KONICA MINOLTA

SERVICE MANUAL

bizhub 750i

KONICA MINOLTA, INC.

Function Version 2.0
Date: 2021/04/02

Table of Contents

A SAFETY AND IMPORTANT WARNING ITEMS A-1

1. IMPORTANT NOTICE A-2
2. DESCRIPTION ITEMS FOR DANGER, WARNING AND CAUTION A-3
   - 2.1 Description items in this Service Manual A-3
   - 2.2 Description items for safety and important warning items A-3
3. SAFETY WARNINGS A-4
   - 3.1 MODIFICATIONS NOT AUTHORIZED BY KONICA MINOLTA, INC. A-4
     - 3.1.1 Actions requiring special attention A-4
   - 3.2 POWER PLUG SELECTION A-5
     - 3.2.1 Power Cord Set or Power Plug A-5
   - 3.3 CHECKPOINTS WHEN PERFORMING ON-SITE SERVICE A-7
     - 3.3.1 Power Supply A-7
     - 3.3.2 Installation Requirements A-11
     - 3.3.3 After Service A-13
   - 3.4 Used Batteries Precautions A-19
     - 3.4.1 ALL Areas A-19
     - 3.4.2 Germany A-19
     - 3.4.3 France A-19
     - 3.4.4 Denmark A-19
     - 3.4.5 Finland, Sweden A-19
     - 3.4.6 Norway A-19
   - 3.5 Laser Safety A-20
     - 3.5.1 Laser Safety A-20
     - 3.5.2 Internal Laser Radiation A-20
     - 3.5.3 Laser Safety Label A-21
     - 3.5.4 Laser Warning Label A-22
     - 3.5.5 PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT A-22
4. WARNING INDICATIONS ON THE MACHINE A-23
   - 4.1 Warning indications inside the machine A-23
   - 4.2 Warning indications on the boards A-24
5. MEASURES TO TAKE IN CASE OF AN ACCIDENT A-25

B NOTATION OF THE CONTENTS B-1

1. PRECAUTION ON HANDLING THIS MANUAL B-1
2. PRODUCT NAME B-2
3. BRAND NAME B-3
4. FEEDING DIRECTION B-4
5. NOTE FOR THE SPECIFICATIONS B-5

C PRODUCT OUTLINE C-1

1. PRODUCT SPECIFICATIONS C-1
   - 1.1 bizhub 750i C-1
     - 1.1.1 Basic specifications C-1
     - 1.1.2 Paper C-2
     - 1.1.3 Print volume C-3
     - 1.1.4 Machine specification C-3
     - 1.1.5 Print function C-3
     - 1.1.6 Scan function C-4
     - 1.1.7 Web browser function C-4
   - 1.2 DF-713 ..... C-6
   - 1.3 LU-205 ..... C-8
   - 1.4 LU-303 ..... C-9
   - 1.5 FS-539/FS-539SD C-9
   - 1.6 PK-524 ..... C-14
   - 1.7 FS-540/FS-540SD C-14
   - 1.8 PK-526 ..... C-19
   - 1.9 ZU-609 ..... C-20
   - 1.10 JS-602 ..... C-21
   - 1.11 PI-507 ..... C-21
   - 1.12 FK-514/FK-515 ..... C-23

1.13 CU-102 ..... C-23
1.14 i-Option C-24
1.14.1 Available function for i-Option C-24
2. OVERALL COMPOSITION C-26
2.1 SYSTEM CONFIGURATION C-26
2.1.1 System configuration C-26
2.1.2 Optional configuration C-27
2.2 SECTION CONFIGURATION C-28
2.3 PAPER PATH C-28
2.4 CONTROL BLOCK DIAGRAM C-29
2.5 IMAGE CREATION PROCESS C-30
2.6 IMAGE FORMING CONTROL C-31
D SERVICE TOOL D-1
1. bizhub 750i D-1
2. Utility tool D-2
2.1 IC card information setting tool of card reader D-2
2.1.1 Outline D-2
2.1.2 IC card information setting procedures D-2
3. DF-713 ..... D-6
4. IM-102 ..... D-7
E MAINTENANCE E-1
1. Concept of maintenance E-1
2. Periodical replacement parts list E-2
2.1 bizhub 750i E-2
2.2 DF-713 ..... E-2
2.3 LU-205 ..... E-2
2.4 LU-303 ..... E-3
2.5 FS-539/FS-539SD E-3
2.6 FS-540/FS-540SD E-3
2.7 PI-507 ..... E-3
3. Periodical replacement procedure E-4
3.1 bizhub 750i E-4
3.1.1 Replacing the tray 1 pick-up roller, tray 1 feed roller, tray 1 separation roller E-4
3.1.2 Replacing the tray 2 pick-up roller, tray 2 feed roller, tray 2 separation roller E-4
3.1.3 Replacing the manual bypass tray pick-up roller, manual bypass tray feed roller, manual bypass tray separation roller assy E-4
3.1.4 Replacing the toner cartridge E-7
3.1.5 Replacing the drum unit E-7
3.1.6 Replacing the developing unit E-9
3.1.7 Replacing the toner filter E-10
3.1.8 Replacing the waste toner box E-10
3.1.9 Replacing the transfer belt unit E-10
3.1.10 Replacing the transfer roller unit E-12
3.1.11 Replacing the fusing unit E-13
3.2 Tray 3/4 ..... E-13
3.2.1 Replacing the tray 3 pick-up roller, feed roller, separation roller E-13
3.2.2 Replacing the tray 4 pick-up roller, feed roller, separation roller E-14
3.3 DF-713 ..... E-15
3.3.1 Replacing the pick-up roller/feed roller E-15
3.3.2 Replacing the separation roller E-16
3.4 LU-205 ..... E-17
3.4.1 Replacing the pick-up roller E-17
3.4.2 Replacing the feed roller E-17
3.4.3 Replacing the separation roller E-18
3.5 LU-303 ..... E-19
3.5.1 Replacing the pick-up roller E-19
3.5.2 Replacing the feed roller E-19
3.5.3 Replacing the separation roller E-20
3.6 FS-539/FS-539SD E-21
3.6.1 Replacing the paddle E-21
3.6.2 Replacing the upper paddle (saddle section) E-22
3.6.3 Replacing the lower paddle (saddle section) E-23

3.7 FS-540/FS-540SD E-23
3.7.1 Replacing the paddle E-23
3.7.2 Replacing the upper paddle (saddle section) E-24
3.7.3 Replacing the lower paddle (saddle section) E-25
3.8 PI-507 ..... E-25
3.8.1 Replacing the pick-up roller/Lw, feed roller/Lw E-25
3.8.2 Replacing the separation roller/Lw, Torque limiter/Lw E-27

4. Cleaning parts list E-28
4.1 bizhub 750i E-28
4.2 DF-713 ..... E-28
4.3 LU-205 ..... E-29
4.4 LU-303 ..... E-29
4.5 FS-539/FS-539SD E-29
4.6 FS-540/FS-540SD E-29
4.7 ZU-609 ..... E-30
4.8 JS-602 ..... E-30
4.9 PI-507 ..... E-30
4.10 IM-102 ..... E-30

5. Cleaning/Lubrication procedure E-31
5.1 bizhub 750i E-31
5.1.1 Cleaning the original glass E-31
5.1.2 Cleaning the scanner rails E-31
5.1.3 Cleaning the mirrors E-31
5.1.4 Cleaning the lens E-31
5.1.5 Cleaning the CCD sensor E-32
5.1.6 Cleaning the tray 1 pick-up roller, tray 1 feed roller, tray 1 separation roller E-32
5.1.7 Cleaning the tray 2 pick-up roller, tray 2 feed roller, tray 2 separation roller E-33
5.1.8 Cleaning the tray 2 transport roller E-33
5.1.9 Cleaning the bypass pick-up roller E-33
5.1.10 Cleaning the manual bypass tray feed roller E-33
5.1.11 Cleaning the manual bypass tray separation roller E-33
5.1.12 Cleaning the PH window E-34
5.1.13 Cleaning of the registration roller E-34
5.1.14 Cleaning of the area around the waste toner collecting port E-34
5.1.15 Cleaning the transfer belt unit E-34
5.1.16 Cleaning of the image transfer entrance guide E-35
5.1.17 Cleaning of the IDC sensor window E-35
5.1.18 Cleaning of the duplex transport rollers E-35
5.1.19 Cleaning of the exit tray front roller E-35
5.2 Tray 3/4 ..... E-36
5.2.1 Tray 3 pick-up roller, feed roller, separation roller E-36
5.2.2 Horizontal transport roller E-36
5.2.3 Tray 4 pick-up roller, feed roller, separation roller E-36
5.2.4 Tray 4 vertical transport roller E-37
5.3 DF-713 ..... E-37
5.3.1 Cleaning the pick-up roller/feed roller E-37
5.3.2 Cleaning the separation roller E-38
5.3.3 Cleaning the torque limiter and shaft E-38
5.3.4 Cleaning the miscellaneous rollers E-39
5.3.5 Cleaning the miscellaneous rolls E-40
5.3.6 Cleaning the front side scanning guide E-41
5.3.7 Cleaning the reflective sensor section E-41
5.3.8 Cleaning the back side scanning glass E-41
5.3.9 Cleaning the back side scanning guide/back side scanning shading shaft E-42
5.4 LU-205 ..... E-42
5.4.1 Pick-up roller E-42
5.4.2 Feed roller E-43
5.4.3 Separation roller E-43
5.4.4 Conveyance roller E-43
5.5 LU-303 ..... E-44
5.5.1 Pick-up roller E-44
5.5.2 Feed roller E-44
5.5.3 Separation roller E-44
5.5.4 Conveyance roller E-44
5.6 FS-539/FS-539SD E-45
5.6.1 Cleaning roller and rolls E-45
5.6.2 Cleaning the paddle E-46

5.6.3 Cleaning the upper paddle (saddle section) E-46
5.6.4 Cleaning the lower paddles (saddle section) E-47
5.6.5 Cleaning the FNS entrance sensor (PS4) E-47
5.6.6 Cleaning the main tray exit sensor (PS16) E-47
5.7 FS-540/FS-540SD E-48
5.7.1 Cleaning roller and rolls E-49
5.7.2 Cleaning the paddles E-50
5.7.3 Cleaning the exit tray conveyance belt (saddle section) E-50
5.7.4 Cleaning the upper paddle (saddle section) E-50
5.7.5 Cleaning the lower paddle (saddle section) E-51
5.7.6 Cleaning the FNS entrance sensor (PS34) E-51
5.7.7 Cleaning the FNS middle sensor (PS36) E-51
5.7.8 Cleaning the main tray exit sensor (PS37) E-52
5.8 ZU-609 ..... E-54
5.8.1 Cleaning the Z fold roller (ZU-609) E-54
5.9 JS-602 ..... E-54
5.9.1 Cleaning the conveyance roller/paper exit roller (JS-602) E-54
5.10 PI-507 ..... E-54
5.10.1 Pick-up roller/Lw, feed roller/Lw, separation roller/Lw E-54
5.10.2 Conveyance roller/Lw E-55
5.11 IM-102 ..... E-55
5.11.1 Cleaning the media detection sensor window E-55

F DISASSEMBLY/REASSEMBLY F-1

1. Disassembly/adjustment prohibited items F-1
1.1 Paint-locked screws F-1
1.2 Red-painted screws F-1
1.3 Variable resistors on board F-1
1.4 Warnings for disassembly F-1
1.5 Warnings / Precautions during setup or transportation F-2

2. Units from which removing is prohibited F-4
2.1 CCD unit F-4
2.1.1 Reason for prohibition F-4
2.2 PH unit F-4
2.2.1 Reason for prohibition F-4
2.3 Fusing unit F-4
2.3.1 Reason for prohibition F-4

3. Disassembly/assembly warning/caution items F-5
3.1 Removal/installing of PWBs F-5

4. Notes when transporting the machine F-6
4.1 Protective materials F-6
4.1.1 Protective materials for the photoconductors F-6
4.1.2 Scanner packing bracket F-6
4.1.3 Paper tray locking materials F-7
4.1.4 Transfer roller locking materials F-7

5. bizhub 750i F-8
5.1 Exterior parts F-8
5.1.1 Scanner right cover F-8
5.1.2 Scanner left cover F-8
5.1.3 Scanner front cover F-8
5.1.4 Scanner upper rear cover F-9
5.1.5 Control panel upper cover F-9
5.1.6 Control panel front cover F-10
5.1.7 Control panel right cover F-10
5.1.8 Control panel left cover/1 ..... F-11
5.1.9 Control panel left cover/2 ..... F-12
5.1.10 Control panel unit F-12
5.1.11 Original glass F-13
5.1.12 Upper front door F-14
5.1.13 Lower front door F-14
5.1.14 Front lower cover F-15
5.1.15 Front cover F-15
5.1.16 Left cover F-15
5.1.17 Paper exit cover F-16
5.1.18 Right rear cover F-16

5.1.19 DF cable cover F-17
5.1.20 Duct cover F-17
5.1.21 Upper left rear cover F-17
5.1.22 Upper right rear cover F-18
5.1.23 Lower rear cover F-18
5.1.24 Tray 1 ..... F-19
5.1.25 Tray 2 ..... F-19
5.2 Units F-19
5.2.1 Waste toner box F-19
5.2.2 LED exposure unit F-20
5.2.3 CCD unit F-21
5.2.4 Paper feed unit F-23
5.2.5 PH unit F-23
5.2.6 Sub hopper unit F-24
5.2.7 Right door unit F-25
5.2.8 Manual bypass tray unit F-27
5.2.9 Regist unit F-29
5.2.10 How to open the PWB box F-30
5.2.11 Main drive unit F-31
5.2.12 Transport unit F-32
5.2.13 Fusing drive unit F-33
5.2.14 Hopper drive unit F-35
5.2.15 ADU transport unit F-36
5.2.16 Expansion control board assy F-37
5.2.17 Gate switch unit F-37
5.2.18 Fan assy F-39
5.2.19 HaCS power supply box F-40
5.3 Boards F-40
5.3.1 Scanner drive board (SCDB) F-40
5.3.2 Base board (BASEB) F-41
5.3.3 Storage board (STRGB) F-43
5.3.4 CPU board (CPUB) F-44
5.3.5 Backup board (ERB) F-45
5.3.6 Expansion control board (EXCB) F-46
5.3.7 TPM board (TPMB) F-47
5.3.8 Machine condition monitor board (MCMB) F-47
5.3.9 Tray 1 FD paper size board (FDPSB/1), tray 2 FD paper size board (FDPSB/2) F-48
5.3.10 Tray 1 CD paper size board (CDPSB/1), tray 2 CD paper size board (CDPSB/2) F-48
5.3.11 Tray 1 paper empty indicator board (PEIB/1), tray 2 paper empty indicator board (PEIB/2) F-49
5.3.12 High voltage unit (HV) F-49
5.3.13 DC power supply (DCPU) F-50
5.3.14 HaCS power supply (FUPU) F-51
5.3.15 Memory board (MEMB) F-52
5.3.16 Erase LED/K (EL/K) F-52
5.4 Motors F-53
5.4.1 Transport motor (M1) F-53
5.4.2 Fusing motor (M3) F-53
5.4.3 Paper exit/reverse motor (M4) F-54
5.4.4 ADU transport motor/1 (M5) F-54
5.4.5 Toner supply motor/K (M6) F-55
5.4.6 Fusing pressure motor (M11) F-55
5.4.7 Tray 1 lift-up motor (M12) F-56
5.4.8 Tray 2 lift-up motor (M13) F-56
5.4.9 Fusing shutter motor (M15) F-57
5.4.10 Waste toner transport motor (M20) F-58
5.4.11 Paper feed motor (M22) F-59
5.4.12 Tray 2 vertical transport motor (M23) F-60
5.4.13 Registration motor (M24) F-61
5.4.14 Toner cartridge motor/K (M25) F-61
5.4.15 ADU transport motor/2 (M26) F-61
5.4.16 Scanner motor (M201) F-63
5.5 Clutches F-64
5.5.1 Tray 2 paper feed clutch (CL1) F-64
5.5.2 Bypass tray paper feed clutch (CL7) F-64
5.6 Fans F-65
5.6.1 PH/power supply cooling fan (FM1) F-65
5.6.2 Transfer belt cleaner cooling fan (FM2) F-66
5.6.3 Rear side cooling fan (FM3) F-67

5.6.4 Toner cartridge cooling fan (FM4) F-67
5.6.5 HaCS power supply cooling fan (FM5) F-68
5.6.6 Paper cooling fan (FM8) F-68
5.6.7 Toner suction fan (FM11) F-69
5.6.8 UFP scavenging fan/Fr (FM17) F-70
5.6.9 UFP scavenging fan/Rr (FM18) F-70
5.6.10 DV cooling fan (FM19) F-71
5.6.11 Fusing edge cooling fan/Fr (FM21) F-72
5.6.12 Fusing edge cooling fan/Rr (FM22) F-73
5.6.13 Machine internal cooling fan (FM25) F-74
5.7 Others F-76
5.7.1 Bypass tray lift-up solenoid (SD1) F-76
5.7.2 Exit path switch solenoid (SD3) F-77
5.7.3 Developing solenoid (SD4) F-78
5.7.4 Bypass tray pick-up roller solenoid (SD6) F-78
5.7.5 FAX speaker (SP1) F-79
5.7.6 Bypass tray CD paper size VR (VR1) F-80

6. Tray 3/4 ..... F-83
6.1 Right door F-83
6.2 Right rear cover F-83
6.3 Rear cover F-83
6.4 Tray 3 ..... F-83
6.5 Tray 4 ..... F-84
6.6 PC control board (PCCB) F-85
6.7 Tray 4 paper feed/transport unit F-85
6.8 Drive unit F-85
6.9 Tray 3 lift-up motor (M143) F-88
6.10 Tray 4 lift-up motor (M144) F-88
6.11 Intermediate motor (M151) F-89
6.12 Transport motor (M152) F-89
6.13 Tray 3 paper feed clutch (CL151) F-89
6.14 Tray 3 transport clutch (CL152) F-91
6.15 Horizontal transport clutch (CL153) F-91
6.16 Tray 4 paper feed clutch (CL161) F-91

7. DF-713/SP-501 ..... F-92
7.1 Front cover (DF-713) F-92
7.2 Rear cover (DF-713) F-92
7.3 Left cover unit (DF-713) F-92
7.4 How to open the document feed tray (DF-713) F-94
7.5 Stamp unit cover (DF-713) F-94
7.6 Lower guide assy (DF-713) F-95
7.7 Dual scan document feeder (DF-713) F-96
7.8 Front side glass cleaning roller unit (DF-713) F-98
7.9 Back side glass cleaning roller unit (DF-713) F-99
7.10 CIS module (CIS) (DF-713) F-100
7.11 DF control board (DFCB) (DF-713) F-101
7.12 Document width size sensor (VR1) (DF-713) F-101
7.13 CIS power supply (CISPU) (DF-713) F-102
7.14 Multi feed detection board/TX (MFDB/TX) (DF-713) F-103
7.15 Multi feed detection board/RX (MFDB/RX) (DF-713) F-103
7.16 Document feed motor (M1) (DF-713) F-104
7.17 Document registration motor (M2) (DF-713) F-105
7.18 Document reading motor (M3) (DF-713) F-106
7.19 Document exit motor (M4) (DF-713) F-106
7.20 DF lift-up motor (M5) (DF-713) F-107
7.21 CIS cleaning motor (M7) (DF-713) F-108
7.22 Document reading glass cleaning motor (M8) (DF-713) F-108
7.23 Document feed clutch (CL1) (DF-713) F-109
7.24 DF cooling fan (FM) (DF-713) F-109
7.25 Separation roller torque limiter (DF-713) F-109
7.26 Stamp unit (SP-501) F-110
7.27 Stamp (SP-501) F-110

8. LU-205 ..... F-112
8.1 Right cover (LU-205) F-112
8.2 Front cover (LU-205) F-112
8.3 Rear cover (LU-205) F-112

8.4 Feed cover (LU-205) F-113
8.5 Large capacity unit (LU-205) F-113
8.6 LU drive board (LUDB) (LU-205) F-114
8.7 LU lift-up motor (M1) (LU-205) F-115
8.8 LU paper feed motor (M2) (LU-205) F-115
8.9 LU transport motor (M3) (LU-205) F-116
8.10 Dehumidification heater (DH) (LU-205) F-116
8.11 Lift wire (LU-205) F-117
8.11.1 Removal F-117
8.11.2 Mounting F-120

9. LU-303 ..... F-127
9.1 Right cover (LU-303) F-127
9.2 Front cover (LU-303) F-127
9.3 Rear cover (LU-303) F-127
9.4 Feed cover (LU-303) F-128
9.5 Large capacity unit (LU-303) F-128
9.6 LU drive board (LUDB) (LU-303) F-129
9.7 LU lift-up motor (M1) (LU-303) F-130
9.8 LU paper feed motor (M2) (LU-303) F-130
9.9 LU transport motor (M3) (LU-303) F-131
9.10 Dehumidification heater (DH) (LU-303) F-131
9.11 Lift wire (LU-303) F-132
9.11.1 Removal F-132
9.11.2 Mounting F-134

10. OT-514 ..... F-140
10.1 Output tray (OT-514) F-140
10.2 Fan unit (OT-514) F-140
10.3 Tacking fan/Fr (FM23), Tacking fan/Rr (FM24) (OT-514) F-141

11. RU-519 ..... F-143
11.1 RU transport unit (RU-519) F-143
11.2 Sensor unit (RU-519) F-143
11.3 RU transport motor (M1) (RU-519) F-143

12. FS-539/FS-539SD F-145
12.1 Finisher (FS-539/FS-539SD) F-145
12.2 Rear cover (FS-539/FS-539SD) F-146
12.3 Front door (FS-539/FS-539SD) F-146
12.4 Front upper cover (FS-539/FS-539SD) F-147
12.5 Left lower cover (FS-539/FS-539SD) F-147
12.6 Front lower cover (FS-539/FS-539SD) F-148
12.7 Left cover (FS-539/FS-539SD) F-148
12.8 Stapler unit (FS-539/FS-539SD) F-149
12.9 FS control board (FSCB) (FS-539/FS-539SD) F-152
12.10 FNS entry transport motor (M2) (FS-539/FS-539SD) F-152
12.11 FNS discharge motor (M3) (FS-539/FS-539SD) F-153
12.12 Receiving roller retraction motor (M4) (FS-539/FS-539SD) F-153
12.13 FNS paddle motor (M5) (FS-539/FS-539SD) F-153
12.14 Trail edge stopper motor (M6) (FS-539/FS-539SD) F-154
12.15 Alignment motor/Fr (M7) (FS-539/FS-539SD) F-154
12.16 Alignment motor/Rr (M8) (FS-539/FS-539SD) F-155
12.17 Pre-eject drive motor (M9) (FS-539/FS-539SD) F-155
12.18 Bundle eject motor (M10) (FS-539/FS-539SD) F-156
12.19 Main tray up/down motor (M11) (FS-539/FS-539SD) F-156
12.20 Paper delivery control motor (M12) (FS-539/FS-539SD) F-157
12.21 Stapler movement motor (M13) (FS-539/FS-539SD) F-157

13. FS-539SD saddle section F-159
13.1 Saddle unit (FS-539SD saddle section) F-159
13.2 Front cover (FS-539SD saddle section) F-161
13.3 Exit tray (FS-539SD saddle section) F-162
13.4 Stapler unit (FS-539SD saddle section) F-162
13.5 SD control board (SDCB) (FS-539SD saddle section) F-164
13.6 SD transport motor (M101) (FS-539SD saddle section) F-165
13.7 Paper discharge control motor (M102) (FS-539SD saddle section) F-165
13.8 Alignment motor (M103) (FS-539SD saddle section) F-165
13.9 Stopper drive motor (M104) (FS-539SD saddle section) F-166
13.10 Center fold roller motor (M105) (FS-539SD saddle section) F-167

13.11 Center fold guide motor (M106) (FS-539SD saddle section) F-167
13.12 SD paddle motor (M107) (FS-539SD saddle section) F-167
13.13 Tri-folding guide motor (M108) (FS-539SD saddle section) F-168
13.14 Center fold knife motor (M109) (FS-539SD saddle section) F-168
13.15 Stopper solenoid (SD101) (FS-539SD saddle section) F-169
14. PK-524 ..... F-173
14.1 Punch Kit (PK-524) F-173
15. FS-540/FS-540SD F-174
15.1 Finisher (FS-540/FS-540SD) F-174
15.2 Upper cover/1 (FS-540/FS-540SD) F-174
15.3 Upper cover/2 (FS-540/FS-540SD) F-175
15.4 Upper cover/3 (FS-540/FS-540SD) F-175
15.5 Rear cover (FS-540/FS-540SD) F-175
15.6 Front door (FS-540/FS-540SD) F-176
15.7 Front upper cover (FS-540/FS-540SD) F-176
15.8 Front lower cover (FS-540/FS-540SD) F-176
15.9 Main tray (under the paper exit tray) (FS-540/FS-540SD) F-177
15.10 Sub tray (over the paper exit tray) (FS-540/FS-540SD) F-178
15.11 Left lower cover (FS-540/FS-540SD) F-178
15.12 Left upper cover (FS-540/FS-540SD) F-179
15.13 Horizontal transport unit (FS-540/FS-540SD) F-180
15.14 Stapler unit (FS-540/FS-540SD) F-180
15.15 FS control board (FSCB) (FS-540/FS-540SD) F-181
15.16 Bundle eject motor (M1) (FS-540/FS-540SD) F-182
15.17 Pre-eject drive motor (M2) (FS-540/FS-540SD) F-182
15.18 Stacker plate drive motor (M3) (FS-540/FS-540SD) F-182
15.19 Route change gate motor (M4) (FS-540/FS-540SD) F-183
15.20 Main tray up/down motor (M6) (FS-540/FS-540SD) F-183
15.21 Paddle up/down motor (M7)/arm drive motor (M8)/FNS paddle motor (M9) (FS-540/FS-540SD) F-184
15.22 Receiving roller retraction motor (M10) (FS-540/FS-540SD) F-187
15.23 Trailing edge stopper motor/Rr (M11) (FS-540/FS-540SD) F-188
15.24 Trailing edge stopper motor/Fr (M12) (FS-540/FS-540SD) F-188
15.25 Alignment motor/Rr (M13) (FS-540/FS-540SD) F-189
15.26 Alignment motor/Fr (M14) (FS-540/FS-540SD) F-190
15.27 Paper delivery control motor (M15) (FS-540/FS-540SD) F-190
15.28 SD discharge motor (M16) (FS-540/FS-540SD) F-191
15.29 FNS discharge motor (M17) (FS-540/FS-540SD) F-191
15.30 Sub tray discharge motor (M18) (FS-540/FS-540SD) F-192
15.31 Stapler movement motor (M19) (FS-540/FS-540SD) F-193
15.32 FNS entry transport motor (M20) (FS-540/FS-540SD) F-193
15.33 ZU discharge motor (M21) (FS-540/FS-540SD) F-194
16. FS-540SD saddle section F-196
16.1 Saddle unit (FS-540SD saddle section) F-196
16.2 Front cover (FS-540SD saddle section) F-198
16.3 Exit tray (FS-540SD saddle section) F-199
16.4 Stapler unit (FS-540SD saddle section) F-199
16.5 SD control board (SDCB) (FS-540SD saddle section) F-201
16.6 SD transport motor (M101) (FS-540SD saddle section) F-202
16.7 Paper discharge control motor (M102) (FS-540SD saddle section) F-202
16.8 Alignment motor (M103) (FS-540SD saddle section) F-203
16.9 Stopper drive motor (M104) (FS-540SD saddle section) F-203
16.10 Center fold roller motor (M105) (FS-540SD saddle section) F-204
16.11 Center fold guide motor (M106) (FS-540SD saddle section) F-204
16.12 SD paddle motor (M107) (FS-540SD saddle section) F-204
16.13 Tri-folding guide motor (M108) (FS-540SD saddle section) F-205
16.14 Center fold knife motor (M109) (FS-540SD saddle section) F-206
16.15 Paper transport belt motor (M134) (FS-540SD saddle section) F-206
16.16 Stopper solenoid (SD101) (FS-540SD saddle section) F-206
17. PK-526 ..... F-210
17.1 Punch Kit (PK-526) F-210
17.2 Punch control board (PKCB) (PK-526) F-211
17.3 Paper size detect board (PSDTB) (PK-526) F-212
17.4 Punch oscillating motor (M302) (PK-526) F-212
18. ZU-609 ..... F-214
18.1 Z Folding Unit (ZU-609) F-214

18.2 ZU drive board (ZUDB) (ZU-609) F-217
18.3 ZU relay board (ZURB) (ZU-609) F-217
18.4 ZU transport motor (M500) (ZU-609) F-217
18.5 Folding guide motor (M501) (ZU-609) F-218
18.6 Pressure motor (M502) (ZU-609) F-218
19. JS-602 ..... F-219
19.1 Paper exit tray (JS-602) F-219
19.2 Front cover (JS-602) F-219
19.3 Rear cover (JS-602) F-219
19.4 Job separator (JS-602) F-220
19.5 Entrance switching solenoid (SD401) (JS-602) F-220
20. PI-507 ..... F-222
20.1 Upper cover (PI-507) F-222
20.2 Rear cover (PI-507) F-222
20.3 Operation panel cover assy (PI-507) F-222
20.4 Post Inserter (PI-507) F-222
20.5 PI drive board (PIDB) (PI-507) F-224
20.6 PI operation board (PIOB) (PI-507) F-224
20.7 PI relay board (PIRB) (PI-507) F-224
20.8 Tray lift motor /Lw (M202) (PI-507) F-225
20.9 Transfer motor (M203) (PI-507) F-225
20.10 Transport roller drive motor (M204) (PI-507) F-227
20.11 Folding guide motor (M501) (PI-507) F-227
20.12 Transfer clutch /Lw (CL202) (PI-507) F-227
20.13 Registration clutch (CL203) (PI-507) F-228
20.14 Pick-up solenoid /Lw (SD202) (PI-507) F-230
20.15 Paper size VR /Lw (VR202) (PI-507) F-230
21. SC-509 ..... F-232
21.1 DSC board/1 (SC-509) F-232
22. FK-514 ..... F-233
22.1 FAX Kit (Line1), FAX Kit (Line2) (FK-514) F-233
22.2 FAX Kit (Line1), FAX Kit (Line2) (FK-514) (with MK-742) F-234
23. FK-515 ..... F-237
23.1 FAX board (line 3), FAX board (line 4) (FK-515) F-237
24. UK-221 ..... F-238
24.1 Upgrade kit (UK-221) F-238
25. KP-102 ..... F-239
25.1 Keypad (KP-102) F-239
26. CU-102 ..... F-240
26.1 Clean unit (CU-102) F-240
26.2 Clean unit drive board (CUDB) F-240
26.3 Exhaust fan/1 (FM14) F-241
26.4 Exhaust fan/2 (FM15) F-241
27. WT-519 ..... F-243
27.1 Working table (WT-519) F-243
28. IM-102 ..... F-246
28.1 Paper basis weight detection board/TX (PBWDB/TX) F-246
28.2 Envelope detection board/RX (ENVDB/RX) F-247
28.3 Envelope detection relay board (ENVDRB) F-247
28.4 Envelope detection board/TX (ENVDB/TX) F-248
28.5 Paper basis weight detection board/RX (PBWDB/RX) F-248
29. EM-908 ..... F-250
29.1 Expanded memory unit (EM-908) F-250
30. COMMERCIALLY AVAILABLE PARTS F-252
30.1 Installing the key counter F-252
30.1.1 Configuration F-252
30.1.2 Procedure F-252
30.2 Installing the original size sensor/2 (Option) F-252
G MECHANICAL ADJUSTMENT G-1
1. ADVANCE CHECKS G-1

2. bizhub 750i G-2
2.1 Skew Adj. G-2
2.1.1 Confirmation procedure G-2
2.1.2 Adjustment procedure G-2
2.2 Centering adjustment of the tray 1/2 ..... G-3
2.3 Adjusting the tray 1 paper pick-up pressure G-4
2.4 Adjusting the parallelism of the fusing unit path G-4
2.5 PH skew adjustment G-5
2.6 Control panel tilt adjustment G-7
3. Tray 3/4 ..... G-8
3.1 Changing the paper size of the tray 3/4 ..... G-8
3.2 Centering adjustment of the tray 3/4 ..... G-9
4. LU-205 ..... G-10
4.1 Changing the paper size G-10
4.1.1 Purpose G-10
4.1.2 Procedure G-10
4.2 Centering adjustment of the LCT G-10
4.2.1 Purpose G-10
4.2.2 Procedure G-10
4.3 Pick-up roller load adjustment of the LCT G-11
4.3.1 Purpose G-11
4.3.2 Procedure G-11
5. LU-303 ..... G-13
5.1 Centering adjustment of the LCT G-13
5.1.1 Purpose G-13
5.1.2 Procedure G-13
5.2 Pick-up roller load adjustment of the LCT G-13
5.2.1 Purpose G-13
5.2.2 Procedure G-13
6. DF-713 ..... G-15
6.1 Adjusting the height of the dual scan document feeder G-15
6.2 Adjusting front side skew feed on dual scan document feeder G-15
6.3 Adjusting back side skew feed on dual scan document feeder G-17
6.4 Adjusting the pressure of the separation roller G-17
7. PK-524 ..... G-19
7.1 Punch hole deviation correction G-19
8. PK-526 ..... G-21
8.1 Punch hole deviation correction G-21
9. FS-539SD G-22
9.1 Half-fold skew adjustment G-22
10. FS-540SD G-24
10.1 Half-fold skew adjustment G-24
H UTILITY H-1
1. Outline H-1
2. Accessibility H-2
3. Counter H-3
4. Utility H-4
4.1 Information H-4
4.2 System Settings H-4
4.3 Box H-5
4.4 Copier Settings H-5
4.5 Printer Settings H-6
4.6 Store Address H-7
4.7 Scan/Fax Settings H-8
4.8 Fax Settings H-8
4.9 Customize H-8
5. Language Selection H-10
6. Administrator H-11
6.1 Outline H-11
6.2 Maintenance H-11

6.3 System Settings H-12
6.3.1 Machine Setting H-12
6.3.2 Register Support Information H-12
6.3.3 Reset Settings H-12
6.3.4 User Box Setting H-12
6.3.5 URL Document Management Setting H-13
6.3.6 Standard Size Setting H-13
6.3.7 Stamp Settings H-13
6.3.8 Blank Page Print Settings H-13
6.3.9 Job Priority Operation Settings H-13
6.3.10 System Connection Setting H-13
6.3.11 Searchable PDF Settings H-13
6.3.12 Compact PDF Settings H-13
6.3.13 Outline PDF Setting H-14
6.3.14 PDF Web Optimization Default Settings H-14
6.3.15 PDF/A Default Settings H-14
6.3.16 Scan File Name Settings H-14
6.3.17 Set Paper Name by User H-14
6.3.18 Enlarge Display Settings H-14
6.3.19 Registered Key Settings H-14
6.3.20 Main Menu Display Settings H-14
6.3.21 Preview Settings H-14
6.3.22 List/Counter H-14
6.3.23 Custom Function Pattern Selection H-15
6.3.24 Custom Function Profile User/Account H-15
6.3.25 Function Display Key Permission Setting H-15
6.3.26 Temporary Change Language H-15
6.3.27 Main Menu Default (Classic Style) H-15
6.3.28 Main Menu Default (Basic Style) H-15
6.3.29 Display 10 Keypad when entering Number of Sets H-15
6.3.30 Print end notification lamp ON time settings H-15
6.3.31 Universal Print Settings H-15
6.3.32 Widget Function Settings H-16
6.3.33 Output Settings H-16
6.3.34 Bypass Tray Overwrite Settings for Print PC H-16
6.3.35 Network Selection Settings H-16
6.3.36 Job History Display Setting H-16
6.3.37 Paper Size/Type Settings Screen Display H-16
6.3.38 Default Bypass Paper Type Setting H-16
6.3.39 Page Number Print Position H-16
6.3.40 Voice Guidance Settings H-16
6.3.41 ADF Settings H-17
6.3.42 ADF original skew adj.setting H-17
6.3.43 Paper type auto detection settings H-17
6.3.44 Auto envelope detection sett. H-17
6.3.45 Def. operation mode set. H-17
6.3.46 Slide Menu Settings H-17
6.3.47 Widget Function Settings H-17
6.3.48 Change Permission for Default Value Setting H-17
6.3.49 Manual staple setting H-17
6.4 Security H-17
6.5 User Auth/Account Track H-19
6.6 Network H-21
6.7 Box H-24
6.8 Printer Settings H-24
6.9 Store Address H-24
6.10 Fax Settings H-25
6.10.1 Header/Footer Position H-25
6.10.2 Line Parameter Setting H-25
6.10.3 TX/RX Settings H-25
6.10.4 Function Setting H-26
6.10.5 Report Settings H-26
6.10.6 Multi Line Settings H-27
6.10.7 Network Fax Setting H-27
6.10.8 Header Information H-27
6.10.9 Fax Print Quality Settings H-28
6.10.10 Fax Setting List H-28
6.11 Copier Settings H-28

7. Expert Adjustment H-29
8. Storage Management H-31
9. Banner Printing H-32
10. Device Information H-33
11. Remote Panel H-34
12. Card Authentication H-35
13. Supplementary explanation of utility mode H-36
13.1 Maintenance H-36
13.1.1 License Settings H-36
13.1.2 USB flash drive backup H-36
13.1.3 Remote Access Setting H-37
13.2 System Settings H-37
13.2.1 Voice Guidance Settings H-37
13.3 Security H-37
13.3.1 ProhibitFunctions H-37
13.3.2 Enhanced Security Mode H-38
13.3.3 Image Log Transfer Settings H-40
13.3.4 Driver Password Encryption Setting H-40
13.3.5 Quick Security Setting H-41
13.4 User Authentication/Account Track H-42
13.4.1 Authentication Device Settings H-42
13.5 Network H-43
13.5.1 Network Fax Setting H-43
13.5.2 IWS Settings H-44
13.5.3 Remote Panel Settings H-44
13.5.4 Network I/F Configuration H-45
13.5.5 Wireless Network Setting H-46
13.6 Machine Update Settings H-47
13.6.1 Internet ISW Settings H-47
13.6.2 Machine Auto Update Settings H-47
13.6.3 HTTP Proxy Settings H-50
13.7 Storage Management H-50
13.7.1 Encryption Settings H-50
13.7.2 Debug Log Encryption Settings H-50

I SERVICE MODE I-1

1. Outline I-1
2. SETUP WIZARD I-2
3. Time Zone/Date & Time Input mode I-3
4. Search I-4
5. Machine I-5
5.1 Trail Edge Color Alignment Adj I-5
5.2 Fusing Temperature I-5
5.3 Fusing Transport Speed I-6
5.4 Printer Area I-6
5.4.1 Leading Edge Adjustment I-6
5.4.2 Printer Image Centering Side 1 ..... I-6
5.4.3 Leading Edge Adj. Side 2 (Duplex) I-7
5.4.4 Prt. Image Center. Side 2 (Dup) I-7
5.4.5 Paper Feed Direction Adj. I-8
5.4.6 Tray Printing Position: Tip I-8
5.5 Scan Area I-9
5.5.1 Test chart I-9
5.5.2 Image Position: Leading Edge I-9
5.5.3 Scanner Image Side Edge I-9
5.5.4 Main Scan Zoom Adj. I-10
5.5.5 Sub Scan Zoom Adj. I-10
5.6 Printer Reg. Loop Adj. I-11
5.7 Main Scanning Direction Zoom I-11
5.8 LD adjustment I-11
5.8.1 LD Timing Adj. I-11
5.8.2 LD 1/2 Balance Adj. I-12

5.8.3 LD Light Width Adjustment I-12
5.9 Manual Bypass Tray Width Adj I-12
5.10 Lead Edge Erase Adjustment I-12
5.11 Non-Image Area Erase Check I-13
5.12 Split Line Prior Detection I-13
5.13 PPM Control Choice I-13
5.14 High Humidity PPM Adjustment I-13
5.15 Move Scanner to Home I-14
5.16 Weight calc. default I-14
6. Firmware Version I-16
7. Imaging Process Adjustment I-17
7.1 Gradation Adjust I-17
7.2 Stabilizer I-18
7.3 Density Balance Adjust I-18
7.4 Max Image Density Adj I-18
7.5 Image Background Adj I-18
7.6 Paper Separation Adjustment I-19
7.7 Removable Voltage Adjust I-19
7.8 TCR Level Setting I-19
7.9 Transfer Voltage Fine Adj I-19
7.9.1 Primary transfer adj. I-19
7.9.2 2nd Transfer Adj. I-20
7.10 Charge AC Output fine adjustment I-20
7.11 Thick Paper Density Adjustment I-20
7.12 Grad/Dev AC Bias V Selection I-21
7.13 Black Adjust I-21
7.14 Manual Toner Add I-21
7.15 Refresh Photoconductor I-21
7.16 Trail Edge Correction I-23
8. CS Remote I-24
8.1 Remote Care I-24
8.1.1 Outline I-24
8.1.2 Setting up I-24
8.1.3 Setup confirmation I-25
8.1.4 Calling the maintenance I-25
8.1.5 Calling the center from the administrator I-25
8.1.6 Checking the transmission log I-26
8.1.7 Maintenance/Default Settings I-26
8.1.8 Server Setting I-29
8.1.9 Product Auth. Settings I-31
8.1.10 Import/Export Settings I-31
8.1.11 Auto Initial Dial Setting I-31
8.2 Software SW setting for Remote Care I-32
8.2.1 List of software SW for CS Remote Care I-32
8.2.2 SW No. 01 ..... I-32
8.2.3 SW No. 02 ..... I-33
8.2.4 SW No. 03 ..... I-33
8.2.5 SW No. 04 ..... I-34
8.2.6 SW No. 05 ..... I-34
8.2.7 SW No. 06 ..... I-34
8.2.8 SW No. 07 ..... I-35
8.2.9 SW No. 08 ..... I-35
8.2.10 SW No. 09 ..... I-35
8.2.11 SW No. 10 ..... I-36
8.2.12 SW No. 11 ..... I-36
8.2.13 SW No. 12 ..... I-36
8.2.14 SW No. 14 ..... I-37
8.2.15 SW No. 15 ..... I-37
8.2.16 SW No. 18 ..... I-37
8.2.17 SW No. 21 ..... I-38
8.2.18 SW No. 22 ..... I-38
8.2.19 SW No. 23 ..... I-39
8.3 Remote Analysis I-39
8.3.1 Outline I-39
8.3.2 Function Setting I-39
8.3.3 Send I-40

8.3.4 History Output I-41
8.3.5 CS Remote Analysis Error Code List I-41
9. System 1 ..... I-43
9.1 Marketing Area I-43
9.1.1 List of functions affected by marketing area setting I-43
9.2 Tel/Fax Number I-44
9.3 Serial Number I-44
9.4 Sleep ON/OFF Choice Setting I-44
9.5 Foolscap Size Setting I-44
9.6 Original Size Detection I-44
9.7 Minimum Paper Size Setting I-45
9.8 Install Date I-45
9.9 Initialization I-45
9.9.1 List of Clear Item I-46
9.10 Problem Unit Isolation Set. I-46
9.11 Post card transfer table I-47
9.12 Warm-up I-47
9.12.1 Change Warm Up Time I-47
9.13 Machine State LED Setting I-48
9.14 TP Level I-48
9.15 Burn Prevention Settings I-48
10. System 2 ..... I-49
10.1 Set storage type I-49
10.2 Option Board Status I-49
10.3 Consumable Life Reminder I-49
10.4 Unit Change I-49
10.4.1 Unit Change I-49
10.4.2 Warning display I-49
10.5 Software Switch Setting I-50
10.5.1 SW No.012 ..... I-51
10.5.2 SW No.025 ..... I-51
10.5.3 SW No.033 ..... I-52
10.5.4 SW No.049 ..... I-52
10.5.5 SW No.051 ..... I-52
10.5.6 SW No.069 ..... I-52
10.5.7 SW No.070 ..... I-53
10.5.8 SW No.072 ..... I-53
10.5.9 SW No.121 ..... I-53
10.5.10 SW No.124 ..... I-53
10.5.11 SW No.135 ..... I-53
10.5.12 SW No.143 ..... I-53
10.5.13 SW No.145 ..... I-53
10.5.14 SW No.146 ..... I-54
10.5.15 SW No.147 ..... I-54
10.5.16 SW No.151 ..... I-54
10.5.17 SW No.152 ..... I-54
10.5.18 SW No.155 ..... I-55
10.5.19 SW No.157 ..... I-55
10.5.20 SW No.163 ..... I-55
10.5.21 SW No.172 ..... I-55
10.5.22 SW No.188 ..... I-55
10.5.23 SW No.203 ..... I-55
10.5.24 SW No.206 ..... I-55
10.5.25 SW No.226 ..... I-55
10.5.26 SW No.227 ..... I-56
10.5.27 SW No.230 ..... I-56
10.5.28 SW No.237 ..... I-56
10.6 CCD Calibration I-56
10.7 LCT Paper Size Setting I-56
10.8 Paper Reuse Box Setting I-57
10.9 Line Mag Setting I-57
10.10 Data Capture I-57
10.11 Split Line Detect. Setting I-58
10.12 Stamp I-59
10.13 Network Fax Settings I-59
10.14 RX File Change Page Name I-60
10.15 ADF Settings I-60

10.16 User Paper Settings I-60
10.17 Coverage Rate Screen I-61
10.18 JAM Code Display Setting I-61
10.19 Purge Setting I-61
10.20 Import Config. Data I-61
10.20.1 BootUp Screen I-61
10.20.2 Machine Image I-62
10.20.3 Custom Auth. Setting I-62
10.21 Install Data I-62
10.22 Local Interface Kit Setting I-63
10.23 CIS Image Adjustment I-63
10.24 Display Eco Index I-63
10.25 Internal Error. Auto Cancel I-63
10.26 Acquiring Settings I-64
10.27 Driver Install I-64
10.28 Application Change Setting I-64
10.29 Custom Pattern I-64
10.30 Maintenance Mode I-65
10.31 Smart Fusing Control I-65
10.32 Cleaning Unit Setting I-66
10.33 Auth. Function Enable I-66

11. Counter I-67
11.1 Outline I-67
11.2 Life I-67
11.3 Service Call I-68
11.4 Section Service Call I-68
11.5 Warning I-68
11.6 Maintenance I-68
11.7 Service Total I-69
11.8 Counter Of Each Mode I-69
11.9 Service Call History (Data) I-69
11.10 ADF Paper Pages I-69
11.11 Paper Jam History I-69
11.12 Fax Connection Error I-69
11.13 ADF Scan Glass Contamin. Counter I-69
11.14 Parts Counter (Fixed) I-69
11.14.1 Fixed parts to be counted I-70
11.15 Jam I-70
11.16 Section JAM I-71
11.17 Instantaneous Power Failure I-71
11.18 Detail code history I-71
11.19 Recoverable error counter I-71

12. List Output I-72
12.1 Individual list print output I-72
12.2 Batch list CSV output I-72

13. State Confirmation I-74
13.1 Sensor Check I-74
13.1.1 bizhub 750i I-74
13.1.2 FS-539/FS-539SD I-75
13.1.3 FS-540/FS-540SD I-77
13.2 Table Number I-80
13.3 Level History 1 ..... I-80
13.4 Level History 2 ..... I-80
13.5 Temp. /Humidity/Atmospheric Press I-80
13.6 CCD Check I-81
13.7 Memory/Storage Adjustment I-81
13.7.1 Memory Check I-81
13.7.2 Compress / Decompression Check I-82
13.7.3 JPEG check I-82
13.7.4 Memory Bus Check I-82
13.7.5 DSC Bus Check I-82
13.7.6 Storage R/W Check I-82
13.7.7 Format I-83
13.8 Memory/Storage Status I-83
13.9 Load Check I-83
13.9.1 Load check list I-83

13.10 Adjustment Data List I-88
13.11 Self-diag. (Full/Individual) I-88
13.11.1 Overview of self-diagnostic function I-88
13.11.2 Self-diag. (Full) I-89
13.11.3 Self-diag. (Individual) I-91
13.12 Media detection I-94
14. Test Mode I-95
14.1 Test Pattern I-95
14.1.1 Gradation Pattern I-95
14.1.2 Halftone Pattern I-95
14.1.3 Lattice Pattern I-95
14.1.4 Solid Pattern I-96
14.1.5 Solid Pattern 2 ..... I-96
14.2 Paper Passage Test I-97
14.3 Fax Test I-97
14.4 User Paper 7 Mode I-99
15. ADF I-100
15.1 Original Stop Position I-100
15.2 Registration Loop Adj. I-101
15.3 Auto Stop Position Adjustment I-101
15.4 Paper Passage I-102
15.5 Sensor Check I-102
15.6 Original Tray Width I-102
15.7 Read Pos Adj I-103
15.8 Feed Zoom I-103
15.9 Scanning Light Adjustment I-104
15.10 Mixed original size adjustment I-104
15.11 Home Read Position Adjust I-104
15.12 FD-Mag. Adj. (B) I-104
15.13 Main Scanning Direction Zoom I-105
15.14 Skew Measurement I-106
15.15 ADF automatic Adjustment I-106
16. FAX I-107
16.1 Outline I-107
16.1.1 PBX operating environment I-108
16.2 Modem/NCU I-108
16.3 Network I-110
16.4 System I-111
16.5 Fax File Format I-112
16.6 Communication I-113
16.7 List Output I-114
16.8 Function Parameter I-114
16.9 Initialization I-115
16.10 Fax Line Std. Setting I-115
16.11 Function parameter list (for all fax lines) I-115
16.11.1 Job setting I-115
16.11.2 Function setting I-119
16.11.3 Report setting I-123
16.11.4 Panel settings I-125
16.12 Function parameter list (for separate line) I-128
16.12.1 Function setting 1 ..... I-128
16.12.2 Function setting 2 ..... I-131
16.12.3 Function setting 3 ..... I-133
16.12.4 Function setting 4 ..... I-135
16.12.5 Function setting 5 ..... I-138
16.12.6 Fax capacity setting I-141
16.12.7 HP setting I-143
16.13 ..... I-145
17. Finisher I-146
17.1 FS-FN adjustment I-146
17.1.1 Center Staple Position I-146
17.1.2 Half-Fold Position I-146
17.1.3 Punch Centering Fine Adj (for English) I-147
17.1.4 Punch Edge Adj I-148
17.1.5 Punch Regist Loop Size I-149
17.1.6 Punch F. Sensor Intensity Adj. I-149

17.1.7 Vertical Punch (Z-Fold) Position (for English) I-149
17.1.8 Horizontal Punch (Z-Fold) Position (for English) I-151
17.1.9 Resist loop size(Z-fold) I-151
17.1.10 Punch Registration Loop Adj I-152
17.1.11 Punch Resist Loop Size (PI) I-152
17.1.12 1st Tri-Fold Adjustment/2nd Tri-Fold Adjustment I-152
17.1.13 1st Z-Fold Position/2nd Z-Fold Position I-152
17.1.14 PI Size Detection I-153
17.1.15 Post Inserter Adjustment I-153
17.1.16 Finisher Components Test Mode I-154
17.1.17 Paper Alignment Guides W. Adj. I-155
17.1.18 ZFold1st Fold Loop Size I-155
17.1.19 ZFold2nd Fold Loop Size I-156
17.1.20 ZFold2nd Fold Speed I-156
17.1.21 ZFold Adjust Custom I-156
17.2 Max Staple Limit Setting I-156
17.3 Punch Option Setting I-156
17.4 Max. # of Folded Sheets Setting I-156
17.5 Tri-Fold Output Setting I-157
17.6 Job Separator I-157
17.7 Center Staple Output Setting I-157
18. Network Settings I-158
18.1 2nd Network Setting I-158
18.2 Remote Service Setting I-158
18.2.1 Function Setting I-158
18.2.2 Proxy Server Setting I-158
18.2.3 Maintenance Setting I-159
18.2.4 XMPP Settings I-159
18.2.5 Always Connection Setting I-159
18.3 Port Settings I-160
18.4 MTU Param. set. I-160
19. Machine Update Setting I-161
19.1 Internet ISW I-161
19.1.1 Internet ISW Set I-161
19.1.2 HTTP Setting I-161
19.1.3 FTP Setting I-161
19.1.4 Forwarding Access Setting I-161
19.1.5 Download I-161
19.1.6 Update Start Time Settings I-162
19.2 Machine Auto Update setting I-162
19.2.1 Auto Update setting I-162
19.2.2 Relay server setting I-167
19.2.3 Transmission log Update I-168
19.2.4 Transmission Server Log I-169
19.2.5 Update Log Display I-169
19.2.6 Relay Server Log Confirmation I-169
19.2.7 Manually Update I-170
19.2.8 Machine Import setting I-170
19.2.9 Machine Export setting I-170
19.2.10 Machine Update Password I-171
19.3 Firmware Update I-171
19.4 Firmware Rollback I-171
19.5 Copy Network Settings I-172
19.5.1 Outline I-172
19.5.2 Environmental preparations I-172
19.5.3 Deliver/setting procedure I-173
19.6 OSS Update I-173
J BILLING SETTING/ENHANCED SECURITY/DEBUG SETTINGS J-1
1. BILLING SETTING J-1
1.1 Outline J-1
1.2 Counter Setting J-1
1.2.1 Total Counter Mode J-1
1.2.2 Large Size Counter Mode J-1
1.2.3 Banner Paper Counter Mode J-2
1.2.4 Banner Counter Double Count Mode J-2

1.2.5 Count by the combination of each setting J-2
1.3 Management Function Choice J-3
1.3.1 Key counter only J-3
1.3.2 Management Device 2 ..... J-3
1.3.3 Vendor 2 ..... J-4
1.3.4 Key Counter IF Vendor J-5
1.4 Authentication Device 2 ..... J-5
1.4.1 Installation procedures of authentication unit J-5
1.5 Setting items that automatically change the setting values J-7
1.5.1 When the vendor2 is mounted J-7
1.5.2 When the key counter IF vendor is mounted J-8
1.5.3 When the management device 2 is mounted J-8
1.5.4 When the authentication device 2 is mounted J-9
1.6 Coverage Rate Clear J-9
1.7 License Management J-9
1.7.1 Activation J-9
1.7.2 Deactivation J-12
1.7.3 Repair J-16
1.7.4 Initialize J-20
1.7.5 Request Code J-20
1.7.6 List J-20
1.7.7 Function List J-20
1.8 Manage OpenAPI Authentication J-20
1.9 WebDAV Server Setting J-20
1.10 Coverage Counter Setting J-21
1.11 Print Counter Clear J-23
1.12 Coverage Counter Detail J-24
2. ENHANCED SECURITY J-25
2.1 Outline J-25
2.2 CE Password J-25
2.3 Administrator Password J-25
2.4 Administrator Feature Level J-25
2.5 CE Authentication J-26
2.6 Life Stop Setting J-26
2.7 Memory Data Backup J-26
2.8 operation Ban release time J-26
2.9 Administrator unlocking J-27
2.10 Engine FW DipSW J-27
2.10.1 Details of Each Function J-29
2.11 Engine Data Backup J-34
2.12 Storage Data Backup J-34
2.13 Data Backup J-35
2.13.1 Client Function J-35
2.13.2 Server Function J-38
2.14 ADF Data Backup J-38
2.15 Customer Type J-38
2.16 TPM Setting J-39
2.17 FWCert. Settings J-39
3. DEBUG SETTINGS J-40
3.1 Outline J-40
3.2 Debug Log Output J-40
3.3 Acquiring Mode J-40
3.4 TX Debug Log Settings J-41
3.5 Remote Log Retrieval J-42
3.6 Remote Log Server Settings J-42
3.7 Enable Core Dump J-43
3.8 USB Password J-43
3.9 Other J-43
3.9.1 Screen Capture J-43
3.9.2 Panel Operation Playback J-44
3.10 Operation of the debug log function J-44
3.10.1 Advance preparation J-44
3.10.2 Basic mode J-44
3.10.3 Enhance mode J-45
K FIRMWARE K-1

1. Overview K-1
2. USB memory K-2
2.1 Preparation K-2
2.2 Rewriting of Firmware K-2
2.3 Action when data transfer fails K-4
3. Internet ISW K-6
3.1 Service environment K-6
3.2 Preparation K-6
3.2.1 Making the firmware data K-6
3.2.2 Internet ISW Set K-6
3.3 Rewriting of Firmware K-6
4. Auto Update setting K-8
4.1 Service environment K-8
4.2 Preparation K-8
4.3 Rewriting of Firmware K-8
5. How to install the i-Option data K-9
5.1 Available function for i-Option K-9
5.2 LK-107/LK-108 font data installation procedure K-9
6. Creating back up files when updating firmware K-10
L TROUBLESHOOTING L-1
1. JAM CODE L-1
1.1 JAM display L-1
1.2 Initial check items L-2
1.3 List of the JAM code L-3
1.4 JAM that do not display the JAM code L-4
1.5 1#-## L-6
1.5.1 10-01, 10-02, 10-04, 10-40 ..... L-6
1.5.2 11-01, 11-02, 11-04, 11-05, 11-40 ..... L-6
1.5.3 12-01, 12-05, 12-40 ..... L-7
1.5.4 13-05, 13-40 ..... L-8
1.5.5 14-05, 14-40 ..... L-8
1.5.6 15-01, 15-40 ..... L-9
1.5.7 17-20 ..... L-9
1.5.8 17-30, 17-31 ..... L-10
1.5.9 17-40, 17-41 ..... L-10
1.6 2#-## L-11
1.6.1 20-01, 20-02, 20-04 ..... L-11
1.7 3#-## L-12
1.7.1 30-03 ..... L-12
1.7.2 32-01, 32-05, 32-06, 32-30 ..... L-12
1.8 6#-## L-13
1.8.1 66-02 ..... L-13
1.8.2 66-03, 66-13, 66-23, 66-33 ..... L-13
1.8.3 66-04, 66-14 ..... L-14
1.8.4 66-05, 66-06 ..... L-15
1.8.5 66-07 ..... L-15
1.8.6 66-08 ..... L-15
1.8.7 66-54 ..... L-16
1.9 7#-## L-16
1.9.1 72-11 ..... L-16
1.9.2 72-14 ..... L-17
1.9.3 72-15 ..... L-17
1.9.4 72-16 ..... L-18
1.9.5 72-17 ..... L-19
1.9.6 72-18 ..... L-19
1.9.7 72-19 ..... L-20
1.9.8 72-21 ..... L-21
1.9.9 72-22 ..... L-21
1.9.10 72-23 ..... L-22
1.9.11 72-25, 72-26 ..... L-23
1.9.12 72-31, 72-34 ..... L-24
1.9.13 72-35 ..... L-24
1.9.14 72-40, 72-41 ..... L-24
1.9.15 72-43 ..... L-25

1.9.16 72-49 ..... L-26
1.9.17 72-50 ..... L-26
1.9.18 72-51 ..... L-26
1.9.19 72-75 ..... L-27
1.9.20 72-76 ..... L-28
1.9.21 72-77 ..... L-28
1.9.22 72-81 ..... L-29
1.9.23 72-84 ..... L-30
1.9.24 72-85 ..... L-30
1.9.25 72-86 ..... L-31
1.9.26 72-87 ..... L-32
1.9.27 75-42 ..... L-32
1.9.28 75-43 ..... L-33
1.10 9# ## L-34
1.10.1 92-01, 92-02, 92-04, 92-40 ..... L-34
1.10.2 93-10 ..... L-34
1.10.3 99-01 ..... L-35
1.10.4 99-02 ..... L-35
1.10.5 99-03 ..... L-36
1.10.6 99-04 ..... L-36
1.10.7 99-05 ..... L-36
1.10.8 99-06 ..... L-36
1.10.9 99-07 ..... L-36
1.10.10 99-08 ..... L-37
1.10.11 99-09 ..... L-37
1.10.12 99-10 ..... L-37
1.10.13 99-11 ..... L-37
1.10.14 99-12 ..... L-38
1.10.15 99-14 ..... L-38
1.10.16 99-15 ..... L-38
1.11 Sensor layout L-39
1.11.1 bizhub 750i L-39
1.11.2 DF-713 ..... L-39
1.11.3 LU-205/LU-303 ..... L-40
1.11.4 FS-539/FS-539SD/PK-524/RU-519 ..... L-40
1.11.5 FS-540/FS-540SD/PK-526/PI-507/ZU-609/RU-519 ..... L-41
1.11.6 JS-602 ..... L-42

2. MALFUNCTION CODE L-43
2.1 Display procedure L-43
2.2 List of the malfunction code L-43
2.3 S-1 ..... L-44
2.4 S-2 ..... L-44
2.5 D-1 ..... L-44
2.6 D-3 ..... L-44
2.7 P-5, P-28 ..... L-45
2.8 P-9 ..... L-45
2.9 P-27 ..... L-46
2.10 P-33 ..... L-46
2.11 P-34 ..... L-46
2.12 P-35 ..... L-46
2.13 P-36 ..... L-47
2.14 P-37 ..... L-47
2.15 P-38 ..... L-48
2.16 P-39 ..... L-48
2.17 P-40 ..... L-48
2.18 P-41 ..... L-48
2.19 P-42 ..... L-49
2.20 P-43 ..... L-49

3. TROUBLE CODE L-50
3.1 Overview of trouble code L-50
3.2 Overview of troubleshooting procedure L-50
3.2.1 Troubleshooting procedure L-51
3.3 Trouble resetting procedure L-51
3.3.1 Trouble resetting procedure by Trouble Reset key L-51
3.3.2 Trouble resetting procedure by the auto cancel function L-52
3.3.3 Trouble resetting procedure by remote operation L-52
3.4 Nonvolatile memory clear function L-52

3.4.1 Data to be cleared by the nonvolatile memory clear function L-53
3.4.2 Start and execution procedure L-53
3.5 Trouble isolation function L-54
3.6 List of the trouble code L-55
3.7 C0### L-63
3.7.1 C0002 ..... L-63
3.7.2 C0104, C0105 ..... L-63
3.7.3 C0107 ..... L-63
3.7.4 C0202 ..... L-64
3.7.5 C0204 ..... L-64
3.7.6 C0206 ..... L-64
3.7.7 C0208 ..... L-65
3.7.8 C0211 ..... L-65
3.7.9 C0216 ..... L-66
3.8 C1### L-66
3.8.1 C1003, C1013 ..... L-66
3.8.2 C1004, C1014 ..... L-67
3.8.3 C1007, C1017 ..... L-67
3.8.4 C1081, C1082 ..... L-67
3.8.5 C1102 ..... L-68
3.8.6 C1103 ..... L-69
3.8.7 C1104 ..... L-70
3.8.8 C1105 ..... L-70
3.8.9 C1106 ..... L-71
3.8.10 C1109 ..... L-72
3.8.11 C1112 ..... L-73
3.8.12 C1113 ..... L-73
3.8.13 C1114 ..... L-74
3.8.14 C1115 ..... L-75
3.8.15 C1124 ..... L-75
3.8.16 C1125 ..... L-76
3.8.17 C1127 ..... L-76
3.8.18 C1130 ..... L-77
3.8.19 C1131 ..... L-77
3.8.20 C1132 ..... L-78
3.8.21 C1133 ..... L-78
3.8.22 C1140 ..... L-79
3.8.23 C1141 ..... L-80
3.8.24 C1142 ..... L-80
3.8.25 C1143 ..... L-81
3.8.26 C1144 ..... L-81
3.8.27 C1145 ..... L-82
3.8.28 C1146 ..... L-83
3.8.29 C1152 ..... L-83
3.8.30 C1156 ..... L-83
3.8.31 C1184 ..... L-84
3.8.32 C1195 ..... L-85
3.8.33 C1196 ..... L-86
3.8.34 C1197 ..... L-86
3.8.35 C11A2 ..... L-87
3.8.36 C11C5 ..... L-88
3.8.37 C11E1 ..... L-88
3.8.38 C11E2 ..... L-89
3.8.39 C1403 ..... L-89
3.8.40 C1404 ..... L-89
3.9 C2### L-89
3.9.1 C2204 ..... L-89
3.9.2 C2350 ..... L-90
3.9.3 C2355 ..... L-90
3.9.4 C2357 ..... L-91
3.9.5 C2414 ..... L-91
3.9.6 C2557 ..... L-91
3.9.7 C2558 ..... L-92
3.9.8 C255C L-92
3.9.9 C2564 ..... L-93
3.9.10 C2650 ..... L-93
3.9.11 C2A14 ..... L-93
3.9.12 C2A24 ..... L-94

3.10 C3### L-94
3.10.1 C3103 ..... L-94
3.10.2 C3104 ..... L-95
3.10.3 C3201, C3202 ..... L-95
3.10.4 C3203 ..... L-96
3.10.5 C3302 ..... L-96
3.10.6 C3306 ..... L-96
3.10.7 C3307 ..... L-97
3.10.8 C3425 ..... L-97
3.10.9 C3722, C3725, C3726 ..... L-97
3.10.10 C3737 ..... L-98
3.10.11 C3825, C3826 ..... L-98
3.10.12 C3922, C3925, C3926 ..... L-98
3.10.13 C392B L-99
3.11 C4### L-99
3.11.1 C40A2, C40A3, C40A4, C40A5, C40A6, C40C3, C40C5 ..... L-99
3.11.2 C4101 ..... L-100
3.11.3 C4501 ..... L-100
3.12 C5### L-100
3.12.1 C5102, C5103 ..... L-100
3.12.2 C5351 ..... L-101
3.12.3 C5355 ..... L-101
3.12.4 C5356 ..... L-101
3.12.5 C5358 ..... L-102
3.12.6 C5360 ..... L-102
3.12.7 C5361 ..... L-102
3.12.8 C5362 ..... L-103
3.12.9 C5370 ..... L-103
3.12.10 C5372 ..... L-103
3.12.11 C5601 ..... L-104
3.12.12 C5603 ..... L-104
3.12.13 C5605, C5606 ..... L-104
3.12.14 C5610 ..... L-104
3.12.15 C5620 ..... L-105
3.13 C6### L-105
3.13.1 C6001 ..... L-105
3.13.2 C6002 ..... L-105
3.13.3 C6102, C6103 ..... L-105
3.13.4 C6104, C6105 ..... L-106
3.13.5 C6704 ..... L-106
3.13.6 C6751 ..... L-107
3.13.7 C6752 ..... L-107
3.13.8 C6753 ..... L-107
3.13.9 C6754, C6755 ..... L-108
3.13.10 C6756 ..... L-108
3.13.11 C6901, C6902, C6903, C6911, C6912, C6913 ..... L-108
3.13.12 C6F01, C6F02, C6F03, C6F04, C6F05, C6F06, C6F07, C6F08, C6F09, C6F0A, C6FDC, C6FDD L-109
3.14 C7### L-109
3.14.1 C7106 ..... L-109
3.14.2 C7107 ..... L-109
3.14.3 C7111 ..... L-110
3.14.4 C7112 ..... L-110
3.14.5 C7132 ..... L-110
3.14.6 C7137 ..... L-110
3.14.7 C7139 ..... L-111
3.14.8 C7141 ..... L-111
3.14.9 C7160 ..... L-111
3.14.10 C7162 ..... L-111
3.14.11 C7163 ..... L-112
3.14.12 C7164 ..... L-112
3.14.13 C7202 ..... L-112
3.14.14 C7206 ..... L-112
3.14.15 C7241 ..... L-113
3.14.16 C7242 ..... L-113
3.14.17 C7243 ..... L-113
3.14.18 C7251 ..... L-114
3.14.19 C7301 ..... L-114
3.14.20 C7302 ..... L-114

3.14.21 C7304 ..... L-114
3.14.22 C7305 ..... L-115
3.14.23 C7310 ..... L-115
3.14.24 C7311 ..... L-115
3.14.25 C7312 ..... L-115
3.14.26 C7313 ..... L-116
3.14.27 C7314 ..... L-116
3.14.28 C7315 ..... L-116
3.14.29 C7317 ..... L-116
3.14.30 C7318 ..... L-117
3.14.31 C7319 ..... L-117
3.14.32 C7401 ..... L-117
3.14.33 C7402 ..... L-118
3.14.34 C7501 ..... L-118
3.14.35 C7502 ..... L-118
3.14.36 C7601 ..... L-118
3.14.37 C7604 ..... L-119
3.14.38 C7605 ..... L-119
3.14.39 C7606 ..... L-119
3.14.40 C7607 ..... L-119
3.14.41 C760A L-120
3.14.42 C760B L-120
3.14.43 C760C L-120
3.14.44 C760D L-120
3.14.45 C760E L-121
3.14.46 C760F L-121
3.14.47 C7610 ..... L-121
3.14.48 C7622 ..... L-121
3.14.49 C7624 ..... L-122
3.14.50 C7631 ..... L-122
3.14.51 C7633 ..... L-122
3.15 C8### L-122
3.15.1 C8103 ..... L-122
3.15.2 C8106 ..... L-123
3.15.3 C8107 ..... L-123
3.15.4 C8302 ..... L-124
3.15.5 C8401 ..... L-124
3.15.6 C8402 ..... L-124
3.16 C9### L-124
3.16.1 C9401, C9402 ..... L-124
3.16.2 C9403, C9404 ..... L-125
3.16.3 C9701 ..... L-125
3.16.4 C9702 ..... L-126
3.17 CA### L-126
3.17.1 CA051, CA052, CA053 ..... L-126
3.18 CB### L-126
3.19 CC### L-126
3.19.1 CC002 ..... L-126
3.19.2 CC151, CC152 ..... L-127
3.19.3 CC155 ..... L-127
3.19.4 CC156 ..... L-127
3.19.5 CC159, CC15A L-127
3.19.6 CC15B L-127
3.19.7 CC15C L-128
3.19.8 CC163 ..... L-128
3.19.9 CC164 ..... L-128
3.19.10 CC170, CC171, CC172, CC173, CC174, CC180, CC181, CC182, CC183, CC184, CC185, CC186 ..... L-129
3.19.11 CC190 ..... L-129
3.19.12 CC191 ..... L-129
3.19.13 CC211 ..... L-130
3.19.14 CC212 ..... L-130
3.19.15 CC213 ..... L-130
3.19.16 CC214 ..... L-130
3.19.17 CC216 ..... L-131
3.19.18 CC301 ..... L-131
3.19.19 CC302 ..... L-131
3.19.20 CCC00 ..... L-131
3.20 CD### L-132

3.20.1 CD002 ..... L-132
3.20.2 CD004, CD00F, CD020 ..... L-132
3.20.3 CD010 ..... L-132
3.20.4 CD011 ..... L-132
3.20.5 CD012 ..... L-133
3.20.6 CD030 ..... L-133
3.20.7 CD041, CD042, CD043, CD044, CD045, CD046 ..... L-133
3.20.8 CD047, CD048, CD049, CD04A, CD04B L-133
3.20.9 CD050 ..... L-133
3.20.10 CD072 ..... L-134
3.20.11 CD073 ..... L-134
3.20.12 CD110 ..... L-134
3.20.13 CD201, CD202, CD203 ..... L-134
3.20.14 CD211, CD212 ..... L-135
3.20.15 CD241, CD242 ..... L-135
3.20.16 CD261 ..... L-135
3.20.17 CD262 ..... L-135
3.20.18 CD2D1 ..... L-136
3.20.19 CD3## L-136
3.20.20 CD313 ..... L-136
3.20.21 CD38E L-137
3.20.22 CD390 ..... L-137
3.20.23 CD391 ..... L-137
3.20.24 CD392 ..... L-137
3.20.25 CD3B1, CD3B3, CD3B4, CD3B5 ..... L-138
3.20.26 CD3C0 ..... L-138
3.20.27 CD401, CD402, CD403, CD404, CD405, CD406, CD407, CD411, CD412, CD413 ..... L-138
3.20.28 CD601, CD602, CD603 ..... L-139
3.20.29 CD701, CD702, CD703 ..... L-139
3.20.30 CD704 ..... L-139
3.20.31 CDC## L-139
3.20.32 CDF50, CDF70, CDFA0 ..... L-140
3.20.33 CDF51, CDF71, CDFA1 ..... L-140
3.21 CE### L-140
3.21.1 CE001, CE003, CE004, CE005, CE006, CE007, CE009 ..... L-140
3.21.2 CE002 ..... L-141
3.21.3 CE012 ..... L-141
3.21.4 CE013 ..... L-141
3.21.5 CE014 ..... L-141
3.21.6 CE015 ..... L-141
3.21.7 CE101 ..... L-142
3.21.8 CE201 ..... L-142
3.21.9 CE202 ..... L-142
3.21.10 CE203 ..... L-142
3.21.11 CE204 ..... L-143
3.21.12 CE301, CE302, CE303, CE304, CE305 ..... L-143
3.21.13 CE401 ..... L-143
3.21.14 CED01 ..... L-143
3.21.15 CEEE1, CEEE3 ..... L-144
3.21.16 CEEE2 ..... L-144
3.22 CF### (Abort code) L-144
3.22.1 CFA## L-144
3.22.2 CFB## L-144
3.22.3 CFC## L-145
3.22.4 CFD## L-145
3.22.5 CFE## L-145
3.22.6 CFF## L-145
4. TROUBLESHOOTING USING SELF-DIAG. (FULL) L-147
4.1 Overview of Self-diag. (Full) function L-147
4.2 Self-diag. (Full) Procedure L-147
4.2.1 Auto Execution of Self-diag. (Full) L-147
4.2.2 Error code resetting procedures L-147
4.3 Error Code List L-148
4.4 E1-1 ..... L-149
4.5 E1-2 ..... L-149
4.6 E1-3 ..... L-150
4.7 E1-4 ..... L-150

4.8 E1-5 ..... L-150
4.9 E2-1 ..... L-150
4.10 E2-2 ..... L-150
4.11 E2-3 ..... L-151
4.12 E2-4 ..... L-151
4.13 E2-5 ..... L-151
4.14 E3-1 ..... L-151
4.15 E3-2, E3-3 ..... L-152
4.16 E4-1, E4-2 ..... L-152
4.17 E4-3, E4-4 ..... L-152
4.18 E5-1 ..... L-152
4.19 E5-2 ..... L-153
4.20 E5-3 ..... L-153
4.21 E5-4 ..... L-153
4.22 E5-5 ..... L-153
4.23 E5-6, E5-7, E5-8, E5-9, E5-10 ..... L-154
4.24 E5-11 ..... L-154
4.25 E5-12 ..... L-154
4.26 E6-1, E6-2 ..... L-155
4.27 E7-1, E7-2 ..... L-155
4.28 E8-1 ..... L-156
4.29 E9-1 ..... L-156
4.30 E10-1, E10-2 ..... L-156
4.31 E11-1, E11-2 ..... L-156
4.32 E12-1, E12-2, E12-3, E12-4 ..... L-157

5. TROUBLESHOOTING WHEN NG IS DISPLAYED ON THE SELF-DIAG. (INDIVIDUAL) L-158
5.1 I2S check L-158
5.1.1 Troubleshooting when NG is displayed for AUDIO (voice) L-158
5.2 Various USB Check L-158
5.2.1 Troubleshooting when NG is displayed for Keyboard L-158
5.2.2 Troubleshooting when NG is displayed for USB Memory L-158
5.3 CPU board check L-158
5.3.1 Troubleshooting when NG is displayed for Ping Test L-158

6. ERROR CODE FOR THE INTERNET ISW L-159
6.1 Error code list for the Internet ISW L-159
6.2 0x0# L-159
6.3 0x1# L-160
6.4 0x2# L-160

7. CS REMOTE CARE ERROR CODE L-161
7.1 Troubleshooting for CS Remote Care L-161
7.2 CS Remote Care Operation under Enhanced Security Mode L-161
7.3 List of the CS Remote Care error code L-161
7.3.1 When connecting by modem L-161
7.3.2 When connecting by e-mails L-162
7.3.3 When connecting by http L-164
7.3.4 When connecting by Fax modem L-166

8. CS REMOTE ANALYSIS ERROR CODE L-167
8.1 When connecting by SOAP L-167
8.1.1 1### L-167
8.1.2 2### L-167
8.1.3 3### L-168
8.1.4 4### L-168
8.2 When connecting by http L-168
8.2.1 0### L-168
8.2.2 1### L-168
8.2.3 2### L-168
8.2.4 3### L-169
8.2.5 4### L-169
8.2.6 5### L-169
8.2.7 6### L-169
8.2.8 7### L-169

9. FAX TROUBLE CODE L-170
9.1 The error in the transmission/reception system L-170
9.2 B0## L-170
9.3 B11# L-170

9.4 B12# L-171
9.5 B13# L-171
9.6 B14# L-171
9.7 B15# L-171
9.8 B16# L-172
9.9 B17# L-172
9.10 B18# L-172
9.11 B19# L-172
9.12 T0# L-173
9.13 T1# L-174
9.14 T2# L-175
9.15 T3# L-175
9.16 T4# L-175
9.17 T5# L-176
9.18 T6# L-177
9.19 T7# L-177
9.20 T8# L-178
9.21 T9# L-179
9.22 R0# L-180
9.23 R1# L-181
9.24 R2# L-182
9.25 R3# L-183
9.26 R4# L-183
9.27 R5# L-184
9.28 R6# L-184
9.29 R7# L-185
9.30 R8# L-186
9.31 R9# L-186
9.32 Other L-186

10. DIAGNOSTIC CODES L-187
10.1 Outline L-187
10.2 Explanation L-187
10.2.1 The diagnostic code L-187
10.2.2 Information of communication results and conditions L-187

11. NETWORK FAX ERROR CODE L-189
11.1 Error code list of the transmission system L-189
11.2 Error code list of the reception system L-189
11.3 Other L-190

12. OPEN API RELATED TROUBLE L-191
12.1 Outline L-191
12.2 Types of Trouble L-191
12.3 Solution L-191
12.3.1 When using an application L-191
12.3.2 After rewriting the firmware of the machine L-192

13. PANEL BLACKOUT TROUBLE (BOOT DIAGNOSIS FUNCTION) L-193
13.1 Boot diagnosis function L-193
13.1.1 Boot diagnosis sequence L-193
13.1.2 Manual boot diagnosis procedure L-194
13.1.3 Boot diagnosis result list L-194
13.1.4 How to reset the boot diagnosis result L-194

14. TROUBLES THAT DO NOT DISPLAY THE TROUBLE CODE L-195
14.1 Machine is not energized at all (DCPU operation check) L-195
14.2 Fusing heaters do not operate L-195
14.3 Power is not supplied to DF L-195
14.4 Power is not supplied to option L-196

15. OTHER TROUBLE L-197
15.1 Firmware error warning L-197
15.2 Storage lock password error warning L-197

16. TROUBLESHOOTING OF i-Option L-198
16.1 Structure of license management L-198
16.2 License management information L-198
16.3 Error message L-198
16.3.1 License management error L-198

17. IMAGE QUALITY PROBLEM L-199

17.1 How to read element data L-199
17.1.1 Table Number L-199
17.1.2 Level History 1 ..... L-201
17.1.3 Level History 2 ..... L-201
17.2 Troubleshooting procedure overview L-202
17.2.1 Test pattern printing L-202
17.3 Corrective action procedure L-202
17.3.1 Skewed image/Image deviation L-202
17.3.2 White line 1, white band 1, black line 1, black band 1 ..... L-204
17.3.3 White line 2, white band 2, black line 2, black band 2 ..... L-206
17.3.4 Uneven density 1 ..... L-208
17.3.5 Uneven density 2 ..... L-209
17.3.6 Faint image, low image density (ID lowering) L-211
17.3.7 Gradation reproduction failure L-212
17.3.8 Foggy background L-213
17.3.9 Void areas, White spots L-215
17.3.10 Black spots L-216
17.3.11 Blurred image L-217
17.3.12 Back marking L-218
17.3.13 Blank copy, Black copy L-219
17.3.14 Uneven pitch L-220
17.3.15 Uneven gloss, Rough gloss L-221
17.3.16 Poor fusing performance, Offset L-221
17.3.17 Brush effect, Image bleeding L-222
17.3.18 Blurred fine lines L-223
17.3.19 Moire L-224
17.3.20 Distorted image L-225
17.3.21 ACS malfunction L-225
17.3.22 Abnormal image L-225

18. IC PROTECTOR L-227
18.1 Outline L-227
18.2 IC protector list L-227
18.2.1 bizhub 750i L-227
18.2.2 DF-713 ..... L-228
18.2.3 FS-539/FS-539SD L-229
18.2.4 FS-540/FS-540SD L-230
18.2.5 PK-526 ..... L-232
18.2.6 PI-507 ..... L-232
18.2.7 ZU-609 ..... L-232

M PARTS/CONNECTOR LAYOUT DRAWING M-1

1. PARTS LAYOUT DRAWING M-1
1.1 bizhub 750i M-1
1.1.1 Scanner section M-1
1.1.2 Front side M-1
1.1.3 Back side M-3
1.1.4 Left side M-4
1.1.5 Right side M-5
1.1.6 Manual bypass tray M-5
1.1.7 Tray 1 ..... M-6
1.1.8 Tray 2 ..... M-6
1.1.9 Tray 3/4 ..... M-7
1.1.10 Fusing/paper exit section M-8
1.1.11 Duplex section M-8
1.2 DF-713 ..... M-9
1.3 LU-205 ..... M-10
1.4 LU-303 ..... M-11
1.5 RU-519 ..... M-11
1.6 FS-539/FS-539SD M-12
1.7 FS-539SD saddle section M-13
1.8 PK-524 ..... M-14
1.9 FS-540/FS-540SD M-14
1.10 FS-540SD saddle section M-16
1.11 PK-526 ..... M-17
1.12 ZU-609 ..... M-17
1.13 JS-602 ..... M-18
1.14 PI-507 ..... M-18

1.15 OT-514 ..... M-19
1.16 CU-102 ..... M-19
1.17 WT-519 ..... M-19
2. CONNECTOR LAYOUT DRAWING M-20
2.1 BOARD CONNECTOR LAYOUT DRAWING M-20
2.1.1 bizhub 750i M-20
2.1.2 Tray 3/4 ..... M-24
2.1.3 WT-519 ..... M-25
2.1.4 DF-713 ..... M-25
2.1.5 FS-539/FS-539SD M-26
2.1.6 FS-540/FS-540SD M-27
2.1.7 PK-526 ..... M-27
2.1.8 ZU-609 ..... M-27
2.1.9 PI-507 ..... M-28
2.1.10 FK-514 (line 1/2) M-28
2.1.11 FK-515 (line 3/4) M-29
2.1.12 CU-102 ..... M-29
2.1.13 SC-509 ..... M-29
2.1.14 EM-908 ..... M-29
2.1.15 IM-102 ..... M-30
2.2 RELAY CONNECTOR LAYOUT DRAWING M-32
2.2.1 Main body M-32
2.2.2 Tray 3/4 ..... M-34
N TIMING CHART N-1
1. bizhub 750i N-1
1.1 Timing chart when printing N-1
2. LU-205/LU-303 ..... N-2
O WIRING DIAGRAM O-1
1. bizhub 750i O-1
1.1 Main body O-1
2. DF-713 ..... O-3
3. LU-205 ..... O-4
4. LU-303 ..... O-5
5. FS-539/FS-539SD O-6
6. FS-540/FS-540SD O-7
7. PK-526 ..... O-8
8. ZU-609 ..... O-9
9. PI-507 ..... O-10
P THEORY OF OPERATION P-1
1. bizhub 750i P-1
1.1 INTERFACE SECTION P-1
1.1.1 Configuration P-1
1.2 SCANNER SECTION P-4
1.2.1 Configuration P-4
1.2.2 Drive P-4
1.2.3 LED exposure unit P-4
1.2.4 When the power is ON P-5
1.2.5 Control when the Start key is pressed P-5
1.2.6 Original scanning area P-7
1.2.7 Original size detection control P-7
1.3 WRITE SECTION (PH SECTION) P-9
1.3.1 Configuration P-9
1.3.2 Overview P-9
1.3.3 Laser exposure process P-10
1.3.4 Laser emission timing P-10
1.3.5 Laser emission stop P-11
1.3.6 Laser emission area P-11
1.3.7 PH unit temperature detection control P-12

1.3.8 PH window cleaning P-12
1.4 PHOTOCONDUCTOR SECTION P-13
1.4.1 Configuration P-13
1.4.2 Drive P-13
1.4.3 Erase LED control P-14
1.4.4 Photoconductor cleaning P-14
1.4.5 Electrostatic charger control P-15
1.4.6 Charging roller cleaning P-16
1.4.7 Drum unit mounting detection P-17
1.5 DEVELOPING SECTION P-17
1.5.1 Configuration P-17
1.5.2 Drive P-18
1.5.3 Developing unit pressure/releases mechanism P-18
1.5.4 Developer flow P-18
1.5.5 Auto refining developing system P-19
1.5.6 Developing bias P-19
1.5.7 Toner scattering prevention P-20
1.5.8 Developing cooling P-20
1.5.9 Toner density control P-20
1.5.10 Developing unit mounting detection P-21
1.6 TONER SUPPLY SECTION P-22
1.6.1 Configuration P-22
1.6.2 Drive P-22
1.6.3 Toner replenishing overview P-23
1.6.4 Toner replenishing from toner bottle to toner hopper P-24
1.6.5 Toner replenishing from toner hopper to developing unit P-24
1.6.6 Auxiliary toner replenishing control for toner hopper P-25
1.6.7 Auxiliary toner replenishing control for developing unit P-26
1.6.8 Toner spillage prevention shutter P-26
1.6.9 Toner empty detection control P-27
1.7 1ST TRANSFER SECTION P-28
1.7.1 Configuration P-28
1.7.2 Drive P-28
1.7.3 1st transfer roller control P-29
1.7.4 1st transfer control P-29
1.7.5 Transfer belt cleaning P-29
1.7.6 Waste toner spillage prevention shutter P-31
1.7.7 Cleaning blade foreign matter removal control P-32
1.7.8 Transfer belt new article detection P-32
1.8 2ND TRANSFER SECTION P-32
1.8.1 Configuration P-32
1.8.2 Drive P-33
1.8.3 2nd transfer control P-33
1.8.4 Control of toner application to 2nd transfer roller P-34
1.8.5 2nd transfer roller cleaning P-34
1.8.6 Charge neutralization and separation of paper P-34
1.8.7 2nd transfer roller new article detection P-35
1.9 TONER COLLECTING SECTION P-35
1.9.1 Configuration P-35
1.9.2 Waste toner box drive mechanism P-35
1.9.3 Control of waste toner conveyance through waste toner box P-36
1.9.4 Waste toner box drive section rotation detection P-36
1.9.5 Waste toner box-in-position detection P-37
1.9.6 Waste toner box full detection P-37
1.9.7 Waste toner box new article detection P-38
1.9.8 Waste toner spillage prevention shutter P-38
1.10 PAPER FEED SECTION (TRAY 1/2) P-39
1.10.1 Configuration P-39
1.10.2 Drive P-40
1.10.3 Up/down control P-40
1.10.4 Paper feed control P-42
1.10.5 Paper feed retry control P-42
1.10.6 Feed roller speed reduction control P-43
1.10.7 Vertical transport roller speed reduction control P-43
1.10.8 Paper transport control P-43
1.10.9 Downstream exit control during multi-print cycle P-43
1.10.10 Paper size detection control P-44
1.10.11 Regulation of trailing edge of small-sized paper P-45

1.10.12 Remaining paper detection control P-45
1.10.13 Paper feed tray locking mechanism P-46
1.10.14 Roller retract mechanism P-47
1.10.15 Paper feed tray stopper release mechanism P-48
1.11 PAPER FEED SECTION (TRAY 3/4) P-49
1.11.1 Outline P-49
1.12 PAPER FEED SECTION (MANUAL BYPASS TRAY) P-50
1.12.1 Configuration P-50
1.12.2 Drive P-50
1.12.3 Up/down control P-50
1.12.4 Paper feed control P-52
1.12.5 Paper size detection control P-52
1.12.6 Paper empty detection control P-53
1.12.7 Bypass tray pick-up roller retract mechanism P-54
1.13 REGISTRATION SECTION P-54
1.13.1 Configuration P-54
1.13.2 Registration control P-55
1.13.3 Paper trailing edge detection P-55
1.13.4 Automatic detection of paper type P-55
1.14 FUSING SECTION P-56
1.14.1 Configuration P-56
1.14.2 Drive P-56
1.14.3 Fusing speed correction P-57
1.14.4 Fusing pressure/retraction control P-57
1.14.5 Paper separation mechanism P-58
1.14.6 Fusing temperature control P-59
1.14.7 HaCS control P-61
1.14.8 Plain paper fusing temperature control P-61
1.14.9 Smart fusing control P-62
1.14.10 Fusing edge cooling mechanism P-63
1.14.11 Protection from abnormal temperatures P-64
1.14.12 Fusing PPM control P-64
1.14.13 Fusing unit new article detection P-65
1.15 PAPER EXIT/REVERSE SECTION P-66
1.15.1 Configuration P-66
1.15.2 Drive P-66
1.15.3 Transport control P-66
1.16 DUPLEX SECTION P-68
1.16.1 Configuration P-68
1.16.2 Paper transport control P-68
1.16.3 Duplex circulation control P-69
1.17 IMAGE STABILIZATION CONTROL P-70
1.17.1 Overview P-70
1.17.2 Description of control P-71
1.17.3 Control contents P-71
1.17.4 Operation timing P-72
1.17.5 Image stabilization control during SRA3 size printing P-73
1.18 IMAGE PROCESSING P-73
1.18.1 Scanner section image processing block diagram P-73
1.18.2 Write section image processing block diagram P-74
1.19 POWER SUPPLY SECTION P-75
1.19.1 Main power switch P-75
1.19.2 Power key P-77
1.20 FAN CONTROL P-78
1.20.1 Configuration P-78
1.20.2 Control P-79
1.20.3 PH/power supply cooling fan P-80
1.20.4 Transfer belt cleaner cooling fan P-81
1.20.5 Rear side cooling fan P-81
1.20.6 Toner cartridge cooling fan P-82
1.20.7 HaCS power supply cooling fan P-82
1.20.8 Paper cooling fan P-83
1.20.9 Toner suction fan P-83
1.20.10 UFP scavenging fan P-84
1.20.11 DV cooling fan P-84
1.20.12 Fusing edge cooling fan P-85
1.20.13 Machine internal cooling fan P-85
1.21 COUNTER CONTROL P-86

1.21.1 Configuration P-86
1.21.2 Operation P-86
1.22 HEATER P-87
1.22.1 HT-509/MK-734 ..... P-87
1.22.2 LU/TK-101 ..... P-87
1.23 INDICATOR FUNCTION P-89
1.23.1 Configuration P-89
1.23.2 Control P-89
2. DF-713 ..... P-91
2.1 Configuration P-91
2.1.1 Section configuration P-91
2.1.2 Main part configuration P-91
2.2 Outline P-92
2.3 Document feed section P-93
2.3.1 Drive P-93
2.3.2 Document set/empty detection P-93
2.3.3 Document size detection mechanism P-94
2.3.4 Up/down control for the document feed tray P-96
2.3.5 Document feed control P-97
2.3.6 Upper door open/close detection mechanism P-97
2.3.7 Document feed tray open and close detection mechanism P-97
2.3.8 Double feed detection P-98
2.4 Document registration section P-98
2.4.1 Drive P-98
2.4.2 Registration control P-99
2.5 Document reading section P-99
2.5.1 Drive P-99
2.5.2 Document reading transport control P-100
2.5.3 CIS document reading control P-100
2.5.4 Reading speed correction control P-102
2.5.5 Document reading glass contamination prevention control P-102
2.5.6 CIS glass contamination prevention control P-103
2.5.7 Opening and closing guide set detection P-104
2.6 Document exit section P-104
2.6.1 Drive P-104
2.6.2 Document exit mechanism P-104
2.6.3 Faxed document stamp function (SP-501) P-105
2.7 DF open/close detection mechanism P-105
2.8 Cooling inside the unit mechanism P-105
3. PC-417 ..... P-107
3.1 Configuration P-107
3.2 Paper path P-107
3.3 Drive P-107
3.3.1 Tray 3 ..... P-107
3.3.2 Tray 4 ..... P-108
3.3.3 Horizontal transport/Vertical transport P-108
3.4 Up down control P-109
3.4.1 Up operation P-109
3.4.2 Down operation P-109
3.4.3 Operation timing P-109
3.5 Paper feed control P-110
3.5.1 Pick-up control P-110
3.6 Horizontal transport control P-110
3.7 Paper feed retry control P-111
3.8 Paper feed temporary stop control P-111
3.9 Paper size detection control P-111
3.9.1 Paper guide position regulation P-111
3.9.2 Paper size settings P-112
3.10 Remaining paper detection control P-112
3.10.1 Paper near-empty detection P-112
3.10.2 Paper empty detection P-112
3.10.3 Remaining paper level detection P-113
3.10.4 Remaining paper level display P-113
3.11 Roller retract mechanism P-113
3.11.1 Tray 3 ..... P-113
3.11.2 Tray 4 ..... P-114
3.12 Tray open/close detection mechanism P-114

4. LU-205 ..... P-116
4.1 CONFIGURATION P-116
4.1.1 Exterior view P-116
4.1.2 SECTION CONFIGURATION P-116
4.1.3 Main part P-116
4.1.4 Electrical part P-117
4.2 PAPER PATH P-117
4.3 DRIVE P-117
4.3.1 Paper feed transport drive P-118
4.3.2 Paper lift-up drive P-118
4.4 Unit open/close section P-118
4.4.1 Unit lock mechanism P-118
4.4.2 LU door open/close detection mechanism P-119
4.5 Paper storage section P-120
4.5.1 Paper tray lifting mechanism P-120
4.5.2 Paper tray lift-up drive release mechanism P-122
4.5.3 Paper guide plate P-123
4.6 Paper feed/transport section P-124
4.6.1 Paper feed control P-124
4.6.2 Paper transport control P-126
4.6.3 Remaining paper level detection P-126
4.6.4 Paper empty detection P-128
4.6.5 Remaining paper display P-128
5. LU-303 ..... P-130
5.1 CONFIGURATION P-130
5.1.1 Exterior view P-130
5.1.2 SECTION CONFIGURATION P-130
5.1.3 Main part P-130
5.1.4 Electrical part P-131
5.2 PAPER PATH P-131
5.3 DRIVE P-131
5.3.1 Paper feed transport drive P-132
5.3.2 Paper lift-up drive P-132
5.4 Unit open/close section P-132
5.4.1 Unit lock mechanism P-132
5.4.2 LU door open/close detection mechanism P-133
5.5 Paper storage section P-134
5.5.1 Paper tray lifting mechanism P-134
5.5.2 Paper tray lift-up drive release mechanism P-136
5.5.3 Paper size detection mechanism P-136
5.6 Paper feed/transport section P-136
5.6.1 Paper feed control P-136
5.6.2 Paper transport control P-138
5.6.3 Remaining paper level detection P-138
5.6.4 Paper empty detection P-139
5.6.5 Remaining paper display P-141
6. OT-514 ..... P-142
6.1 Configuration P-142
6.2 Paper cooling mechanism P-142
7. RU-519 ..... P-143
7.1 Configuration P-143
7.2 Drive P-143
7.3 Paper transport control P-144
7.4 RU section door open/close detection mechanism P-145
7.5 3rd exit tray full detection mechanism P-145
8. FS-539/FS-539SD/PK-524 ..... P-146
8.1 Configuration P-146
8.2 Paper path P-146
8.3 FINISHER SECTION P-147
8.3.1 Door open/close detection mechanism P-147
8.4 TRANSPORT SECTION P-148
8.4.1 Configuration P-148
8.4.2 Drive P-148
8.4.3 Paper path switching mechanism P-148
8.4.4 Receiving roller section up/down function P-149
8.4.5 Buffer control P-150

8.4.6 Sub tray exit mechanism P-150
8.5 ALIGNMENT SECTION P-151
8.5.1 Configuration P-151
8.5.2 Drive P-153
8.5.3 Paper transport control to alignment section P-154
8.5.4 Paper alignment control P-154
8.5.5 Paper exit control P-156
8.6 STAPLER SECTION P-158
8.6.1 Configuration P-158
8.6.2 Drive P-158
8.6.3 Stapler movement control P-158
8.6.4 Manual staple mechanism P-159
8.6.5 Staple control P-160
8.6.6 Staple empty detection control P-160
8.7 OUTPUT TRAY SECTION P-161
8.7.1 Configuration P-161
8.7.2 Drive P-162
8.7.3 Main tray up/down mechanism P-162
8.7.4 Main tray paper level detection control P-164
8.7.5 Main tray position detection mechanism P-165
8.7.6 Tray full detection mechanism P-165
8.8 Saddle section P-166
8.8.1 Configuration P-166
8.8.2 Transport section P-168
8.8.3 Alignment section P-169
8.8.4 Stapler P-172
8.8.5 Folding/Saddle stitching P-173
8.8.6 Tri-folding P-175
8.8.7 Exit section P-176
8.9 PK-524 ..... P-178
8.9.1 Configuration P-178
8.9.2 Drive P-179
8.9.3 Skew correction control P-179
8.9.4 Punch control P-179
8.9.5 Puncher up/down status detection configuration P-181
8.9.6 Punch dust box full detection mechanism P-181
8.9.7 Punch dust box installation detection mechanism P-182

9. FS-540/FS-540SD/PK-526/JS-602/PI-507/ZU-609 ..... P-183
9.1 CONFIGURATION P-183
9.2 PAPER PATH P-183
9.3 FINISHER SECTION P-184
9.3.1 Door open/close detection mechanism P-184
9.4 TRANSPORT SECTION P-185
9.4.1 Configuration P-185
9.4.2 Drive P-186
9.4.3 Route change gate P-186
9.4.4 Sub tray/JS route change gate P-187
9.4.5 Receiving roller section up/down function P-187
9.4.6 Buffer control P-188
9.4.7 Sub tray output P-189
9.5 ALIGNMENT SECTION P-189
9.5.1 Configuration P-189
9.5.2 Drive P-191
9.5.3 Paper transport control P-192
9.5.4 Paper alignment control P-193
9.5.5 Paper exit control P-194
9.5.6 Stack support plate control P-195
9.6 STAPLER SECTION P-196
9.6.1 Configuration P-196
9.6.2 Drive P-196
9.6.3 Stapler position detection P-197
9.6.4 Manual staple mechanism P-197
9.6.5 Staple control P-198
9.7 OUTPUT TRAY SECTION P-199
9.7.1 Configuration P-199
9.7.2 Drive P-199
9.7.3 Main tray up/down mechanism P-199

9.7.4 Main tray paper detection P-200
9.7.5 Main tray position detection mechanism P-201
9.7.6 Tray full detection mechanism P-202
9.8 SADDLE SECTION P-203
9.8.1 Configuration P-203
9.8.2 Transport section P-205
9.8.3 Alignment section P-207
9.8.4 Stapler P-209
9.8.5 Folding/Saddle stitching P-210
9.8.6 Tri-folding P-213
9.8.7 Exit section P-215
9.9 PK-526 ..... P-218
9.9.1 Configuration P-218
9.9.2 Drive P-218
9.9.3 Punch standby position movement control P-219
9.9.4 Punch position correction control P-219
9.9.5 Punch control P-220
9.9.6 Punch dust box control P-221
9.10 ZU-609 ..... P-221
9.10.1 Configuration P-221
9.10.2 Drive P-221
9.10.3 1st folding mechanism P-222
9.10.4 2nd folding mechanism P-223
9.10.5 Double-folding mechanism P-224
9.10.6 Transport roller pressure change P-225
9.10.7 Z-fold pressure release mechanism P-225
9.10.8 Z-fold paper detection P-226
9.11 PI-507 ..... P-227
9.11.1 Configuration P-227
9.11.2 Drive P-227
9.11.3 Tray lift mechanism P-227
9.11.4 Pick-up mechanism P-228
9.11.5 Separation mechanism P-228
9.11.6 Path switching mechanism P-229
9.11.7 Paper size detection control P-229
9.11.8 Door open/close detection mechanism P-229
9.12 JS-602 ..... P-230
9.12.1 Configuration P-230
9.12.2 Drive P-230
9.12.3 Job tray transport mechanism P-230
9.12.4 Door open/close detection mechanism P-231

10. FK-514/FK-515/MK-742 ..... P-232
10.1 COMMUNICATION CONTROL P-232
10.1.1 FIF bits of DIS, DTC and DCS P-232
10.1.2 Modem fallback sequence P-240
10.1.3 V8/V34 sequence P-240
10.2 FUNCTION P-248
10.2.1 Telephone function P-248
10.2.2 F-code P-249
10.2.3 Transmission function P-253
10.2.4 Reception function P-253

11. AU-102 ..... P-256
11.1 Configuration P-256
11.2 Operation P-256

12. AU-201S P-257
12.1 Configuration P-257
12.2 Operation P-257
12.3 Specifications P-257

13. EK-608/EK-609 ..... P-258
13.1 EK-608 ..... P-258
13.1.1 Configuration P-258
13.1.2 Operation P-258
13.2 EK-609 ..... P-258
13.2.1 Configuration P-258
13.2.2 Operation P-258

14. SC-509 ..... P-260
14.1 Configuration P-260
14.2 Operation P-260
15. UK-221 ..... P-261
15.1 CONFIGURATION P-261
15.1.1 Mounting position P-261
15.2 OPERATION P-261
15.2.1 Outline P-261
15.2.2 2nd network interface structure P-262
15.2.3 Operation on ErP Auto Power Off mode P-264
16. IM-102 ..... P-268
16.1 Intelligent media sensor P-268
17. CU-102 ..... P-270
17.1 CONFIGURATION P-270
17.2 OPERATION P-270
17.2.1 Exhaust control P-270
17.2.2 Filter configuration P-270
17.2.3 Airflow P-271
17.2.4 Operation timing P-271
18. WT-519 ..... P-272
18.1 CONFIGURATION P-272
19. EM-908 ..... P-273
19.1 CONFIGURATION P-273

Revision List

No.	Title	Description of revision	Date
1	Issue of the first edition	-	2020/06/23
2	C.1.14.1 Available function for i-Option	Correspondence of the function version 2.0 (MR3).	2020/12/07
3	C.2.1.1 (2) System rear view	Correspondence of the function version 2.0 (MR3).	2020/12/07
4	E.3.1.7 Replacing the toner filter	Correspondence of the function version 2.0 (MR3).	2020/12/07
5	E.3.1.10 Replacing the transfer roller unit	Correspondence of the function version 2.0 (MR3).	2020/12/07
6	F.28.4 Envelope detection board/TX (ENVDB/TX)	Correspondence of the function version 2.0 (MR3).	2020/12/07
7	F.28.5 Paper basis weight detection board/RX (PBWDB/RX)	Correspondence of the function version 2.0 (MR3).	2020/12/07
8	F.29 EM-908	Correspondence of the function version 2.0 (MR3).	2020/12/07
9	H.6.3.14 PDF Web Optimization Default Settings	Correspondence of the function version 2.0 (MR3).	2020/12/07
10	H.6.3.15 PDF/A Default Settings	Correspondence of the function version 2.0 (MR3).	2020/12/07
11	H.4.1 Information	Correspondence of the function version 2.0 (MR3).	2020/12/07
12	I.10.1 Set storage type	Correspondence of the function version 2.0 (MR3).	2020/12/07
13	I.11.6 Maintenance	Correspondence of the function version 2.0 (MR3).	2020/12/07
14	I.18.2.4 XMPP Settings	Correspondence of the function version 2.0 (MR3).	2020/12/07
15	K.5.1 Available function for i-Option	Correspondence of the function version 2.0 (MR3).	2020/12/07
16	L.2.18 P-41	Correspondence of the function version 2.0 (MR3).	2020/12/07
17	L.2.19 P-42	Correspondence of the function version 2.0 (MR3).	2020/12/07
18	L.2.20 P-43	Correspondence of the function version 2.0 (MR3).	2020/12/07
19	L.3.6 List of the trouble code	Correspondence of the function version 2.0 (MR3).	2020/12/07
20	L.3.14.32 C7401	Correspondence of the function version 2.0 (MR3).	2020/12/07
21	P.19 EM-908	Correspondence of the function version 2.0 (MR3).	2020/12/07
22	F.5.1.15 Front cover	The explanation was modified.	2021/03/31
23	F.7.14 Multi feed detection board/TX (MFDB/TX) (DF-713)	The explanation was modified.	2021/03/31
24	F.7.15 Multi feed detection board/RX (MFDB/RX) (DF-713)	The explanation was modified.	2021/03/31
25	I.10.20.1 BootUp Screen	The explanation was modified.	2021/03/31
26	I.19.2.1 (2) Preparations	The explanation was modified.	2021/03/31
27	I.19.3 Firmware Update	The explanation was modified.	2021/03/31
28	L.10.1 Outline	The explanation was modified.	2021/03/31
29	H.13.1.2 USB flash drive backup	The explanation was modified.	2021/03/31
30	H.6.4 Security	The explanation was modified.	2021/03/31

A SAFETY AND IMPORTANT WARNING ITEMS

Read carefully the safety and important warning items described below to understand them before doing service work.

1. IMPORTANT NOTICE

- Because of possible hazards to an inexperienced person servicing this product as well as the risk of damage to the product, KONICA MINOLTA, INC. (hereafter called KM) strongly recommends that all servicing be performed only by KM-trained service technicians.
- Changes may have been made to this product to improve its performance after this Service Manual was printed. Accordingly, KM does not warrant, either explicitly or implicitly, that the information contained in this service manual is complete and accurate.
- The user of this service manual must assume all risks of personal injury and/or damage to the product while servicing the product for which this service manual is intended. Therefore, this service manual must be carefully read before doing service work both in the course of technical training and even after that, for performing maintenance and control of the product properly. Keep this service manual also for future service.
- Distributors or KM issue password for customer engineers (CE) as necessary. The password is required for operations or machine settings that are based on this service manual. These customer engineers (CE) must manage the password carefully. Never leak the password to a third party.

2. DESCRIPTION ITEMS FOR DANGER, WARNING AND CAUTION

2.1 Description items in this Service Manual

In this Service Manual, each of three expressions "⚠DANGER", "⚠WARNING", and "⚠ CAUTION" are defined as follows.
When servicing the product, the relevant works (disassembling, reassembling, adjustment, repair, maintenance, etc.) need to be conducted with utmost care.

⚠ DANGER	: Action having a high possibility of suffering death or serious injury
⚠ WARNING	: Action having a possibility of suffering death or serious injury
⚠ CAUTION	: Action having a possibility of suffering a slight wound and property damage

2.2 Description items for safety and important warning items

Symbols used for safety and important warning items are defined as follows:


: Precaution when servicing the product.


: Prohibition when servicing the product.


: Direction when servicing the product.


General precaution


Electric hazard


High temperature


General prohibition


Do not touch with wet hand


Do not disassemble


General instruction


Unplug


Ground/Earth

Illustrations representing the power plug and wall outlet used in the following descriptions are only typical. Their shapes differ depending on the country or region.

3. SAFETY WARNINGS

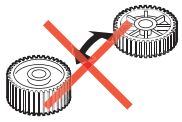
3.1 MODIFICATIONS NOT AUTHORIZED BY KONICA MINOLTA, INC.

KONICA MINOLTA brand products are renowned for their high reliability. This reliability is achieved through high-quality design and a solid service network.
Product design is a highly complicated and delicate process where numerous mechanical, physical, and electrical aspects have to be taken into consideration, with the aim of arriving at proper tolerances and safety factors. For this reason, unauthorized modifications involve a high risk of degradation in performance and safety. Such modifications are therefore strictly prohibited. the points listed below are not exhaustive, but they illustrate the reasoning behind this policy.

3.1.1 Actions requiring special attention

⚠WARNING

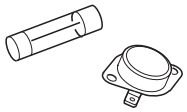
- Do not make any modifications to the product unless otherwise instructed by KM.
- Do not use any part not specified by KM.



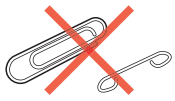
- Do not use any power cord or power plug not specified by KM.



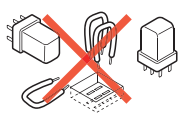
- Use only the protective fuses specified by KM.
  Use of any type of fuse or related part not specified by KM makes safety devices inoperative which may result in a fire from high heat.



- Do not disable fuse functions or use a wire, metal clip, solder, or other conductor in place of the fuse.
  Fire may result from high heat.

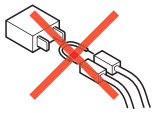


- Do not disable relay functions (for example, inserting a piece of paper between relay contacts to hamper circuit action.)
  Fire may result from high heat.



⚠WARNING

- Do not disable safety functions (for example, interlocks and safety circuits).
  Safety devices become inoperative, resulting in fire from high heat, electric shock, or injury.



3.2 POWER PLUG SELECTION

In some countries or areas, the power plug provided with the product may not fit the wall outlet used in the area. In that case, it is the obligation of the customer engineer (hereafter called the CE) to attach the appropriate power plug or power cord set in order to connect the product to the supply.

3.2.1 Power Cord Set or Power Plug

⚠WARNING

- Use a power supply cord set which meets the following criteria:
  - provided with a plug having configuration intended for the connection to wall outlet appropriate for the product's rated voltage and current, and
  - the plug has pin/terminal(s) for grounding, and
  - provided with three-conductor cable having enough current capacity, and
  - the cord set meets regulatory requirements for the area.

  Use of inadequate cord set leads to fire or electric shock.



⚠WARNING

- Attach power plug which meets the following criteria:
  - having configuration intended for the connection to wall outlet appropriate for the product's rated voltage and current, and
  - the plug has pin/terminal(s) for grounding, and
  - meets regulatory requirements for the area.

  Use of inadequate cord set leads to the product connecting to inadequate power supply (voltage, current capacity, grounding), and may result in fire or electric shock.

- The wires in the power supply cord shall be connected to the terminals of the plug in accordance with the following:

Color of the wire		Terminal of the plug
Brown	Black	Marked with "L", "A" or "W" or colored RED
Light Blue	White	Marked with "N" or colored BLACK
Green-and-Yellow		Marked with "E", "PE" or " ⏚ " or colored GREEN or GREEN-AND-YELLOW

- Wrong connection may cancel safeguards within the product, and results in fire or electric shock.

3.3 CHECKPOINTS WHEN PERFORMING ON-SITE SERVICE

KONICA MINOLTA brand products are extensively tested before shipping, to ensure that all applicable safety standards are met, in order to protect the customer and customer engineer (hereafter called the CE) from the risk of injury. However, in daily use, any electrical equipment may be subject to parts wear and eventual failure. In order to maintain safety and reliability, the CE must perform regular safety checks.

3.3.1 Power Supply

(1) Connection to Power Supply

⚠WARNING

- The power outlet should have a capacity of at least the maximum power consumption and be dedicated only to the product.
  The current that can be passed through the outlet is limited and any current exceeding the limit could result in fire.



- If the wall outlet has two or more receptacles and the product and another electrical appliance are plugged into this wall outlet, make sure that the total load does not exceed the rating of the wall outlet. The current that can be passed through the outlet is limited and any current exceeding the limit could result in a fire.

⚠WARNING

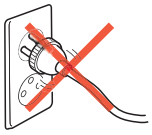
- Do not use any conversion plug adapter even if the power plug shape does not match your wall outlet.

  The shapes of the power plug and the wall outlet are set according to the voltage and allowable current. Use of a conversion plug adapter could result in an abnormal voltage or insufficient current capacity, leading to a fire. It may also result in an electric shock due to a grounding failure.

  If the plug shape does not match the wall outlet, request the user to perform power source installation work.

- Make sure the power cord is plugged into the wall outlet securely.

  If the power plug is left loose in the wall outlet, contact failure may occur, leading to abnormal heating of the power plug and a risk of fire.



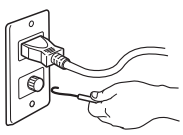
(2) Ground Connection

⚠WARNING

- Check whether the product is grounded properly.

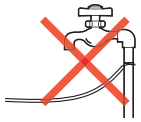
  If current leakage occurs in an ungrounded product, you may suffer electric shock while operating the product.

  Connect power plug to grounded wall outlet.



⚠WARNING

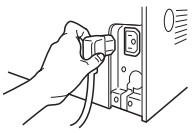
- Make sure of correct ground connection.
  If the grounding wire is connected to an inappropriate part, there is a risk of explosion or electric shock. Do not connect the grounding wire to any of the following parts:
  a. Gas pipe: Gas explosion or fire may result.
  b. Lightning rod: Risk of electric shock or fire during lightning.
  c. Grounding wire for telephone line: Risk of electric shock or fire during lightning.
  d. Water pipe and faucet: These parts do not serve as a ground connection because of a plastic part that is very often installed midway within the water pipe.

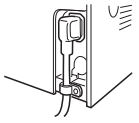


(3) Power Plug and Cord

⚠WARNING

- When using the power cord set (inlet type) that came with this product, make sure the connector is securely inserted in the inlet of the product.
  When a securing measure is provided, secure the cord with the fixture properly.
  If the power cord (inlet type) is not connected to the product securely, a contact problem may lead to increased resistance, overheating, and risk of fire.



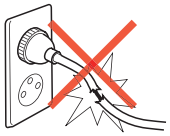


⚠WARNING

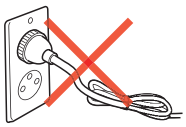
- Do not allow the power cord to be stepped on or pinched.
  Overheating may occur there, leading to a risk of fire.



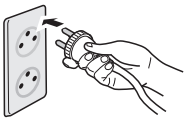
- Check whether the power cord is damaged. Check whether the sheath is damaged.
  If the power plug, cord, or sheath is damaged, replace with a new power cord (with plug and connector on each end) specified by KM. Using the damaged power cord may result in fire or electric shock.



- Do not bundle or tie the power cord.
  Overheating may occur there, leading to a risk of fire.

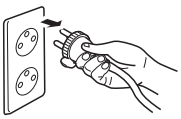


- Check whether dust is collected around the power plug and wall outlet.
  Using the power plug and wall outlet without removing dust may result in fire.



- Do not insert the power plug into the wall outlet with a wet hand.
  The risk of electric shock exists.

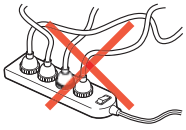
- When unplugging the power cord, grasp the plug, not the cable.
  The cable may be broken, leading to a risk of fire and electric shock.



(4) Wiring

⚠WARNING

- Never use multi-plug adapters to plug multiple power cords in the same outlet.
  If used, the risk of fire exists.



⚠WARNING

- When an extension cord is required, use one that meets the rated current, rated voltage, and the relevant safety standards of the country.

  Current that can be passed through the extension cable is limited and fire may result from the use of an inappropriate type of an extension cable.

  Do not use an extension cable reel with the cable taken up. Fire may result.



3.3.2 Installation Requirements

(1) Prohibited Installation Places

⚠WARNING

- Do not place the product near flammable materials or volatile materials that may catch fire.

  A risk of fire exists.



- Do not place the product in a place exposed to water such as rain.

  A risk of fire and electric shock exists.

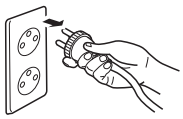
(2) When not Using the Product for a long time

⚠WARNING



- When the product is not to be used for an extended period of time (for holidays, for example), instruct the user to turn OFF the power switch and unplug the power cord from the power outlet.

  Dust collected around the power plug and outlet may cause fire.



(3) Ventilation

⚠CAUTION



- The product generates ozone gas during operation.

  If the smell of ozone is present in the following cases, ventilate the room.

  a. When the product is used in a poorly ventilated room

  b. When making a lot of copies

  c. When using multiple products at the same time



(4) Stability

⚠CAUTION



- Be sure to lock the caster stoppers.

  In the case of an earthquake, the product may slide, leading to an injury.

3.3.3 After Service

(1) Inspection before Servicing

⚠WARNING



- Before conducting an inspection, read all relevant documentation (service manual, technical notices, etc.) and proceed with the inspection following the prescribed procedure using the recommended personal safety equipment and using only the prescribed tools.

  Do not make any adjustment not described in the documentation.

  If the prescribed procedure or tool is not used, the product may break and a risk of injury or fire exists.

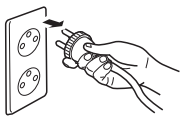




- Before conducting an inspection, be sure to disconnect the power plugs from the Main Body and Accessories (Options).

  When the power plug is inserted into the wall outlet, some units are still powered even if the POWER switch is turned OFF.

  A risk of electric shock exists.

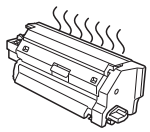


⚠CAUTION



- The area around the fixing unit is hot.

  You may get burned.



⚠CAUTION

- Do not leave the machine unattended during transportation, installation, and/or inspection.

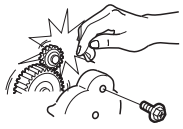
  If the machine is left unattended, face protrusions toward the wall or take other necessary precautions to prevent a user or other person in the area from stumbling over a protrusion of the machine or being caught by a cable, possibly causing a fall to the floor or other personal injury.

(2) Work Performed with the Product Powered On

⚠WARNING

- Take every care when making adjustments or performing an operation check with the product powered.

  If you make adjustments or perform an operation check with the external cover detached, you may touch live or high-voltage parts or you may be caught in moving gears or the timing belt, leading to a risk of injury.



- Take every care when servicing with the external cover detached.

  High-voltage exists around the drum unit. A risk of electric shock exists.

- If it is absolutely necessary to service the machine with the door open or external covers removed, always be attentive to the motion of the internal parts.

  A normally protected part may cause unexpected hazards.

⚠CAUTION



- Do not keep gazing at a lamp light during the service procedure with the product powered ON.
  Eyestrain may result.

(3) Safety Checkpoints

⚠WARNING



- When a product fault is reported from a user, check parts and repair the fault appropriately with safety in mind.
  A damaged product, personal injury, or fire may result.



- Whenever mounting an option on the machine, be attentive to the motion of the other workers performing the task.
  Another worker may be injured by a pinch point between the machine and the option.



- When mounting an option on the machine, be careful about the clearance between the machine and the option.
  You may be injured with your finger or hand pinched between the machine and the option.



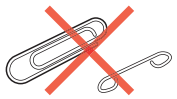
- When removing a part that secures a motor, gear, or other moving part, disassembling a unit, or reinstalling any of such parts and units, be careful about moving parts and use care not to drop any part or unit. During the service procedure, give sufficient support for any heavy unit.
  You may be injured by a falling part or unit.

⚠WARNING

- Check the external covers and frame for possible sharp edges, burrs, and damage.
  They can be a cause of injury during use or servicing.

- When accessing a hard-to-view or narrow spot, be careful about sharp edges and burrs on the frame and parts.
  They may injure your hands or fingers.

- Do not allow any metal parts such as clips, staples, and screws to fall into the product.
  They can short internal circuits and cause electric shock or spark bursting into flame.



- Check wiring for pinched and any other damage.
  Current can leak, leading to a risk of electric shock or fire.

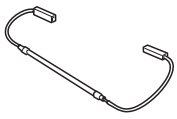
- Check high-voltage cables and sheaths for any damage.
  Damage may lead to product failure and/or the risk of fire.



- Do not disassemble or adjust the write unit (PH unit) incorporating a laser.
  The laser light can enter your eye, leading to a risk of loss of eyesight.

- Do not supply power with the write unit (PH unit) shifted from the specified mounting position.
  The laser light can enter your eye, leading to a risk of loss of eyesight.

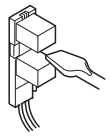
- After replacing a part to which AC voltage is applied (e.g., optical lamp and fixing lamp), be sure to check the installation state.
  A risk of fire exists.



⚠WARNING

- Check the interlock switch and actuator for loosening and check whether the interlock functions properly.

  If the interlock does not function, you may receive an electric shock or be injured when you insert your hand in the product (e.g., for clearing paper jam).



- Make sure the wiring cannot come into contact with sharp edges, burrs, or other pointed parts.

  Damage may lead to the risk of electric shock or fire.



- Make sure that all screws, components, wiring, connectors, etc. that were removed for safety check and maintenance have been reinstalled in the original location. (Pay special attention to forgotten connectors, pinched cables, forgotten screws, etc.)

  A risk of product trouble, personal injury, electric shock, and fire exists.



- Never use any flammable or combustible spray, fluid, gas, or similar substance in and around the product.

  Do not use any flammable or combustible dust spray, in particular, to clean the interior of the product.

  Fire or explosion may result.

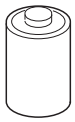


⚠CAUTION

- Carefully remove all toner remnants and dust from electrical parts and electrode units such as a charging corona unit.
  Toner remnants and dust may lead to product failure and/or the risk of fire.

- Check electrode units such as a charging corona unit for deterioration and signs of leakage.
  Damage may lead to product failure and/or the risk of fire.

- When replacing a battery, replace it with a new one as specified.
  Dispose of the used battery as instructed on its packaging or by local ordinance.
  There is a risk of explosion if the battery is replaced with an incorrect type.



(4) Handling of Consumables

⚠WARNING

- For handling of consumables (toner, developer, photoconductor, etc.) and their storage precautions, see MSDS.

(5) Handling of Service Materials

⚠CAUTION

- Handle with care according to MSDS.
  Use of solvent may involve explosion, fire, or personal injury.



3.4 Used Batteries Precautions

3.4.1 ALL Areas

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

3.4.2 Germany

VORSICHT!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.
Ersatz nur durch denselben oder einen vom Hersteller empfohlenen gleichwertigen Typ.
Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

3.4.3 France

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.
Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.
Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

3.4.4 Denmark

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

3.4.5 Finland, Sweden

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

3.4.6 Norway

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

3.5 Laser Safety

3.5.1 Laser Safety

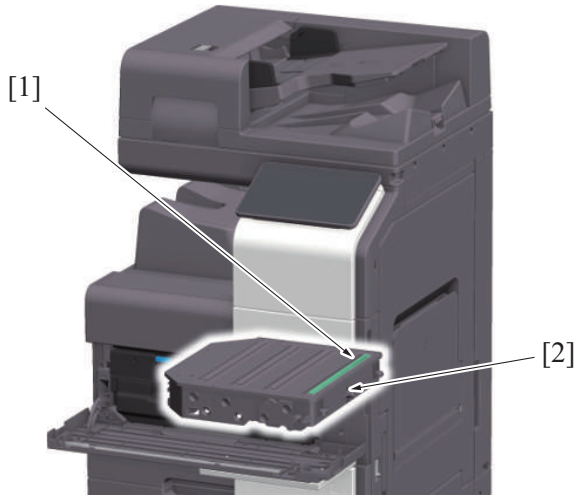
This is a digital machine certified as a Class 1 laser product. There is no possibility of danger from a laser, provided the machine is serviced according to the instruction in this manual.

3.5.2 Internal Laser Radiation

- This product employs a Class 3B laser diode that emits an invisible laser beam. The laser diode and the scanning polygon mirror are incorporated in the print head unit.
- The print head unit is NOT A FIELD SERVICEABLE ITEM. Therefore, the print head unit should not be opened under any circumstances.

semiconductor laser	
Maximum power of the laser diode	25 mW
Maximum average radiation power (*)	17.7 µW
Wavelength	775-800 nm

*at laser aperture of the Print Head Unit



[1]	Laser Aperture of the Print Head Unit	[2]	Print Head Unit

(1) U.S.A., Canada (CDRH Regulation)

- This machine is certified as a Class 1 Laser product under Radiation Performance Standard according to the Food, Drug and Cosmetic Act of 1990. Compliance is mandatory for Laser products marketed in the United States and is reported to the Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration of the U.S. Department of Health and Human Services (DHHS). This means that the device does not produce hazardous laser radiation.
- The label shown on " A.3.5.3 Laser Safety Label" indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

⚠WARNING

⚠ Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

semiconductor laser	
Maximum power of the laser diode	25 mW
Wavelength	775 to 800 nm

(2) All Areas

⚠WARNING

⚠ Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

semiconductor laser	
Maximum power of the laser diode	25 mW
Wavelength	775 to 800 nm

3.5.3 Laser Safety Label

A laser safety label is attached to the outside of the machine as shown below.



3.5.4 Laser Warning Label

A laser warning label is attached to the inside of the machine as shown below.



3.5.5 PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT

- Be sure to unplug the power cord whenever performing a service job in the laser beam path (around the PH unit).
- If it is absolutely unavoidable to perform a service job with the power cord plugged in, strictly observe the following precautions:
  1. Before starting the service job, take off your watch, ring, and other reflective articles and be sure to wear laser protective goggles.
  2. Keep other personnel away from the work site.
  3. Do not bring any highly reflective tool into the laser beam path during the service procedure.

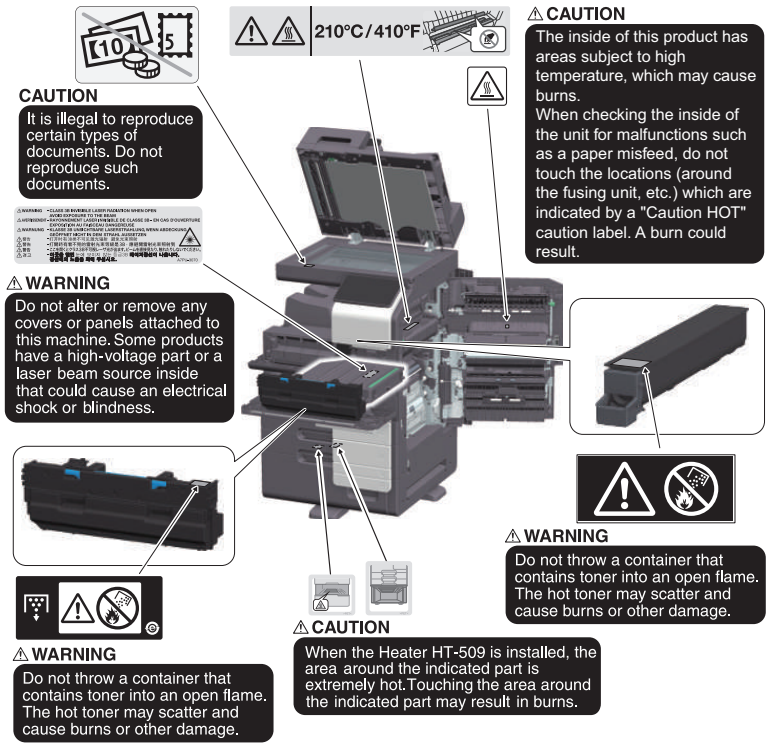
4. WARNING INDICATIONS ON THE MACHINE

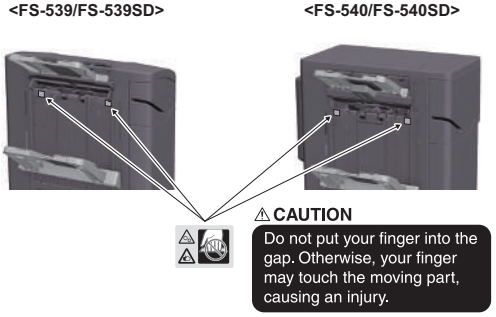
Caution labels shown are attached in some areas on/in the machine.
When accessing these areas for maintenance, repair, or adjustment, special care should be taken to avoid burns and electric shock.

4.1 Warning indications inside the machine

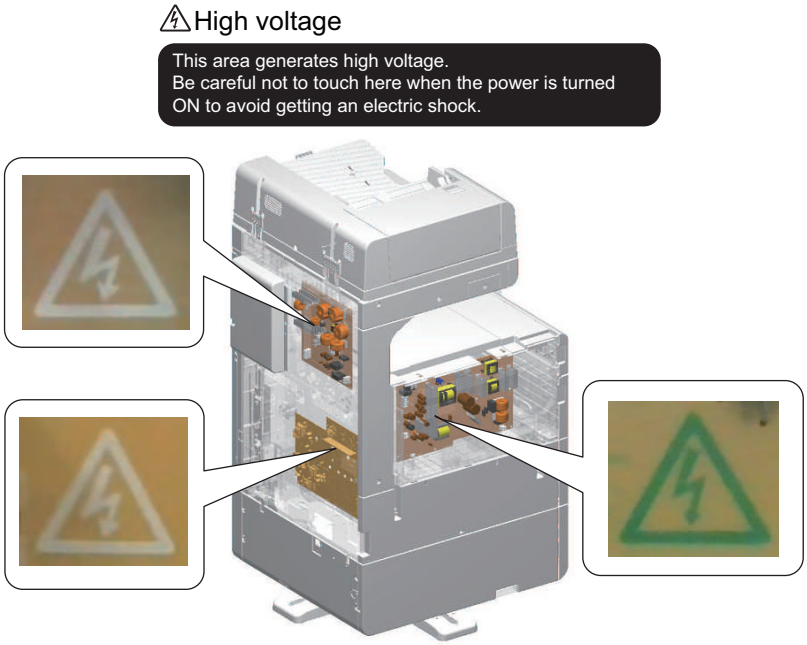
⚠CAUTION

You may be burned or injured if you touch any area that you are advised not to touch by any caution label. Do not remove caution labels. If any caution label has come off or soiled and therefore the caution cannot be read, contact our service office.





4.2 Warning indications on the boards



5. MEASURES TO TAKE IN CASE OF AN ACCIDENT

1. If an accident has occurred, the distributor who has been notified first must immediately take emergency measures to provide relief to affected persons and to prevent further damage.
2. If a report of a serious accident has been received from a customer, an on-site evaluation must be carried out quickly and KM must be notified.
3. To determine the cause of the accident, conditions and materials must be recorded through direct on-site checks, in accordance with instructions issued by KM.
4. For reports and measures concerning serious accidents, follow the regulations specified by every distributor.

B NOTATION OF THE CONTENTS

1. PRECAUTION ON HANDLING THIS MANUAL

CAUTION

- **Use of this manual should be strictly supervised to avoid disclosure of confidential information.**

2. PRODUCT NAME

In this manual, each of the products is described as follows:

1	bizhub 750i	Main body, Machine
2	Microsoft Windows 8.1	Windows 8.1
3	Microsoft Windows 10	Windows 10
4	When the description is made in combination of the OS's mentioned above	Windows 8.1/10

3. BRAND NAME

TRADEMARKS OF OTHER COMPANIES

- The company names and product names mentioned in this manual are the brand name or the registered trademark of each company.

OWN TRADEMARKS

- KONICA MINOLTA, KONICA MINOLTA logo, and bizhub are the registered trademarks of KONICA MINOLTA, INC.
- © 2020 KONICA MINOLTA, INC.

4. FEEDING DIRECTION

- When the long side of the paper is parallel with the feeding direction, it is called short edge feeding. The feeding direction which is perpendicular to the short edge feeding is called the long edge feeding.
- Short edge feeding will be identified with [S (abbreviation for Short edge feeding)] on the paper size. No specific notation is added for the long edge feeding. When the size has only the short edge feeding with no long edge feeding, [S] will not be added to the paper size.

Sample notation

Paper size	Feeding direction	Notation
A4	Long edge feeding	A4
	Short edge feeding	A4S
A3	Short edge feeding	A3

5. NOTE FOR THE SPECIFICATIONS

- These specifications are subject to change without notice.

C PRODUCT OUTLINE

1. PRODUCT SPECIFICATIONS

1.1 bizhub 750i

1.1.1 Basic specifications

Items	Specifications	
Type	Combination scanner and printer console type	
Control panel	10.1-inch TFT color LCD WVGA Electrostatic touch panel (vibration feedback)	
Printing process	Laser electrostatic process copying system	
Photoconductor	OPC drum: KM-91Dz	
Developing system	Dry 2 components developing method, HMT developing system	
Charging system	Roller charging system	
Neutralizing system	Red LED system	
Image transfer system	1st: Belt transfer system, 2nd: Roller transfer system	
Paper separating system	Combination of curvature, separating claws, and bias needle system	
Fusing system	Upper 2-axis pad pressure fusing	
Heating system	Halogen lamp	
Original scanning	Mirror scanning CCD optical system (Sheet through system when DF is used)	
Exposure lamp	LED light (10 W or under)	
Scanning resolution	Main scan direction: 600 dpi, Sub scan direction: 600 dpi	
Original glass	Stationary (Mirror scan)	
Original alignment	Rear left edge	
Types of original	Sheets, Books, Three-dimensional objects	
Max. original size	A3 or 11 x 17	
Max. original weight	Max. 2 kg (4 7/16 lb)	
Exposure system	2 beam LD exposure system, and polygon mirror scan system	
Exposure resolution	Copy	Main scan direction: Equivalent to 1800 dpi, Sub scan direction: 600 dpi
	Print	
	1200 dpi mode	Main scan direction: 1200 dpi, Sub scan direction: 1200 dpi
Image loss	Copy	Leading edge: 4.2 mm (3/16 inches) (Thin Paper: 5 mm (3/16 inches)) Trailing edge: 3 mm (1/8 inches) Rear edge: 3 mm (1/8 inches) Front edge: 3 mm (1/8 inches)
	PC print	Leading edge: 4.2 mm (3/16 inches) (Thin Paper: 5 mm (3/16 inches)) Trailing edge: 4.2 mm (3/16 inches) Rear edge: 4.2 mm (3/16 inches) Front edge: 4.2 mm (3/16 inches)
Warm-up time (73.4 °F (23 °C), std. voltage, Classic Style)	Black: 18 sec. or less (Except for Japan), 30 sec. or less (Japan) Note: Warm-up time may vary depending on the operating environment and usage.	
First copy time (Tray 1, A4 or 8 1/2 x 11, full size)	Black: 2.8 sec.	
Copying speed for multi-copy cycle (A4 or 8 1/2 x 11, plain paper, black mode)	75 sheets/min. (1-sided), 75 sheets/min. (2-sided)	
Process speed	330 mm/s: Plain paper, Plain paper+, Thin paper, Recycled paper 170 mm/s: Thick 1, Thick 1+ 145 mm/s: Thick 2, Thick 3, Thick 4, Special paper, Glossy mode, Coated paper 126.12 mm/s: OHP film 105.93 mm/s: 1200 dpi mode	
Fixed zoom ratios	Full size	×1.000
	Reduction	×0.500, ×0.707, ×0.816, ×0.866 (Japan, Europe) ×0.500, ×0.647, ×0.733, ×0.785 (US)
	Enlargement	×1.154, ×1.224, ×1.414, ×2.000 (Japan, Europe) ×1.214, ×1.294, ×1.545, ×2.000 (US)
	Zoom ratios memory	3 memories
Variable zoom ratios	x0.250 to x4.000	in 0.001 increments
Paper feeding separation system	Manual bypass tray	With pick-up roller Small roller separation system with torque limiter
	Tray 1/2	Roller separation system with pick-up mechanism
	Tray 3/4	Roller separation system with pick-up mechanism

Items	Specifications	
Copy exit tray capacity	Plain paper	200 sheets
	Thick paper	10 sheets
	OHP film	1 sheet
	Thin paper	100 sheets
	Coated paper	1 sheet
Memory capacity	Main memory: 8GB Standard storage: 256 GB	
Standard for external memory	Type: USB flash memory Interface: USB 2.0/1.1 (Type A) • FAT32-formatted memory device • Not including security features (Possible to turn OFF security features) • A USB flash memory that appears as multiple drives on a computer cannot be used. • Reading and writing to memory compatible with the USB3.0 is possible, but the transfer speed is the same as USB2.0. Note: Possible to be non-operational memory products.	
Material	Toner cartridge, drum unit, developing unit, waste toner box, transfer belt unit, fusing unit For details, refer to PERIODICAL MAINTENANCE.	

1.1.2 Paper

Type/Size		Tray 1	Tray 2	Tray 3	Tray 4	Manual bypass tray
Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb)) (*1) (*5)		500 sheets	500 sheets	1,500 sheets	1,000 sheets	-
Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))						150 sheets
Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))						
Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb))		400 sheets	400 sheets	1,200 sheets	800 sheets	120 sheets
Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb))		150 sheets	150 sheets	600 sheets	400 sheets	20 sheets
Thick 1+ (121 to 157 g/m^2 (32 3/16 to 41 3/4 lb))						
Thick 2 (158 to 209 g/m^2 (42 to 55 5/8 lb))						
Thick 3 (210 to 256 g/m^2 (55 7/8 to 68 1/8 lb)) (*1)						
Thick 4 (257 to 300 g/m^2 (68 3/8 to 79 13/16 lb)) (*1) (*4)		-	-	-	-	
OHP film (*2) (*3)						
Index paper						
Label sheet						
Postcard		200 sheets				
Envelope		70 sheets				10 sheets
Long size paper (127 to 210 g/m^2 (33 13/16 to 55 7/8 lb)) (*6)		-				
Coated paper (121 to 157 g/m^2 (32 3/16 to 41 3/4 lb)						1 sheet
Regular paper size		A3, B4, A4, A4S, B5, B5S, A5S, B6S, A6S, Postcard 11 x 17, 8^1/$_2$ x 14, 8^1/$_2$ x 11, 8^1/$_2$ x 11 S, 5^1/$_2$ x 8^1/$_2$ S, 4 x 6, Foolscap (*7), 8K, 16K	SRA3, A3W, A3, B4, A4, A4S, B5, B5S, A5S 11 x 17, 8^1/$_2$ x 14, 8^1/$_2$ x 11, 8^1/$_2$ x 11 S, 5^1/$_2$ x 8^1/$_2$ S, Foolscap (*7), 8K, 16K	A4, B5, A5S, 8^1/$_2$ x 11, 5^1/$_2$ x 8^1/$_2$ S, 16K	A4, B5, A5S, 8^1/$_2$ x 11, 5^1/$_2$ x 8^1/$_2$ S, 16K	SRA3, A3W, A3, B4, A4, A4S, B5, B5S, A5, A5S, B6S, A6S, Postcard 11 x 17, 8^1/$_2$ x 14, 8^1/$_2$ x 11, 8^1/$_2$ x 11 S, 7^1/$_4$ x 10^1/$_2$, 7^1/$_4$ x 10^1/$_2$ S, 5^1/$_2$ x 8^1/$_2$, 5^1/$_2$ x 8^1/$_2$ S, 4 x 6, Foolscap (*8), 8K, 16K, 16KS
Custom paper size	Width	90 to 297 mm (3 9/16 to 11 11/16 inches)	139.7 to 320 mm (5 1/2 to 12 5/8 inches)	-	-	90 to 320 mm (3 9/16 to 12 5/8 inches) (Long size paper: 90 to 297 mm, 8 1/4 to 11 11/16 inches)
	Length	148 to 431.8 mm (5 13/16 to 17 inches)	182 to 457.2 mm (7 3/16 to 18 inches)	-	-	139.7 to 1200 mm (5 1/2 to 47 1/4 inches)

Type/Size		Tray 1	Tray 2	Tray 3	Tray 4	Manual bypass tray
						(Long size paper: 457.3 to 1200 mm, 18 to 47 1/4 inches)

- *1: Images are out of guarantee.
- *2: Only for feeding landscape oriented.
- *3: Black print only.
- *4: Only for feeding landscape oriented A4/ Letter paper and A3/ Ledger
- *5: Thin paper smaller than A5 size cannot be conveyed.
- *6: MK-730 is necessary.
- *7: There are 4 types to be selected from in the service mode; 8 x 13, $8^{1}/_{4}$ x 13, $8^{1}/_{2}$ x 13, $8^{1}/_{2}$ x $13^{1}/_{2}$.
- *8: There are 6 types to be selected from in the service mode; 8 x 13, $8^{1}/_{4}$ x 13, $8^{1}/_{2}$ x 13, $8^{1}/_{2}$ x $13^{1}/_{2}$, $8^{13}/_{20}$ x 13, $8^{1}/_{8}$ x $13^{1}/_{4}$.

NOTE

- **OHP film, thick 4, envelope, label sheet, index paper and long size paper cannot be fed for duplex printing.**

1.1.3 Print volume

Items	Japan	North America	Europe
Average print volume (prints/month)	35,000	32,000	33,000
Maximum print volume (prints/month) (*)	300,000	300,000	300,000

- *: Range of guaranteed performance for paper feeding

1.1.4 Machine specification

Items		Specifications			
Power requirement	Voltage	AC 100 V	AC 110 V	AC 120 V	AC 220 to 240 V
	Current	15 A	15 A	16A	10A
	Frequency	50/60 Hz	60 Hz	60 Hz	50/60 Hz
Max. power consumption		1,500 W or less	1,500 W or less	2,100 W or less	2,100 W or less
Power consumption in each mode	Low power mode	100 W or less (*3)			
	Sleep mode (*1)	0.5 W (*3)			
	Sub power OFF mode (*2)	0.5 W (*3)			
	ErP auto power off mode	0.5 W (*3)			
	Plug-in power consumption	0.4 W			
Dimension		615 mm (*4) (W) x 688 mm (D) x 1,207 mm (H) (*5) (24 3/16 inches (*4) (W) x 27 1/16 inches (D) x 37 13/16 inches (H) (*5))			
Space requirements (*6)		1098 mm (*7) (W) x 1,343 mm (D) x 1,560.5 mm (H) (43 1/4 inches (*7) (W) x 52 7/8 inches (D) x 51 3/4 inches (H))			
Weight		Approx. 140 kg (308 5/8) (without toner cartridge)			
Operating environment	Temperature	10 to 30 °C / 50 to 86 °F (with a fluctuation of 10 °C / 18 °F or less per hour)			
	Humidity	15 to 85 % (Relative humidity with a fluctuation of 10 % or less per hour)			
	Levelness	Difference between front and back, right and left should be 1 degree or under.			

- *1: [Administrator] -> [Maintenance] -> [Timer Setting] -> [Power Settings] -> [Power Consumption in Sleep Mode]
- *2: Even in sub power off mode, [Disabled], [Enabled] and [High] are selectable in [Administrator] -> [Maintenance] -> [Timer Setting] -> [Power Settings] -> [Power Consumption in Sleep Mode].
- *3: The value is only provided for reference. It varies depending on different operating environments.
- *4: Width when the manual bypass tray is closed
- *5: Height up to the top of the DF
- *6: Manual bypass tray/sub tray and the tray are pulled out, and the DF is opened.
- *7: Space for opening and closing the right door is included.

1.1.5 Print function

Items	Specifications	
Print resolution	Multivalued: Equivalent to 1,800 dpi in main scanning direction x 600 dpi in sub scanning direction Binary: Equivalent to 1,200 dpi in main scanning direction x 1,200 dpi in sub scanning direction	
Printer language	PostScript 3 (3016) Emulation PCL 6 (XL Version 3.0) Emulation PCL5e/c Emulation, XPS Version 1.0	
Printer driver (PCL6/XPS/FAX)	Server	Windows Server 2008 (x86/x64) Windows Server 2008 R2 Windows Server 2012 Windows Server 2012 R2 Windows Server 2016 Windows Server 2019
	Client	Windows 7 Professional (x86/x64) Windows 7 Enterprise (x86/x64)

Items	Specifications	
		Windows 8.1 (x86/x64) Windows 10 (x86/x64)
Printer driver (PS3)	Server	Windows Server 2008 (x86/x64) Windows Server 2008 R2 Windows Server 2012 Windows Server 2012 R2 Windows Server 2016 Windows Server 2019
	Client	Windows 7 Professional (x86/x64) Windows 7 Enterprise (x86/x64) Windows 8.1 (x86/x64) Windows 10 (x86/x64) Macintosh OSX (10.10, 10.11) PPD+PDE macOS (10.12, 10.13, 10.14, 10.15) PPD+PDE Red Hat Enterprise Linux (CUPS v1.1.22) PPD
Host interface	Ethernet 10Base-T, 100Base-TX, 1000Base-T USB 2.0/1.1 USB_Host	
Built-in fonts (PCL)	European	80 fonts
	Japanese	HGMinchoL, HGPMinchoL, HGGothicB, HGPGothicB
Built-in fonts (PostScript 3 Emulation)	European	Type1 font 137 fonts
	Japanese	HGMinchoL, HGGothicB

1.1.6 Scan function

Items	Specifications	
Scannable scan range	Conform to the basic specifications	
Scanning resolution	Push: 200 dpi, 300 dpi, 400 dpi, 600 dpi Pull: 100 dpi, 200 dpi, 300 dpi, 400 dpi, 600 dpi	
Scanning speed	1-sided: 120 sheets/min., 2-sided: 240 sheets/min. (using DF, A4, scanning resolution of 300 dpi) 1-sided: 140 sheets/min., 2-sided: 280 sheets/min. (using DF, A4, scanning resolution of 200 dpi)	
Scanning size (scanner glass)	Width 297 mm x Length 431.8 mm (Width 11 11/16 inches x Length 17 inches) (Max.)	
Scanning size (DF)	Width 297 mm x Length 1,000 mm (Width 11 11/16 inches x Length 39 3/8 inches) (Max.): 400 dpi or less Width 297 mm x Length 432 mm (Width 11 11/16 inches x Length 17 inches) (Max.): 600 dpi	
Interface	Ethernet 10Base-T, 100Base-TX, 1000Base-T	
Communication protocol	TCP/IP (FTP, SMB, SMTP, WebDAV) IPv4/IPv6	
TWAIN Driver	Type	HDD TWAIN Driver Real Time Mode Twain Driver
	Supported operating system	Windows 7 Professional (x86/x64) Windows 7 Enterprise (x86/x64) Windows 8.1 (x86/x64) Windows 10 (x86/x64)
Function	Scan to FTP, Scan to PC (SMB), Scan to E-Mail, Scan to WebDAV, Scan to BOX [SSD], Scan to USB memory, Scan to Scan Server, Devices Profile for Web Services (DPWS), Scan to Me, Scan to Home, Scan to Web service (WSD scan)	
Output method	TIFF, PDF, Compact PDF, JPEG, XPS, Compact XPS, OOXML (pptx, xlsx, docx), Searchable PDF, PDF/A, Linearized PDF	
Output page setting	Specified number of separate pages (1 to 999 pages), Multi page	

1.1.7 Web browser function

- Main specifications of the web browser installed are as follows.

Items	Specifications
Browser engine	Chromium Browser
Supported protocol	HTTP (HTTP 0.9/1.0/1.1) HTTPS TCP/IP
Supported markup language	HTML 4.01 A part of HTML 5.0 XHTML 1.1/Basic
Style sheet	CSS3
Script language	JavaScript 1.7 ECMAScript (3rd/5th/5.1) Ajax*1
DOM	Level 2 Level 3

Items	Specifications
File type	JPEG BMP PNG GIF Animation GIF PDF
Supported SSL/TLS version	SSL3.0 TLS1.0 TLS1.1 TLS1.2
Supported character code	Japanese (Shift_JIS) Japanese (ISO-2022-JP) Japanese (EUC-JP) Chinese Simplified (GB2312) Chinese Traditional (Big5) Western European (ISO-8859-1) Unicode (UTF-8)
PDF viewer	Adobe Reader LE PDFium

- *1: Limited to the JavaScript-supported range only.

NOTE

- **Using the web browser function available with this machine, the contents on the Internet can be accessed from the control panel. Users are responsible for the contents that they access, download, or upload as well as the contents of other communication. Users shall follow the rules of their company and laws of their country. Konica Minolta, Inc. and its group companies accept no responsibility for the users' use of the Internet.**

NOTE

- **When using a web browser function, 26 dots from the perimeter of the touch panel area is not sensitive area. Service Mode Software Switch Setting It is possible to narrow the non-sensitive area by using [Software Switch Setting] in Service Mode as with followings. However, the touch panel cannot detect touch operation correctly.**
  - **Switch No.143 [00000000] at Bit assignment/[00] at HEX assignment non-sensitive area: 26 dots from the perimeter of the touch panel**
  - **Switch No.143 [00000001] at Bit assignment/[01] at HEX assignment non-sensitive area: 16 dots from the perimeter of the touch panel**
  - **Switch No.143 [00000010] at Bit assignment/[02] at HEX assignment non-sensitive area: 9 dots from the perimeter of the touch panel**

1.2 DF-713

Basic specifications

Items		Specifications	
Name		Reverse automatic document feeder	
Type		Paper feed section	Paper feed from top of stack
		Document reading section	Front side: Sheet-through system Back side: Reading by CIS
		Document exit section	Straight exit system
Installation		Screw clamp to the main body	
Document alignment		Center	
Document loading		Face up	
Mode		Standard mode/thin paper mode, Mixed original detection mode, Scan mode/FAX mode	
Original scanning speed (A4 or $8^1/_2$ x 11)	Copy	Color	75 sheets/min. (1-sided: 600 dpi), 150 sheets/min. (2-sided: 600 dpi)
		Black	80 sheets/min. (1-sided: 600 dpi), 160 sheets/min. (2-sided: 600 dpi)
	Scan/FAX mode	Color	100 sheets/min. (1-sided: 400 dpi), 200 sheets/min. (2-sided: 400 dpi) 120 sheets/min. (1-sided: 300 dpi), 240 sheets/min. (2-sided: 300 dpi) 140 sheets/min. (1-sided: 200 dpi), 280 sheets/min. (2-sided: 200 dpi)
		Black	100 sheets/min. (1-sided: 400 dpi), 200 sheets/min. (2-sided: 400 dpi) 120 sheets/min. (1-sided: 300 dpi), 240 sheets/min. (2-sided: 300 dpi) 140 sheets/min. (1-sided: 200 dpi), 280 sheets/min. (2-sided: 200 dpi)
Power requirement		Power supply: DC 24 V, DC 12 V (for CIS), DC 5 V (for recovering from the sleep mode)	
		Supplying method: Supplied from the main body	
Max. power consumption		104.5 W or less	
Dimension		612 mm (W) x 503 mm (D) x 177 mm (H) (24 inches (W) x 19 13/16 inches (D) x 7 inches (H))	
Weight		Approx. 15.1 kg (33 5/16 lb)	
Operating environment		Conforms to the operating environment of the main body.	
Option		Stamp unit (SP-501)	

Type of original

Items	Mode	Specifications
Type	Standard mode/thin paper mode (Plain paper)	1-sided mode: 35 to 210 g/m^2 (9 5/16 to 55 7/8 lb)
		2-sided mode: 50 to 210 g/m^2 (13 5/16 to 55 7/8 lb)
	Mixed original detection mode (Plain paper)	1-sided mode: 35 to 210 g/m^2 (9 5/16 to 55 7/8 lb)
		2-sided mode: 50 to 210 g/m^2 (13 5/16 to 55 7/8 lb)
	Scan/FAX mode (Plain paper)	1-sided mode: 35 to 210 g/m^2 (9 5/16 to 55 7/8 lb)
		2-sided mode: 50 to 210 g/m^2 (13 5/16 to 55 7/8 lb)
	Custom size paper detection mode	52 to 210 g/m^2 (13 13/16 to 55 7/8 lb)
Document size	Standard mode	Japan: A3 to B6S, Postcard S North America: 11 x 17 to $5^1/_2$ x $8^1/_2$ Europe: A3 to A6S
	Mixed original detection mode	Refer to the mixed original feed chart.
	Scan/FAX mode	Metric: A3 to B6S, Postcard S Inch: 11 x 17 to $5^1/_2$ x $8^1/_2$ Width: 100 mm to 297 mm (3 15/16 inches to 11 11/16 inches) Length: 139.7 mm to 431.8 mm (5 1/2 inches to 17 inches) (FAX transmission mode: 139.7 mm to 1,000 mm (5 1/2 inches to 39 3/8 inches))
	Index paper mode	Japan: A3, B4, A4S, A4, B5 North America: $8^1/_2$ x 14, $8^1/_2$ x 11 S, $8^1/_2$ x 11 Europe: A3, B4, A4S, A4, B5
	Custom size paper detection mode	Metric: A3 to B6S, Postcard S Inch: 11 x 17 to $5^1/_2$ x $8^1/_2$

Items	Mode	Specifications
		Width: 100 mm to 297 mm (3 15/16 inches to 11 11/16 inches) Length: 139.7 mm to 431.8 mm (5 1/2 inches to 17 inches)
Capacity	Standard mode Mixed original detection mode Scan/FAX mode	Japan: 300 sheets (68 g/m^2 (18 1/16 lb)) or stack of 19 mm (3/4 inches) and below (including paper curl) North America: 300 sheets (75 g/m^2 (19 15/16 lb)) or stack of 19 mm (3/4 inches) and below (including paper curl) Europe: 300 sheets (80 g/m^2 (21 1/4 lb)) or stack of 19 mm (3/4 inches) and below (including paper curl)
	Index paper mode	70 sheets

Mixed original feed chart

◎	Same size	Tilted with in 1.5 % or less
○	Mixed original feed available	
×	No. mixed original feed	
-	Can not set original	

<For Japan>

			Max. original size								
			297 mm		257 mm		210 mm		182 mm	148 mm	128 mm
			A3	A4	B4	B5	A4S	A5	B5S	A5S	B6S
Mixed original size	297 mm	A3	◎	◎	-	-	-	-	-	-	-
		A4	◎	◎	-	-	-	-	-	-	-
	257 mm	B4	○	○	◎	◎	-	-	-	-	-
		B5	○	○	◎	◎	-	-	-	-	-
	210 mm	A4S	○	○	○	○	◎	◎	-	-	-
		A5	×	×	○	○	◎	◎	-	-	-
	182 mm	B5S	×	×	○	○	○	○	◎	-	-
	148 mm	A5S	×	×	×	×	×	×	○	◎	-
	128 mm	B6S	×	×	×	×	×	×	×	○	◎

<For North America>

			Max. original size					
			11 inches		8^1/$_2$ inches			5^1/$_2$ inches
			11 x 17	8^1/$_2$ x 11	8^1/$_2$ x 14	8^1/$_2$ x 11 S	5^1/$_2$ x 8^1/$_2$	5 ^{1}/$_2$ x 8 ^{1}/$_2$S
Mixed original size	11 inches	11 x 17	◎	◎	-	-	-	-
		8^1/$_2$ x 11	◎	◎	-	-	-	-
	8^1/$_2$ inches	8^1/$_2$ x 14	○	○	◎	◎	◎	-
		8^1/$_2$ x 11 S	○	○	◎	◎	◎	-
		5^1/$_2$ x 8^1/$_2$	×	×	◎	◎	◎	-
	5^1/$_2$ inches	5 ^{1}/$_2$ x 8 ^{1}/$_2$S	×	×	×	×	×	◎

<For Europe>

			Max. original size							
			297 mm		257 mm		210 mm		182 mm	148 mm
			A3	A4	B4	B5	A4S	A5	B5S	A5S
Mixed original size	297 mm	A3	◎	◎	-	-	-	-	-	-
		A4	◎	◎	-	-	-	-	-	-
	257 mm	B4	○	○	◎	◎	-	-	-	-
		B5	○	○	◎	◎	-	-	-	-
	210 mm	A4S	○	○	○	○	◎	◎	-	-
		A5	×	×	○	○	◎	◎	-	-
	182 mm	B5S	×	×	○	○	○	○	◎	-
	148 mm	A5S	×	×	×	×	×	×	○	◎

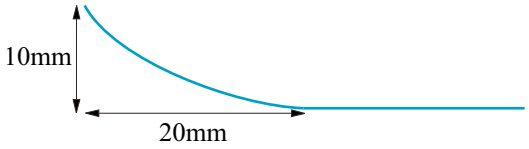
Particular original

- If fed, paper feed will be possible to some extent but trouble occurrence will be possible.

Type of original	Possible trouble
Sheets lightly curled (Curled amount: 10 to 15 mm (3/8 to 9/16 inches)) (*1)	Dog-eared, exit failure, transport failure

Type of original	Possible trouble
Thermal paper (Heat sensitive paper)	Edge folded, exit failure, transport failure
Paper immediately after paper exit from the main unit	Paper feed failure, transport failure
Paper with many punched holes (e.g., loose leaf (*2), CF paper (*3))	Multi-page feed due to flashes from holes
Folded original (including half-folded and Z-folded originals) (*4)	Paper feed failure, transport failure, image distortion
Sheets with 2 to 4 holes	Transport failure
Coated paper (including inkjet paper)	Paper feed failure, transport failure

- *1: Amount of curl: When the original is less than 10 mm (3/8 inches) in vertical and 20 mm (13/16 inches) in horizontal direction and the amount of float of the folded original is less than 10 mm (3/8 inches), the feed and the image are guaranteed.



*2: Limited to vertical feeding
*3: No crease on perforation
*4: Creases must be smoothed out. (amount of float: 15 mm (9/16 inches) or less)

Prohibited original

- Prohibited originals that cause trouble

Type of original
Sheets stapled or clipped together
Book original
Sheets with paper attached
Sheets clipped or notched
Torn paper
Original weighing less than 35 g/m^2 (9 5/16 lb) or 210 g/m^2 (55 7/8 lb) or more
Significantly curled original (amount of curl exceeding 15 mm (9/16 inches))
OHP film
Label sheet
Offset master paper
Glossy photographic paper or glossy enamel paper

1.3 LU-205

Basic specifications

Items	Specifications
Name	2,500 sheets Large Capacity Unit
Type	External option attached to the right side of the main body
Document alignment	Center
Power requirement	Supplied from the main body
Max. power consumption	22 W or less
Dimension	629 mm (W) x 556 mm (D) x 405 mm (H) (24$^3/_4$ inches (W) x 21$^7/_8$ inches (D) x 15$^{15}/_{16}$ inches (H))
Weight	Approx. 25.0 kg (55$^1/_8$ lb)
Operating environment	Conforms to the operating environment of the main body.

Paper capacity

Type	Capacity
Thin paper (52 to 59 g/m^2 (13$^{13}/_{16}$ to 15$^{11}/_{16}$ lb))	2,500 sheets
Plain paper (60 to 90 g/m^2 (15$^{15}/_{16}$ to 23$^{15}/_{16}$ lb))	
Plain paper+ (91 to 105 g/m^2 (24$^3/_{16}$ to 27$^{15}/_{16}$ lb)) (*2)	2,000 sheets
Thick 1 (106 to 120 g/m^2 (28$^3/_{16}$ to 31$^{15}/_{16}$ lb)) (*2)	
Thick 1+ (121 to 157 g/m^2 (32$^3/_{16}$ to 41$^3/_4$ lb)) (*2)	1,450 sheets
Thick 2 (158 to 209 g/m^2 (42 to 55$^5/_8$ lb)) (*2)	1,250 sheets
Thick 3 (210 to 256 g/m^2 (55$^7/_8$ to 68$^1/_8$ lb)) (*1) (*2)	1,000 sheets

- *1: Images are out of guarantee.
- *2: Excluding damp paper, curled paper, and recycled paper.

Paper size

Type	Size
Regular size paper	SRA3, A3, B4, A4S, A4 12 x 18, 11 x 17, $8^1/_2$ x 14, $8^1/_2$ x 11S, $8^1/_2$ x 11

1.4 LU-303

Basic specifications

Items	Specifications
Name	3,000 sheets Large Capacity Unit
Type	External option attached to the right side of the main body
Document alignment	Center
Power requirement	Supplied from the main body
Max. power consumption	22 W or less
Dimension	367 mm (W) x 528 mm (D) x 405 mm (H) ($14^7/_{16}$ inches (W) x $20^{13}/_{16}$ inches (D) x $15^{15}/_{16}$ inches (H))
Weight	Approx. 18.0 kg ($39^{11}/_{16}$ lb)
Operating environment	Conforms to the operating environment of the main body.

Paper capacity

Type	Capacity
Thin paper (52 to 59 g/m^2 ($13^{13}/_{16}$ to $15^{11}/_{16}$ lb))	3,000 sheets
Plain paper (60 to 90 g/m^2 ($15^{15}/_{16}$ to $23^{15}/_{16}$ lb))	
Plain paper+ (91 to 105 g/m^2 ($24^3/_{16}$ to $27^{15}/_{16}$ lb)) (*)	2,500 sheets
Thick 1 (106 to 120 g/m^2 ($28^3/_{16}$ to $31^{15}/_{16}$ lb)) (*)	
Thick 1+ (121 to 157 g/m^2 ($32^3/_{16}$ to $41^3/_4$ lb)) (*)	1,750 sheets
Thick 2 (158 to 209 g/m^2 (42 to $55^5/_8$ lb)) (*)	1,550 sheets
Thick 3 (210 to 256 g/m^2 ($55^7/_8$ to $68^1/_8$ lb)) (*)	1,300 sheets

- *: Excluding damp paper, curled paper, and recycled paper.

Paper size

Type	Size
Regular size paper	A4, $8^1/_2$ x 11

1.5 FS-539/FS-539SD

Basic specifications

Items	Specifications
Name	Multi staple finisher (FS-539) Finisher-contained center-staple and tri-fold device (FS-539SD)
Type	Freestanding
Document alignment	Center
Consumable	Main body: Staples (5,000 staples / cartridge) Center staple: Staples (5,000 staples / cartridge) (FS-539SD)
Mode	Sort, group Sort offset, group offset Sort staple, group staple Center staple (FS-539SD), Center fold (FS-539SD), Tri-folding (FS-539SD)
Power requirement	DC 24 V ± 10% (supplied from the main body)
Max. power consumption	85 W or less
Dimension	658 mm (W) (*) x 681 mm (D) x 1065 mm (H) (*) (25 7/8 inches (W) (*) x 26 13/16 inches (D) x 41 15/16 inches (H) (*))
Weight	Approx. 31 kg (68 11/32 lb) (FS-539), Approx. 53 kg (116 27/32 lb) (FS-539SD)
Operating environment	Conforms to the operating environment of the main body.
Option	Punch Kit (PK-524)

- *: Size when the paper output tray is pulled out

Sort/Group

<Paper capacity>

Paper type	Maximum number of stacked sheets			
	Main tray			Sub tray
	A5, A5S, 5 1/2 x 8 1/2, 5 1/2 x 8 1/2 S or less	B5, B5S or greater A4S, 8 1/2 x 11 S or less	B4, 8 1/2 x 14 or greater	
Thin paper (52 to 59 g/m² (13 13/16 to 15 11/16 lb))	500 sheets	3,000 sheets (FS-539) 2,000 sheets (FS-539SD)	1,500 sheets	200 sheets
Plain paper (60 to 90 g/m² (15 15/16 to 23 15/16 lb))				
Recycled paper (60 to 90 g/m² (15 15/16 to 23 15/16 lb))				
Plain paper+ (91 to 105 g/m² (24 3/16 to 27 15/16 lb))				20 sheets
Thick 1 (106 to 120 g/m² (28 3/16 to 31 15/16 lb))	20 sheets			
Thick 1+ (121 to 157 g/m² (32 3/16 to 41 3/4 lb))				
Thick 2 (158 to 209 g/m² (42 to 55 5/8 lb))				
Thick 3 (210 to 256 g/m² (55 7/8 to 68 1/8 lb))				
Thick 4 (257 to 300 g/m² (68 3/8 to 79 13/16 lb))				
Postcard	-			
Envelope	20 sheets			
OHP film				
Label sheet				
Letterhead				
Tab paper	-			

<Height of stacked sheets>

Paper length	Maximum height of stacked sheets	
	Main tray	Sub tray
A4S, 8 1/2 x 11 S or less	375 mm (14 3/4 inches) (FS-539) 250 mm (9 13/16 inches) (FS-539SD)	35 mm (1 3/8 inches)
B4, 8 1/2 x 14 or greater	187.5 mm (7 3/8 inches)	

NOTE

- **If either the number or height of stacked sheets reaches the specified value, "Tray paper full" is determined.**

<Paper size>

Type	Size	
	Main tray	Sub tray
Regular size paper	SRA3, A3W, A3, B4, A4, A4S, B5, B5S, A5, A5S 12 1/4 x 18, 12 x 18, 11 x 17, 8 1/2 x 14, 8 1/2 x 11, 8 1/2 x 11 S, 7 1/4 x 10 1/2, 7 1/4 x 10 1/2 S, 5 1/2 x 8 1/2, 5 1/2 x 8 1/2 S, 8K, 16KS, 16K	SRA3, A3W, A3, B4, A4, A4S, B5, B5S, A5, A5S, B6S, A6S, Postcard S 12 1/4 x 18, 12 x 18, 11 x 17, 8 1/2 x 14, 8 1/2 x 11, 8 1/2 x 11 S, 7 1/4 x 10 1/2, 7 1/4 x 10 1/2 S, 5 1/2 x 8 1/2, 5 1/2 x 8 1/2 S, 8K, 16KS, 16K
Custom size paper	Width: 130 mm to 320 mm (5 1/8 inches to 12 5/8 inches) Length: 139.7 mm to 457.2 mm (5 1/2 inches to 18 inches)	Width: 90 mm to 320 mm (3 9/16 inches to 12 5/8 inches) Length: 139.7 mm to 1,200 mm (5 1/2 inches to 47 1/4 inches)

Sort offset/Group offset

<Paper capacity>

Paper type	Maximum number of stacked sheets			
	Main tray			Sub tray
	less than B5	A4, A4S, B5 8 1/2 x 11, 8 1/2 x 11 S	B4, B5S, 8 1/2 x 14 or greater	
Thin paper (52 to 59 g/m² (13 13/16 to 15 11/16 lb))	500 sheets	3,000 sheets (FS-539) 2,000 sheets (FS-539SD)	1,500 sheets	-
Plain paper (60 to 90 g/m² (15 15/16 to 23 15/16 lb))				
Recycled paper (60 to 90 g/m² (15 15/16 to 23 15/16 lb))				
Plain paper+ (91 to 105 g/m² (24 3/16 to 27 15/16 lb))				
Thick 1 (106 to 120 g/m² (28 3/16 to 31 15/16 lb))	20 sheets			

Paper type	Maximum number of stacked sheets			
	Main tray			Sub tray
	less than B5	A4, A4S, B5 8 1/2 x 11, 8 1/2 x 11 S	B4, B5S, 8 1/2 x 14 or greater	
Thick 1+ (121 to 157 g/m² (32 3/16 to 41 3/4 lb))				
Thick 2 (158 to 209 g/m² (42 to 55 5/8 lb))				
Thick 3 (210 to 256 g/m² (55 7/8 to 68 1/8 lb))				
Thick 4 (257 to 300 g/m² (68 3/8 to 79 13/16 lb))				

<Height of stacked sheets>

Paper length	Maximum height of stacked sheets	
	Main tray	Sub tray
A4S, 8 1/2 x 11 S or less	375 mm (14 3/4 inches) (FS-539) 250 mm (9 13/16 inches) (FS-539SD)	-
B4, 8 1/2 x 14 or greater	187.5 mm (7 3/8 inches)	

NOTE

- **If either the number or height of stacked sheets reaches the specified value, "Tray paper full" is determined.**

<Paper size>

Type	Size	
	Main tray	Sub tray
Regular size paper	SRA3, A3W, A3, B4, A4, A4S, B5, B5S, A5 12 1/4 x 18, 12 x 18, 11 x 17, 8 1/2 x 14, 8 1/2 x 11, 8 1/2 x 11 S, 7 1/4 x 10 1/2, 7 1/4 x 10 1/2 S, 5 1/2 x 8 1/2, 8K, 16KS, 16K	-
Custom size paper	Width: 182 mm to 320 mm (7 3/16 inches to 12 5/8 inches) Length: 148.5 mm to 457.2 mm (5 7/8 inches to 18 inches)	

Staple

<Paper capacity>

Paper type	No. of sheets to be stapled	Max. capacity			
		Main tray			Sub tray
		A4, B5, 8 1/2 x 11	A4S, 8 1/2 x 11 S or less	B4, 8 1/2 x 14 or greater	
Thin paper (52 to 59 g/m² (13 13/16 to 15 11/16 lb)) Plain paper (60 to 90 g/m² (15 15/16 to 23 15/16 lb)) Recycled paper (60 to 90 g/m² (15 15/16 to 23 15/16 lb)) Plain paper+ (91 to 105 g/m² (24 3/16 to 27 15/16 lb))	2 to 9 sheets	200 sets (*)	100 sets		-
	10 to 20 sheets	50 sets			
	21 to 30 sheets	30 sets			
	31 to 40 sheets	25 sets			
	41 to 50 sheets	20 sets			
Thick 1 (106 to 120 g/m² (28 3/16 to 31 15/16 lb)) Thick 1+ (121 to 157 g/m² (32 3/16 to 41 3/4 lb)) Thick 2 (158 to 209 g/m² (42 to 55 5/8 lb))	2 to 5 sheets	100 sets			
	6 sheets or more	500 sheets in total			

- *: 100 sets for thin paper, recycled paper or plain paper+

<Height of stacked sheets>

Paper length	Maximum height of stacked sheets	
	Main tray	Sub tray
A4S, 8 1/2 x 11 S or less	375 mm (14 3/4 inches) (FS-539) 250 mm (9 13/16 inches) (FS-539SD)	-
B4, 8 1/2 x 14 or greater	187.5 mm (7 3/8 inches)	

NOTE

- **If either the number or height of stacked sheets reaches the specified value, "Tray paper full" is determined.**

<Paper size>

Type	Size	
	Main tray	Sub tray
Regular size paper	A3, B4, A4, A4S, B5, B5S, A5 11 x 17, 8 1/2 x 14, 8 1/2 x 11, 8 1/2 x 11 S, 7 1/4 x 10 1/2, 7 1/4 x 10 1/2 S, 5 1/2 x 8 1/2, 8K, 16KS, 16K	-
Custom size paper	Width: 182 mm to 297 mm (7 3/16 inches to 11 11/16 inches)	

Type	Size	
	Main tray	Sub tray
	Length: 139.7 mm to 431.8 mm (5 1/2 inches to 17 inches)	

<No. of sheets to be stapled>

Mode	Basis weight	Max. No. of sheets to be stapled
Normal mode	52 to 90 g/m^2 (13 13/16 to 23 15/16 lb)	50 sheets
	91 to 120 g/m^2 (24 3/16 to 31 15/16 lb)	30 sheets
	121 to 209 g/m^2 (32 3/16 to 55 5/8 lb)	15 sheets
Cover sheet mode	Cover sheet: 200 g/m^2 (53 3/16 lb), body page: 90 g/m^2 (23 15/16 lb)	Cover sheet: 2 sheets + body page: 48 sheets
	Cover sheet: 200 g/m^2 (53 3/16 lb), body page: 80 g/m^2 (21 1/4 lb)	
	Cover sheet: 163 g/m^2 (43 3/8 lb), body page: 90 g/m^2 (23 15/16 lb)	
	Cover sheet: 163 g/m^2 (43 3/8 lb), body page: 80 g/m^2 (21 1/4 lb)	
	Cover sheet: 163 g/m^2 (43 3/8 lb), body page: 75 g/m^2 (19 15/16 lb)	

<Stapling position>

Stapling position	Paper size
Back/Front of the corner (45 degree)	A3, B4, A4, B5, 11 x 17, 8$^1/_2$ x 11
Back/Front of the corner (Parallel) (Available only when being selected)	A3, A4, 11 x 17, 8$^1/_2$ x 11
Back/Front of the corner (Parallel)	A4S, B5S, A5, 8$^1/_2$ x 14, 8$^1/_2$ x 11 S
Side: Parallel 2 point	A3, B4, A4, A4S, B5, B5S, A5, 11 x 17, 8$^1/_2$ x 14, 8$^1/_2$ x 11, 8$^1/_2$ x 11 S

Center staple/Folding

<Paper capacity>

Paper type	Number of center staple sheets	Number of folding sheets	Max. capacity
Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb)) Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb)) Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	2 to 3 sheets	1 to 3 sheets	20 sets
	4 to 10 sheets	4 to 5 sheets	10 sets
	11 to 20 sheets	-	5 sets
Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb))	2 to 10 sheets	1 to 5 sheets	-
Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb))	2 to 7 sheets		
Thick 1+ (121 to 157 g/m^2 (32 3/16 to 41 3/4 lb))			
Thick 2 (158 to 209 g/m^2 (42 to 55 5/8 lb))	2 to 5 sheets		
Thick 3 (210 to 256 g/m^2 (55 7/8 to 68 1/8 lb))	1 sheet (*)	1 sheet	
Thick 4 (257 to 300 g/m^2 (68 3/8 to 79 13/16 lb))			

- *: Use thick paper 3 and thick paper 4 only for “Cover sheet” in center staple cover sheet mode.

<Paper size>

Type	Size	
	Center Staple	Center Fold
Regular size paper	SRA3, A3W, A3, B4, A4S 12$^1/_4$ x 18, 12 x 18, 11 x 17, 8$^1/_2$ x 14, 8$^1/_2$ x 11 S, 8K	SRA3, A3W, A3, B4, A4S 12$^1/_4$ x 18, 12 x 18, 11 x 17, 8$^1/_2$ x 14, 8$^1/_2$ x 11 S, 8K
Custom size paper	Width: 210 mm to 320 mm (8 1/4 inches to 12 5/8 inches) Length: 279.4 mm to 457.2 mm (11 inches to 18 inches)	Width: 210 mm to 320 mm (8 1/4 inches to 12 5/8 inches) Length: 279.4 mm to 457.2 mm (11 inches to 18 inches)

<Number of center staple sheets>

Mode	Paper type	Max. No. of sheets to be stapled
Center staple normal mode	Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb))	20 sheets
	Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	
	Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	
	Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb))	10 sheets
	Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb))	7 sheets
	Thick 1+ (121 to 157 g/m^2 (32 3/16 to 41 3/4 lb))	
	Thick 2 (158 to 209 g/m^2 (42 to 55 5/8 lb))	5 sheets
Center staple cover sheet mode (body page) (*)	52 to 209 g/m^2 (13 13/16 to 55 5/8 lb)	Max. No. of sheets to be stapled - 1 sheet
Center staple cover sheet mode (cover sheet)	91 to 300 g/m^2 (24 3/16 to 79 13/16 lb)	1 sheet

- *: Use only 1 sheet as a cover sheet for cover mode

<Number of folding sheets>

Mode	Paper type	Max. number of folding sheets
Center fold mode	Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb))	5 sheets
	Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	
	Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	
	Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb))	
	Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb))	
	Thick 1+ (121 to 157 g/m^2 (32 3/16 to 41 3/4 lb))	
	Thick 2 (158 to 209 g/m^2 (42 to 55 5/8 lb))	
	Thick 3 (210 to 256 g/m^2 (55 7/8 to 68 1/8 lb))	1 sheet
	Thick 4 (257 to 300 g/m^2 (68 3/8 to 79 13/16 lb))	

Tri-folding

<Paper capacity>

Paper type	Number of tri-folding sheets	Max. capacity
Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb)) Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb)) Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	1 sheet	30 sets
	2 to 3 sheets	10 sets
Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb)) Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb))	1 sheet	-

<Paper size>

Type	Size
Regular size paper	A4S, 8^1/$_2$ x 11 S, 16KS

<Number of tri-folding sheets>

Mode	Paper type	Max. number of folding sheets
Normal mode	Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb))	3 sheets
	Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	
	Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	
Thick paper mode	Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb))	1 sheet
	Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb))	

Manual staple

<Number of sheets to be stapled, stapling position>

Paper type	Max. No. of sheets to be stapled	Stapling position
Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb))	50 sheets	Corner (45 degree)
Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))		
Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))		
Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb))	-	
Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb))		
Thick 1+ (121 to 157 g/m^2 (32 3/16 to 41 3/4 lb))		
Thick 2 (158 to 209 g/m^2 (42 to 55 5/8 lb))		

1.6 PK-524

Basic specifications

Items	Specifications
Name	Punch kit
Type	Finisher-contained hole punch device
Punching method	Slide cam method by DC brush motor
No. of holes	Japan: 2 holes North America: 2-3 holes switching Europe: 2-4 holes switching Sweden: 4 holes
Supported mode	Punch mode
Applicable post processing mode	Sort, Group, Staple
Power requirement	DC 24 V +5% / -10% (supplied from the finisher)
	DC 5 V ±10% (supplied from the finisher)
Max. power consumption	Included in the max. power consumption of finisher
Dimension	64.6 mm (W) x 519.75 mm (D) x 164.5 mm (H) (2 9/16 inches (W) x 20 1/2 inches (D) x 6 1/2 inches (H))
Weight	Approx. 1.8 kg (3 15/16 lb)
Operating environment	Conforms to the operating environment of the main body.

Paper process ability

Items	Specifications
Paper type	Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb)) Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb)) Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb)) Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb)) Thick 1+ (121 to 157 g/m^2 (32 3/16 to 41 3/4 lb)) Thick 2 (158 to 209 g/m^2 (42 to 55 5/8 lb)) Thick 3 (210 to 256 g/m^2 (55 7/8 to 68 1/8 lb)) Thick 4 (257 to 300 g/m^2 (68 3/8 to 79 13/16 lb))
Paper size	A3, B4, A4, A4S (*), B5, B5S (*), A5 (*), A5S (*) 11 x 17, 8$^1/_2$ x 14 (*), 8$^1/_2$ x 11, 8$^1/_2$ x 11 S (*), 7$^1/_4$ x 10$^1/_2$, 7$^1/_4$ x 10$^1/_2$ S (*), 5$^1/_2$ x 8$^1/_2$ (*), 5$^1/_2$ x 8$^1/_2$ S (*), 8K, 16K, 16KS (*)
Punch prohibited paper	Label paper, Tab paper, OHP film, Translucent paper, Holed paper Other paper that may interfere with the operation of the punch kit or the punch blade

* Not available for 3 holes in North America and 4 holes in Europe

1.7 FS-540/FS-540SD

Basic specifications

Items	Specifications
Name	Multi staple finisher (FS-540) Finisher-contained center-staple and tri-fold device (FS-540SD)
Type	Freestanding
Document alignment	Center
Consumable	Main body: Staples (5,000 staples / cartridge) Center staple: Staples (5,000 staples / cartridge) (FS-540SD)

Items	Specifications
Mode	Sort, group Sort offset, group offset Sort staple, group staple Center staple (FS-540SD), Center fold (FS-540SD), Tri-folding (FS-540SD)
Power requirement	DC 24 V ± 10% (supplied from the main body)
Max. power consumption	120 W or less
Dimension	752 mm (W) (*) x 752 mm (D) x 1077 mm (H) (*) (FS-540) (29 5/8 inches (W) (*) x 29 5/8 inches (D) x 42 3/8 inches (H) (*) (FS-540)) 776 mm (W) (*) x 752 mm (D) x 1077 mm (H) (*) (FS-540SD) (30 9/16 inches (W) (*) x 29 5/8 inches (D) x 42 3/8 inches (H) (*) (FS-540SD))
Weight	Approx. 53 kg (116 27/32 lb) (FS-540) Approx. 73 kg (160 15/16 lb) (FS-540SD)
Operating environment	Conforms to the operating environment of the main body.
Option	Punch Kit (PK-526), Post Inserter (PI-507), Z Folding Unit (ZU-609), Job Separator (JS-602)

- *: Size when the paper output tray is pulled out

Sort/Group

<Paper capacity>

Paper type	Maximum number of stacked sheets			
	Main tray			Sub tray
	A5, A5S, 5 1/2 x 8 1/2, 5 1/2 x 8 1/2 S or less	B5, B5S or greater A4S, 8 1/2 x 11 S or less	B4, 8 1/2 x 14 or greater	
Thin paper (52 to 59 g/m² (13 13/16 to 15 11/16 lb))	500 sheets	3,000 sheets (FS-540) 2,500 sheets (FS-540SD)	1,500 sheets	200 sheets
Plain paper (60 to 90 g/m² (15 15/16 to 23 15/16 lb))				
Recycled paper (60 to 90 g/m² (15 15/16 to 23 15/16 lb))				
Plain paper+ (91 to 105 g/m² (24 3/16 to 27 15/16 lb))				20 sheets
Thick 1 (106 to 120 g/m² (28 3/16 to 31 15/16 lb))	20 sheets			
Thick 1+ (121 to 157 g/m² (32 3/16 to 41 3/4 lb))				
Thick 2 (158 to 209 g/m² (42 to 55 5/8 lb))				
Thick 3 (210 to 256 g/m² (55 7/8 to 68 1/8 lb))				
Thick 4 (257 to 300 g/m² (68 3/8 to 79 13/16 lb))				
Postcard	-			
Envelope	20 sheets			
OHP film				
Label sheet				
Letterhead				
Tab paper	-			

<Height of stacked sheets>

Paper length	Maximum height of stacked sheets	
	Main tray	Sub tray
A4S, 8 1/2 x 11 S or less	375 mm (14 3/4 inches) (FS-540) 250 mm (9 13/16 inches) (FS-540SD)	35 mm (1 3/8 inches)
B4, 8 1/2 x 14 or greater	187.5 mm (7 3/8 inches)	

NOTE

- **If either the number or height of stacked sheets reaches the specified value, "Tray paper full" is determined.**

<Paper size>

Type	Size	
	Main tray	Sub tray
Regular size paper	SRA3, A3W, A3, B4, A4, A4S, B5, B5S, A5, A5S 12 1/4 x 18, 12 x 18, 11 x 17, 8 1/2 x 14, 8 1/2 x 11, 8 1/2 x 11 S, 7 1/4 x 10 1/2, 7 1/4 x 10 1/2 S, 5 1/2 x 8 1/2, 5 1/2 x 8 1/2 S, 8K, 16KS, 16K	SRA3, A3W, A3, B4, A4, A4S, B5, B5S, A5, A5S, B6S, A6S, Postcard S 12 1/4 x 18, 12 x 18, 11 x 17, 8 1/2 x 14, 8 1/2 x 11, 8 1/2 x 11 S, 7 1/4 x 10 1/2, 7 1/4 x 10 1/2 S, 5 1/2 x 8 1/2, 5 1/2 x 8 1/2 S, 8K, 16KS, 16K
Custom size paper	Width: 130 mm to 320 mm (5 1/8 inches to 12 5/8 inches) Length: 139.7 mm to 457.2 mm (5 1/2 inches to 18 inches)	Width: 90 mm to 320 mm (3 9/16 inches to 12 5/8 inches) Length: 139.7 mm to 1,200 mm (5 1/2 inches to 47 1/4 inches)

Sort offset/Group offset

<Paper capacity>

Paper type	Maximum number of stacked sheets			
	Main tray			Sub tray
	less than B5	A4, A4S, B5 8 $^{1}/_{2}$ x 11, 8$^{1}/_{2}$ x 11 S	B4, B5S, 8$^{1}/_{2}$ x 14 or greater	
Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb))	500 sheets	3,000 sheets (FS-540) 2,500 sheets (FS-540SD)	1,500 sheets	-
Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))				
Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))				
Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb))				
Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb))	20 sheets			
Thick 1+ (121 to 157 g/m^2 (32 3/16 to 41 3/4 lb))				
Thick 2 (158 to 209 g/m^2 (42 to 55 5/8 lb))				
Thick 3 (210 to 256 g/m^2 (55 7/8 to 68 1/8 lb))				
Thick 4 (257 to 300 g/m^2 (68 3/8 to 79 13/16 lb))				

<Height of stacked sheets>

Paper length	Maximum height of stacked sheets	
	Main tray	Sub tray
A4S, 8$^{1}/_{2}$ x 11 S or less	375 mm (14 3/4 inches) (FS-540) 250 mm (9 13/16 inches) (FS-540SD)	-
B4, 8$^{1}/_{2}$ x 14 or greater	187.5 mm (7 3/8 inches)	

NOTE

- **If either the number or height of stacked sheets reaches the specified value, “Tray paper full” is determined.**

<Paper size>

Type	Size	
	Main tray	Sub tray
Regular size paper	SRA3, A3W, A3, B4, A4, A4S, B5, B5S, A5 12$^{1}/_{4}$ x 18, 12 x 18, 11 x 17, 8$^{1}/_{2}$ x 14, 8$^{1}/_{2}$ x 11, 8$^{1}/_{2}$ x 11 S, 7$^{1}/_{4}$ x 10$^{1}/_{2}$, 7$^{1}/_{4}$ x 10$^{1}/_{2}$ S, 5$^{1}/_{2}$ x 8$^{1}/_{2}$, 8K, 16KS, 16K	-
Custom size paper	Width: 182 mm to 320 mm (7 3/16 inches to 12 5/8 inches) Length: 139.7 mm to 457.2 mm (5 1/2 inches to 18 inches)	

Staple

<Paper capacity>

Paper type	No. of sheets to be stapled	Max. capacity			
		Main tray			Sub tray
		A4, B5, 8$^{1}/_{2}$ x 11	A4S, 8$^{1}/_{2}$ x 11 S or less	B4, 8$^{1}/_{2}$ x 14 or greater	
Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb)) Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb)) Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb)) Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb))	2 to 9 sheets	200 sets (*)	100 sets		-
	10 to 20 sheets	50 sets			
	21 to 30 sheets	30 sets			
	31 to 40 sheets	25 sets			
	41 to 50 sheets	20 sets			
	51 to 60 sheets	15 sets			
	61 to 100 sheets	10 sets			
Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb)) Thick 1+ (121 to 157 g/m^2 (32 3/16 to 41 3/4 lb)) Thick 2 (158 to 209 g/m^2 (42 to 55 5/8 lb)) Thick 3 (210 to 256 g/m^2 (55 7/8 to 68 1/8 lb)) Thick 4 (257 to 300 g/m^2 (68 3/8 to 79 13/16 lb))	2 to 5 sheets	100 sets			
	6 sheets or more	500 sheets in total			

- *: 100 sets for thin paper, recycled paper or plain paper+

<Height of stacked sheets>

Paper length	Maximum height of stacked sheets	
	Main tray	Sub tray
A4S, 8 1/2 x 11 S or less	375 mm (14 3/4 inches)	-
B4, 8 1/2 x 14 or greater	187.5 mm (7 3/8 inches)	

NOTE

- **If either the number or height of stacked sheets reaches the specified value, "Tray paper full" is determined.**

<Paper size>

Type	Size	
	Main tray	Sub tray
Regular size paper	A3, B4, A4, A4S, B5, B5S, A5 11 x 17, 8 1/2 x 14, 8 1/2 x 11, 8 1/2 x 11 S, 7 1/4 x 10 1/2, 7 1/4 x 10 1/2 S, 5 1/2 x 8 1/2, 8K, 16KS, 16K	-
Custom size paper	Width: 182 mm to 297 mm (7 3/16 inches to 11 11/16 inches) Length: 139.7 mm to 431.8 mm (5 1/2 inches to 17 inches)	

<No. of sheets to be stapled>

Mode	Max. No. of sheets to be stapled				
	Basis weight	Paper length			
		150 mm or less	151 to 297 mm	298 to 389 mm	390 mm and above
Normal mode	52 to 80 g/m^2 (13 13/16 to 21 1/4 lb)	50 sheets	100 sheets	65 sheets	50 sheets
	81 to 90 g/m^2 (21 9/16 to 23 15/16 lb)	50 sheets	60 sheets	60 sheets	50 sheets
	91 to 105 g/m^2 (24 3/16 to 27 15/16 lb)	50 sheets	50 sheets	50 sheets	50 sheets
	106 to 120 g/m^2 (28 3/16 to 31 15/16 lb)	50 sheets	50 sheets	50 sheets	50 sheets
	121 to 157 g/m^2 (32 3/16 to 41 3/4 lb)	40 sheets	40 sheets	40 sheets	40 sheets
	158 to 256 g/m^2 (42 to 68 1/8 lb)	25 sheets	25 sheets	25 sheets	25 sheets
	257 to 300 g/m^2 (68 3/8 to 79 13/16 lb)	10 sheets	10 sheets	10 sheets	10 sheets
Cover sheet mode	Cover sheet: 300 g/m^2 (53 3/16 lb), body page: 90 g/m^2 (23 15/16 lb)	Cover sheet: 2 sheets + body page: 58 sheets			
	Cover sheet: 300 g/m^2 (53 3/16 lb), body page: 80 g/m^2 (21 1/4 lb)	Cover sheet: 2 sheets + body page: 98 sheets			
	Cover sheet: 271 g/m^2 (72 1/16 lb), body page: 90 g/m^2 (23 15/16 lb)	Cover sheet: 2 sheets + body page: 58 sheets			
	Cover sheet: 271 g/m^2 (72 1/16 lb), body page: 80 g/m^2 (21 1/4 lb)	Cover sheet: 2 sheets + body page: 98 sheets			
	Cover sheet: 271 g/m^2 (72 1/16 lb), body page: 75 g/m^2 (19 15/16 lb)	Cover sheet: 2 sheets + body page: 98 sheets			

<Stapling position>

Stapling position	Paper size
Back/Front of the corner (45 degree)	A3, B4, A4, B5, 11 x 17, 8 1/2 x 11
Back/Front of the corner (Parallel) (Available only when being selected)	A3, A4, 11 x 17, 8 1/2 x 11
Back/Front of the corner (Parallel)	A4S, B5S, A5, 8 1/2 x 14, 8 1/2 x 11 S
Side: Parallel 2 point	A3, B4, A4, A4S, B5, B5S, A5, 11 x 17, 8 1/2 x 14, 8 1/2 x 11, 8 1/2 x 11 S

Center staple/Folding

<Paper capacity>

Paper type	Number of center staple sheets	Number of folding sheets	Max. capacity	
			Paper length less than 330 mm	Paper length greater than 330 mm
Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb)) Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb)) Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	2 to 5 sheets	1 to 5 sheets	35 sets	
	6 to 10 sheets	-	25 sets	30 sets
	11 to 20 sheets	-	15 sets	
Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb))	2 to 10 sheets	1 to 5 sheets	-	
Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb))	2 to 7 sheets			
Thick 1+ (121 to 157 g/m^2 (32 3/16 to 41 3/4 lb))				
Thick 2 (158 to 209 g/m^2 (42 to 55 5/8 lb))	2 to 5 sheets			
Thick 3 (210 to 256 g/m^2 (55 7/8 to 68 1/8 lb))	1 sheet (*)	1 sheet		
Thick 4 (257 to 300 g/m^2 (68 3/8 to 79 13/16 lb))				

- *: Use thick paper 3 and thick paper 4 only for “Cover sheet” in center staple cover sheet mode.

<Paper size>

Type	Size	
	Center Staple	Center Fold
Regular size paper	SRA3, A3W, A3, B4, A4S 12$^1/_4$ x 18, 12 x 18, 11 x 17, 8$^1/_2$ x 14, 8$^1/_2$ x 11 S, 8K	SRA3, A3W, A3, B4, A4S 12$^1/_4$ x 18, 12 x 18, 11 x 17, 8$^1/_2$ x 14, 8$^1/_2$ x 11 S, 8K
Custom size paper	Width: 210 mm to 320 mm (8 1/4 inches to 12 5/8 inches) Length: 279.4 mm to 457.2 mm (11 inches to 18 inches)	Width: 210 mm to 320 mm (8 1/4 inches to 12 5/8 inches) Length: 279.4 mm to 457.2 mm (11 inches to 18 inches)

<Number of center staple sheets>

Mode	Paper type	Max. No. of sheets to be stapled
Center staple normal mode	Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb))	20 sheets
	Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	
	Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	
	Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb))	10 sheets
	Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb))	7 sheets
	Thick 1+ (121 to 157 g/m^2 (32 3/16 to 41 3/4 lb))	
	Thick 2 (158 to 209 g/m^2 (42 to 55 5/8 lb))	5 sheets
Center staple cover sheet mode (body page) (*)	52 to 209 g/m^2 (13 13/16 to 55 5/8 lb)	Max. No. of sheets to be stapled - 1 sheet
Center staple cover sheet mode (cover sheet)	91 to 300 g/m^2 (24 3/16 to 79 13/16 lb)	1 sheet

- *: Use only 1 sheet as a cover sheet for cover mode

<Number of folding sheets>

Mode	Paper type	Max. number of folding sheets
Center fold mode	Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb))	5 sheets
	Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	
	Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	
	Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb))	
	Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb))	
	Thick 1+ (121 to 157 g/m^2 (32 3/16 to 41 3/4 lb))	
	Thick 2 (158 to 209 g/m^2 (42 to 55 5/8 lb))	
	Thick 3 (210 to 256 g/m^2 (55 7/8 to 68 1/8 lb))	1 sheet
	Thick 4 (257 to 300 g/m^2 (68 3/8 to 79 13/16 lb))	

Tri-folding

<Paper capacity>

Paper type	Number of tri-folding sheets	Max. capacity
Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb)) Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb)) Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	1 sheet	50 sets
	2 sheets	40 sets
	3 sheets	30 sets
Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb)) Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb))	1 sheet	-

<Paper size>

Type	Size
Regular size paper	A4S, 8$^1/_2$ x 11 S, 16KS

<Number of tri-folding sheets>

Mode	Paper type	Max. number of folding sheets
Normal mode	Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb))	3 sheets
	Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	
	Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	
Thick paper mode	Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb))	1 sheet
	Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb))	

Manual staple

<Number of sheets to be stapled, stapling position>

Paper type	Max. No. of sheets to be stapled	Stapling position
Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb))	50 sheets	Corner (45 degree)
Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))		
Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))		
Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb))	-	
Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb))		
Thick 1+ (121 to 157 g/m^2 (32 3/16 to 41 3/4 lb))		
Thick 2 (158 to 209 g/m^2 (42 to 55 5/8 lb))		
Thick 3 (210 to 256 g/m^2 (55 7/8 to 68 1/8 lb))		
Thick 4 (257 to 300 g/m^2 (68 3/8 to 79 13/16 lb))		

1.8 PK-526

Basic specifications

Items	Specifications
Name	Punch kit
Type	Finisher-contained hole punch device with auto paper alignment mechanism
Punching method	Slide cam method by DC brush motor
No. of holes	Japan: 2 holes North America: 2-3 holes switching Europe: 2-4 holes switching Sweden: 4 holes
Supported mode	Punch mode
Applicable post processing mode	Sort, Group, Staple
Power requirement	DC 24 V +5% / -10% (supplied from the finisher)
	DC 5 V ±10% (supplied from the finisher)
Max. power consumption	Included in the max. power consumption of finisher

Items	Specifications
Dimension	145.3 mm (W) x 592.2 mm (D) x 165.4 mm (H) (5 3/4 inches (W) x 23 5/16 inches (D) x 6 1/2 inches (H))
Weight	Approx. 3.0 kg (6 5/8 lb)
Operating environment	Conforms to the operating environment of the main body.

Paper process ability

Items	Specifications
Paper type	Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb)) Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb)) Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb)) Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb)) Thick 1+ (121 to 157 g/m^2 (32 3/16 to 41 3/4 lb)) Thick 2 (158 to 209 g/m^2 (42 to 55 5/8 lb)) Thick 3 (210 to 256 g/m^2 (55 7/8 to 68 1/8 lb)) Thick 4 (257 to 300 g/m^2 (68 3/8 to 79 13/16 lb))
Paper size	A3, B4, A4, A4S (*), B5, B5S (*), A5 (*), A5S (*) 11 x 17, 8^1/$_2$ x 14 (*), 8^1/$_2$ x 11, 8^1/$_2$ x 11 S (*), 7^1/$_4$ x 10^1/$_2$, 7^1/$_4$ x 10^1/$_2$ S (*), 5^1/$_2$ x 8^1/$_2$ (*), 5^1/$_2$ x 8^1/$_2$ S (*), 8K, 16K, 16KS (*)
Punch prohibited paper	Label paper, Tab paper, OHP film, Translucent paper, Holed paper Other paper that may interfere with the operation of the punch kit or the punch blade

* Not available for 3 holes in North America and 4 holes in Europe

1.9 ZU-609

Basic specifications

Items	Specifications
Name	Z folding unit
Type	Finisher-contained
Document alignment	Center
Mode	Through (no folding) Z-folding Double-folding
Applicable post processing mode	Staple Punch (punch kit is installed)
Power requirement	DC 24 V ±10% (supplied from the finisher)
	DC 5 V ±5% (supplied from the finisher)
Max. power consumption	Included in the max. power consumption of finisher
Dimension	101 mm (W) x 506 mm (D) x 186 mm (H) (4 inches (W) x 19 15/16 inches (D) x 7 5/16 inches (H))
Weight	Approx. 4.5 kg (9 15/16 lb)
Operating environment	Conforms to the operating environment of the main body.

Through (no folding)

- **It is a paper transporting function, and conforms to the specifications of the installed finisher.**

Z-folding

<Paper capacity>

Paper type	With staple			No staple
	Number of sheets being folded	Number of sheets without being folded	Number of sets stacked in main tray	Number of sheets stacked in main tray when continuously exiting folded paper
Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb)) Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb)) Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	1 sheet	1 to 40 sheets	20 sets	30 sheets
		41 to 90 sheets	10 sets	
	2 sheets	1 to 80 sheets:	10 sets	
	3 sheets	1 to 70 sheets:	4 sets	
	4 sheets	1 to 60 sheets:	3 sets	
	5 sheets	1 to 50 sheets:	2 sets	
	6 to 10 sheets	No dropping		

<Paper size>

Type	Size
Regular size paper	A3, B4, 11 x 17, 8K

Double-folding

<Paper capacity>

Paper type	With staple			No staple
	Number of sheets being folded	Number of sheets without being folded	Number of sets stacked in main tray	Number of sheets stacked in main tray when continuously exiting folded paper
Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb)) Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb)) Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	1 sheet	1 to 40 sheets	20 sets	30 sheets
		41 to 90 sheets	10 sets	
	2 sheets	1 to 80 sheets:	10 sets	
	3 sheets	1 to 70 sheets:	4 sets	
	4 sheets	1 to 60 sheets:	3 sets	
	5 sheets	1 to 50 sheets:	2 sets	
	6 to 10 sheets	No dropping		

<Paper size>

Type	Size
Regular size paper	8$^1/_2$ x 14

1.10 JS-602

Basic specifications

Items	Specifications
Name	Job separator
Type	Add-on finishing device externally mounted on top of finisher
Mode	Sort, group
Power requirement	DC 24 V (supplied from the finisher)
	DC 5 V (supplied from the finisher)
Max. power consumption	5 W or less
Dimension	480 mm (W) (*) x 537 mm (D) x 226 mm (H) (*) (18 7/8 inches (W) (*) x 21 1/8 inches (D) x 8 7/8 inches (H) (*))
Weight	Approx. 1.75 kg (3 7/8 lb)
Operating environment	Conforms to the operating environment of the main body.

- *: Size when the paper output tray is pulled out

Sort/Group

<Paper capacity>

Basis weight	Maximum number of stacked sheets	
	A4, 8$^1/_2$ x 11	Other than A4, 8$^1/_2$ x 11
60 to 90 g/m^2 (15 15/16 to 23 15/16 lb)	100 sheets	50 sheets

<Height of stacked sheets>

Basis weight	Maximum height of stacked sheets
60 to 90 g/m^2 (15 15/16 to 23 15/16 lb)	28 mm (1 1/8 inches)

NOTE

- **If either the number or height of stacked sheets reaches the specified value, "Tray paper full" is determined.**

<Paper size>

Type	Size
Regular size paper	A3, B4, A4, A4S, B5, B5S, A5S 11 x 17, 8$^1/_2$ x 14, 8$^1/_2$ x 11, 8$^1/_2$ x 11 S, 7$^1/_4$ x 10$^1/_2$, 7$^1/_4$ x 10$^1/_2$ S, 5$^1/_2$ x 8$^1/_2$, 5$^1/_2$ x 8$^1/_2$ S, 8K, 16KS, 16K
Custom size paper	Width: 139.7 mm to 297 mm (5 1/2 inches to 11 11/16 inches) Length: 182 mm to 431.8 mm (7 3/16 inches to 17 inches)

1.11 PI-507

Basic specifications

Items	Specifications
Name	Post inserter
Type	External type finisher
Document alignment	Center
Mode	Auto mode Manual mode
Power requirement	DC 24 V ±10% (supplied from the finisher)
Max. power consumption	Regulated on finisher system

Items	Specifications
Dimension	513 mm (W) x 635 mm (D) x 222 mm (H) (20 3/16 inches (W) x 25 inches (D) x 8 3/4 inches (H))
Weight	Approx. 12 kg (26 7/16 lb)
Operating environment	Conforms to the operating environment of the main body.

Auto mode

Items	Specifications	
Functions	Feeds paper to finisher automatically under the instruction from the main body.	
Post processing mode	Sort, group Sort offset, group offset Staple, punch (*1) Center staple (*2), Center fold (*2), Tri-fold (*2)	
Paper type	Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb)) Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb)) Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb)) Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb)) Thick 1+ (121 to 157 g/m^2 (32 3/16 to 41 3/4 lb)) Thick 2 (158 to 209 g/m^2 (42 to 55 5/8 lb)) Thick 3 (210 to 256 g/m^2 (55 7/8 to 68 1/8 lb)) Thick 4 (257 to 300 g/m^2 (68 3/8 to 79 13/16 lb)) Label sheet	
Paper capacity	Tray /Up	200 sheets (80 g/m^2 (21 1/4 lb)) or 30 mm (1 3/16 inches) or less in height
	Tray /Lw	200 sheets (80 g/m^2 (21 1/4 lb)) or 30 mm (1 3/16 inches) or less in height

- *1: Selectable when punch kit is installed
- *2: Selectable when finisher with SD is installed

<Paper size>

Type	Size	
	Tray /Up	Tray /Lw
Regular size paper	A4, A4S, B5, B5S, A5 8 1/2 x 11, 8 1/2 x 11 S, 7 1/4 x 10 1/2, 7 1/4 x 10 1/2 S, 5 1/2 x 8 1/2, 5 1/2 x 8 1/2 S, 16K, 16KS	SRA3, A3W, A3, B4, A4, A4S, B5, B5S, A5 12 1/4 x 18, 12 x 18, 11 x 17, 8 1/2 x 14, 8 1/2 x 11, 8 1/2 x 11 S, 7 1/4 x 10 1/2, 7 1/4 x 10 1/2 S, 5 1/2 x 8 1/2, 8K, 16KS, 16K
Custom size paper	Width: 182 mm to 320 mm (7 3/16 inches to 12 5/8 inches) Length: 139 mm to 297 mm (5 1/2 inches to 11 11/16 inches)	Width: 182 mm to 320 mm (7 3/16 inches to 12 5/8 inches) Length: 139 mm to 457.2 mm (5 1/2 inches to 18 inches)

Manual mode

Items	Specifications	
Functions	Feeds paper to finisher under the instruction from the operation section of PI.	
Post processing mode	Staple, punch (*1) Center staple (*2), Tri-fold (*2)	
Paper type	Thin paper (52 to 59 g/m^2 (13 13/16 to 15 11/16 lb)) Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb)) Plain paper+ (91 to 105 g/m^2 (24 3/16 to 27 15/16 lb)) Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb)) Thick 1+ (121 to 157 g/m^2 (32 3/16 to 41 3/4 lb)) Thick 2 (158 to 209 g/m^2 (42 to 55 5/8 lb)) Thick 3 (210 to 256 g/m^2 (55 7/8 to 68 1/8 lb)) Thick 4 (257 to 300 g/m^2 (68 3/8 to 79 13/16 lb)) Label sheet	
Paper capacity	Tray /Up	-
	Tray /Lw	200 sheets (80 g/m^2 (21 1/4 lb)) or 30 mm (1 3/16 inches) or less in height

- *1: Selectable when punch kit is installed
- *2: Selectable when finisher with SD is installed

<Paper size>

Type	Size	
	Tray /Up	Tray /Lw
Regular size paper	-	SRA3, A3W, A3, B4, A4, A4S, B5, B5S, A5 12 1/4 x 18, 12 x 18, 11 x 17, 8 1/2 x 14, 8 1/2 x 11, 8 1/2 x 11 S, 7 1/4 x 10 1/2, 7 1/4 x 10 1/2 S, 5 1/2 x 8 1/2, 8K, 16KS, 16K

1.12 FK-514/FK-515

Basic specifications

Items	Specifications	
Applicable lines	PSTN, PBX	
Protocol	Group 3 (compliant to ITU-T T.30) • ECM • F-code communication • Konica Minolta non-standard protocol: No • Group 4: No	
Maximum data rate	33,600 bps	
Coding method	MH, MR, MMR, JBIG	
Modulation method	V.27 ter V.29 (V.33): V.33 is for reception only. V.17 V.8 V.34	
Communication resolution	Normal	8 lines/mm × 3.85 lines/mm 200 dpi x 100 dpi
	Fine	8 lines/mm × 7.7 lines/mm 200 dpi x 200 dpi
	Super fine	8 lines/mm × 15.4 lines/mm (Reception only) 16 lines/mm × 15.4 lines/mm 400 dpi x 400 dpi
	Ultra fine	600 dpi x 600 dpi
Resolution conversion	At sending	Scanner: inch Density conversion: inch -> mm Communication: mm / inch (600 dpi only)
	At receiving (mm)	Density conversion: mm -> inch Print: inch
	At receiving (inch)	Density conversion: inch -> inch Print: inch
Automatic reduction at sending	A3 -> B4, A3 -> A4 and B4 -> A4 • Automatically reduced and sent in accordance with the recording paper size of remote station.	

Line connecting section

Items	Specifications
NCU type	A-A~, line control by silicon DAA
Connecting terminal	RJ11
Modem	Matsushita MMD-5020
Modem sending level	-10 to -15 dBm (Country spec)
DTMF sending level	-10 to -15 dBm (Country spec)
Receiving sensitivity	G3 reception: up to -48 dB Tone reception: up to -52 dB
Dialing signal	DP (10pps) and DTMF

1.13 CU-102

Basic specifications

Items	Specifications	
Name	Clean unit	
Type	Exhaust scrubber	
Suction system	Dual parallel fan	
Trapping system	UFP trap	UFP filter
UFP collection efficiency	UFP filter collection capacity: More than 99 %	
Maximum suction air volume	1.2 m^3/min (Avg. flow velocity: 0.1 m/sec)	
Exhaust direction	Exhaust downflow	
Power requirement	DC 24 V (supplied from the main body)	
Max. power consumption	17 W or less	
Dimension	480 mm (W) x 75 mm (D) x 314 mm (H) ($18^7/_8$ (W) x $3^1/_{16}$ (D) x $12^3/_8$ (H))	
Weight	Approx. 2.0 kg ($4^7/_{16}$ lb)	
Operating environment	Conforms to the operating environment of the main body.	

1.14 i-Option

1.14.1 Available function for i-Option

- The functions available for i-Option are as follows.

(1) List of advanced functions

Function	Overview	Required option
Voice guidance (*)	This function also helps people who have difficulty viewing the screen to carry out operations more smoothly via voice guidance. It is available on the Enlarge Display screen, Guidance screen, or Accessibility Settings screen. English and Japanese are available.	• LK-104
Searchable PDF	Allows you to paste transparent text data into a PDF file when converting scanned original data into PDF files, and create a searchable PDF file. This function automatically creates text information from scanned images using OCR character recognition technology.	• LK-105
Barcode font	Allows you to generate a bar code based on data sent to this machine from the ERP (Enterprise Resource Planning) system, and print it from this machine. You can directly print data without using the printer driver.	• LK-106
Unicode font	Allows you to print text information (unicode) of multiple languages sent to this machine from the ERP (Enterprise Resource Planning) system. You can directly print data without using the printer driver.	• LK-107
OCR font	OCR font can be used on this machine. OCR font is standardized font that enables text to be appropriately recognized when the OCR (Optical Character Recognition) is used.	• LK-108
Encryption PDF (Digital ID)	Allows you to encrypt the PDF using a user digital signature when sending a PDF file.	• LK-110
Searchable PDF (Fax RX Document)	Allows you to create a text searchable PDF file when converting a received fax into a PDF file using the Forward TX function or TSI Routing function and sending it to PC.	
OOXML File Conversion	Allows you to send or store the scanned original data by converting it into an OOXML (DOCX or XLSX) file. Also allows you to paste transparent text data and create a text searchable OOXML file. This function automatically creates text information from scanned images using OCR character recognition technology.	
Compact PDF (Print RX Document)	Allows you to select a file type as Compact PDF when fetching the data stored in the box of this machine using the printer driver and sending it by E-mail or sending it to PC.	
High image quality compact PDF	This function improves the image processing accuracy when creating a Compact PDF data. This function improves the reproducibility of the colored characters or lines. Also, it allows you to set the reversed characters as the texts to be searched.	
E-mail RX Print	Allows you to print the file attached to an E-mail from this machine when the E-mail has been sent to the address of this machine.	
ThinPrint function	Allows you to enable the ThinPrint function on this machine. ThinPrint is such a function allows you to make a speedy print by compressing the data or controlling the marginal zone when sending a print job from ThinPrint Engine (.print Engine) to ThinPrint Client (.print Client). This machine operates as ThinPrint Client (.print Client).	• LK-111
Ubiquitous Printing	Ubiquitous printing is a function that executes print jobs, which are spooled in an MFP through the user's computer once, from any MFP in a ubiquitous group that consists of multiple MFPs.	• LK-114
TPM (Trusted Platform Module)	TPM (Trusted Platform Module) is a hardware chip used for processing such as information encryption and decryption. Security enhancement is realized by encrypting confidential information such as certificates and passwords of this machine. The TPM key used for encrypting confidential information on the machine is saved in a dedicated storage space mounted on the TPM chip. No external devices can access the storage space and the confidential information can be kept in utmost security. In addition, for future possible replacement of the TPM chip, information required for restoring the TPM key can be saved for backup in a USB memory device.	• LK-115
Virus Scan Functions	To run the virus scan on a file which is to be read or written via the file system. The virus scan is to be ran on such a data that it is sent or received between the external cloud, PC or USB memory.	• LK-116
IP fax (SIP)	Sends and receives a fax via network communication without using a telephone line. This function is available between devices compatible with IP fax.	• LK-117
My Panel	Allows you to use the touch panel, which is customized only for you, through any MFP connected to the network. The touch panel customization settings are stored on the My Panel Manager server. If necessary, they can be changed on My Panel Manager.	• My Panel Manager Application license

Function	Overview	Required option
My Address	Allows you to use a dedicated address book through any MFP connected to the network. The dedicated address book is stored on the My Panel Manager server. If necessary, it can be edited on My Panel Manager.	• My Panel Manager Device license

- *: To use voice guidance, in addition to LK-104 license activation, optional Local Interface Kit EK-608 or EK-609 must be installed.

(2) Activation procedures of i-Option

For details of the activation procedures, refer to the followings.

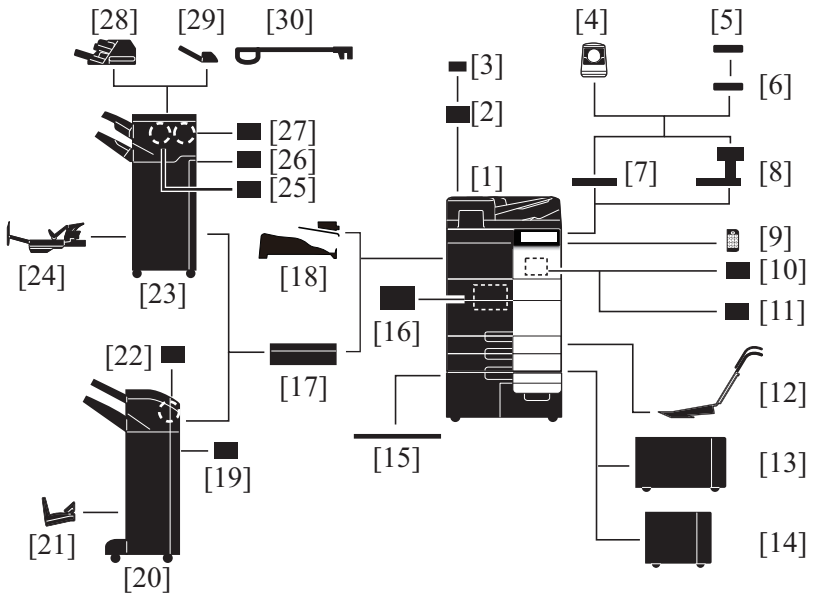
- Activation via Administrator Settings: License Settings.
- Activation via Service Mode: License Management - Activation

2. OVERALL COMPOSITION

2.1 SYSTEM CONFIGURATION

2.1.1 System configuration

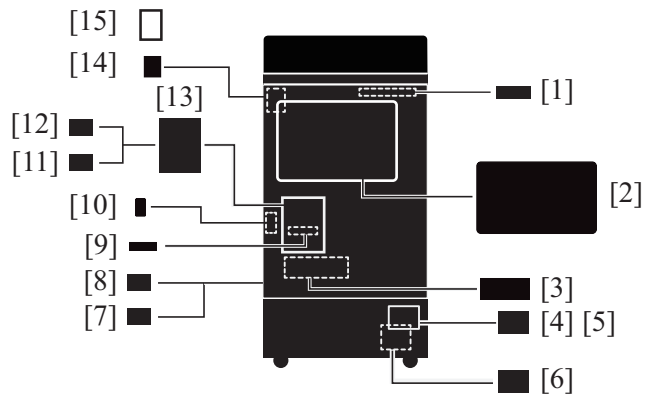
(1) System front view



[1]	bizhub 750i	[2]	Stamp Unit SP-501
[3]	Spare TX Marker Stamp 2	[4]	Authentication Unit AU-102
[5]	Authentication Unit AU-201S	[6]	Mount Kit MK-735
[7]	Working Table WT-506	[8]	Working Table WT-519
[9]	Keypad KP-102	[10]	Local Interface Kit EK-608
[11]	Local Interface Kit EK-609	[12]	Mount Kit MK-730
[13]	Large Capacity Unit LU-205	[14]	Large Capacity Unit LU-303
[15]	Heater HT-509	[16]	Keyboard Holder KH-102 (*1)
[17]	Relay Unit RU-519	[18]	Output Tray OT-514
[19]	Staple Kit SK-602	[20]	Finisher FS-539
[21]	Finisher FS-539SD	[22]	Punch Kit PK-524
[23]	Finisher FS-540	[24]	Finisher FS-540SD
[25]	Z Folding Unit ZU-609	[26]	Staple Kit SK-704
[27]	Punch Kit PK-526	[28]	Job Separator JS-602
[29]	Post Inserter PI-507	[30]	Assist Handle AH-101

- *1: Except for Japan

(2) System rear view



[1]	Condensation prevention heater HT-510 (*1)	[2]	Clean Unit CU-102
[3]	Security Kit SC-509	[4]	Condensation prevention heater power supply box MK-719 (*1)

[5]	Power Supply BOX MK-734 (*2)	[6]	Transformer kit TK-101
[7]	Fax Kit FK-514	[8]	Fax Kit FK-514
[9]	Expanded Memory Unit EM-908	[10]	Intelligent media sensor IM-102
[11]	Fax Kit FK-515 (*3)	[12]	Fax Kit FK-515 (*3)
[13]	Fax Mount Kit MK-742 (*3)	[14]	Upgrade Kit (wireless) UK-221
[15]	i-Option LK-104/105/106/107/108/ 110/111/114/115/116/117	-	-

- *1: Japan only
- *2: Except for Japan
- *3: Japan, North America and Asia Pacific only

2.1.2 Optional configuration

(1) Combination configuration of main body and paper feed options

1	Main body	LU-205
2	Main body	LU-303

(2) Combination configuration of main body and post-processing options

1	Main body	RU-519	FS-539	PK-524	SK-602
2	Main body	RU-519	FS-539SD	PK-524	SK-602
3	Main body	RU-519	FS-540	PK-526	SK-704
4	Main body	RU-519	FS-540SD	PK-526	SK-704

(3) Combination of main body and fax kit

(a) Japan, North America, Asia Pacific

1	Main body	FK-514 (main line)	FK-514 (line 2)	MK-742	FK-515 (line 3)	FK-515 (line 4)

(b) Europe

1	Main body	FK-514 (main line)	FK-514 (line 2)

(4) Combination of main body (scanner section) and heater

(a) Japan

1	Main body (scanner section)	MK-719	HT-510

(b) International

- No optional settings

(5) Combination configuration of paper feed options and dehumidifier heater

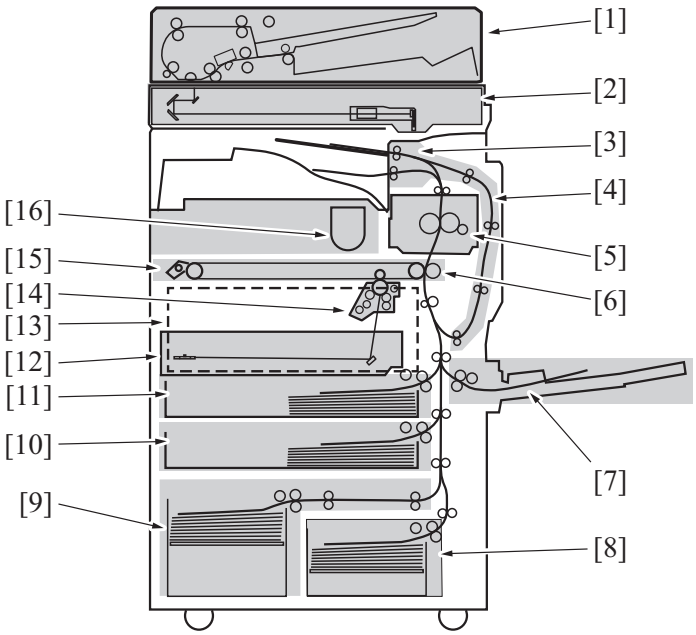
(a) Japan

1	Tray 3/4 (standard equipment dehumidifier heater)	HT-509	LU-205 (standard equipment dehumidifier heater)	TK-101
2	Tray 3/4 (standard equipment dehumidifier heater)	HT-509	LU-303 (standard equipment dehumidifier heater)	TK-101

(b) International

1	Tray 3/4	HT-509	MK-734	LU-205 (standard equipment dehumidifier heater)	TK-101
2	Tray 3/4	HT-509	MK-734	LU-303 (standard equipment dehumidifier heater)	TK-101

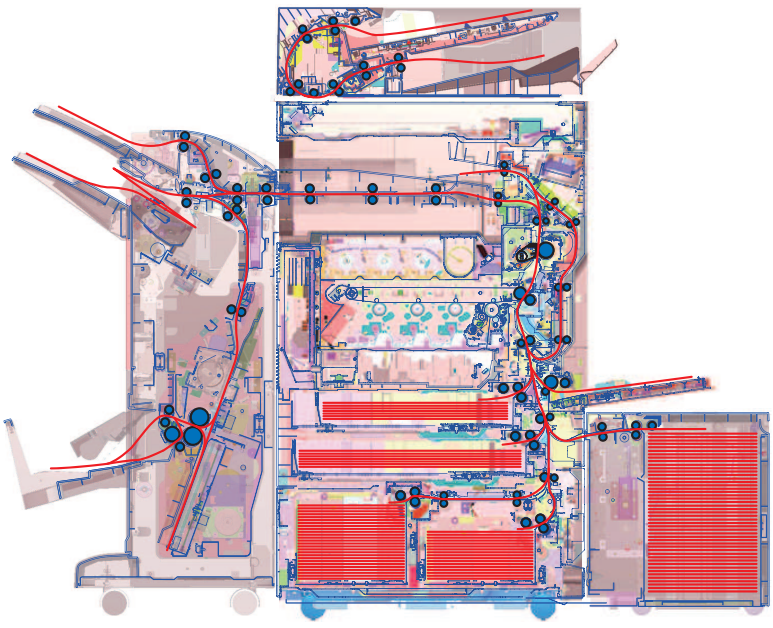
2.2 SECTION CONFIGURATION



[1]	Automatic document feeder (Standard)	[2]	Scanner section
[3]	Paper exit/reverse section	[4]	Duplex section
[5]	Fusing Section	[6]	2nd transfer section
[7]	Paper feed section (Manual bypass tray)	[8]	Paper feed section (Tray 4)
[9]	Paper feed section (Tray 3)	[10]	Paper feed section (Tray 2)
[11]	Paper feed section (Tray 1)	[12]	Write section (PH section)
[13]	Toner collecting section inside front door (Dotted lines)	[14]	Photoconductor section/Developing section
[15]	1st transfer section	[16]	Toner supply section

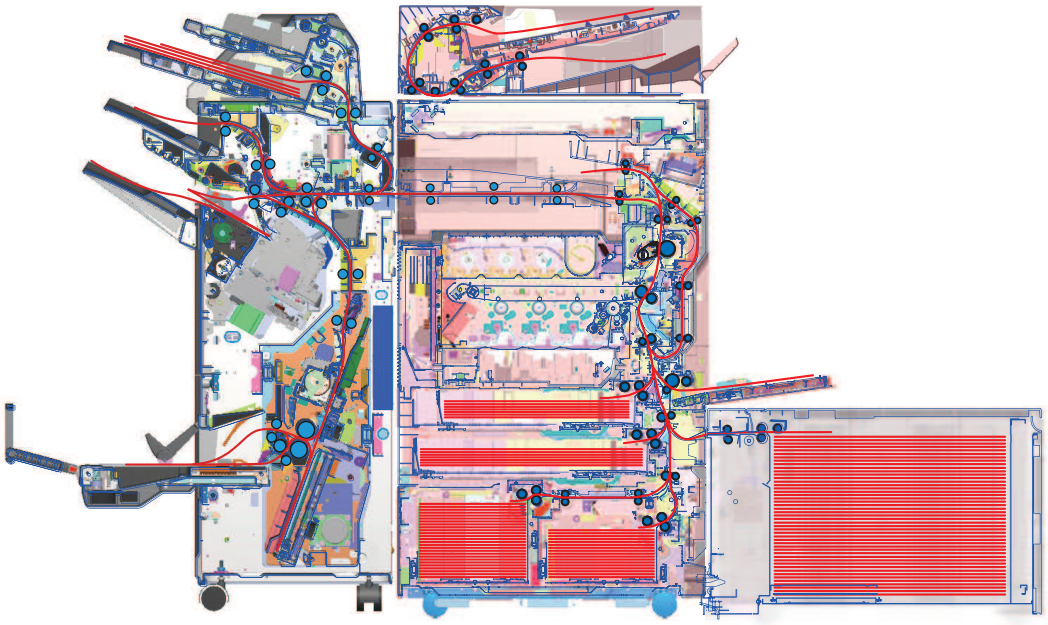
2.3 PAPER PATH

Main body + RU-519 + FS-539SD + LU-303



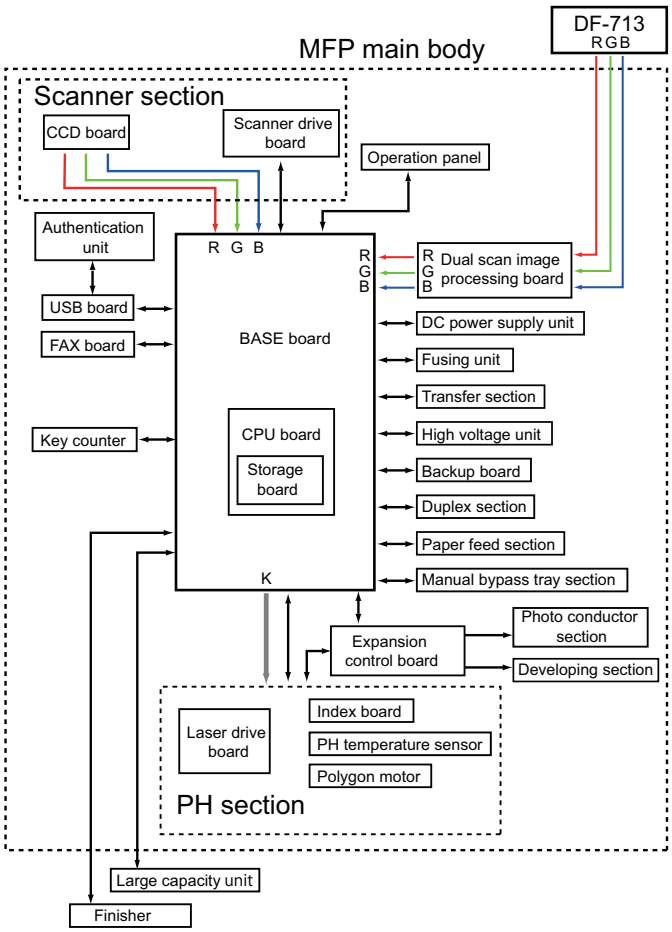
- List of drive rollers and sensors in the paper path

Main body + RU-519 + FS-540SD + LU-205

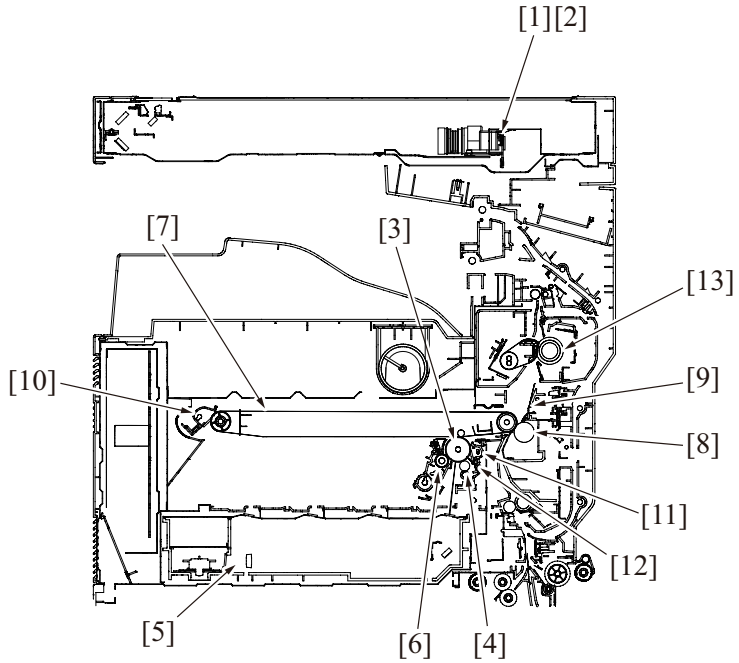


- List of drive rollers and sensors in the paper path

2.4 CONTROL BLOCK DIAGRAM

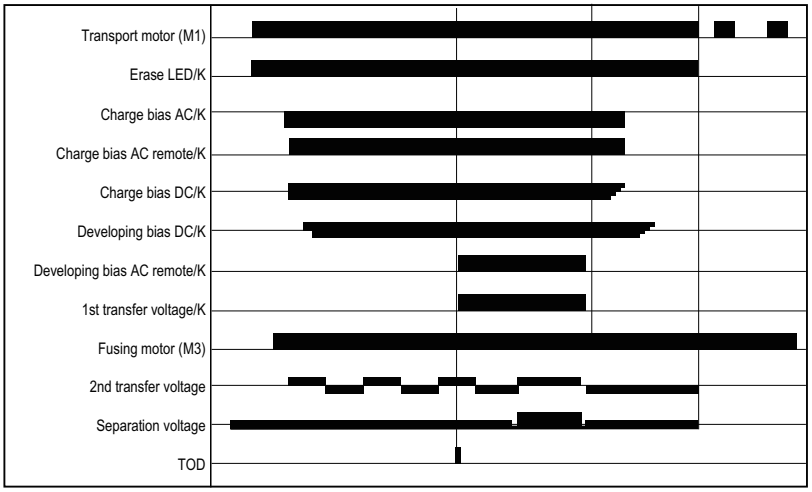


2.5 IMAGE CREATION PROCESS



[1]	Photoelectric conversion	The light reflected off the surface of the original is separated into different colors using the color filters (R, G, and B); CCD then converts it into a corresponding electric signal and outputs the signal to the IR imaging processing section.
[2]	Printer image processing	• The electric signal is converted to digital image signals. After going through some corrections, the VIDEO signal is output to the printer image processing section. • D/A conversion will be performed after the VIDEO signal is corrected. This data will control the emission of the laser diode.
[3]	Photoconductor	The image of the original projected onto the surface of the photoconductor is changed to a corresponding electrostatic latent image.
[4]	Charging roller	Supply negative charge on the photoconductor.
[5]	Laser exposure	Expose photoconductor to a laser beam to develop electrostatic latent image.
[6]	Developing	• The toner, agitated and negatively charged in the developer mixing chamber, is attracted onto the electrostatic latent image formed on the surface of the photoconductor. It is thereby changed to a visible, developed image. • AC and DC negative bias voltages are applied to the developing roller, thereby preventing toner from sticking to the background image portion.
[7]	1st transfer	A DC positive voltage is applied to the backside of the transfer belt, thereby allowing the visible, developed image on the surface of the photoconductor to be transferred onto the transfer belt.
[8]	2nd transfer	A DC positive voltage is applied to the backside of the paper, thereby allowing the visible, developed image on the surface of the transfer belt to be transferred onto the paper.
[9]	Separation	The paper, which has undergone the 2nd transfer process, is neutralized so that it can be properly separated from the transfer belt by the paper separator claws.
[10]	Transfer belt cleaning	Residual toner on the surface of the transfer belt is collected for cleaning by cleaning blade.
[11]	Main erase	The surface of the photoconductor is irradiated with light, which neutralizes any surface potential remaining on the surface of the photoconductor.
[12]	Photoconductor cleaning	The residual toner left on the surface of the photoconductor is scraped off.
[13]	Fusing	The visible toner image transferred onto the surface of the paper is melted by the heat of the fusing roller and fixed to the paper by pressure.

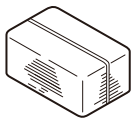
2.6 IMAGE FORMING CONTROL



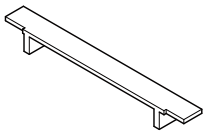
D SERVICE TOOL

1. bizhub 750i

Service material list

Name	Shape	Parts No.	Remarks
Cleaning pad (30 pcs)		A5AWP001 ##	30pcs/1 pack
Hydro-wipe		65AA-9920	10pcs/1pack

CE tool list

Tool name	Shape	Quantity	Parts No.	Remarks
Color chart		1	9J06 PJP1 ##	
Monochrome chart		1	A79J PJP0 ##	
Scanner positioning tool		1	A79J PJG0 ##	

2. Utility tool

2.1 IC card information setting tool of card reader

2.1.1 Outline

- Before connecting a card reader to the MFP, it is necessary to prepare an IC card information setting file with the loadable driver.
- To prepare this file, a tool is used for preparing the IC card information setting file for use in each card reader.

Card reader	IC card information setting file preparation tool
AU-201S	Auth Device Tool Advanced for AU-201/AU-201S
SCL-010	Auth Device Tool Advanced for SCL-010
OMNIKEY 5427CK (AU-205H)	Auth Device Advanced for 5427CK (AU-205H)
YSoft	Auth Device Tool Advanced for YSoft CRv2/YSoft CRv3

System requirement of tools

OS	• Windows 7 • Windows 8.1 • Windows 10 Support both 32-bit (x86) and 64-bit (x64) editions.
Library (Any of these needs to be installed)	• Microsoft .Net Framework2.0 SP2 • Microsoft .Net Framework3.0 SP2 • Microsoft .Net Framework3.5 SP1 • Microsoft .Net Framework3.5.1
Hard disk	3 MB or more free space is required
Display	800 x 600 pixels,16 bit full color

2.1.2 IC card information setting procedures

(1) Setting IC card information in the loadable driver in advance

(a) Auth Device Tool Advanced for AU-201/AU-201S

1. Obtain the loadable driver (ICC_LDR.tar) for use in AU-201S that is compatible with the type of card used.
2. Start the Auth Device Tool Advanced for AU-201/AU-201S.
3. Select [Import Loadable Driver] from [File] and select the loadable driver.
4. Select card type.
5. If the card is good for detailed settings, click [Detail Setting/Extra Data Setting].
6. Input the necessary extended data. (For details, ask the IC card administrator.)
7. Select Loadable Driver in [Export Format] and click [Export].
8. Select the loadable driver to be updated and the output location of the loadable driver and click [OK].
9. Copy the output loadable driver (ICC_LDR.tar) to the root directory of the USB memory.
   NOTE
   - **Please do not save any other data in the USB memory.**
10. Call the Service Mode to the screen of the MFP.
11. Select [System 2] -> [Driver Install] -> [Install].
12. Connect the USB memory in which the loadable driver has been saved to the USB port on the side of the control panel.
13. Select [Loadable driver] and touch the [Start] to install the loadable driver.
14. Remove the USB memory and, accessing [Billing Setting] -> [Authentication Device 2], select [Card].
15. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.
16. Set the authentication user.

(b) Auth Device Tool Advanced for SCL-010

1. Obtain the loadable driver (ICC_LDR.tar) for use in SCL-010 that is compatible with the type of card used.
2. Start the Auth Device Tool Advanced for SCL-010.
3. Select card type.
4. Select Loadable Driver in [Export Format] and click [Export].
5. Select the loadable driver to be updated and the output location of the loadable driver and click [OK].
6. Copy the output loadable driver (ICC_LDR.tar) to the root directory of the USB memory.
   NOTE
   - **Please do not save any other data in the USB memory.**
7. Call the Service Mode to the screen of the MFP.
8. Select [System 2] -> [Driver Install] -> [Install].
9. Connect the USB memory in which the loadable driver has been saved to the USB port on the side of the control panel.
10. Select [Loadable driver] and touch the [Start] to install the loadable driver.
11. Remove the USB memory and, accessing [Billing Setting] -> [Authentication Device 2], select [Card].
12. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.
13. Set the authentication user.

(c) Auth Device Tool Advanced for 5427CK (Setting: TypeA/HID Prox/Multiple)

NOTE

- **Selecting [Multiple] makes cards of HID Prox, HID iCLASS and TypeA available at the same time.**

1. Obtain the loadable driver (ICC_LDR.tar) for use in OMNIKEY 5427CK (AU-205H) that is compatible with the type of card used.
2. Start the Auth Device Tool Advanced for 5427CK (AU-205H).
3. Select card type. (Except for HID iCLASS)
4. Select Loadable Driver in [Export Format] and click [Export].
5. Select the loadable driver to be updated and the output location of the loadable driver and click [OK].
6. Copy the output loadable driver (ICC_LDR.tar) to the root directory of the USB memory.

NOTE
- **Please do not save any other data in the USB memory.**

7. Call the Service Mode to the screen of the MFP.
8. Select [System 2] -> [Driver Install] -> [Install].
9. Connect the USB memory in which the loadable driver has been saved to the USB port on the side of the control panel.
10. Select [Loadable driver] and touch the [Start] to install the loadable driver.
11. Remove the USB memory and, accessing [Billing Setting] -> [Authentication Device 2], select [Card].
12. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.
13. Set the authentication user.

(d) Auth Device Tool Advanced for 5427CK (HID iCLASS)

1. Obtain the loadable driver (ICC_LDR.tar) for use in OMNIKEY 5427CK (AU-205H) that is compatible with the type of card used.
2. Start the Auth Device Tool Advanced for 5427CK (AU-205H).
3. Select HID iCLASS.
4. Click [Detail Setting].
5. Set the card ID length.
6. Select Loadable Driver in [Export Format] and click [Export].
7. Select the loadable driver to be updated and the output location of the loadable driver and click [OK].
8. Copy the output loadable driver (ICC_LDR.tar) to the root directory of the USB memory.

NOTE
- **Please do not save any other data in the USB memory.**

9. Call the Service Mode to the screen of the MFP.
10. Select [System 2] -> [Driver Install] -> [Install].
11. Connect the USB memory in which the loadable driver has been saved to the USB port on the side of the control panel.
12. Select [Loadable driver] and touch the [Start] to install the loadable driver.
13. Remove the USB memory and, accessing [Billing Setting] -> [Authentication Device 2], select [Card].
14. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.
15. Set the authentication user.

(e) Auth Device Tool Advanced for YSoft CRv2/YSoft CRv3

NOTE
- **If a YSoft card reader is used, when performing authentication, the default setting for the loadable driver makes the card to be informed as an HID Prox card regardless of which type you are using. To change the card type when performing authentication, using Auth Device Tool Advanced for YSoft CRv2/YSoft CRv3 to choose a corresponding card type to be reported to the authentication program from the following list.**

Card Reader Name	Readable Card Type	IC Card Information Setting (card type to be reported)
KM USB Reader v2 MultiReader HF	Mifare	TypeA (1) (*1)
KM USB Reader v2 Legic Advant	LEGIC	TypeA (1) (*1)
KM USB Reader v2 ASK FSK 125kHz	EM4100, EM4102, RFID 125kHz	EM4100/ EM4102/ RFID 125kHz
KM USB Reader v2 Mot/Ind W26	Indala	Indala
KM USB Reader v2 HID Prox	HID Prox	HID Prox (1) (*2)
KM USB Reader v2 HID iCLASS	HID iCLASS	HID iCLASS (1) (*3)
KM USB Reader v3 MF & Legic	LEGIC	TypeA (1) (*1)
KM USB Reader v3 Indala	Indala	Indala
KM USB Reader v3 MF+	EM4100, EM4102, RFID 125kHz	EM4100/ EM4102/ RFID 125kHz
	Mifare	TypeA (1) (*1)
	HID Prox	HID Prox (1) (*2)
	HID iCLASS	HID iCLASS (1) (*3)

- ***1: The content (ID) to be read from the type A card setting differs from which to be read by using AU-201/AU-201S.**
- ***2: The content (ID) to be read from the HID Prox card setting differs from which to be read by using AU-201H.**
- ***3: The content (ID) to be read from the HID iCLASS card setting differs from which to be read by using AU-202H.**

1. Obtain the loadable driver (ICC_LDR.tar) for the YSoft card reader.
2. Start the Auth Device Tool Advanced for YSoft CRv2/YSoft CRv3.
3. Select card type.
4. Select Loadable Driver in [Export Format] and click [Export].
5. Select the loadable driver to be updated and the output location of the loadable driver and click [OK].
6. Copy the output loadable driver (ICC_LDR.tar) to the root directory of the USB memory.

NOTE
- **Please do not save any other data in the USB memory.**

7. Call the Service Mode to the screen of the MFP.
8. Select [System 2] -> [Driver Install] -> [Install].
9. Connect the USB memory in which the loadable driver has been saved to the USB port on the side of the control panel.
10. Select [Loadable driver] and touch the [Start] to install the loadable driver.
11. Remove the USB memory and, accessing [Billing Setting] -> [Authentication Device 2], select [Card].
12. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.
13. Set the authentication user.

(2) Installing IC card information setting only in the MFP afterward

(a) Preparations

- Using the Data Administrator, register the target MFP in advance.
- Set the MFP into a state in which it can communicate over the network.
- Accessing Web Connection -> [Administrator mode] -> [Security Settings], issue a self-signed certificate from [Device Certificate Setting] and install it.
- Accessing Web Connection -> [Administrator mode] -> [Network Settings], set use of [SSL/TLS] in [OpenAPI] to “SSL Only”.

NOTE

- **Only one loadable device driver must be stored in the USB memory, and please do not save any other data in the USB memory.**

(b) Auth Device Tool Advanced for AU-201/AU-201S

1. Install the loadable driver for use in AU-201/AU-201S that is compatible with the type of card used.
2. Start the Auth Device Tool Advanced for AU-201/AU-201S.
3. Select card type.
4. If the card is good for detailed settings, click [Detail Setting/Extra Data Setting].
5. Input the necessary extended data. (For details, ask the IC card administrator.)
6. Select IC card information setting file in [Export Format] and click [Export].
7. Set the encrypted password.
8. Save the file (iccConfig.bin).
9. Start the Data Administrator, and select the target MFP.
10. In the [Settings for multiple device] tab, click [Batch setting of IC Card Information].
11. Using [Browse], select the file saved in step 8.
12. Click [Open] and type the encrypted password set in step 7.
13. Click [Next] and select the device to be imported.
14. Click [Start] and write the file in the MFP.
15. Check that “Normal” is shown in [Status].
16. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.
17. Set the authentication user.

(c) Auth Device Tool Advanced for SCL-010

1. Install the loadable driver for SCL-010 to the MFP.
2. Start the Auth Device Tool Advanced for SCL-010.
3. Select card type.
4. Select IC card information setting file in [Export Format] and click [Export].
5. Set the encrypted password.
6. Save the file (iccConfig.bin).
7. Start the Data Administrator, and select the target MFP.
8. In the [Settings for multiple device] tab, click [Batch setting of IC Card Information].
9. Using [Browse], select the file saved in step 6.
10. Click [Open] and type the encrypted password set in step 5.
11. Click [Next] and select the device to be imported.
12. Click [Start] and write the file in the MFP.
13. Check that “Normal” is shown in [Status].
14. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.
15. Set the authentication user.

(d) Auth Device Tool Advanced for 5427CK (Setting: TypeA/HID Prox/Multiple)

1. Install the loadable driver for the OMNIKEY 5427CK (AU-205H) on the MFP.
2. Start the Auth Device Tool Advanced for 5427CK (AU-205H).
3. Select card type. (Except for HID iCLASS)
4. Select IC card information setting file in [Export Format] and click [Export].
5. Set the encrypted password.
6. Save the file (iccConfig.bin).
7. Start the Data Administrator, and select the target MFP.
8. In the [Settings for multiple device] tab, click [Batch setting of IC Card Information].
9. Using [Browse], select the file saved in step 6.
10. Click [Open] and type the encrypted password set in step 5.
11. Click [Next] and select the device to be imported.
12. Click [Start] and write the file in the MFP.
13. Check that “Normal” is shown in [Status].
14. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.
15. Set the authentication user.

(e) Auth Device Tool Advanced for 5427CK (HID iCLASS)

1. Install the loadable driver for the OMNIKEY 5427CK (AU-205H) on the MFP.
2. Start the Auth Device Tool Advanced for 5427CK (AU-205H).
3. Select HID iCLASS.
4. Click [Detail Setting].
5. Set the card ID length.
6. Select IC card information setting file in [Export Format] and click [Export].
7. Set the encrypted password.
8. Save the file (iccConfig.bin).
9. Start the Data Administrator, and select the target MFP.
10. In the [Settings for multiple device] tab, click [Batch setting of IC Card Information].
11. Using [Browse], select the file saved in step 8.

12. Click [Open] and type the encrypted password set in step 7.
13. Click [Next] and select the device to be imported.
14. Click [Start] and write the file in the MFP.
15. Check that “Normal” is shown in [Status].
16. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.
17. Set the authentication user.

(f) Auth Device Tool Advanced for YSoft CRv2/YSoft CRv3

NOTE

- **If a YSoft card reader is used, when performing authentication, the default setting for the loadable driver makes the card to be informed as an HID Prox card regardless of which type you are using. To change the card type when performing authentication, using Auth Device Tool Advanced for YSoft CRv2/YSoft CRv3 to choose a combination of corresponding card types to be reported to the authentication program from the following list.**

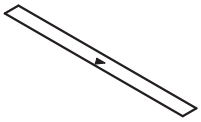
Card Reader Name	Readable Card Type	IC Card Information Setting (card type to be reported)
KM USB Reader v2 MultiReader HF	Mifare	TypeA (1) (*1)
KM USB Reader v2 Legic Advant	LEGIC	TypeA (1) (*1)
KM USB Reader v2 ASK FSK 125kHz	EM4100, EM4102, RFID 125kHz	EM4100/ EM4102/ RFID 125kHz
KM USB Reader v2 Mot/Ind W26	Indala	Indala
KM USB Reader v2 HID Prox	HID Prox	HID Prox (1) (*2)
KM USB Reader v2 HID iCLASS	HID iCLASS	HID iCLASS (1) (*3)
KM USB Reader v3 MF & Legic	LEGIC	TypeA (1) (*1)
KM USB Reader v3 Indala	Indala	Indala
KM USB Reader v3 MF+	EM4100, EM4102, RFID 125kHz	EM4100/ EM4102/ RFID 125kHz
	Mifare	TypeA (1) (*1)
	HID Prox	HID Prox (1) (*2)
	HID iCLASS	HID iCLASS (1) (*3)

- ***1: The content (ID) to be read from the type A card setting differs from which to be read by using AU-201/AU-201S.**
- ***2: The content (ID) to be read from the HID Prox card setting differs from which to be read by using AU-201H.**
- ***3: The content (ID) to be read from the HID iCLASS card setting differs from which to be read by using AU-202H.**

1. Install the loadable driver for the YSoft card reader to the MFP.
2. Start the Auth Device Tool Advanced for YSoft CRv2/YSoft CRv3.
3. Select card type.
4. Select IC card information setting file in [Export Format] and click [Export].
5. Set the encrypted password.
6. Save the file (iccConfig.bin).
7. Start the Data Administrator, and select the target MFP.
8. In the [Settings for multiple device] tab, click [Batch setting of IC Card Information].
9. Using [Browse], select the file saved in step 6.
10. Click [Open] and type the encrypted password set in step 5.
11. Click [Next] and select the device to be imported.
12. Click [Start] and write the file in the MFP.
13. Check that “Normal” is shown in [Status].
14. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.
15. Set the authentication user.

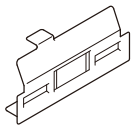
3. DF-713

DF tool list

Tool name	Shape	Quantity	Parts No.	Remarks
DF reading chart		1	9J06 PJG1 ##	
DF reading chart (for Duplex)		1	A782 9450 ##	

4. IM-102

IM tool list

Tool name	Shape	Quantity	Parts No.	Remarks
Adjustment jig (reference paper holder)		1	AC8X R701 ##	

E MAINTENANCE

1. Concept of maintenance

Concept of periodical maintenance

- Cleaning/replacement cycle for each maintenance item of main body/options can be evaluated with the total counter or each life counter value of [Service Mode] -> [Counter] -> [Life].
- Make sure to replace all maintenance parts to new ones. Reusing of the old parts may cause an image failure or other troubles.

Concept of consumable/part replacement time

- The replacement time for each consumable and part is available from [Service Mode] -> [Counter] -> [Life].
- The replacement time means the standard replacement time when prints are made under the conditions as defined in the another section, specified conditions for replacement time. The actual replacement time may vary depending on how the machine is used or the environment.
- “M” refers to the rotation time of each unit.

Consumables/parts name	Field standard yield (*1)	Replacement time (*2)	Life stop (*2)
Drum unit/K	260,000 sheets	4,707M	4,976M
Developing unit/K	1,000,000 sheets	1,000,000 counts	1,010,000 counts
Transfer belt unit	330,000 sheets	11,213M	12,232M
Transfer roller	1,000,000 sheets	33,976M	34,964M
Fusing unit	520,000 sheets	520,000 sheets	546,000 sheets
Toner filter	330,000 sheets	330,000 counts	345,000 counts

- *1: For details of specified conditions of field standard yield, see the following tables.
  *2: The replacement time changes depending on the setting of the replacement timing intelligent control. See Replacement timing Intelligent Control of Developing unit.

Specified conditions of field standard yield

Japan

Items		bizhub 750i
Printing	Black	8 P/J
Paper size ratio		A4S: 40%
Coverage		6%
Average print volume/month	Black	16,500 prints/month

North America

Items		bizhub 750i
Printing	Black	8 P/J
Paper size ratio		Letter S: 7%
Coverage		6%
Average print volume/month	Black	11,340 prints/month

Europe

Items		bizhub 750i
Printing	Black	8 P/J
Paper size ratio		A4S: 7%
Coverage		6%
Average print volume/month	Black	14,300 prints/month

2. Periodical replacement parts list

2.1 bizhub 750i

Section	Parts name	Parts No.	Qt.	Replacing cycle	Descriptions	Ref. page
Tray 1	Tray 1 pick-up roller	A64J 5642 ##	1	300,000	(*1) (*2)	E.3.1.1 Replacing the tray 1 pick-up roller, tray 1 feed roller, tray 1 separation roller
	Tray 1 feed roller	A64J 5641 ##	1	300,000		
	Tray 1 separation roller	AA2J 5600 ##	1	300,000		
Tray 2	Tray 2 pick-up roller	A64J 5642 ##	1	300,000	(*1) (*2)	E.3.1.2 Replacing the tray 2 pick-up roller, tray 2 feed roller, tray 2 separation roller
	Tray 2 feed roller	A64J 5641 ##	1	300,000		
	Tray 2 separation roller	AA2J 5600 ##	1	300,000		
Tray 3	Tray 3 pick-up roller	A64J 5642 ##	1	300,000	(*1) (*2)	E.3.2.1 Replacing the tray 3 pick-up roller, feed roller, separation roller
	Tray 3 feed roller	A64J 5641 ##	1	300,000		
	Tray 3 separation roller	AA2J 5600 ##	1	300,000		
Tray 4	Tray 4 pick-up roller	A64J 5642 ##	1	300,000	(*1) (*2)	E.3.2.2 Replacing the tray 4 pick-up roller, feed roller, separation roller
	Tray 4 feed roller	A64J 5641 ##	1	300,000		
	Tray 4 separation roller	AA2J 5600 ##	1	300,000		
Manual bypass tray	Bypass pick-up roller	A5C1 5622 ##	1	200,000	(*1) (*2)	E.3.1.3 Replacing the manual bypass tray pick-up roller, manual bypass tray feed roller, manual bypass tray separation roller assy
	Manual bypass tray feed roller	A00F 6232 ##	1	200,000		
	Manual bypass tray separation roller assy	AA7N 5911 ##	1	200,000		
Processing section	Toner cartridge/K	-	1	40,000	(*3)	E.3.1.4 Replacing the toner cartridge
	Drum unit/K	-	1	260,000	(*3) (*4)	E.3.1.5 Replacing the drum unit
	Developing unit/K	-	1	1,000,000	(*4)	E.3.1.6 Replacing the developing unit
	Toner filter	A161 R728 ##	1	330,000	(*4)	E.3.1.7 Replacing the toner filter
	Waste toner box	AD1Y 0Y1 (Japan, North America) AD1Y WY1 (Except for Japan and North America)	1	300,000	(*3) (*4)	E.3.1.8 Replacing the waste toner box
Image transfer section	Transfer Belt Unit	AC74 R701 ##	1	330,000	(*4)	E.3.1.9 Replacing the transfer belt unit
	Transfer roller unit	AA2J R720 ##	1	1,000,000	(*4)	E.3.1.10 Replacing the transfer roller unit
Fusing Section	Fusing unit	ACKN R708 ## (100V) ACKN R709 ## (120V) ACKN R710 ## (220-240V)	1	520,000	(*4)	E.3.1.11 Replacing the fusing unit

*1: Life counter value
*2: Replace these parts at the same time.
*3: The parts can be replaced either by user or service engineer.
*4: Field standard yield

2.2 DF-713

Section	Part name	Parts No.	Qt.	Replacing cycle	Descriptions	Ref. page
Dual scan document feeder	Pick-up roller	9J07 3301 ##	2	200,000	(*1) (*2)	E.3.3.1 Replacing the pick-up roller/feed roller
	Feed roller	A00J 5636 ##	1	200,000		
	Separation roller	9J07 3409 ##	1	200,000		E.3.3.2 Replacing the separation roller

*1: Life counter value
*2: Replace these parts at the same time.

2.3 LU-205

Part name	Parts No.	Qt.	Replacing cycle	Descriptions	Ref. page
Pick-up roller	A5C1 5622 ##	1	300,000	(*1) (*2)	E.3.4.1 Replacing the pick-up roller

Part name	Parts No.	Qt.	Replacing cycle	Descriptions	Ref. page
Feed roller	A00J 5636 ##	1	300,000		E.3.4.2 Replacing the feed roller
Separation roller	A00J 5636 ##	1	300,000		E.3.4.3 Replacing the separation roller

- *1: Actual replacement cycle (life counter value)
  *2: Replace these parts at the same time.

2.4 LU-303

Part name	Parts No.	Qt.	Replacing cycle	Descriptions	Ref. page
Pick-up roller	A5C1 5622 ##	1	300,000	(*1) (*2)	E.3.5.1 Replacing the pick-up roller
Feed roller	A00J 5636 ##	1	300,000		E.3.5.2 Replacing the feed roller
Separation roller	A00J 5636 ##	1	300,000		E.3.5.3 Replacing the separation roller

- *1: Actual replacement cycle (life counter value)
  *2: Replace these parts at the same time.

2.5 FS-539/FS-539SD

Part name	Parts No.	Qt.	Replacing cycle	Descriptions	Ref. page
Paddle (finisher)	AAR4 PP83 ##	2	2,000,000	(*)	E.3.6.1 Replacing the paddle
	A87G PP0X ##	1	2,000,000		
Upper paddle (saddle unit)	A3ER PP38 ##	1	2,000,000	(*)	E.3.6.2 Replacing the upper paddle (saddle section)
Lower paddle (saddle unit)	A3ER PP7Y ##	4	2,000,000	(*)	E.3.6.3 Replacing the lower paddle (saddle section)

- *: Actual replacement cycle (life counter value)

2.6 FS-540/FS-540SD

Part name	Parts No.	Qt.	Replacing cycle	Descriptions	Ref. page
Paddle (finisher)	AAR5 PPE3 ##	2	2,000,000	(*)	E.3.7.1 Replacing the paddle
Upper paddle (saddle unit)	A3ER PP38 ##	1	2,000,000	(*)	E.3.7.2 Replacing the upper paddle (saddle section)
Lower paddle (saddle unit)	A3ER PP7Y ##	4	2,000,000	(*)	E.3.7.3 Replacing the lower paddle (saddle section)

- *: Actual replacement cycle (life counter value)

2.7 PI-507

Part name	Parts No.	Qt.	Replacing cycle	Descriptions	Ref. page
Feed roller/Lw	13QN R705 ##	1	100,000	(*)	E.3.8.1 Replacing the pick-up roller/Lw, feed roller/Lw
Separation roller/Lw	13QN R704 ##	1	100,000	(*)	E.3.8.2 Replacing the separation roller/Lw, Torque limiter/Lw
Pick-up roller/Lw	50BA R701 ##	1	200,000	(*)	E.3.8.1 Replacing the pick-up roller/Lw, feed roller/Lw
Torque limiter/Lw	13QN 4073 ##	1	600,000	(*)	E.3.8.2 Replacing the separation roller/Lw, Torque limiter/Lw

- *: Fixed parts counter value

3. Periodical replacement procedure

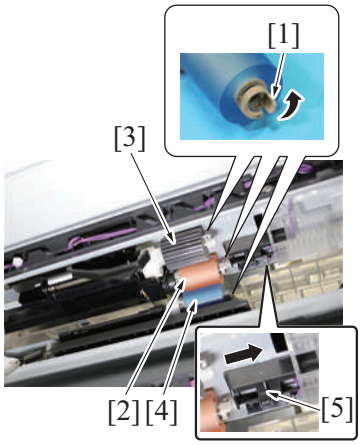
NOTE

- **The alcohol described in the cleaning procedure of maintenance represents the isopropyl alcohol.**

3.1 bizhub 750i

3.1.1 Replacing the tray 1 pick-up roller, tray 1 feed roller, tray 1 separation roller

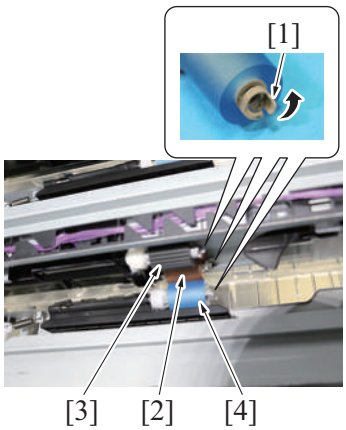
1. Open the right door.
2. Remove the tray 1.
   F.5.1.24 Tray 1
3. Remove the tray 2.
   F.5.1.25 Tray 2



4. Release the tab [1] of each roller, and remove the tray 1 feed roller [2], tray 1 pick-up roller [3] and tray 1 separation roller [4].
   NOTE
   - **Remove the tray 1 feed roller [2] by sliding the cover [5].**
5. To reinstall, reverse the order of removal.
6. Select [Service Mode] -> [Counter] -> [Life] and clear the count of [Tray 1].

3.1.2 Replacing the tray 2 pick-up roller, tray 2 feed roller, tray 2 separation roller

1. Open the right door.
2. Remove the tray 1.
   F.5.1.24 Tray 1
3. Remove the tray 2.
   F.5.1.25 Tray 2

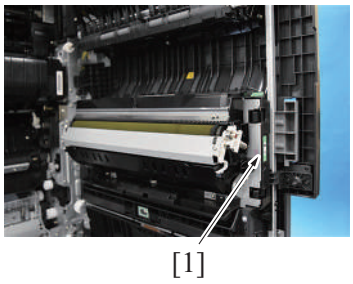


4. Release the tab [1] of each roller, and remove the tray 2 feed roller [2], tray 2 pick-up roller [3] and tray 2 separation roller [4].
5. To reinstall, reverse the order of removal.
6. Select [Service Mode] -> [Counter] -> [Life] and clear the count of [Tray 2].

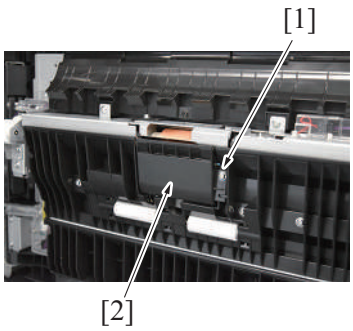
3.1.3 Replacing the manual bypass tray pick-up roller, manual bypass tray feed roller, manual bypass tray separation roller assy

1. Open the right door.

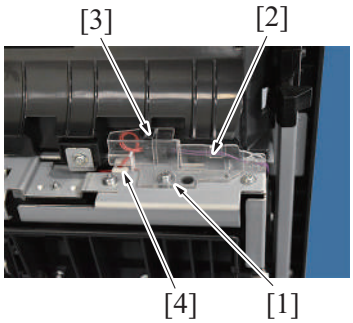
2. Open the 2nd transfer unit [1].



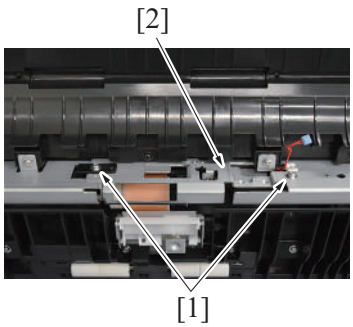
3. Remove the screw [1], and remove the cover [2].



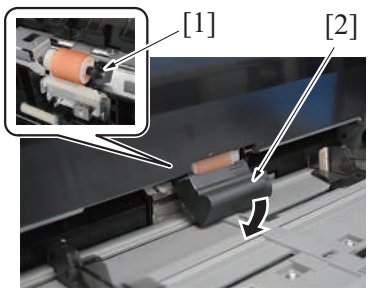
4. Remove the screw [1], and remove the connector protective cover [2].
5. Disconnect the connector [3], and remove the harness from the edge cover [4].

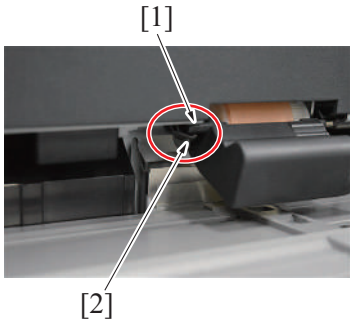


6. Remove two screws [1], and remove the plate [2].

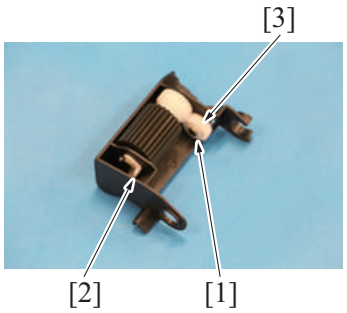


7. Remove the bushing [1], and remove the manual bypass tray pick-up roller assy [2].

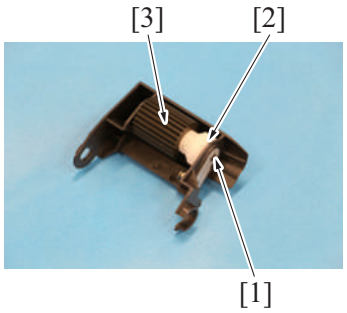




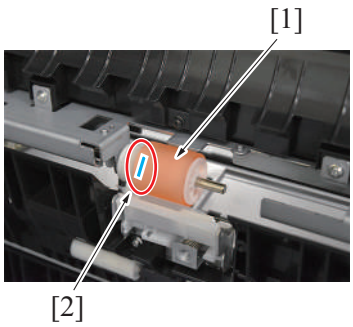
8. **NOTE**
   - **When installing the pick-up roller assy [1], make sure that it is located above the manual bypass tray pick-up roller solenoid lever [2].**



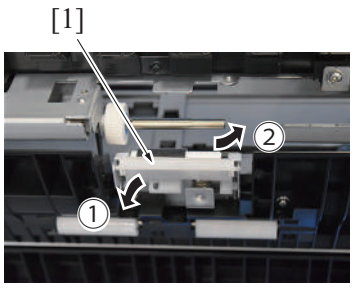
9. Remove the C-clip [1], C-clip [2] and gear [3].



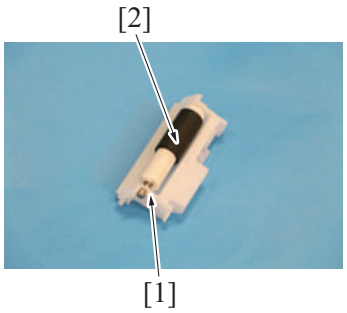
10. Remove the shaft [1] and gear [2], and remove the manual bypass tray pick-up roller [3].



11. Remove the manual bypass tray feed roller [1].
    NOTE
    - **When removing the feed roller, the pin [2] may fall, so be careful not to lose the pin by setting the paper in the manual bypass tray before removal.**



12. Remove the manual bypass tray separation roller unit [1].



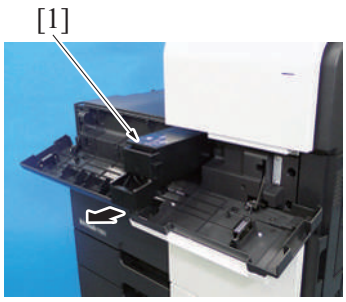
13. Remove the C-clip [1], and remove the manual bypass tray separation roller assy [2].

14. To reinstall, reverse the order of removal.
15. Select [Service Mode] -> [Counter] -> [Life] and clear the count of [Manual Tray].

3.1.4 Replacing the toner cartridge

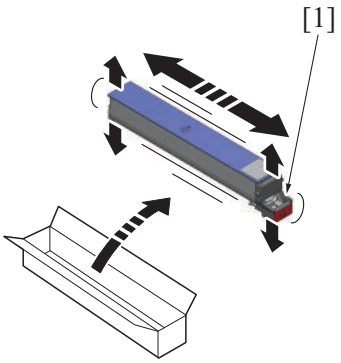
(1) Removal procedure

1. Open the upper front door.

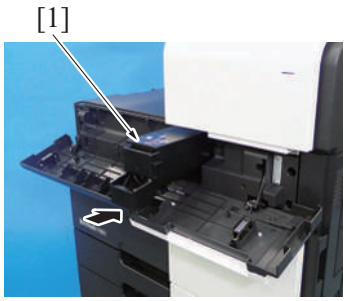


2. Remove the toner cartridge [1].

(2) Reinstall procedure



1. Remove the new toner cartridge [1] from its packaging, and then shake the cartridge side to side 5 to 10 times.
   NOTE
   - **Shake the toner cartridge well.**
     If shaking is not enough, that may cause trouble.

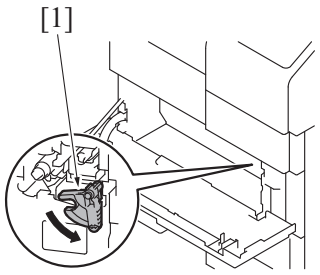


2. Insert the toner cartridge [1] into the machine.

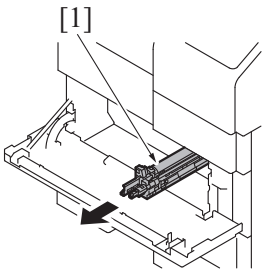
3.1.5 Replacing the drum unit

(1) Removal procedure

1. Open the lower front door.
2. Remove the waste toner box.
   F.5.2.1 Waste toner box

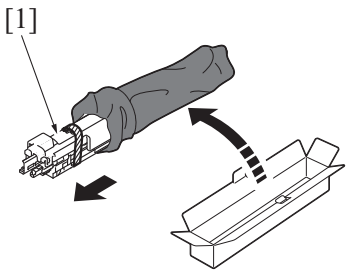


3. Turn the drum unit lock lever [1] and release the lock.

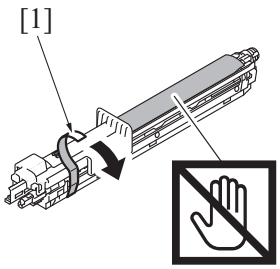


4. Pull the drum unit [1] to you and remove it from the machine.

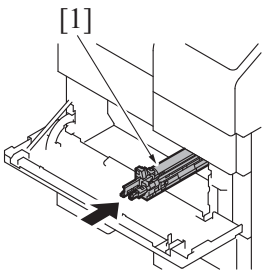
(2) Reinstall procedure



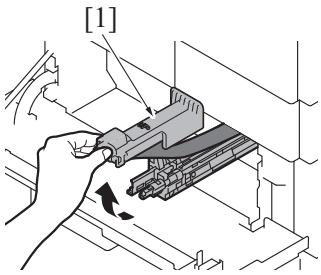
1. Remove the drum unit [1] from its package.
2. Remove the drum unit [1] from the plastic bag.



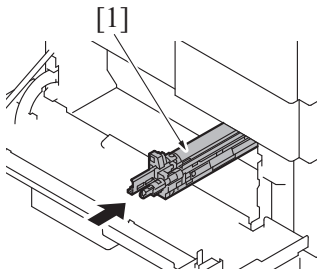
3. Peel off the tape [1].
NOTE
- **Do not hold the drum unit by the upper part. Holding it by the upper part can cause scratches on the surface of the photoconductor, resulting in the deterioration of image quality.**



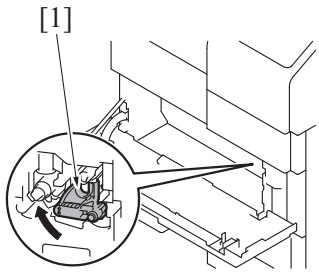
4. Insert the drum unit [1] into the machine.



5. Remove the photoconductor protective sheet [1].



6. Completely insert the drum unit [1].

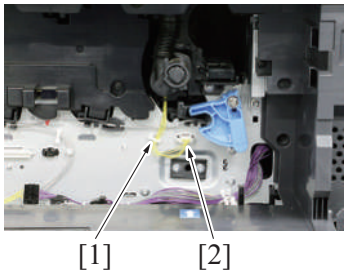


7. Turn the drum unit lock lever [1] and lock the drum unit.
NOTE
- **If the lock lever is hard to rotate, turn the lever while pushing the drum unit to the rear.**

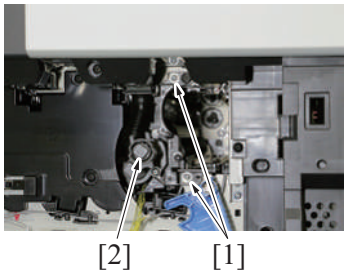
8. Reinstall the waste toner box.
9. Close the upper front door.
10. Turn ON the main power switch, and carry out the [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust].

3.1.6 Replacing the developing unit

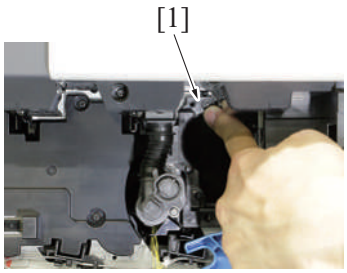
1. Remove the waste toner box.
   F.5.2.1 Waste toner box
2. Remove the front lower cover.
   F.5.1.14 Front lower cover
3. Remove the drum unit.
   E.3.1.5 Replacing the drum unit



4. Remove the harness from the wire saddle [1], and disconnect the connector [2].



5. Remove two screws [1], and remove the developing unit [2].

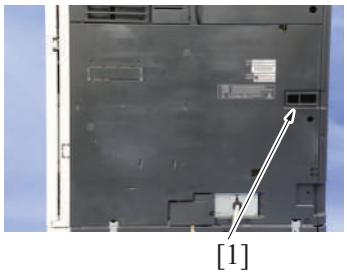


6. To reinstall, reverse the order of removal.
   NOTE
   - **To install two screws in the developing unit, press the position [1] with your finger as shown in the illustration.**

7. Carry out the [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust].

3.1.7 Replacing the toner filter

1. Squeeze the hook and remove the toner filter [1].

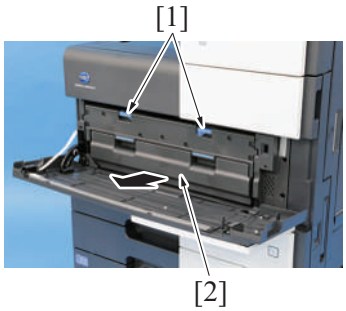


2. To reinstall, reverse the order of removal.
3. Select [Service Mode] -> [Counter] -> [Life] and clear the count of [Toner Filter].

3.1.8 Replacing the waste toner box

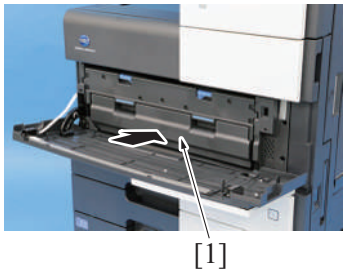
(1) Removal procedure

1. Open the lower front door.



2. Unhook the waste toner box fixing levers [1] and remove the waste toner box [2].

(2) Reinstall procedure

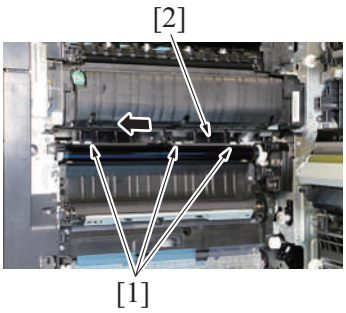


1. Remove the brand new waste toner box from its package and remove the packing material.
2. Set the waste toner box [1].
3. Close the lower front door.

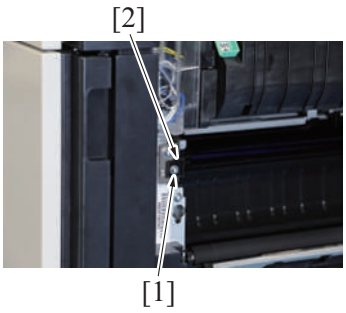
3.1.9 Replacing the transfer belt unit

(1) Removal procedure

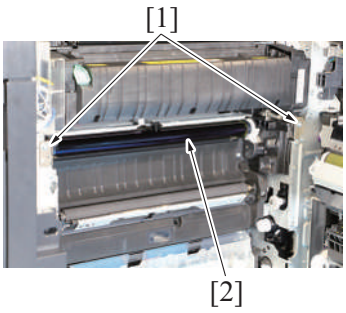
1. Open the right door.



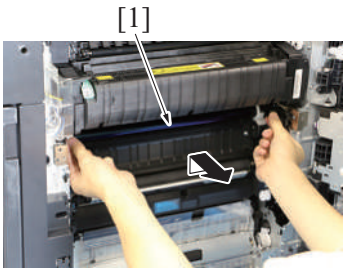
2. Release three tabs [1], and remove the 2nd transfer paper winding prevention guide [2].



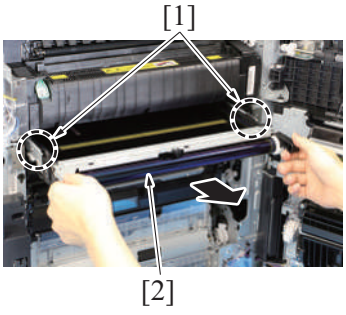
3. Remove the screw [1], and remove the stopper [2].



4. Remove two screws [1] and unlock the transfer belt unit [2].

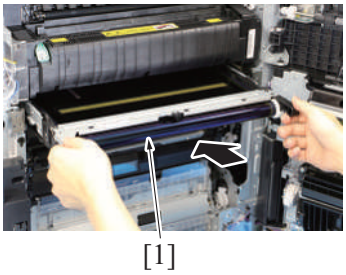


5. Hold the both sides and lift it to take out the transfer belt unit [1] a little.

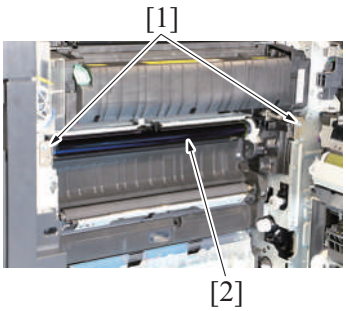


6. Hold the position [1] and remove the transfer belt unit [2].
NOTE
- **Do not touch the surface of the transfer belt unit.**
- **Cover the transfer belt unit with something such shade cloth to protect its surface from dust or foreign matter.**
- **If accidentally touched the surface of the transfer belt, lightly wipe it using the Hydro-wipe (65AA-99##). Do not clean with alcohol or water.**

(2) Reinstall procedure



1. Insert the transfer belt unit [1].
   NOTE
   - **Insert the transfer belt unit with care not to allow its docking gear to be damaged by hitting it against the rail or associated part.**
   - **Do not touch the surface of the transfer belt unit.**
   - **Cover the transfer belt unit with something such shade cloth to protect its surface from dust or foreign matter.**
   - **If accidentally touched the surface of the transfer belt, lightly wipe it using the Hydro-wipe (65AA-99##). Do not clean with alcohol or water.**

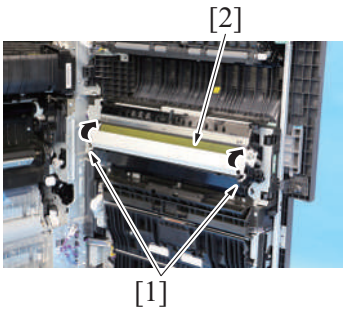


2. Install the transfer belt unit [2] with two screws [1].
3. Install the 2nd transfer paper winding prevention guide.
4. To reinstall, reverse the order of removal.
5. Turn ON the main power switch.
6. Carry out the [Service Mode] -> [Counter] -> [Life] -> [New Release].
7. Carry out the [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust].

3.1.10 Replacing the transfer roller unit

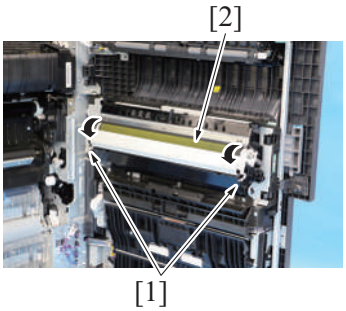
(1) Removal procedure

1. Open the right door.



2. Unlock the lock levers [1] of the transfer roller unit (at two places).
3. Holding onto the lock levers [1] (at two places), remove the transfer roller unit [2].

(2) Reinstall procedure



1. Holding onto the lock levers [1] (at two places), mount the new transfer roller unit [2].
2. Lock the lock levers [1] (at two places).
   NOTE
   - **Make sure that the levers are locked in position both at front and rear.**
3. Close the right door.
4. Select [Service Mode] -> [Counter] -> [Life] and clear the count of [Transfer Roller Unit].

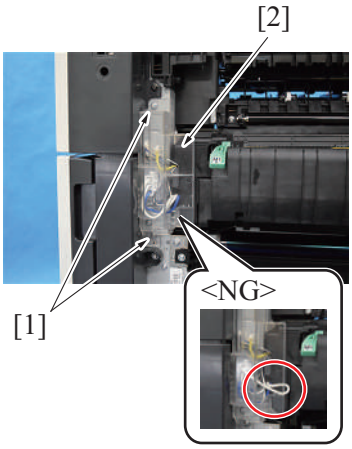
3.1.11 Replacing the fusing unit

CAUTION

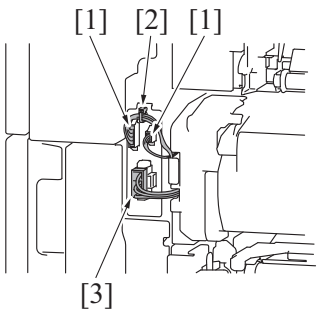
- The temperature gets high in the vicinity of the fusing unit. You may get burned when you come into contact with the area.

  Before replacement operations, make sure that more than 20 minutes have elapsed since the main power switch was turned off.

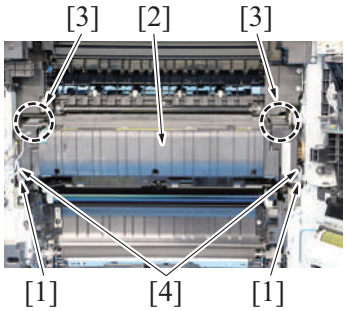
1. Open the right door.



2. Remove two screws [1], and remove the connector protective cover [2].
   NOTE
   - **When installing the connector protective cover, make sure that the primary wire is not nipped by the connector protective cover.**



3. Disconnect two connectors [1] and remove the harness from the wire saddle [2].
4. Disconnect the connector [3].
   NOTE
   - **When removing the connector [3], press the claw to release the lock, then remove it.**



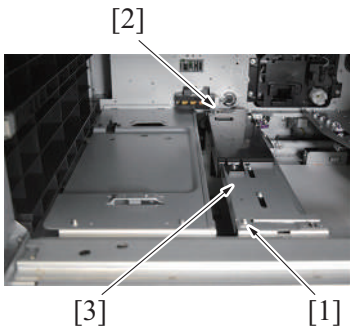
5. Remove two screws [1], and remove the fusing unit [2].
   NOTE
   - **When removing the fusing unit, hold the parts [3] shown in the illustration. Make sure to hold it firmly so that it would not fall due to its weight.**
   - **When installing the fusing unit, make sure that the set pin [4] is inserted in the fusing unit.**

6. To reinstall, reverse the order of removal.
7. Carry out the [Service Mode] -> [Counter] -> [Life] -> [New Release].

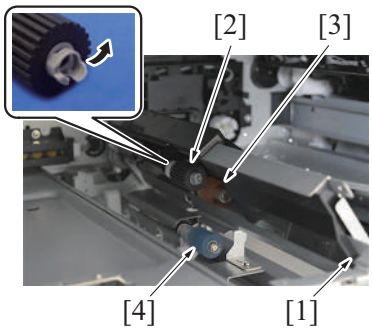
3.2 Tray 3/4

3.2.1 Replacing the tray 3 pick-up roller, feed roller, separation roller

1. Remove the tray 1 and tray 2.
2. Slide out the tray 3.



3. Remove the screw [1], and loosen the screw [2].
4. Open the tray 3 paper feed unit [3].

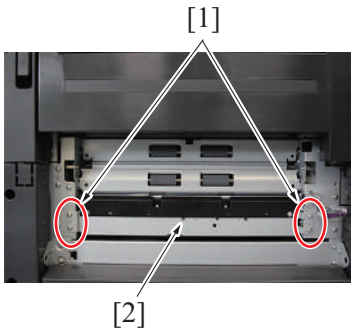


5. Pull out the plate [1], and fix the tray 3 paper feed unit.
6. Release the tab, and remove the tray 3 pick-up roller [2], tray 3 feed roller [3] and tray 3 separation roller [4].

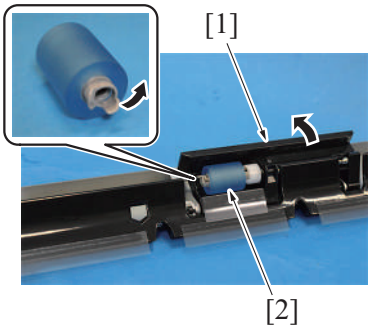
7. To reinstall, reverse the order of removal.
8. Select [Service Mode] -> [Counter] -> [Life] and clear the count of [Tray 3].

3.2.2 Replacing the tray 4 pick-up roller, feed roller, separation roller

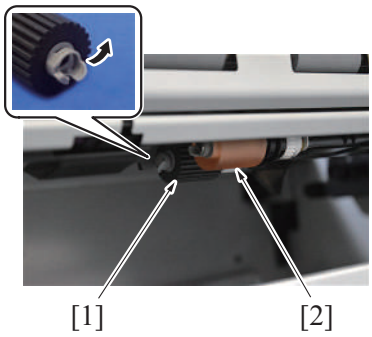
1. Slide out the tray 4.
2. Remove the right door.
   F.6.1 Right door



3. Remove four screws [1], and remove the separation roller assy [2].



4. Open the separation roller holder [1], release the tab, and remove the tray 4 separation roller [2].



5. Release the tab, and remove the tray 4 pick-up roller [1] and tray 4 feed roller [2].

6. To reinstall, reverse the order of removal.
7. Select [Service Mode] -> [Counter] -> [Life] and clear the count of [Tray 4].

3.3 DF-713

NOTE

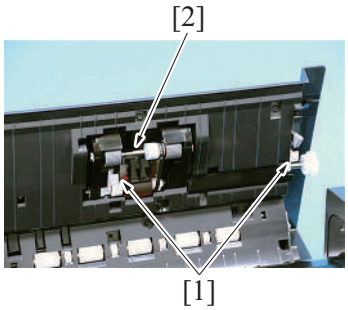
- **The alcohol described in the cleaning procedure of maintenance represents the isopropyl alcohol.**

3.3.1 Replacing the pick-up roller/feed roller

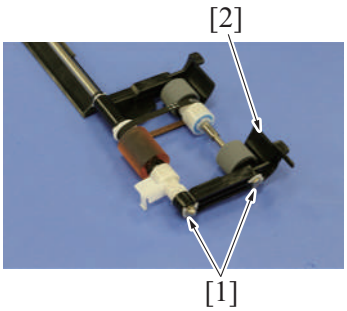
1. Open the left cover [1].



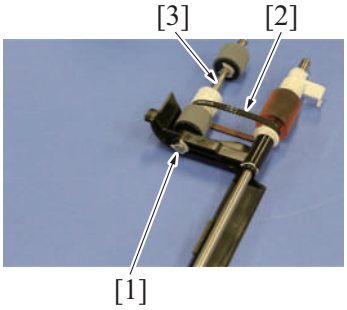
2. Release two locks [1], and remove the pick-up/feed roller assy [2].



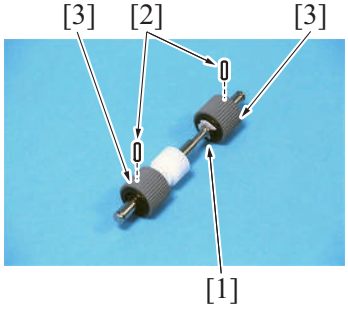
3. Remove two C-clips [1], and remove the arm [2].

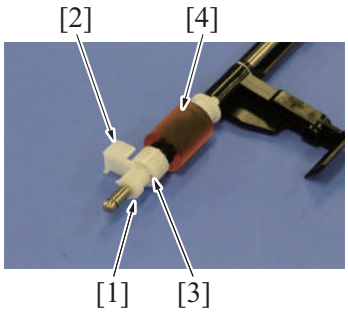


4. Remove the C-clip [1], remove the belt [2] and remove the pick-up roller assy [3].



5. Remove the C-clip [1], remove two pins [2] and remove two pick-up rollers [3].





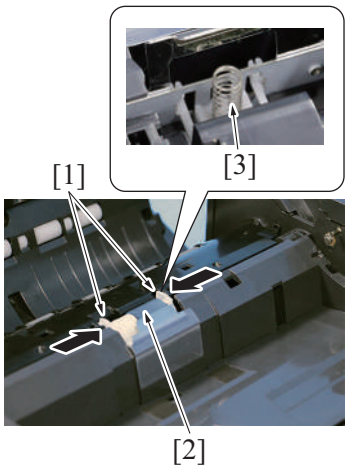
6. Remove the C-clip [1], and remove the arm [2].
7. Remove the C-clip [3], and remove the feed roller [4].

8. To reinstall, reverse the order of removal.

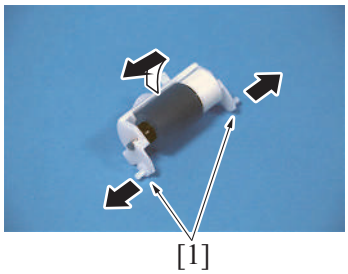
3.3.2 Replacing the separation roller



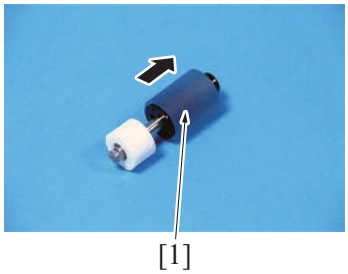
1. Open the left cover [1].



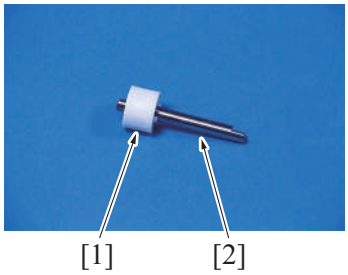
2. Grip both sides [1] of the holder and remove the separation roller assy [2].
NOTE
- **Do not lose the spring [3] at the lower part of the separation roller assy [2].**



3. Remove the shaft while spreading the holder [1].
NOTE
- **Take care not to spread the holder too much, it may cause damage.**



4. Remove the separation roller [1] from the shaft.
NOTE
- **Take care not to lose the pin.**



5. Before replacing the separation roller, wipe off the grease adhering to the torque limiter [1] and the shaft [2] using a dry cloth.
NOTE
- **Make sure not to use alcohol. Wipe with a dry cloth.**

6. To reinstall, reverse the order of removal.

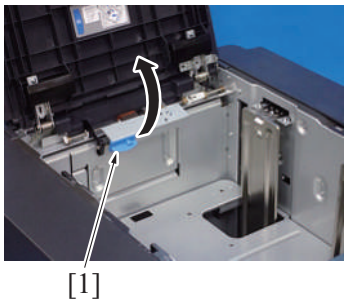
3.4 LU-205

NOTE
- **The alcohol described in the cleaning procedure of maintenance represents the isopropyl alcohol.**

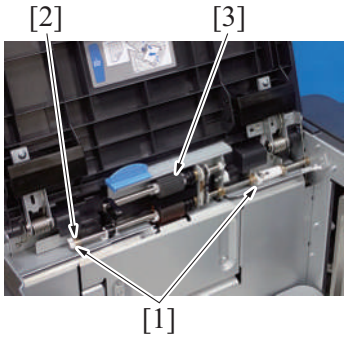
3.4.1 Replacing the pick-up roller

1. Open the upper door.

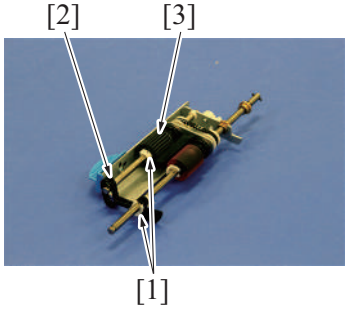
2. Move the feed roller [1] up.



3. Remove two C-clips [1], the bushing [2] and remove the feed roller assy [3].



4. Remove two C-clips [1], the actuator [2] and remove the pick-up roller [3].

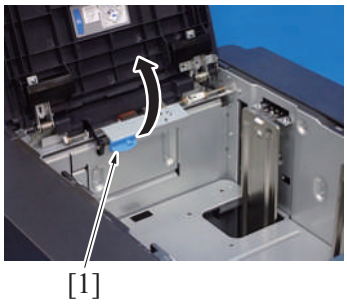


5. To reinstall, reverse the order of removal.

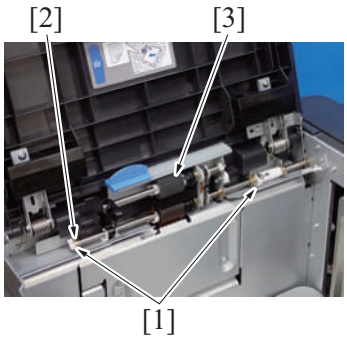
3.4.2 Replacing the feed roller

1. Open the upper door.

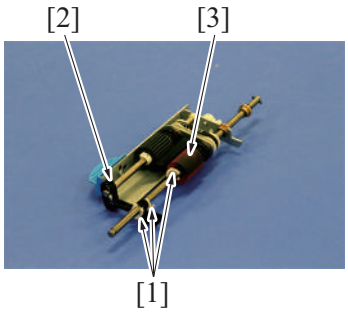
2. Move the feed roller [1] up.



3. Remove two C-clips [1], the bushing [2] and remove the feed roller assy [3].



4. Remove three C-clips [1], the actuator [2] and remove the feed roller [3].

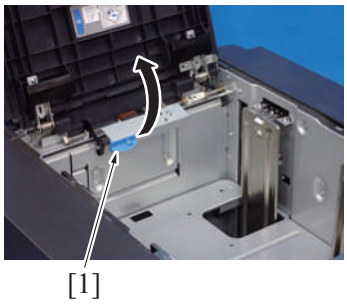


5. To reinstall, reverse the order of removal.

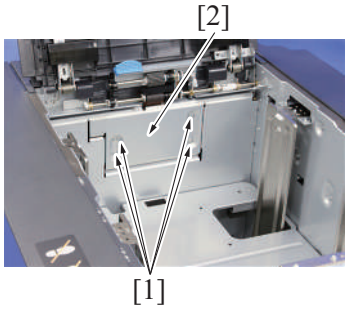
3.4.3 Replacing the separation roller

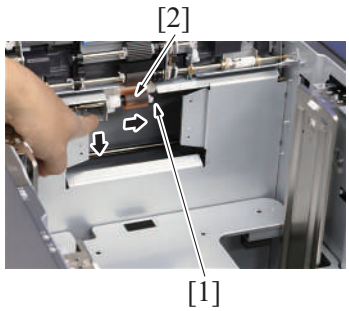
1. Open the upper door.

2. Move the feed roller [1] up.



3. Remove four screws [1], and remove the plate [2].





4. Remove the C-clip [1] while pressing the separation roller down to remove the separation roller [2].

5. To reinstall, reverse the order of removal.

3.5 LU-303

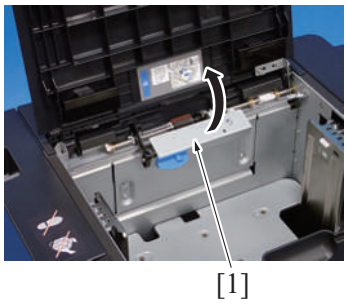
NOTE

- **The alcohol described in the cleaning procedure of maintenance represents the isopropyl alcohol.**

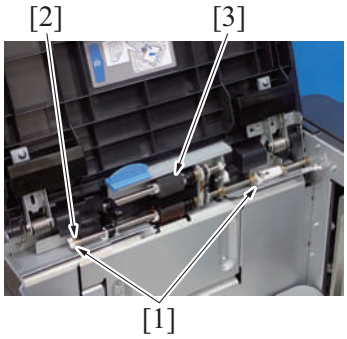
3.5.1 Replacing the pick-up roller

1. Open the upper door.

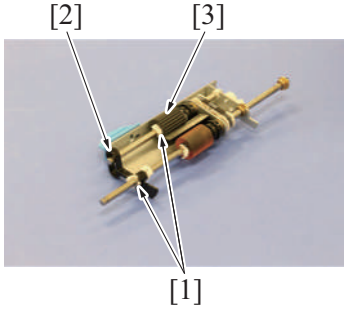
2. Move the feed roller [1] up.



3. Remove two C-clips [1], the bushing [2] and remove the feed roller assy [3].



4. Remove two C-clips [1], the actuator [2] and remove the pick-up roller [3].

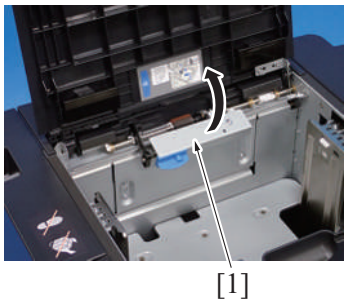


5. To reinstall, reverse the order of removal.

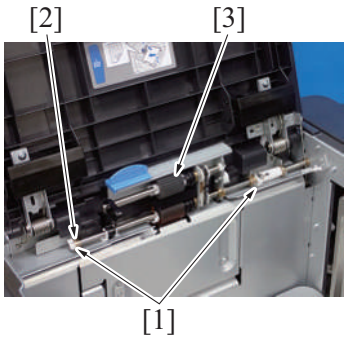
3.5.2 Replacing the feed roller

1. Open the upper door.

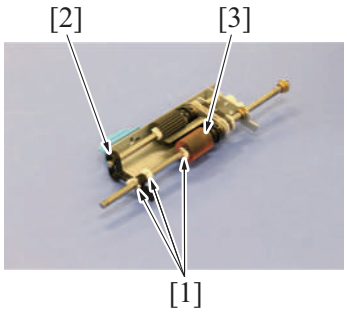
2. Move the feed roller [1] up.



3. Remove two C-clips [1], the bushing [2] and remove the feed roller assy [3].



4. Remove three C-clips [1], the actuator [2] and remove the feed roller [3].

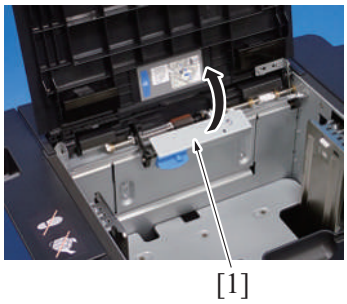


5. To reinstall, reverse the order of removal.

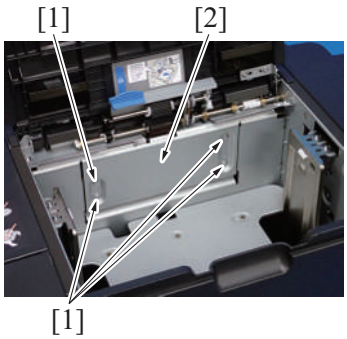
3.5.3 Replacing the separation roller

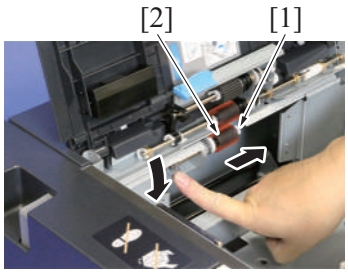
1. Open the upper door.

2. Move the feed roller [1] up.



3. Remove four screws [1], and remove the plate [2].





4. Remove the C-clip [1] while pressing the separation roller down to remove the separation roller [2].

5. To reinstall, reverse the order of removal.

3.6 FS-539/FS-539SD

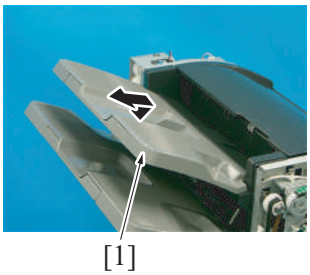
NOTE

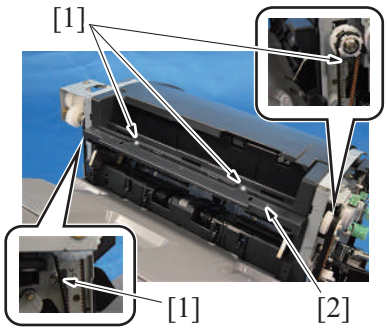
- **The alcohol described in the cleaning procedure of maintenance represents the isopropyl alcohol.**

3.6.1 Replacing the paddle

1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover of the finisher.
   F.12.2 Rear cover (FS-539/FS-539SD)
3. Remove the front door of the finisher.
   F.12.3 Front door (FS-539/FS-539SD)
4. Remove the front upper cover of the finisher.
   F.12.4 Front upper cover (FS-539/FS-539SD)

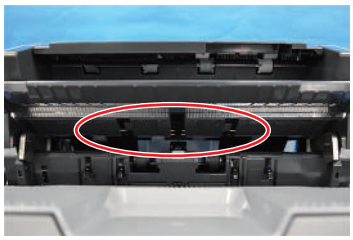
5. Remove the exit tray [1].

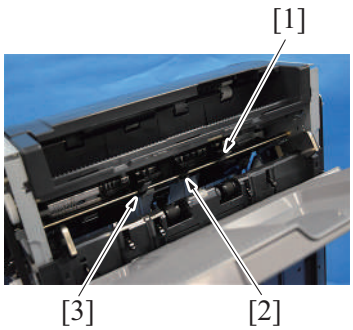




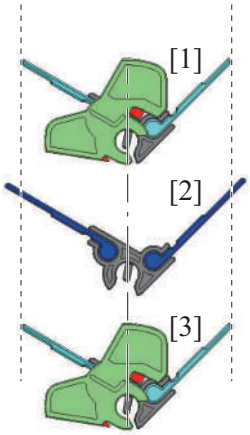
6. Remove four screws [1], and remove the cover [2].

7. **NOTE**
   - **When installing the cover, make sure that the cover is located under the shaft.**





8. Remove the paddle assy (front) [1], paddle assy (center) [2], and paddle assy (rear) [3].

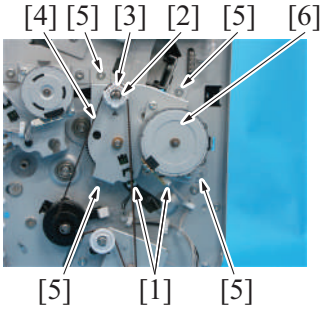


9. **NOTE**
   - **When reinstalling the paddles, be careful not to install them at an incorrect location or in an incorrect orientation.**
     [1]: Paddle assy (front)
     [2]: Paddle assy (center)
     [3]: Paddle assy (rear)

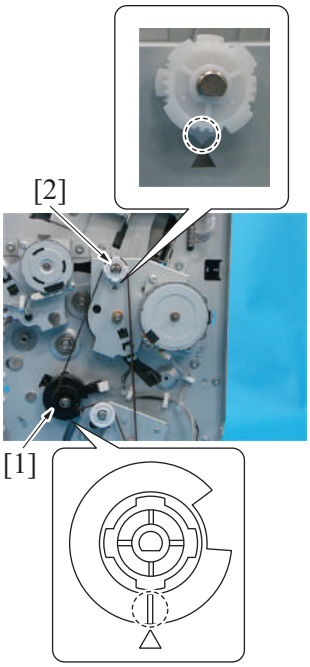
10. To reinstall, reverse the order of removal.

3.6.2 Replacing the upper paddle (saddle section)

1. Remove the saddle unit.
   F.13.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.13.2 Front cover (FS-539SD saddle section)

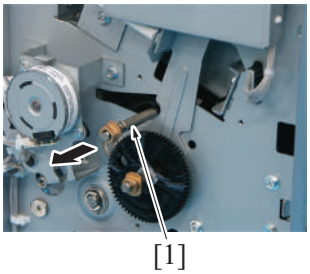


3. Disconnect two connectors [1].
4. Remove the E-ring [2].
5. Remove the gear [3] and the belt [4].
6. Remove four screws [5], and remove the center fold guide motor assy [6].

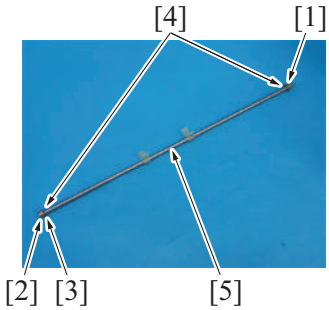


7. **NOTE**
   - **When reinstalling the belt, align the portions of the gear [1] and the gear [2] indicated in the illustration with the triangular marking on the metal plate. Then, install the belt.**

8. Remove the upper paddle assy [1].

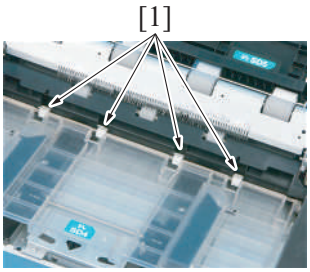


9. Remove the bushing [1].
10. Remove the E-ring [2], and remove the bushing [3].
11. Remove two E-rings [4].
12. Replace the upper paddle [5].



13. To reinstall, reverse the order of removal.

3.6.3 Replacing the lower paddle (saddle section)



1. Remove four lower paddles [1].

3.7 FS-540/FS-540SD

NOTE
- **The alcohol described in the cleaning procedure of maintenance represents the isopropyl alcohol.**

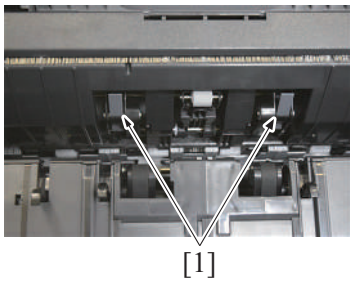
3.7.1 Replacing the paddle

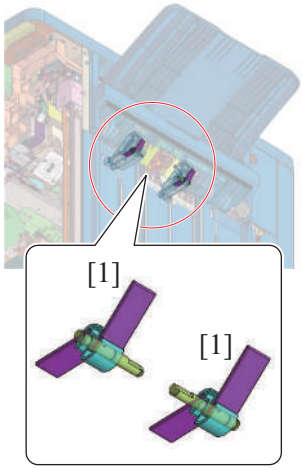
1. Remove the rear cover.

F.15.5 Rear cover (FS-540/FS-540SD)

2. Remove the main tray.
F.15.9 Main tray (under the paper exit tray) (FS-540/FS-540SD)

3. Remove the paddles [1].



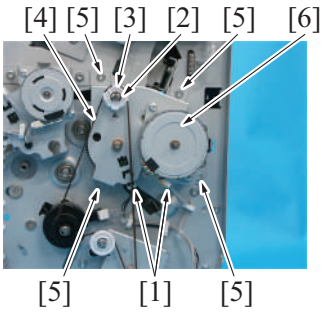


4. **NOTE**
   - **When installing the paddles [1], make sure that the paddle direction matches the shaft holes.**

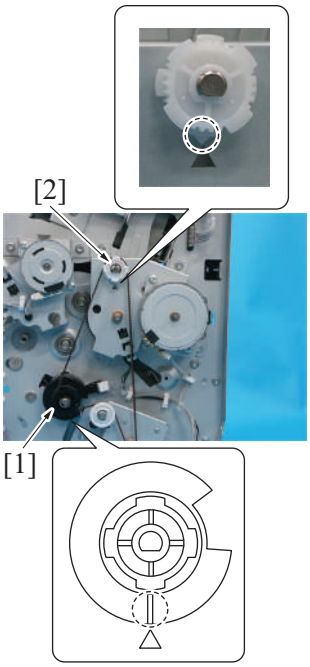
5. To reinstall, reverse the order of removal.

3.7.2 Replacing the upper paddle (saddle section)

1. Remove the saddle unit.
F.16.1 Saddle unit (FS-540SD saddle section)
2. Remove the front cover.
F.16.2 Front cover (FS-540SD saddle section)

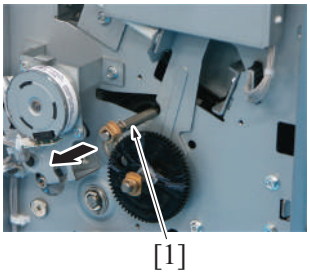


3. Disconnect two connectors [1].
4. Remove the E-ring [2].
5. Remove the gear [3] and belt [4].
6. Remove four screws [5], and remove the center fold guide motor assy [6].

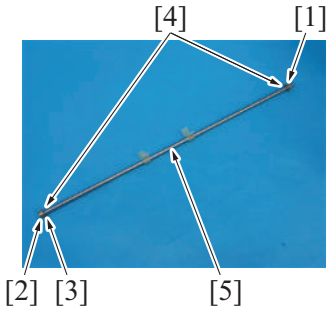


7. **NOTE**
   - **When reinstalling the belt, align the portions of the gear [1] and the gear [2] indicated in the illustration with the triangular marking on the metal plate. Then, install the belt.**

8. Remove the upper paddle assy [1].



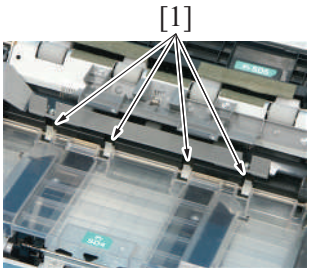
9. Remove the bushing [1].
10. Remove the E-ring [2], and remove the bushing [3].
11. Remove two E-rings [4].
12. Replace the upper paddle [5].



13. To reinstall, reverse the order of removal.

3.7.3 Replacing the lower paddle (saddle section)

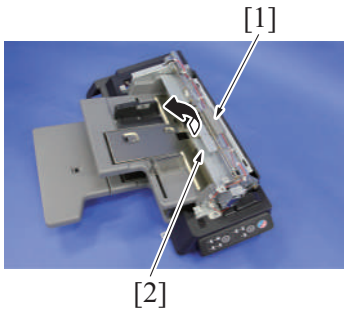
1. Remove the lower paddles [1].



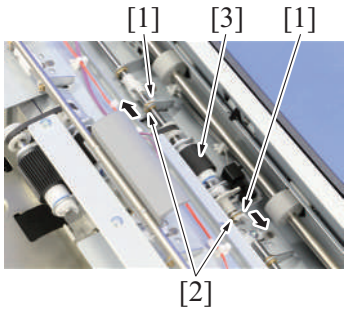
3.8 PI-507

3.8.1 Replacing the pick-up roller/Lw, feed roller/Lw

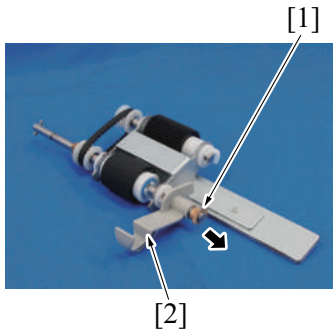
1. Remove the upper cover.
   F.20.1 Upper cover (PI-507)



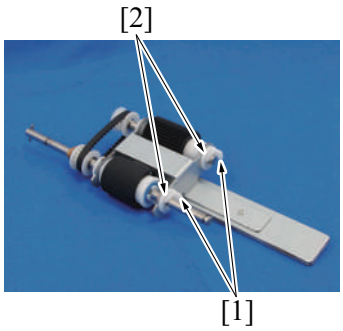
2. Pull the unlock lever [1] and open the upper door [2].



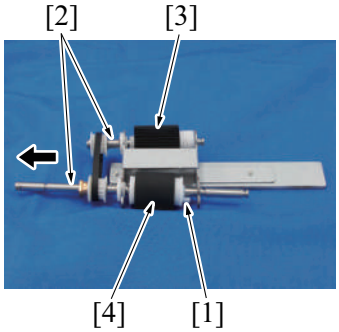
3. Remove two C-clips [1], shift two bushings [2] at left and right side, and remove the feed roller assy/Lw [3].



4. Remove the bushing [1] and remove the actuator [2].



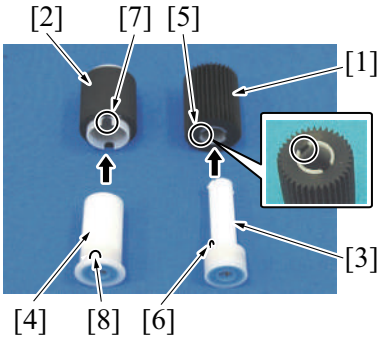
5. Remove two C-clips [1] and remove two bushings [2].



6. Remove the C-clip [1].
7. Slide two roller shafts [2] toward the direction of the arrow and remove the pick-up roller/Lw [3] and feed roller/Lw [4].

NOTE

- **Install with the blue side of the one-way clutch of the pick-up roller and the feed roller to face front when installing.**

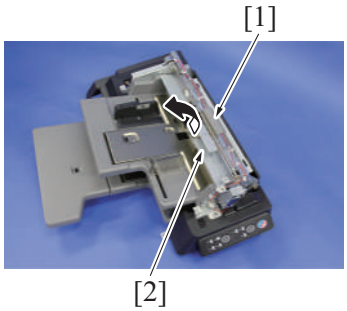


8. Remove the pick-up roller [1] and feed roller [2] from the one-way clutches [3] and [4].
NOTE
- **Insert the pick-up roller [1] so the cut out [5] of the pick-up roller to align with the protrusion [6] of the one-way clutch when installing the pick-up roller.**
- **Insert the feed roller [2] so the cut out [7] of the feed roller to align with the protrusion [8] of the one-way clutch when installing the feed roller.**

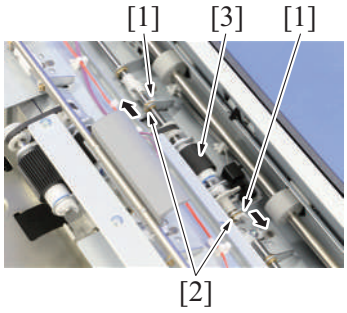
9. To reinstall, reverse the order of removal.

3.8.2 Replacing the separation roller/Lw, Torque limiter/Lw

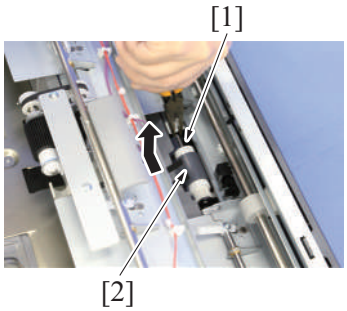
1. Remove the upper cover.
F.20.1 Upper cover (PI-507)



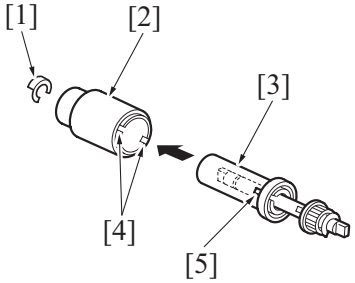
2. Pull the unlock lever [1] and open the upper door [2].



3. Remove two C-clips [1], shift two bushings [2] at left and right side toward outside, and remove the feed roller assy/Lw [3].



4. Unlock the hook [1] and remove the separation roller assy/Lw [2] by moving it in a direction of the arrow.



5. Remove the C-clip [1], and remove the separation roller/Lw [2] and the torque limiter/Lw [3].
NOTE
- **Install the separation roller/Lw so the two cut outs [4] will be facing forward and aligned to the protrusion [5].**

6. To reinstall, reverse the order of removal.

4. Cleaning parts list

- Clean with reference to the numeric values displayed on the total counter or the messages displayed on the control panel.

4.1 bizhub 750i

Section	Parts name	Cleaning cycle	Ref. page
Scanner section	Original glass	At abnormal image occurring (image noise, etc.)	E.5.1.1 Cleaning the original glass
	Scanner rails	At abnormal image occurring (synchronized shift, etc.)	E.5.1.2 Cleaning the scanner rails
	Mirrors	At abnormal image occurring (image fogging, image unevenness etc.)	E.5.1.3 Cleaning the mirrors
	Lens	At abnormal image occurring (image fogging, image unevenness etc.)	E.5.1.4 Cleaning the lens
	CCD sensor	At abnormal image occurring	E.5.1.5 Cleaning the CCD sensor
Tray 1	Tray 1 feed roller	At paper feeding jam	E.5.1.6 Cleaning the tray 1 pick-up roller, tray 1 feed roller, tray 1 separation roller
	Tray 1 pick-up roller	At paper feeding jam	
	Tray 1 separation roller	At paper feeding jam	
Tray 2	Tray 2 feed roller	At paper feeding jam	E.5.1.7 Cleaning the tray 2 pick-up roller, tray 2 feed roller, tray 2 separation roller
	Tray 2 pick-up roller	At paper feeding jam	
	Tray 2 separation roller	At paper feeding jam	
	Tray 2 transport roller	At paper feeding jam	E.5.1.8 Cleaning the tray 2 transport roller
Tray 3	Tray 3 pick-up roller	At paper feeding jam	E.5.2.1 Tray 3 pick-up roller, feed roller, separation roller
	Tray 3 feed roller	At paper feeding jam	
	Tray 3 separation roller	At paper feeding jam	
	Horizontal transport roller 1	At paper feeding jam	E.5.2.2 Horizontal transport roller
	Horizontal transport roller 2	At paper feeding jam	
Tray 4	Tray 4 pick-up roller	At paper feeding jam	E.5.2.3 Tray 4 pick-up roller, feed roller, separation roller
	Tray 4 feed roller	At paper feeding jam	
	Tray 4 separation roller	At paper feeding jam	
	Tray 4 vertical transport roller	At paper feeding jam	E.5.2.4 Tray 4 vertical transport roller
Manual bypass tray	Bypass pick-up roller	At paper feeding jam	E.5.1.9 Cleaning the bypass pick-up roller
	Manual bypass tray feed roller	At paper feeding jam	E.5.1.10 Cleaning the manual bypass tray feed roller
	Manual bypass tray separation roller	At paper feeding jam	E.5.1.11 Cleaning the manual bypass tray separation roller
Processing section	Transfer belt unit	At abnormal image occurring	E.5.1.15 Cleaning the transfer belt unit
	PH window	At abnormal image occurring	E.5.1.12 Cleaning the PH window
Transport section	Registration roller	60,000	E.5.1.13 Cleaning of the registration roller
Image transfer section	Around waste toner collecting port	60,000	E.5.1.14 Cleaning of the area around the waste toner collecting port
	Image transfer entrance guide	240,000 or When transfer belt unit is replaced	E.5.1.16 Cleaning of the image transfer entrance guide
	IDC sensor window	240,000 or When transfer belt unit is replaced	E.5.1.17 Cleaning of the IDC sensor window
Duplex section	Duplex transport roller	60,000	E.5.1.18 Cleaning of the duplex transport rollers
Paper exit section	Exit tray front roller	300,000	E.5.1.19 Cleaning of the exit tray front roller

4.2 DF-713

Part name	Cleaning cycle	Ref. page
Pick-up roller	50,000	E.5.3.1 Cleaning the pick-up roller/feed roller
Feed roller	50,000	

Part name	Cleaning cycle	Ref. page
Separation roller	50,000	E.5.3.2 Cleaning the separation roller
Torque limiter and shaft	200,000	E.5.3.3 Cleaning the torque limiter and shaft
Rollers and rolls	50,000	E.5.3.4 Cleaning the miscellaneous rollers E.5.3.5 Cleaning the miscellaneous rolls
Front side scanning guide	50,000	E.5.3.6 Cleaning the front side scanning guide
Reflective sensor section	50,000	E.5.3.7 Cleaning the reflective sensor section
Back side scanning glass	At abnormal image occurring (image noise, etc.)	E.5.3.8 Cleaning the back side scanning glass
Back side scanning guide/Back side scanning shading shaft	At abnormal image occurring (image noise, etc.)	E.5.3.9 Cleaning the back side scanning guide/back side scanning shading shaft

4.3 LU-205

Part name	Cleaning cycle	Ref. page
Pick-up roller	At paper feeding jam	E.5.4.1 Pick-up roller
Feed roller	At paper feeding jam	E.5.4.2 Feed roller
Separation roller	At paper feeding jam	E.5.4.3 Separation roller
Conveyance roller	At paper feeding jam	E.5.4.4 Conveyance roller

4.4 LU-303

Part name	Cleaning cycle	Ref. page
Pick-up roller	At paper feeding jam	E.5.5.1 Pick-up roller
Feed roller	At paper feeding jam	E.5.5.2 Feed roller
Separation roller	At paper feeding jam	E.5.5.3 Separation roller
Conveyance roller	At paper feeding jam	E.5.5.4 Conveyance roller

4.5 FS-539/FS-539SD

Part name	Cleaning cycle	Ref. page
Roller and rolls (finisher)	300,000	E.5.6.1 Cleaning roller and rolls
Paddle (finisher)	300,000	E.5.6.2 Cleaning the paddle
Transport roller (saddle unit)	300,000	E.5.6.1 Cleaning roller and rolls
Folding roller (saddle unit)	300,000	
Upper paddle (saddle unit)	300,000	E.5.6.3 Cleaning the upper paddle (saddle section)
Lower paddle (saddle unit)	300,000	E.5.6.4 Cleaning the lower paddles (saddle section)
FNS entrance sensor (PS4) (finisher)	300,000	E.5.6.5 Cleaning the FNS entrance sensor (PS4)
Main tray exit sensor (PS16) (finisher)	300,000	E.5.6.6 Cleaning the main tray exit sensor (PS16)

4.6 FS-540/FS-540SD

Part name	Cleaning cycle	Ref. page
Paddle (finisher)	300,000	E.5.7.2 Cleaning the paddles
Transport roller (saddle unit)	300,000	E.5.7.1 Cleaning roller and rolls
Folding roller (saddle unit)	300,000	
Upper paddle (saddle unit)	300,000	E.5.7.4 Cleaning the upper paddle (saddle section)
Lower paddle (saddle unit)	300,000	E.5.7.5 Cleaning the lower paddle (saddle section)
Exit tray transport belt (saddle unit)	300,000	E.5.7.3 Cleaning the exit tray conveyance belt (saddle section)
FNS entrance sensor (PS34) (finisher)	300,000	E.5.7.6 Cleaning the FNS entrance sensor (PS34)
FNS middle sensor (PS36) (finisher)	300,000	E.5.7.7 Cleaning the FNS middle sensor (PS36)
Main tray exit sensor (PS37) (finisher)	300,000	E.5.7.8 Cleaning the main tray exit sensor (PS37)

4.7 ZU-609

Part name	Cleaning cycle	Ref. page
Fold roller	300,000	E.5.8.1 Cleaning the Z fold roller (ZU-609)

4.8 JS-602

Part name	Cleaning cycle	Ref. page
Conveyance roller	100,000	E.5.9.1 Cleaning the conveyance roller/paper exit roller (JS-602)
Paper exit roller	100,000	

4.9 PI-507

Part name	Actual cleaning cycle	Ref. page
Pick-up roller	100,000	E.5.10.1 Pick-up roller/Lw, feed roller/Lw, separation roller/Lw
Feed roller	100,000	
Separation roller	100,000	
Conveyance roller	100,000	E.5.10.2 Conveyance roller/Lw

4.10 IM-102

Part name	Cleaning cycle	Ref. page
Media detection sensor window	330,000	E.5.11.1 Cleaning the media detection sensor window

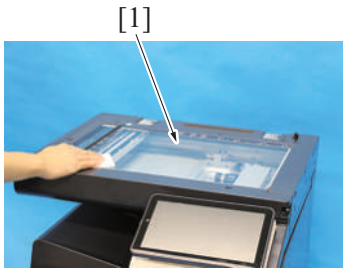
5. Cleaning/Lubrication procedure

NOTE

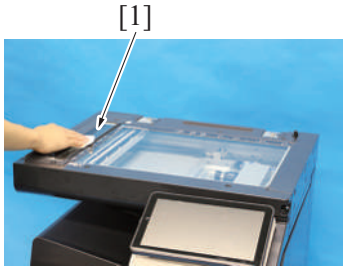
- **The alcohol described in the cleaning procedure of maintenance represents the isopropyl alcohol.**

5.1 bizhub 750i

5.1.1 Cleaning the original glass



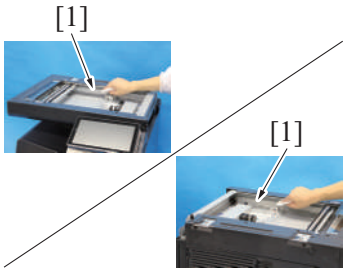
1. Using a cleaning pad dampened with alcohol, wipe the original glass [1] clean of dirt.



2. Using a cleaning pad dampened with alcohol, wipe the document reading glass [1] clean of dirt.

5.1.2 Cleaning the scanner rails

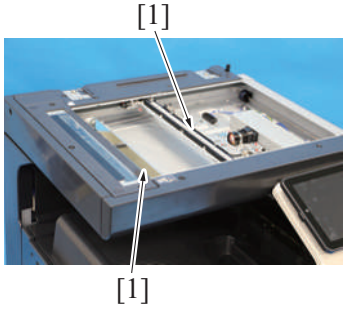
1. Remove the original glass.
   F.5.1.11 Original glass



2. Using a cleaning pad dampened with alcohol, wipe the scanner rails [1] clean of dirt.
   NOTE
   - **Apply lubricant after cleaning.**

5.1.3 Cleaning the mirrors

1. Remove the original glass.
   F.5.1.11 Original glass

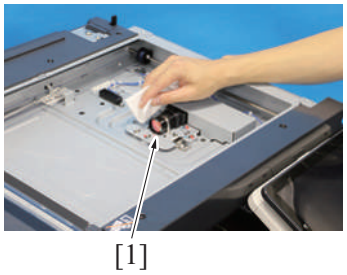


2. Using a cleaning pad dampened with alcohol, wipe the mirrors [1].

5.1.4 Cleaning the lens

1. Remove the original glass.
   F.5.1.11 Original glass

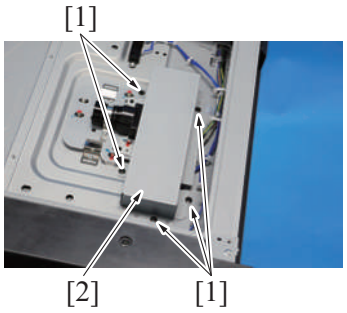
2. Clean the lens [1].



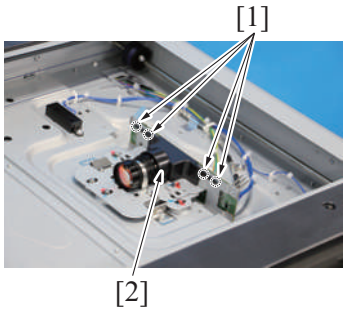
5.1.5 Cleaning the CCD sensor

1. Remove the original glass.
F.5.1.11 Original glass

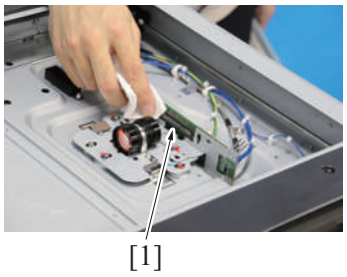
2. Remove five screws [1] and remove the CCD unit cover [2].



3. Remove four tabs [1], and remove the CCD sensor cover [2].



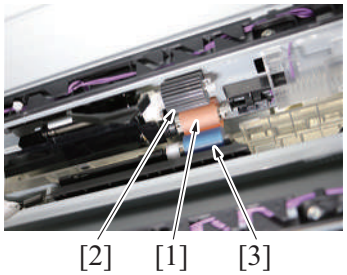
4. Clean the CCD sensor [1].



5.1.6 Cleaning the tray 1 pick-up roller, tray 1 feed roller, tray 1 separation roller

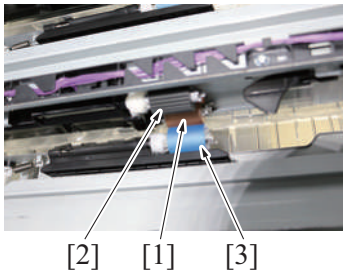
1. Remove the tray 1.
F.5.1.24 Tray 1
2. Remove the tray 2.
F.5.1.25 Tray 2

3. Using a cleaning pad dampened with alcohol, wipe the tray 1 feed roller [1], tray 1 pick-up roller [2], tray 1 separation roller [3] clean of dirt.



5.1.7 Cleaning the tray 2 pick-up roller, tray 2 feed roller, tray 2 separation roller

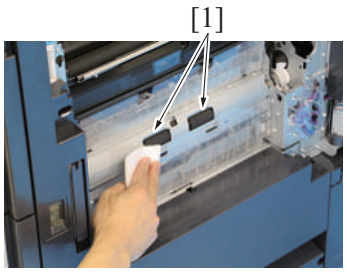
1. Remove the tray 1.
   F.5.1.24 Tray 1
2. Remove the tray 2.
   F.5.1.25 Tray 2



3. Using a cleaning pad dampened with alcohol, wipe the tray 2 feed roller [1], tray 2 pick-up roller [2], tray 2 separation roller [3] clean of dirt.

5.1.8 Cleaning the tray 2 transport roller

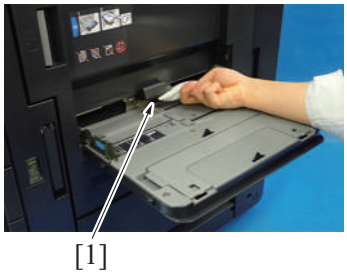
1. Open the right door.



2. Using a cleaning pad dampened with alcohol, wipe the tray 2 transport rollers [1] clean of dirt.

5.1.9 Cleaning the bypass pick-up roller

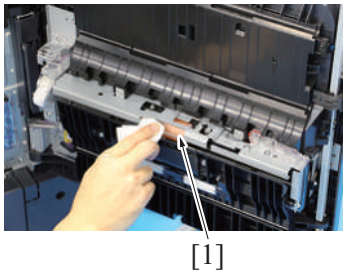
1. Open the manual bypass tray.



2. Using a cleaning pad dampened with alcohol, wipe the bypass tray pick-up roller [1] clean of dirt.

5.1.10 Cleaning the manual bypass tray feed roller

1. Open the right door.
2. Open the registration unit.

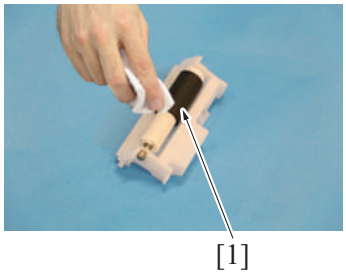


3. Using a cleaning pad dampened with alcohol, wipe the manual bypass tray feed roller [1] clean of dirt.

5.1.11 Cleaning the manual bypass tray separation roller

1. Remove the manual bypass tray separation roller unit.
   E.3.1.3 Replacing the manual bypass tray pick-up roller, manual bypass tray feed roller, manual bypass tray separation roller assy

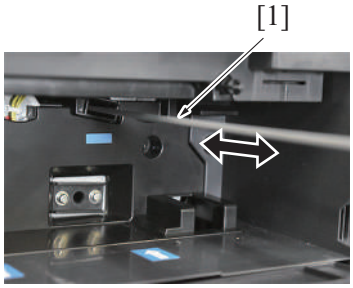
2. Using a cleaning pad dampened with alcohol, wipe the manual bypass tray separation roller [1] clean of dirt.



5.1.12 Cleaning the PH window

1. Open the lower front door.
2. Remove the waste toner box.
F.5.2.1 Waste toner box

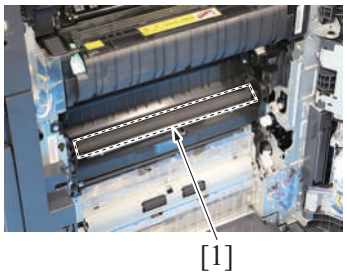
3. Clean the PH window by putting the PH window cleaning jig [1] back and forth a couple times.



5.1.13 Cleaning of the registration roller

1. Open the right door.

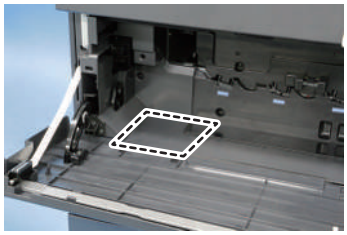
2. Using a cleaning pad with alcohol, wipe the registration roller [1] clean of dirt.



5.1.14 Cleaning of the area around the waste toner collecting port

1. Remove the waste toner box.

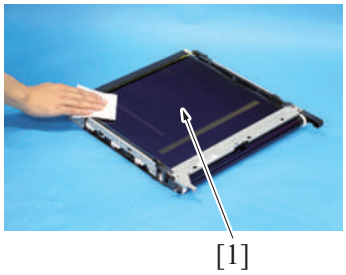
2. Wipe the areas around the waste toner collecting port clean of spilled toner and dirt using a cleaning pad with water or alcohol.



5.1.15 Cleaning the transfer belt unit

1. Remove the transfer belt unit.
E.3.1.9 Replacing the transfer belt unit

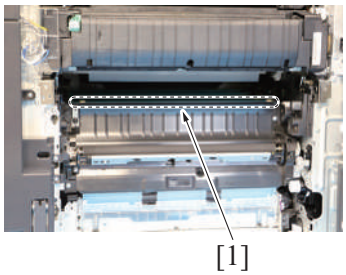
2. Using a hydro-wipe (65AA-99##), wipe the transfer belt [1].
NOTE
- **Do not wipe out with water.**
- **Do not wipe out with any solvents.**



5.1.16 Cleaning of the image transfer entrance guide

1. Remove the transfer belt unit.
E.3.1.9 Replacing the transfer belt unit

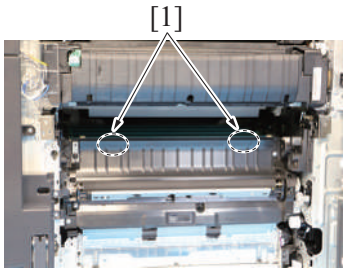
2. Wipe the image transfer entrance guide [1] clean of spilled toner and dirt using a cleaning pad with water or alcohol.



5.1.17 Cleaning of the IDC sensor window

1. Remove the transfer belt unit.
E.3.1.9 Replacing the transfer belt unit

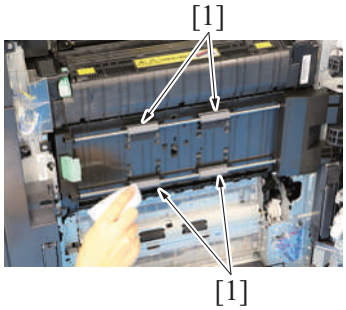
2. Wipe out the IDC sensor window [1].
NOTE
- **Do not wipe out with any solvents or alcohols.**



5.1.18 Cleaning of the duplex transport rollers

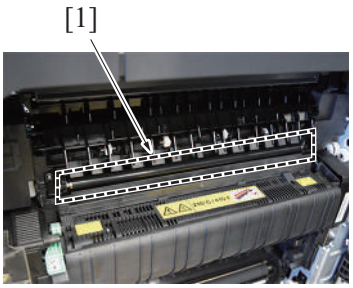
1. Open the right door.
2. Open the registration unit.

3. Using a cleaning pad with water or alcohol, wipe the duplex transport rollers [1] clean of dirt.



5.1.19 Cleaning of the exit tray front roller

1. Open the right door.

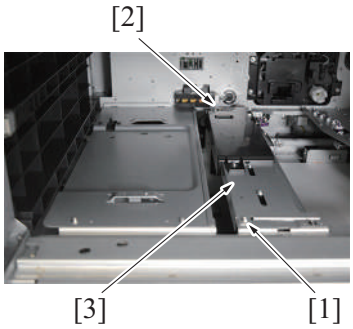


2. Using a cleaning pad with alcohol, wipe the exit tray front roller [1] clean of dirt.

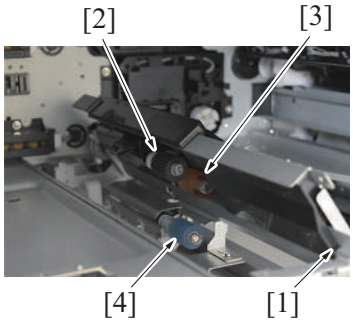
5.2 Tray 3/4

5.2.1 Tray 3 pick-up roller, feed roller, separation roller

1. Remove the tray 1 and tray 2.
2. Slide out the tray 3.



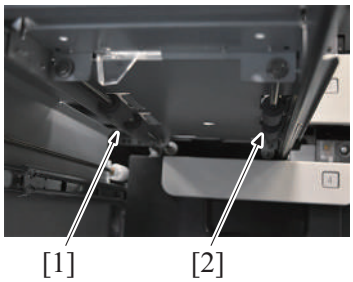
3. Remove the screw [1], and loosen the screw [2].
4. Open the tray 3 paper feed unit [3].



5. Pull out the plate [1], and fix the tray 3 paper feed unit.
6. Using a cleaning pad dampened with alcohol, wipe the tray 3 pick-up roller [2], tray 3 feed roller [3], and tray 3 separation roller [4] clean of dirt.

5.2.2 Horizontal transport roller

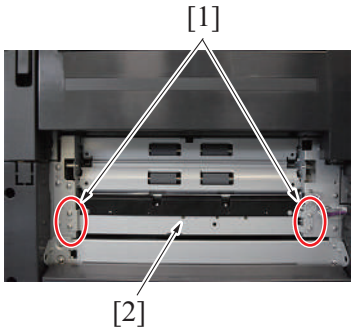
1. Slide out the tray 3.



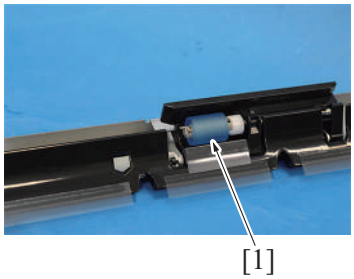
2. Using a cleaning pad dampened with alcohol, wipe the horizontal transport roller 1 [1], horizontal transport roller 2 [2] clean of dirt.

5.2.3 Tray 4 pick-up roller, feed roller, separation roller

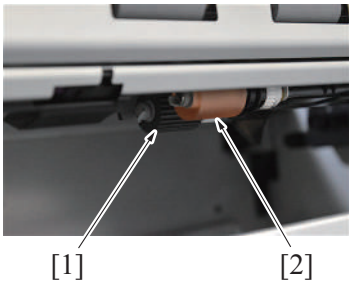
1. Slide out the tray 4.
2. Remove the right door.
   F.6.1 Right door



3. Remove four screws [1], and remove the separation roller assy [2].



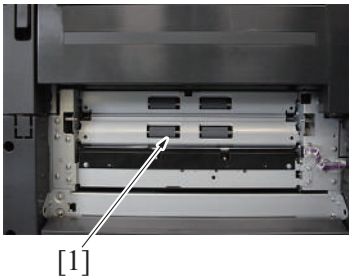
4. Using a cleaning pad dampened with alcohol, wipe the tray 4 separation roller [1] clean of dirt.



5. Using a cleaning pad dampened with alcohol, wipe the tray 4 pick-up roller [1] and tray 4 feed roller [2] clean of dirt.

5.2.4 Tray 4 vertical transport roller

1. Open the right door.

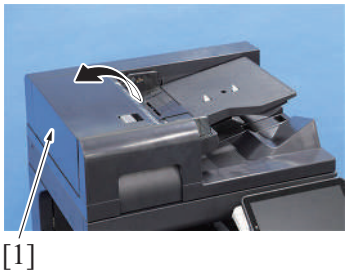


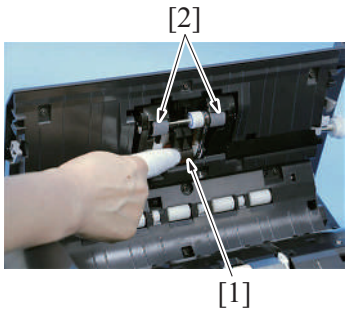
2. Using a cleaning pad dampened with alcohol, wipe the tray 4 vertical transport roller [1] clean of dirt.

5.3 DF-713

5.3.1 Cleaning the pick-up roller/feed roller

1. Open the left cover [1].



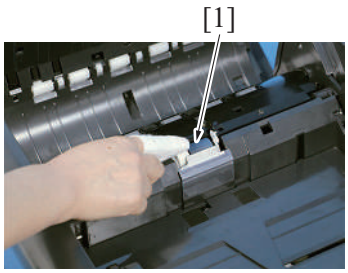


2. Using a cleaning pad dampened with alcohol, wipe the pick-up roller [1] / feed roller [2] clean of dirt.

5.3.2 Cleaning the separation roller

1. Open the left cover [1].





2. Using a cleaning pad dampened with alcohol, wipe the separation roller [1] clean of dirt.

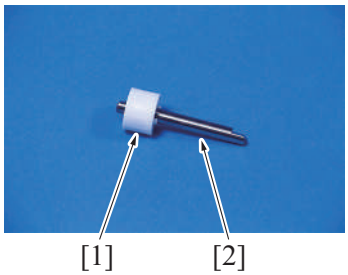
5.3.3 Cleaning the torque limiter and shaft

1. Open the left cover [1].



2. Remove the separation roller.
E.3.3.2 Replacing the separation roller

3. Using a cleaning pad, wipe the torque limiter [1] and the shaft [2] clean of dirt.

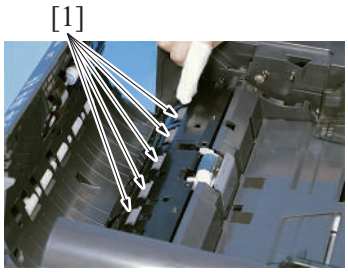


5.3.4 Cleaning the miscellaneous rollers

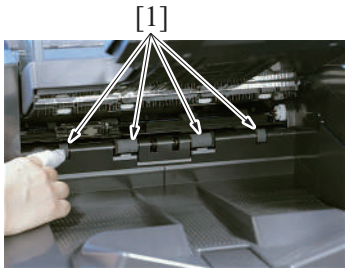
1. Open the left cover [1].



2. Using a cleaning pad dampened with alcohol, wipe the rollers [1] clean of dirt.

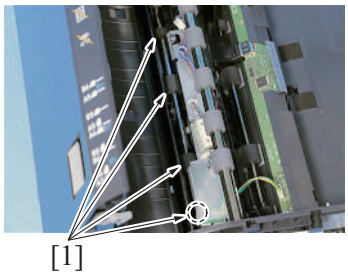


3. Lift up the document feed tray.
4. Using a cleaning pad dampened with alcohol, wipe the rollers [1] clean of dirt.

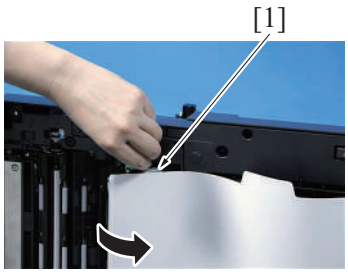


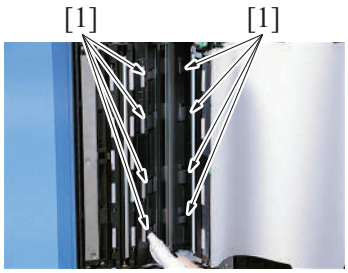
5. Remove the lower guide assy.
F.7.6 Lower guide assy (DF-713)

6. Using a cleaning pad dampened with alcohol, wipe the rollers [1] clean of dirt.



7. Open the opening and closing guide [1].



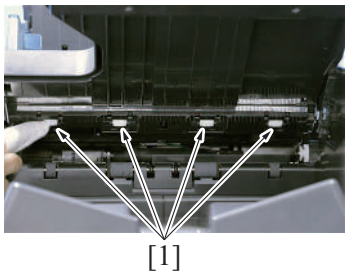


8. Using a cleaning pad dampened with alcohol, wipe the rollers [1] clean of dirt.

9. To reinstall, reverse the order of removal.

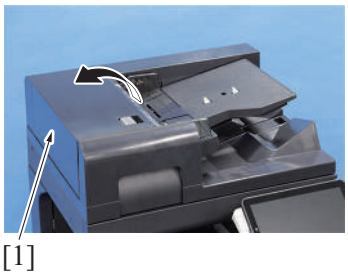
5.3.5 Cleaning the miscellaneous rolls

1. Lift up the document feed tray.

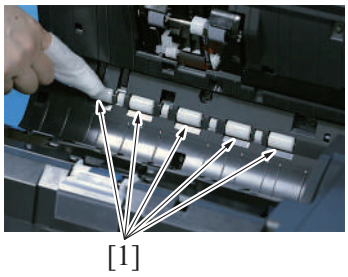


2. Using a cleaning pad dampened with alcohol, wipe the rolls [1] clean of dirt.

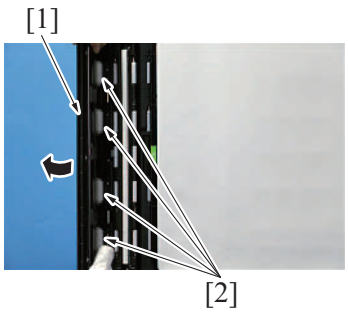
3. Open the left cover [1].

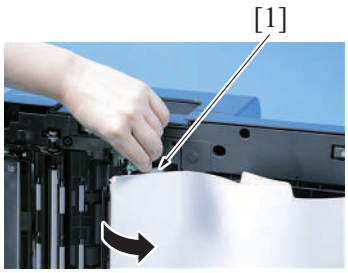


4. Using a cleaning pad dampened with alcohol, wipe the rolls [1] clean of dirt.

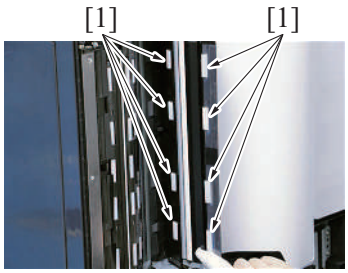


5. Open the dual scan document feeder.
6. While opening the pre-reading sheet assy [1], using a cleaning pad dampened with alcohol, wipe the rolls [2] clean of dirt.





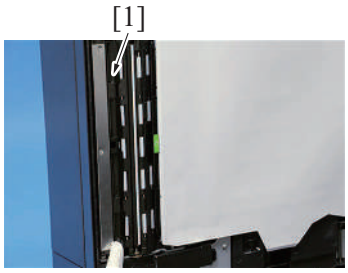
7. Open the opening and closing guide [1].



8. Using a cleaning pad dampened with alcohol, wipe the rolls [1] clean of dirt.

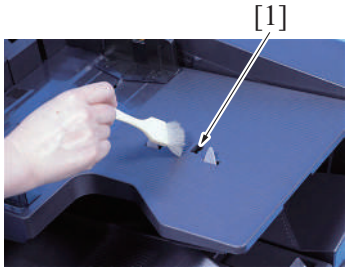
5.3.6 Cleaning the front side scanning guide

1. Open the dual scan document feeder.

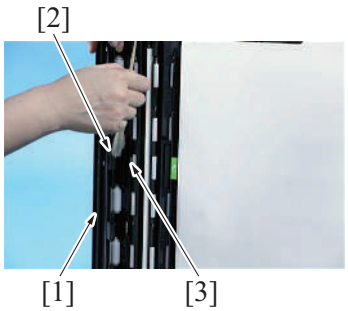


2. Using a cleaning pad dampened with alcohol, wipe the front side scanning guide [1] clean of dirt.
NOTE
- **Be careful not to damage the sheet.**

5.3.7 Cleaning the reflective sensor section



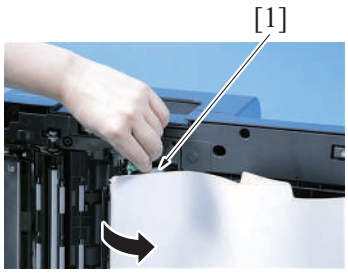
1. Clean the sensor [1] using a brush or other similar tools.



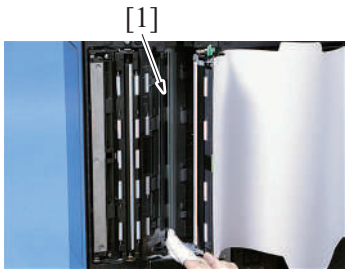
2. Open the dual scan document feeder.
3. Open the pre-reading sheet assy [1], and clean the reflective section [2] and sensor section [3] using a brush or other similar tools.

5.3.8 Cleaning the back side scanning glass

1. Open the dual scan document feeder.



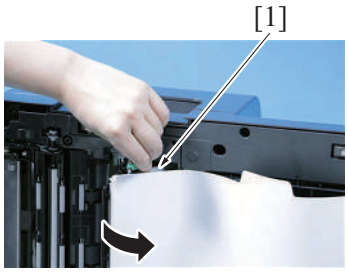
2. Open the opening and closing guide [1].



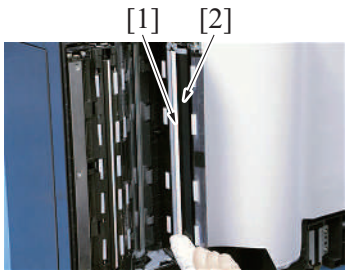
3. Using a cleaning pad, wipe the back side scanning glass [1].

5.3.9 Cleaning the back side scanning guide/back side scanning shading shaft

1. Open the dual scan document feeder.



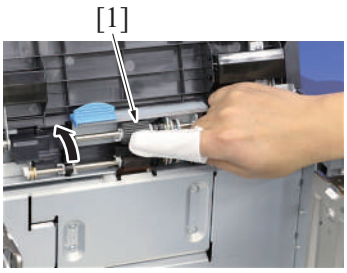
2. Open the opening and closing guide [1].



3. Using a cleaning pad with alcohol, wipe the back side scanning guide [1] and back side scanning shading shaft [2] clean of dirt.

5.4 LU-205

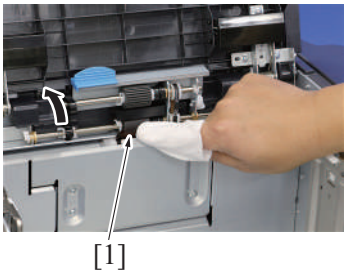
5.4.1 Pick-up roller



1. Open the upper door.
2. Lift the pick-up roller.
3. Using a cleaning pad dampened with alcohol, wipe the pick-up roller [1] clean of dirt.

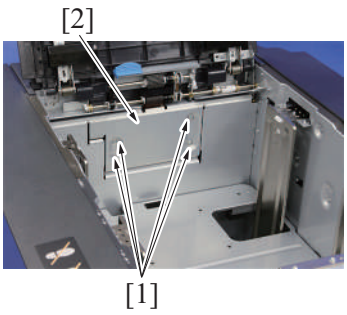
5.4.2 Feed roller

1. Open the upper door.
2. Lift the pick-up roller.
3. Using a cleaning pad dampened with alcohol, wipe the feed roller [1] clean of dirt.

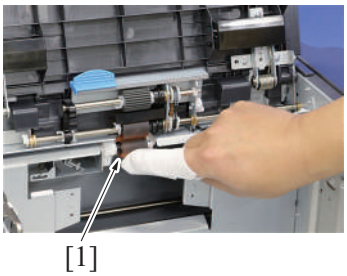


5.4.3 Separation roller

1. Open the upper door.
2. Lift the pick-up roller.
3. Remove four screws [1] and remove the plate [2].

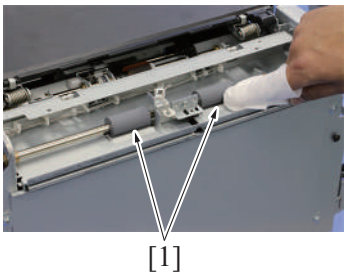


4. Using a cleaning pad dampened with alcohol, wipe the separation roller [1] clean of dirt.



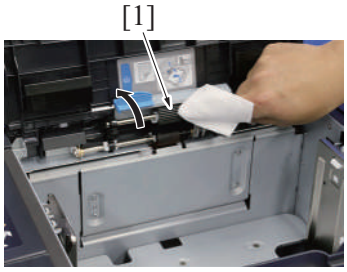
5.4.4 Conveyance roller

1. Remove the paper feed cover.
   F.8.4 Feed cover (LU-205)
2. Using a cleaning pad dampened with alcohol, wipe the conveyance rollers [1] clean of dirt.



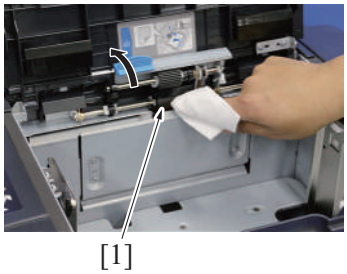
5.5 LU-303

5.5.1 Pick-up roller



1. Open the upper door.
2. Lift the pick-up roller.
3. Using a cleaning pad dampened with alcohol, wipe the pick-up roller [1] clean of dirt.

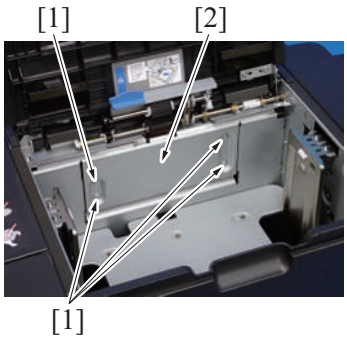
5.5.2 Feed roller



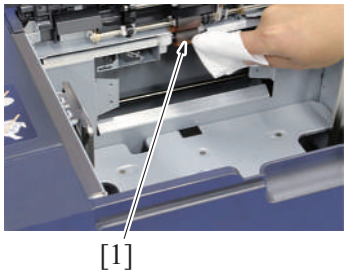
1. Open the upper door.
2. Lift the pick-up roller.
3. Using a cleaning pad dampened with alcohol, wipe the feed roller [1] clean of dirt.

5.5.3 Separation roller

1. Open the upper door.
2. Lift the pick-up roller.



3. Remove four screws [1], and remove the plate [2].

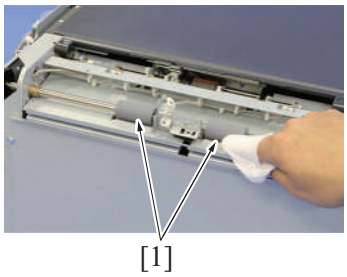


4. Using a cleaning pad dampened with alcohol, wipe the separation roller [1] clean of dirt.

5.5.4 Conveyance roller

1. Remove the paper feed cover.
F.9.4 Feed cover (LU-303)

2. Using a cleaning pad dampened with alcohol, wipe the conveyance rollers [1] clean of dirt.



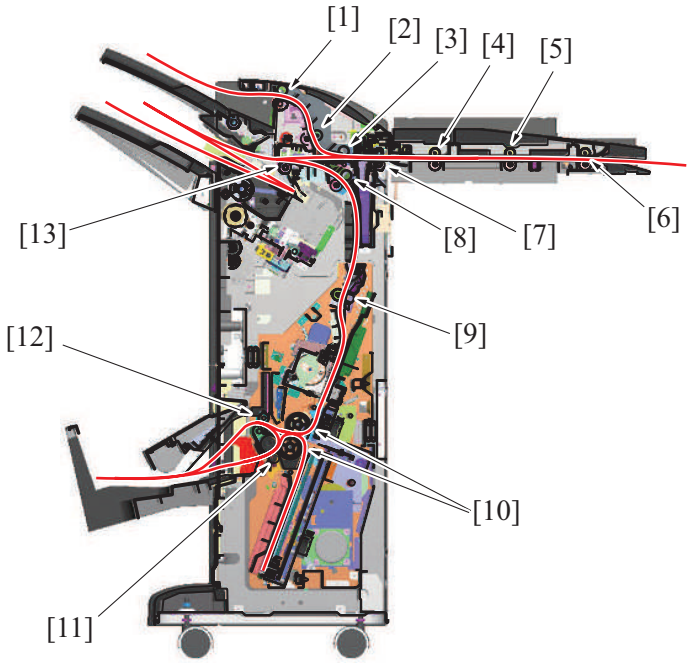
5.6 FS-539/FS-539SD

NOTE

- **The alcohol described in the cleaning procedure of maintenance represents the isopropyl alcohol.**

5.6.1 Cleaning roller and rolls

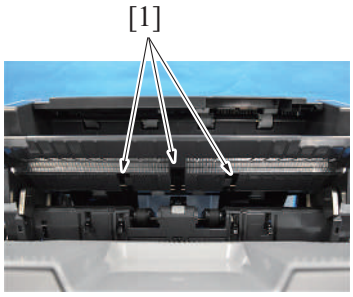
FS-539/FS-539SD (When PK-524 installed)



[1]	Sub tray exit roller, roll	[2]	Sub tray transport roller, roll
[3]	Transport roller, roll	[4]	RU transport roller 3, transport roll 3 (horizontal transport section) *
[5]	RU transport roller 2, transport roll 2 (horizontal transport section) *	[6]	RU transport roller 1, transport roll 1 (horizontal transport section) *
[7]	FNS entry roller, roll	[8]	Saddle section exit roller, roll
[9]	Saddle section paper feed roller, roll	[10]	Center folding roller
[11]	Tri-folding roller, roll	[12]	Sub tray exit roller, roll
[13]	Receiving roller, Receiving roll	-	-

- *: Option

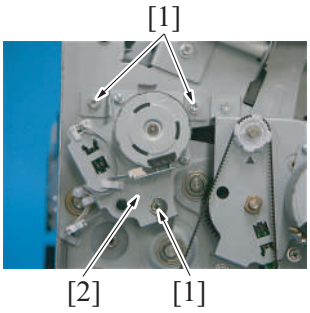
5.6.2 Cleaning the paddle



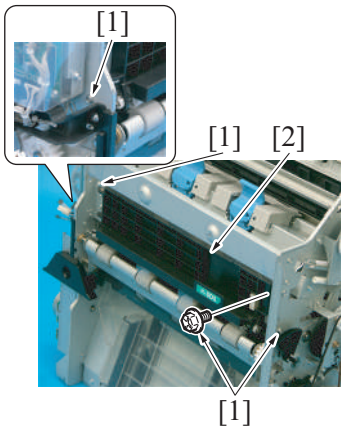
1. Using a cleaning pad dampened with alcohol, wipe the paddles [1] clean of dirt.

5.6.3 Cleaning the upper paddle (saddle section)

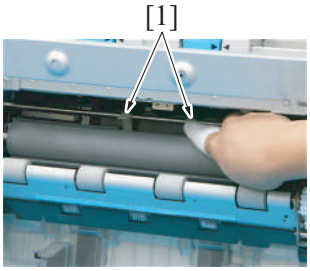
1. Remove the saddle unit.
   F.13.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.13.2 Front cover (FS-539SD saddle section)



3. Remove three screws [1], and remove the tri-folding guide motor assy [2].

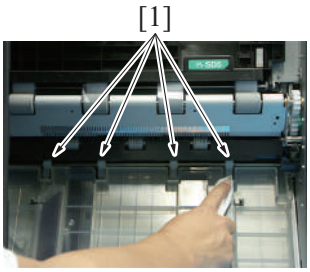


4. Remove four screws [1], and remove the transport assy [2].



5. Using a cleaning pad dampened with alcohol, wipe the paddles [1] clean of dirt.

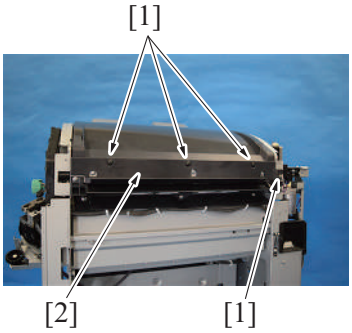
5.6.4 Cleaning the lower paddles (saddle section)



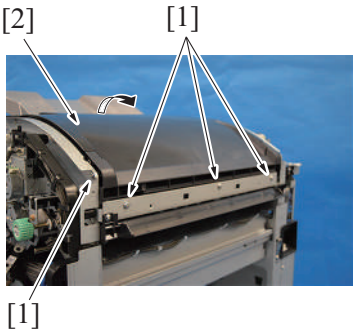
1. Using a cleaning pad dampened with alcohol, wipe the paddles [1] clean of dirt.

5.6.5 Cleaning the FNS entrance sensor (PS4)

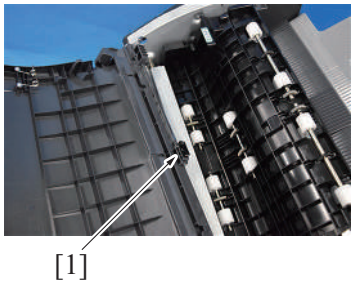
1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover of the finisher.
   F.12.2 Rear cover (FS-539/FS-539SD)
3. Remove the front door of the finisher.
   F.12.3 Front door (FS-539/FS-539SD)
4. Remove the front upper cover of the finisher.
   F.12.4 Front upper cover (FS-539/FS-539SD)



5. Remove four screws [1], and remove the cover [2].
   NOTE
   - **When reinstalling the screws, be careful not to install them incorrect.**



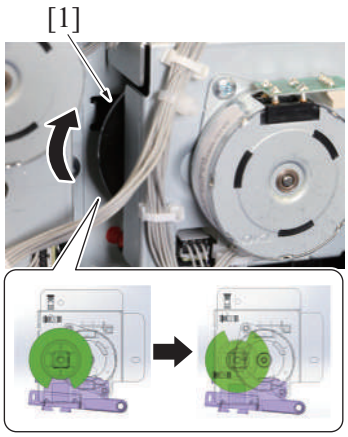
6. Remove four screws [1], and remove the cover [2].



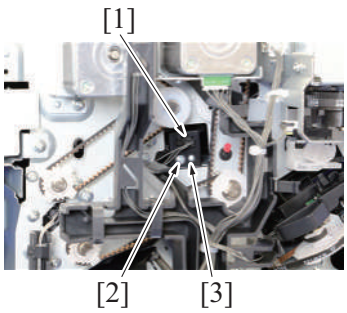
7. Using a cleaning pad dampened with alcohol, wipe the FNS entrance sensor [1] clean of dirt.
8. To reinstall, reverse the order of removal.

5.6.6 Cleaning the main tray exit sensor (PS16)

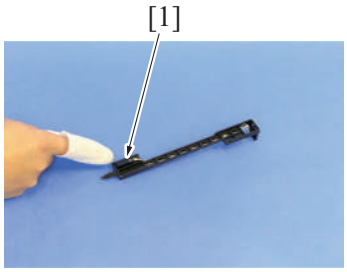
1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover of the finisher.
   F.12.2 Rear cover (FS-539/FS-539SD)
3. Remove the front door of the finisher.
   F.12.3 Front door (FS-539/FS-539SD)
4. Remove the front upper cover of the finisher.
   F.12.4 Front upper cover (FS-539/FS-539SD)



5. Rotate the douser [1] by 180 degrees.



6. Disconnect the connector [1], and remove the screw [2] and the guide [3].



7. Using a cleaning pad dampened with alcohol, wipe the main tray exit sensor [1] clean of dirt.

8. To reinstall, reverse the order of removal.

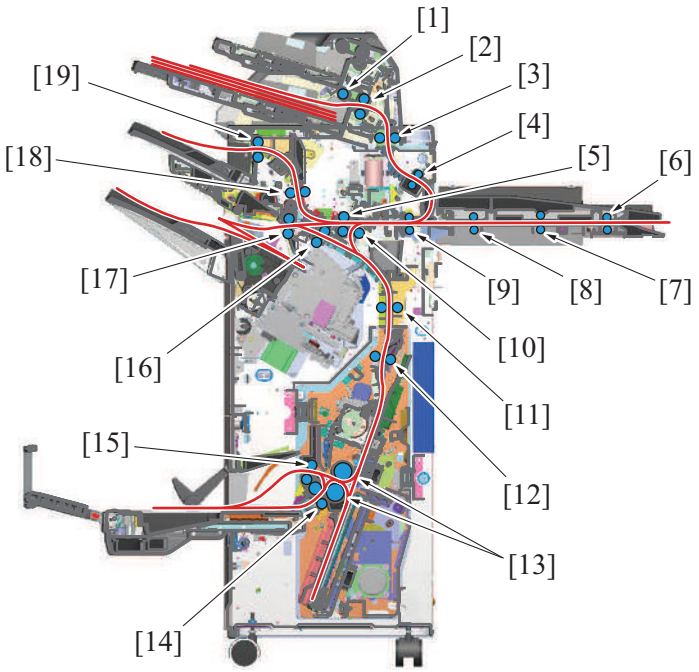
5.7 FS-540/FS-540SD

NOTE

- **The alcohol described in the cleaning procedure of maintenance represents the isopropyl alcohol.**

5.7.1 Cleaning roller and rolls

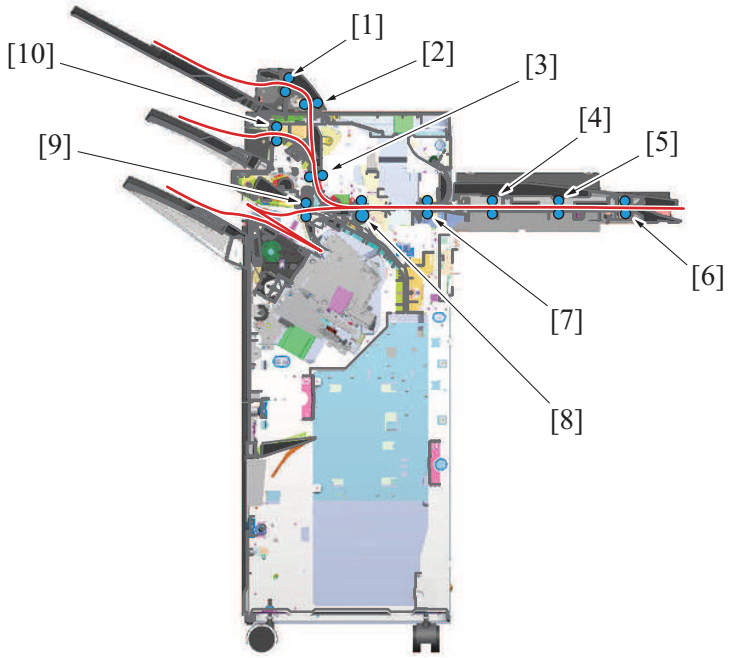
FS-540SD (When PK-526/ZU-609/PI-507 installed)



[1]	Pick-up roller/Lw (post inserter) (*)	[2]	Feed roller/Lw, separation roller/Lw (post inserter) (*)
[3]	Transport roller, transport roll (post inserter) (*)	[4]	PI transport roller, PI transport roll
[5]	Transport roller 1/transport roll 2	[6]	RU transport roller 1, transport roll 1 (relay unit) (*)
[7]	RU transport roller 2, transport roll 2 (relay unit) (*)	[8]	RU transport roller 3, transport roll 3 (relay unit) (*)
[9]	FNS entry roller, roll	[10]	Z folding roller (Z folding unit) (*)
[11]	Saddle section exit roller 2, roll	[12]	Saddle section paper feed roller, roll
[13]	Center folding roller	[14]	Tri-folding roller, roll
[15]	Saddle tray exit roller, roll	[16]	Saddle section exit roller 1, roll
[17]	Receiving roller, Receiving roll	[18]	Sub tray transport roller, roll
[19]	Sub tray exit roller, roll	-	-

- *: Option

FS-540 (When JS-602 installed)



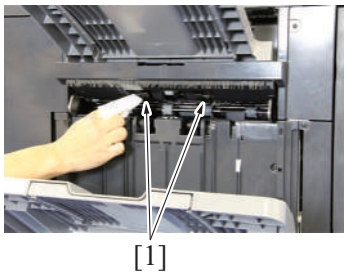
[1]	Separator exit roller, roll (separator) (*)	[2]	Separator transport roller, roll (separator) (*)

[3]	Sub tray transport roller, roll	[4]	RU transport roller 3, transport roll 3 (relay unit) (*)
[5]	RU transport roller 2, transport roll 2 (relay unit) (*)	[6]	RU transport roller 1, transport roll 1 (relay unit) (*)
[7]	FNS entry roller, roll	[8]	Transport roller 1/transport roller 2
[9]	Receiving roller, receiving roll	[10]	Sub tray exit roller, roll

- *: Option

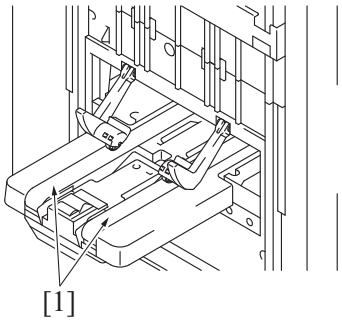
5.7.2 Cleaning the paddles

1. Using a cleaning pad dampened with alcohol, wipe the paddles [1] clean of dirt.



5.7.3 Cleaning the exit tray conveyance belt (saddle section)

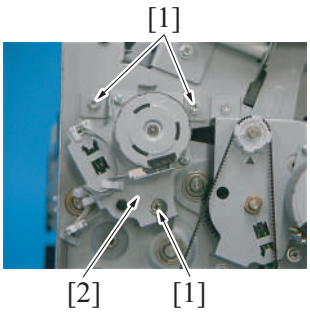
1. Using a cleaning pad dampened with alcohol, wipe the exit tray conveyance belt [1] clean of dirt.



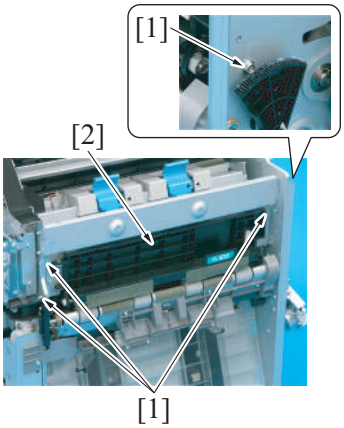
5.7.4 Cleaning the upper paddle (saddle section)

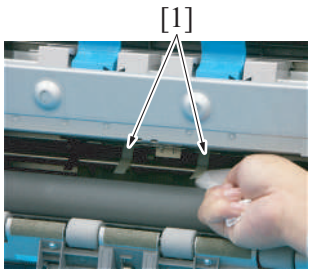
1. Remove the saddle unit.
   F.16.1 Saddle unit (FS-540SD saddle section)
2. Remove the front cover.
   F.16.2 Front cover (FS-540SD saddle section)

3. Remove three screws [1], and remove the tri-folding guide motor assy [2].



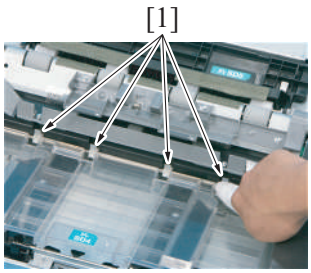
4. Remove four screws [1], and remove the transport assy [2].





5. Using a cleaning pad dampened with alcohol, wipe the paddles [1] clean of dirt.

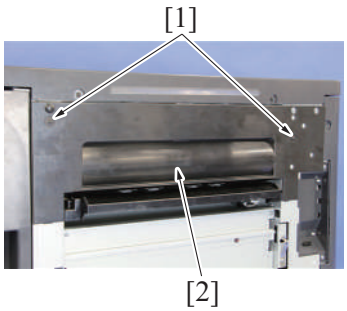
5.7.5 Cleaning the lower paddle (saddle section)



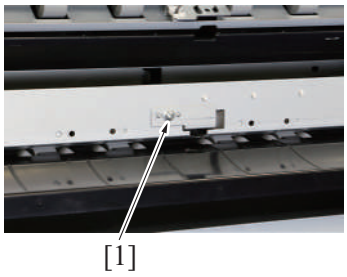
1. Using a cleaning pad dampened with alcohol, wipe the paddles [1] clean of dirt.

5.7.6 Cleaning the FNS entrance sensor (PS34)

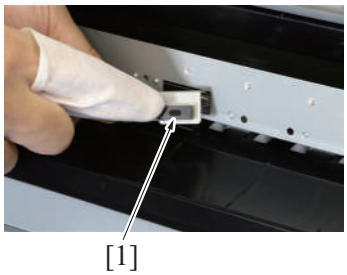
1. Remove the finisher from the main body.
F.15.1 Finisher (FS-540/FS-540SD)



2. Remove two screws [1], and remove the cover [2].



3. Remove the screw [1].



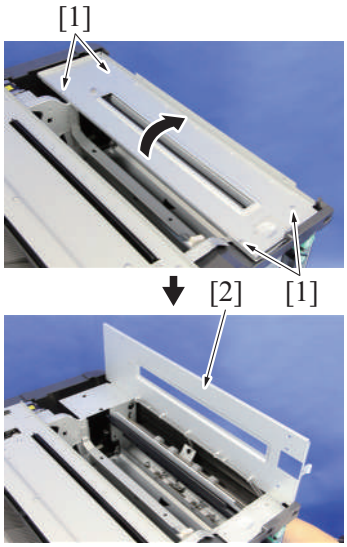
4. Wipe the FNS entrance sensor [1] clean of dirt.
NOTE
- **Do not wipe out with any solvents or alcohols.**

5. To reinstall, reverse the order of removal.

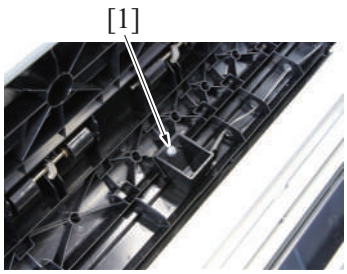
5.7.7 Cleaning the FNS middle sensor (PS36)

1. Remove the finisher from the main body.

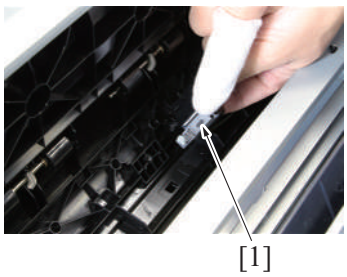
F.15.1 Finisher (FS-540/FS-540SD)
2. Remove the upper cover/1.
F.15.2 Upper cover/1 (FS-540/FS-540SD)
3. Remove the upper cover/2.
F.15.3 Upper cover/2 (FS-540/FS-540SD)
4. Remove the upper cover/3.
F.15.4 Upper cover/3 (FS-540/FS-540SD)



5. Remove four screws [1], and lift up the plate [2].



6. Remove the screw [1].

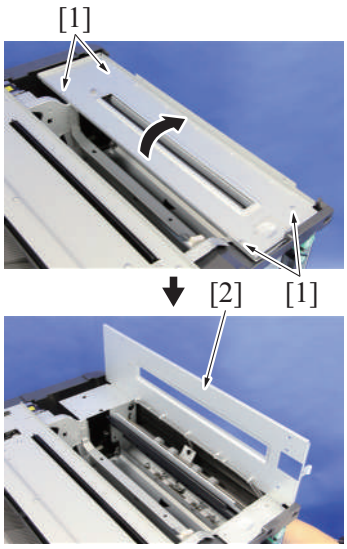


7. Wipe the FNS middle sensor [1] clean of dirt.
NOTE
- **Do not wipe out with any solvents or alcohols.**

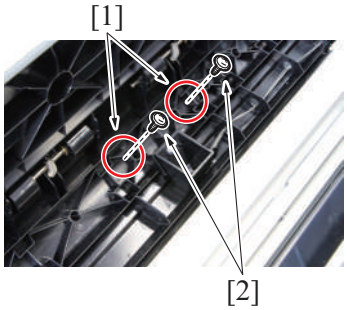
8. To reinstall, reverse the order of removal.

5.7.8 Cleaning the main tray exit sensor (PS37)

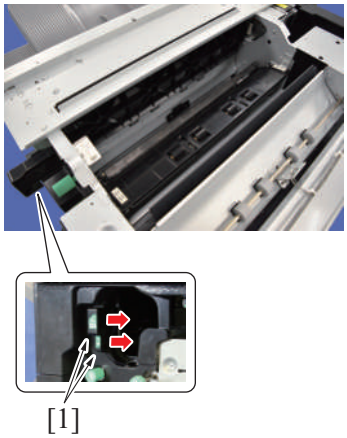
1. Remove the finisher from the main body.
F.15.1 Finisher (FS-540/FS-540SD)
2. Remove the upper cover/1.
F.15.2 Upper cover/1 (FS-540/FS-540SD)
3. Remove the upper cover/2.
F.15.3 Upper cover/2 (FS-540/FS-540SD)
4. Remove the upper cover/3.
F.15.4 Upper cover/3 (FS-540/FS-540SD)



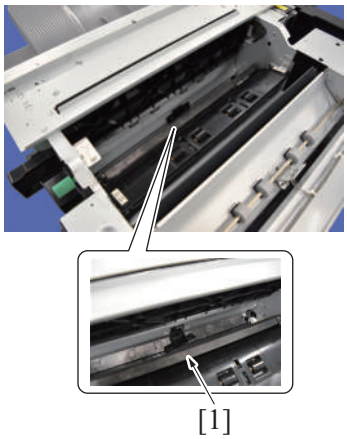
5. Remove four screws [1], and lift up the plate [2].



6. Remove two screws [2] from two holes [1] of the guide.



7. Open the front door of the finisher, and open the guide levers (FS4/FS5) [1].



8. Remove the main tray exit sensor [1], and wipe it clean of dirt.
NOTE
- **Do not wipe out with any solvents or alcohols.**

9. To reinstall, reverse the order of removal.

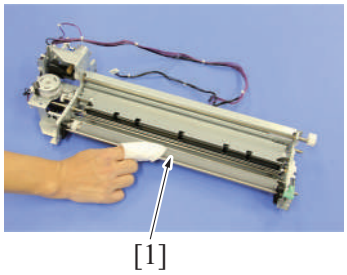
5.8 ZU-609

NOTE

- **The alcohol described in the cleaning procedure of maintenance represents the isopropyl alcohol.**

5.8.1 Cleaning the Z fold roller (ZU-609)

1. Remove the Z folding unit.
   F.18.1 Z Folding Unit (ZU-609)
2. Using a cleaning pad dampened with alcohol, wipe the Z fold roller [1] clean of dirt.



3. To reinstall, reverse the order of removal.

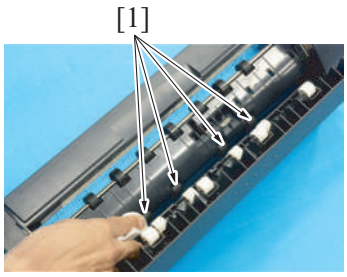
5.9 JS-602

NOTE

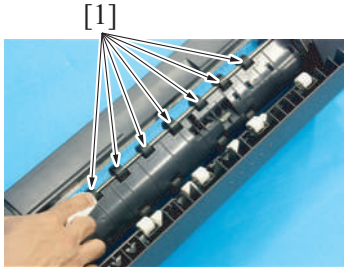
- **The alcohol described in the cleaning procedure of maintenance represents the isopropyl alcohol.**

5.9.1 Cleaning the conveyance roller/paper exit roller (JS-602)

1. Open the cover.
2. Using a cleaning pad dampened with alcohol, wipe the conveyance rollers [1] clean of dirt.



3. Using a cleaning pad dampened with alcohol, wipe the paper exit rollers [1] clean of dirt.



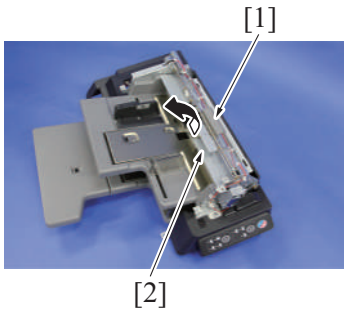
5.10 PI-507

NOTE

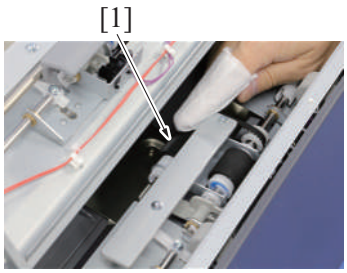
- **The alcohol described in the cleaning procedure of maintenance represents the isopropyl alcohol.**

5.10.1 Pick-up roller/Lw, feed roller/Lw, separation roller/Lw

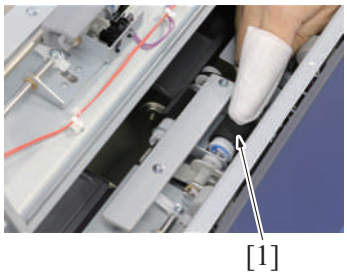
1. Remove the upper cover.
   F.20.1 Upper cover (PI-507)



2. Pull the unlock lever [1] and open the upper door [2].

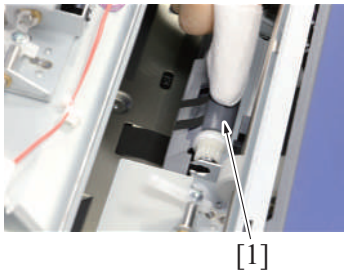


3. Using a cleaning pad dampened with alcohol, wipe the pick-up roller/Lw [1] clean of dirt.



4. Using a cleaning pad dampened with alcohol, wipe the feed roller/Lw [1] clean of dirt.

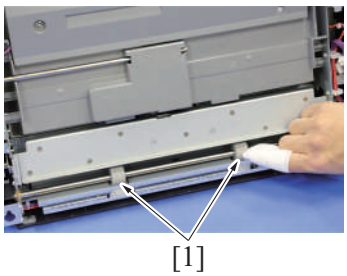
5. Remove the feed roller assy/Lw.
E.3.8.1 Replacing the pick-up roller/Lw, feed roller/Lw



6. Using a cleaning pad dampened with alcohol, wipe the separation roller/Lw [1] clean of dirt.

5.10.2 Conveyance roller/Lw

1. Remove the post inserter.
F.20.4 Post Inserter (PI-507)

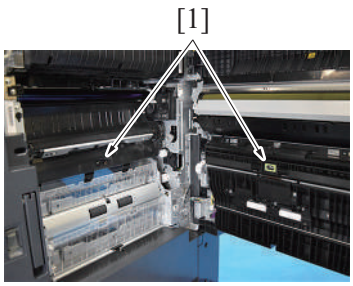


2. Using a cleaning pad dampened with alcohol, wipe the conveyance rollers/Lw [1] clean of dirt.

5.11 IM-102

5.11.1 Cleaning the media detection sensor window

1. Open the right door.



2. Clean the media detection sensor windows [1] with air.

F DISASSEMBLY/REASSEMBLY

1. Disassembly/adjustment prohibited items

1.1 Paint-locked screws

NOTE

- **To prevent loose screws, a screw lock in blue or green series color is applied to the screws.**
- **The screw lock is applied to the screws that may get loose due to the vibrations and loads created by the use of machine or due to the vibrations created during transportation.**
- **If the screw lock coated screws are loosened or removed, be sure to apply a screw lock after the screws are tightened.**

1.2 Red-painted screws

NOTE

- **The screws which are difficult to be adjusted in the field are painted in red in order to prevent them from being removed by mistake.**
- **Do not remove or loosen any of the red-painted screws in the field. It should also be noted that, when two or more screws are used for a single part, only one representative screw may be marked with the red paint.**

1.3 Variable resistors on board

NOTE

- **Do not turn the variable resistors on boards for which no adjusting instructions are given in Adjustment/Setting.**

1.4 Warnings for disassembly

⚠WARNING

- When accessing a hard-to-view or narrow spot, be careful about sharp edges and burrs on the frame and parts.

  They may injure your hands or fingers.

⚠WARNING

- If it is absolutely necessary to service the machine with the door open or external covers removed, always be attentive to the motion of the internal parts.

  A normally protected part may cause unexpected hazards.

⚠WARNING

- When removing a part that secures a motor, gear, or other moving part, disassembling a unit, or reinstalling any of such parts and units, be careful about moving parts and use care not to drop any part or unit. During the service procedure, give sufficient support for any heavy unit.

  You may be injured by a falling part or unit.

1.5 Warnings / Precautions during setup or transportation

⚠WARNING

- Whenever mounting an option on the machine, be attentive to the motion of the other workers performing the task.

  Another worker may be injured by a pinch point between the machine and the option.

⚠WARNING

- When mounting an option on the machine, be careful about the clearance between the machine and the option.

  You may be injured with your finger or hand pinched between the machine and the option.

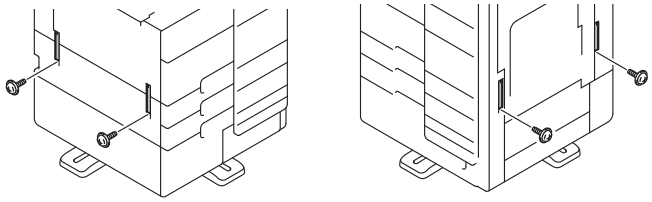
⚠CAUTION

- Do not leave the machine unattended during transportation, installation, and/or inspection. If the machine is left unattended, face protrusions toward the wall or take other necessary precautions to prevent.

  A user or other person in the area from stumbling over a protrusion of the machine or being caught by a cable, possibly causing a fall to the floor or other personal injury.

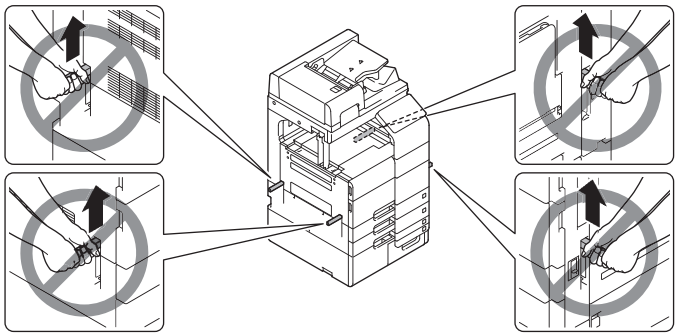
⚠CAUTION

- Do not lift the machine by holding the handle. Be sure to secure the four handles with the supplied screw after installation.



⚠CAUTION

- Be sure to secure handles. If you accidentally hold the handle and lift the machine, resulting in an injury.



2. Units from which removing is prohibited

2.1 CCD unit

2.1.1 Reason for prohibition

- Since the accuracy of the CCD unit is guaranteed as a unit, no accuracy is guaranteed if it is disassembled. Do no remove any screw which may disassemble the CCD unit.

2.2 PH unit

2.2.1 Reason for prohibition

- The laser runs inside the PH unit. Opening the cover may cause dust to enter and interrupt the laser. Do no remove any screw which may disassemble the PH unit.

2.3 Fusing unit

2.3.1 Reason for prohibition

- Inner part of the fusing unit and the position of the fusing belt are adjusted prior to shipping. Do not remove any screw which may disassemble the fusing unit.

3. Disassembly/assembly warning/caution items

3.1 Removal/installing of PWBs

CAUTION

- When removing or installing a circuit board or other electrical component, refer to “Handling of PWBs” and follow the corresponding removal or installing procedures.
- The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.
- Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.

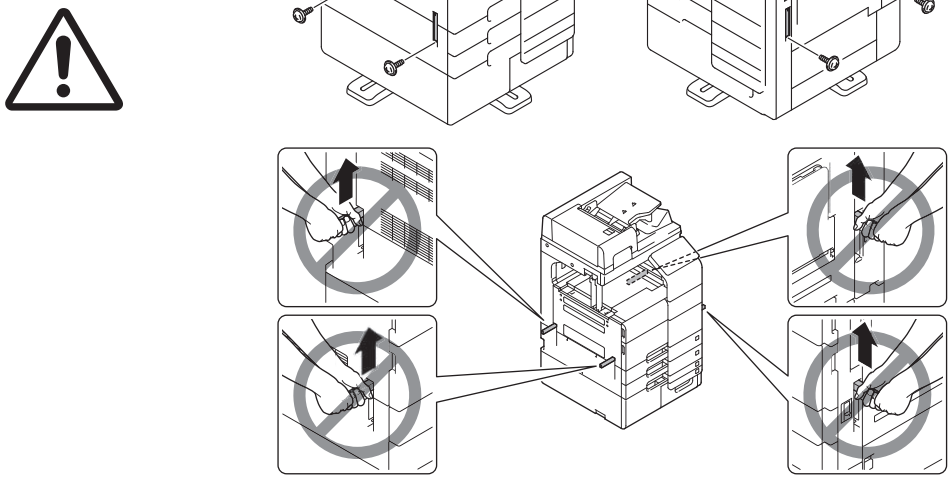
4. Notes when transporting the machine

NOTE

- **When transporting a machine to reinstall it in another location, attach the following protective materials to the machine in order to prevent the machine from being damaged or spilling out by vibration during transportation.**
- **The protective materials are removed when the machine is set up. However, be sure to keep the protective materials after finishing the set-up.**

⚠CAUTION

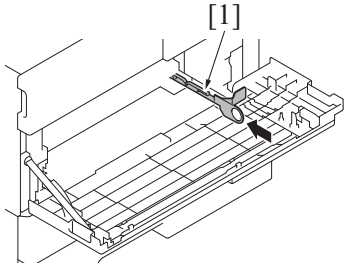
- Make sure that the handle is secured with screws when installing the machine. When using the handle with the screws removed, be sure to tighten them again after use.
- Do not lift up the machine when using the handle. Otherwise, it may injures you.



4.1 Protective materials

4.1.1 Protective materials for the photoconductors

1. Remove the waste toner box.
   F.5.2.1 Waste toner box

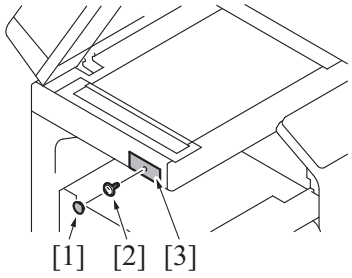


2. Insert the protective materials for the photoconductors [1] in the indicated position and push it as far as it will go.

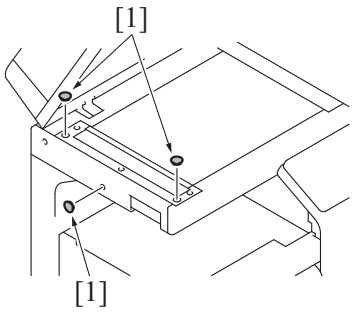
4.1.2 Scanner packing bracket

1. Check that the exposure unit is at the home position.

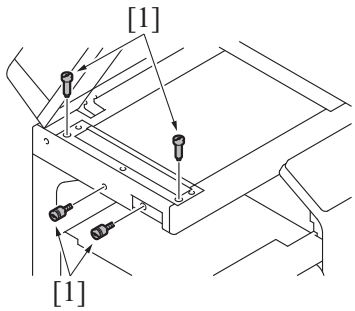
2. Remove the cap [1].
3. Remove the screw [2], and remove the cover [3].



4. Remove three caps [1].



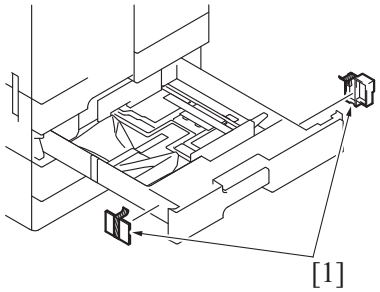
5. Attach the scanner locking materials [1] to fix the scanner.



4.1.3 Paper tray locking materials

1. Slide out the tray 2.

2. Install the locking materials [1].

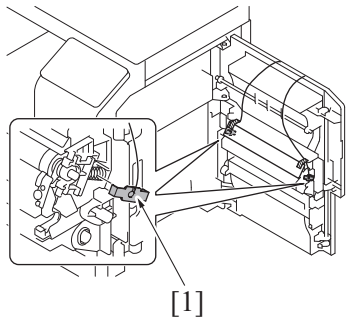


3. Slide the tray 2 back in.

4.1.4 Transfer roller locking materials

1. Open the right door.

2. Install the locking materials [1].

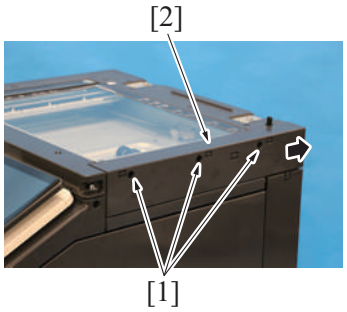


3. Close the right door.

5. bizhub 750i

5.1 Exterior parts

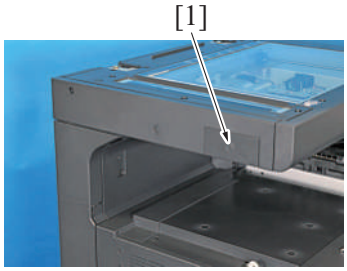
5.1.1 Scanner right cover



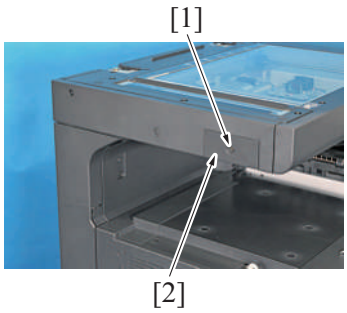
1. Remove three screws [1]. Remove the scanner right cover [2] while moving it in the direction shown with the arrow.

2. To reinstall, reverse the order of removal.

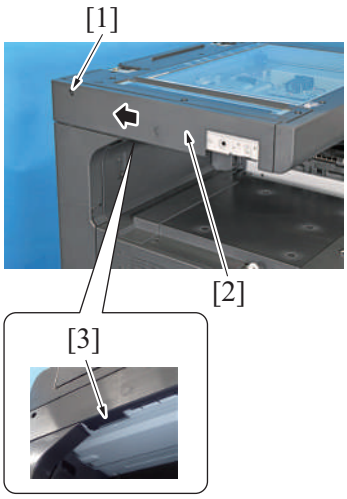
5.1.2 Scanner left cover



1. Remove the cap [1].



2. Remove the screw [1], and remove the cover [2].



3. Remove the screw [1]. Remove the scanner left cover [2] while moving it in the direction shown with the arrow.
NOTE
- **When removing the scanner left cover, unhook the tab [3] on the bottom of the cover.**

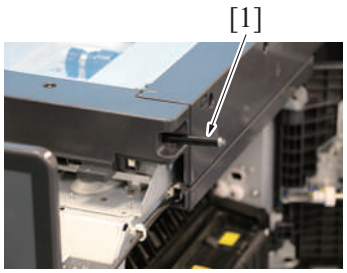
4. To reinstall, reverse the order of removal.

5.1.3 Scanner front cover

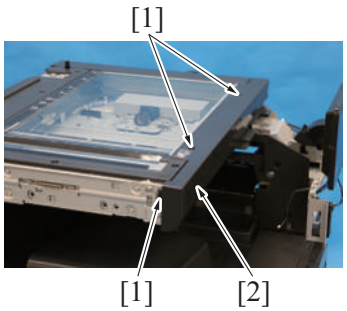
1. Remove the scanner left cover.
F.5.1.2 Scanner left cover
2. Remove the control panel upper cover.
F.5.1.5 Control panel upper cover
3. Remove the control panel front cover.

F.5.1.6 Control panel front cover

4. Remove the control panel right cover.
F.5.1.7 Control panel right cover
5. Remove the control panel left cover/2.
F.5.1.9 Control panel left cover/2



6. Remove the stylus pen [1].

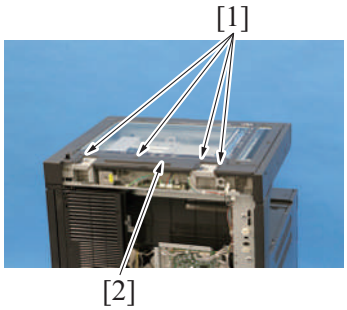


7. Remove three screws [1], and remove the scanner front cover [2].

8. To reinstall, reverse the order of removal.

5.1.4 Scanner upper rear cover

1. Remove the dual scan document feeder.
F.7.7 Dual scan document feeder (DF-713)
2. Remove the lower rear cover.
F.5.1.23 Lower rear cover
3. Remove the duct cover.
F.5.1.20 Duct cover
4. Remove the upper right rear cover.
F.5.1.22 Upper right rear cover



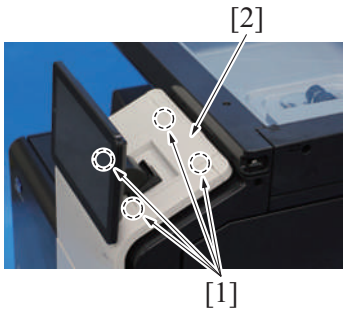
5. Remove four screws [1], and remove the scanner upper rear cover [2].

6. To reinstall, reverse the order of removal.

5.1.5 Control panel upper cover

1. Raise the control panel.



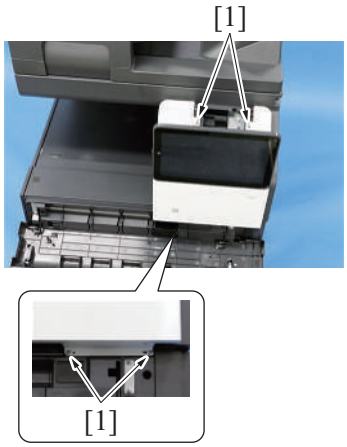


2. Unhook four tabs [1], and remove the control panel upper cover [2].

3. To reinstall, reverse the order of removal.

5.1.6 Control panel front cover

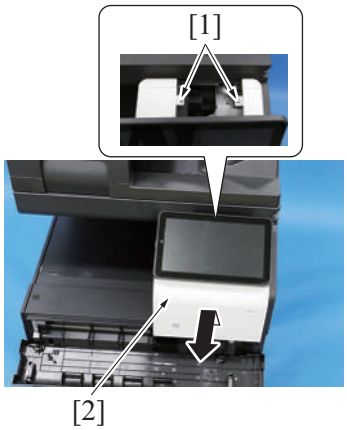
1. Open the upper front door.
2. Remove the control panel upper cover.
F.5.1.5 Control panel upper cover



3. Remove four screws [1].



4. Slightly tilt down the control panel.



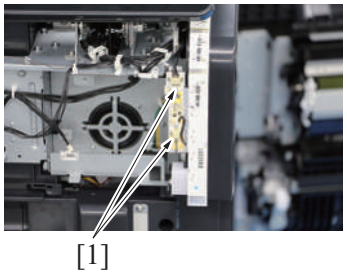
5. Unhook two tabs [1], and remove the control panel front cover [2].

6. To reinstall, reverse the order of removal.

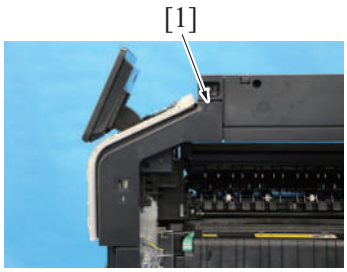
5.1.7 Control panel right cover

1. Open the right door.
2. Remove the control panel upper cover.
F.5.1.5 Control panel upper cover
3. Remove the control panel front cover.
F.5.1.6 Control panel front cover

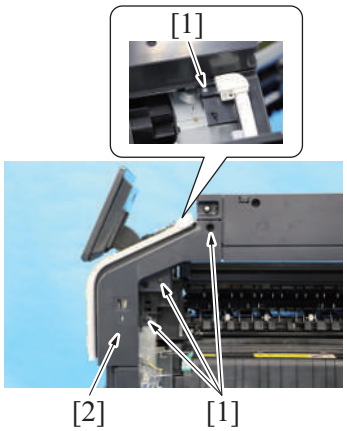
4. Disconnect two connectors [1].



5. Remove the cap [1].



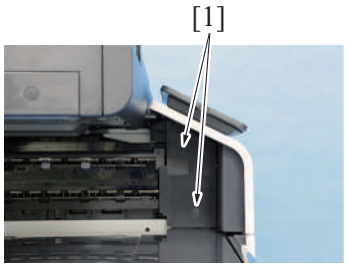
6. Remove four screws [1], and remove the control panel right cover [2].



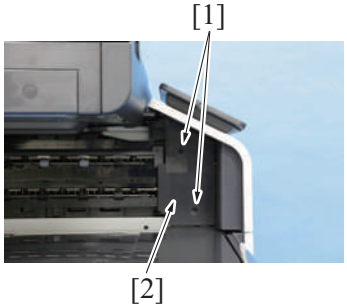
7. To reinstall, reverse the order of removal.

5.1.8 Control panel left cover/1

1. Remove two caps [1].



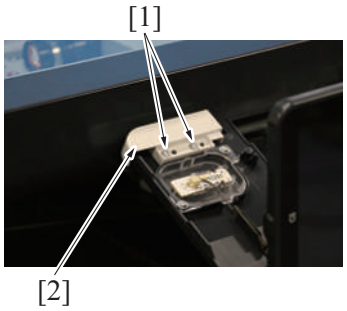
2. Remove two screws [1], and remove the control panel left cover/1 [2].



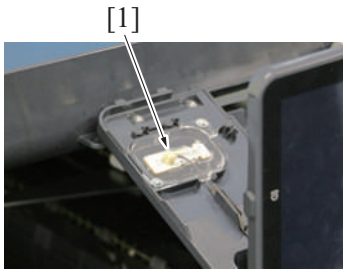
3. To reinstall, reverse the order of removal.

5.1.9 Control panel left cover/2

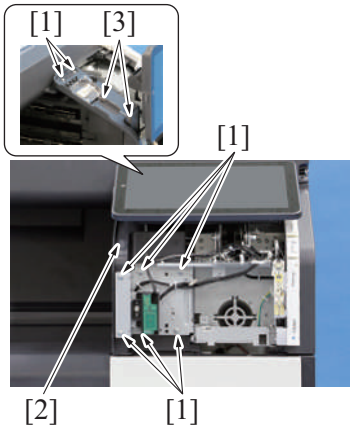
1. Remove the control panel upper cover.
   F.5.1.5 Control panel upper cover
2. Remove the control panel front cover.
   F.5.1.6 Control panel front cover



3. Remove two screws [1], and remove the cover [2].



4. Disconnect the connector [1].

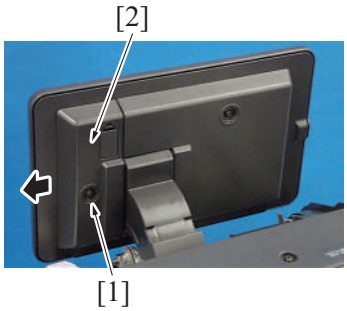


5. Remove eight screws [1], and remove the control panel left cover/2 [2].
   NOTE
   - **When installing the cover, insert two sponges [3] into the harness guide.**

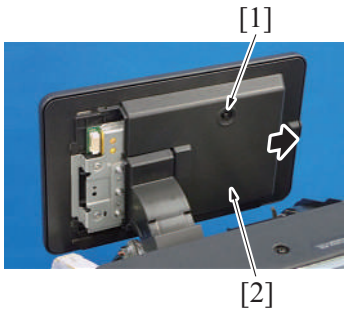
6. To reinstall, reverse the order of removal.

5.1.10 Control panel unit

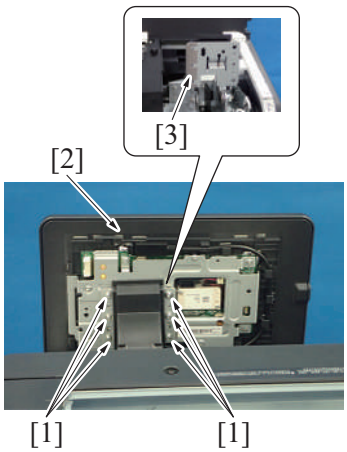
1. Remove the control panel upper cover.
   F.5.1.5 Control panel upper cover
2. Remove the control panel front cover.
   F.5.1.6 Control panel front cover



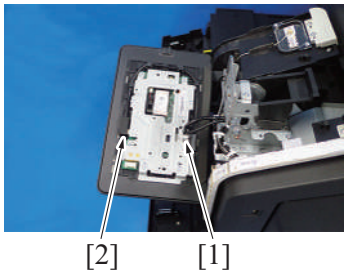
3. Remove the screw [1], and remove the cover [2].



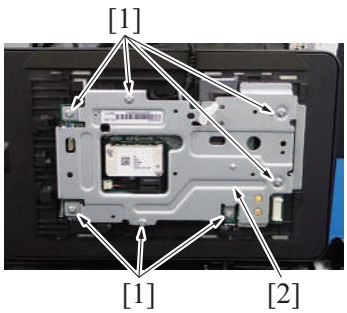
4. Remove the screw [1], and remove the cover [2].



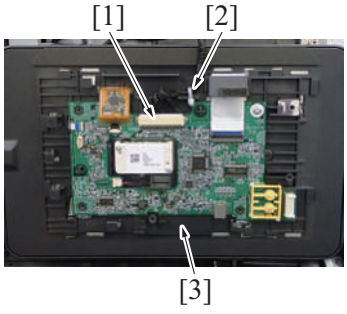
5. Remove six screws [1], and remove the control panel unit [2].
NOTE
- **When removing the control panel unit [2], take care not to drop the plate [3] (on the left side while viewing from the front).**



6. Remove the cable from the wire saddle [1]. Disconnect the cable [2], then remove the cable from the cable guide.



7. Remove seven screws [1], and remove the plate [2].



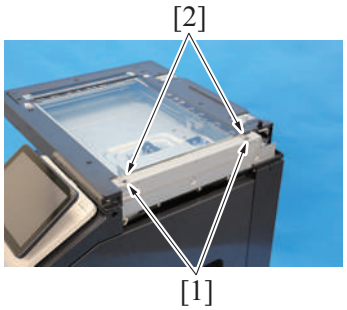
8. Disconnect the connector [1], cut the cable tie [2], and remove the control panel unit [3].
NOTE
- **When installing the control panel unit, use the new cable tie.**

9. To reinstall, reverse the order of removal.

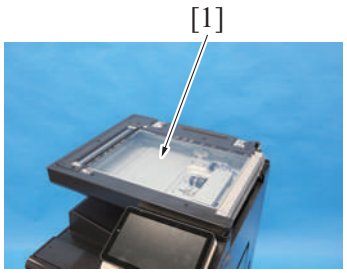
5.1.11 Original glass

1. Remove the scanner right cover.

F.5.1.1 Scanner right cover



2. Remove two screws [1], and remove two original glass locking materials [2].

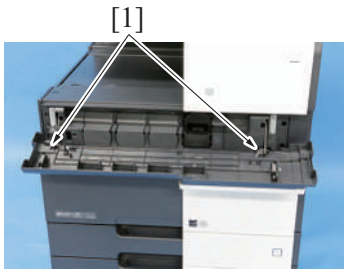


3. Remove the original glass [1].

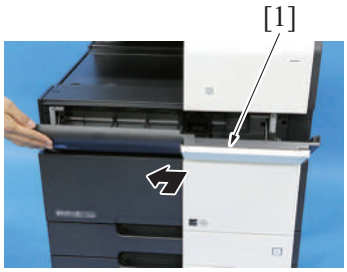
4. To reinstall, reverse the order of removal.
5. Perform the adjustment from [Service Mode] -> [Machine] -> [Scan Area] -> [Scanner Image Side Edge].
6. Perform the adjustment from [Service Mode] -> [Machine] -> [Scan Area] -> [Image Position: Leading Edge].

5.1.12 Upper front door

1. Open the upper front door.



2. Remove two C-clips [1].



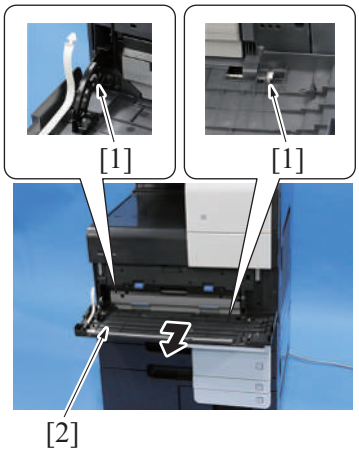
3. Slightly raise the upper front door [1] up, and slide it to the left to remove it.

4. To reinstall, reverse the order of removal.

5.1.13 Lower front door



1. Open the lower front door, and rotate the stopper [1] to remove it.

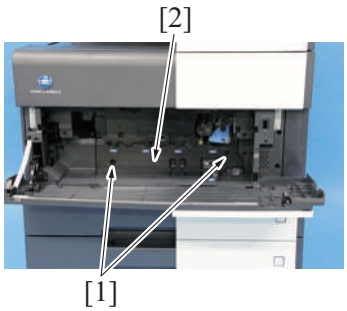


2. Remove two C-clips [1], and remove the lower front door [2].

3. To reinstall, reverse the order of removal.

5.1.14 Front lower cover

1. Remove the waste toner box.
   F.5.2.1 Waste toner box

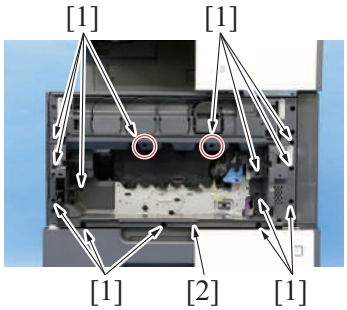


2. Remove two screws [1], and remove the front lower cover [2].

3. To reinstall, reverse the order of removal.

5.1.15 Front cover

1. Remove the upper front door.
   F.5.1.12 Upper front door
2. Remove the lower front door.
   F.5.1.13 Lower front door
3. Remove the waste toner box.
   F.5.2.1 Waste toner box
4. Remove the front lower cover.
   F.5.1.14 Front lower cover

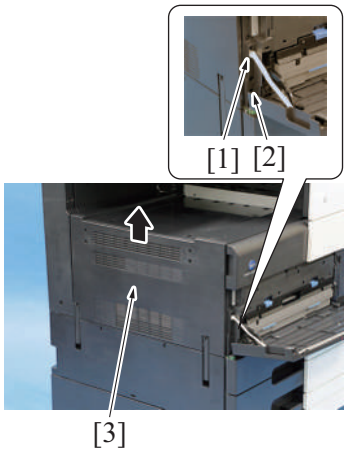


5. Remove nine or 14 screws [1], and remove the front cover [2].
   NOTE
   - **The number of screws varies depending on the product.**
   - **When installing the cover, note that only the type of screws circled in red differs from others.**

6. To reinstall, reverse the order of removal.

5.1.16 Left cover

1. Open the lower front door.

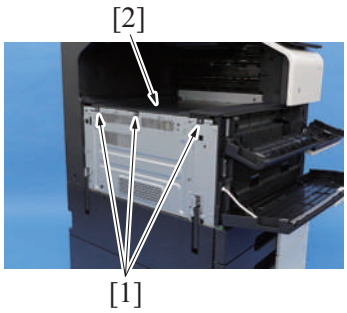


2. Rotate the stopper [1] to remove it. Remove the screw [2].
3. Remove the left cover [3] while sliding it upward.

4. To reinstall, reverse the order of removal.

5.1.17 Paper exit cover

1. Open the upper front door.
2. Open the lower front door.
3. Remove the left cover.
F.5.1.16 Left cover

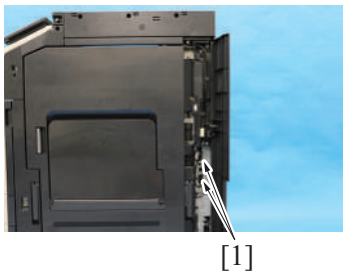


4. Remove three screws [1], and remove the paper exit cover [2].

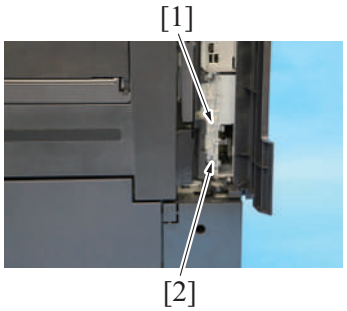
5. To reinstall, reverse the order of removal.

5.1.18 Right rear cover

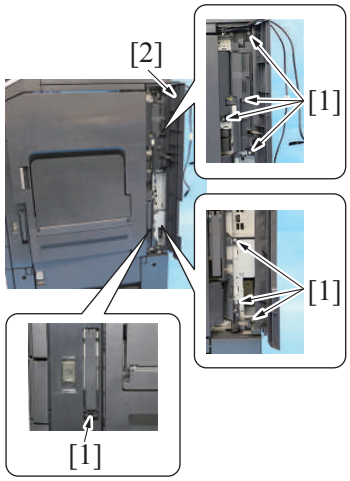
1. Open the right rear cover.



2. Disconnect two connectors [1] and remove the cable from the cable guide.



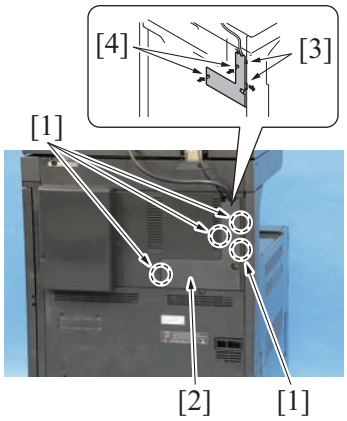
3. Remove the screw [1], and remove the connector cover [2].



4. Remove eight screws [1], and remove the right rear cover [2] as clearing the harness.

5. To reinstall, reverse the order of removal.

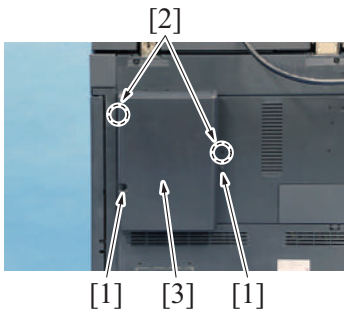
5.1.19 DF cable cover



1. Unhook four tabs [1], and remove the DF cable cover [2].
   NOTE
   - **When mounting the cover, insert two claws [3] into the holes on the main unit cover first. Then fit two claws [4] into the holes.**
   - **Be careful not to pinch the harness.**

2. To reinstall, reverse the order of removal.

5.1.20 Duct cover

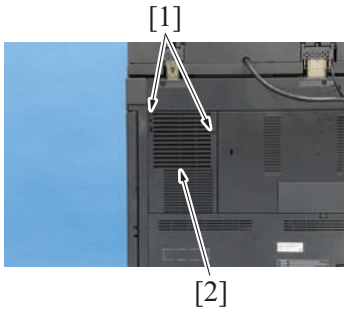


1. Remove two screws [1].
2. Unhook two tabs [2], and remove the duct cover [3].

3. To reinstall, reverse the order of removal.

5.1.21 Upper left rear cover

1. Remove the duct cover.
   F.5.1.20 Duct cover

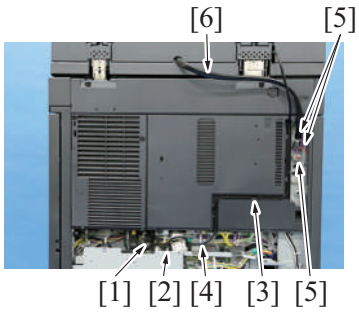


2. Remove two screws [1], and remove the upper left rear cover [2].

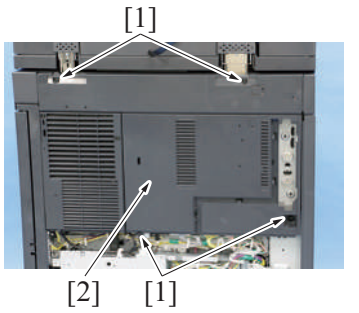
3. To reinstall, reverse the order of removal.

5.1.22 Upper right rear cover

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the duct cover.
   F.5.1.20 Duct cover
3. Remove the DF cable cover.
   F.5.1.19 DF cable cover



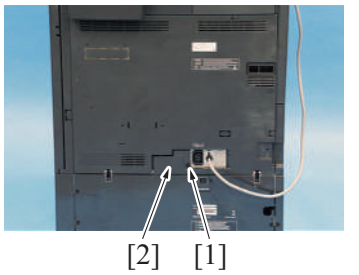
4. Disconnect the connector [1]. Remove the DF cable/1 [4] from the wire saddle [2] and each cable guide [3].
5. Disconnect three connectors [5] and remove the DF cable/2 [6].



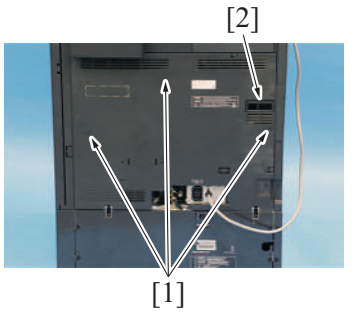
6. Remove four screws [1] and remove the upper right rear cover [2].

7. To reinstall, reverse the order of removal.

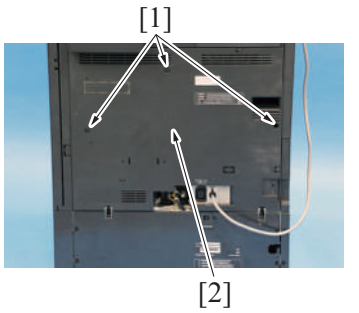
5.1.23 Lower rear cover



1. Remove the screw [1], and remove the paper feed cabinet connector cover [2].



2. Remove three caps [1].
3. Remove the filter [2].

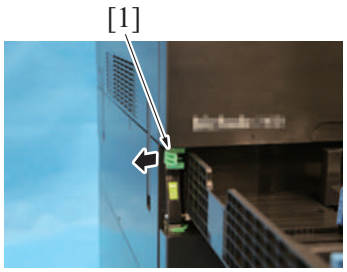


4. Remove three screws [1], and remove the lower rear cover [2].

5. To reinstall, reverse the order of removal.

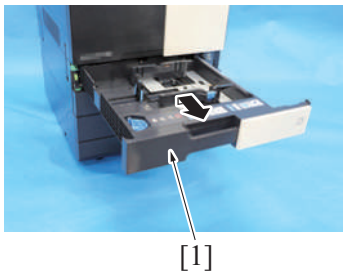
5.1.24 Tray 1

1. Slide out the tray 1 and unload paper from it.



2. Unlock the stopper [1].

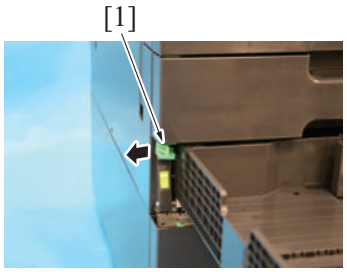
3. Hold up the tray 1 [1] to remove it.



4. To reinstall, reverse the order of removal.

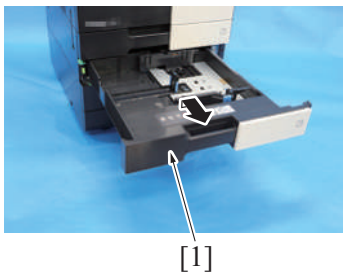
5.1.25 Tray 2

1. Slide out the tray 2 and unload paper from it.



2. Unlock the stopper [1].

3. Hold up the tray 2 [1] to remove it.

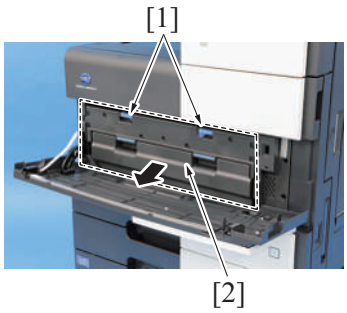


4. To reinstall, reverse the order of removal.

5.2 Units

5.2.1 Waste toner box

1. Open the lower front door.

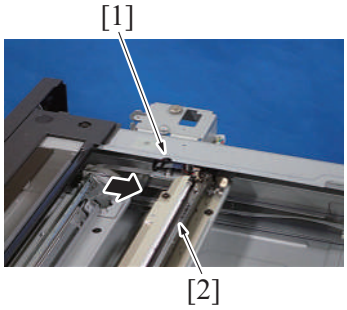


2. Release two locks [1], and remove the waste toner box [2].

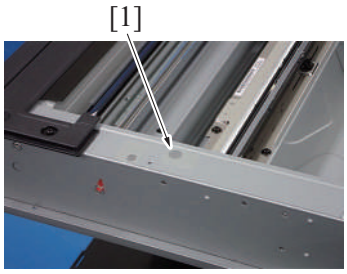
3. To reinstall, reverse the order of removal.

5.2.2 LED exposure unit

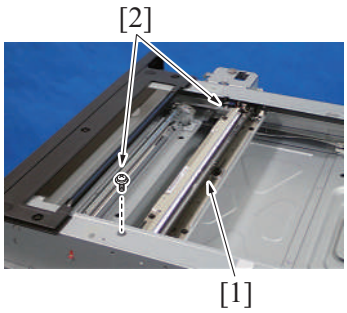
1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the duct cover.
   F.5.1.20 Duct cover
3. Remove the upper right rear cover.
   F.5.1.22 Upper right rear cover
4. Remove the scanner upper rear cover.
   F.5.1.4 Scanner upper rear cover
5. Remove the scanner right cover.
   F.5.1.1 Scanner right cover
6. Remove the scanner left cover.
   F.5.1.2 Scanner left cover
7. Remove the control panel upper cover.
   F.5.1.5 Control panel upper cover
8. Remove the control panel front cover.
   F.5.1.6 Control panel front cover
9. Remove the control panel right cover.
   F.5.1.7 Control panel right cover
10. Remove the control panel left cover/2.
    F.5.1.9 Control panel left cover/2
11. Remove the scanner front cover.
    F.5.1.3 Scanner front cover
12. Remove the original glass.
    F.5.1.11 Original glass



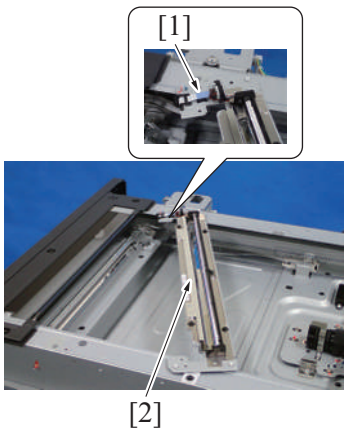
13. Move the LED exposure unit assy [2] to screw access point [1].



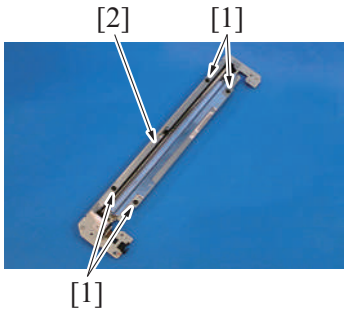
14. Peel off seal [1].



15. Remove two screws [2] of the LED exposure unit assy [1].



16. Disconnect the flat cable [1], and remove the LED exposure unit assy [2].



17. Remove four screws [1], and remove the LED exposure unit [2].

18. To reinstall, reverse the order of removal.

NOTE

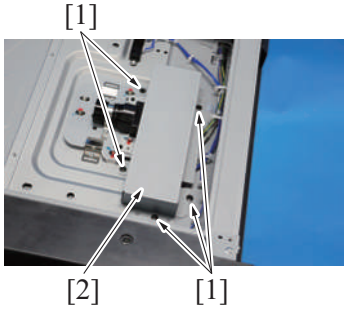
- **When installing the LED exposure unit, be careful not to pinch the flat cable with the screws.**
- **When replacing the LED exposure unit with a brand-new one, peel the protective film from the unit after attaching it.**
- **When replacing the LED exposure unit, order a replacement seal (Parts number: 4581 1625 ##).**

5.2.3 CCD unit

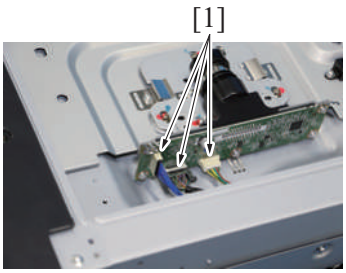
(1) Removal procedure

1. Remove the scanner right cover.
F.5.1.1 Scanner right cover

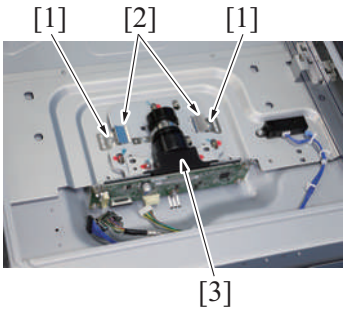
2. Remove the original glass.
F.5.1.11 Original glass



3. Remove five screws [1] and remove the CCD unit cover [2].

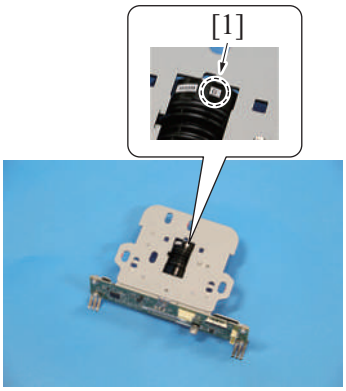


4. Disconnect three connectors [1].

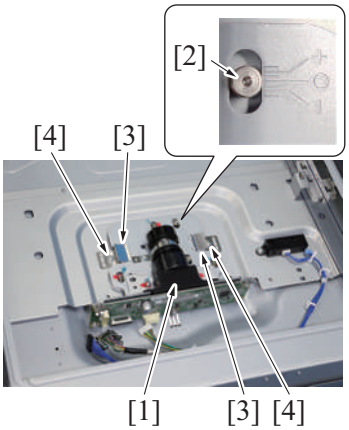


5. Remove the screw [1] each, and remove two retainer plates [2].
6. Remove the CCD unit [3].

(2) Reinstall procedure



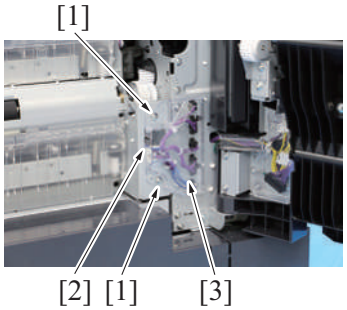
1. Check the mark [1] on lens of the CCD unit.
   NOTE
   - **The mark is be "-", "o", or "+".**



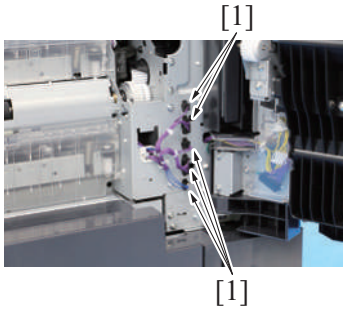
2. Install the CCD unit [1] to the main body.
3. Set the scale [2] of the CCD unit to the same position as the mark checked on step 1, and secure it with two retainer plates [3] and the screw [4] at two points.
4. For the rest of the mounting procedure, reverse the order of removal.
5. Reinstall the original glass.
6. Turn ON the main power switch.
7. Make adjustments from [Service Mode] -> [System 2] -> [CCD Calibration].
8. Make adjustments from [Service Mode] -> [System 2] -> [Line Mag Setting].
9. Make adjustments from [Service Mode] -> [Machine] -> [Printer Area] -> [Paper Feed Direction Adj.].
10. Make adjustments from [Service Mode] -> [Machine] -> [Scan Area] -> [Main Scan Zoom Adj.]. If the specifications do not match, loosen the CCD unit mounting screws and move the CCD unit in the sub scan direction as necessary.
    NOTE
    - **Hold the CCD unit by hand when moving it. NEVER use a screwdriver or similar tool to tap to move it. Otherwise, a varied distance between the CCD sensor and lens results.**
11. Make adjustments from [Service Mode] -> [Machine] -> [Scan Area] -> [Scanner Image Side Edge].

5.2.4 Paper feed unit

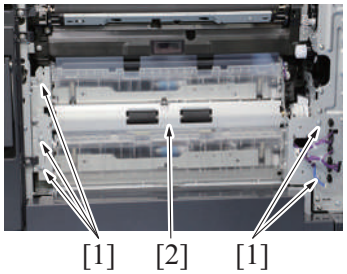
1. Slide out the tray 1 and the tray 2.
2. Open the right door.



3. Remove two screws [1] and the tab [2], and remove the connector cover [3].



4. Disconnect five connectors [1].



5. Remove five screws [1], and remove the paper feed unit [2].
6. To reinstall, reverse the order of removal.

5.2.5 PH unit

⚠WARNING

- Do not supply power with the write unit (PH unit) shifted from the specified mounting position.

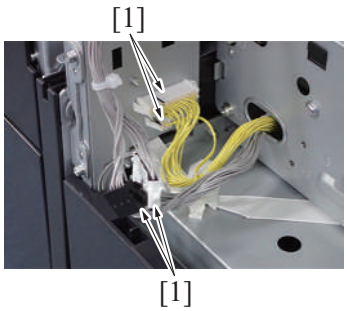
  The laser light can enter your eye, leading to a risk of loss of eyesight.

⚠WARNING

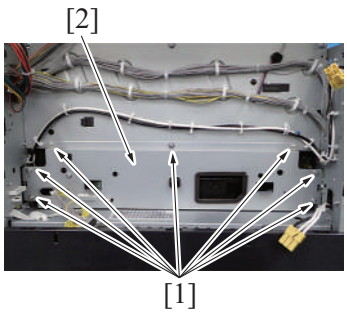
- Do not disassemble or adjust the write unit (PH unit) incorporating a laser.

  The laser light can enter your eye, leading to a risk of loss of eyesight.

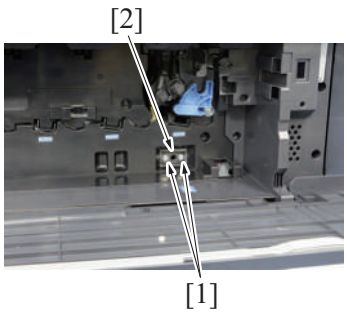
1. Remove the waste toner box.
   F.5.2.1 Waste toner box
2. Remove the left cover.
   F.5.1.16 Left cover
3. Remove the paper exit cover.
   F.5.1.17 Paper exit cover
4. Remove the DC power supply.
   F.5.3.13 DC power supply (DCPU)



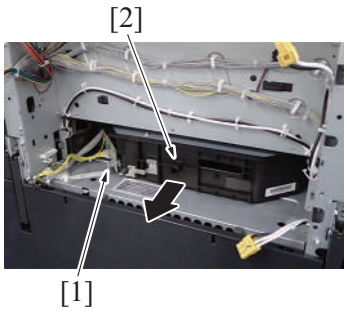
5. Disconnect four connectors [1].



6. Remove seven screws [1], and remove the plate [2].



7. Remove two screws [1], and remove the set pin [2] for the PH unit.



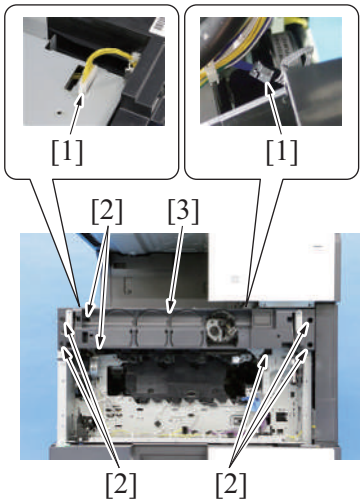
8. Disconnect the flat cable [1], and remove the PH unit [2].

9. To reinstall, reverse the order of removal.
10. Perform the adjustment from [Service Mode] -> [Machine] -> [Printer Area] -> [Leading Edge Adjustment].
11. Perform the adjustment from [Service Mode] -> [Machine] -> [Printer Area] -> [Printer Image Centering Side 1].

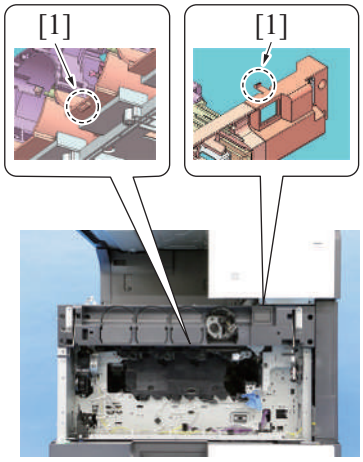
5.2.6 Sub hopper unit

1. Remove the upper front door.
   F.5.1.12 Upper front door
2. Remove the lower front door.
   F.5.1.13 Lower front door
3. Remove the waste toner box.
   F.5.2.1 Waste toner box
4. Remove the front lower cover.
   F.5.1.14 Front lower cover
5. Remove the front cover.
   F.5.1.15 Front cover

6. Remove the toner cartridge/K.
   E.3.1.4 Replacing the toner cartridge
7. Remove the drum unit/K.
   E.3.1.5 Replacing the drum unit
8. Remove the developing unit/K.
   E.3.1.6 Replacing the developing unit
9. Remove the left cover.
   F.5.1.16 Left cover
10. Remove the paper exit cover.
    F.5.1.17 Paper exit cover



11. Disconnect two connectors [1]. Remove seven screws [2], and remove the sub hopper unit [3].

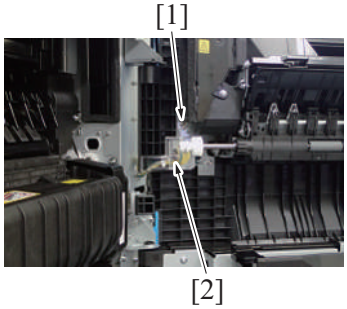


12. **NOTE**
    - **Note that two tabs [1] is at the position as shown on the illustration when removal/install.**

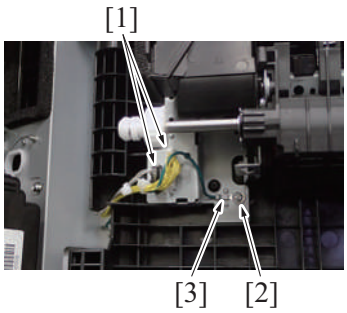
13. To reinstall, reverse the order of removal.

5.2.7 Right door unit

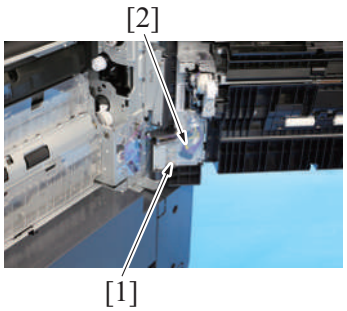
1. Remove the right rear cover.
   F.5.1.18 Right rear cover
2. Open the right door.



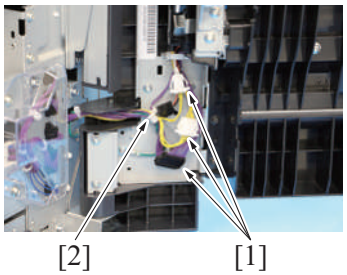
3. Remove the screw [1], and remove the connector cover/1 [2].



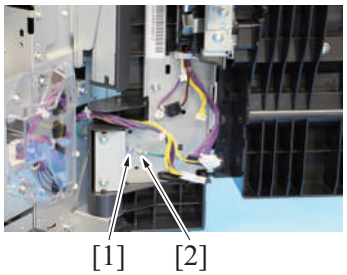
4. Disconnect two connectors [1].
5. Remove the screw [2], and remove the ground terminal [3].



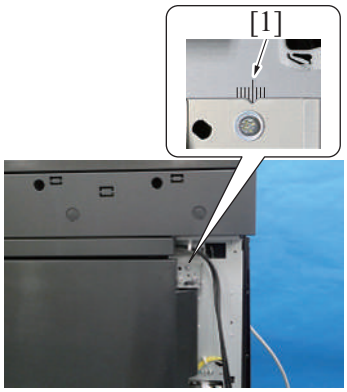
6. Remove the screw [1], and remove the connector cover/2 [2].



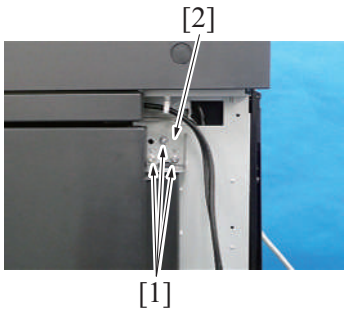
7. Disconnect three connectors [1], and remove the harness from the wire saddle [2].



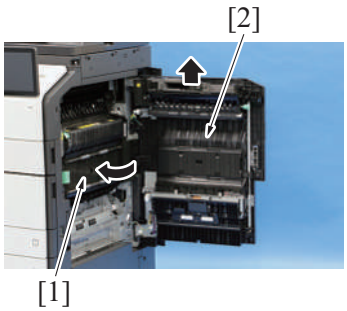
8. Remove the screw [1], and remove the ground terminal [2].



9. Draw the gauge line to the hinge mounting part (upper section) [1] along the cutout of the hinge on the frame of the main body.



10. Remove three screws [1], and remove the hinge (upper section) [2].



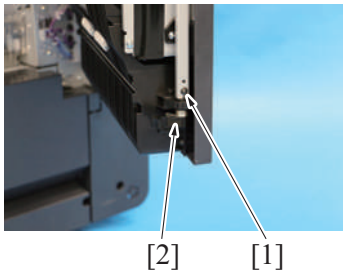
11. Close the regist unit [1].
12. Hold up the right door unit [2] to remove it.

13. To reinstall, reverse the order of removal.
NOTE
- **When installing the right door unit, align it with the guide lines drawn on the scales indicated on the machine frame. Open and close the right door to check for any interference and correct if necessary.**

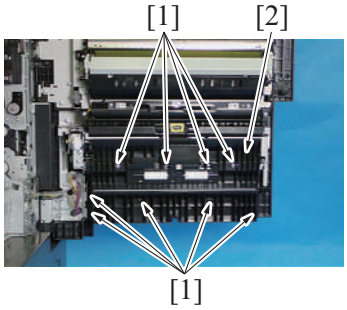
5.2.8 Manual bypass tray unit

1. Open the right door.
2. Open the regist unit.

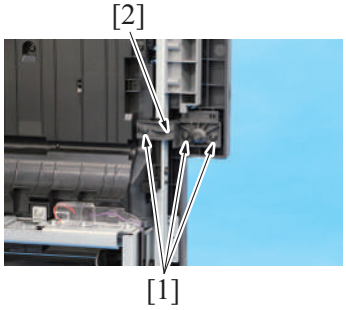
3. Remove the screw [1], and remove the shaft holder/1 [2].

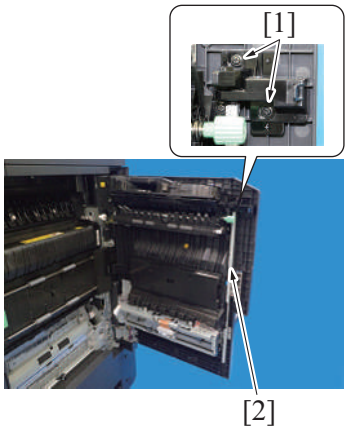


4. Remove nine screws [1], and remove the vertical transport roll assy [2].

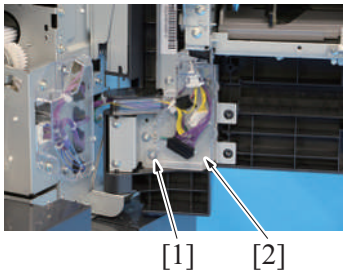


5. Remove three screws [1], and remove the shaft holder/2 [2].

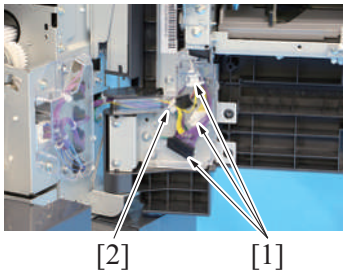




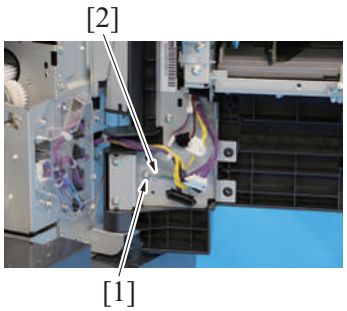
6. Remove two screws [1], and remove the right door lever assy [2].



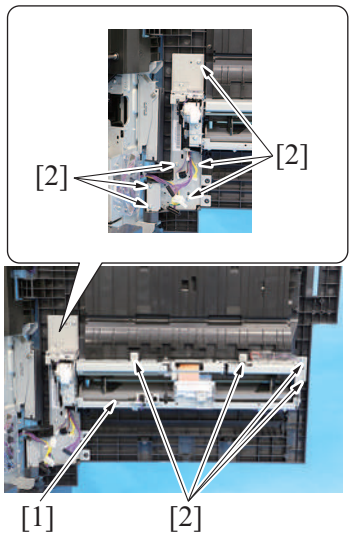
7. Remove the screw [1], and remove the connector cover [2].



8. Disconnect three connectors [1], and remove the harness from the wire saddle [2].

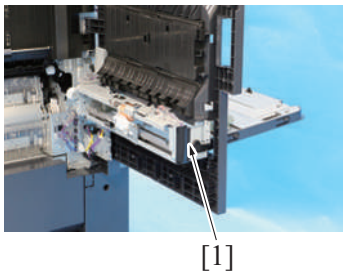


9. Remove the screw [1], and remove the ground terminal [2].



10. Remove 10 screws [2] of the manual bypass tray unit [1].

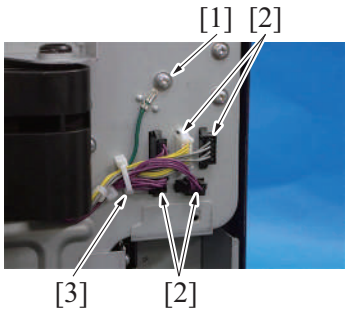
11. Remove the manual bypass tray unit [1].



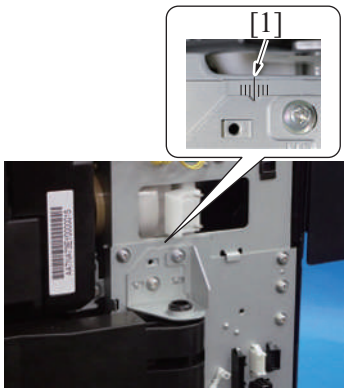
12. To reinstall, reverse the order of removal.

5.2.9 Regist unit

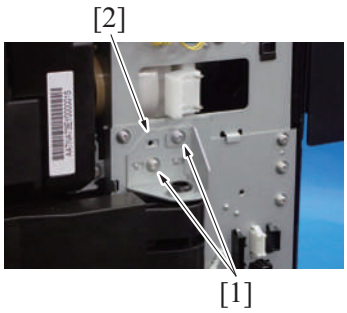
1. Remove the right rear cover.
F.5.1.18 Right rear cover
2. Remove the right door unit.
F.5.2.7 Right door unit



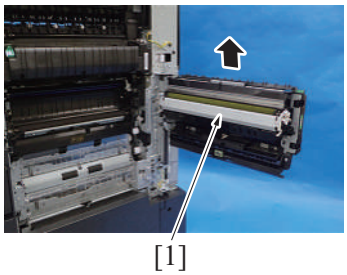
3. Remove the screw [1]. Disconnect four connectors [2]. Remove the harness and ground wire from the wire saddle [3].



4. Draw the gauge line to the hinge mounting part [1] along the cutout of the hinge on the frame of the main body.



5. Remove two screws [1], and remove the hinge [2].

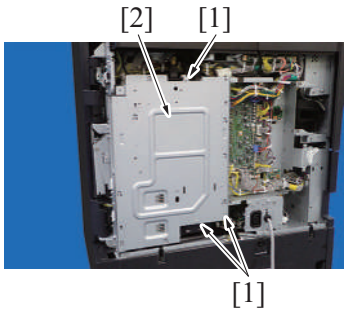


6. Hold up the regist unit [1] to remove it.

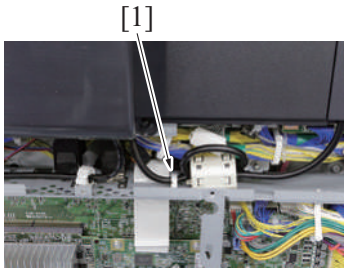
7. To reinstall, reverse the order of removal.

5.2.10 How to open the PWB box

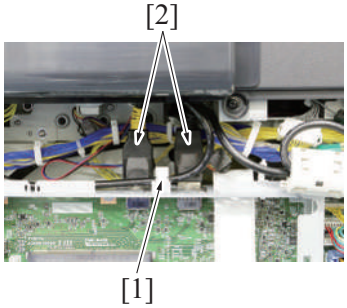
1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the right rear cover.
   F.5.1.18 Right rear cover



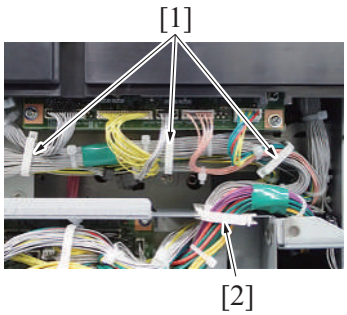
3. Remove three screws [1], and remove the plate [2].



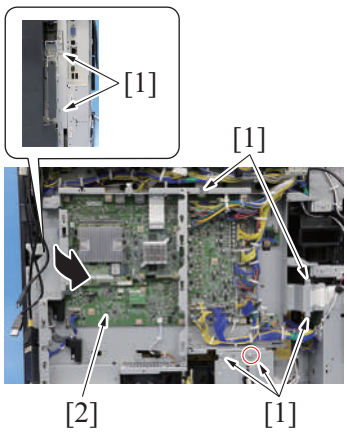
4. Remove the cable from the wire saddle [1].



5. Remove the cable from the wire saddle [1], and disconnect two connectors [2].



6. Remove the harness from three wire saddles [1] and edge cover [2].

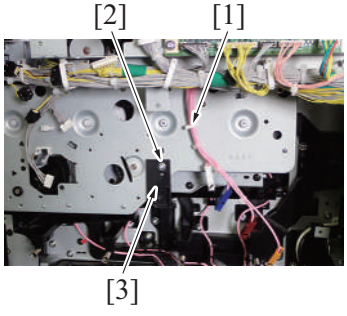


7. Remove seven screws [1] and open the PWB box [2].
NOTE
- **When installing the cover, note that only the type of screws circled in red differs from others.**

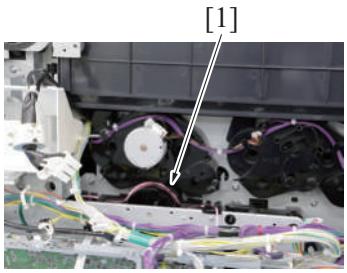
8. To reinstall, reverse the order of removal.

5.2.11 Main drive unit

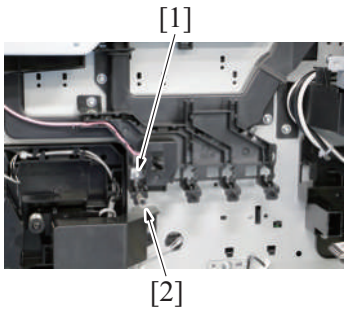
1. Remove the drum unit/K.
E.3.1.5 Replacing the drum unit
2. Remove the developing unit/K.
E.3.1.6 Replacing the developing unit
3. Remove the lower rear cover.
F.5.1.23 Lower rear cover
4. Remove the duct cover.
F.5.1.20 Duct cover
5. Remove the upper right rear cover.
F.5.1.22 Upper right rear cover
6. Remove the right rear cover.
F.5.1.18 Right rear cover
7. Remove the expansion control board assy.
F.5.2.16 Expansion control board assy
8. Open the PWB box.
F.5.2.10 How to open the PWB box
9. Remove the high voltage unit.
F.5.3.12 High voltage unit (HV)
10. Remove the transport motor.
F.5.4.1 Transport motor (M1)
11. Remove the developing solenoid.
F.5.7.3 Developing solenoid (SD4)
12. Remove the registration motor.
F.5.4.13 Registration motor (M24)
13. Remove the ADU transport motor/2.
F.5.4.15 ADU transport motor/2 (M26)



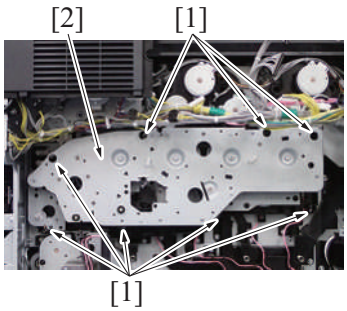
14. Remove the harness from the wire saddle [1].
15. Remove the screw [2], and remove the cover [3].



16. Remove the harness from the harness guide [1].



17. Remove the screw [1], and remove the harness from the harness guide.
NOTE
- **Make sure not to lose the spring [2].**

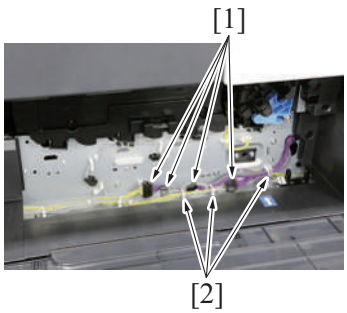


18. Remove eight screws [1], and remove the main drive unit [2].

19. To reinstall, reverse the order of removal.

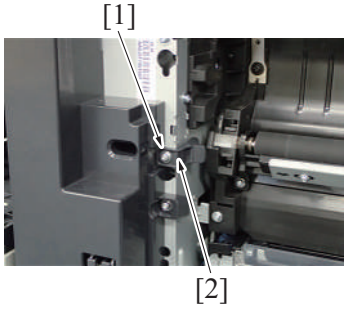
5.2.12 Transport unit

1. Remove the waste toner box.
   F.5.2.1 Waste toner box
2. Remove the transfer belt unit.
   E.3.1.9 Replacing the transfer belt unit
3. Remove the front lower cover.
   F.5.1.14 Front lower cover

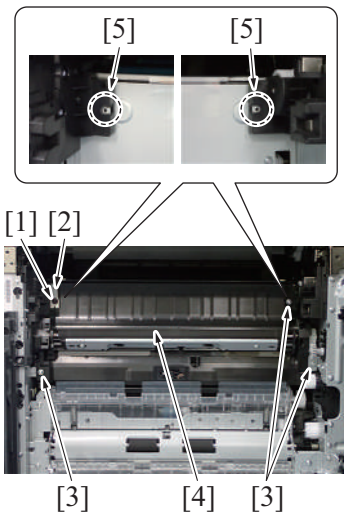


4. Disconnect four connectors [1]. Remove the harness from three wire saddles [2].

5. Open the right door and the regist unit.



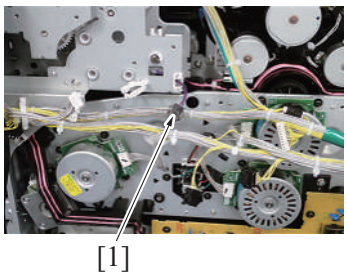
6. Remove the screw [1], and remove the stopper [2].



9. To reinstall, reverse the order of removal.

5.2.13 Fusing drive unit

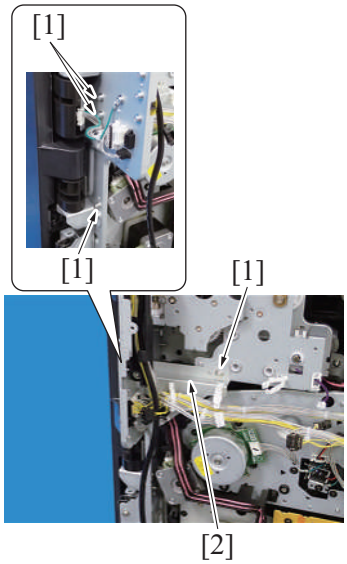
1. Remove the fusing unit.
   E.3.1.11 Replacing the fusing unit
2. Remove the transfer belt unit.
   E.3.1.9 Replacing the transfer belt unit
3. Remove the toner cartridge/K.
   E.3.1.4 Replacing the toner cartridge
4. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
5. Remove the duct cover.
   F.5.1.20 Duct cover
6. Remove the upper right rear cover.
   F.5.1.22 Upper right rear cover
7. Remove the upper left rear cover.
   F.5.1.21 Upper left rear cover
8. Remove the right rear cover.
   F.5.1.18 Right rear cover
9. Remove the left cover.
   F.5.1.16 Left cover
10. Remove the paper exit cover.
    F.5.1.17 Paper exit cover
11. Remove the expansion control board assy.
    F.5.2.16 Expansion control board assy
12. Open the PWB box.
    F.5.2.10 How to open the PWB box
13. Remove the fan assy.
    F.5.2.18 Fan assy
14. Remove the fusing motor.
    F.5.4.2 Fusing motor (M3)
15. Remove the fusing pressure motor.
    F.5.4.6 Fusing pressure motor (M11)



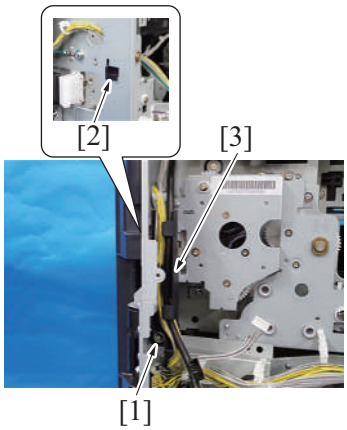
16. Disconnect the connector [1].

7. Remove the screw [1], and remove the plate spring [2].
8. Remove three screws [3], and remove the transport unit [4].
   NOTE
   - **When removing the transport unit [4], be careful not to damage or deform the guide sheet of the paper feed unit.**
   - **When removing the transport unit [4], be careful not to drop the plate nut [5].**

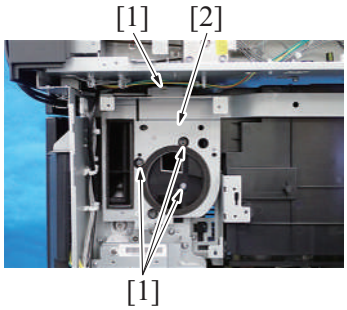
17. Remove four screws [1], and evacuate the plate [2].



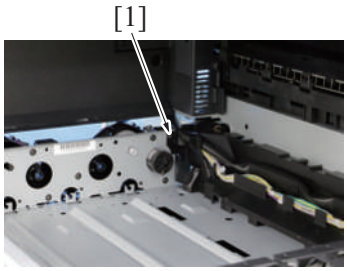
18. Remove the screw [1], and unhook the tab [2].
19. Remove the harness guide [3] as clearing the harness and cables.

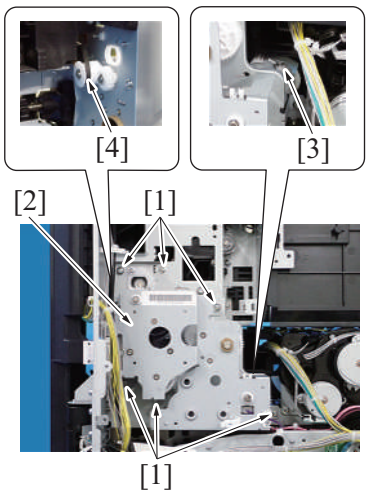


20. Remove four screws [1], and remove the plate [2].



21. Remove the screw [1].



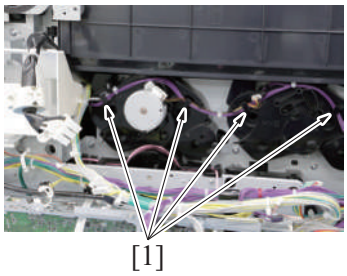


22. Remove six screws [1], and remove the fusing drive unit [2].
NOTE
- **Install the fusing drive unit, so that the gear assy [3] is in the direction shown in the illustration.**
- **When installing the fusing drive unit, place the belt [4] on the gear.**

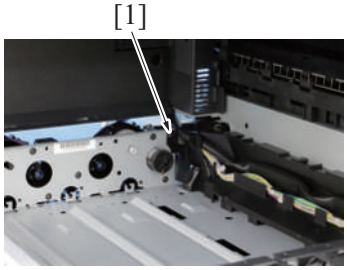
23. To reinstall, reverse the order of removal.

5.2.14 Hopper drive unit

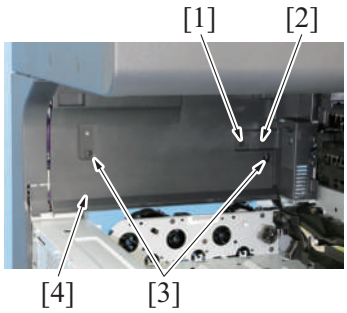
1. Remove the toner cartridge/K.
   E.3.1.4 Replacing the toner cartridge
2. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
3. Remove the duct cover.
   F.5.1.20 Duct cover
4. Remove the upper right rear cover.
   F.5.1.22 Upper right rear cover
5. Remove the HaCS power supply box.
   F.5.2.19 HaCS power supply box
6. Remove the left cover.
   F.5.1.16 Left cover
7. Remove the paper exit cover.
   F.5.1.17 Paper exit cover
8. Remove the toner cartridge motor/K.
   F.5.4.14 Toner cartridge motor/K (M25)



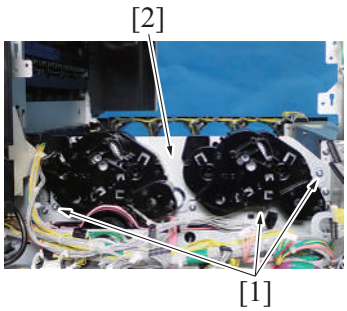
9. Remove the harness from four harness guides [1].



10. Remove the screw [1].



11. Remove the screw [1], and remove the cover [2].
12. Remove two screws [3], and remove the cover [4].

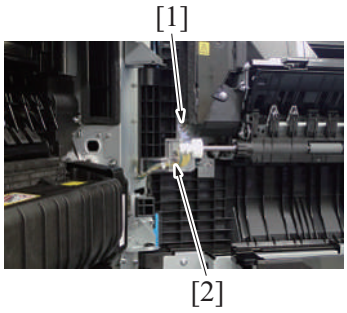


13. Remove three screws [1], and remove the hopper drive unit [2].

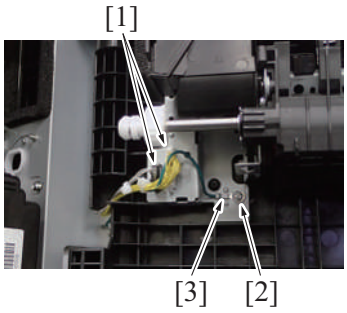
14. To reinstall, reverse the order of removal.

5.2.15 ADU transport unit

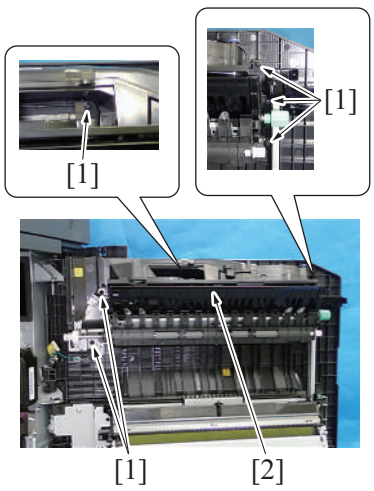
1. Open the right door.



2. Remove the screw [1], and remove the connector cover [2].



3. Disconnect two connectors [1].
4. Remove the screw [2], and remove the ground terminal [3].

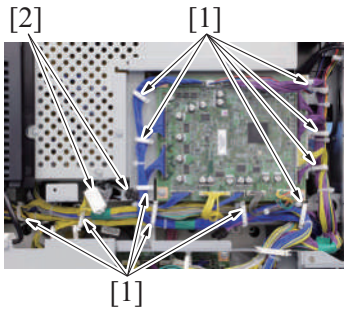


5. Remove six screws [1], and remove the ADU transport unit [2].

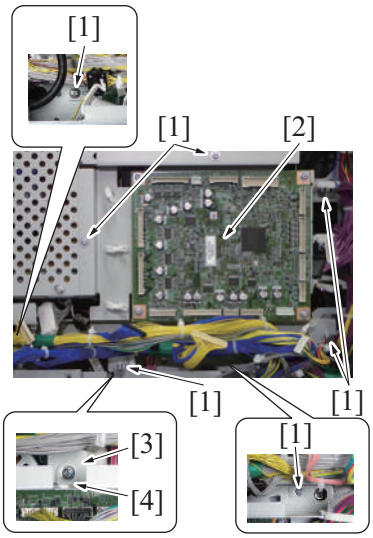
6. To reinstall, reverse the order of removal.

5.2.16 Expansion control board assy

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the duct cover.
   F.5.1.20 Duct cover
3. Remove the upper right rear cover.
   F.5.1.22 Upper right rear cover



4. Disconnect all connectors from the expansion control board. Remove the harness from 11 wire saddles [1].
5. Disconnect two connectors [2].

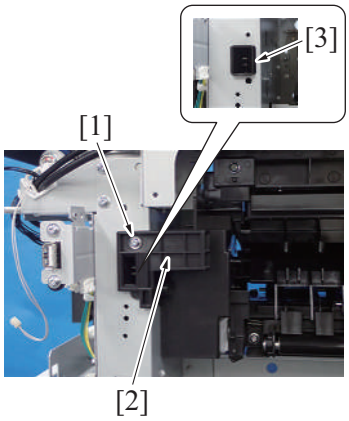


6. Remove seven screws [1], and remove the expansion control board assy [2].
   NOTE
   - **When installing the expansion control board assy, make sure that the expansion control board assy plate [3] is located behind the plate [4] of the board box.**

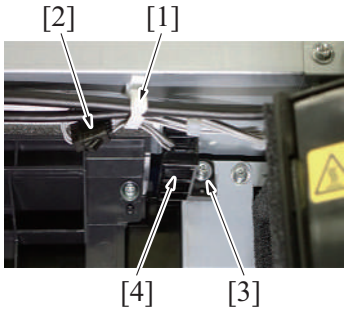
7. To reinstall, reverse the order of removal.

5.2.17 Gate switch unit

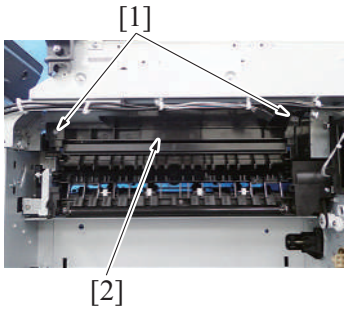
1. Remove the control panel left cover/1.
   F.5.1.8 Control panel left cover/1
2. Remove the control panel upper cover.
   F.5.1.5 Control panel upper cover
3. Remove the control panel front cover.
   F.5.1.6 Control panel front cover
4. Remove the control panel right cover.
   F.5.1.7 Control panel right cover
5. Remove the scanner right cover.
   F.5.1.1 Scanner right cover
6. Remove the fusing unit.
   E.3.1.11 Replacing the fusing unit
7. Open the right door and the regist unit.



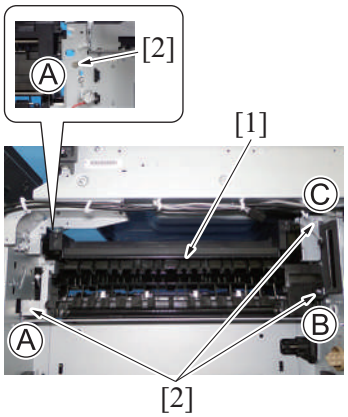
8. Remove the screw [1], and remove the cover [2].
NOTE
- **When removing the cover, take care not to drop the collar [3] located behind the cover [2].**



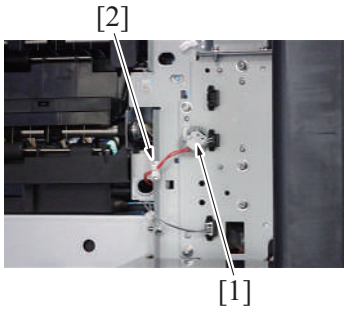
9. Remove the harness from the wire saddle [1]. Disconnect the connector [2].
10. Remove the screw [3], and remove the harness guide [4].



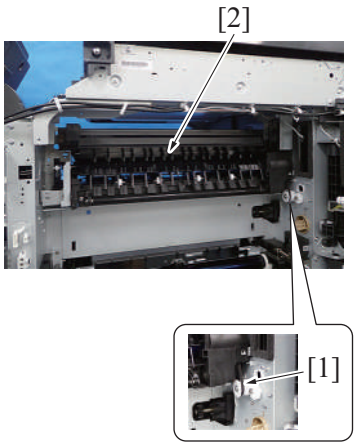
11. Remove two screws [1], and remove the cover [2].



12. Remove four screws [2] of the gate switch unit [1].
NOTE
- **When installing the unit, note that three types of screws is present.**
  A: Shoulder screw (short) x 2
  B: Shoulder screw (long) x 1
  C: SEMS screw x 1



13. Disconnect the connector [1].
14. Remove the harness from the edge cover [2].

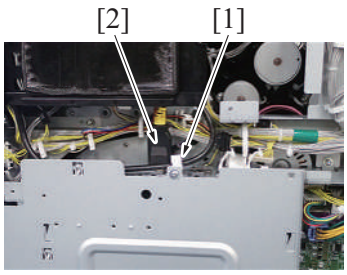


15. Remove the gate switch unit [2] as clearing the belt [1].
NOTE
- **When installing the gate switch unit [2], place the belt [1] on the gear.**

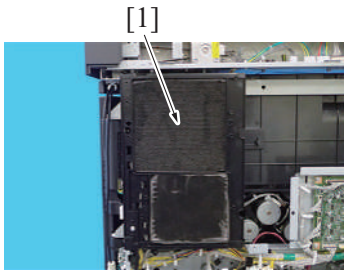
16. To reinstall, reverse the order of removal.

5.2.18 Fan assy

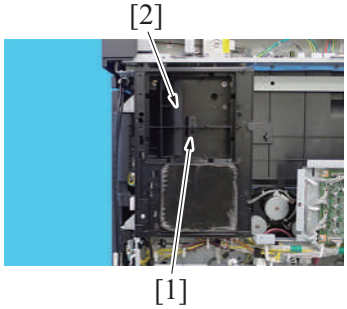
1. Remove the lower rear cover.
F.5.1.23 Lower rear cover
2. Remove the duct cover.
F.5.1.20 Duct cover
3. Remove the upper right rear cover.
F.5.1.22 Upper right rear cover
4. Remove the upper left rear cover.
F.5.1.21 Upper left rear cover
5. Remove the right rear cover.
F.5.1.18 Right rear cover



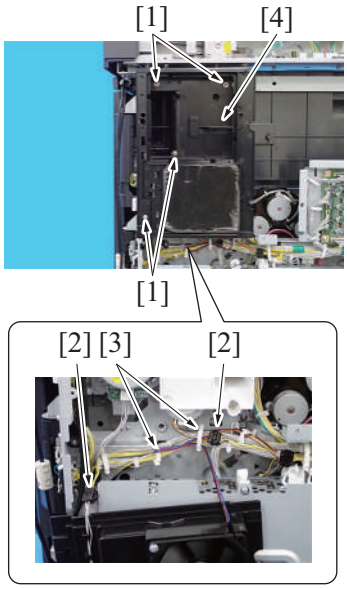
6. Remove the cable from the wire saddle [1], and disconnect the connector [2].



7. Remove the filter [1].



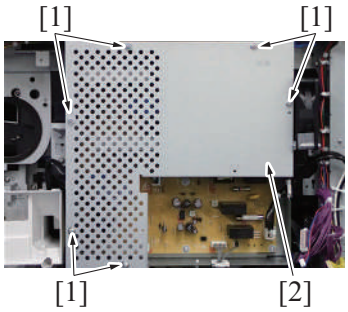
8. Remove the screw [1], and remove the duct [2].



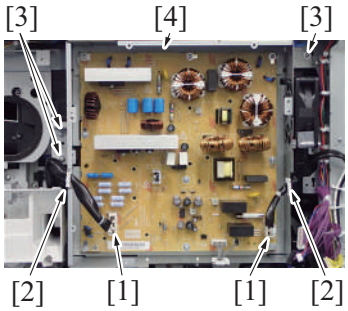
9. Remove four screws [1]. Disconnect two connectors [2].
10. Remove the harness from two wire saddles [3], and remove the fan assy [4].
11. To reinstall, reverse the order of removal.

5.2.19 HaCS power supply box

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the duct cover.
   F.5.1.20 Duct cover
3. Remove the upper right rear cover.
   F.5.1.22 Upper right rear cover
4. Remove the upper left rear cover.
   F.5.1.21 Upper left rear cover
5. Remove the right rear cover.
   F.5.1.18 Right rear cover
6. Remove the fan assy.
   F.5.2.18 Fan assy
7. Remove the expansion control board assy.
   F.5.2.16 Expansion control board assy



8. Remove six screws [1], and remove the protective shield [2].



9. Disconnect two connectors [1], and remove the harness from two edge covers [2].
10. Remove three screws [3], and remove the HaCS power supply box [4].
11. To reinstall, reverse the order of removal.

5.3 Boards

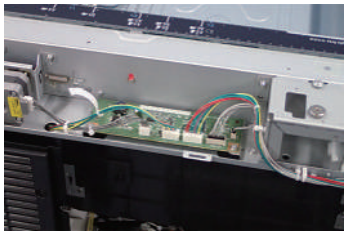
5.3.1 Scanner drive board (SCDB)

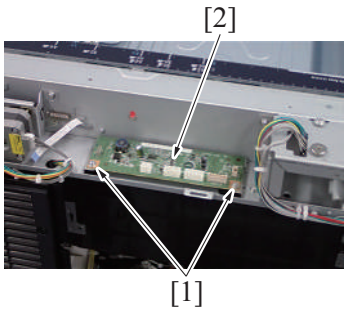
1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the duct cover.

F.5.1.20 Duct cover

3. Remove the upper right rear cover.
F.5.1.22 Upper right rear cover
4. Remove the scanner upper rear cover.
F.5.1.4 Scanner upper rear cover

5. Disconnect all connectors on the scanner drive board.





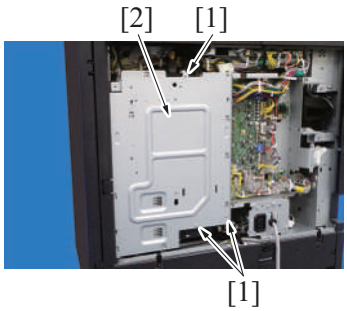
6. Remove two screws [1], and remove the scanner drive board [2].

7. To reinstall, reverse the order of removal.

5.3.2 Base board (BASEB)

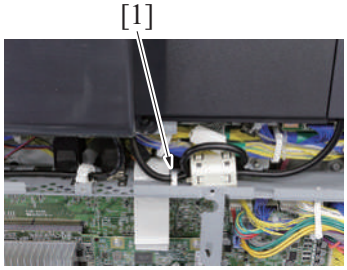
1. Remove the lower rear cover.
F.5.1.23 Lower rear cover

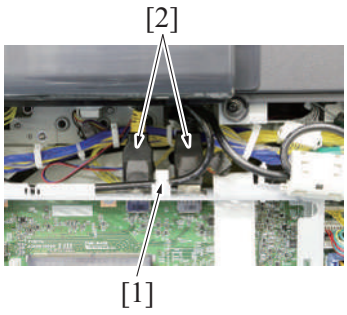
2. Remove three screws [1], and remove the plate [2].



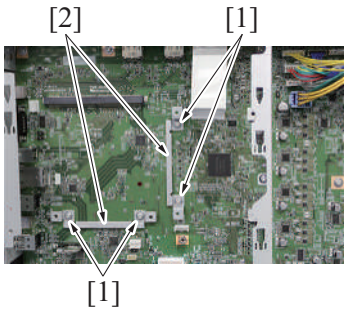
3. If the FAX kit FK-514 is mounted, remove the FAX board.
F.22 FK-514
4. If the security kit SC-509 is mounted, remove the DSC board/1.
F.21 SC-509
5. Remove the memory board.
F.5.3.15 Memory board (MEMB)
6. Remove the CPU board.
F.5.3.4 CPU board (CPUB)
7. Remove the TPM board.
F.5.3.7 TPM board (TPMB)

8. Remove the cable from the wire saddle [1].

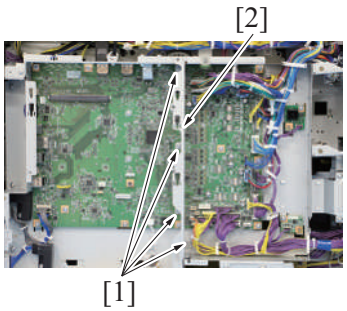




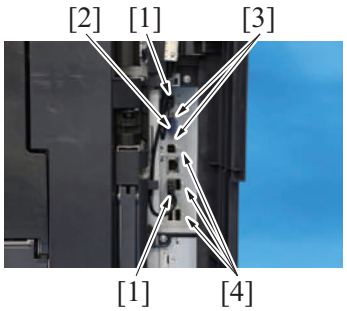
9. Remove the cable from the wire saddle [1], and disconnect two connectors [2].



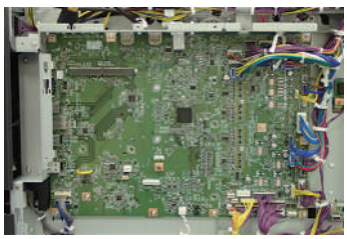
10. Remove four screws [1], and remove two plates [2].



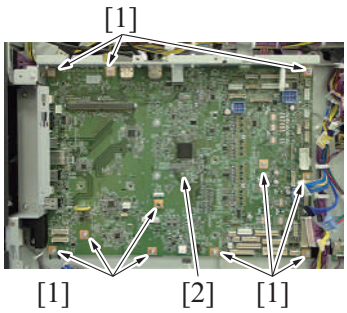
11. Remove four screws [1], and remove the plate [2].



12. Disconnect two connectors [1] from the side of the base board. Remove the connector cover [2] and two bolts [3]. Remove three screws [4].



13. Remove all connectors and flat cables on the base board.



14. Remove 11 screws [1], and remove the base board [2].

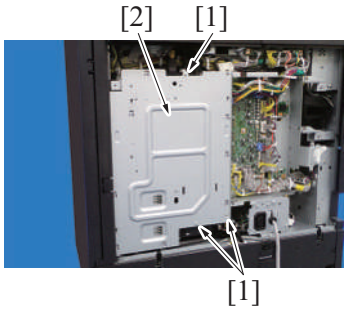
15. To reinstall, reverse the order of removal.

5.3.3 Storage board (STRGB)

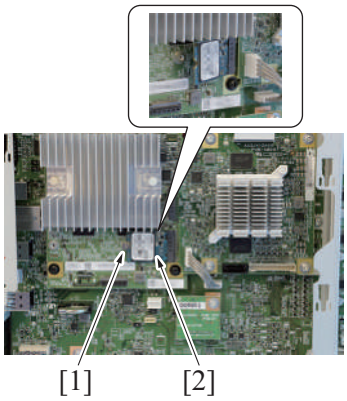
NOTE

- **Never use the combination of the used storage board removed from another machine and the CPU board. This combination causes corruption of stored data. Note that the combination of the original storage board and the used CPU board removed from another machine also causes the same problem.**
- **Never replace the storage board and CPU board with new one at the same time.**

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover



2. Remove three screws [1], and remove the plate [2].

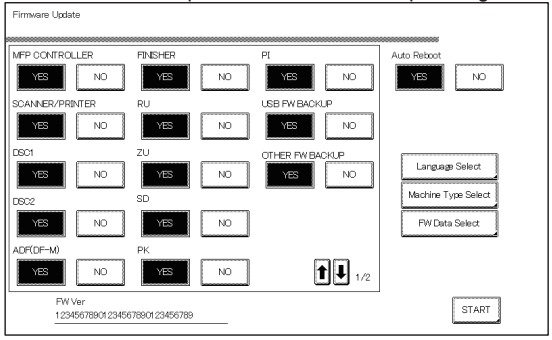


3. Remove the screw [1], and remove the storage board [2].
   NOTE
   - **When mounting the storage board, insert it obliquely.**

4. To reinstall, reverse the order of removal.

Actions after replacement of the board

1. Connect the USB memory containing the firmware into the USB port of the main body.
2. Turn the main power switch ON while pressing the Stop key.



3. When a firmware update screen appears, touch [START] to update the firmware.
4. When the firmware is upgraded, the machine restarts automatically.



5. When [Recover Data] appears on the screen, touch [Recover Data].
6. When a verification message appears, touch [Yes].

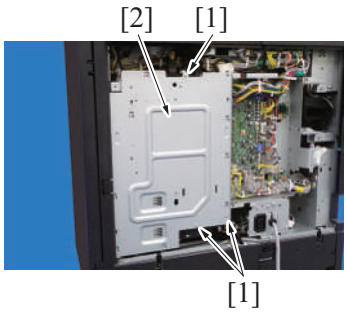
7. When the “Turn the main switch OFF and ON.” screen appears, turn OFF the main power switch, and remove the USB memory.
8. Turn ON the main power switch.
9. After starting up the machine, check the firmware version in Service Mode.
10. If the firmware version is not the latest, upgrade the firmware.
11. If a data has been retrieved with backup utility, conduct the data restoration.
12. Install the movie data, voice data, font data or other data as required.

5.3.4 CPU board (CPUB)

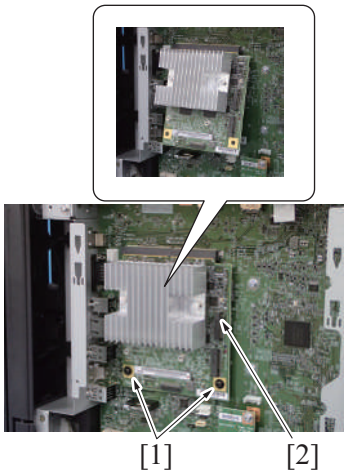
NOTE

- **Never use the combination of the used CPU board removed from another machine and the storage board. This combination causes corruption of stored data. Note that the combination of the original CPU board and the used storage board removed from another machine also causes the same problem.**
- **Never replace the CPU board and storage board with new one at the same time.**

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover



2. Remove three screws [1], and remove the plate [2].
3. Remove the memory board.
   F.5.3.15 Memory board (MEMB)
4. Remove the storage board.
   F.5.3.3 Storage board (STRGB)



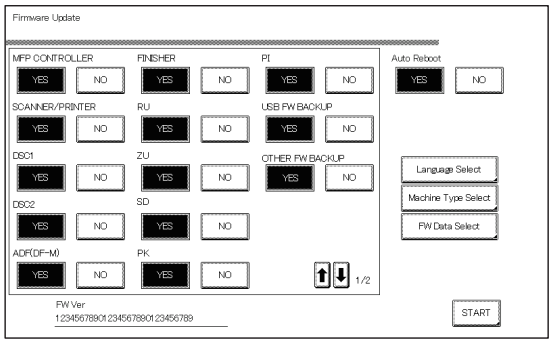
5. Remove two screws [1], and remove the CPU board [2].
   NOTE
   - **When mounting the CPU board, insert it obliquely.**
6. To reinstall, reverse the order of removal.

Actions after replacement of the board

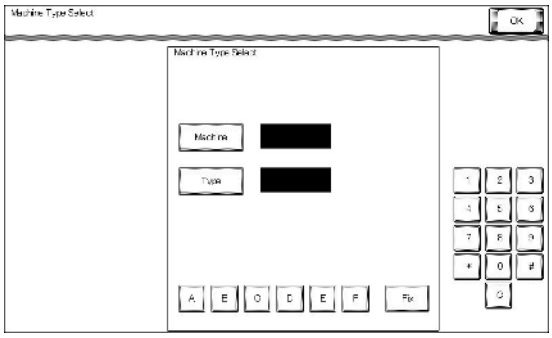
NOTE

- **Be sure to configure settings in [Machine] and [Type] from [Machine Type Select] immediately after replacing the CPU board with a new one.**

1. Connect the USB memory containing the firmware into the USB port of the main body.
2. Turn the main power switch ON while pressing the Stop key.



3. When a firmware update screen appears, touch [Machine Type Select].



4. Enter information in [Machine] and [Type] according to Table: Machine type information. Then touch [Fix].
5. Touch [OK].
6. Turn OFF the main power switch, and remove the USB memory.
7. Turn ON the main power switch.



8. Wait until the trouble code (C-D3C0) screen appears.
9. When [Recover Data] appears on the trouble code screen, touch [Recover Data].
10. When a verification message appears, touch [Yes].

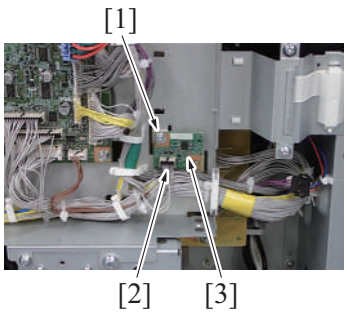
11. When the “Turn the main switch OFF and ON.” screen appears, turn OFF the main power switch.
12. Turn ON the main power switch.
13. When the machine starts up normally, check the firmware version.
14. If the firmware version is not the latest, upgrade the firmware.

Table: Machine type information

First four digits of the serial number	ACV7
[Machine]	13
[Type]	E

5.3.5 Backup board (ERB)

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover



2. Remove the screw [1]. Disconnect the connector [2], and remove the backup board [3].

3. To reinstall, reverse the order of removal.
   NOTE
   - **Since the counter will be cleared when the backup board is replaced with a new one, replace the following parts with new ones.**
   - **When the transfer belt unit and the fusing unit have been replaced with new ones, perform [New Release] in the service mode. When the transfer roller has been replaced with a new one, perform [Counter clear].**
   - **Developing unit/K**
   - **Drum unit/K**

- **Toner cartridge/K**
- **Transfer belt unit**
- **Fusing unit**
- **Transfer roller**
- **Feed roller, pick-up roller, separation roller (including options)**

NOTE

- **When the new backup board is installed, the error message: "License management error occurred." is displayed. Conduct the i-Option recovery operation.**

4. Open the lower front door and turn ON the main power supply switch.
5. Enter the Service Mode. Make individual adjustments shown in Table 1: Readjustment items in the order listed, using the machine management list and the adjustment lists that were output at the time of main body installation and maintenance.

NOTE

- **Ensure the front lower door is opened.**

NOTE

- **Conduct the readjustment of the above adjustment items before the starting the initial warm-up operation after replacing the backup board.**

6. Turn OFF the main power switch.
7. Turn ON the main power switch and close the lower front door. Check to see that warm-up and image stabilization operations are completed normally.
8. Enter the Service Mode again. Make individual adjustments shown in Table 2: Readjustment items in the order listed, using the machine management list and the adjustment lists that were output at the time of main body installation and maintenance.
9. Execute [Service Mode] -> [Enhanced Security] -> [Engine FW DipSW], and configure settings for keys shown in Table 3: Switch No. to be enabled.

NOTE

- **Also ON (reverse display) switch numbers in Engine FW DipSW those are enabled at time of main body setup and maintenance.**

Table 1: Readjustment items

Adjustment items	Service mode readjustment items		
1	Imaging Process Adjustment	Image Background Adj	
2		Max Image Density Adj	
3		Grad/Dev AC Bias V Selection	
4	System 1	Change Warm Up Time	
5	Imaging Process Adjustment	Charge AC Output fine adjustment	
6	System 2	Unit Change	Warning Display

Table 2: Readjustment items

Adjustment items	Service mode readjustment items		
1	Machine	Manual Bypass Tray Width Adj	
2		Printer Reg. Loop Adj.	
3		Fusing Temperature	
4	Finisher	FS-FN Adjustment	
5	Machine	Printer Area	Paper Feed Direction Adj.
6		Fusing speed	
7		Printer Area	Printer Image Centering Side 1
8			Prt. Image Center. Side 2 (Dup)
9			Leading Edge Adjustment
10			Leading Edge Adj. Side 2 (Duplex)
11			Tray Printing Position: Tip
12	Imaging Process Adjustment	Transfer Voltage Fine Adj	2nd Transfer Adj.
13			Primary transfer adj.

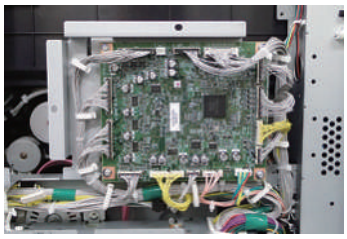
Table 3: Switch No. to be enabled

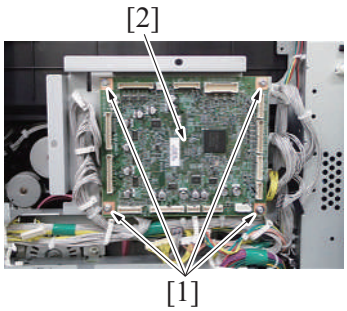
Region	Switch No. to be enabled
Japan	[6] is set to OFF (normal display)
Other than Japan	[6] is set to ON (reverse display)

5.3.6 Expansion control board (EXCB)

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the duct cover.
   F.5.1.20 Duct cover
3. Remove the upper right rear cover.
   F.5.1.22 Upper right rear cover

4. Disconnect all connectors from the expansion control board.



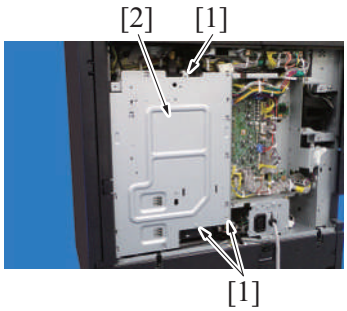


5. Remove four screws [1], and remove the expansion control board [2].

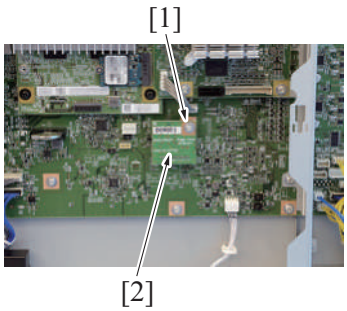
6. To reinstall, reverse the order of removal.

5.3.7 TPM board (TPMB)

1. Remove the lower rear cover.
F.5.1.23 Lower rear cover



2. Remove three screws [1], and remove the plate [2].

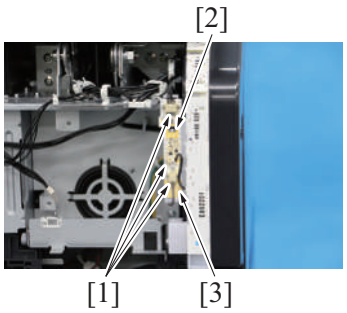


3. Remove the screw [1], and remove the TPM board [2].

4. To reinstall, reverse the order of removal.

5.3.8 Machine condition monitor board (MCMB)

1. Remove the control panel upper cover.
F.5.1.5 Control panel upper cover
2. Remove the control panel front cover.
F.5.1.6 Control panel front cover



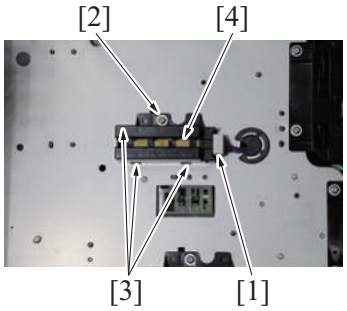
3. Disconnect three connectors [1]. Unhook the tab [2], and remove the machine condition monitor board [3].
4. To reinstall, reverse the order of removal.

5.3.9 Tray 1 FD paper size board (FDPSB/1), tray 2 FD paper size board (FDPSB/2)

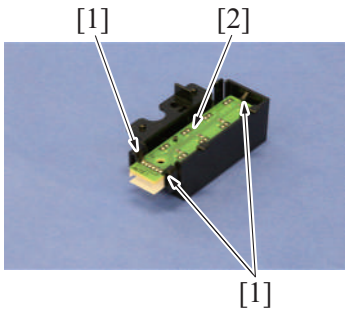
NOTE

- **The tray 1 FD paper size board and the tray 2 FD paper size board are of the same form and mechanism. This procedure shows the steps taken for the tray 1 FD paper size board.**

1. Remove the tray 1.
2. Remove the tray 2.



3. Disconnect the connector [1].
4. Remove the screw [2] and three tabs [3], and remove the tray 1 FD paper size board assy [4].



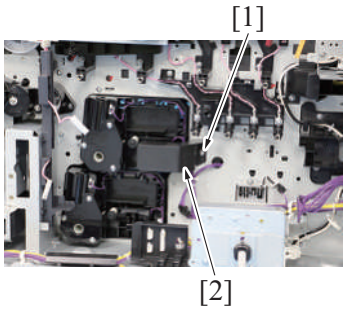
5. Unhook three tabs [1], and remove the tray 1 FD paper size board [2].
6. To reinstall, reverse the order of removal.

5.3.10 Tray 1 CD paper size board (CDPSB/1), tray 2 CD paper size board (CDPSB/2)

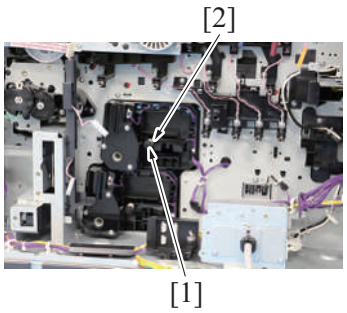
NOTE

- **The tray 1 CD paper size board and the tray 2 CD paper size board are of the same form and mechanism. This procedure shows the steps taken for the tray 1 CD paper size board.**

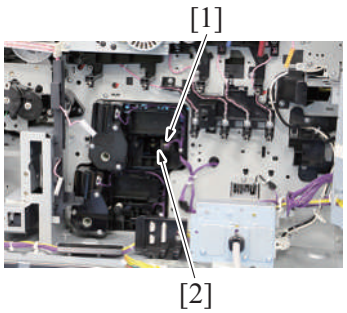
1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the right rear cover.
   F.5.1.18 Right rear cover
3. Open the PWB box.
   F.5.2.10 How to open the PWB box
4. Remove the high voltage unit.
   F.5.3.12 High voltage unit (HV)
5. Slide out the tray 1.



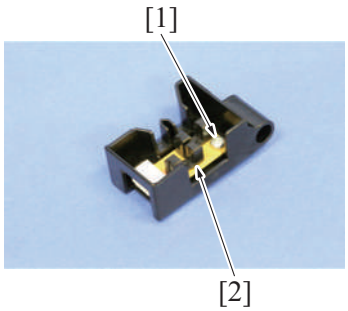
6. Remove the screw [1], and remove the cover [2].



7. Remove screw [1] and spring [2].



8. Remove the connector [1], and remove the tray 1 CD paper size board assy [2].

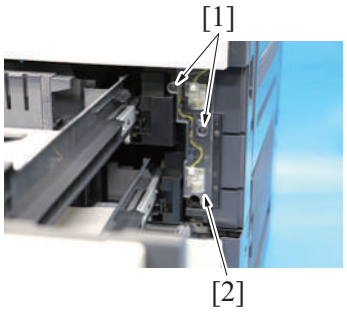


9. Remove the screw [1], and remove the tray 1 CD paper size board [2].

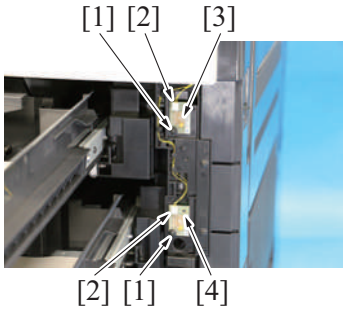
10. To reinstall, reverse the order of removal.

5.3.11 Tray 1 paper empty indicator board (PEIB/1), tray 2 paper empty indicator board (PEIB/2)

1. Slide out the tray 1 and the tray 2.



2. Remove two screws [1], and remove the tray right cover [2].



3. Remove one screw [1] each. Disconnect one connector [2] each, and remove the tray 1 paper empty indicator board [3] and the tray 2 paper empty indicator board [4].

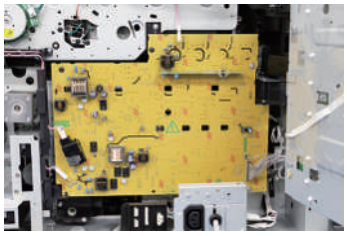
4. To reinstall, reverse the order of removal.

5.3.12 High voltage unit (HV)

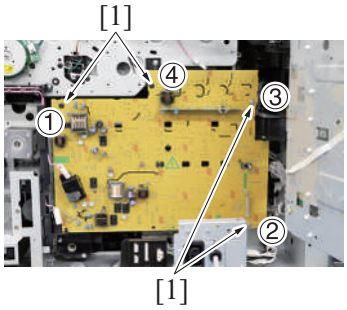
1. Remove the lower rear cover.
F.5.1.23 Lower rear cover
2. Remove the right rear cover.

F.5.1.18 Right rear cover

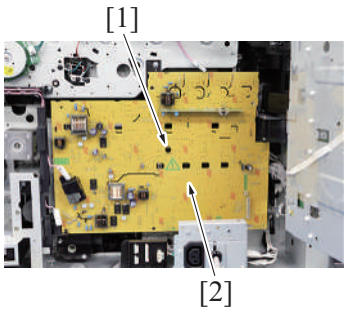
3. Open the PWB box.
F.5.2.10 How to open the PWB box



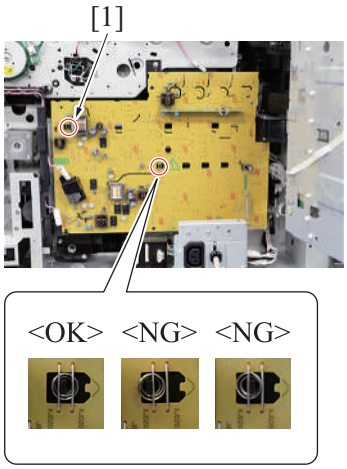
4. Disconnect all connectors and solderless terminals on the high voltage unit.



5. Remove four screws [1] of the high voltage unit.
NOTE
- **When installing the high voltage unit, tighten the screws in the order shown in the illustration.**



6. Unhook the tab [1], and remove the high voltage unit [2].

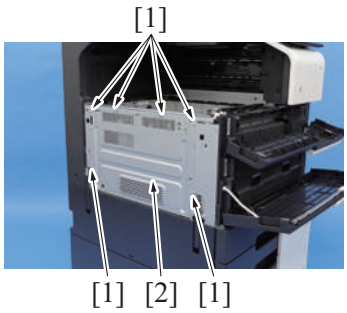


7. **NOTE**
- **When mounting the high voltage unit, the resinous holder is inserted in the center of the wire, and the terminal contact point [1] must be contacted without fail. The claw also must be firmly hooked.**

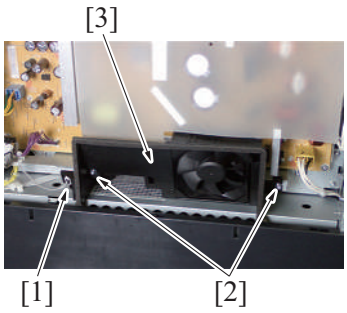
8. To reinstall, reverse the order of removal.

5.3.13 DC power supply (DCPU)

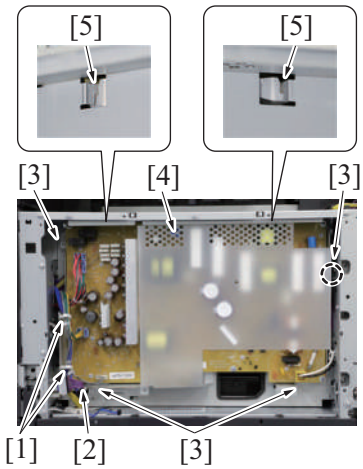
1. Remove the left cover.
F.5.1.16 Left cover
2. Remove the paper exit cover.
F.5.1.17 Paper exit cover



3. Remove six screws [1], and remove the DC power supply protective shield [2].



4. Disconnect the connector [1].
5. Remove two screws [2], and remove the PH/power supply cooling fan assy [3].

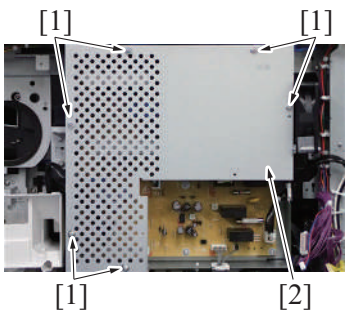


6. Disconnect all connectors on the DC power supply [4].
7. Remove the harness from two wire saddles [1] and edge cover [2].
8. Remove four screws [3], and remove the DC power supply [4].
   NOTE
   - **When installing the DC power supply [4], hook two tabs [5].**

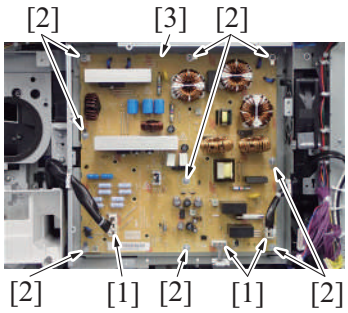
9. To reinstall, reverse the order of removal.

5.3.14 HaCS power supply (FUPU)

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the duct cover.
   F.5.1.20 Duct cover
3. Remove the upper right rear cover.
   F.5.1.22 Upper right rear cover
4. Remove the upper left rear cover.
   F.5.1.21 Upper left rear cover
5. Remove the right rear cover.
   F.5.1.18 Right rear cover
6. Remove the fan assy.
   F.5.2.18 Fan assy
7. Remove the expansion control board assy.
   F.5.2.16 Expansion control board assy



8. Remove six screws [1], and remove the protective shield [2].

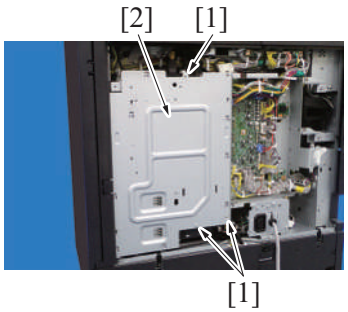


9. Disconnect three connectors [1].
10. Remove nine screws [2], and remove the HaCS power supply [3].

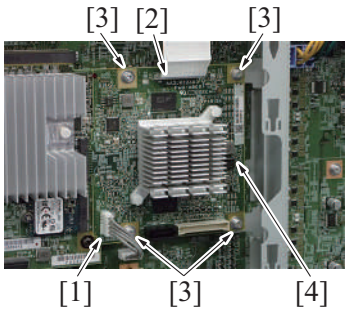
11. To reinstall, reverse the order of removal.

5.3.15 Memory board (MEMB)

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover



2. Remove three screws [1], and remove the plate [2].

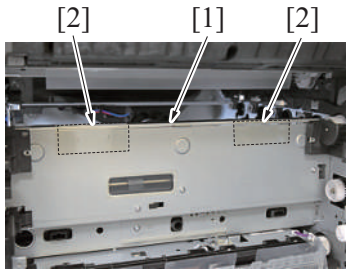


3. Disconnect the connector [1] and remove the flat cable [2].
4. Remove four screws [3], and remove the memory board [4].

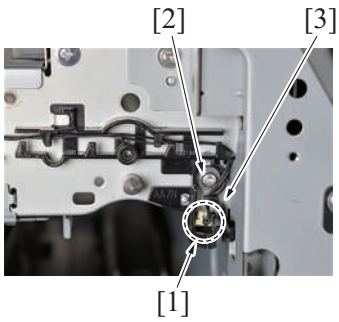
5. To reinstall, reverse the order of removal.

5.3.16 Erase LED/K (EL/K)

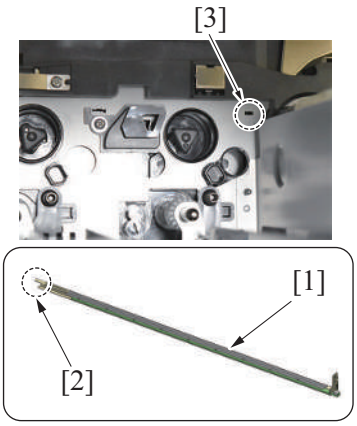
1. Remove the transport unit.
   F.5.2.12 Transport unit
2. Remove the sub hopper unit.
   F.5.2.6 Sub hopper unit



3. Peel off the upper side of the seals [2] from the mounting plate [1] of the erase LED/K carefully.
   NOTE
   - **Be careful not to stain the adhesive surface of the seal with fingerprints or dust.**
   - **When installing the erase LED/K (EL/K), the peeled seal must be reattached to the original position.**



4. Disconnect the connector [1] from the erase LED/K (EL/K).
5. Remove the screw [2], and remove the erase LED/K (EL/K) [3].



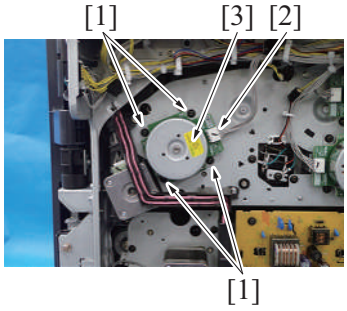
6. **NOTE**
   - **When installing the erase LED/K (EL/K) [1], insert the rear protrusion [2] into the hole [3] on the main body.**
   - **Be careful not to stain the part where the seal peeled off in step 3 will be adhered with fingerprints or dust.**

7. To reinstall, reverse the order of removal.

5.4 Motors

5.4.1 Transport motor (M1)

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the right rear cover.
   F.5.1.18 Right rear cover
3. Open the PWB box.
   F.5.2.10 How to open the PWB box

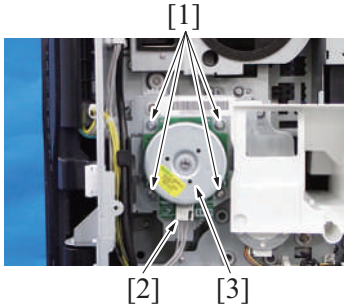


4. Remove four screws [1]. Disconnect the connector [2], and remove the transport motor [3].
   NOTE
   - **Remove/install holding the plate part of the motor.**

5. To reinstall, reverse the order of removal.

5.4.2 Fusing motor (M3)

1. Remove the fan assy.
   F.5.2.18 Fan assy

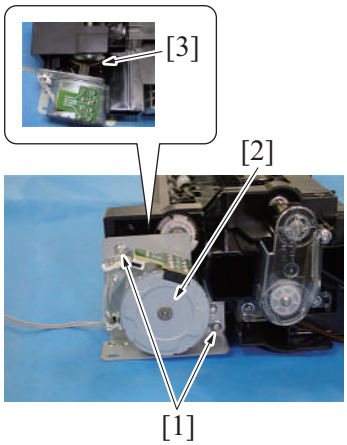


2. Remove four screws [1]. Disconnect the connector [2], and remove the fusing motor [3].
   NOTE
   - **Remove/install holding the plate part of the motor.**

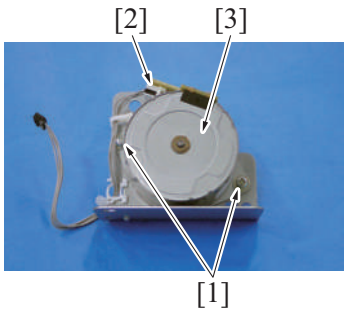
3. To reinstall, reverse the order of removal.

5.4.3 Paper exit/reverse motor (M4)

1. Remove the gate switch unit.
   F.5.2.17 Gate switch unit



2. Remove two screws [1], and remove the paper exit/reverse motor assy [2].
   NOTE
   - **When installing, place the gear of the paper exit/reverse motor assy [2] on the belt [3].**

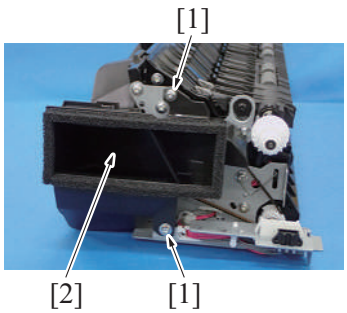


3. Remove two screws [1]. Disconnect the connector [2], and remove the paper exit/reverse motor [3].

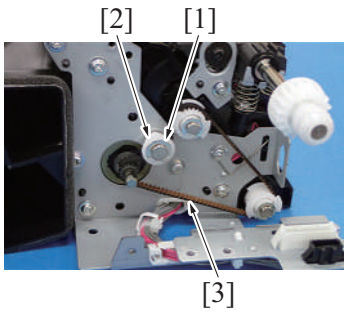
4. To reinstall, reverse the order of removal.

5.4.4 ADU transport motor/1 (M5)

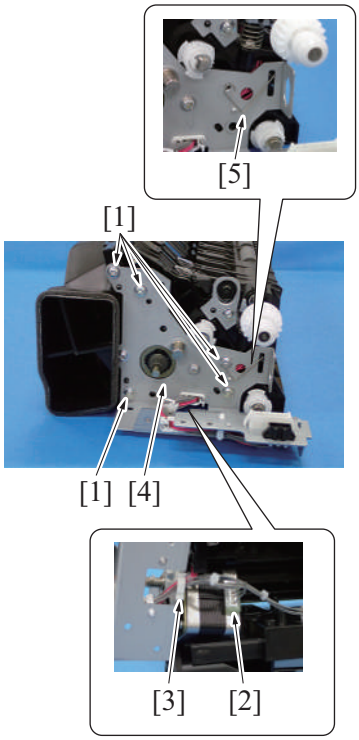
1. Remove the ADU transport unit.
   F.5.2.15 ADU transport unit



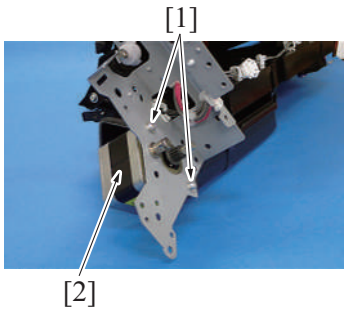
2. Remove two screws [1], and remove the duct [2].



3. Remove the E-ring [1], and remove the pulley [2] and the belt [3].



4. Remove five screws [1]. Disconnect the connector [2] and remove the harness from the edge cover [3] to release the ADU transport motor/1 assy [4].
NOTE
- **When installing, set the wire [5] as shown in the illustration.**

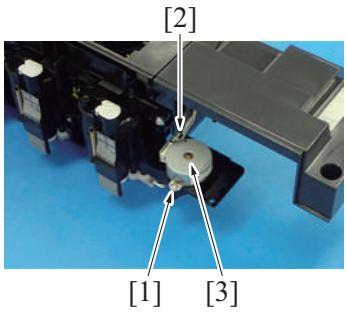


5. Remove two screws [1], and remove the ADU transport motor/1 [2].

6. To reinstall, reverse the order of removal.

5.4.5 Toner supply motor/K (M6)

1. Remove the sub hopper unit.
F.5.2.6 Sub hopper unit

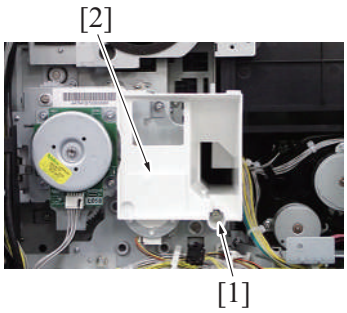


2. Remove the screw [1].
3. Disconnect the connector [2] and remove the toner supply motor/K [3].

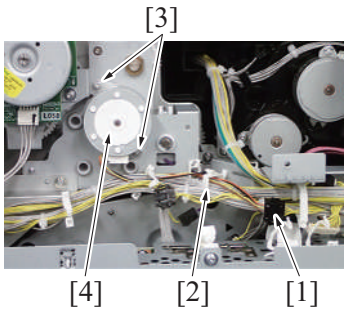
4. To reinstall, reverse the order of removal.

5.4.6 Fusing pressure motor (M11)

1. Remove the fan assy.
F.5.2.18 Fan assy



2. Remove the screw [1], and remove the duct [2].

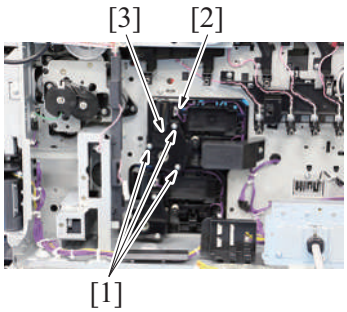


3. Disconnect the connector [1], and remove the harness from the wire saddle [2]. Remove two screws [3], and remove the fusing pressure motor [4].

4. To reinstall, reverse the order of removal.

5.4.7 Tray 1 lift-up motor (M12)

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the right rear cover.
   F.5.1.18 Right rear cover
3. Open the PWB box.
   F.5.2.10 How to open the PWB box
4. Remove the high voltage unit.
   F.5.3.12 High voltage unit (HV)
5. Slide out the tray 1.



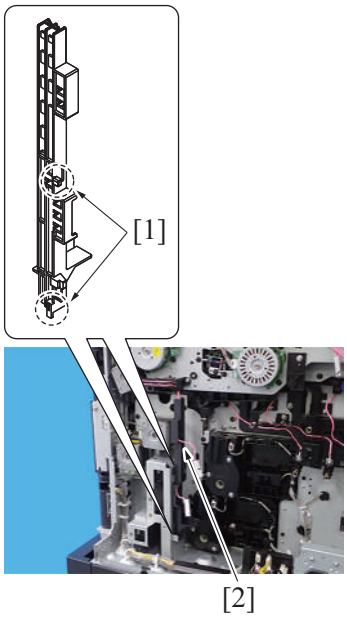
6. Remove three screws [1]. Disconnect the connector [2], and remove the tray 1 lift-up motor [3].

7. To reinstall, reverse the order of removal.

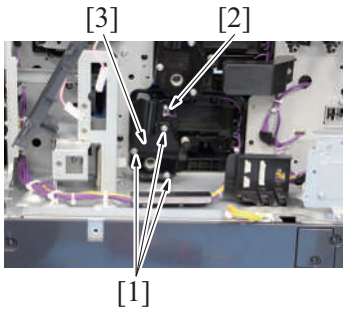
5.4.8 Tray 2 lift-up motor (M13)

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the right rear cover.
   F.5.1.18 Right rear cover
3. Open the PWB box.
   F.5.2.10 How to open the PWB box
4. Remove the high voltage unit.
   F.5.3.12 High voltage unit (HV)
5. Slide out the tray 2.

6. Unhook two tabs [1], and remove the harness guide [2].



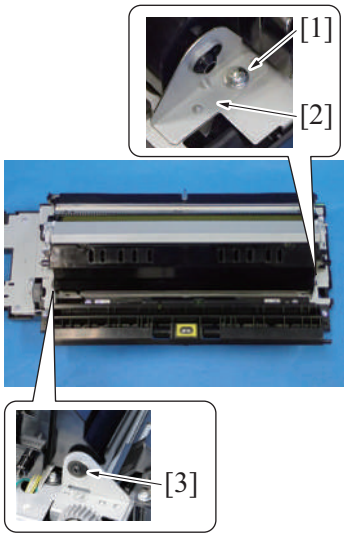
7. Remove three screws [1]. Disconnect the connector [2], and remove the tray 2 lift-up motor [3].



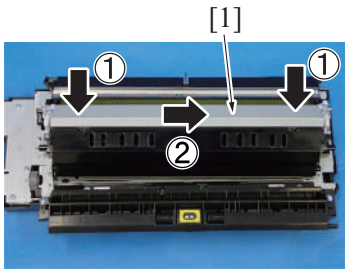
8. To reinstall, reverse the order of removal.

5.4.9 Fusing shutter motor (M15)

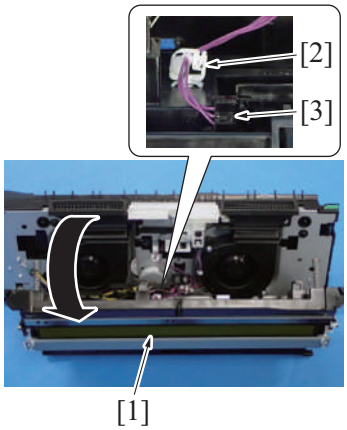
1. Remove the regist unit.
F.5.2.9 Regist unit



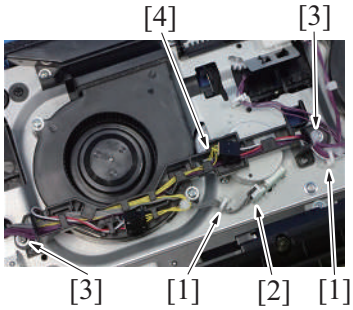
2. Remove the screw [1], and remove the plate [2].
3. Remove the screw [3].



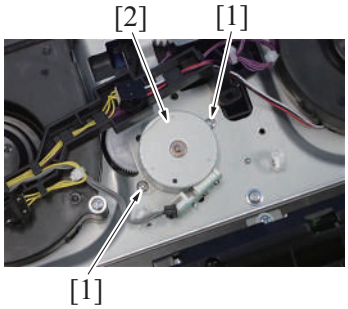
4. While pressing the 2nd transfer assy [1] on from the top, slide it to the right to unlock it.



5. Slowly open the 2nd transfer assy [1].
6. Remove the harness from the wire saddle [2], and disconnect the connector [3].
7. Remove the 2nd transfer assy [1].



8. Remove the harness from two wire saddles [1], and disconnect the connector [2].
9. Remove two screws [3], and move the harness guide [4].

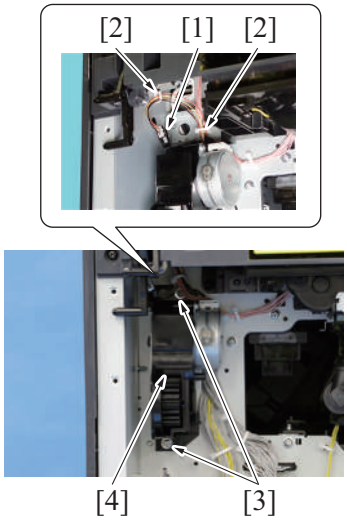


10. Remove two screws [1], and remove the fusing shutter motor [2].

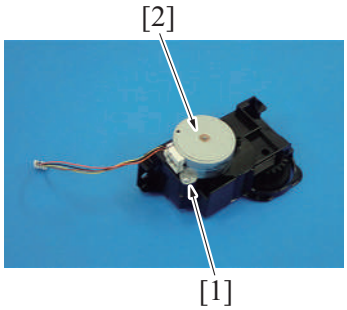
11. To reinstall, reverse the order of removal.

5.4.10 Waste toner transport motor (M20)

1. Remove the upper front door.
   F.5.1.12 Upper front door
2. Remove the lower front door.
   F.5.1.13 Lower front door
3. Remove the waste toner box.
   F.5.2.1 Waste toner box
4. Remove the front lower cover.
   F.5.1.14 Front lower cover
5. Remove the front cover.
   F.5.1.15 Front cover



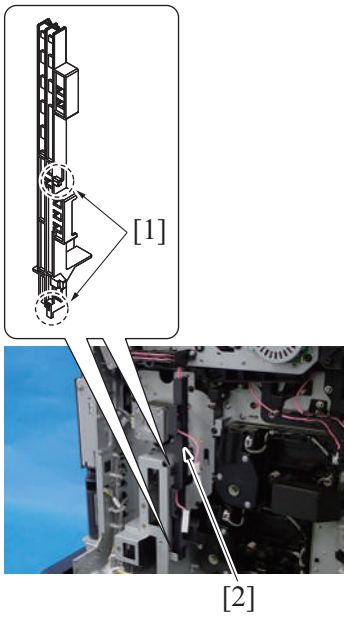
6. Disconnect the connector [1], and remove the harness from two wire saddles [2].
7. Remove two screws [3], and remove the waste toner transport motor assy [4].



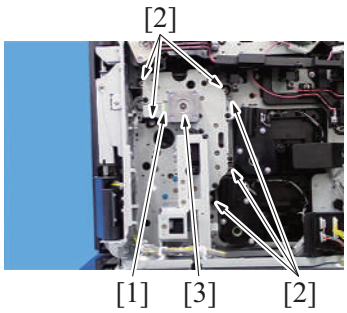
8. Remove the screw [1], and remove the waste toner transport motor [2].
9. To reinstall, reverse the order of removal.

5.4.11 Paper feed motor (M22)

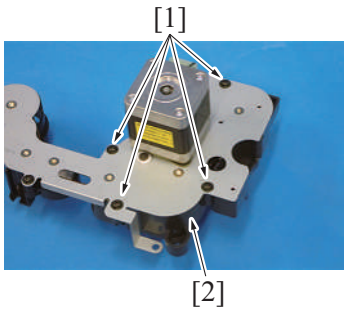
1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the right rear cover.
   F.5.1.18 Right rear cover
3. Open the PWB box.
   F.5.2.10 How to open the PWB box
4. Remove the high voltage unit.
   F.5.3.12 High voltage unit (HV)
5. Remove the tray 2 vertical transport motor (M23).
   F.5.4.12 Tray 2 vertical transport motor (M23)



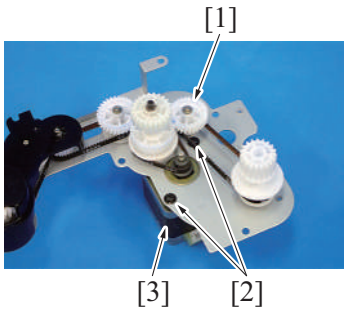
6. Unhook two tabs [1], and remove the harness guide [2].



7. Disconnect the connector [1].
8. Remove six screws [2], and remove the paper feed motor assy [3].



9. Remove four screws [1], and remove the cover [2].

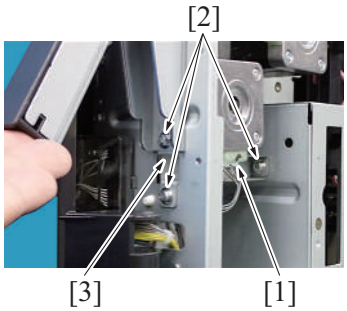


10. Remove the gear [1].
11. Remove two screws [2], and remove the paper feed motor [3].

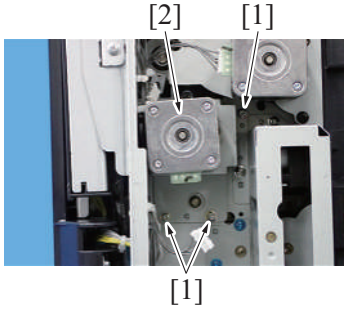
12. To reinstall, reverse the order of removal.

5.4.12 Tray 2 vertical transport motor (M23)

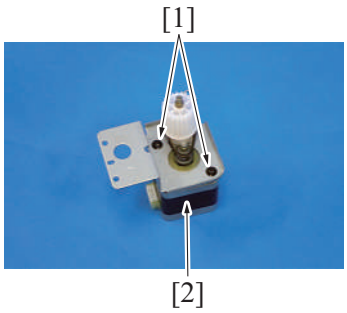
1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the right rear cover.
   F.5.1.18 Right rear cover
3. Open the PWB box.
   F.5.2.10 How to open the PWB box



4. Disconnect the connector [1].
5. Remove three screws [2], and remove the plate [3].



6. Remove three screws [1], and remove the tray 2 vertical transport motor assy [2].

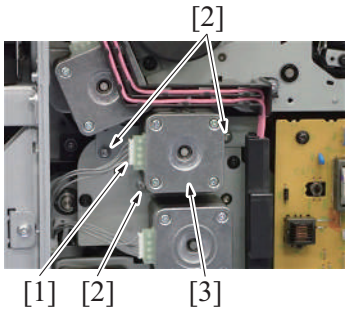


7. Remove two screws [1], and remove the tray 2 vertical transport motor [2].

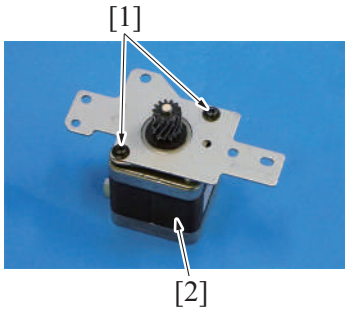
8. To reinstall, reverse the order of removal.

5.4.13 Registration motor (M24)

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the right rear cover.
   F.5.1.18 Right rear cover
3. Open the PWB box.
   F.5.2.10 How to open the PWB box



4. Disconnect the connector [1].
5. Remove three screws [2] and remove the registration motor assy [3].

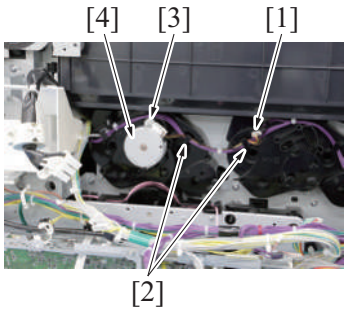


6. Remove two screws [1], and remove the registration motor [2].

7. To reinstall, reverse the order of removal.

5.4.14 Toner cartridge motor/K (M25)

1. Remove the expansion control board assy.
   F.5.2.16 Expansion control board assy
2. Remove the HaCS power supply box.
   F.5.2.19 HaCS power supply box



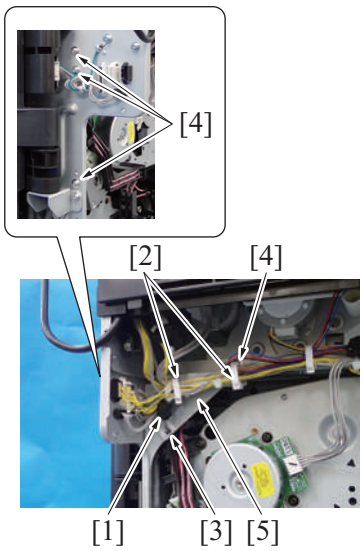
3. Disconnect the connector [1], and remove the harness from two harness guides [2].
4. Remove the screw [3], and remove the toner cartridge motor/K [4].

5. To reinstall, reverse the order of removal.

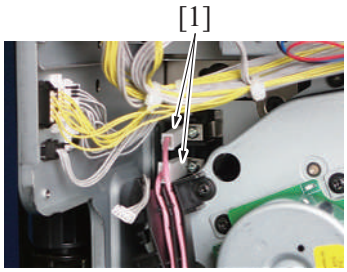
5.4.15 ADU transport motor/2 (M26)

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the right rear cover.
   F.5.1.18 Right rear cover

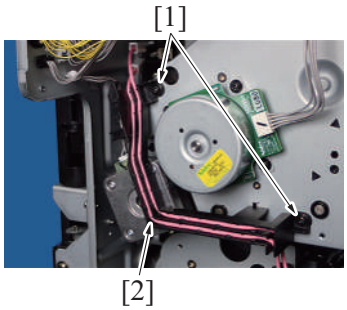
3. Open the PWB box.
   F.5.2.10 How to open the PWB box
4. Remove the registration motor.
   F.5.4.13 Registration motor (M24)



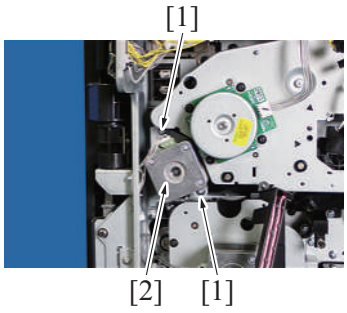
5. Disconnect the connector [1].
6. Remove the harness from two wire saddles [2] and the edge cover [3].
7. Remove four screws [4], and remove the plate [5].



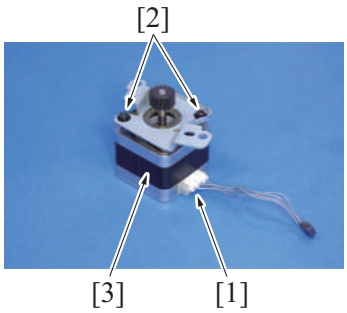
8. Disconnect two solderless terminals [1].



9. Remove two screws [1], and remove the harness guide [2].



10. Remove two screws [1], and remove the ADU transport motor/2 assy [2].

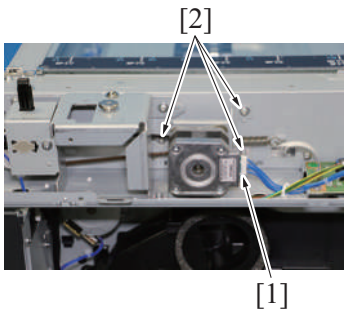


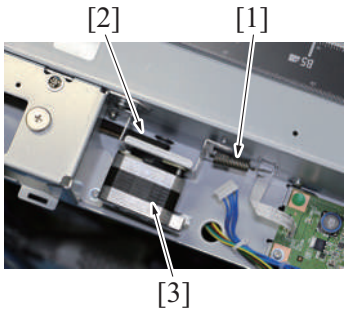
13. To reinstall, reverse the order of removal.

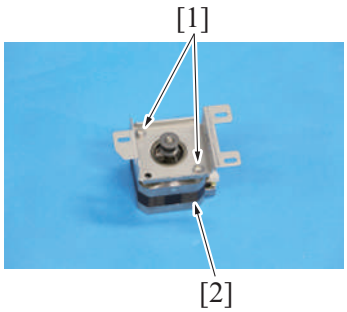
5.4.16 Scanner motor (M201)

(1) Removal procedure

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the duct cover.
   F.5.1.20 Duct cover
3. Remove the upper right rear cover.
   F.5.1.22 Upper right rear cover
4. Remove the scanner right cover.
   F.5.1.1 Scanner right cover
5. Remove the scanner upper rear cover.
   F.5.1.4 Scanner upper rear cover







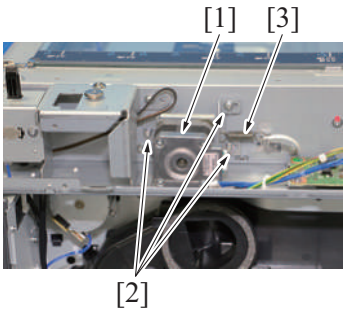
11. Disconnect the connector [1].
12. Remove two screws [2], and remove the ADU transport motor/2 [3].

6. Disconnect the connector [1], and remove three screws [2].

7. Remove the spring [1] and the belt [2], and remove the scanner motor assy [3].

8. Remove two screws [1], and remove the scanner motor [2].

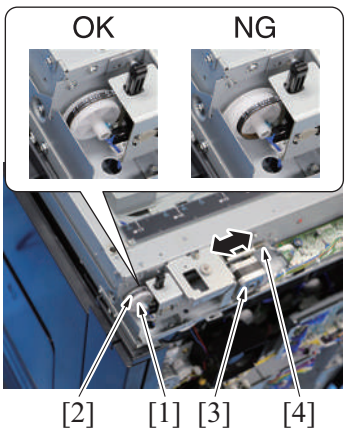
(2) Reinstall procedure



1. Attach the spring [3] to the scanner motor assy [1].
2. Temporarily secure the scanner motor assy [1] with three screws [2].

NOTE

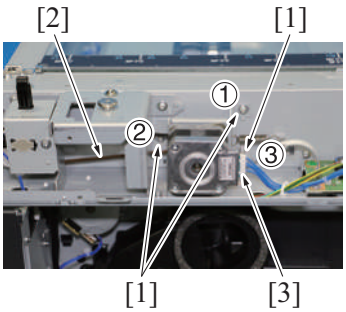
- **The screws [2] should be temporarily tightened to a degree that the position of the motor can be adjusted by the spring force.**
- **When installing the scanner motor, make sure that the scanner motor is disconnected with the connector.**



3. Attach the drive belt [2] to the pulley [1] and the gear of scanner motor.
4. Move the scanner motor assy [3] in the direction shown in the illustration for two to three times, then make sure that it runs smoothly.

NOTE

- **Make sure that the drive belt [2] is properly kept tight by the spring [4] force.**
- **If the deflection or tension of the drive belt [2] is excessive, the scanner unit does not work correctly. This may result in trouble.**
- **Make sure that the drive belt [2] is attached to the pulley [1] correctly.**



5. Tighten three screws [1] in the order shown in the illustration to fix the scanner motor assy.

NOTE

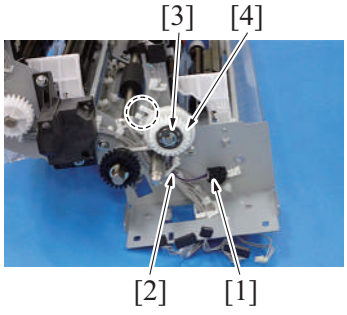
- **When tightening the screw [1], make sure that the scanner motor assy is not touched.**
- **After securing the scanner motor assy, check again that the deflection and tension of the drive belt [2] are not excessive.**

6. Connect the connector [3] to the scanner motor.
7. Perform the adjustment from [Service Mode] -> [Machine] -> [Scan Area] -> [Main Scan Zoom Adj.].

5.5 Clutches

5.5.1 Tray 2 paper feed clutch (CL1)

1. Remove the paper feed unit.
F.5.2.4 Paper feed unit



2. Disconnect the connector [1]. Remove the harness from the wire saddle [2].
3. Remove the E-ring [3], and remove the tray 2 paper feed clutch [4].

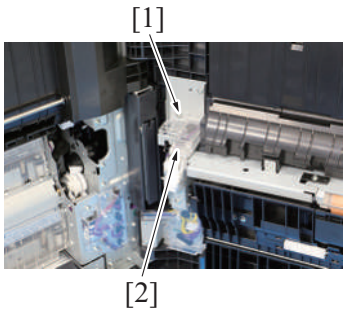
NOTE

- **When mounting the tray 2 paper feed clutch, set the convex part of the stopper into the concave part of the tray 2 paper feed clutch [4].**

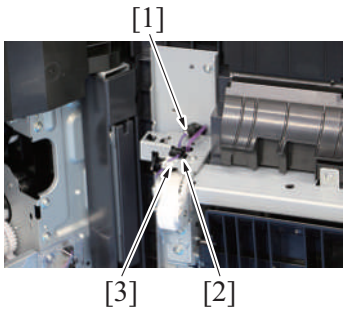
4. To reinstall, reverse the order of removal.

5.5.2 Bypass tray paper feed clutch (CL7)

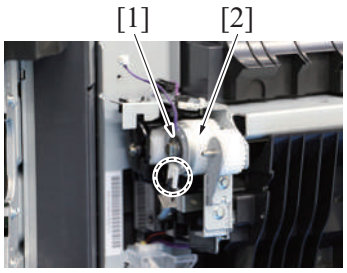
1. Open the right door.
2. Open the regist unit.



3. Remove the screw [1], and remove the connector cover [2].



4. Disconnect the connector [1], and remove the harness from the harness guide [2] and the edge cover [3].



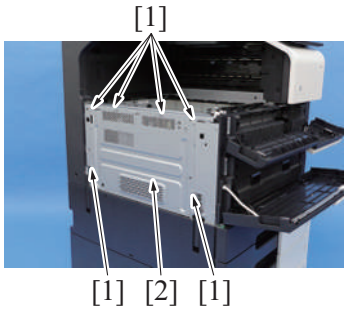
5. Remove the E-ring [1], and remove the bypass tray paper feed clutch [2].
NOTE
- **When mounting the bypass tray paper feed clutch, set the convex part of the stopper into the concave part of the bypass tray paper feed clutch [2].**

6. To reinstall, reverse the order of removal.

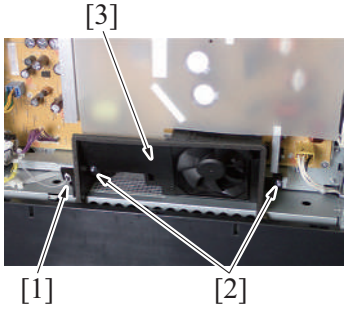
5.6 Fans

5.6.1 PH/power supply cooling fan (FM1)

1. Remove the left cover.
F.5.1.16 Left cover
2. Remove the paper exit cover.
F.5.1.17 Paper exit cover

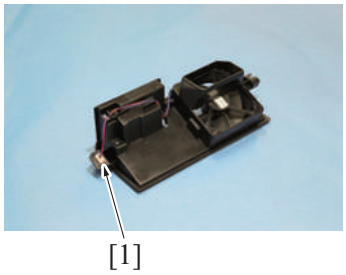


3. Remove six screws [1], and remove the DC power supply protective shield [2].

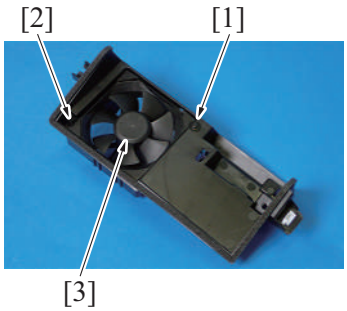


4. Disconnect the connector [1].
5. Remove two screws [2], and remove the PH/power supply cooling fan assy [3].

6. Disconnect the connector [1], and remove the harness from the harness guide.



7. Remove the screw [1]. Unhook the tab [2], and remove the PH/power supply cooling fan [3].

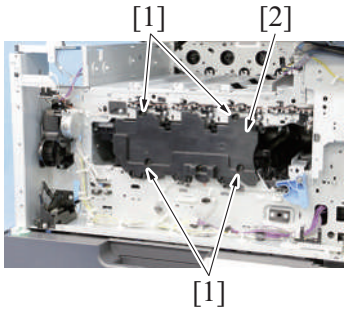


8. To reinstall, reverse the order of removal.

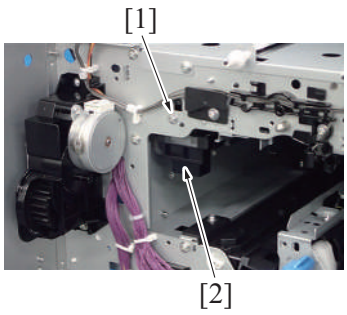
5.6.2 Transfer belt cleaner cooling fan (FM2)

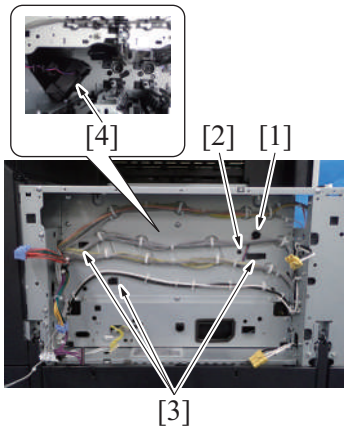
1. Remove the DC power supply.
   F.5.3.13 DC power supply (DCPU)
2. Remove the transfer belt unit.
   E.3.1.9 Replacing the transfer belt unit
3. Remove the sub hopper unit.
   F.5.2.6 Sub hopper unit

4. Remove four screws [1], and remove the cover [2].

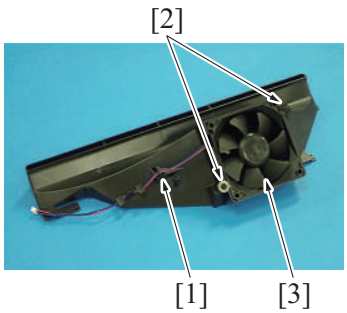


5. Remove the screw [1], and remove the waste toner pipe [2].





6. Disconnect the connector [1].
7. Remove the screw [2].
8. Release three tabs [3], and remove the transfer belt cleaner cooling fan assy [4].

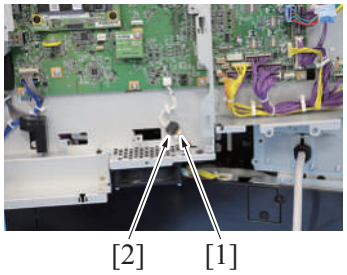


9. Remove the harness from the harness guide [1].
10. Remove two screws [2], and remove the transfer belt cleaner cooling fan [3].

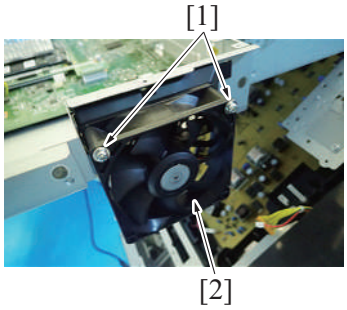
11. To reinstall, reverse the order of removal.

5.6.3 Rear side cooling fan (FM3)

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the right rear cover.
   F.5.1.18 Right rear cover
3. Open the PWB box.
   F.5.2.10 How to open the PWB box



4. Remove the harness from the wire saddle [1], and disconnect the connector [2].

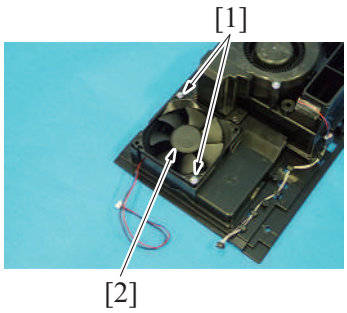


5. Remove two screws [1], and remove the rear side cooling fan [2].

6. To reinstall, reverse the order of removal.

5.6.4 Toner cartridge cooling fan (FM4)

1. Remove the fan assy.
   F.5.2.18 Fan assy

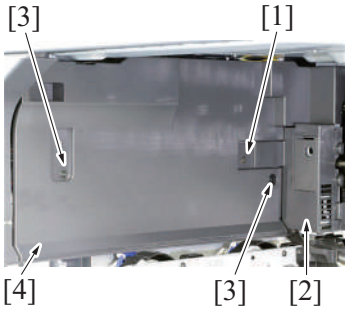


2. Remove two screws [1], and remove the toner cartridge cooling fan [2].

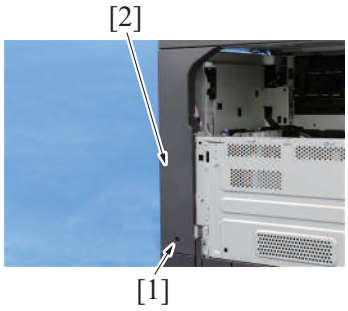
3. To reinstall, reverse the order of removal.

5.6.5 HaCS power supply cooling fan (FM5)

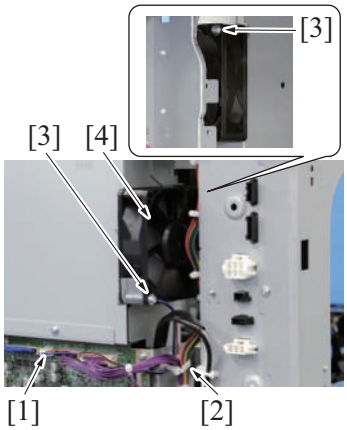
1. Open the upper front door.
2. Open the lower front door.
3. Remove the left cover.
   F.5.1.16 Left cover
4. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
5. Remove the duct cover.
   F.5.1.20 Duct cover
6. Remove the DF cable cover.
   F.5.1.19 DF cable cover
7. Remove the upper right rear cover.
   F.5.1.22 Upper right rear cover



8. Remove the screw [1], and remove the cover [2].
9. Remove two screws [3], and remove the cover [4].



10. Remove the screw [1], and remove the cover [2].



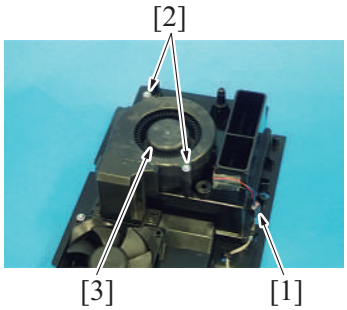
11. Disconnect the connector [1], and remove the harness from the wire saddle [2].
12. Remove two screws [3], and remove the HaCS power supply cooling fan [4].

13. To reinstall, reverse the order of removal.

5.6.6 Paper cooling fan (FM8)

1. Remove the fan assy.

F.5.2.18 Fan assy

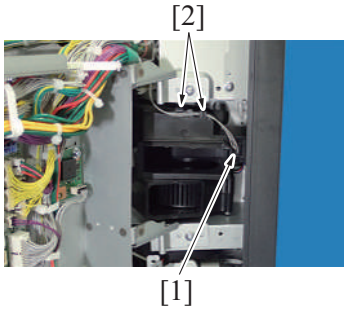


2. Disconnect the connector [1]. Remove two screws [2], and remove the paper cooling fan [3].

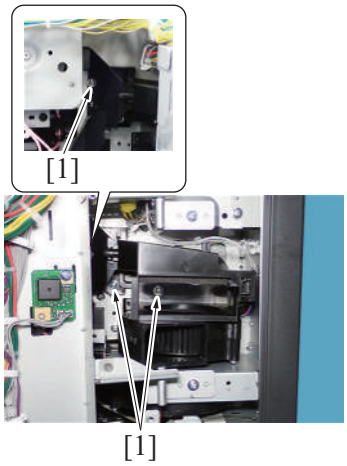
3. To reinstall, reverse the order of removal.

5.6.7 Toner suction fan (FM11)

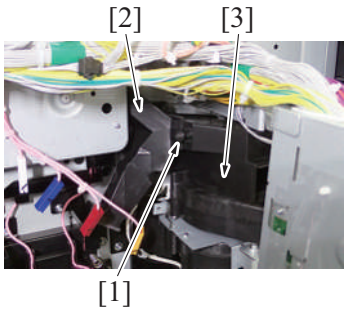
1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Open the PWB box.
   F.5.2.10 How to open the PWB box
3. Remove the high voltage unit.
   F.5.3.12 High voltage unit (HV)



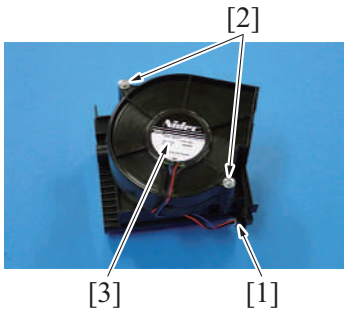
4. Disconnect the connector [1], and remove the harness from two harness guides [2].



5. Remove three screws [1].



6. Remove the screw [1], and remove the duct [2]. Remove the toner suction fan assy [3].

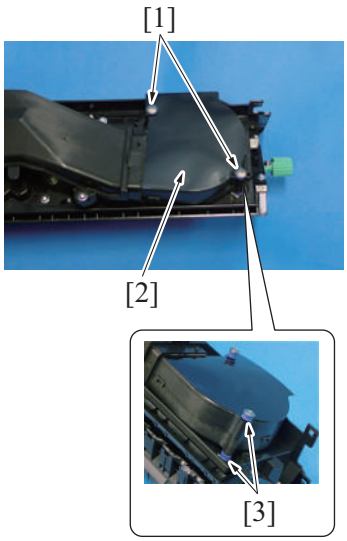


7. Disconnect the connector [1]. Remove two screws [2], and remove the toner suction fan [3].

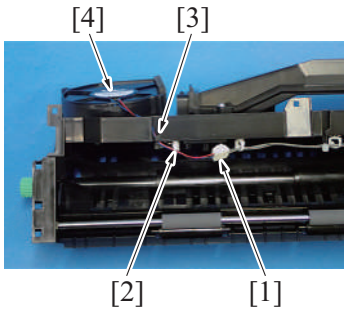
8. To reinstall, reverse the order of removal.

5.6.8 UFP scavenging fan/Fr (FM17)

1. Remove the ADU transport unit.
   F.5.2.15 ADU transport unit



2. Remove two screws [1], and remove the film [2].
   NOTE
   - **When attaching the film [2], set the rubber [3] to each of the upper and lower sides as shown in the illustration.**

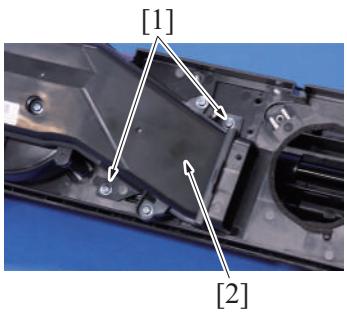


3. Disconnect the connector [1], remove the harness from the wire saddle [2] and harness guide [3], and remove the UFP scavenging fan/Fr [4].

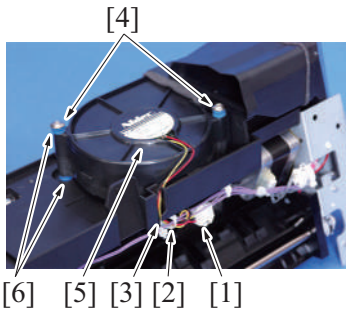
4. To reinstall, reverse the order of removal.

5.6.9 UFP scavenging fan/Rr (FM18)

1. Remove the ADU transport unit.
   F.5.2.15 ADU transport unit
2. Remove the UFP scavenging fan/Fr.
   F.5.6.8 UFP scavenging fan/Fr (FM17)



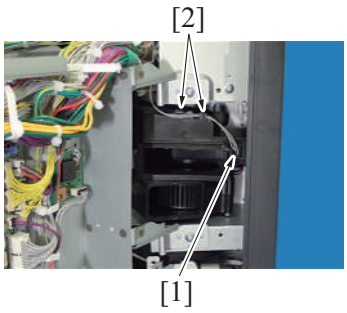
3. Remove two screws [1], and remove the duct [2].



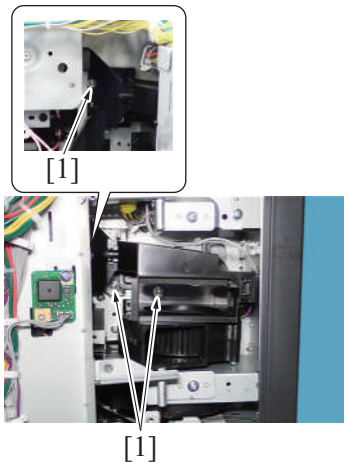
4. Disconnect the connector [1], and remove the harness from the wire saddle [2] and harness guide [3].
5. Remove two screws [4], and remove the UFP scavenging fan/Rr [5].
   NOTE
   - **When attaching the UFP scavenging fan/Rr [5], set the rubber [6] to each of the upper and lower sides as shown in the illustration.**
6. To reinstall, reverse the order of removal.

5.6.10 DV cooling fan (FM19)

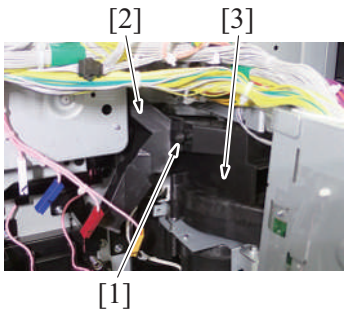
1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Open the PWB box.
   F.5.2.10 How to open the PWB box
3. Remove the high voltage unit.
   F.5.3.12 High voltage unit (HV)



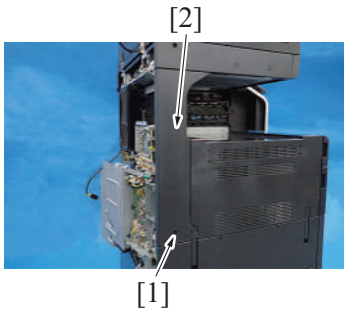
4. Disconnect the connector [1], and remove the harness from two harness guides [2].



5. Remove three screws [1].

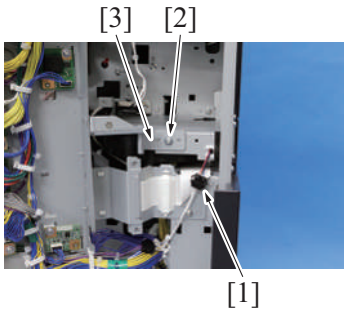


6. Remove the screw [1], and remove the duct [2]. Remove the toner suction fan assy [3].

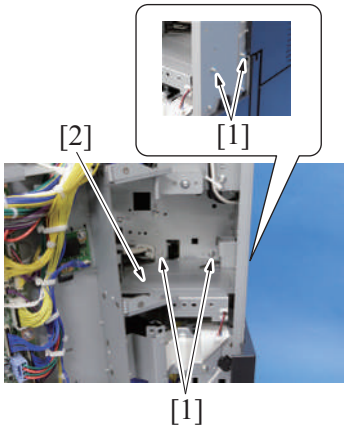


7. Remove the screw [1], and remove the cover [2].

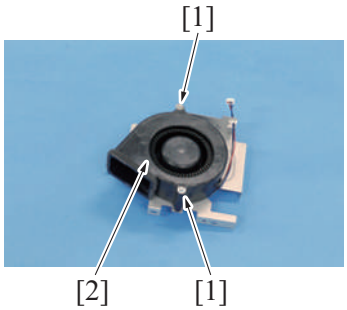
8. Close the PWB box.



9. Disconnect the connector [1].
10. Remove the screw [2], and remove the shaft [3] of the board box.



11. Remove four screws [1], and remove the DV cooling fan assy [2].

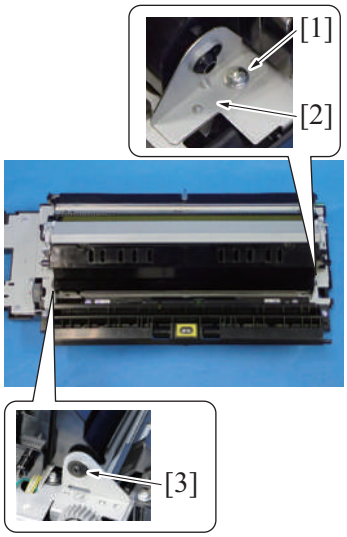


12. Remove two screws [1], and remove the DV cooling fan [2].

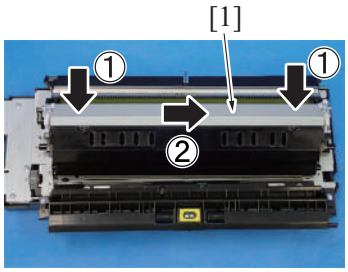
13. To reinstall, reverse the order of removal.

5.6.11 Fusing edge cooling fan/Fr (FM21)

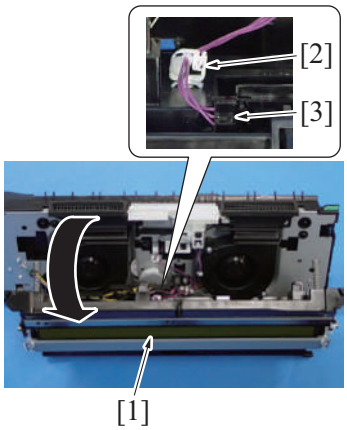
1. Remove the regist unit.
F.5.2.9 Regist unit



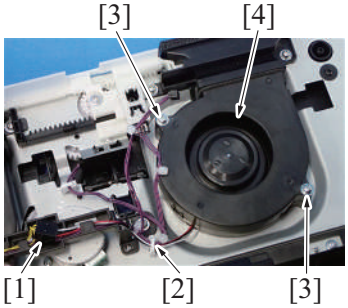
2. Remove the screw [1], and remove the plate [2].
3. Remove the screw [3].



4. While pressing the 2nd transfer assy [1] on from the top, slide it to the right to unlock it.



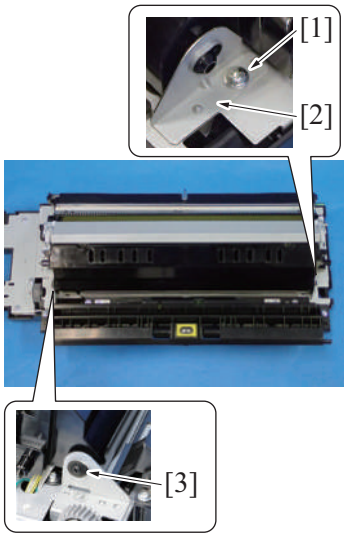
5. Slowly open the 2nd transfer assy [1].
6. Remove the harness from the wire saddle [2], and disconnect the connector [3].
7. Remove the 2nd transfer assy [1].



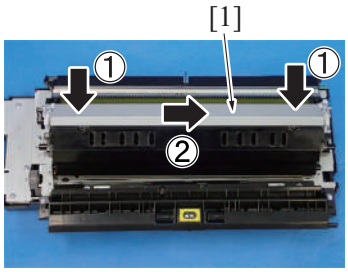
8. Disconnect the connector [1], and remove the harness from the wire saddle [2].
9. Remove two screws [3], and remove the fusing edge cooling fan/Fr [4].
10. To reinstall, reverse the order of removal.

5.6.12 Fusing edge cooling fan/Rr (FM22)

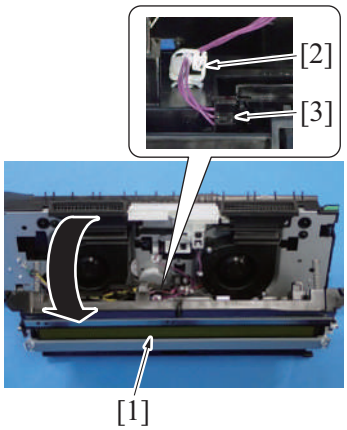
1. Remove the regist unit.
F.5.2.9 Regist unit



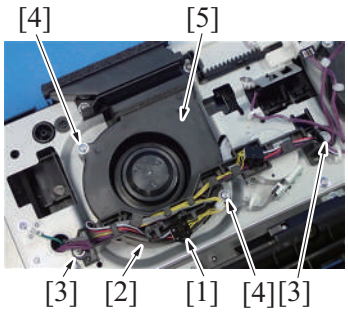
2. Remove the screw [1], and remove the plate [2].
3. Remove the screw [3].



4. While pressing the 2nd transfer assy [1] on from the top, slide it to the right to unlock it.



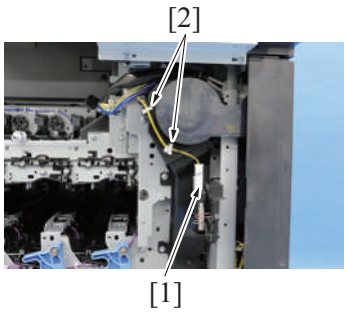
5. Slowly open the 2nd transfer assy [1].
6. Remove the harness from the wire saddle [2], and disconnect the connector [3].
7. Remove the 2nd transfer assy [1].



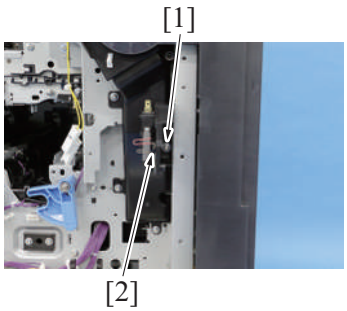
8. Disconnect the connector [1], and remove the harness from the harness guide [2].
9. Remove two screws [3], and move the harness guide [2].
10. Remove two screws [4], and remove the fusing edge cooling fan/Rr [5].
11. To reinstall, reverse the order of removal.

5.6.13 Machine internal cooling fan (FM25)

1. Remove the sub hopper unit.
F.5.2.6 Sub hopper unit

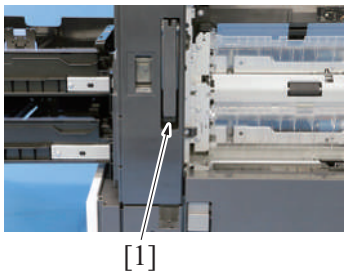


2. Disconnect the solderless terminal [1]. Remove the harness from two wire saddles [2].

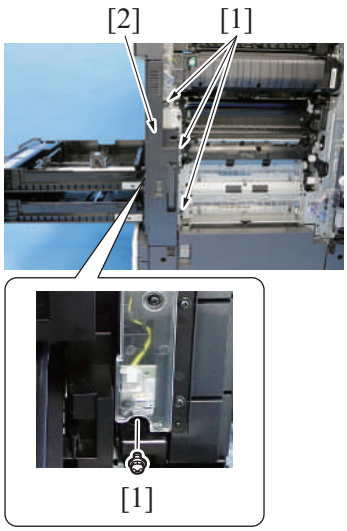


3. Remove the screw [1], and remove the front door switch [2].

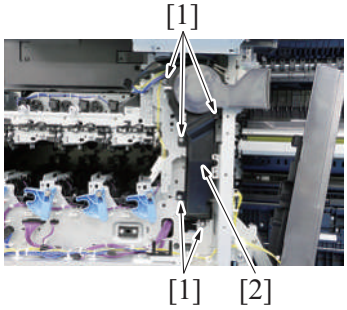
4. Slide out the tray 1.
5. Slide out the tray 2.
6. Open the right door.



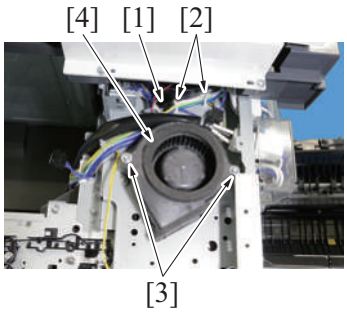
7. Remove the screw [1] from the handle.



8. Remove four screws [1], and evacuate the cover [2].



9. Remove five screws [1], and remove the duct [2].

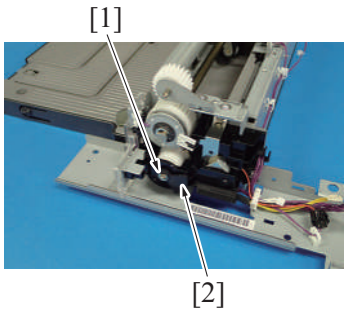


10. Disconnect the connector [1], and remove the harness from two wire saddles [2].
11. Remove two screws [3], and remove the machine internal cooling fan [4].
12. To reinstall, reverse the order of removal.

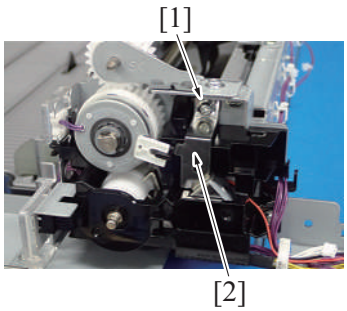
5.7 Others

5.7.1 Bypass tray lift-up solenoid (SD1)

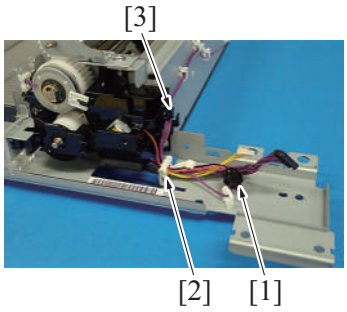
1. Remove the manual bypass tray unit.
F.5.2.8 Manual bypass tray unit



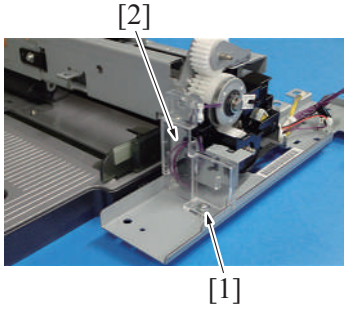
2. Remove the E-ring [1], and remove the actuator [2].



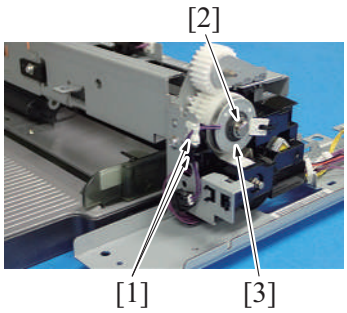
3. Remove the screw [1], and remove the plate [2].



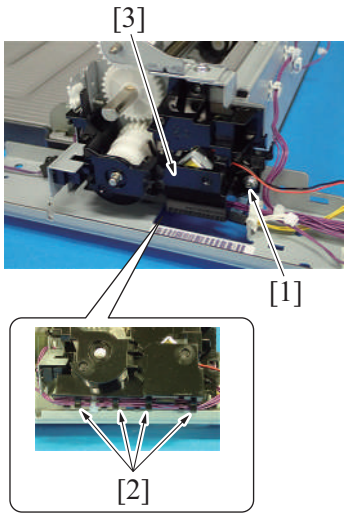
4. Disconnect the connector [1], and remove the harness from the edge cover [2].
5. Remove the harness from the harness guide [3].



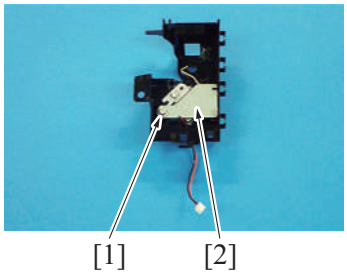
6. Remove the screw [1], and remove the cover [2].



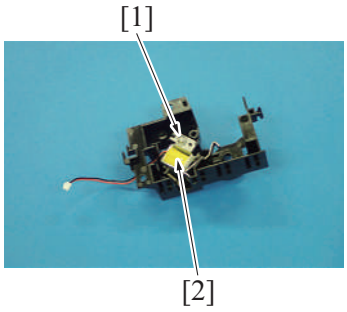
7. Remove the harness from two harness guides [1]. Remove the E-ring [2], and evacuate the bypass tray paper feed clutch [3].



8. Remove the screw [1], and remove the bypass tray lift-up solenoid assy [3] while removing the harness from four harness guides [2].



9. Remove the screw [1], and remove the plate [2].

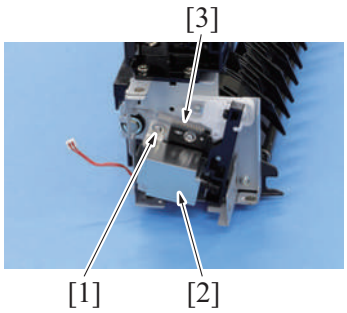


10. Remove the screw [1], and remove the bypass tray lift-up solenoid [2].

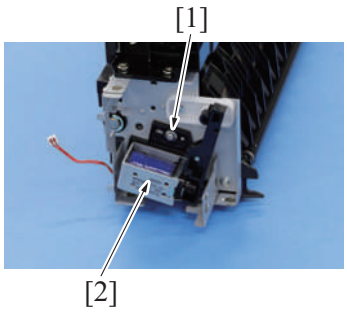
11. To reinstall, reverse the order of removal.

5.7.2 Exit path switch solenoid (SD3)

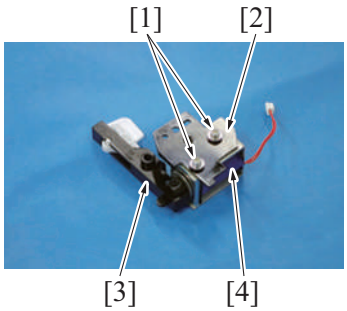
1. Remove the gate switch unit.
F.5.2.17 Gate switch unit



2. Remove the screw [1], and remove the plate [2]. Remove the spring [3].



3. Remove the screw [1], and remove the exit path switch solenoid assy [2].

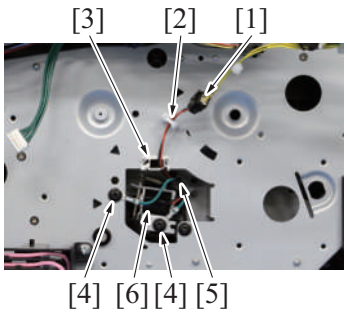


4. Remove two screws [1], and remove the cover [2]. Remove the actuator [3], and remove the exit path switch solenoid [4].

5. To reinstall, reverse the order of removal.

5.7.3 Developing solenoid (SD4)

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover
2. Remove the right rear cover.
   F.5.1.18 Right rear cover
3. Open the PWB box.
   F.5.2.10 How to open the PWB box

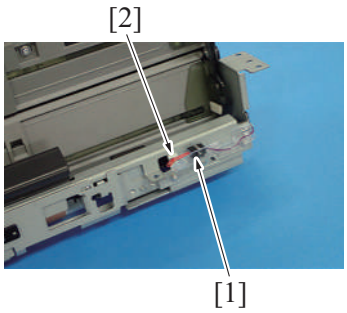


4. Disconnect the connector [1], and remove the harness from the wire saddle [2] and the edge cover [3].
5. Remove two screws [4]. Remove the harness and ground wire from the harness guide [5], and remove the developing solenoid [6].

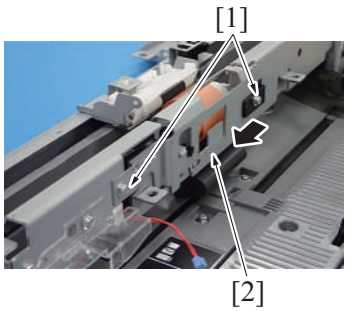
6. To reinstall, reverse the order of removal.

5.7.4 Bypass tray pick-up roller solenoid (SD6)

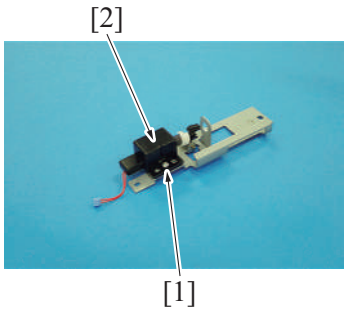
1. Remove the manual bypass tray unit.
   F.5.2.8 Manual bypass tray unit



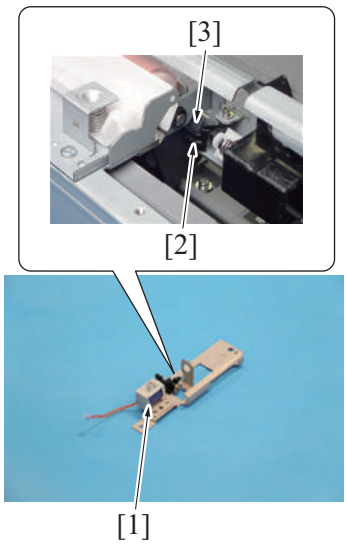
2. Disconnect the connector [1], and remove the harness from the harness guide [2].



3. Remove two screws [1] and remove the bypass tray pick-up roller solenoid assy [2].



4. Remove the screw [1], and remove the cover [2].

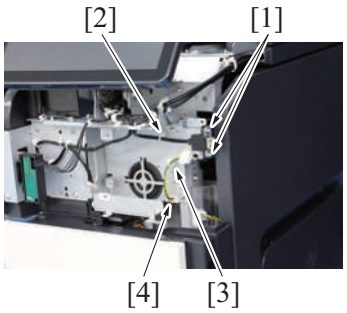


5. Remove the bypass tray pick-up roller solenoid [1].
NOTE
- **Install the bypass tray pick-up roller solenoid, so that the tab [2] is in a position under the bypass tray pick-up roller cover [3].**

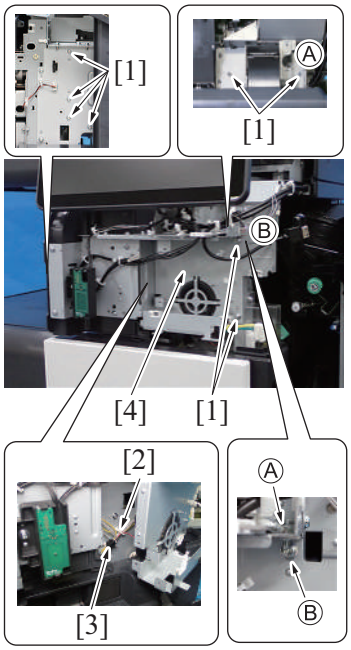
6. To reinstall, reverse the order of removal.

5.7.5 FAX speaker (SP1)

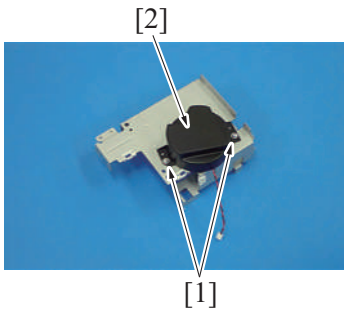
1. Remove the control panel upper cover.
F.5.1.5 Control panel upper cover
2. Remove the control panel front cover.
F.5.1.6 Control panel front cover
3. Remove the control panel right cover.
F.5.1.7 Control panel right cover
4. Remove the control panel left cover/1.
F.5.1.8 Control panel left cover/1



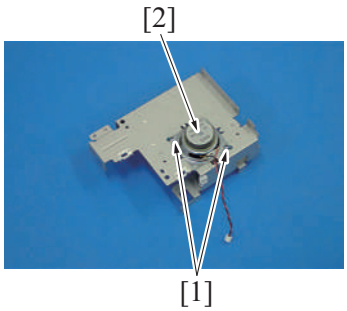
5. Remove two screws [1]. Remove the cable from the wire saddle [2]. Remove the wire saddle [3], and remove the harness from the harness guide [4].



6. Remove eight screws [1].
7. Remove the harness from the wire saddle [2], and disconnect the connector [3]. Remove the FAX speaker assy [4].
   NOTE
   - **When removing the FAX speaker assy, make sure to remove the screw [A] first.**
   - **When installing the FAX speaker assy, make sure to install the screw [B] first.**



8. Remove two screws [1], and remove the cover [2].



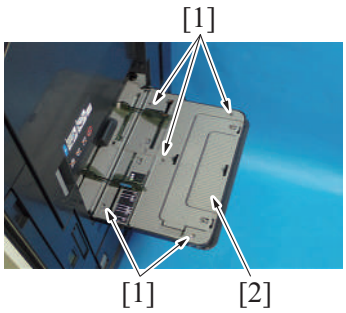
9. Remove two screws [1], and remove the FAX speaker [2].

10. To reinstall, reverse the order of removal.

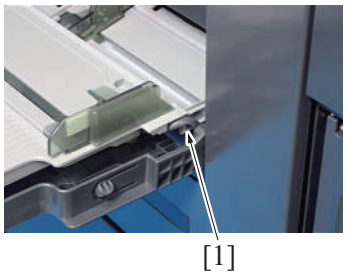
5.7.6 Bypass tray CD paper size VR (VR1)

(1) Removal procedure

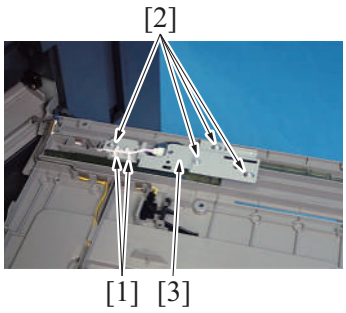
1. Open the manual bypass tray.



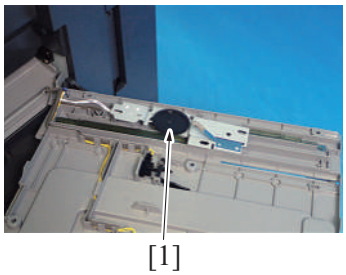
2. Remove five screws [1], and remove the cover [2].



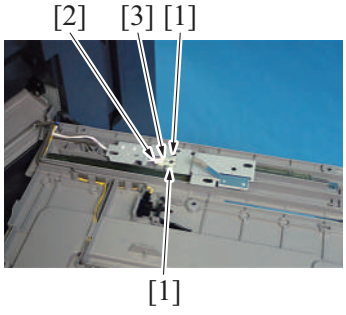
3. Remove the harness from the harness guide [1].



4. Remove the harness from two wire saddles [1].
5. Remove four screws [2], and remove the bypass tray CD paper size VR assy [3].

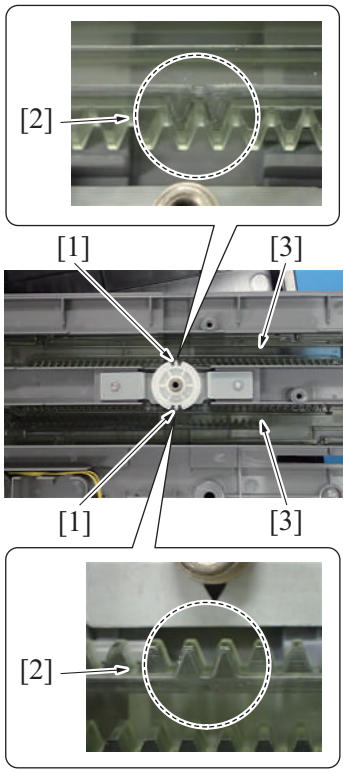


6. Remove the gear [1].

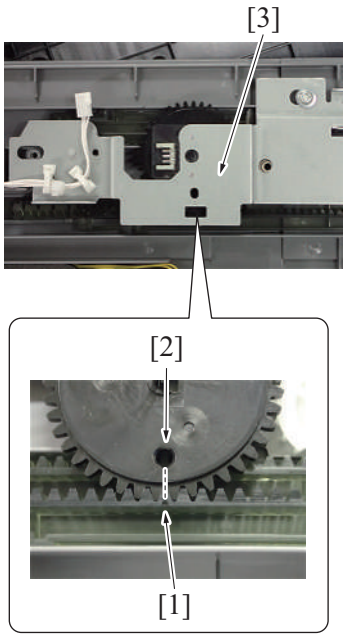


7. Remove two screws [1].
8. Disconnect the connector [2], and remove the bypass tray CD paper size VR [3].

(2) Reinstall procedure



1. Align the match mark [2] on the bypass guide rack gear with two gear ribs [1], and install two bypass guide rack gears [3].



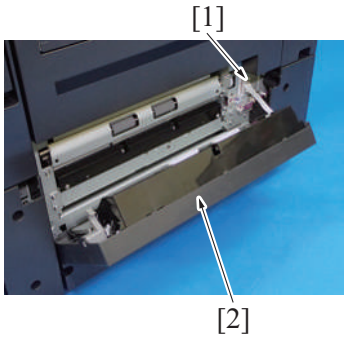
2. When installing the bypass tray CD paper size VR assy [3], make sure that the concavity [1] on the bypass guide rack gear and the gear hole [2] on the bypass tray CD paper size VR assy are placed in a straight line.
3. Secure the bypass tray CD paper size VR assy with four screws.

4. To reinstall, reverse the order of removal.
5. After the bypass tray CD paper size VR base has been mounted, check that the lever of the bypass tray CD paper size VR moves smoothly in a manner operatively connected to the bypass guide.
6. Perform the adjustment from [Service Mode] -> [Machine] -> [Manual Bypass Tray Width Adj].

6. Tray 3/4

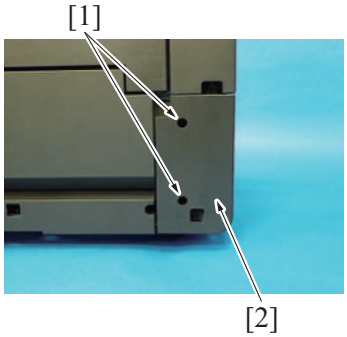
6.1 Right door

1. Open the right door.



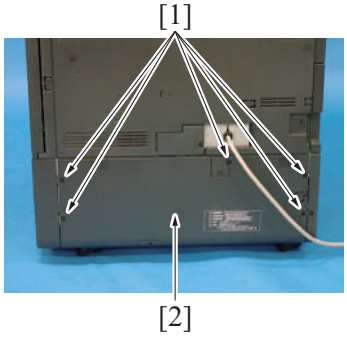
2. Remove the screw [1], and remove the right door [2].
3. To reinstall, reverse the order of removal.

6.2 Right rear cover



1. Remove two screws [1], and remove the right rear cover [2].
2. To reinstall, reverse the order of removal.

6.3 Rear cover

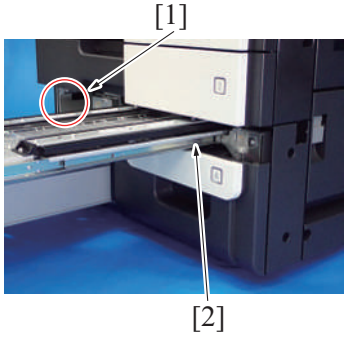


1. Remove five screws [1], and remove the rear cover [2].
2. To reinstall, reverse the order of removal.

6.4 Tray 3

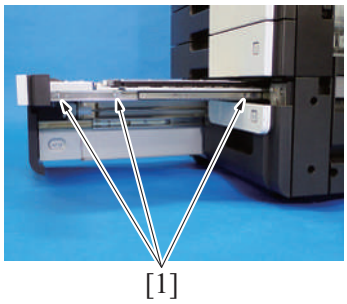
NOTE

- **This procedure shows the steps taken for removing the tray 3 and the horizontal transport section together.**

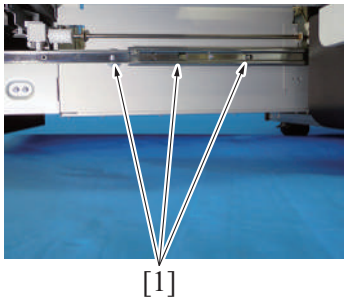


1. Slide out the tray 3 to the position [1].
2. Remove the screw [2].

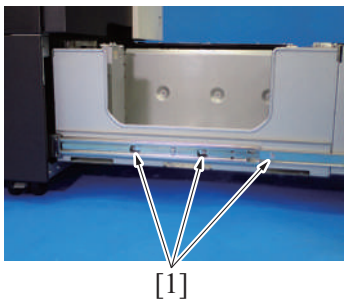
3. Slide out the tray 3 more.
4. Remove three screws [1].



5. Remove three screws [1].



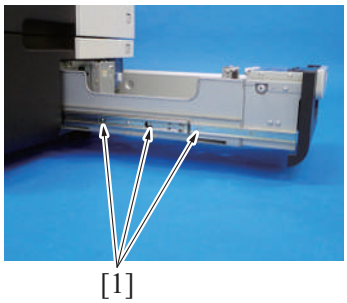
6. Remove three screws [1], and remove the tray 3.



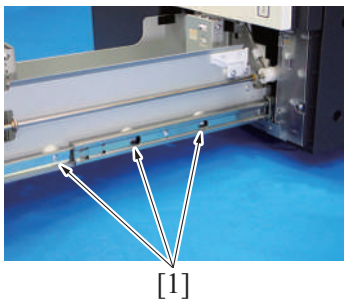
7. To reinstall, reverse the order of removal.

6.5 Tray 4

1. Slide out the tray 4.
2. Remove three screws [1].



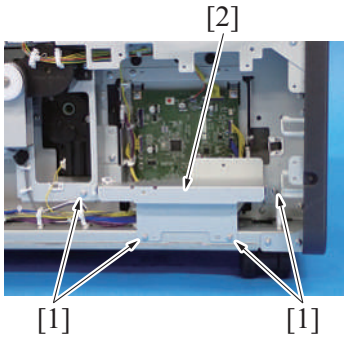
3. Remove three screws [1], and remove the tray 4.



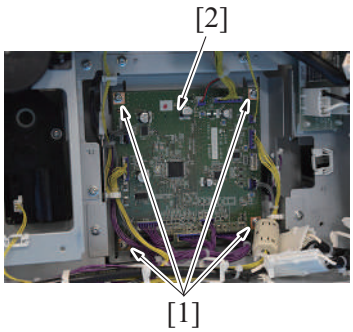
4. To reinstall, reverse the order of removal.

6.6 PC control board (PCCB)

1. Remove the rear cover.
   F.6.3 Rear cover



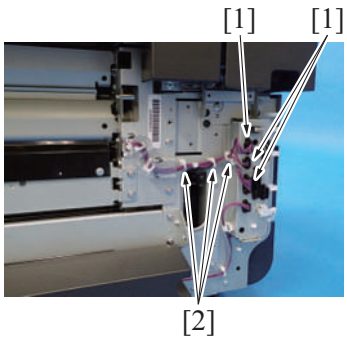
2. Remove four screws [1], and remove the plate [2].



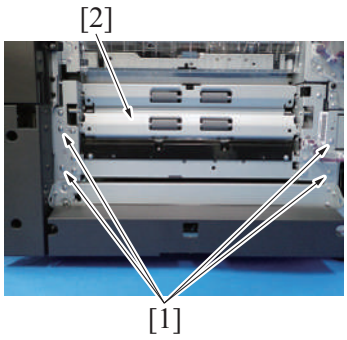
3. Disconnect all connectors on the PC control board.
4. Remove four screws [1], and remove the PC control board [2].
5. To reinstall, reverse the order of removal.

6.7 Tray 4 paper feed/transport unit

1. Remove the right door.
   F.6.1 Right door
2. Remove the right rear cover.
   F.6.2 Right rear cover
3. Slide out the tray 4.



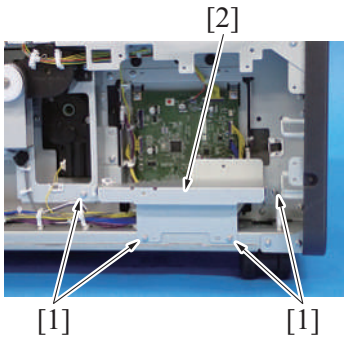
4. Disconnect three connectors [1], and remove the harness from three wire saddles [2].
5. Open the right door of the main body.



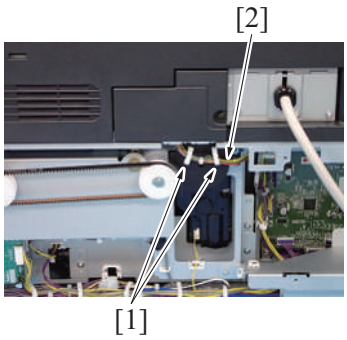
6. Remove four screws [1], and remove the tray 4 paper feed/transport unit [2].
7. To reinstall, reverse the order of removal.

6.8 Drive unit

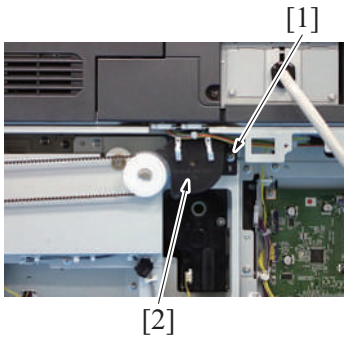
1. Remove the rear cover.
   F.6.3 Rear cover



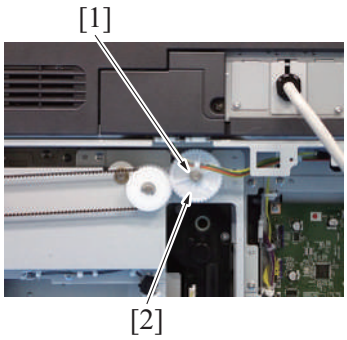
2. Remove four screws [1], and remove the plate [2].



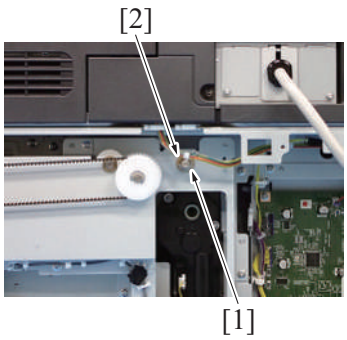
3. Remove the harness [2] from two wire saddles [1].



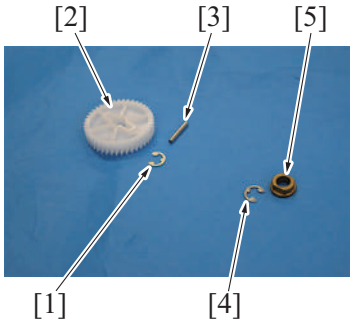
4. Remove the screw [1], and remove the cover [2].



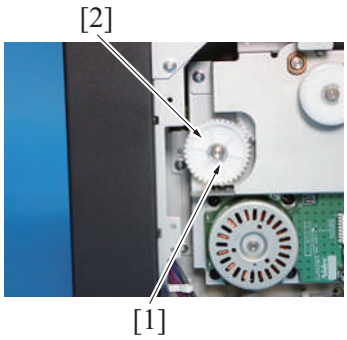
5. Remove the E-ring [1], and remove the gear [2] and pin.



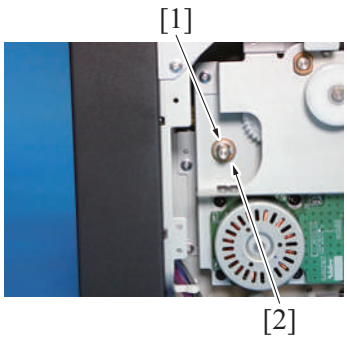
6. Remove the E-ring [1], and remove the bushing [2].



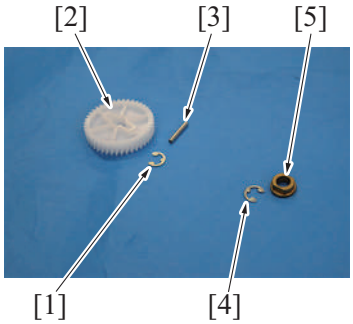
7. **NOTE**
   - **Take care not to lose the removed E-ring [1], gear [2], pin [3], E-ring [4] and bushing [5].**



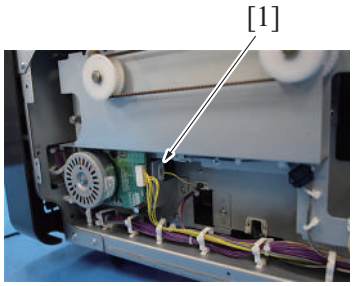
8. Remove the E-ring [1], and remove the gear [2] and pin.



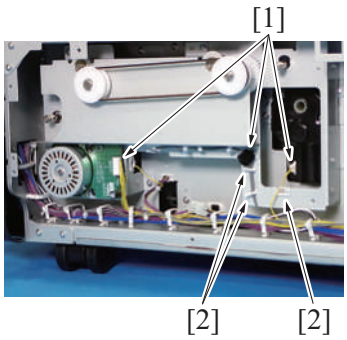
9. Remove the E-ring [1], and remove the bushing [2].



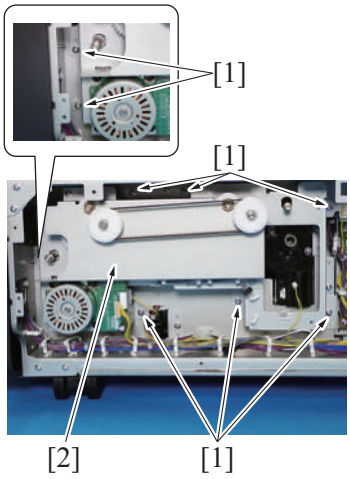
10. **NOTE**
    - **Take care not to lose the removed E-ring [1], gear [2], pin [3], E-ring [4] and bushing [5].**



11. Remove the harness from the wire saddle [1].



12. Disconnect three connectors [1], and remove the harness from three wire saddles [2].

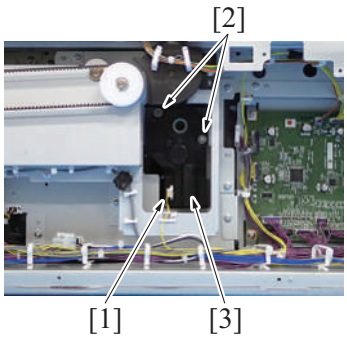


13. Remove eight screws [1], and remove the drive unit [2].

14. To reinstall, reverse the order of removal.

6.9 Tray 3 lift-up motor (M143)

1. Remove the rear cover.
   F.6.3 Rear cover

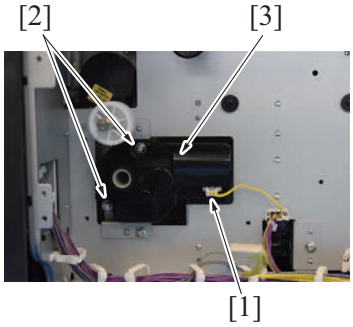


2. Disconnect the connector [1].
3. Remove two screws [2], and remove the tray 3 lift-up motor [3].

4. To reinstall, reverse the order of removal.

6.10 Tray 4 lift-up motor (M144)

1. Remove the rear cover.
   F.6.3 Rear cover
2. Remove the drive unit.
   F.6.8 Drive unit

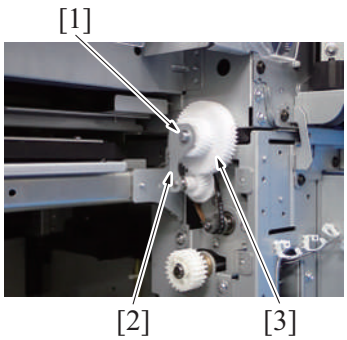


3. Disconnect the connector [1].
4. Remove two screws [2], and remove the tray 4 lift-up motor [3].

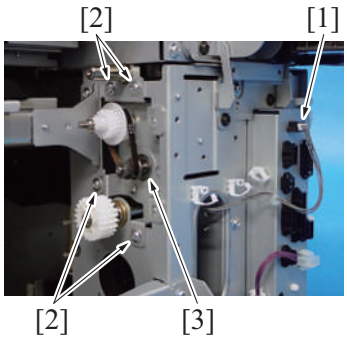
5. To reinstall, reverse the order of removal.

6.11 Intermediate motor (M151)

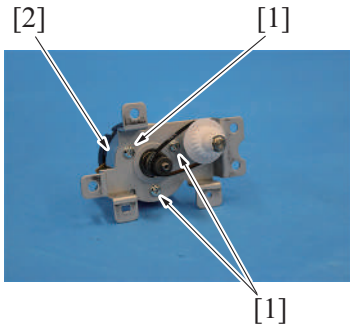
1. Remove the right door.
   F.6.1 Right door
2. Remove the right rear cover.
   F.6.2 Right rear cover
3. Remove the tray 4 paper feed/transport unit.
   F.6.7 Tray 4 paper feed/transport unit



4. Remove the screw [1], and remove the plate [2].
5. Remove the gear [3].



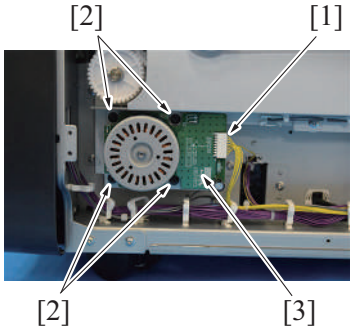
6. Disconnect the connector [1].
7. Remove four screws [2], and remove the intermediate motor assy [3].



8. Remove three screws [1], and remove the intermediate motor [2].
9. To reinstall, reverse the order of removal.

6.12 Transport motor (M152)

1. Remove the rear cover.
   F.6.3 Rear cover



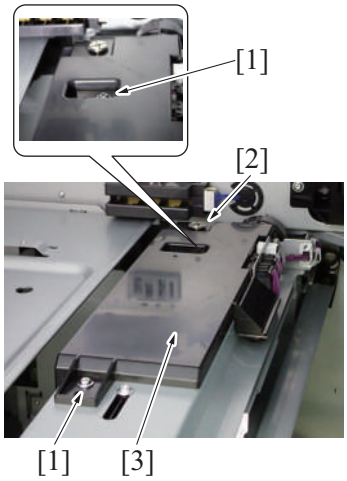
2. Disconnect the connector [1].
3. Remove four screws [2], and remove the transport motor [3].
4. To reinstall, reverse the order of removal.

6.13 Tray 3 paper feed clutch (CL151)

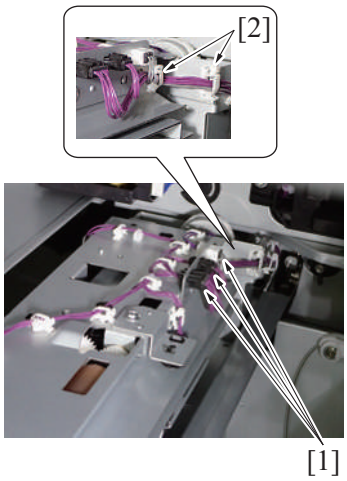
1. Remove the tray 1.
   F.5.1.24 Tray 1
2. Remove the tray 2.
   F.5.1.25 Tray 2
3. Remove the right door.

F.6.1 Right door

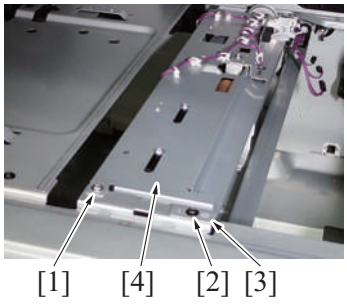
4. Remove the right rear cover.
   F.6.2 Right rear cover
5. Slide out the tray 3.
6. Remove the tray 4 paper feed/transport unit.
   F.6.7 Tray 4 paper feed/transport unit



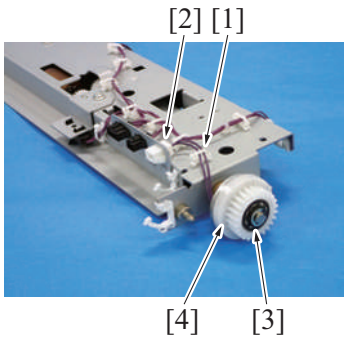
7. Remove two screws [1].
8. Loosen the screw [2], and remove the cover [3].



9. Disconnect three connectors [1].
10. Remove the harness from two wire saddles [2].



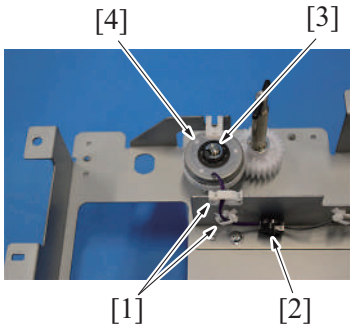
11. Remove the screw [1].
12. Remove the screw [2], and remove the tray 3 paper feed unit [4] together with the plate [3].



13. Remove the harness from the wire saddle [1], and disconnect the connector [2].
14. Remove the E-ring [3], and remove the tray 3 paper feed clutch [4].
15. To reinstall, reverse the order of removal.

6.14 Tray 3 transport clutch (CL152)

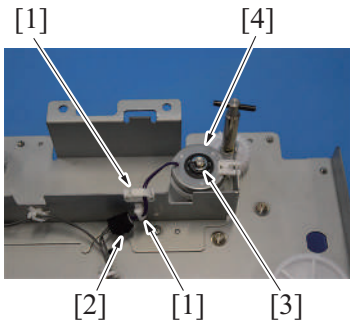
1. Remove the rear cover.
   F.6.3 Rear cover
2. Remove the drive unit.
   F.6.8 Drive unit



3. Remove the harness from two wire saddles [1], and disconnect the connector [2].
4. Remove the E-ring [3], and remove the tray 3 transport clutch [4].
5. To reinstall, reverse the order of removal.

6.15 Horizontal transport clutch (CL153)

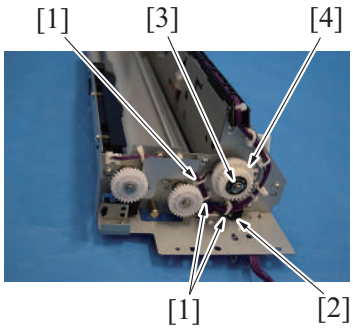
1. Remove the rear cover.
   F.6.3 Rear cover
2. Remove the drive unit.
   F.6.8 Drive unit



3. Remove the harness from two wire saddles [1], and disconnect the connector [2].
4. Remove the E-ring [3], and remove the horizontal transport clutch [4].
5. To reinstall, reverse the order of removal.

6.16 Tray 4 paper feed clutch (CL161)

1. Remove the right door.
   F.6.1 Right door
2. Remove the right rear cover.
   F.6.2 Right rear cover
3. Remove the tray 4 paper feed/transport unit.
   F.6.7 Tray 4 paper feed/transport unit

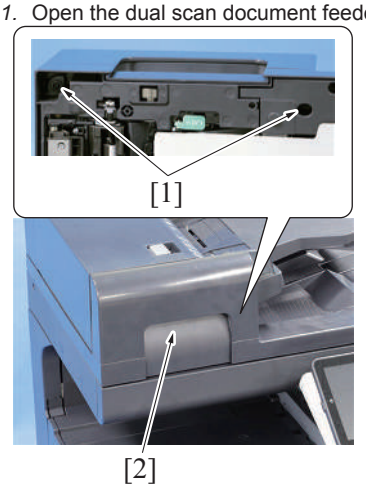


4. Remove the harness from three wire saddles [1], and disconnect the connector [2].
5. Remove the E-ring [3], and remove the tray 4 paper feed clutch [4].
6. To reinstall, reverse the order of removal.

7. DF-713/SP-501

7.1 Front cover (DF-713)

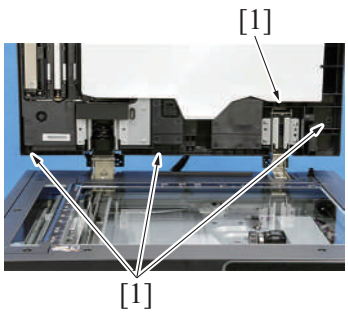
1. Open the dual scan document feeder.



2. Remove two screws [1], and remove the front cover [2].
3. To reinstall, reverse the order of removal.

7.2 Rear cover (DF-713)

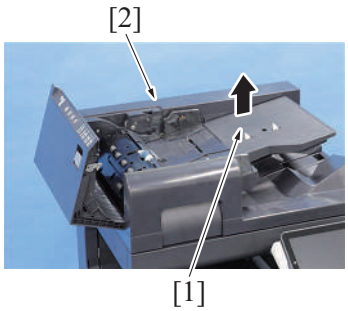
1. Open the dual scan document feeder.



2. Remove four screws [1].
   NOTE
   - **If the dual scan document feeder is set to be lifted up at angles up to 60 degrees due to the set position of the stopper for the hinge, change the set position to the lower side so that the dual scan document feeder can be opened completely.**
3. Open the left cover [1].



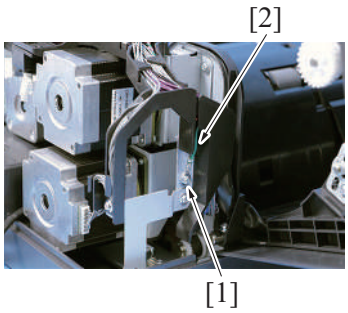
4. Slightly lift up the document feed tray [1].
5. Remove the rear cover [2].



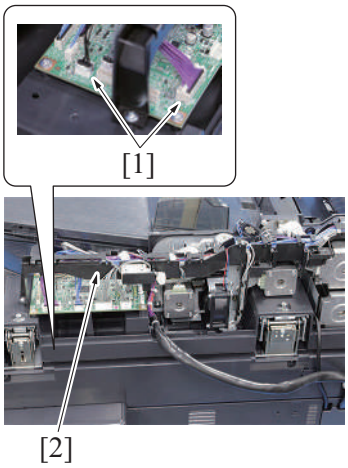
6. To reinstall, reverse the order of removal.

7.3 Left cover unit (DF-713)

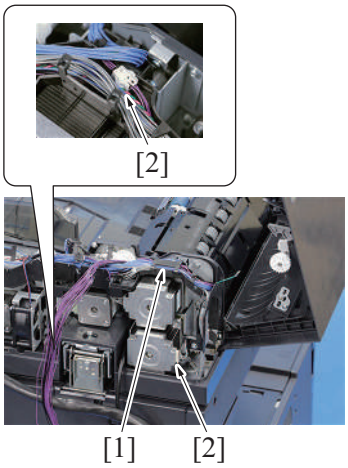
1. Remove the rear cover.
   F.7.2 Rear cover (DF-713)
2. Remove the front cover.
   F.7.1 Front cover (DF-713)



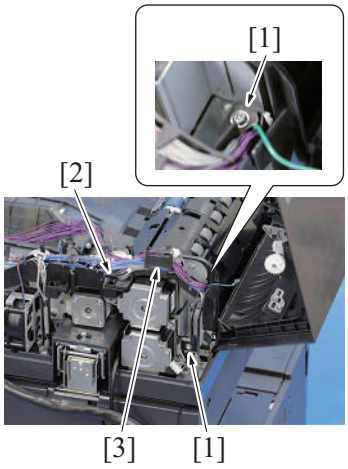
3. Remove the screw [1], and remove the ground earth [2] from the harness guide.



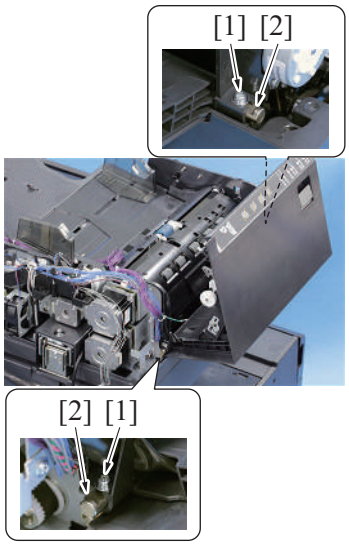
4. Disconnect two connectors [1], and remove the harness from the harness guide [2].



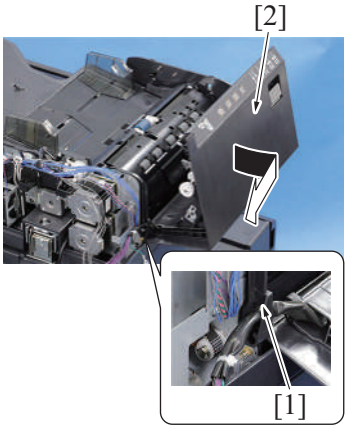
5. Remove the wire saddle [1], and disconnect two connectors [2].



6. Remove two screws [1].
7. Unhook the tab [2], remove the harness from the harness guide [3], and remove the harness guide [3].



8. Remove two screws [1], and remove two shafts [2].



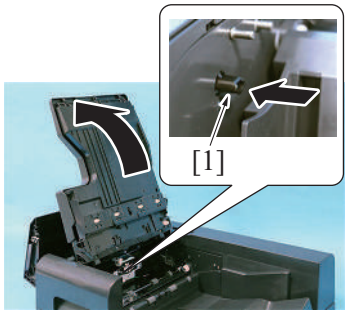
9. Remove the left cover unit [2] as shown in the illustration while pressing the harness into the hole [1] shown in the illustration.

10. To reinstall, reverse the order of removal.

7.4 How to open the document feed tray (DF-713)



1. Open the left cover [1].



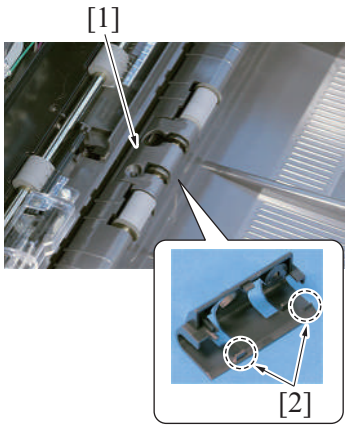
2. Lift up the document feed tray while pressing the document feed tray lock lever [1] in.

NOTE

- **Operation must be done while supporting the document feed tray to prevent it from being closed.**

7.5 Stamp unit cover (DF-713)

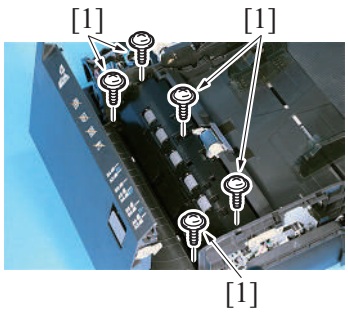
1. Open the document feed tray.
F.7.4 How to open the document feed tray (DF-713)



2. Remove the stamp unit cover [1], so that the bottom lock tabs [2] opens.

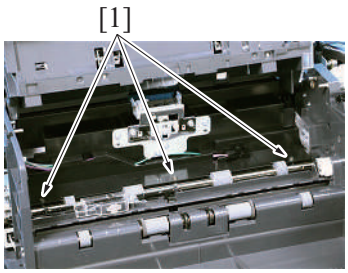
7.6 Lower guide assy (DF-713)

1. Remove the front cover.
   F.7.1 Front cover (DF-713)
2. Remove the rear cover.
   F.7.2 Rear cover (DF-713)

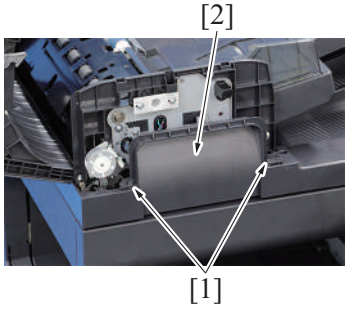


3. Remove five screws [1].

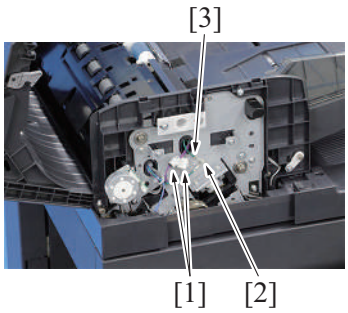
4. Open the document feed tray.
   F.7.4 How to open the document feed tray (DF-713)



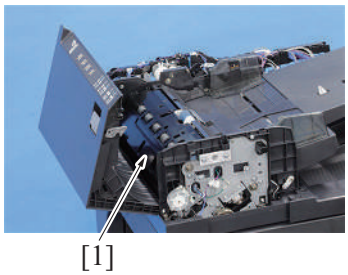
5. Remove three screws [1].



6. Remove two screws [1], and remove the cover [2].



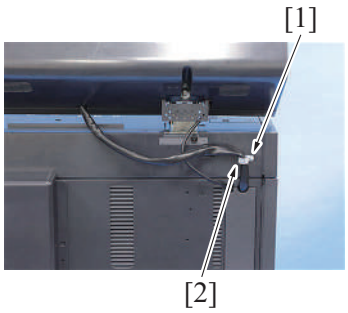
7. Disconnect two connectors [1], remove the screw [2], and disconnect the ground wire [3].



8. Remove the lower guide assy [1].

9. To reinstall, reverse the order of removal.

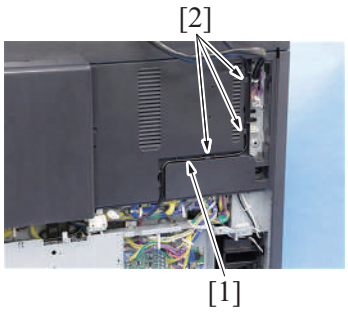
7.7 Dual scan document feeder (DF-713)



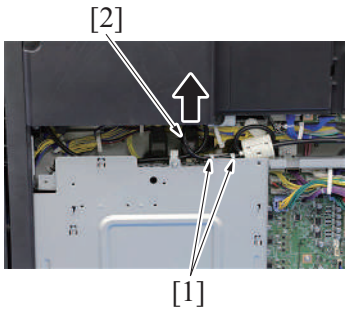
1. Remove the screw [1], and remove the cable tie [2].

2. Remove the DF cable cover.
F.5.1.19 DF cable cover

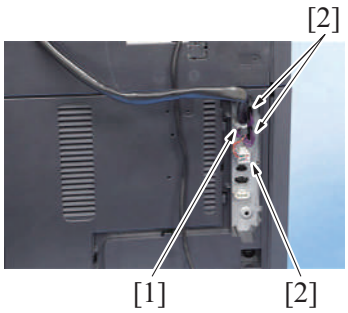
3. Remove the lower rear cover.
F.5.1.23 Lower rear cover



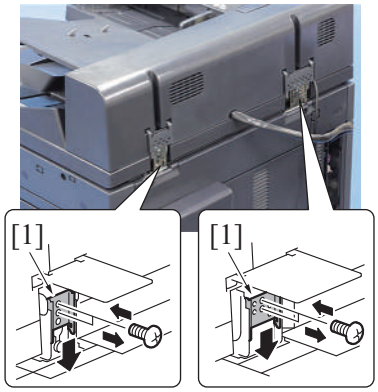
4. Remove the cable [1] from the cable guide [2].



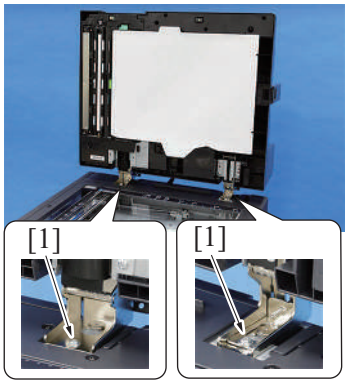
5. Remove the cable from two wire saddles [1], and disconnect the connector [2].



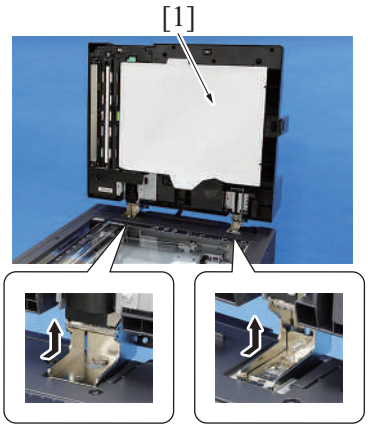
6. Remove the cable tie [1], and disconnect three connectors [2].



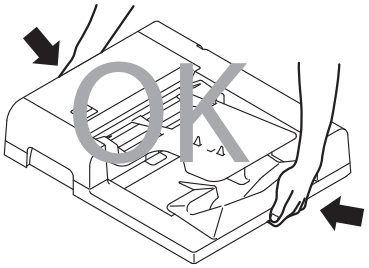
7. Change the set position of the hinge stopper [1] to the lower side.
NOTE
- **After you installed the dual scan document feeder, make sure to return the hinge stopper [1] to the original position.**

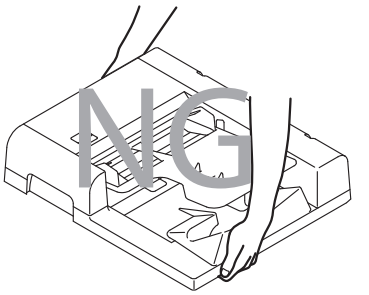


8. Open the dual scan document feeder at an angle up to 90 degrees.
9. Remove two screws [1].



10. Remove the dual scan document feeder [1].





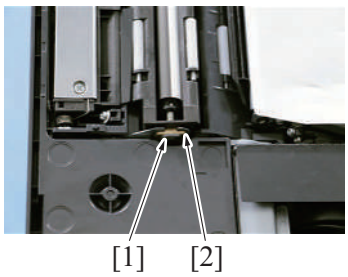


11. **NOTE**
- **When carrying the dual scan document feeder, be sure to hold onto the specified positions. The feeder main body can be distorted if held at inappropriate positions.**
- **After removing the dual scan document feeder from the machine, place it on the floor or the like as shown in the illustration.**

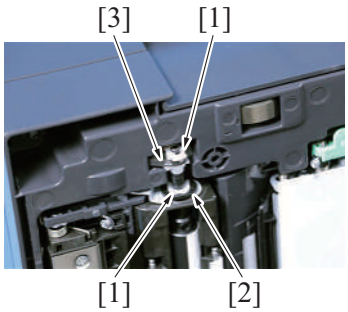
12. To reinstall, reverse the order of removal.

7.8 Front side glass cleaning roller unit (DF-713)

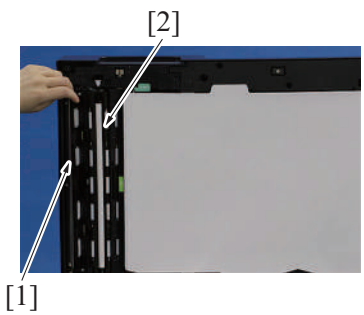
1. Open the dual scan document feeder.



2. Remove the C-clip [1] and the bushing [2].



3. Remove two C-clips [1], move the bushing [2], and remove the belt [3].



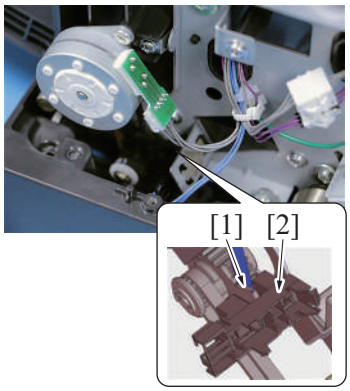
4. Remove the front side glass cleaning roller unit [2] while opening the pre-read sheet assy [1].

5. To reinstall, reverse the order of removal.

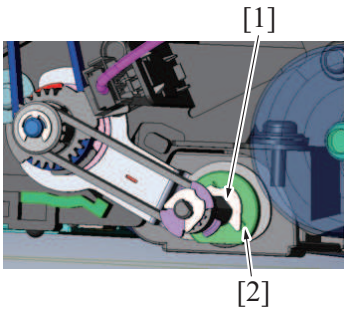
NOTE

- **When installing the front side glass cleaning roller unit, the following adjustment is necessary.**

1. **Adjust the actuator [1] so that it is positioned where it blocks the light of the document reading glass cleaning sensor [2], and install the belt.**

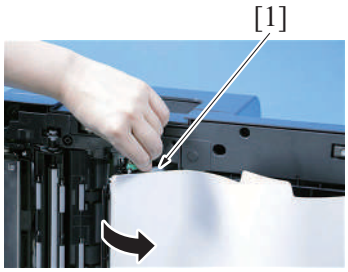


2. **Align the D cut surface [1] of the shaft with the lines [2] marked on the bushing.**

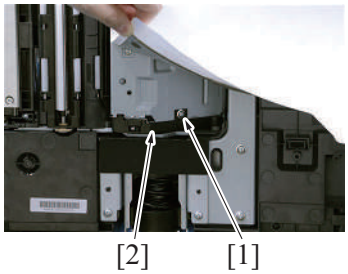


7.9 Back side glass cleaning roller unit (DF-713)

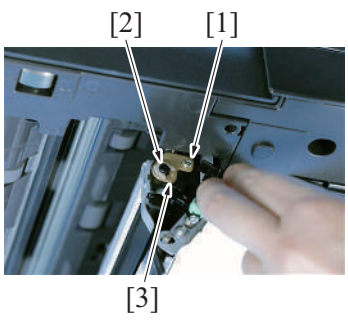
1. Open the dual scan document feeder.
2. Open the opening and closing guide [1].

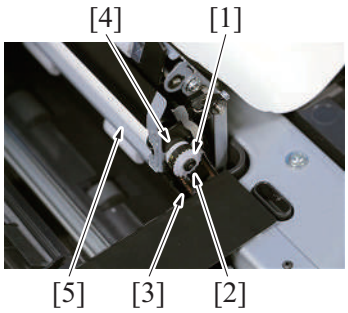


3. While peeling off the mat, remove the screw [1], and while opening the opening and closing guide, remove the cover [2].



4. Remove the screw [1] and C-clip [2], and remove the bushing [3].

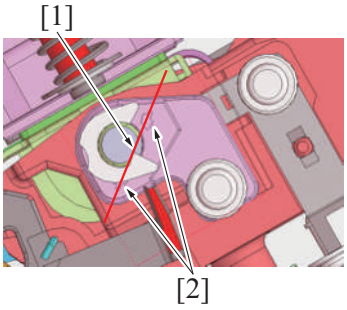




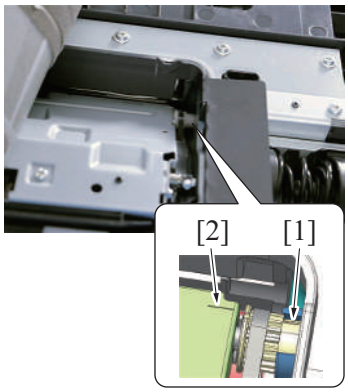
5. Remove the C-clip [1].
6. Remove the gear [2], and remove the belt [3].
7. Remove the bushing [4].
8. Remove the back side glass cleaning roller unit [5].
9. To reinstall, reverse the order of removal.

NOTE

- **When installing the back side glass cleaning roller unit, the following adjustment is necessary.**



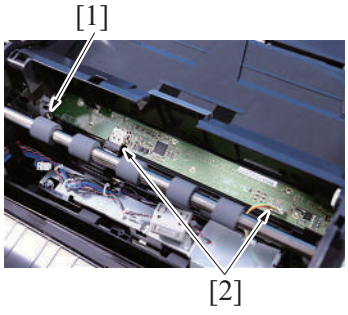
1. **Align the D cut surface [1] of the shaft with the lines [2] marked on the bushing.**



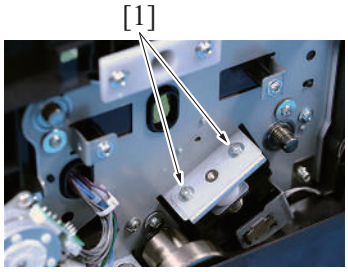
2. **When installing the belt, align the line [1] on the pulley and the line [2] on the transport guide.**

7.10 CIS module (CIS) (DF-713)

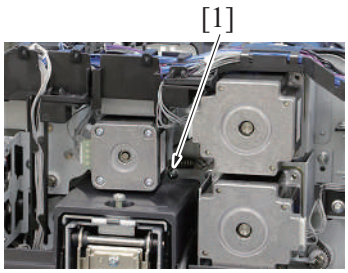
1. Remove the lower guide assy.
F.7.6 Lower guide assy (DF-713)



2. Remove the screw [1], and disconnect two connectors [2].

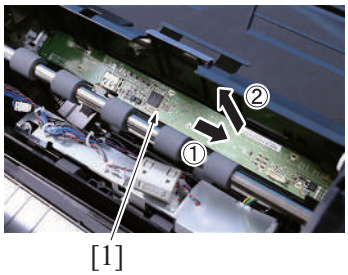


3. Remove two screws (front side) [1].

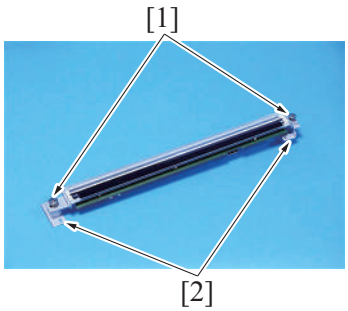


4. Remove the screw (rear side) [1].

5. Remove the CIS module [1] as shown in the illustration.



6. Remove the E-rings [1] on the right and left and remove the plates [2].



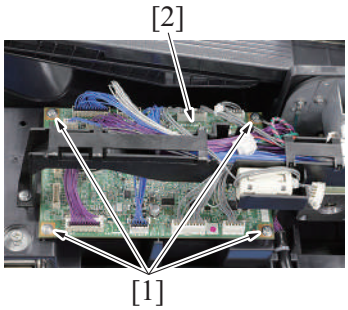
7. To reinstall, reverse the order of removal.

NOTE

- **Be sure to perform the following steps after the CIS module has been replaced with a new one.**
- **Adjust the back side skew feed on the dual scan document feeder.**
- **Execute [Service Mode] -> [System 2] -> [CCD Calibration].**
- **Execute [Service Mode] -> [System 2] -> [Line Mag Setting].**
- **Execute [Service Mode] -> [ADF] -> [Auto Stop Position Adjustment].**
- **Execute [Service Mode] -> [ADF] -> [FD-Mag. Adj. (B)].**
- **Execute [Service Mode] -> [ADF] -> [Main Scanning Direction Zoom].**

7.11 DF control board (DFCB) (DF-713)

1. Remove the rear cover.
   F.7.2 Rear cover (DF-713)



2. Disconnect all connectors from the board.
3. Remove four screws [1], and remove the DF control board [2].

4. To reinstall, reverse the order of removal.

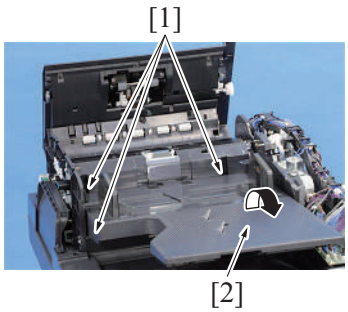
NOTE

- **Be sure to install the firmware after the DF control board has been replaced with a new one.**
- **Be sure to restore the data by executing [Enhanced Security] -> [ADF Data Backup] -> [ADF Data Reflect Mode] after the DF control board has been replaced with a new one.**

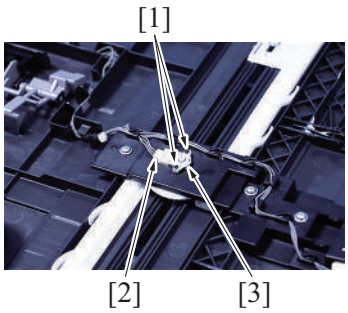
7.12 Document width size sensor (VR1) (DF-713)

1. Remove the front cover.
   F.7.1 Front cover (DF-713)
2. Remove the rear cover.

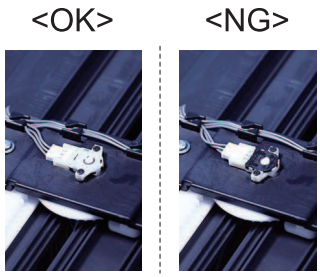
F.7.2 Rear cover (DF-713)



3. Unhook three tabs [1].
4. Rotate the document feed tray [2] to remove it.



5. Remove two screws [1], disconnect the connector [2], and remove the document width size sensor [3].



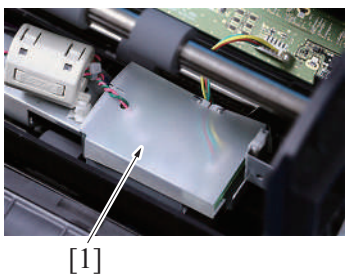
6. **NOTE**
   - **For mounting the document width size sensor, mount it in the direction shown on the illustration.**

7. To reinstall, reverse the order of removal.

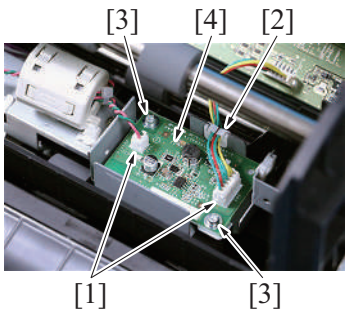
NOTE
- **Be sure to perform the following operation when the document width size sensor is replaced.**
- **Execute [Service Mode] -> [ADF] -> [Original Tray Width].**
- **Turn OFF the main power switch and turn it ON again and check whether size detection operates normally.**

7.13 CIS power supply (CISPU) (DF-713)

1. Remove the lower guide assy.
   F.7.6 Lower guide assy (DF-713)



2. Open the protective sheet [1].



3. Disconnect two connectors [1].
4. Remove the harness from the edge cover [2].
5. Remove two screws [3], and remove the CIS power supply [4].

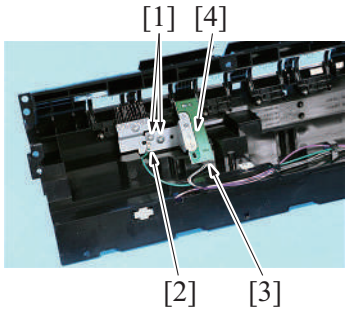
6. To reinstall, reverse the order of removal.

7.14 Multi feed detection board/TX (MFDB/TX) (DF-713)

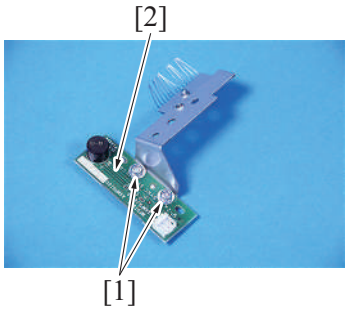
NOTE

- **Replace the multi feed detection boards for transmission (MFDB/TX) and reception (MFDB/RX) together as a set.**
- **Check the DF firmware version and update it to the latest version.**

1. Remove the lower guide assy.
   F.7.6 Lower guide assy (DF-713)

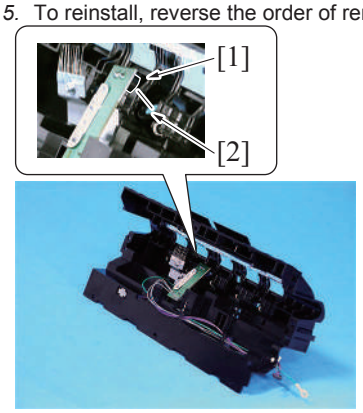


2. Remove two screws [1], and disconnect the ground wire [2].
3. Disconnect the connector [3] and remove the multi feed detection board/TX assy [4].



4. Remove two screws [1], and remove the multi feed detection board/TX [2].

5. To reinstall, reverse the order of removal.



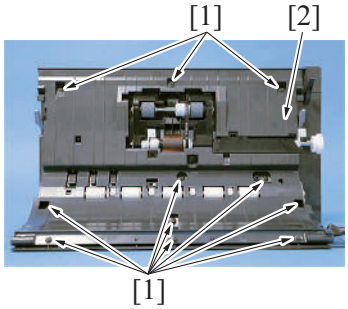
6. **NOTE**
   - **Install the board so that the sensor part [1] is engaged in the concave part [2].**

7.15 Multi feed detection board/RX (MFDB/RX) (DF-713)

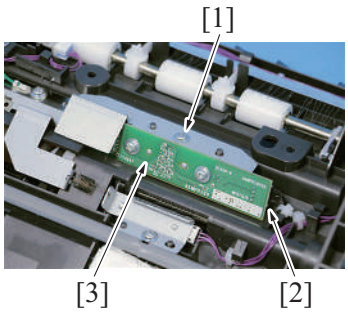
NOTE

- **Replace the multi feed detection boards for transmission (MFDB/TX) and reception (MFDB/RX) together as a set.**
- **Check the DF firmware version and update it to the latest version.**

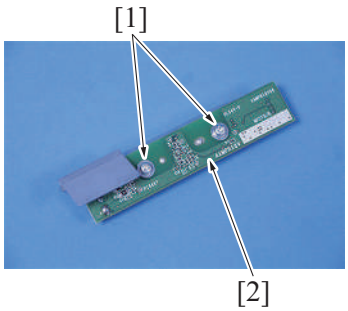
1. Remove the left cover unit.
   F.7.3 Left cover unit (DF-713)



2. Remove 11 screws [1], and remove the cover [2].

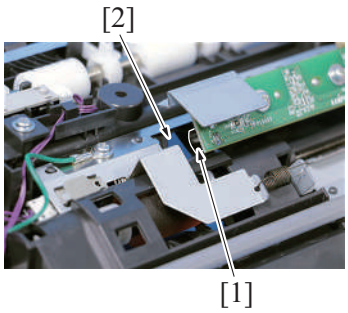


3. Remove the screw [1], disconnect the connector [2], and remove the multi feed detection board/RX assy [3].



4. Remove two screws [1], and remove the multi feed detection board/RX [2].

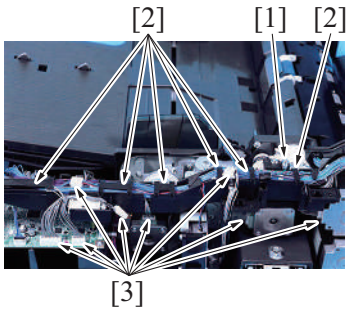
5. To reinstall, reverse the order of removal.



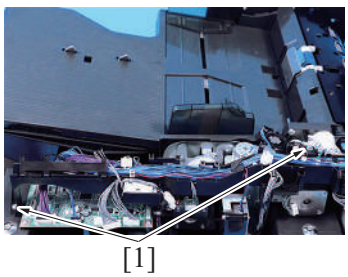
6. **NOTE**
   - **Install the board so that the sensor part [1] is engaged in the concave part [2].**

7.16 Document feed motor (M1) (DF-713)

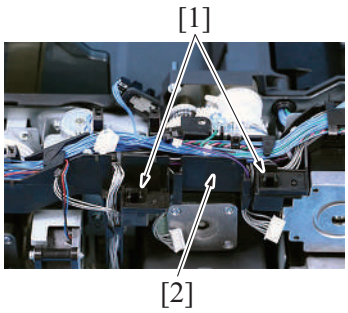
1. Remove the rear cover.
   F.7.2 Rear cover (DF-713)



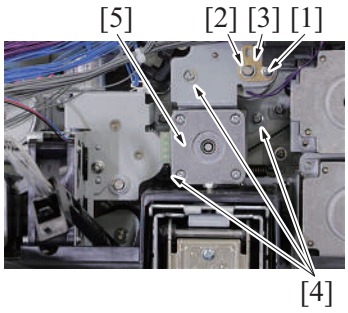
2. Remove the screw, and disconnect the ground wire [1].
3. Remove six wire saddles [2], and disconnect eight connectors [3].



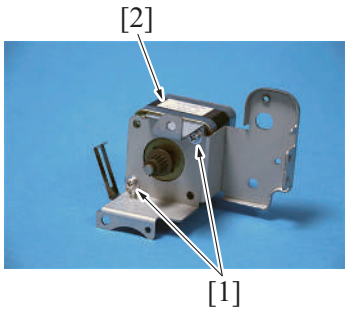
4. Remove two screws [1].



5. Unhook two tabs [1], remove the harness from the harness guide [2], and remove the harness guide [2].



6. Remove the screw [1], and remove the E-ring [2] and bushing [3].
7. Remove three screws [4], and remove the document feed motor assy [5].

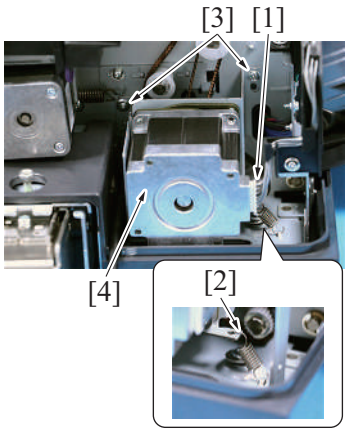


8. Remove two screws [1], and remove the document feed motor [2].

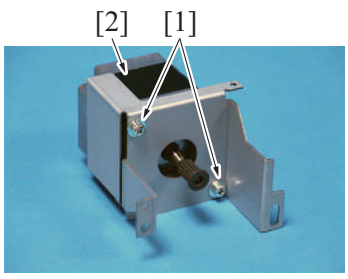
9. To reinstall, reverse the order of removal.

7.17 Document registration motor (M2) (DF-713)

1. Remove the rear cover.
   F.7.2 Rear cover (DF-713)
2. Remove the document reading motor.
   F.7.18 Document reading motor (M3) (DF-713)



3. Disconnect the connector [1].
4. Remove the spring [2].
5. Remove two screws [3], and remove the document registration motor assy [4].

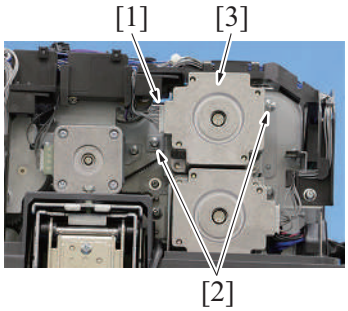


6. Remove two screws [1], and remove the document registration motor [2].

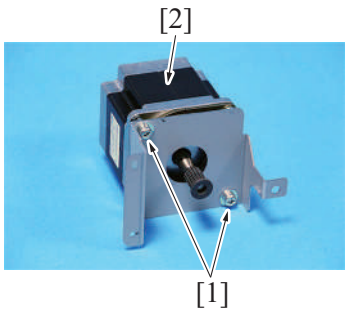
7. To reinstall, reverse the order of removal.

7.18 Document reading motor (M3) (DF-713)

1. Remove the rear cover.
F.7.2 Rear cover (DF-713)

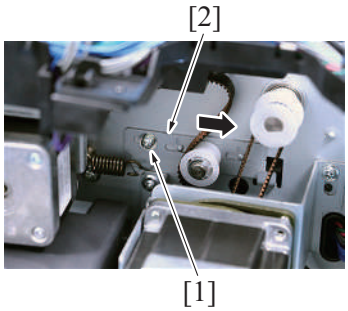


2. Disconnect the connector [1].
3. Remove two screws [2], and remove the document reading motor assy [3].

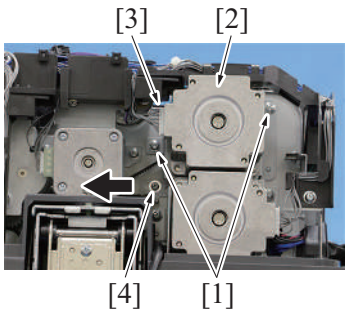


4. Remove two screws [1], and remove the document reading motor [2].

5. To reinstall, perform the following procedures.



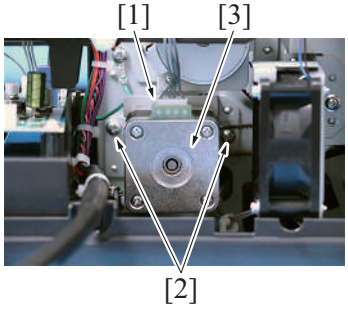
6. Loosen the screw [1] and move the tension plate [2] in the direction of the arrow to reduce the belt tension.
7. Tighten the screw [1].



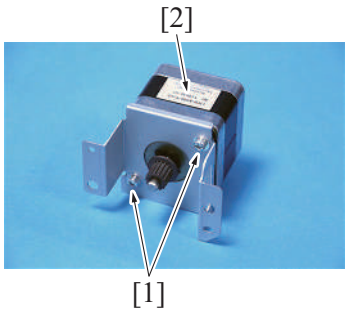
8. Install the document reading motor assy [2] with two screws [1].
9. Connect the connector [3].
10. Loosen the screw [4] and apply tension to the belt.
11. Tighten the screw [4].

7.19 Document exit motor (M4) (DF-713)

1. Remove the rear cover.
F.7.2 Rear cover (DF-713)



2. Disconnect the connector [1], remove two screws [2], and remove the document exit motor assy [3].

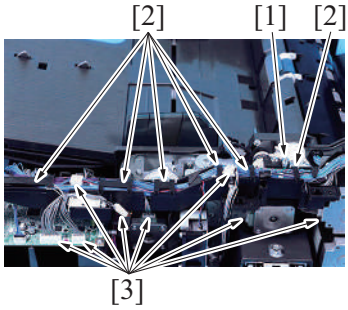


3. Remove two screws [1], and remove the document exit motor [2].

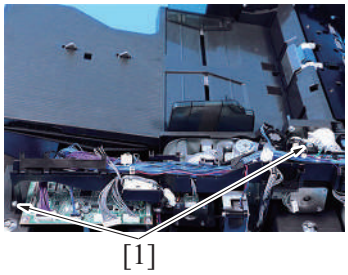
4. To reinstall, reverse the order of removal.

7.20 DF lift-up motor (M5) (DF-713)

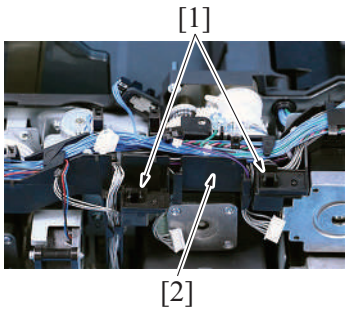
1. Remove the rear cover.
F.7.2 Rear cover (DF-713)



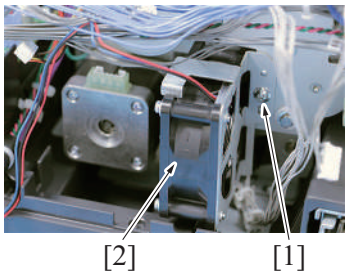
2. Remove the screw, and disconnect the ground wire [1].
3. Remove six wire saddles [2], and disconnect eight connectors [3].



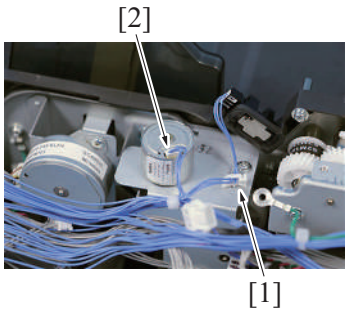
4. Remove two screws [1].



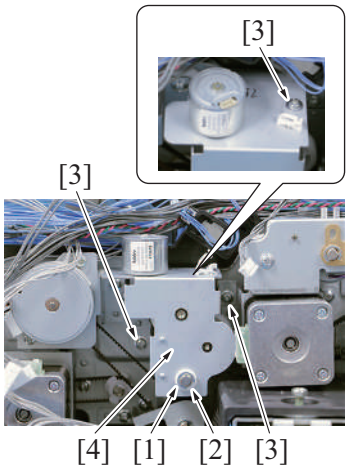
5. Unhook two tabs [1], remove the harness from the harness guide [2], and remove the harness guide [2].



6. Remove the screw [1], and remove the DF cooling fan assy [2].



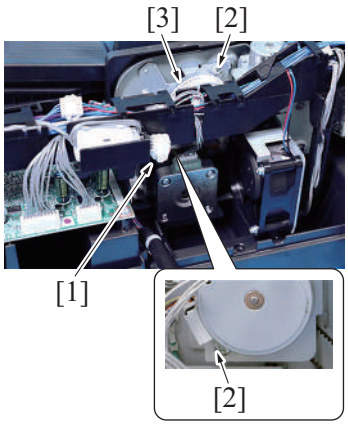
7. Remove the harness from the wire saddle [1].
8. Disconnect the connector [2].



9. Remove the E-ring [1], and remove the bushing [2].
10. Remove three screws [3], and remove the DF lift-up motor [4].
11. To reinstall, reverse the order of removal.

7.21 CIS cleaning motor (M7) (DF-713)

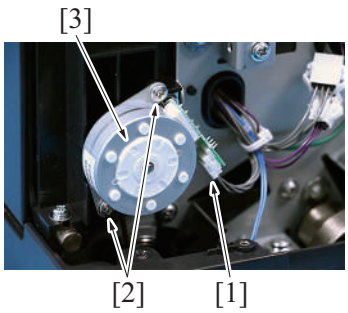
1. Remove the rear cover.
F.7.2 Rear cover (DF-713)



2. Disconnect the connector [1].
3. Remove two screws [2], and remove the CIS cleaning motor [3].
4. To reinstall, reverse the order of removal.

7.22 Document reading glass cleaning motor (M8) (DF-713)

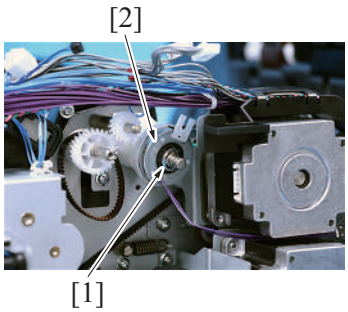
1. Remove the front cover.
F.7.1 Front cover (DF-713)



2. Disconnect the connector [1].
3. Remove two screws [2], and remove the document reading glass cleaning motor [3].
4. To reinstall, reverse the order of removal.

7.23 Document feed clutch (CL1) (DF-713)

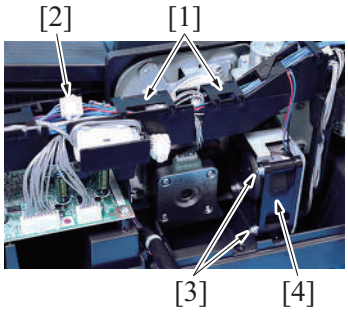
1. Remove the rear cover.
   F.7.2 Rear cover (DF-713)
2. Remove the document feed motor assy.
   F.7.16 Document feed motor (M1) (DF-713)



3. Remove the E-ring [1], and remove the document feed clutch [2].
4. To reinstall, reverse the order of removal.

7.24 DF cooling fan (FM) (DF-713)

1. Remove the rear cover.
   F.7.2 Rear cover (DF-713)

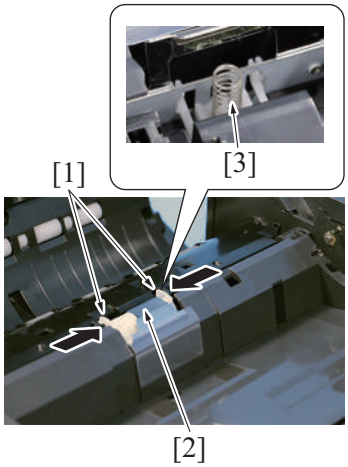


2. Remove two wire saddles [1], disconnect the connector [2], and remove the harness from the wire guide.
3. Remove two screws [3], and remove the DF cooling fan [4].
4. To reinstall, reverse the order of removal.

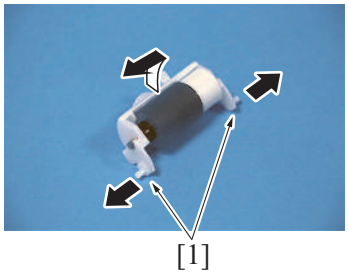
7.25 Separation roller torque limiter (DF-713)

1. Open the left cover [1].

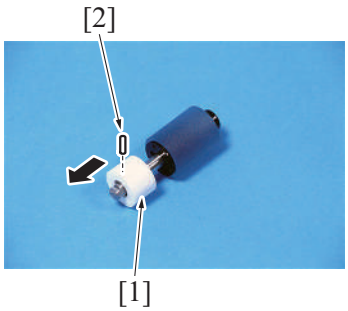




2. Grip both sides [1] of the holder and remove the separation roller assy [2].
   NOTE
   - **Do not lose the spring [3] at the lower part of the separation roller assy [2].**



3. Remove the shaft while spreading the holder [1].
NOTE
- **Take care not to spread the holder too much, it may cause damage.**

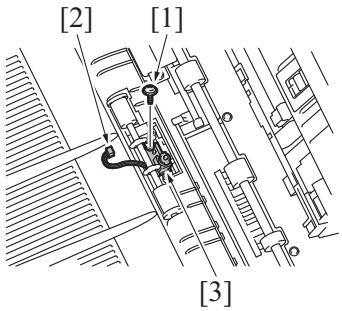


4. Remove the torque limiter [1] from the shaft.
NOTE
- **Take care not to lose the pin [2].**

5. To reinstall, reverse the order of removal.

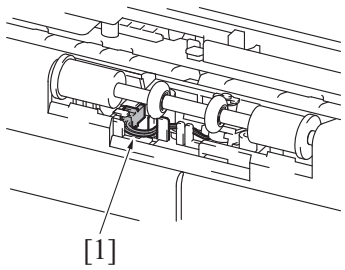
7.26 Stamp unit (SP-501)

1. Open the document feed tray.
F.7.4 How to open the document feed tray (DF-713)
2. Remove the stamp unit cover.
F.7.5 Stamp unit cover (DF-713)



3. Remove the screw [1], and disconnect the ground wire.
4. Disconnect the connector [2], and remove the stamp unit [3].

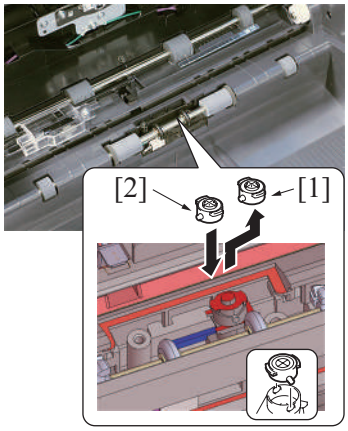
5. To reinstall, reverse the order of removal.



6. **NOTE**
- **Install the stamp unit as shown in the illustration, so that the harness [1] does not interfere with the roller.**

7.27 Stamp (SP-501)

1. Open the document feed tray.
F.7.4 How to open the document feed tray (DF-713)
2. Remove the stamp unit cover.
F.7.5 Stamp unit cover (DF-713)

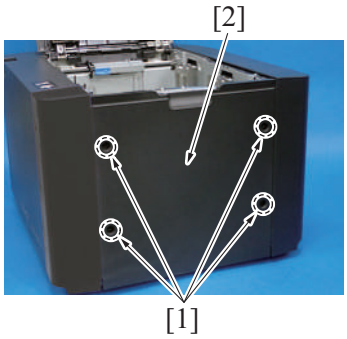


3. Remove the used stamp [1] and install the spare TX marker stamp [2].
NOTE
- **Align the round pin of the stamp to the groove in the stamp unit.**

8. LU-205

8.1 Right cover (LU-205)

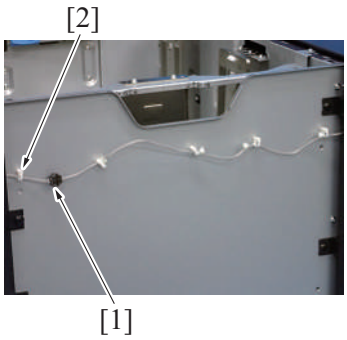
1. Open the upper door.



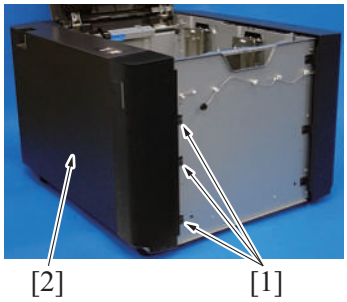
2. Remove 4 screws [1], and remove the right cover [2].
3. To reinstall, reverse the order of removal.

8.2 Front cover (LU-205)

1. Remove the right cover.
F.8.1 Right cover (LU-205)



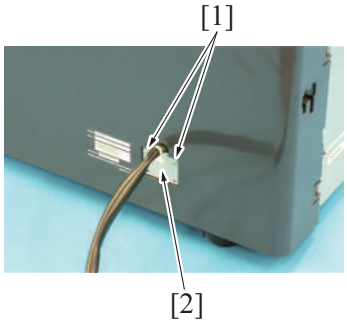
2. Disconnect the connector [1], and remove the harness from the wire saddle [2].
3. Loosen three screws [1], and remove the front cover [2].



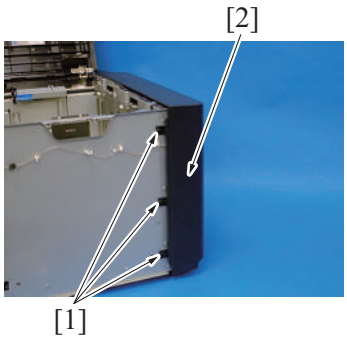
4. To reinstall, reverse the order of removal.

8.3 Rear cover (LU-205)

1. Remove the right cover.
F.8.1 Right cover (LU-205)



2. Remove two screws [1], and remove the plate [2].

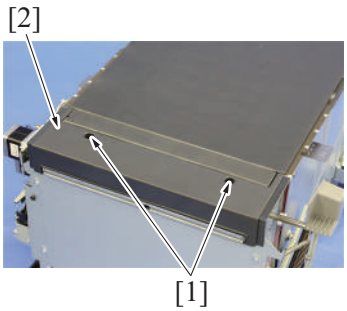


3. Loosen three screws [1], and remove the rear cover [2].

4. To reinstall, reverse the order of removal.

8.4 Feed cover (LU-205)

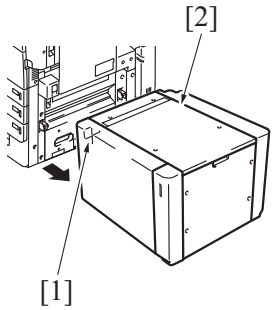
1. Remove the right cover.
   F.8.1 Right cover (LU-205)
2. Remove the front cover.
   F.8.2 Front cover (LU-205)
3. Remove the rear cover.
   F.8.3 Rear cover (LU-205)



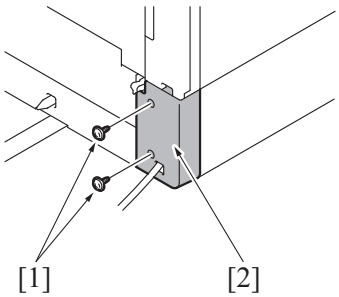
4. Remove two screws [1] and remove the feed cover [2].

5. To reinstall, reverse the order of removal.

8.5 Large capacity unit (LU-205)

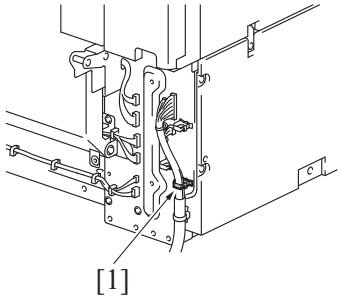


1. Slide the large capacity unit [2] while pressing on the lever [1], and remove from the main body.

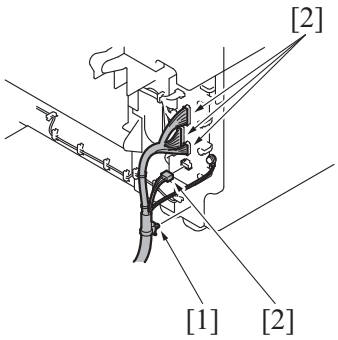


2. Remove two screws [1], and remove the cover [2].

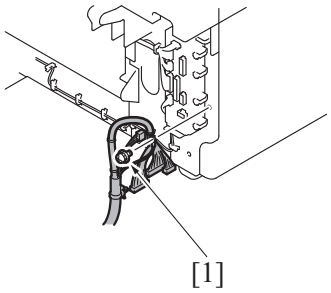
3. Remove the harness from the wire saddle [1].



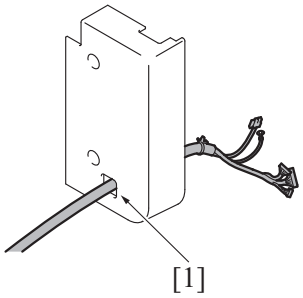
4. Remove the the cord clamp [1] and four connectors [2].



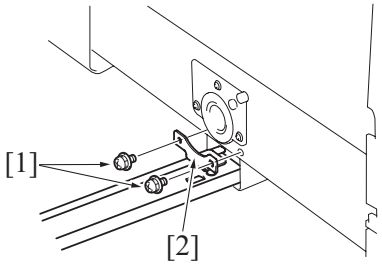
5. Remove the screw [1] of the ground wire.



6. Remove the harness from the cover [1].



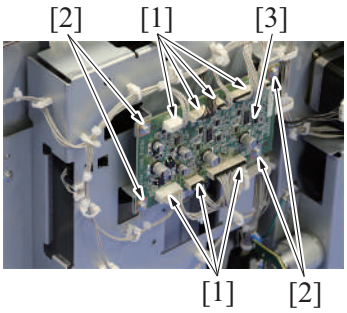
7. Remove two screws [1] and remove the mounting plate [2].



8. To reinstall, reverse the order of removal.

8.6 LU drive board (LUDB) (LU-205)

1. Remove the right cover.
   F.8.1 Right cover (LU-205)
2. Remove the rear cover.
   F.8.3 Rear cover (LU-205)

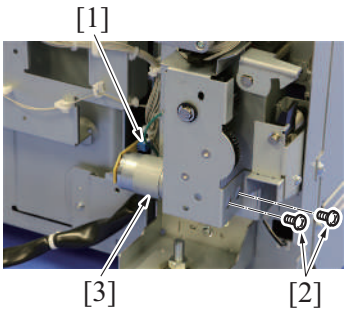


3. Disconnect seven connectors [1].
4. Remove four screws [2] and remove the LU drive board [3].

5. To reinstall, reverse the order of removal.

8.7 LU lift-up motor (M1) (LU-205)

1. Remove the right cover.
   F.8.1 Right cover (LU-205)
2. Remove the rear cover.
   F.8.3 Rear cover (LU-205)

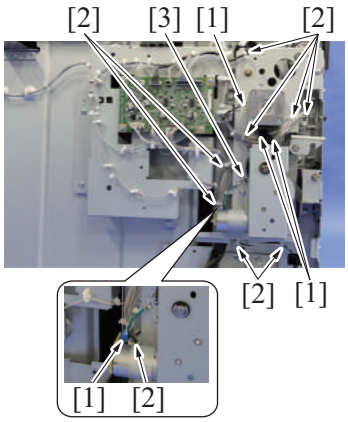


3. Disconnect the connector [1], remove two screws [2] and remove the LU lift-up motor [3].

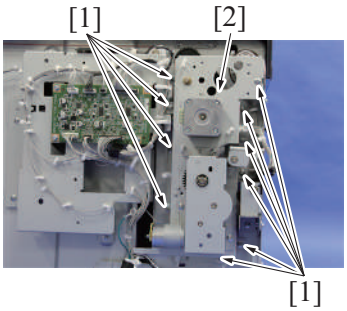
4. To reinstall, reverse the order of removal.

8.8 LU paper feed motor (M2) (LU-205)

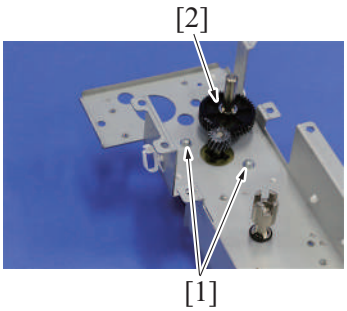
1. Remove the right cover.
   F.8.1 Right cover (LU-205)
2. Remove the rear cover.
   F.8.3 Rear cover (LU-205)
3. Remove the LU transport motor.
   F.8.9 LU transport motor (M3) (LU-205)



4. Disconnect four connectors [1].
5. Remove the harness from nine wire saddles [2].
6. Remove the screw [3] and disconnect the ground wire.



7. Remove 10 screws [1] and remove the drive assy [2].

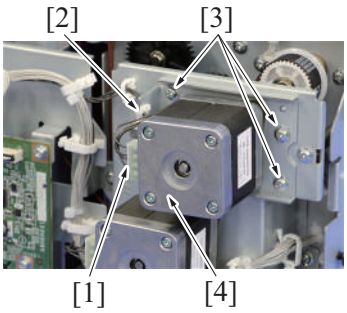


8. Remove two screws [1] and remove the LU paper feed motor [2].

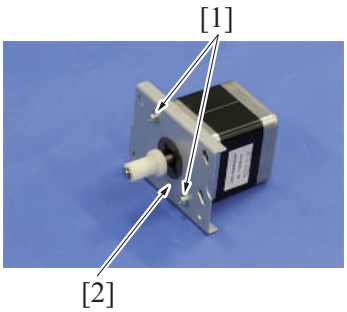
9. To reinstall, reverse the order of removal.

8.9 LU transport motor (M3) (LU-205)

1. Remove the right cover.
   F.8.1 Right cover (LU-205)
2. Remove the rear cover.
   F.8.3 Rear cover (LU-205)



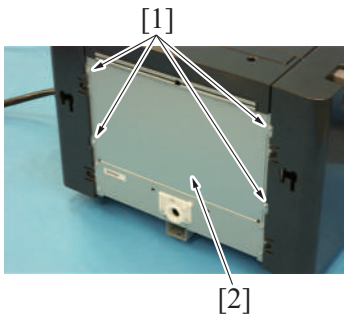
3. Disconnect the connector [1] and remove the harness from the edge cover [2].
4. Remove three screws [3] and remove the LU transport motor assy [4].



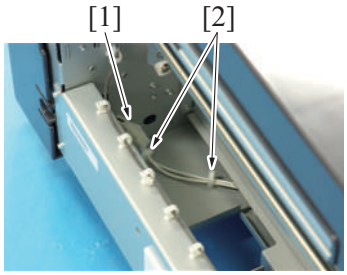
5. Remove two screws [1], and remove the LU transport motor [2].

6. To reinstall, reverse the order of removal.

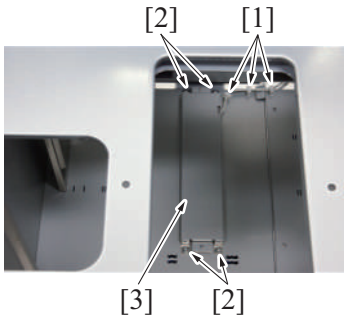
8.10 Dehumidification heater (DH) (LU-205)



1. Remove four screws [1] and remove the left cover [2].



2. Disconnect the connector [1].
3. Remove the harness from two wire saddles [2].



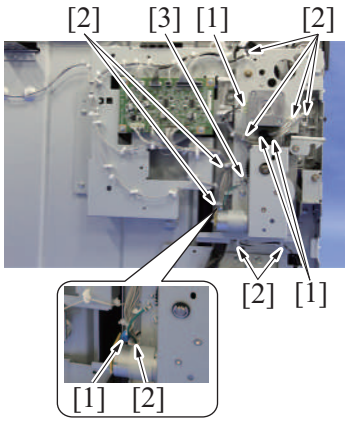
4. Remove the harness from three wire saddles [1].
5. Remove four screws [2] and remove the dehumidification heater [3].

6. To reinstall, reverse the order of removal.

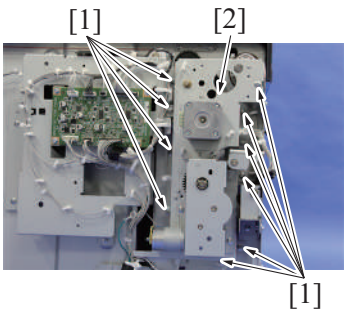
8.11 Lift wire (LU-205)

8.11.1 Removal

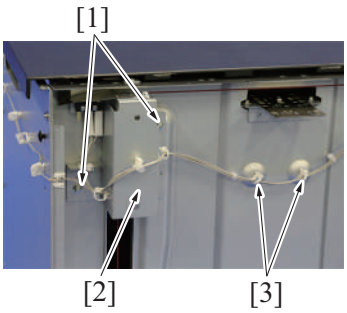
1. Remove the right cover.
   F.8.1 Right cover (LU-205)
2. Remove the front cover.
   F.8.2 Front cover (LU-205)
3. Remove the rear cover.
   F.8.3 Rear cover (LU-205)
4. Remove the LU transport motor.
   F.8.9 LU transport motor (M3) (LU-205)



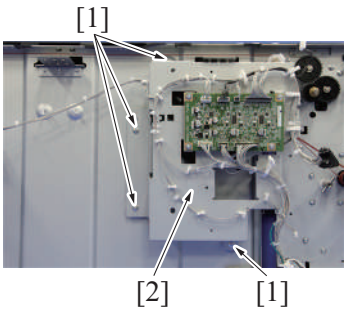
5. Disconnect four connectors [1].
6. Remove the harness from nine wire saddles [2].
7. Remove the screw [3] and disconnect the ground wire.



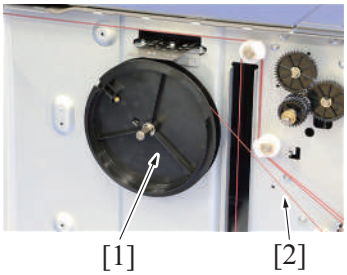
8. Remove 10 screws [1] and remove the drive assy [2].



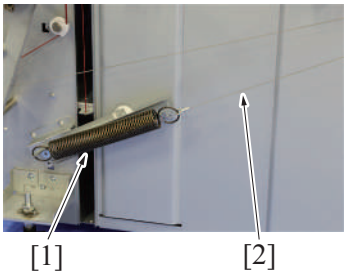
9. Remove two screws [1] and remove the plate [2].
10. Remove the harness from two wire saddles [3].



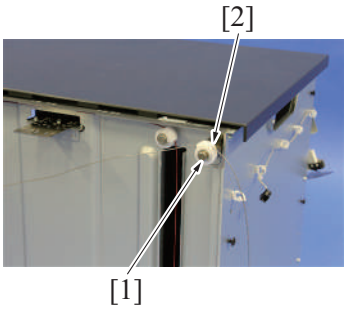
11. Remove four screws [1] and remove the LU drive board assy [2].



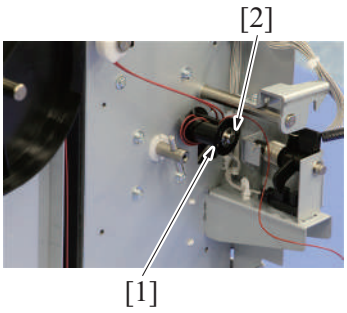
12. Remove the lift wire/L [2] from the rotation plate [1].



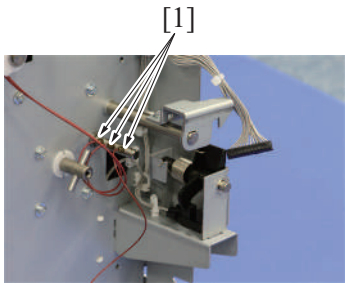
13. Remove the auxiliary wire [2] from the spring [1] on the front side.



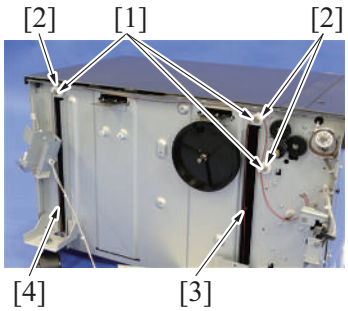
14. Remove the E-ring [1] on the front side to remove the wire holding jig [2].



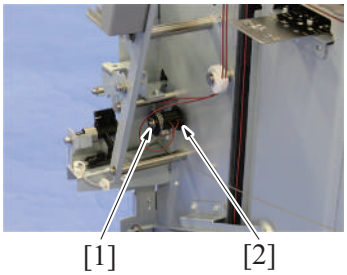
15. Remove the E-ring [2] on the rear side to remove the driving pulley [1].



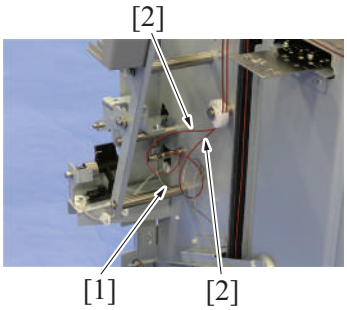
16. Pull out three lift wires [1].



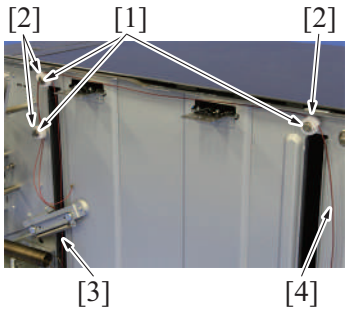
17. Remove three E-rings [1] and three wire pulleys [2], and remove the lift wire/S [3] and the lift wire/L [4].



18. Remove the E-ring [1] on the front side to remove the driving pulley [2].

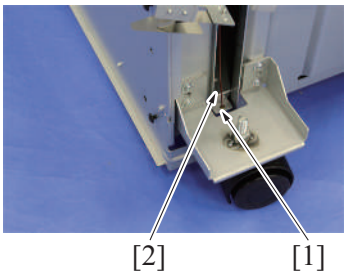


19. Pull out the auxiliary wire [1] and two lift wires [2].

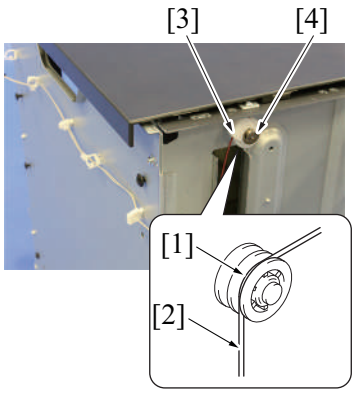


20. Remove three E-rings [1] and three wire pulleys [2], and remove the lift wire/S [3] and the lift wire/L [4].

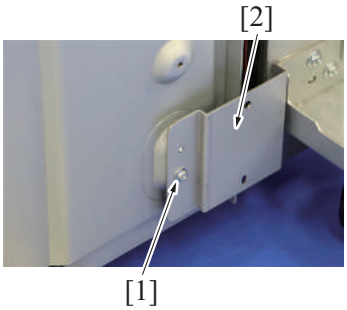
8.11.2 Mounting



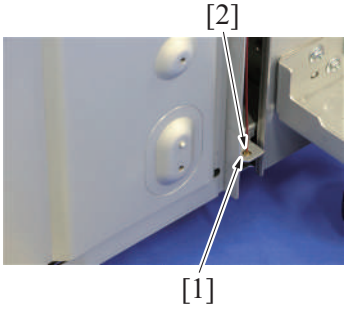
1. Insert the lift wire/L [2] to the left hole [1] on the rear face.



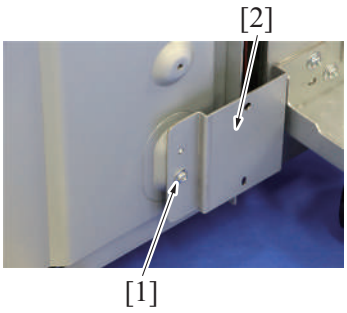
2. Set the lift wire/L [2] to the near side groove [1] of the wire pulley and fix it with the wire holding jig [3] and the E-ring [4].



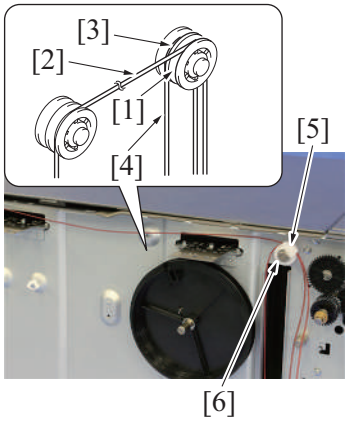
3. Remove the screw [1], and remove the plate [2].



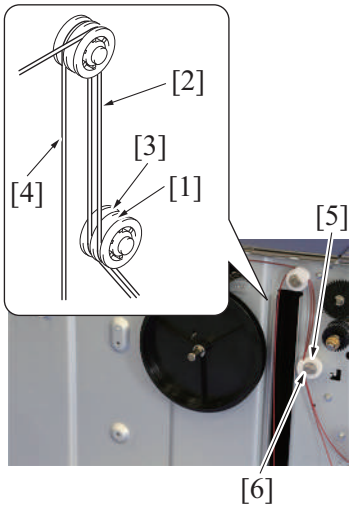
4. Insert the lift wire/S [2] to the right hole [1] on the rear face.



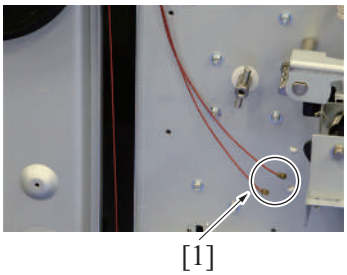
5. Install the plate [2] with the screw [1].



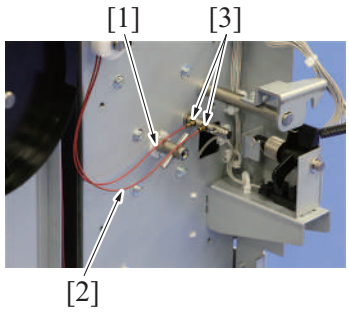
6. Set the lift wire/L [2] to the near side groove [1] of the wire pulley and the lift wire/S [4] to the far side groove [3], and fix it with the wire holding jig [5] and the E-ring [6].



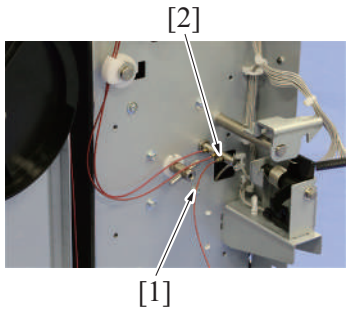
7. Set the lift wire/L [2] to the near side groove [1] of the wire pulley and the lift wire/S [4] to the far side groove [3], and fix it with the wire holding jig [5] and the E-ring [6].



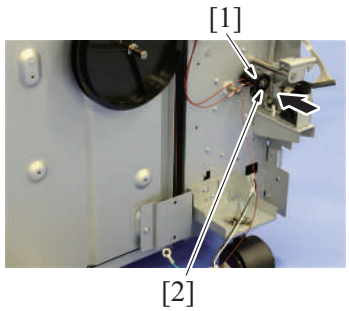
8. **NOTE**
   - **It is correct when the tip of the wire [1] is the same length.**



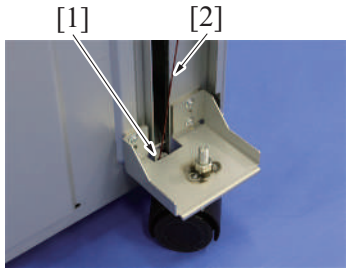
9. Take the edges of the lift wire/S [1] and the lift wire/L [2] to set them to the holes on the shaft [3].



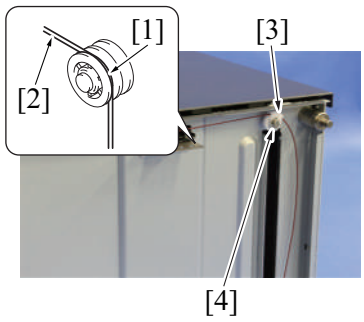
10. Lift the edge of the lift wire/L [1] and set it in the hole on the shaft [2].



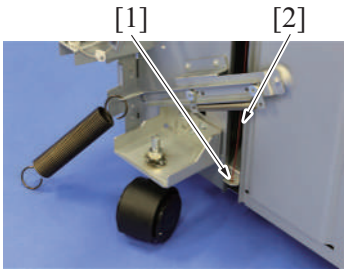
11. Mount the driving pulley [1] and secure it with the E-ring [2].



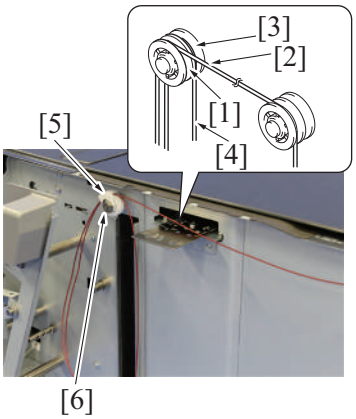
12. Insert the lift wire/L [2] to the right hole [1] on the front face.



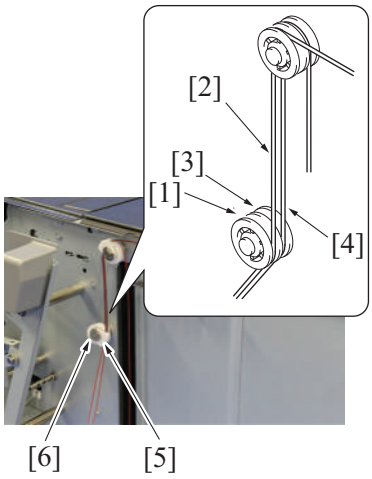
13. Set the lift wire/L [2] to the near side groove [1] of the wire pulley and fix it with the wire holding jig [3] and the E-ring [4].



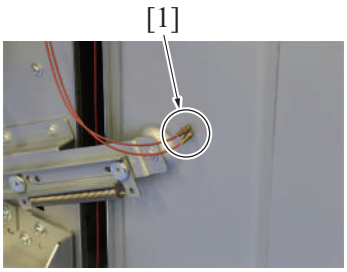
14. Insert the lift wire/S [2] to the left hole [1] on the front face.



15. Set the lift wire/L [2] to the near side groove [1] of the wire pulley and the lift wire/S [4] to the far side groove [3], and fix it with the wire holding jig [5] and the E-ring [6].

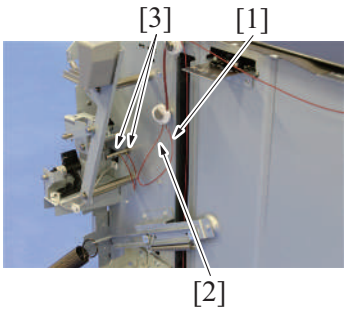


16. Set the lift wire/L [2] to the near side groove [1] of the wire pulley and the lift wire/S [4] to the far side groove [3], and fix it with the wire holding jig [5] and the E-ring [6].

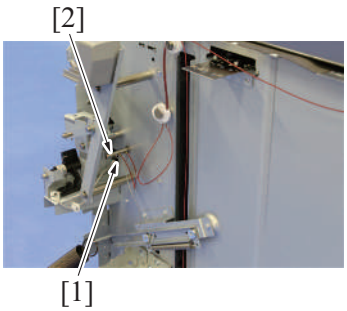


17. **NOTE**

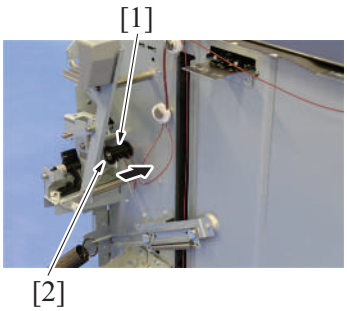
- **It is correct when the tip of the wire [1] is the same length.**



18. Take the edges of the lift wire/S [1] and the lift wire/L [2] to set them to the holes on the shaft [3].

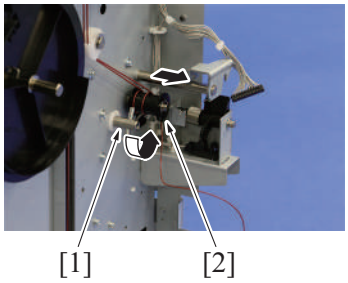


19. Take the edge of the auxiliary wire [1] and set it to the hole on the shaft [2].



20. Mount the driving pulley [1] and secure it with the E-ring [2].

Rear side

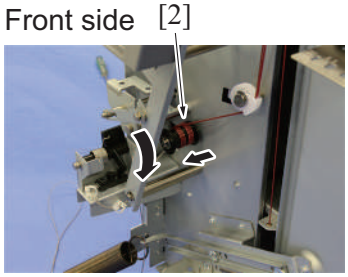


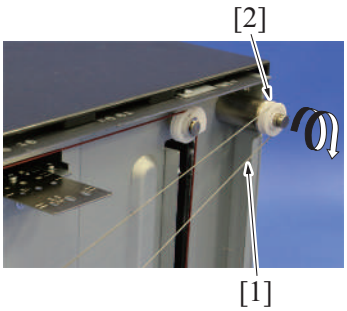
21. Wind the wire to the driving pulley [2] by rotating the lift up shaft [1] (counterclockwise when seen from rear) until the tray assy has risen to the upper end.

NOTE

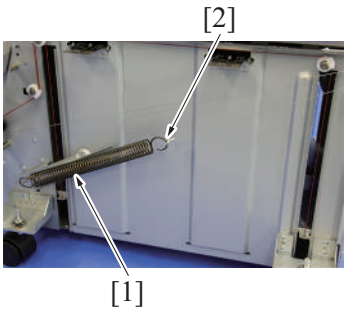
- **Wind the wire to the direction shown by the arrow.**

Front side

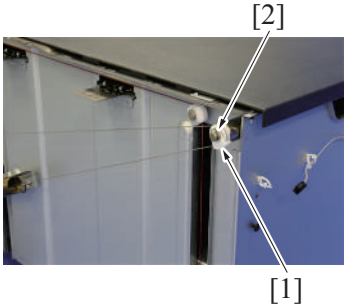




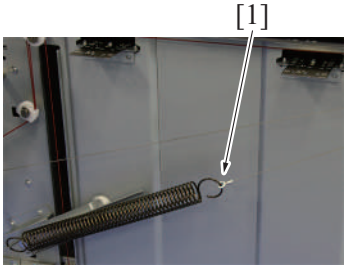
22. Once the wire is wound until the tray assy is at the upper end, wind the auxiliary wire [2] once in a clockwise direction to the wire pulley [1] in front.



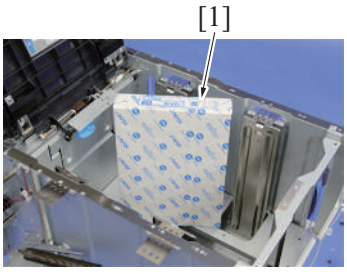
23. Set the auxiliary wire [1] in the front to the hook of the slide spring [2].



24. Mount the wire holding jig [1] and secure it with the E-ring [2].

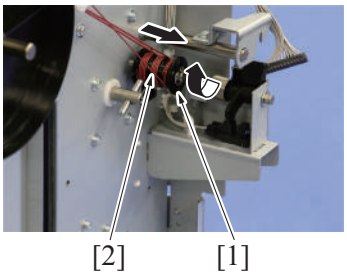


25. **NOTE**
    - **Check to make sure that the wire hook [1] is at the position shown on the picture when the tray assy is at the lower end.**

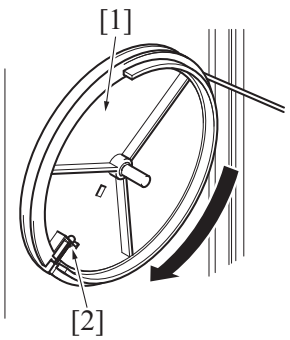


26. Place a weight such as a package of paper, etc. [1] to move the tray assy down to the lower end.

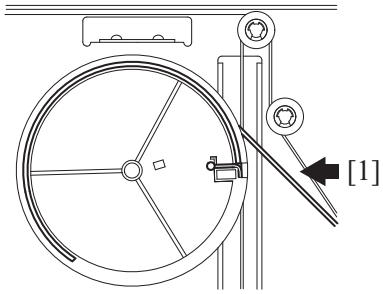
27. Wrap the lift wire/L [2] six times clockwise on the driving pulley [1] at the rear.



28. Turn the rotation plate [1] one and a half times clockwise from the position where the plate holds the tension, to set the lift wire/L [2].



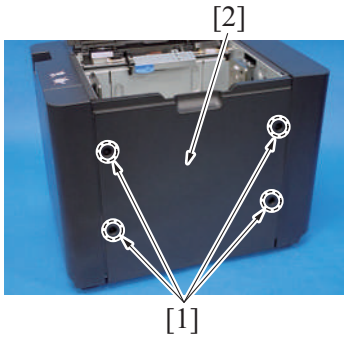
29. **NOTE**
    - **Make sure that the tray assy is at the lower limit and the hire hook section of the rotation plate [1] is near the position indicated by the arrow in the figure.**



9. LU-303

9.1 Right cover (LU-303)

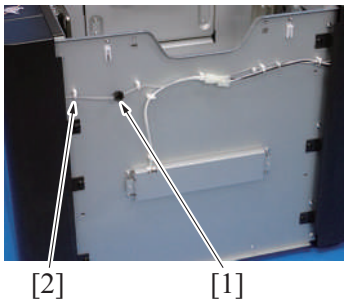
1. Open the upper door.



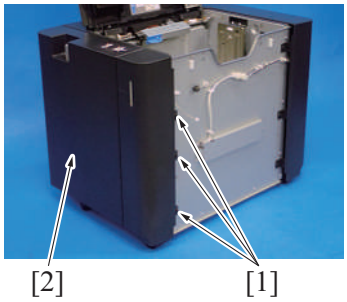
2. Remove 4 screws [1], and remove the right cover [2].
3. To reinstall, reverse the order of removal.

9.2 Front cover (LU-303)

1. Remove the right cover.
F.9.1 Right cover (LU-303)



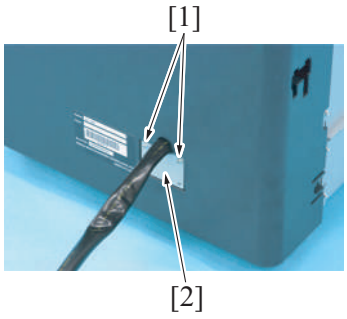
2. Disconnect the connector [1], and remove the harness from the wire saddle [2].
3. Loosen three screws [1], and remove the front cover [2].



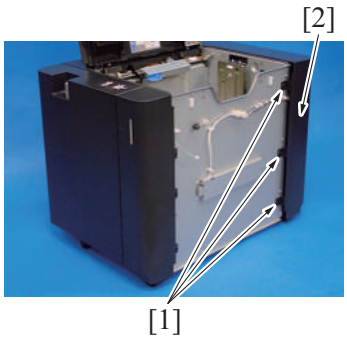
4. To reinstall, reverse the order of removal.

9.3 Rear cover (LU-303)

1. Remove the right cover.
F.9.1 Right cover (LU-303)



2. Remove two screws [1], and remove the plate [2].

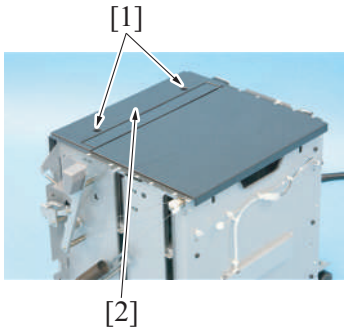


3. Loosen three screws [1], and remove the rear cover [2].

4. To reinstall, reverse the order of removal.

9.4 Feed cover (LU-303)

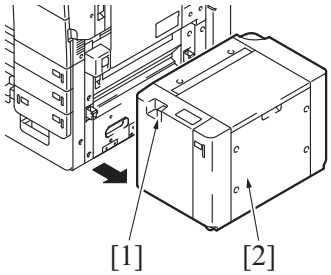
1. Remove the right cover.
   F.9.1 Right cover (LU-303)
2. Remove the front cover.
   F.9.2 Front cover (LU-303)
3. Remove the rear cover.
   F.9.3 Rear cover (LU-303)



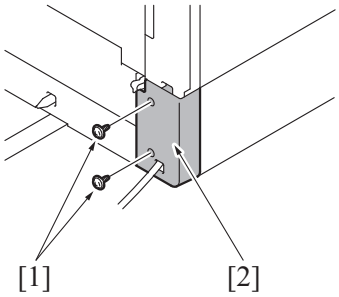
4. Remove two screws [1] and remove the feed cover [2].

5. To reinstall, reverse the order of removal.

9.5 Large capacity unit (LU-303)

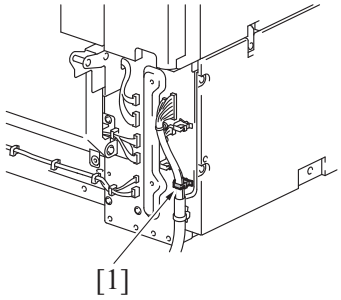


1. Slide the large capacity unit [2] while pressing on the lever [1], and remove from the main body.

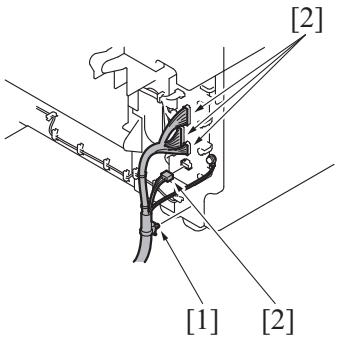


2. Remove two screws [1], and remove the cover [2].

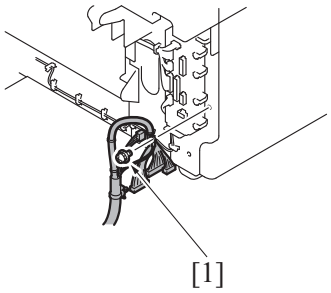
3. Remove the harness from the wire saddle [1].



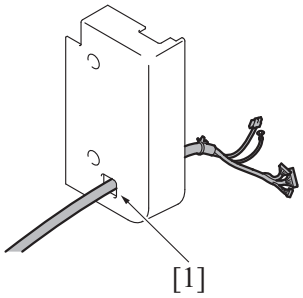
4. Remove the the cord clamp [1] and four connectors [2].



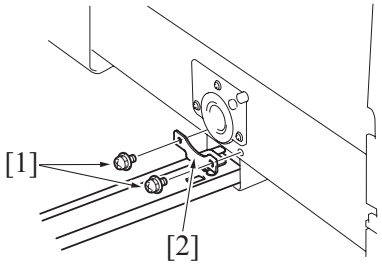
5. Remove the screw [1] of the ground wire.



6. Remove the harness from the cover [1].



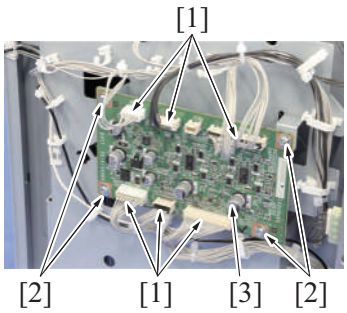
7. Remove two screws [1] and remove the mounting plate [2].



8. To reinstall, reverse the order of removal.

9.6 LU drive board (LUDB) (LU-303)

1. Remove the right cover.
   F.9.1 Right cover (LU-303)
2. Remove the rear cover.
   F.9.3 Rear cover (LU-303)

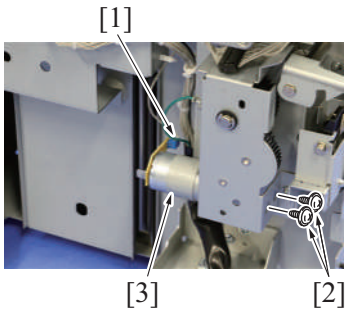


3. Disconnect six connectors [1], remove four screws [2], and remove the LU drive board [3].

4. To reinstall, reverse the order of removal.

9.7 LU lift-up motor (M1) (LU-303)

1. Remove the right cover.
   F.9.1 Right cover (LU-303)
2. Remove the rear cover.
   F.9.3 Rear cover (LU-303)

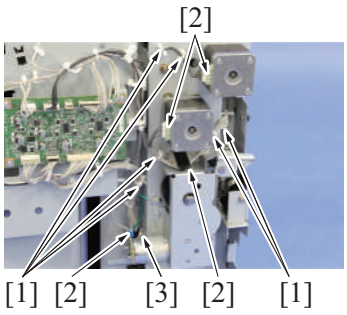


3. Disconnect the connector [1], remove two screws [2] and remove the LU lift-up motor [3].

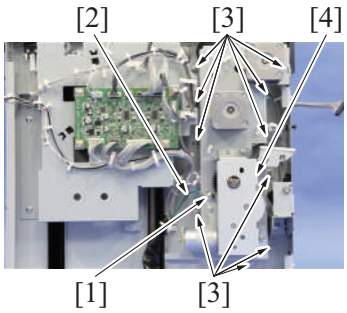
4. To reinstall, reverse the order of removal.

9.8 LU paper feed motor (M2) (LU-303)

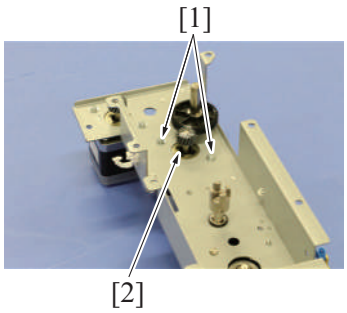
1. Remove the right cover.
   F.9.1 Right cover (LU-303)
2. Remove the rear cover.
   F.9.3 Rear cover (LU-303)



3. Remove six wire saddles [1], remove harness from the snap band [3], and disconnect four connectors [2].



4. Remove the screw [1], and remove the ground terminal [2].
5. Remove 10 screws [3], and remove the LU paper feed motor/LU transport motor assy [4].

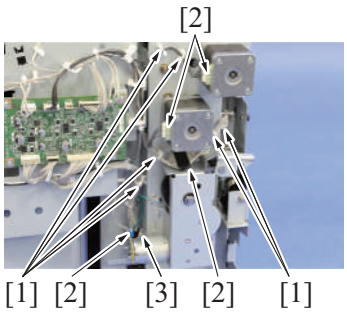


6. Remove two screws [1] and remove the LU paper feed motor [2].

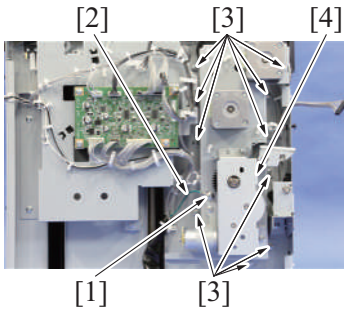
7. To reinstall, reverse the order of removal.

9.9 LU transport motor (M3) (LU-303)

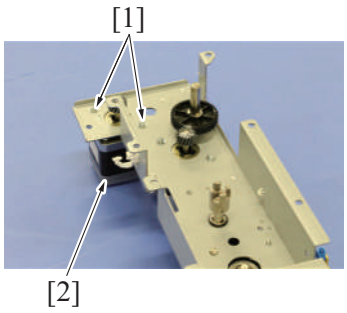
1. Remove the right cover.
   F.9.1 Right cover (LU-303)
2. Remove the rear cover.
   F.9.3 Rear cover (LU-303)



3. Remove six wire saddles [1], remove harness from the snap band [3], and disconnect four connectors [2].



4. Remove the screw [1], and remove the ground terminal [2].
5. Remove 10 screws [3], and remove the LU paper feed motor/LU transport motor assy [4].

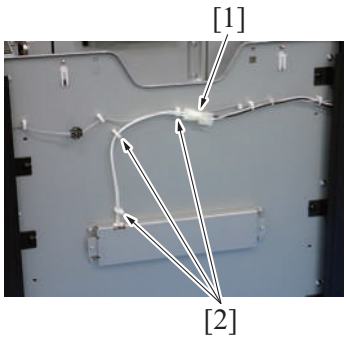


6. Remove two screws [1] and remove the LU transport motor [2].

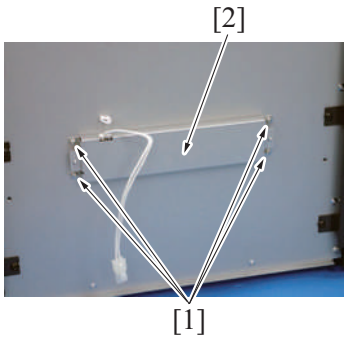
7. To reinstall, reverse the order of removal.

9.10 Dehumidification heater (DH) (LU-303)

1. Remove the right cover.
   F.9.1 Right cover (LU-303)



2. Remove the harness from the connector [1] and three wire saddles [2].

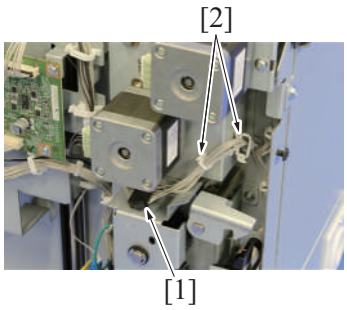


3. Remove four screws [1] and remove the dehumidification heater [2].

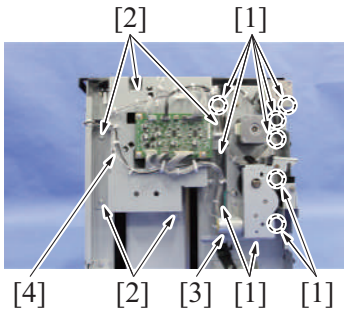
9.11 Lift wire (LU-303)

9.11.1 Removal

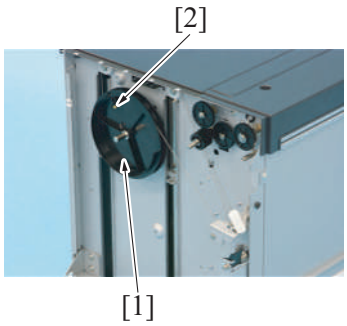
1. Remove the right cover.
   F.9.1 Right cover (LU-303)
2. Remove the front cover.
   F.9.2 Front cover (LU-303)
3. Remove the rear cover.
   F.9.3 Rear cover (LU-303)



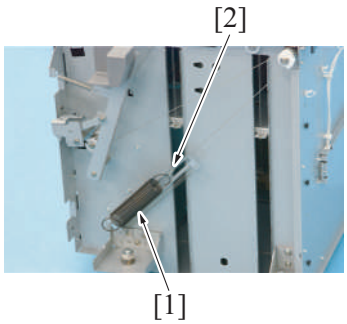
4. Disconnect the connector [1] at the rear, and remove the harness from two wire saddles [2].



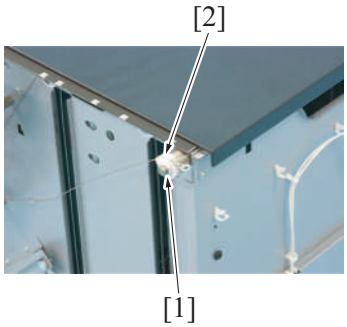
5. Remove nine screws [1] and five screws [2], and remove the LU paper feed motor/LU transport motor [3] and the drive board assy [4].



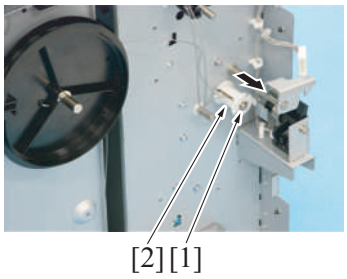
6. Remove the lift wire/L [2] from the rotation plate [1].



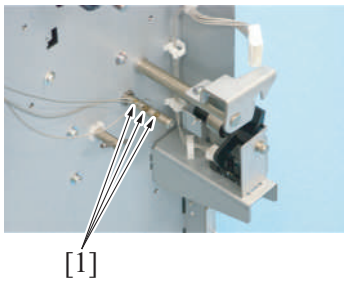
7. Remove the auxiliary wire [2] from the spring [1] on the front side.



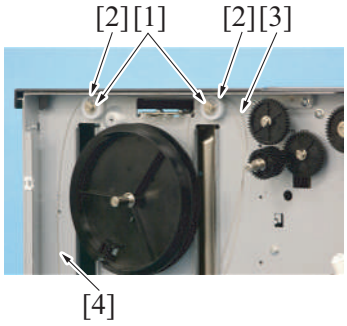
8. Remove the E-ring [1] on the front side to remove the wire holding jig [2].



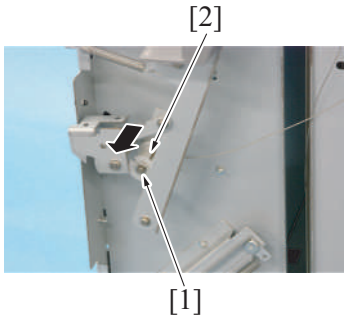
9. Remove the E-ring [1] on the rear side to remove the driving pulley [2].



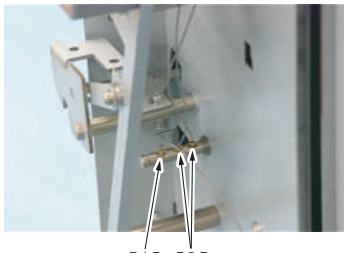
10. Pull out three lift wires [1].



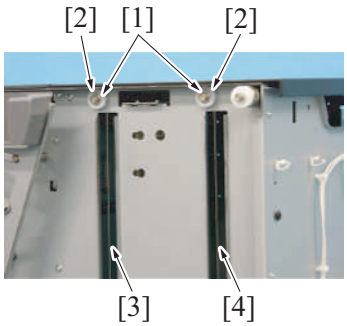
11. Remove two E-rings [1] and two wire pulleys [2] to remove the lift wire/S [3] and the lift wire/L [4].



12. Remove the E-ring [1] on the front side to remove the driving pulley [2].

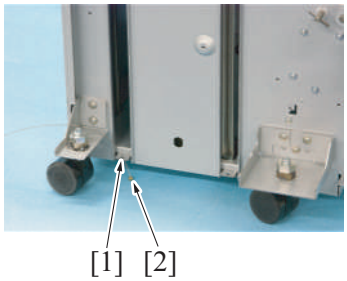


13. Pull out the auxiliary wire [1] and two lift wires [2].

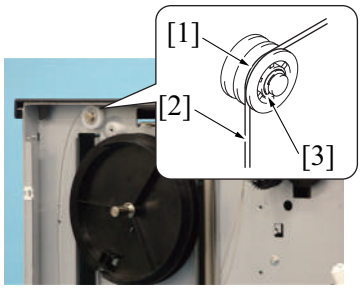


14. Remove two E-rings [1] and two wire pulleys [2] to remove the lift wire/S [3] and the lift wire/L [4].

9.11.2 Mounting

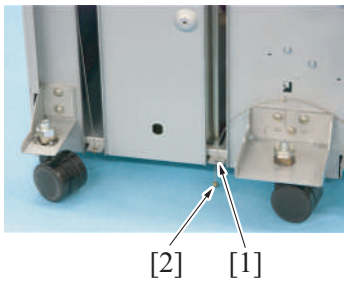


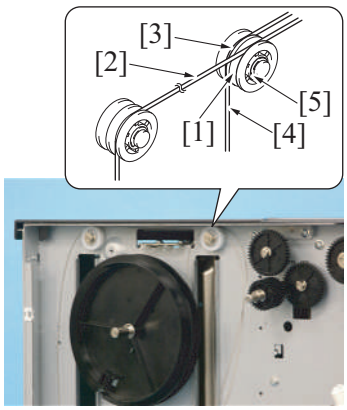
1. Insert the lift wire/L [2] to the left hole [1] on the rear face.



2. Set the lift wire/L [2] to the near side groove [1] on the wire pulley, and secure it with the E-ring [3].

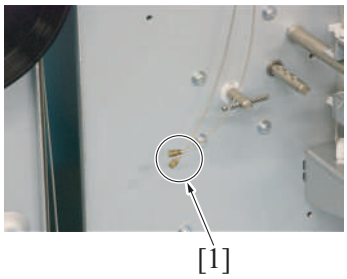
3. Insert the lift wire/S [2] to the right hole [1] on the rear face.

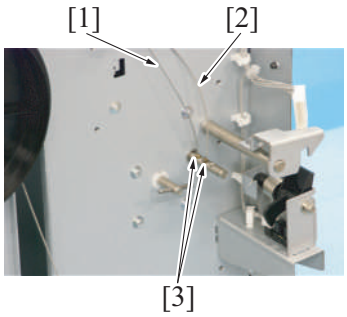




4. Set the lift wire/L [2] to the near side groove [1] on the wire pulley, and set the lift wire/S [4] to the far side groove [3] and secure them with the E-ring [5].

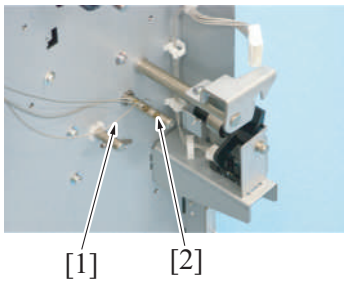
5. **NOTE**
   - **It is correct when the tip of the wire [1] is the same length.**



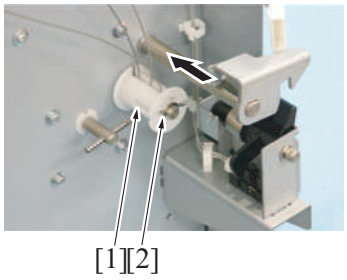


6. Take the edges of the lift wire/S [1] and the lift wire/L [2] and set them to the holes on the shaft [3].

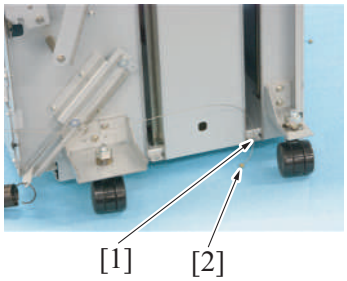
7. Take the edge of the lift wire/L [1] and set it to the hole [2] on the shaft.



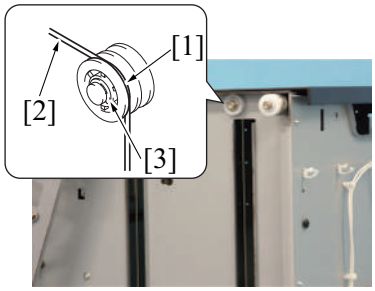
8. Mount the driving pulley [1] and secure it with the E-ring [2].



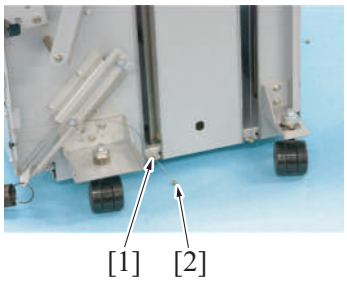
9. Insert the lift wire/L [2] to the right hole [1] on the front face.

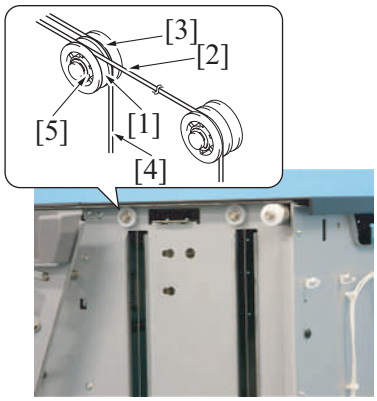


10. Set the lift wire/L [2] to the near side groove [1] on the wire pulley and secure it with the E-ring [3].



11. Insert the lift wire/S [2] to the left hole [1] on the front face.

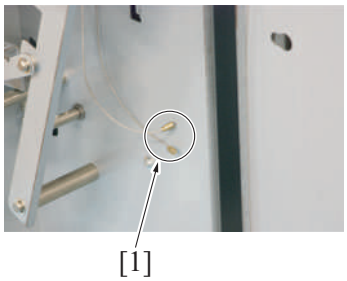




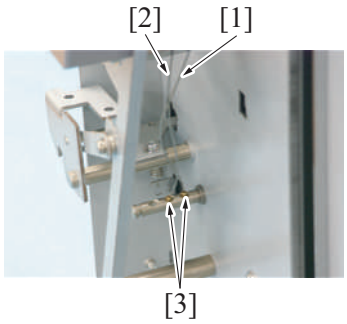
12. Set the lift wire/L [2] to the near side groove [1] on the wire pulley, and set the lift wire/S [4] to the far side groove [3] and secure them with the E-ring [5].

13. **NOTE**

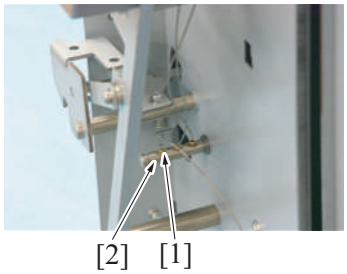
- **It is correct when the tip of the wire [1] is the same length.**



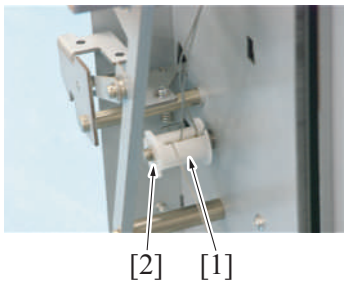
14. Take the edges of the lift wire/S [1] and the lift wire/L [2] to set them to the holes on the shaft [3].



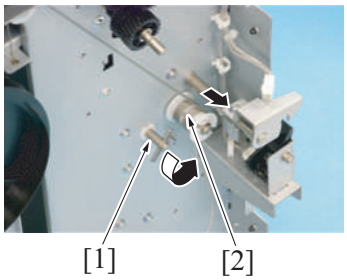
15. Take the edge of the auxiliary wire [1] and set it to the hole on the shaft [2].



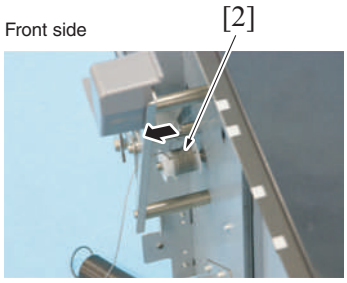
16. Mount the driving pulley [1] and secure it with the E-ring [2].



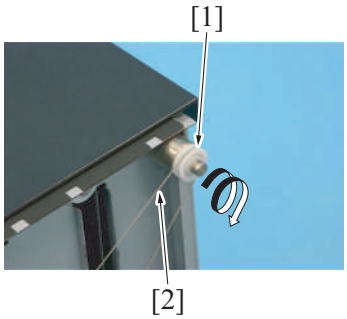
Rear side



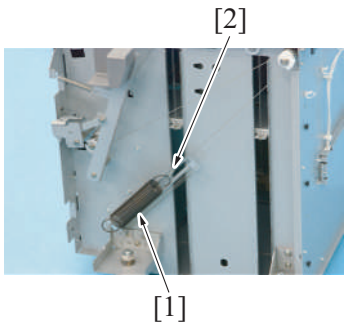
Front side



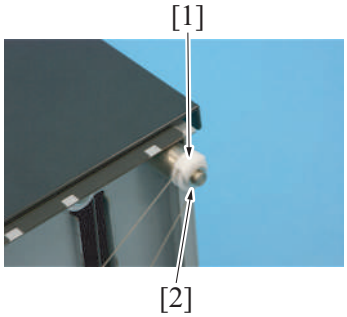
17. Wind the wire to the pulley [2] as rotating the lift up shaft [1] on the rear face counterclockwise and moving the tray assy to the upper end.
NOTE
- **Wind the wire to the direction shown by the arrow.**



18. When the wire is wound with the tray assy being at the up end, wind the auxiliary wire [2] to the wire pulley [1] clockwise once.

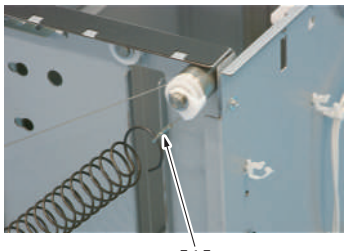


19. Set the auxiliary wire [1] on the front face to the hook of the slide spring [2].

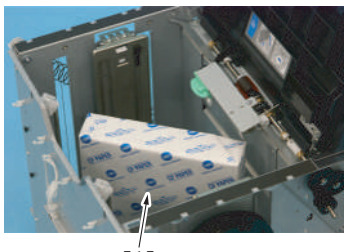


20. Mount the wire holding jig [1] and secure it with the E-ring [2].

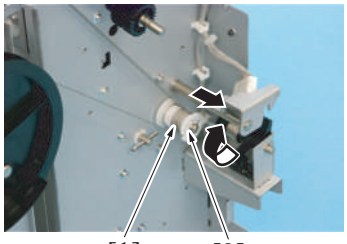
21. **NOTE**
    - **Check to make sure that the wire hook [1] is at the position shown on the picture when the tray assy is at the lower end.**



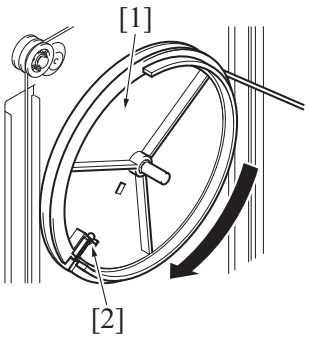
22. Place a weight such as a package of paper, etc. [1] to move the tray assy down to the lower end.



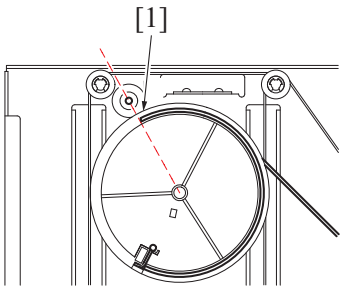
23. Wrap the lift wire/L [2] on the driving pulley [1] on the rear face clockwise seven times.



24. Turn the rotation plate [1] one and a half times clockwise from the position where the plate holds the tension, to set the lift wire/L [2].

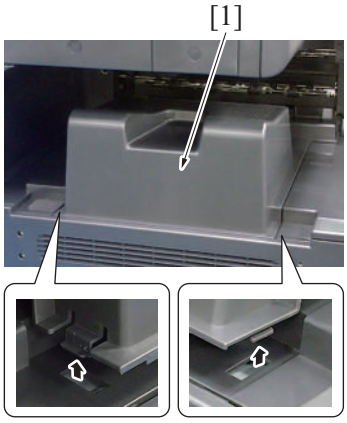


25. **NOTE**
    - **The rib edge [1] of the rotation plate must be around the dotted lines as shown in the picture when the tray assy is at the lowest level.**



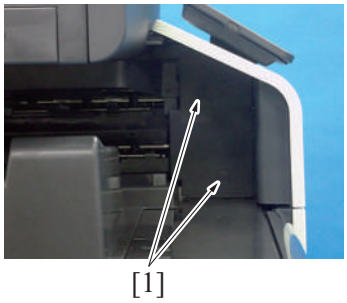
10. OT-514

10.1 Output tray (OT-514)

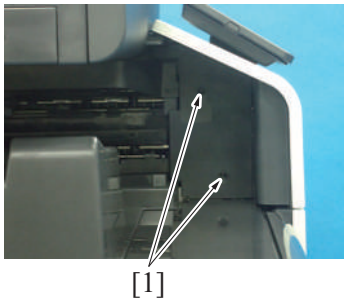


1. Remove the exit tray [1].
2. To reinstall, reverse the order of removal.

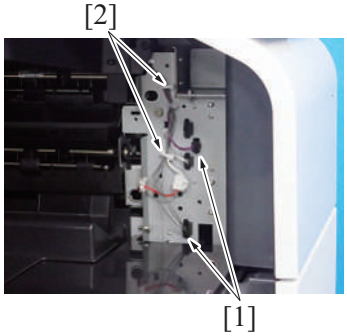
10.2 Fan unit (OT-514)



1. Remove two caps [1].

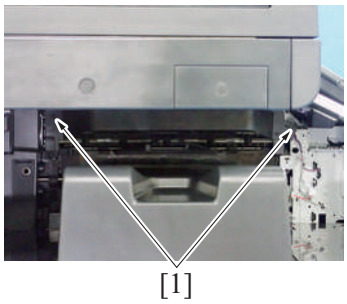


2. Remove two screws [1].

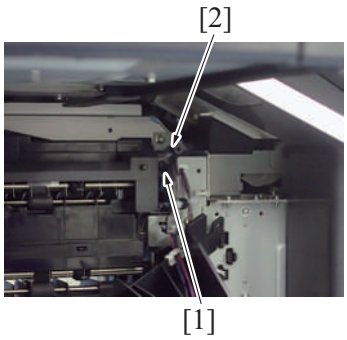


3. Disconnect two connectors [1].
4. Remove the harness from two wire saddles [2].

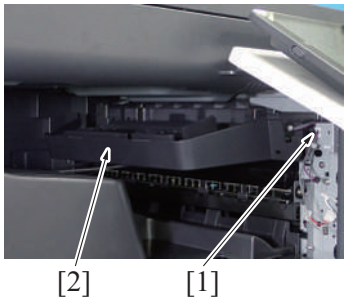
5. Remove two screws [1].



6. Remove the screw [1], and remove the joint [2].



7. Remove the harness from the edge cover [1].
8. Remove the fan unit [2].

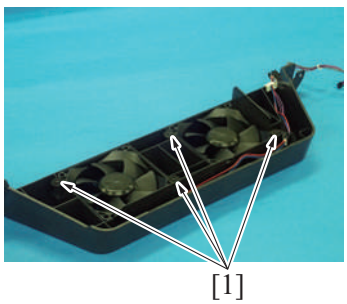


9. To reinstall, reverse the order of removal.

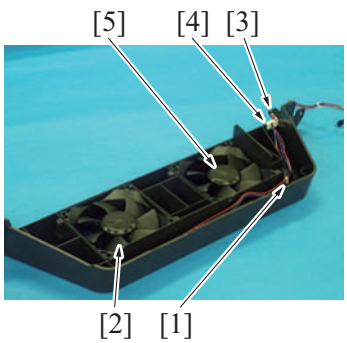
10.3 Tacking fan/Fr (FM23), Tacking fan/Rr (FM24) (OT-514)

1. Remove the fan unit.
F.10.2 Fan unit (OT-514)

2. Remove four screws [1].



3. Disconnect the connector [1], and remove the tacking fan/Rr [2].
4. Disconnect the connector [3]. Remove the harness from the edge cover [4], and remove the tacking fan/Fr [5].

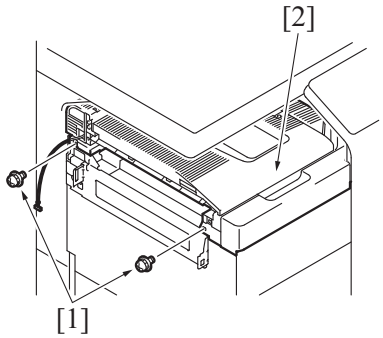


5. To reinstall, reverse the order of removal.

11. RU-519

11.1 RU transport unit (RU-519)

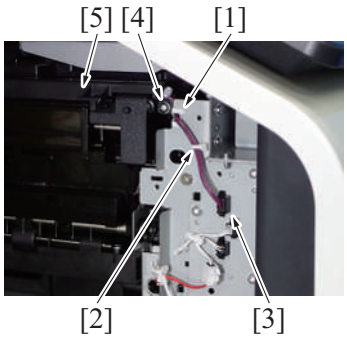
1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
   F.15.1 Finisher (FS-540/FS-540SD)



2. Remove two screws [1], and remove the horizontal transport unit [2].
3. To reinstall, reverse the order of removal.

11.2 Sensor unit (RU-519)

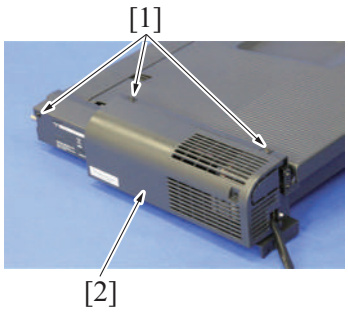
1. Remove the RU transport unit.
   F.11.1 RU transport unit (RU-519)
2. Remove the control panel left cover/1.
   F.5.1.8 Control panel left cover/1



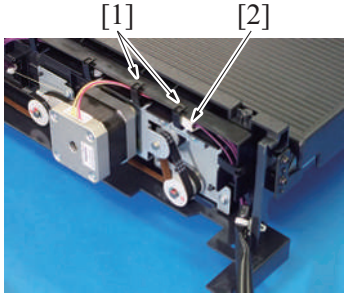
3. Remove the harness from the edge cover [1] and wire saddle [2].
4. Disconnect the connector [3].
5. Remove the screw [4], and remove the sensor unit [5].
6. To reinstall, reverse the order of removal.

11.3 RU transport motor (M1) (RU-519)

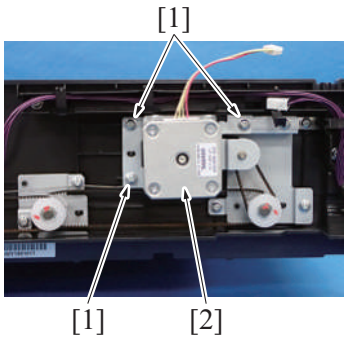
1. Remove the RU transport unit.
   F.11.1 RU transport unit (RU-519)



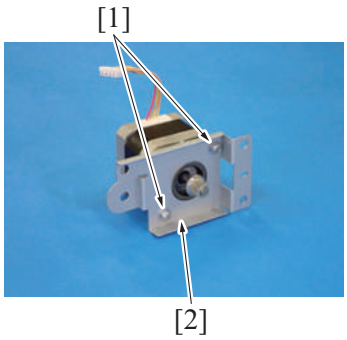
2. Remove three screws [1], and remove the rear cover [2] of the RU transport unit.



3. Remove the harness from two wire saddles [1].
4. Disconnect the connector [2].



5. Remove three screws [1], and remove the RU transport motor assy [2].



6. Remove two screws [1], and remove the RU transport motor [2].

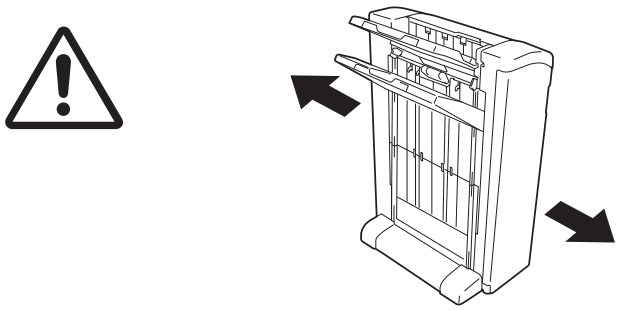
7. To reinstall, reverse the order of removal.

12. FS-539/FS-539SD

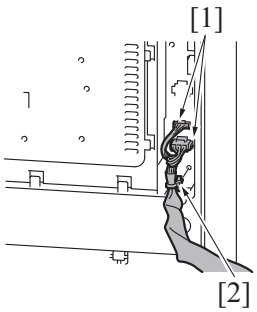
12.1 Finisher (FS-539/FS-539SD)

CAUTION

- When transporting the finisher, make sure to push it to the direction as shown in the illustration. (to prevent turnover during transportation)

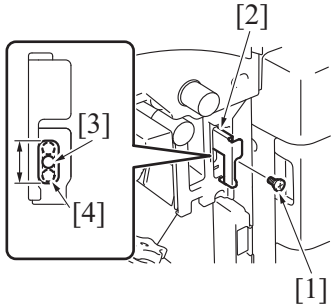


1. Remove the DF cable cover.
   F.5.1.19 DF cable cover

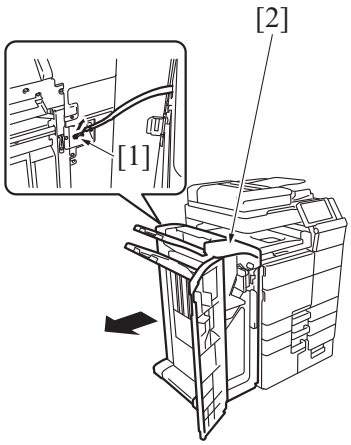


2. Remove the cable tie [2], and disconnect two connectors [1].

3. Open the front door.

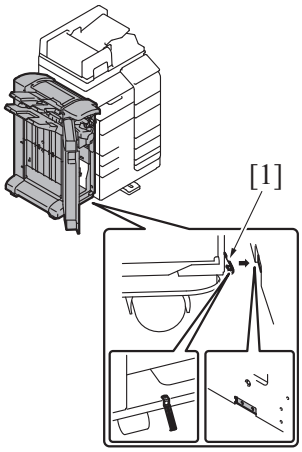


4. Remove the screw [1], and pull out the lever [2].
   NOTE
   - **At the time of the finisher installation, make sure that the screw hole [3] locates within the scope of the mounting hole of the lever [4].**



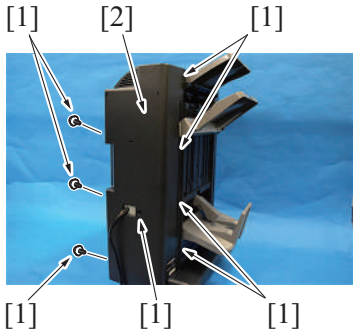
5. Disconnect the connector [1].
6. Remove the finisher [2] from the main body.

7. To reinstall, reverse the order of removal.



8. **NOTE**
   - **The blade spring [1] of the installed plate should be in contact with the main body.**

12.2 Rear cover (FS-539/FS-539SD)

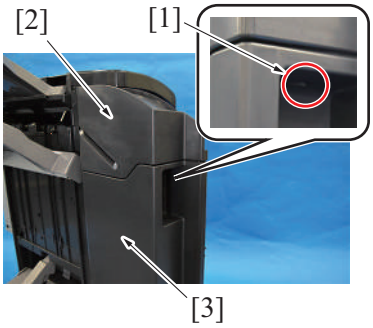


1. Remove eight screws [1], and remove the rear cover [2].

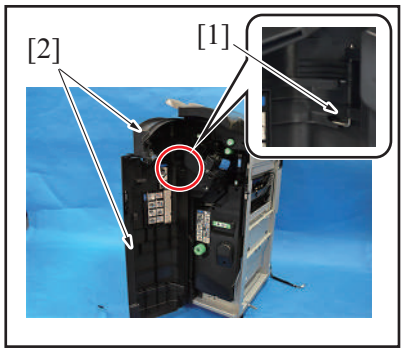
2. To reinstall, reverse the order of removal.

12.3 Front door (FS-539/FS-539SD)

1. Open the front door.



2. While holding down the lock [1], divide the door into the upper part [2] and lower part [3].

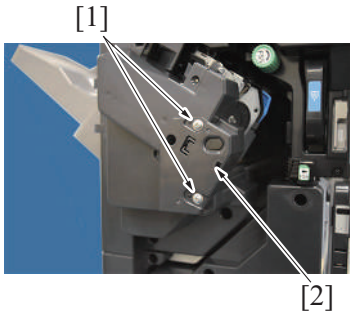


3. Remove the stopper [1], and remove the front door (upper part and lower part) [2].

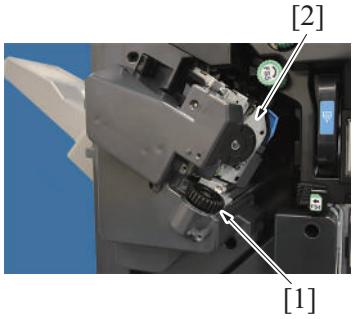
4. To reinstall, reverse the order of removal.

12.4 Front upper cover (FS-539/FS-539SD)

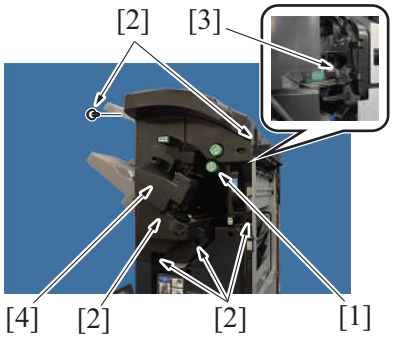
1. Remove the front door.
F.12.3 Front door (FS-539/FS-539SD)



2. Remove two screws [1], and remove the cover [2].



3. Turn the stapler transfer dial [1] to move the stapler [2] to the rear side.

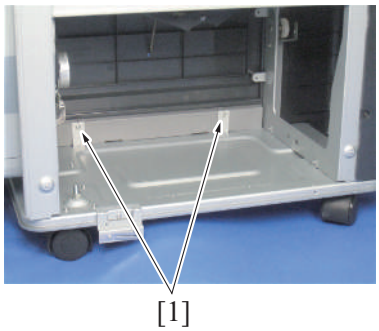


4. Remove the dial FS5 [1].
5. Remove six screws [2], and disconnect the connector [3] located behind the front upper cover.
6. Open the guide plate FS2, and then remove the front upper cover [4].
NOTE
- **If the saddle unit is installed, move the guide plate (FS4), and then remove the front upper cover.**

7. To reinstall, reverse the order of removal.

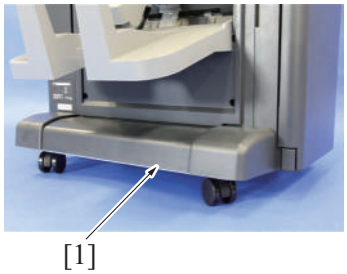
12.5 Left lower cover (FS-539/FS-539SD)

1. Remove the finisher from the main body.
F.12.1 Finisher (FS-539/FS-539SD)



2. Remove two screws [1].
NOTE
- **If the saddle unit is installed, pull out the saddle unit, and then remove two screws [1].**

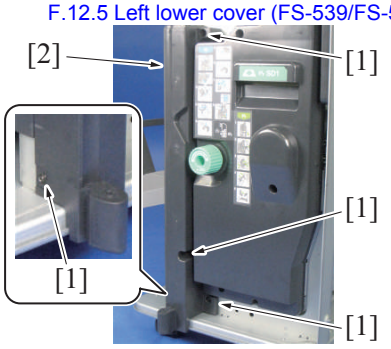
3. Remove the left lower cover [1].



4. To reinstall, reverse the order of removal.

12.6 Front lower cover (FS-539/FS-539SD)

1. Remove the front door.
F.12.3 Front door (FS-539/FS-539SD)
2. Remove the front upper cover.
F.12.4 Front upper cover (FS-539/FS-539SD)
3. Remove the left lower cover.
F.12.5 Left lower cover (FS-539/FS-539SD)

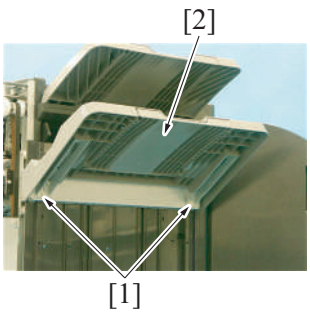


4. Remove four screws [1], and remove the front lower cover [2].

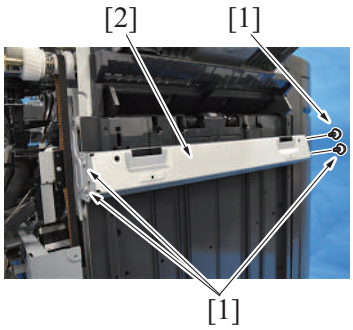
5. To reinstall, reverse the order of removal.

12.7 Left cover (FS-539/FS-539SD)

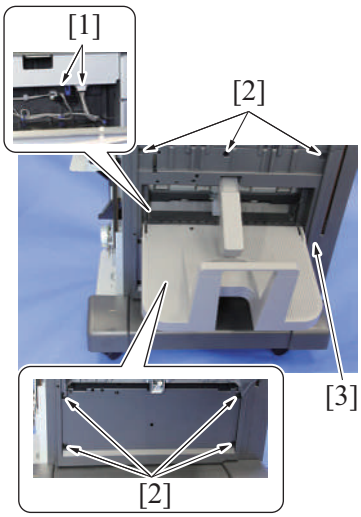
1. Remove the finisher from the main body.
F.12.1 Finisher (FS-539/FS-539SD)
2. When the saddle unit is attached, open the front door and pull out the saddle unit.



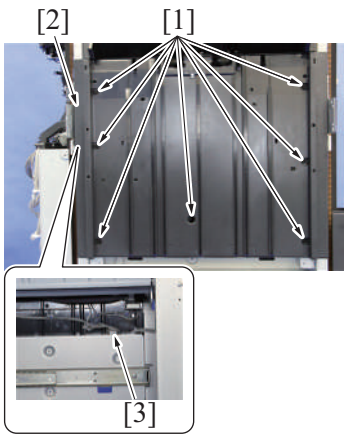
3. Remove two screws [1], and remove the exit tray [2].



4. Remove four screws [1], and remove the plate [2].



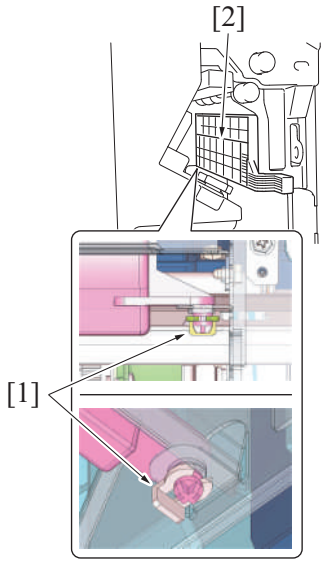
5. Disconnect two connectors [1].
6. Remove seven screws [2], and remove the left cover (lower) [3].
   NOTE
   - **Disconnect one connector when the saddle unit is not installed.**



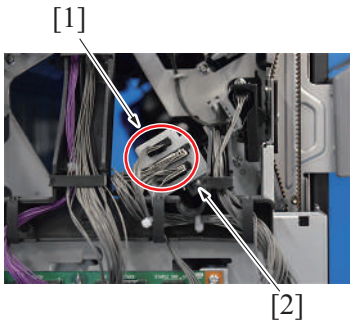
7. Disconnect the connector [3].
8. Remove seven screws [1], and remove the left cover (upper) [2].
9. To reinstall, reverse the order of removal.

12.8 Stapler unit (FS-539/FS-539SD)

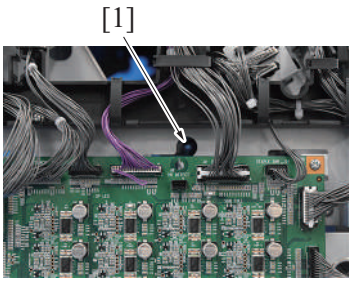
1. Remove the front door.
   F.12.3 Front door (FS-539/FS-539SD)
2. Remove the front upper cover.
   F.12.4 Front upper cover (FS-539/FS-539SD)
3. Remove the rear cover.
   F.12.2 Rear cover (FS-539/FS-539SD)



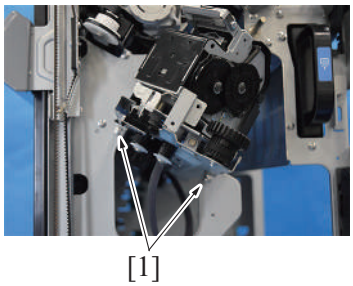
4. When the saddle unit is attached, remove the C-clip [1], and remove the guide plate [2].



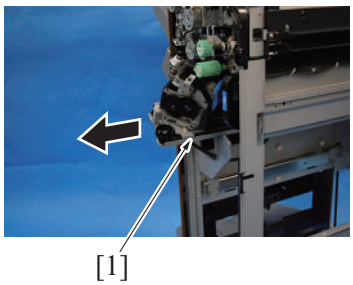
5. Disconnect three connectors [1] from the back of the finisher.
6. Remove the screw [2].



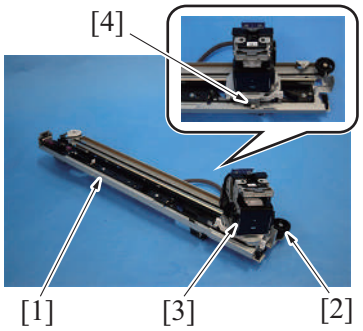
7. Remove the screw [1].



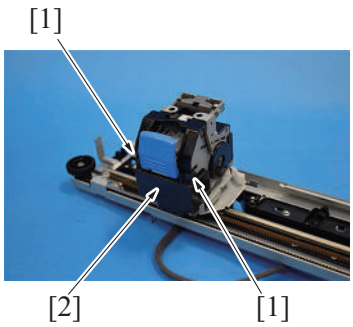
8. Remove two screws [1] from the front of the finisher.



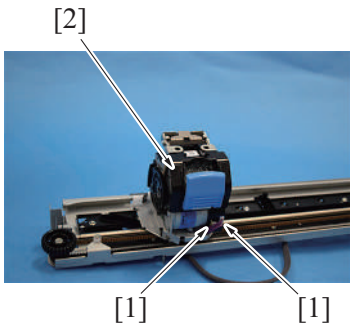
9. Remove the stapler assy [1] from the finisher.
NOTE
- **While removing the stapler assy [1], be careful not to hit the stapler against the finisher frame.**



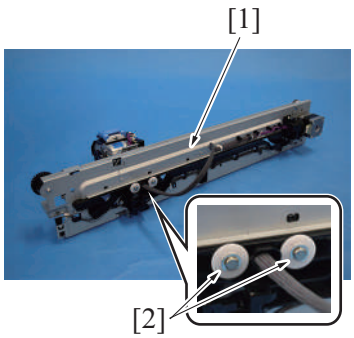
10. Put the stapler assy [1] on a stable workbench.
11. Rotate the stapler transfer dial [2] and move the stapler unit [3] until the roll [4] is visible.



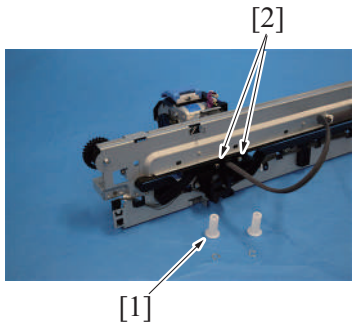
12. Unhook two tabs [1], and remove the cover [2].



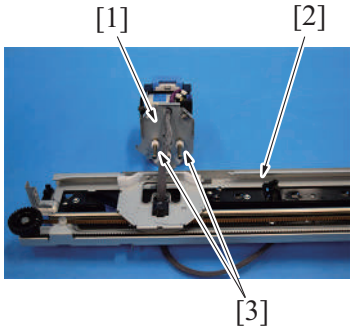
13. Disconnect two connectors [1] from the stapler unit [2].



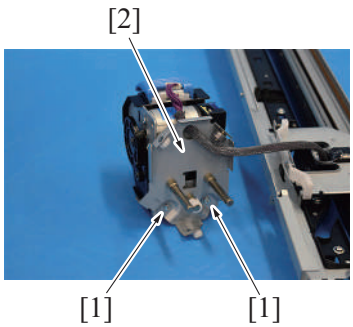
14. Flip the stapler assy [1] over.
15. Remove two E-rings [2] from the guide shafts.



16. Remove two rolls [1] from the guide shaft [2].



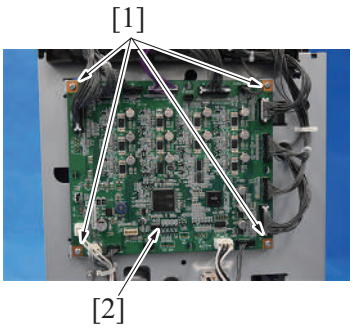
17. Carefully remove the stapler unit [1] from the stapler unit assy [2].
18. Remove two rolls [3] from the guide shafts.
    NOTE
    - **Ensure that the harness does not get damaged in the process.**
    - **Be careful not to lose the rolls.**



19. Remove two screws [1] of the stapler unit and remove the base plate [2] of the stapler unit from the stapler unit.
20. To reinstall, reverse the order of removal.
    NOTE
    - **When installing the stapler unit, be sure to pass the two connectors removed in the step 13 through the hole in the base plate and connect them to the stapler unit before attaching the base plate.**

12.9 FS control board (FSCB) (FS-539/FS-539SD)

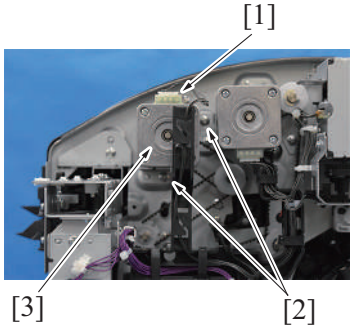
1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover.
   F.12.2 Rear cover (FS-539/FS-539SD)



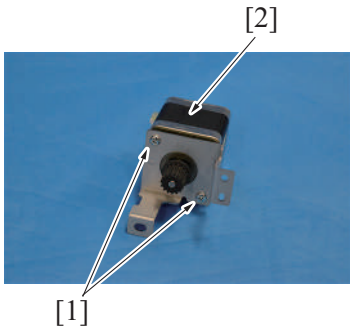
3. Disconnect all connectors from the board.
4. Remove four screws [1], and remove the FS control board [2].
5. To reinstall, reverse the order of removal.

12.10 FNS entry transport motor (M2) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover.
   F.12.2 Rear cover (FS-539/FS-539SD)



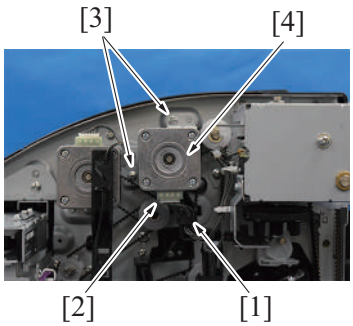
3. Disconnect the connector [1].
4. Remove two screws [2], and remove the FNS entry transport motor assy [3].



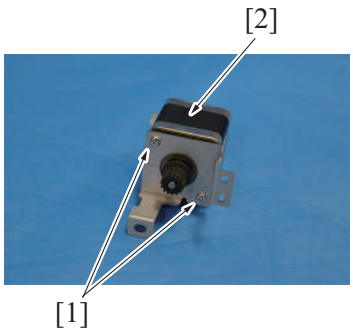
5. Remove two screws [1], and remove the FNS entry transport motor [2].
6. To reinstall, reverse the order of removal.

12.11 FNS discharge motor (M3) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover.
   F.12.2 Rear cover (FS-539/FS-539SD)



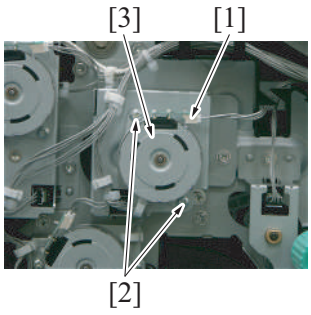
3. Remove the harness from the wire saddle [1], and disconnect the connector [2].
4. Remove two screws [3], and remove the FNS discharge motor assy [4].



5. Remove two screws [1], and remove the FNS discharge motor [2].
6. To reinstall, reverse the order of removal.

12.12 Receiving roller retraction motor (M4) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the front door.
   F.12.3 Front door (FS-539/FS-539SD)
3. Remove the front upper cover.
   F.12.4 Front upper cover (FS-539/FS-539SD)

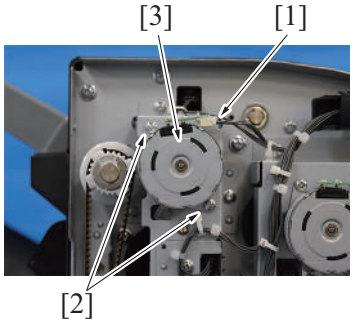


4. Disconnect the connector [1].
5. Remove two screws [2], and remove the receiving roller retraction motor [3].
6. To reinstall, reverse the order of removal.

12.13 FNS paddle motor (M5) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)

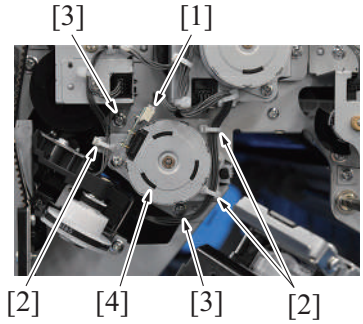
2. Remove the front door.
   F.12.3 Front door (FS-539/FS-539SD)
3. Remove the front upper cover.
   F.12.4 Front upper cover (FS-539/FS-539SD)



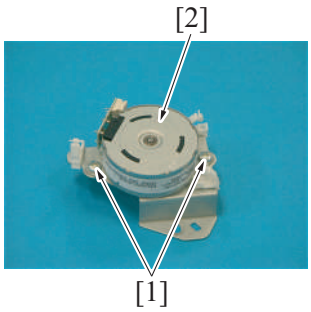
4. Disconnect the connector [1].
5. Remove two screws [2], and remove the FNS paddle motor [3].
6. To reinstall, reverse the order of removal.

12.14 Trail edge stopper motor (M6) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the front door.
   F.12.3 Front door (FS-539/FS-539SD)
3. Remove the front upper cover.
   F.12.4 Front upper cover (FS-539/FS-539SD)



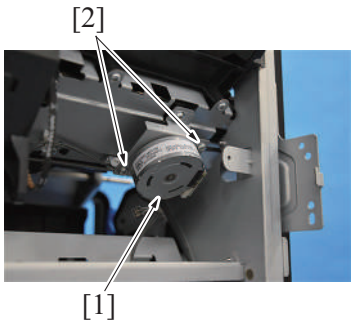
4. Disconnect the connector [1].
5. Remove the harness from three wire saddles [2].
6. Remove two screws [3], and remove the trailing edge stopper motor assy [4].



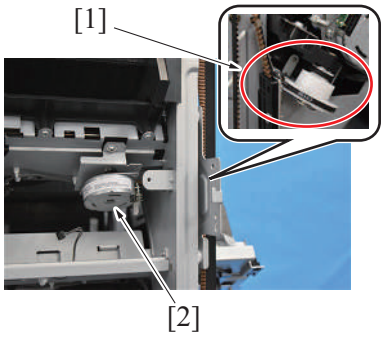
7. Remove two screws [1], and remove the trailing edge stopper motor [2].
8. To reinstall, reverse the order of removal.

12.15 Alignment motor/Fr (M7) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the front door.
   F.12.3 Front door (FS-539/FS-539SD)
3. Remove the front upper cover.
   F.12.4 Front upper cover (FS-539/FS-539SD)
4. Remove the left cover.
   F.12.7 Left cover (FS-539/FS-539SD)
5. Remove the bundle eject motor.
   F.12.18 Bundle eject motor (M10) (FS-539/FS-539SD)



6. Disconnect the connector [1].
7. Remove two screws [2].

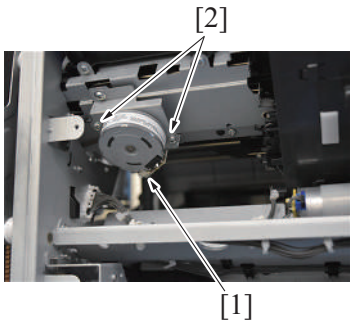


8. Remove the drive belt from the pulley [1], and remove the alignment motor/Fr [2].

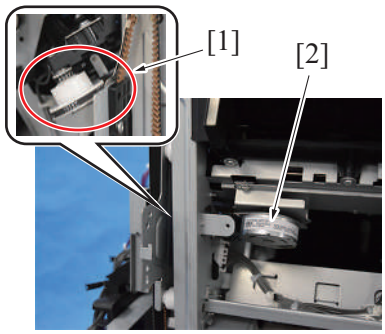
9. To reinstall, reverse the order of removal.

12.16 Alignment motor/Rr (M8) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover.
   F.12.2 Rear cover (FS-539/FS-539SD)
3. Remove the left cover.
   F.12.7 Left cover (FS-539/FS-539SD)



4. Disconnect the connector [1].
5. Remove two screws [2].

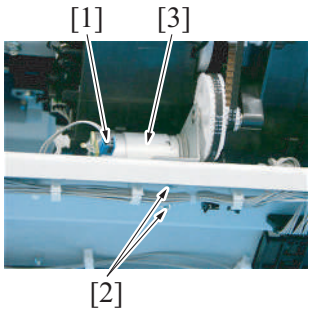


6. Remove the drive belt from the pulley [1], and remove the alignment motor/Rr [2].

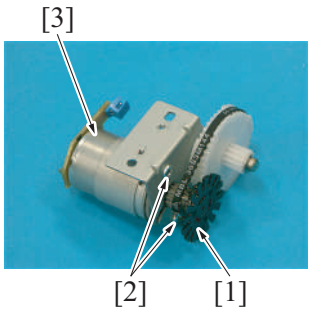
7. To reinstall, reverse the order of removal.

12.17 Pre-eject drive motor (M9) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the left cover.
   F.12.7 Left cover (FS-539/FS-539SD)
3. Disconnect the connector [3].



4. Disconnect the connector [1].
5. Remove two screws [2], and remove the pre-eject drive motor assy [3].

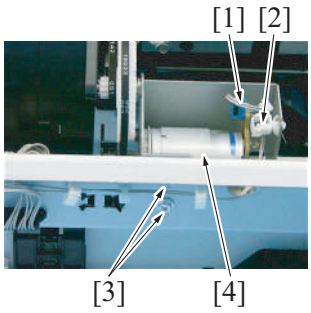


6. Remove the rotating disk [1].
7. Remove two screws [2], and remove the pre-eject drive motor [3].

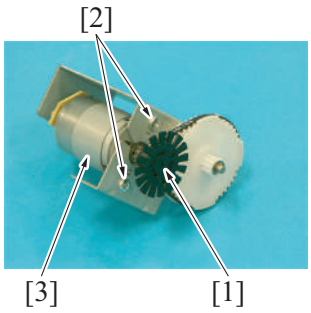
8. To reinstall, reverse the order of removal.

12.18 Bundle eject motor (M10) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the left cover.
   F.12.7 Left cover (FS-539/FS-539SD)



3. Disconnect the connector [1], and remove the harness from the wire saddle [2].
4. Remove two screws [3], and remove the bundle eject motor assy [4].

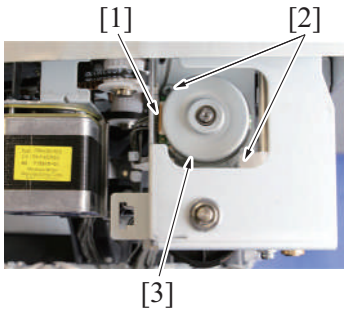


5. Remove the rotating disk [1].
6. Remove two screws [2], and remove the bundle eject motor [3].

7. To reinstall, reverse the order of removal.

12.19 Main tray up/down motor (M11) (FS-539/FS-539SD)

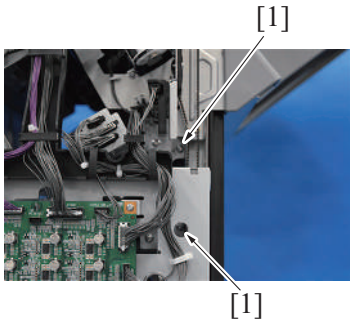
1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover.
   F.12.2 Rear cover (FS-539/FS-539SD)



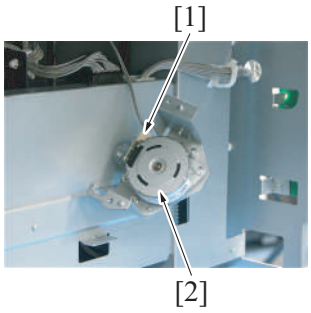
3. Disconnect the connector [1].
4. Remove two screws [2], and remove the main tray up/down motor [3].
5. To reinstall, reverse the order of removal.

12.20 Paper delivery control motor (M12) (FS-539/FS-539SD)

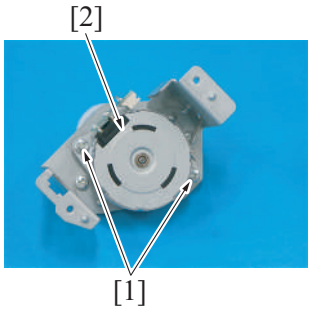
1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover.
   F.12.2 Rear cover (FS-539/FS-539SD)
3. When the saddle unit is attached, open the front door and pull out the saddle unit.



4. Remove two screws [1].



5. Disconnect the connector [1], and remove the paper delivery control motor assy [2].

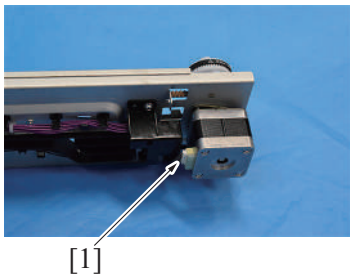


6. Remove two screws [1], and remove the paper delivery control motor [2].
7. To reinstall, reverse the order of removal.

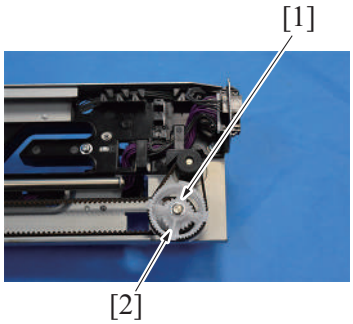
12.21 Stapler movement motor (M13) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the front door.
   F.12.3 Front door (FS-539/FS-539SD)
3. Remove the rear cover.
   F.12.2 Rear cover (FS-539/FS-539SD)
4. Remove the front upper cover.
   F.12.4 Front upper cover (FS-539/FS-539SD)
5. Remove the stapler unit.
   F.12.8 Stapler unit (FS-539/FS-539SD)

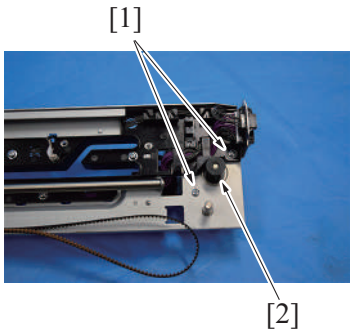
6. Disconnect the connector [1].



7. Remove the E-ring [1], and remove the pulley [2].



8. Remove two screws [1], and remove the stapler movement motor [2].



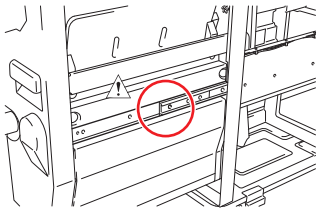
9. To reinstall, reverse the order of removal.

13. FS-539SD saddle section

13.1 Saddle unit (FS-539SD saddle section)

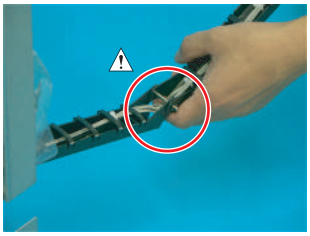
CAUTION

- Be careful not to catch your finger in the edge of the rail when mounting the saddle unit on the right rail for the saddle unit installation.

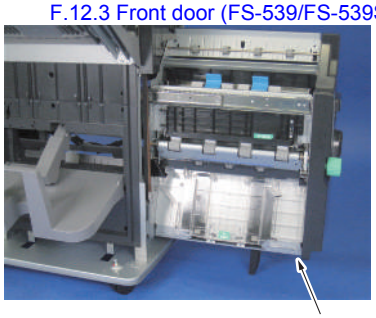


CAUTION

- Be careful not to jam your finger in the connecting section of the pantograph.



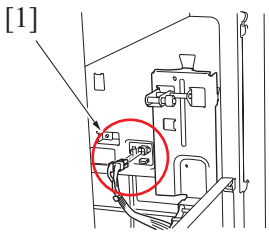
1. Remove the finisher.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the front door of the finisher.
   F.12.3 Front door (FS-539/FS-539SD)



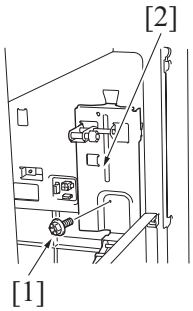
3. Pull out the saddle unit [1].
4. Remove the finisher left lower cover.
   F.12.5 Left lower cover (FS-539/FS-539SD)
5. Remove the finisher front upper cover.
   F.12.4 Front upper cover (FS-539/FS-539SD)
6. Remove the finisher front lower cover.

F.12.6 Front lower cover (FS-539/FS-539SD)

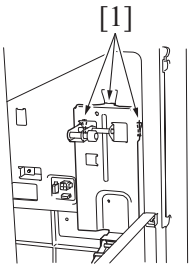
7. Disconnect two connectors [1].



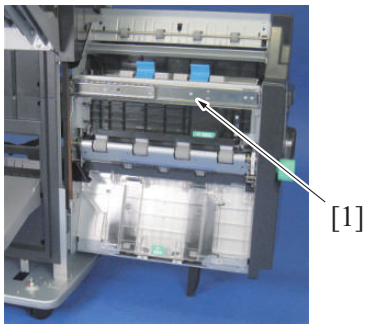
8. Remove the screw [1], and remove the pantograph [2].



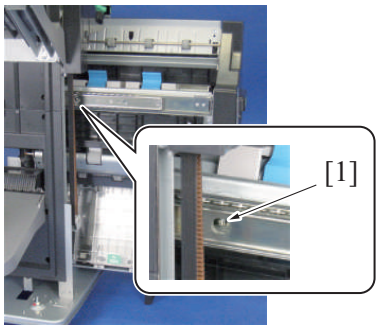
9. **NOTE**
   - **For installation of the pantograph, insert three hooks [1] on the pantograph of the saddle unit into the back holes inside the finisher.**

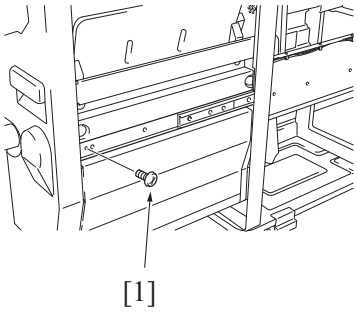


10. Remove the screw [1].

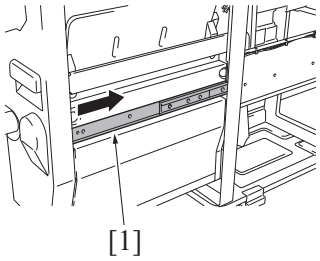


11. Push back the saddle unit into the position of the illustration, and then remove the screw [1].

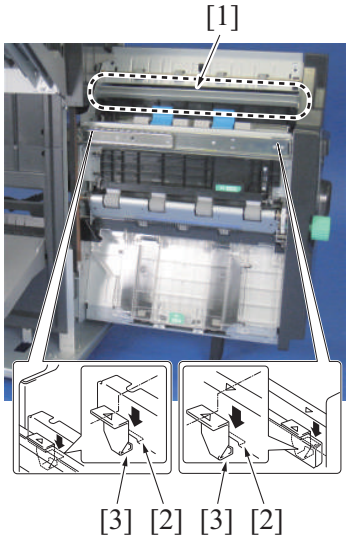




12. Pull out the saddle unit, and then remove the screw [1].



13. Insert the rail [1] on the right side into the finisher.

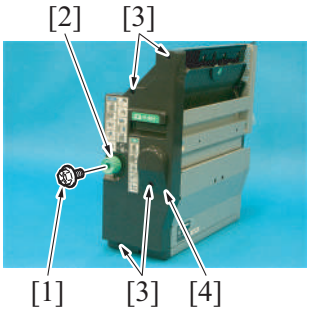


14. Grip the portion [1] as shown in the illustration to raise the saddle unit and take it out.
NOTE
- **For installation of the saddle unit, insert two hooks on the left rail [3] into the two holes of the saddle unit [2].**

15. To reinstall, reverse the order of removal.

13.2 Front cover (FS-539SD saddle section)

1. Remove the saddle unit.
F.13.1 Saddle unit (FS-539SD saddle section)

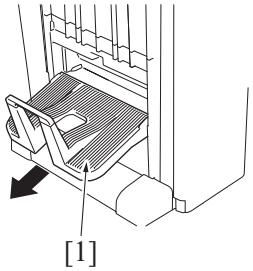


2. Remove the screw [1], and remove the jam clearing dial [2].
3. Remove four screws [3], and remove the front cover [4].
4. To reinstall, reverse the order of removal.

13.3 Exit tray (FS-539SD saddle section)



1. Remove the pin [1], and remove the exit lever [2].

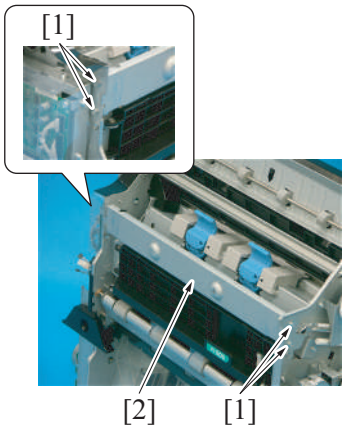


2. Remove the exit tray [1].

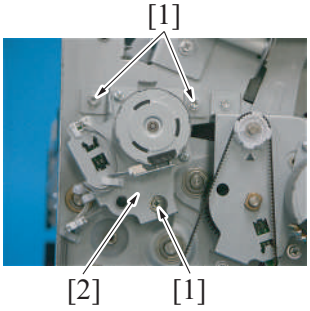
3. To reinstall, reverse the order of removal.

13.4 Stapler unit (FS-539SD saddle section)

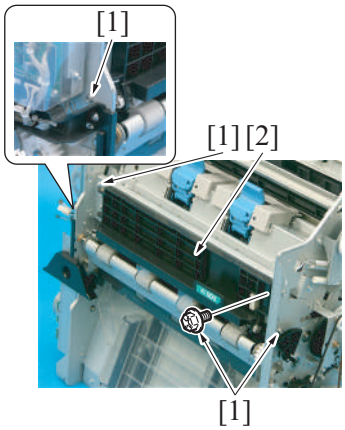
1. Remove the saddle unit.
   F.13.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.13.2 Front cover (FS-539SD saddle section)



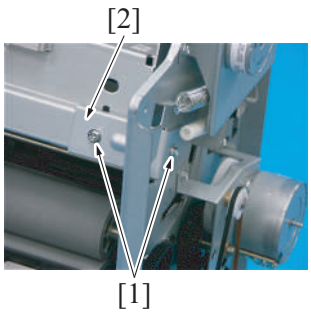
3. Remove four screws [1], and remove the plate [2].



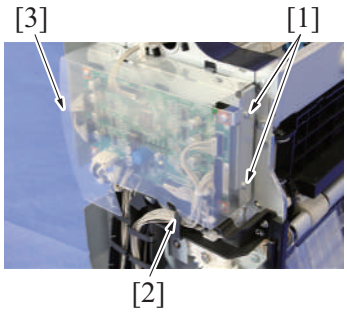
4. Remove three screws [1], and remove the tri-folding guide motor assy [2].



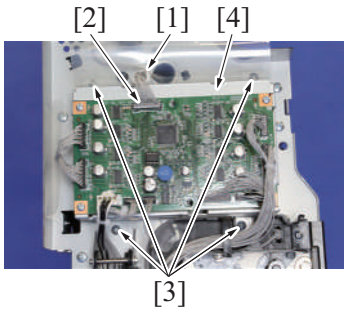
5. Remove four screws [1], and remove the transport assy [2].



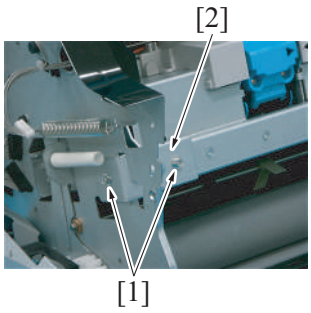
6. Remove two screws [1], and remove the plate [2].



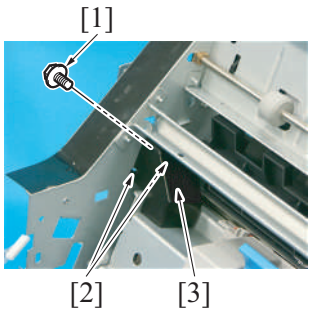
7. Remove two screws [1].
8. Detach the board support film [3] from the harness guide tab [2].



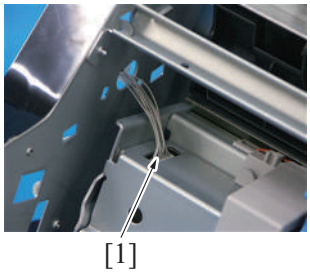
9. Remove the harness from the wire saddle [1].
10. Disconnect the connector [2].
11. Remove four screws [3], and remove the SD control board assy [4].



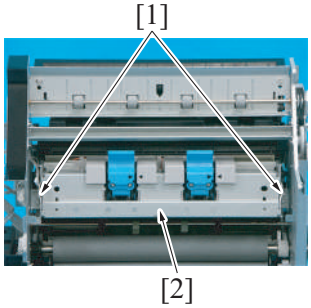
12. Remove two screws [1], and remove the plate [2].



13. Remove the screw [1].
14. Unhook two tabs [2], and remove the cover [3].



15. Disconnect the connector [1].

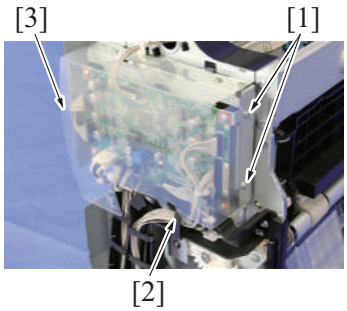


16. Remove two screws [1], and remove the stapler unit [2].

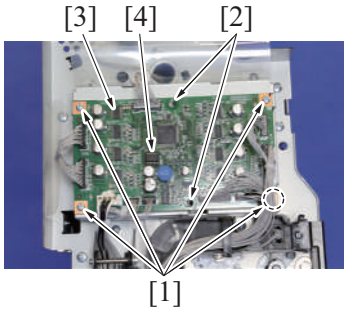
17. To reinstall, reverse the order of removal.

13.5 SD control board (SDCB) (FS-539SD saddle section)

1. Remove the saddle unit.
   F.13.1 Saddle unit (FS-539SD saddle section)



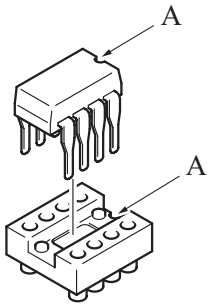
2. Remove two screws [1].
3. Remove the board support film [3] from the harness guide [2].



4. Disconnect all the connectors from the board.
5. Remove four screws [1].
6. Detach the SD control board [3] from two tabs [2].

NOTE

- **When the SD control board (SDCB) has been replaced, be sure to remount EEPROM (U3) [4].**
  Remove EEPROM (U3) [4] from the old SD control board and mount it on the new SD control board.

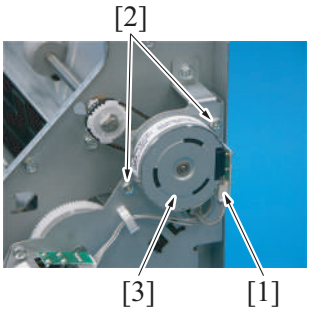


7. **NOTE**
   - **When mounting EEPROM (U3), align the notches (indicated by "A" in the illustration).**
8. To reinstall, reverse the order of removal.

NOTE
- **After replacing the SD control board, be sure to install the latest firmware.**

13.6 SD transport motor (M101) (FS-539SD saddle section)

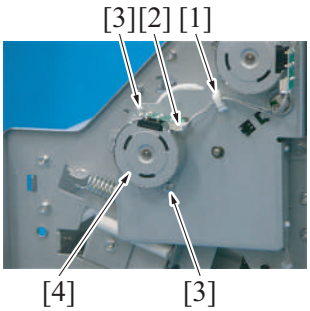
1. Remove the saddle unit.
   F.13.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.13.2 Front cover (FS-539SD saddle section)



3. Disconnect the connector [1].
4. Remove two screws [2], and remove the SD transport motor [3].
5. To reinstall, reverse the order of removal.

13.7 Paper discharge control motor (M102) (FS-539SD saddle section)

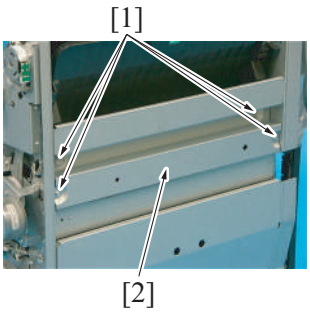
1. Remove the saddle unit.
   F.13.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.13.2 Front cover (FS-539SD saddle section)



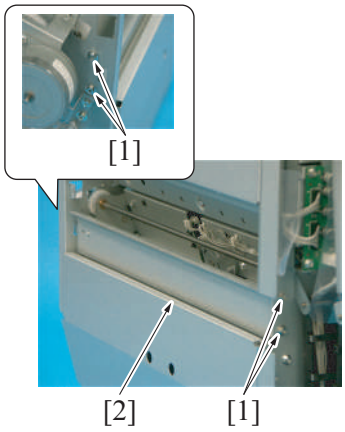
3. Remove the harness from the wire saddle [1], and disconnect the connector [2].
4. Remove two screws [3], and remove the paper discharge control motor [4].
5. To reinstall, reverse the order of removal.

13.8 Alignment motor (M103) (FS-539SD saddle section)

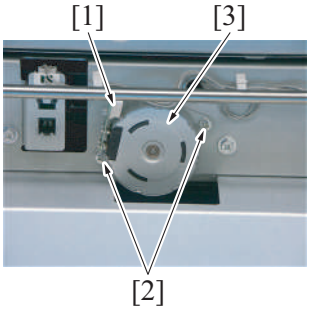
1. Remove the saddle unit.
   F.13.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.13.2 Front cover (FS-539SD saddle section)



3. Remove four screws [1], and remove the plate [2].



4. Remove four screws [1], and remove the plate [2].

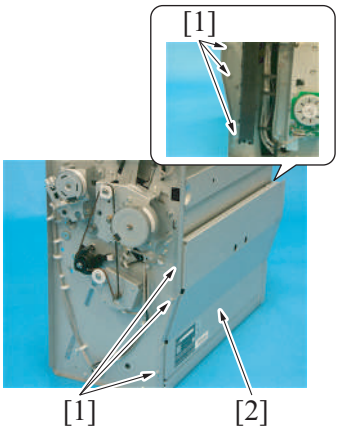


5. Disconnect the connector [1].
6. Remove two screws [2], and remove the alignment motor [3].

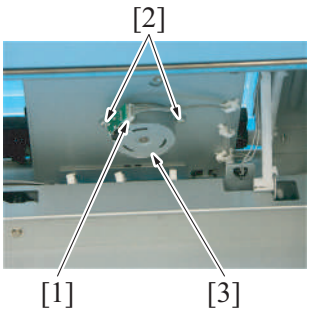
7. To reinstall, reverse the order of removal.

13.9 Stopper drive motor (M104) (FS-539SD saddle section)

1. Remove the saddle unit.
   F.13.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.13.2 Front cover (FS-539SD saddle section)



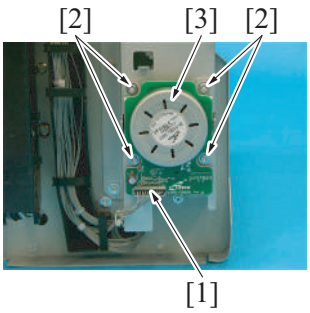
3. Remove six screws [1], and remove the plate [2].



4. Disconnect the connector [1].
5. Remove two screws [2], and remove the stopper drive motor [3].
6. To reinstall, reverse the order of removal.

13.10 Center fold roller motor (M105) (FS-539SD saddle section)

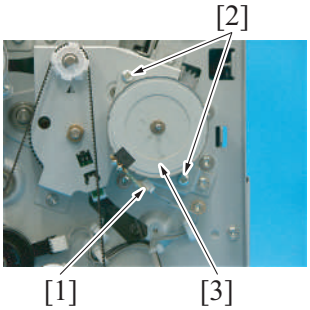
1. Remove the saddle unit.
   F.13.1 Saddle unit (FS-539SD saddle section)



2. Disconnect the connector [1].
3. Remove four screws [2], and remove the center fold roller motor [3].
4. To reinstall, reverse the order of removal.

13.11 Center fold guide motor (M106) (FS-539SD saddle section)

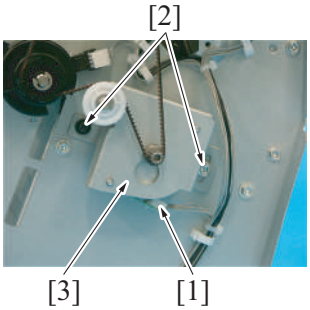
1. Remove the saddle unit.
   F.13.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.13.2 Front cover (FS-539SD saddle section)



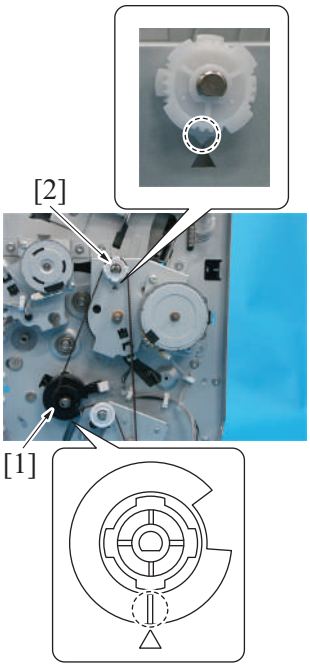
3. Disconnect the connector [1].
4. Remove two screws [2], and remove the center fold guide motor [3].
5. To reinstall, reverse the order of removal.

13.12 SD paddle motor (M107) (FS-539SD saddle section)

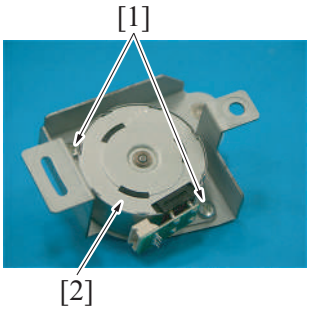
1. Remove the saddle unit.
   F.13.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.13.2 Front cover (FS-539SD saddle section)



3. Disconnect the connector [1].
4. Remove two screws [2], and remove the SD paddle motor assy [3].



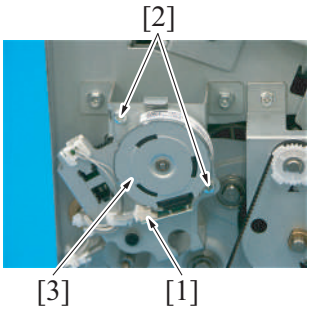
5. **NOTE**
   - **When reinstalling the belt, align the portions of the gear [1] and the gear [2] indicated in the illustration with the triangular marking on the metal plate. Then, install the belt.**



6. Remove two screws [1], and remove the SD paddle motor [2].
7. To reinstall, reverse the order of removal.

13.13 Tri-folding guide motor (M108) (FS-539SD saddle section)

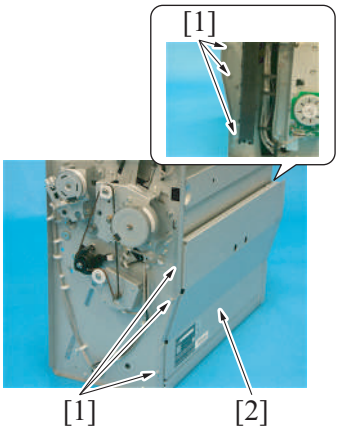
1. Remove the saddle unit.
   F.13.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.13.2 Front cover (FS-539SD saddle section)



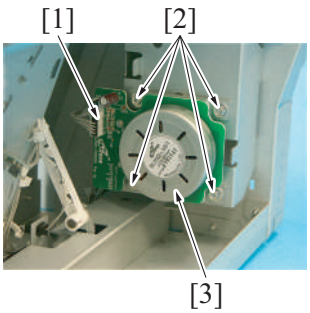
3. Disconnect the connector [1].
4. Remove two screws [2], and remove the tri-folding guide motor [3].
5. To reinstall, reverse the order of removal.

13.14 Center fold knife motor (M109) (FS-539SD saddle section)

1. Remove the saddle unit.
   F.13.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.13.2 Front cover (FS-539SD saddle section)



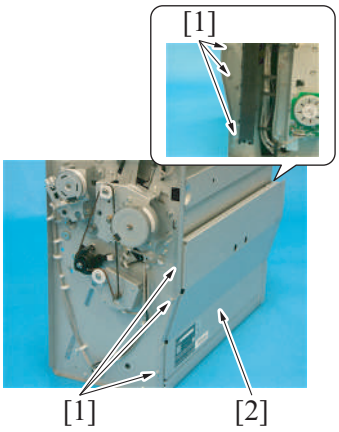
3. Remove six screws [1], and remove the plate [2].



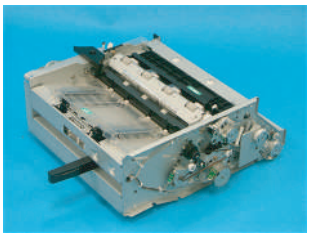
4. Disconnect the connector [1].
5. Remove four screws [2], and remove the center fold knife motor [3].
6. To reinstall, reverse the order of removal.

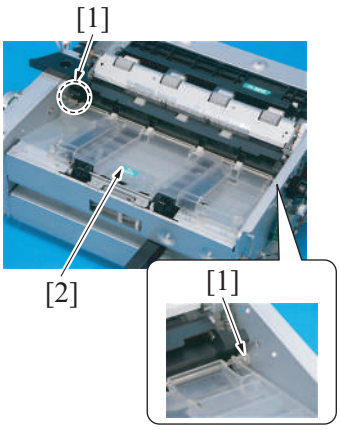
13.15 Stopper solenoid (SD101) (FS-539SD saddle section)

1. Remove the saddle unit.
   F.13.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.13.2 Front cover (FS-539SD saddle section)

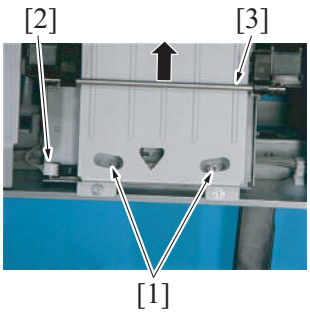


3. Remove six screws [1], and remove the plate [2].
4. Place the saddle unit as shown in the illustration.



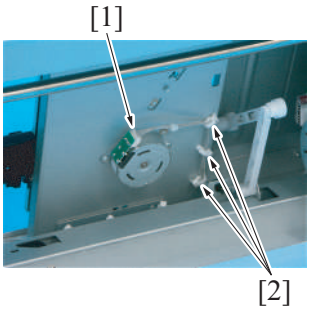


5. Remove two stoppers [1], and remove the guide plate [2].

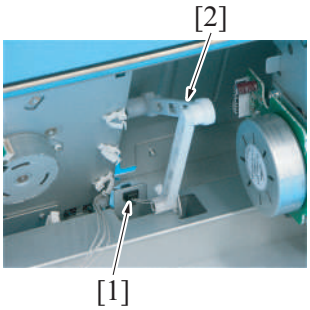


6. Slide the lever unit [3] upward.
7. Remove two screws [1] and disconnect the connector [2].

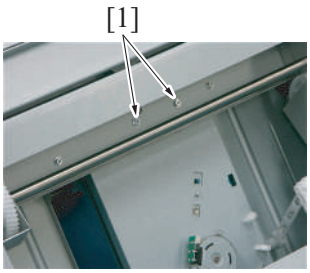
8. Raise the saddle unit.



9. Disconnect the connector [1], and remove the harness from three wire saddles [2].

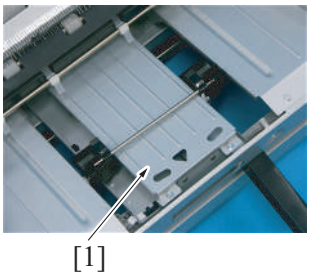


10. Disconnect the connector [1], and remove the drive lever [2].

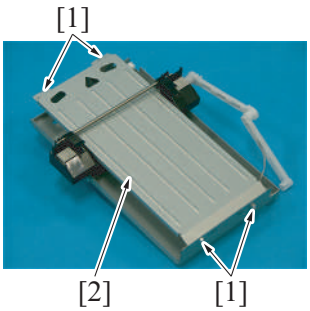


11. Remove two screws [1].

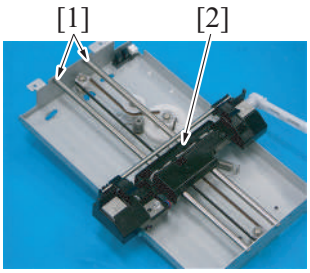
12. Remove the guide plate assy [1].
NOTE
- **When installing the guide plate assy, perform mechanical adjustment.**
G.9.1 Half-fold skew adjustment



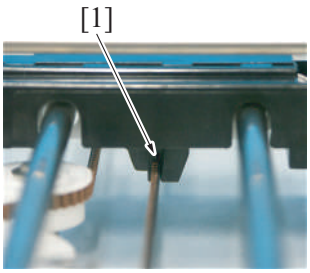
13. Remove four screws [1], and remove the plate [2].



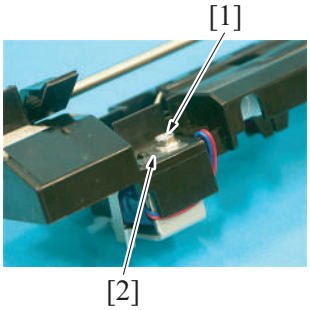
14. Remove two E-rings [1], and remove the stopper guide [2].

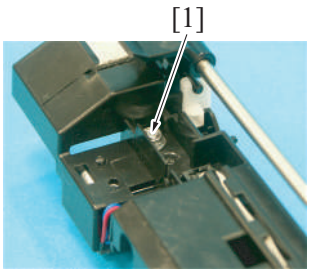


15. **NOTE**
- **When installing the stopper guide, fit the belt into the stopper guide groove [1].**

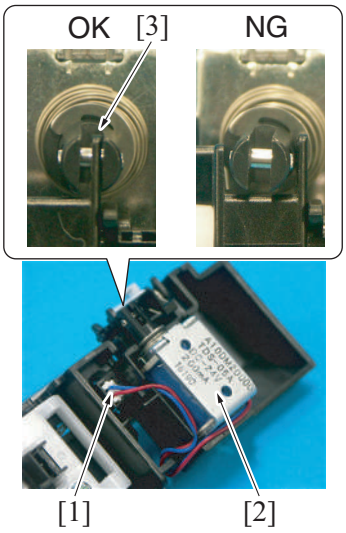


16. Remove the screw [1], and remove the plate [2].





17. Remove the screw [1].



18. Disconnect the connector [1], and remove the stopper solenoid [2].

NOTE

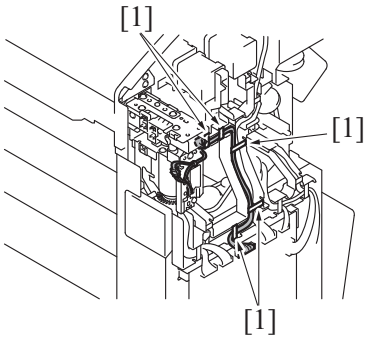
- **When installing the stopper solenoid, fit its tip into the place [3] shown in the illustration.**

19. To reinstall, reverse the order of removal.

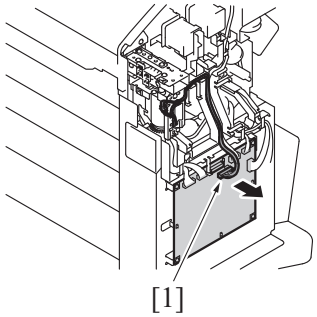
14. PK-524

14.1 Punch Kit (PK-524)

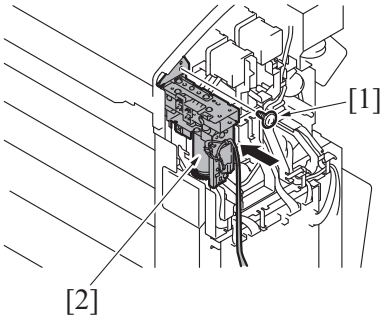
1. Remove the finisher from the main body.
   F.12.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover of the finisher.
   F.12.2 Rear cover (FS-539/FS-539SD)



3. Remove the harness from five wire saddles [1].



4. Disconnect the connector [1].

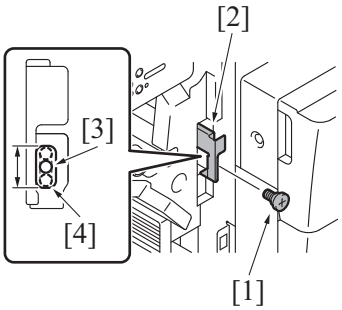


5. Remove the screw [1], and remove the punch kit [2].
6. To reinstall, reverse the order of removal.

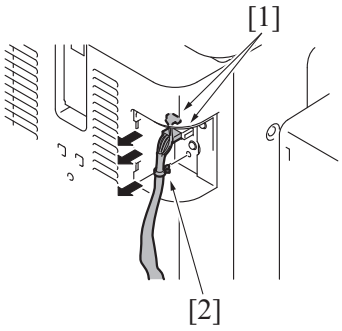
15. FS-540/FS-540SD

15.1 Finisher (FS-540/FS-540SD)

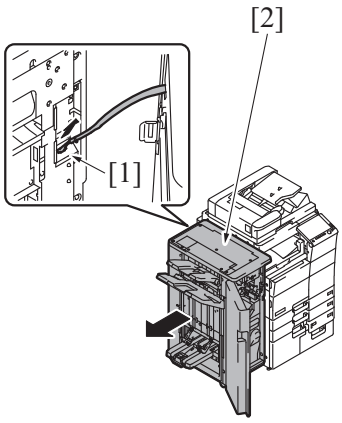
1. Open the front door of the finisher.



2. Remove the screw [1], and pull out the lever [2].
NOTE
- **When installing the finisher, make sure that the screw hole [3] locates within the scope of the mounting hole of the lever [4].**



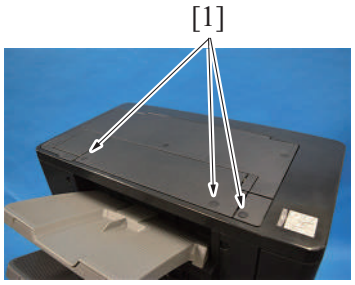
3. Disconnect two connectors [1], and pull out the insertion part of the cable tie [2].



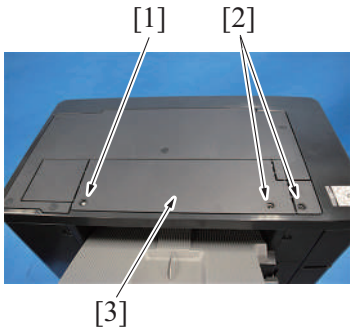
4. Disconnect the connector [1], and remove the finisher [2] from the main body.

5. To reinstall, reverse the order of removal.

15.2 Upper cover/1 (FS-540/FS-540SD)



1. Remove three caps [1].

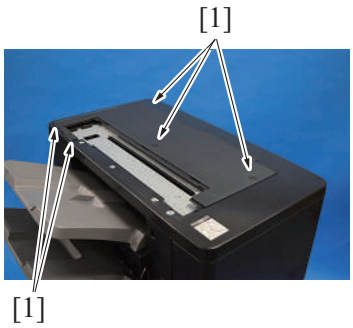


2. Remove the screw [1] and two screws [2], and remove the upper cover/1 [3].
NOTE
- **When installing the screws, be careful not to attach them incorrect, since the screw [1] and the screw [2] are of different types.**

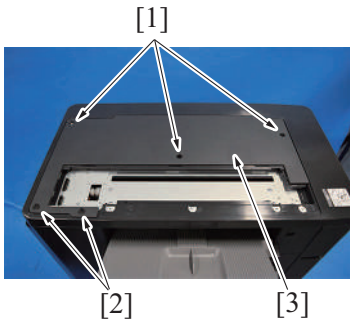
3. To reinstall, reverse the order of removal.

15.3 Upper cover/2 (FS-540/FS-540SD)

1. Remove the upper cover/1.
F.15.2 Upper cover/1 (FS-540/FS-540SD)



2. Remove five caps [1].

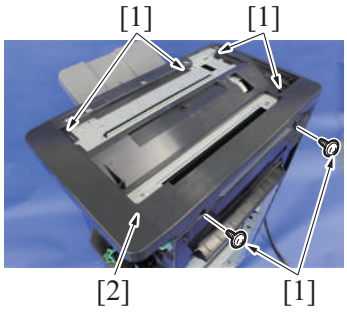


3. Remove three screws [1] and two screws [2], and remove the upper cover/2 [3].
NOTE
- **When installing the screws, be careful not to attach them incorrect, since the screw [1] and the screw [2] are of different types.**

4. To reinstall, reverse the order of removal.

15.4 Upper cover/3 (FS-540/FS-540SD)

1. Remove the upper cover/1.
F.15.2 Upper cover/1 (FS-540/FS-540SD)
2. Remove the upper cover/2.
F.15.3 Upper cover/2 (FS-540/FS-540SD)

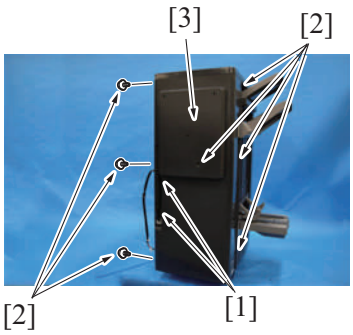


3. Remove six screws [1], and remove the upper cover/3 [2].

4. Reinstall the above parts following the removal steps in reverse.

15.5 Rear cover (FS-540/FS-540SD)

1. Remove the finisher from the main body.
F.15.1 Finisher (FS-540/FS-540SD)

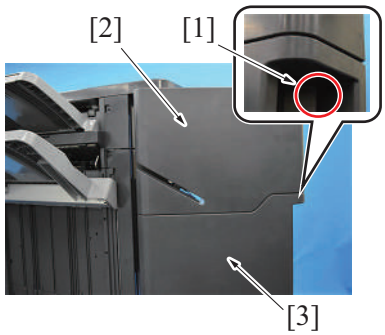


2. Remove the cable located behind the finisher from two wire saddles [1].
3. Remove seven screws [2], and remove the rear cover [3].

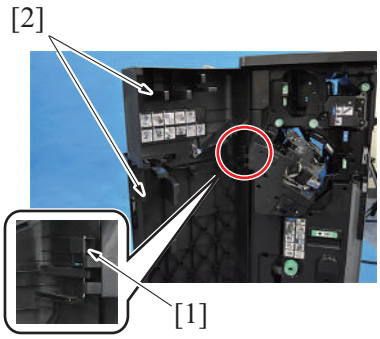
4. To reinstall, reverse the order of removal.

15.6 Front door (FS-540/FS-540SD)

1. Open the front door.



2. While holding down the lock [1], divide the door into the upper part [2] and lower part [3].

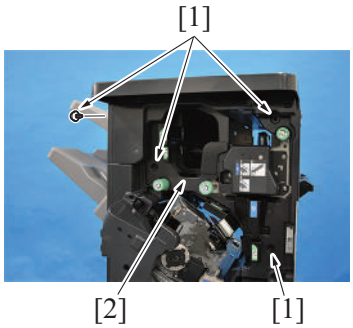


3. Remove the stopper [1], and remove the front door (upper part and lower part) [2].

4. To reinstall, reverse the order of removal.

15.7 Front upper cover (FS-540/FS-540SD)

1. Remove the front door.
F.15.6 Front door (FS-540/FS-540SD)

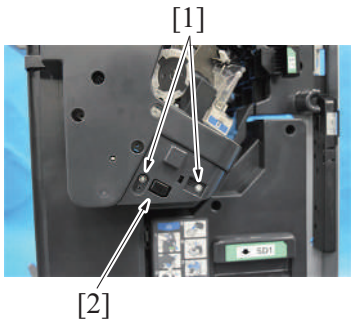


2. Remove four screws [1], and remove the front upper cover [2] while sliding the guide lever (FS4 to FS8). When the punch kit is installed, be sure to remove the cover after removing the punch-hole scraps box.

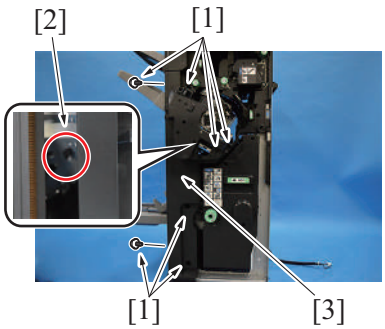
3. To reinstall, reverse the order of removal.

15.8 Front lower cover (FS-540/FS-540SD)

1. Remove the front door.
F.15.6 Front door (FS-540/FS-540SD)



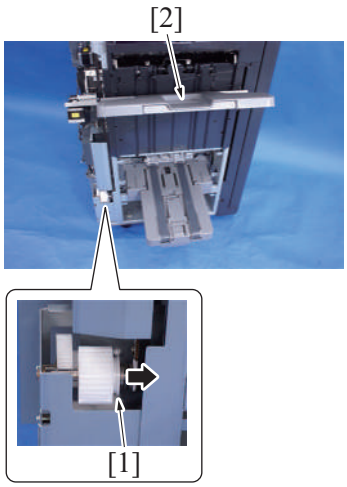
2. Remove two screws [1], and remove the stapler lock cover [2].



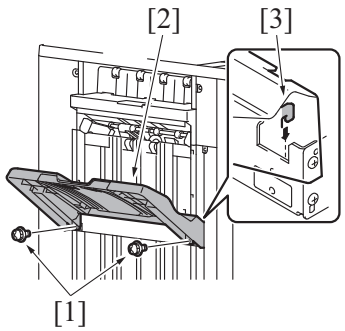
3. Remove seven screws [1], and disconnect the connector [2] located behind the front lower cover.
4. Remove the front lower cover [3].
5. To reinstall, reverse the order of removal.

15.9 Main tray (under the paper exit tray) (FS-540/FS-540SD)

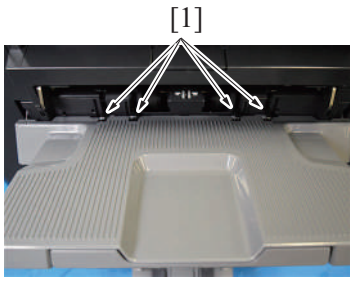
1. Remove the rear cover.
F.15.5 Rear cover (FS-540/FS-540SD)



2. Hold the main tray [2] by your hands, slide the gear coupling [1] to the right, and slightly lower the main tray [2].



3. Remove two screws [1], and remove the main tray [2].
NOTE
- **When installing the main tray, be sure to hang the hooks [3] of the main tray on the two concave parts of the finisher, then fix it.**



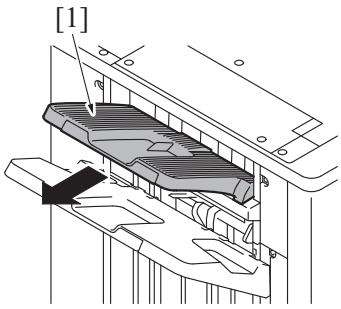
4. **NOTE**
   - **When installing the main tray, make sure that the paper surface detect lever is located above the tray.**

5. To reinstall, reverse the order of removal.

⚠CAUTION

- Note that when sliding the coupling, the main tray may suddenly fall down. Be sure to hold it by your hands.

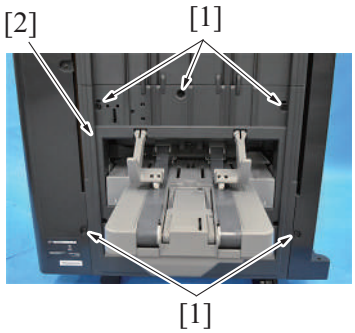
15.10 Sub tray (over the paper exit tray) (FS-540/FS-540SD)



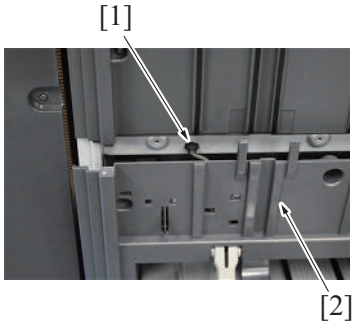
1. Remove the sub tray [1].

2. Reinstall the above parts following the removal steps in reverse.

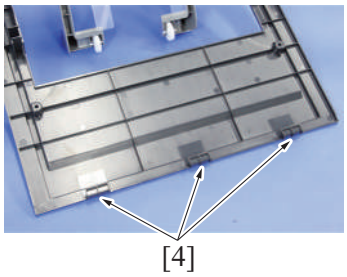
15.11 Left lower cover (FS-540/FS-540SD)



1. Remove five screws [1], and slide the left lower cover [2] downward.



2. Disconnect the connector [1], and remove the left lower cover [2].

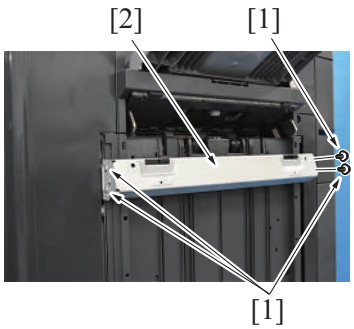


3. **NOTE**
   - **When installing the cover, be sure to hook the three tabs [4] of the left lower cover on the finisher plate.**

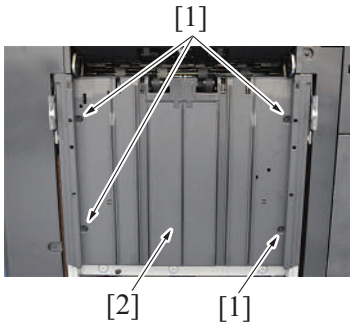
4. To reinstall, reverse the order of removal.

15.12 Left upper cover (FS-540/FS-540SD)

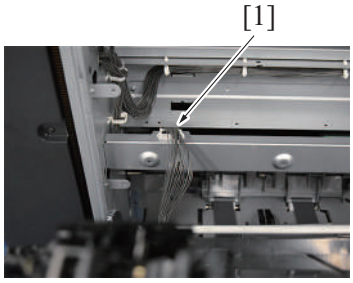
1. Remove the left lower cover.
   F.15.11 Left lower cover (FS-540/FS-540SD)
2. Remove the main tray.
   F.15.9 Main tray (under the paper exit tray) (FS-540/FS-540SD)



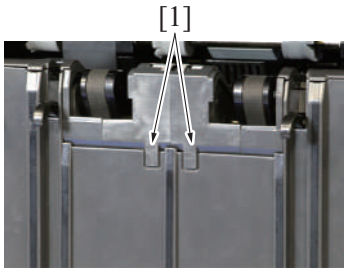
3. Remove four screws [1], and remove the plate [2].



4. Remove four screws [1], and remove the left upper cover [2].



5. Disconnect the connector [1] located behind the left upper cover.

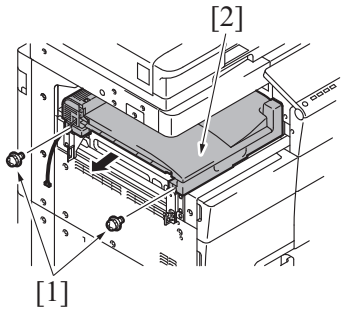


6. **NOTE**
   - **When installing the cover, be sure to mount the top part of the left upper cover on the two inner tabs [1] of the finisher.**

7. To reinstall, reverse the order of removal.

15.13 Horizontal transport unit (FS-540/FS-540SD)

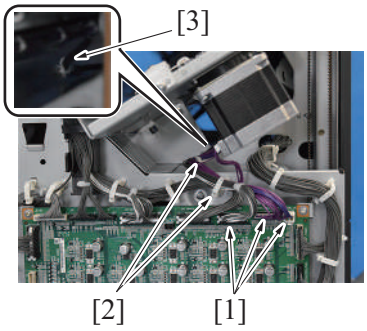
1. Remove the finisher from the main body.
   F.15.1 Finisher (FS-540/FS-540SD)



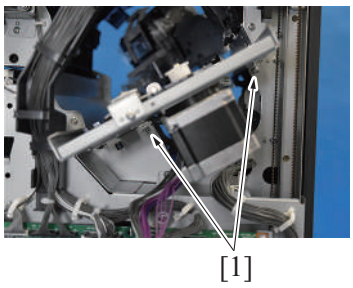
2. Remove two screws [1], and remove the horizontal transport unit [2].
3. To reinstall, reverse the order of removal.

15.14 Stapler unit (FS-540/FS-540SD)

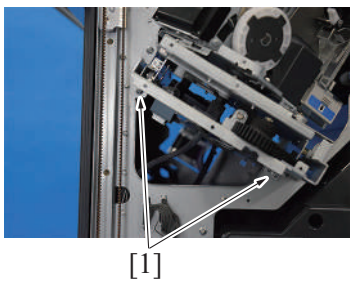
1. Remove the rear cover.
   F.15.5 Rear cover (FS-540/FS-540SD)
2. Remove the front door.
   F.15.6 Front door (FS-540/FS-540SD)
3. Remove the front lower cover.
   F.15.8 Front lower cover (FS-540/FS-540SD)



4. Disconnect three connectors [1], and remove the harness from two wire saddles [2].
5. Remove the harness from the wire saddle [3] located under the stapler unit.

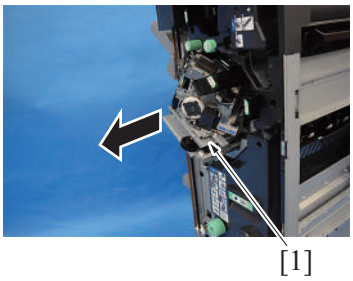


6. Remove two screws [1] from the back of the finisher.

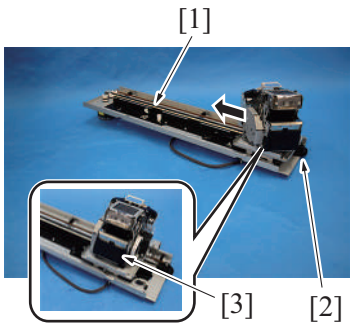


7. Remove two screws [1] from the front of the finisher.

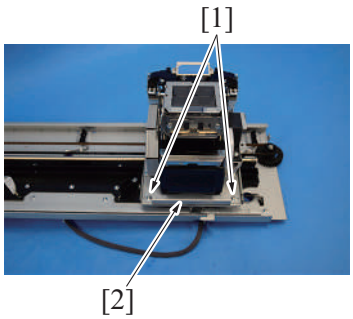
8. Remove the stapler assy [1] from the finisher.
NOTE
- **While removing the stapler assy [1], be careful not to hit the stapler against the finisher frame.**



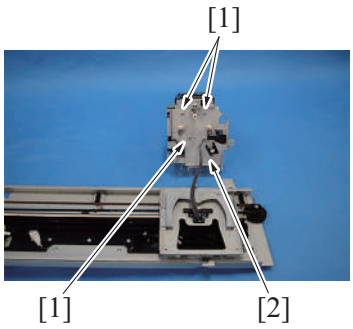
9. Put the stapler assy [1] on a stable workbench.
10. Rotate the stapler transfer dial [2] and move the stapler unit to the position [3] where it becomes parallel.



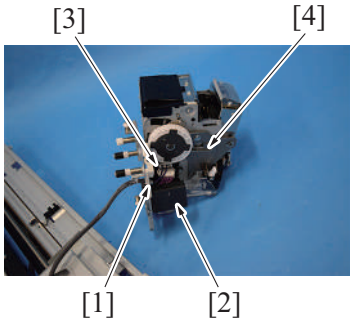
11. Remove two screws [1], and remove the plate [2].
12. Remove the stapler assy.



13. Remove three screws [1], and remove the plate [2].



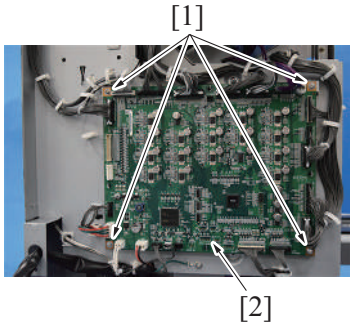
14. Remove the screw [1], and remove the connector protective cover [2].
15. Disconnect two connectors [3], and remove the stamp unit [4].



16. To reinstall, reverse the order of removal.

15.15 FS control board (FSCB) (FS-540/FS-540SD)

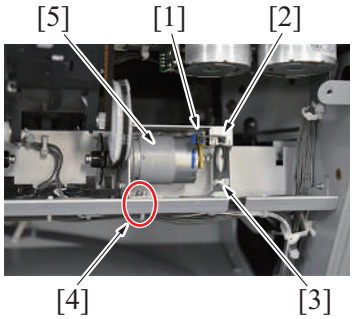
1. Remove the rear cover.
F.15.5 Rear cover (FS-540/FS-540SD)



2. Disconnect all connectors from the FS control board.
3. Remove four screws [1], and remove the FS control board [2].
4. To reinstall, reverse the order of removal.

15.16 Bundle eject motor (M1) (FS-540/FS-540SD)

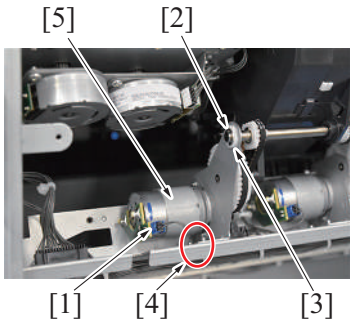
1. Remove the left lower cover.
   F.15.11 Left lower cover (FS-540/FS-540SD)
2. Remove the left upper cover.
   F.15.12 Left upper cover (FS-540/FS-540SD)



3. Disconnect the connector [1], and remove the harness from the edge cover [2] and wire saddle [3].
4. Remove two screws [4], and remove the bundle eject motor [5].
5. To reinstall, reverse the order of removal.

15.17 Pre-eject drive motor (M2) (FS-540/FS-540SD)

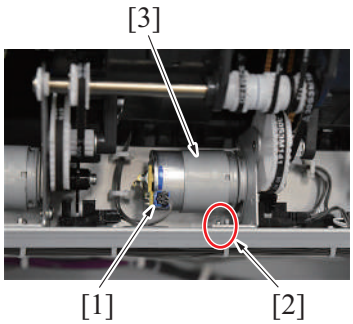
1. Remove the left lower cover.
   F.15.11 Left lower cover (FS-540/FS-540SD)
2. Remove the left upper cover.
   F.15.12 Left upper cover (FS-540/FS-540SD)



3. Disconnect the connector [1].
4. Remove the E-ring [2] and bushing [3].
5. Remove two screws [4], and remove the pre-eject drive motor [5].
6. To reinstall, reverse the order of removal.

15.18 Stacker plate drive motor (M3) (FS-540/FS-540SD)

1. Remove the left lower cover.
   F.15.11 Left lower cover (FS-540/FS-540SD)
2. Remove the left upper cover.
   F.15.12 Left upper cover (FS-540/FS-540SD)

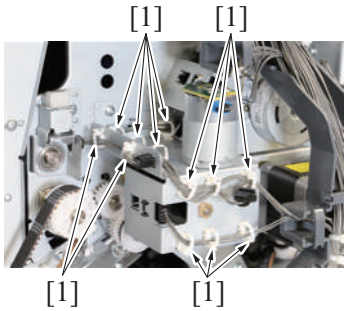


3. Disconnect the connector [1].
4. Remove two screws [2], and remove the stacker plate drive motor [3].

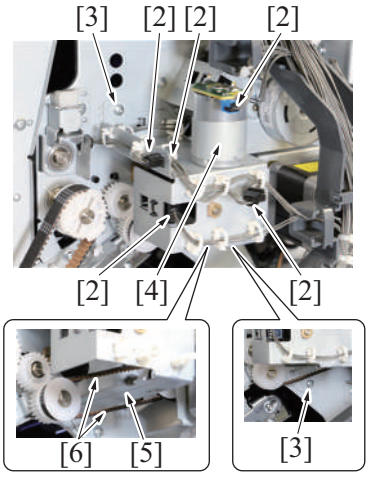
5. To reinstall, reverse the order of removal.

15.19 Route change gate motor (M4) (FS-540/FS-540SD)

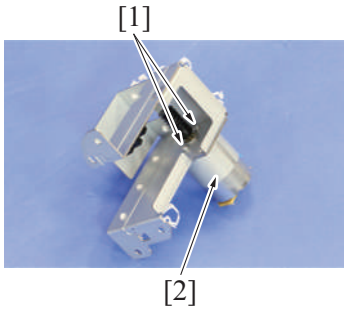
1. Remove the rear cover.
F.15.5 Rear cover (FS-540/FS-540SD)



2. Remove the harness from 12 wire saddles [1].
3. Disconnect five connectors [2].
4. Remove two screws [3] and remove the route change gate motor assy [4].
NOTE
- **During installation, you must pass the metal plate [5] between the belt [6].**



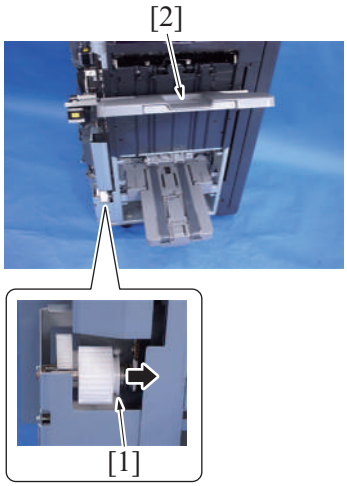
5. Remove two screws [1] and remove the route change gate motor [2].



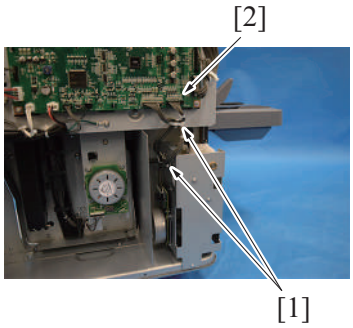
6. Reinstall the above parts following the removal steps in reverse.

15.20 Main tray up/down motor (M6) (FS-540/FS-540SD)

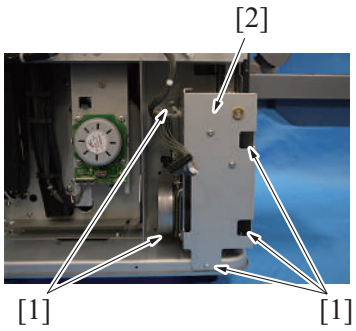
1. Remove the rear cover.
F.15.5 Rear cover (FS-540/FS-540SD)



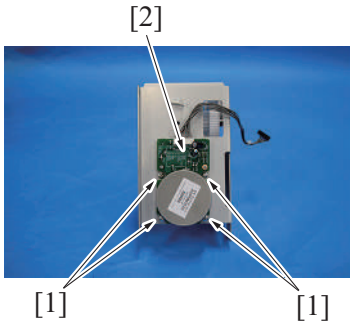
2. Hold the main tray [2] by your hands, slide the gear coupling [1] to the right, and lower the main tray [2] to the lowest level.



3. Remove the harness from two wire saddles [1], and disconnect the connector [2].



4. Remove five screws [1], and remove the main tray up/down motor assy [2].



5. Remove four screws [1], and remove the main tray up/down motor [2].

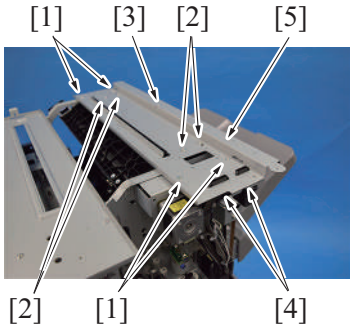
6. To reinstall, reverse the order of removal.

⚠CAUTION

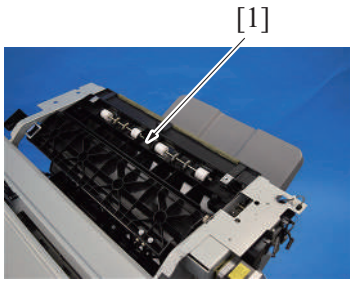
- Note that when sliding the coupling, the main tray may suddenly fall down. Be sure to hold it by your hands.

15.21 Paddle up/down motor (M7)/arm drive motor (M8)/FNS paddle motor (M9) (FS-540/FS-540SD)

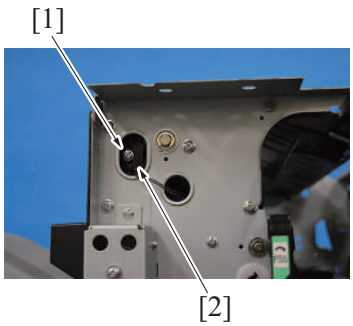
1. Remove the rear cover.
   F.15.5 Rear cover (FS-540/FS-540SD)
2. Remove the upper cover/1.
   F.15.2 Upper cover/1 (FS-540/FS-540SD)
3. Remove the upper cover/2.
   F.15.3 Upper cover/2 (FS-540/FS-540SD)
4. Remove the upper cover/3.
   F.15.4 Upper cover/3 (FS-540/FS-540SD)
5. Remove the front door.
   F.15.6 Front door (FS-540/FS-540SD)
6. Remove the front lower cover.
   F.15.8 Front lower cover (FS-540/FS-540SD)
7. Remove the front upper cover.
   F.15.7 Front upper cover (FS-540/FS-540SD)
8. Remove the sub tray (paper exit upper tray).
   F.15.10 Sub tray (over the paper exit tray) (FS-540/FS-540SD)



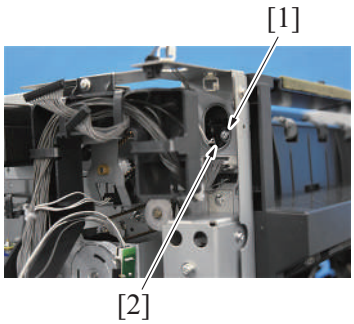
9. Remove four screws [1], four screws [2] and the screw [3], disconnect two connectors [4], and remove the metal plate [5].
NOTE
- **When installing the screws, be careful not to attach them incorrect, since the screw [1], screw [2] and the screw [3] are of different types.**



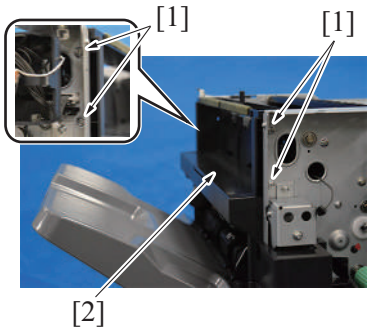
10. Remove the transfer roller unit [1].



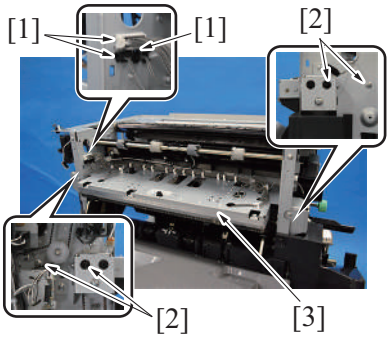
11. Remove the screw [1], and remove the sub tray full sensor/in (PS41) [2].



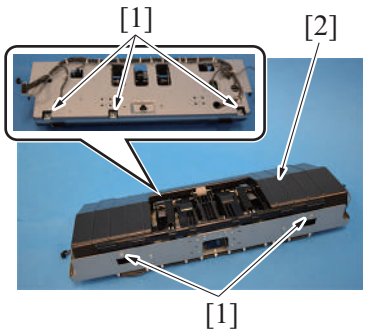
12. Remove the screw [1], and remove the sub tray full sensor/out (PS39) [2].



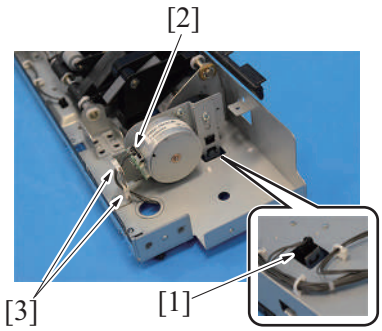
13. Remove four screws [1], and remove the cover [2].



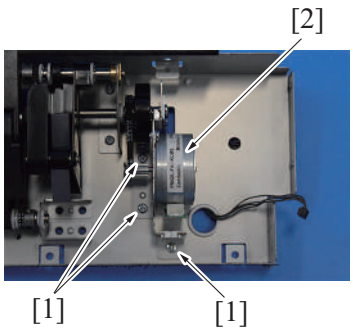
14. Disconnect three connectors [1], remove four screws [2], and remove the upper paddle unit [3].



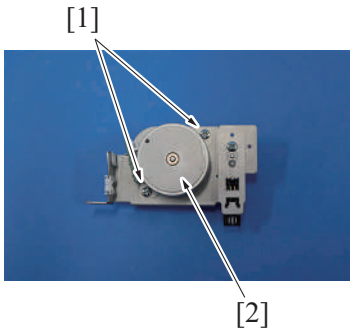
15. Remove five screws [1], and remove the cover [2].



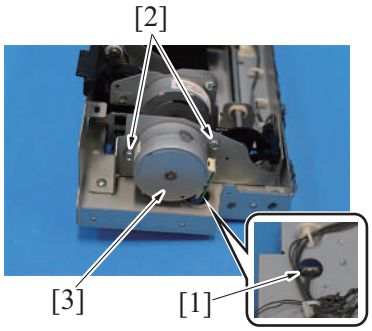
16. Disconnect the connector [1].
17. Disconnect the connector [2], and remove the harness from two edge covers [3].



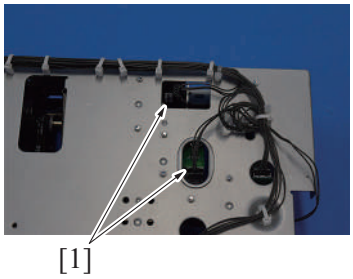
18. Remove three screws [1], and remove the paddle up/down motor assy [2].



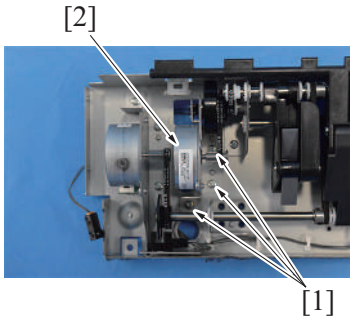
19. Remove two screws [1], and remove the paddle up/down motor [2].



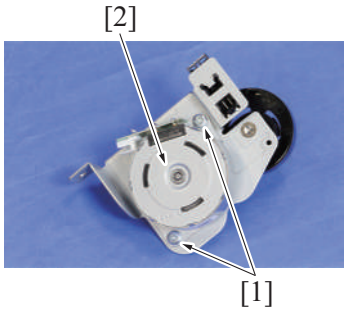
20. Disconnect the connector [1].
21. Remove two screws [2], and remove the arm drive motor [3].



22. Disconnect two connectors [1].



23. Remove three screws [1], and remove the FNS paddle motor assy [2].

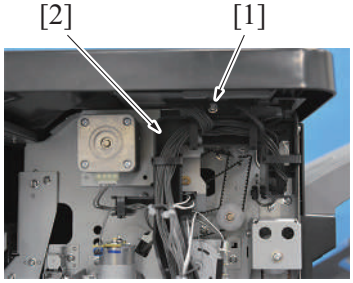


24. Remove two screws [1], and remove the FNS paddle motor [2].

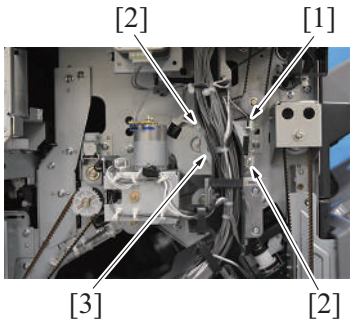
25. To reinstall, reverse the order of removal.

15.22 Receiving roller retraction motor (M10) (FS-540/FS-540SD)

1. Remove the rear cover.
F.15.5 Rear cover (FS-540/FS-540SD)



2. Remove the screw [1], and loosen the harness guide [2].

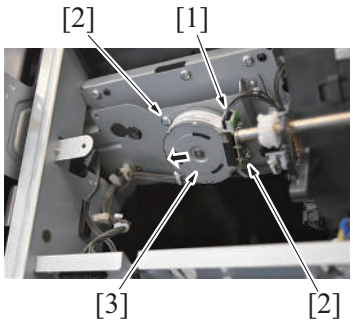


3. Disconnect the connector [1], remove two screws [2], and remove the receiving roller retraction motor [3].

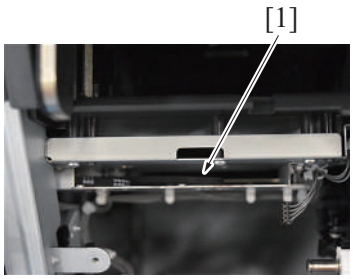
4. To reinstall, reverse the order of removal.

15.23 Trailing edge stopper motor/Rr (M11) (FS-540/FS-540SD)

1. Remove the left lower cover.
   F.15.11 Left lower cover (FS-540/FS-540SD)
2. Remove the left upper cover.
   F.15.12 Left upper cover (FS-540/FS-540SD)
3. Remove the alignment motor/Rr.
   F.15.25 Alignment motor/Rr (M13) (FS-540/FS-540SD)
4. Remove the pre-eject drive motor.
   F.15.17 Pre-eject drive motor (M2) (FS-540/FS-540SD)



5. Disconnect the connector [1], remove two screws [2], and remove the trailing edge stopper motor/Rr [3].

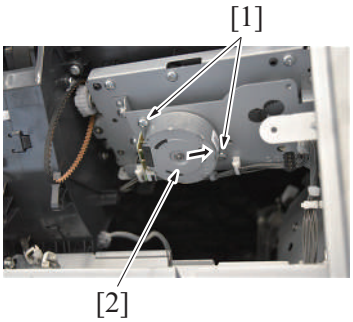


6. **NOTE**
   - **When installing the motor, place the belt [1] on the gear.**

7. To reinstall, reverse the order of removal.

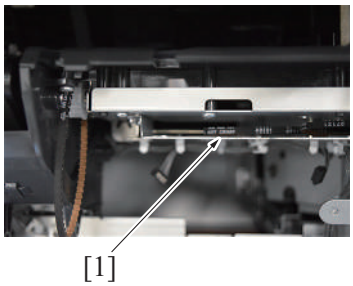
15.24 Trailing edge stopper motor/Fr (M12) (FS-540/FS-540SD)

1. Remove the left lower cover.
   F.15.11 Left lower cover (FS-540/FS-540SD)
2. Remove the left upper cover.
   F.15.12 Left upper cover (FS-540/FS-540SD)
3. Remove the alignment motor/Fr.
   F.15.26 Alignment motor/Fr (M14) (FS-540/FS-540SD)
4. Remove the bundle eject motor.
   F.15.16 Bundle eject motor (M1) (FS-540/FS-540SD)

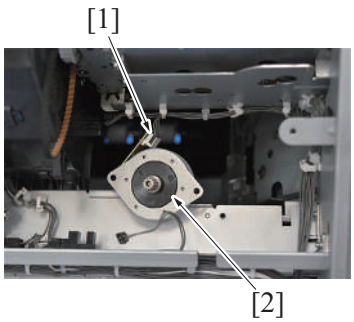


5. Remove two screws [1], and remove the trailing edge stopper motor/Fr [2].

6. **NOTE**
   - **When installing the motor, place the belt [1] on the gear.**



7. Disconnect the connector [1], and remove the trailing edge stopper motor/Fr [2].

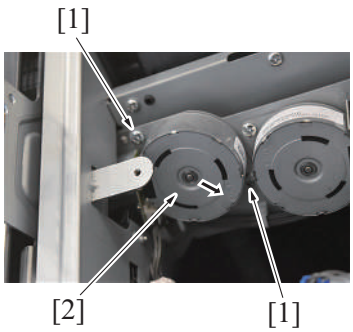


8. To reinstall, reverse the order of removal.

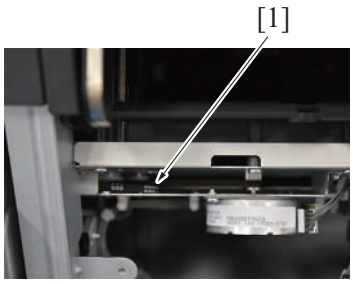
15.25 Alignment motor/Rr (M13) (FS-540/FS-540SD)

1. Remove the left lower cover.
   F.15.11 Left lower cover (FS-540/FS-540SD)
2. Remove the left upper cover.
   F.15.12 Left upper cover (FS-540/FS-540SD)

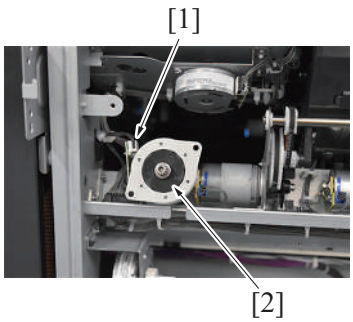
3. Remove two screws [1] and remove the alignment motor/Rr [2].



4. **NOTE**
   - **When installing the motor, place the belt [1] on the gear.**



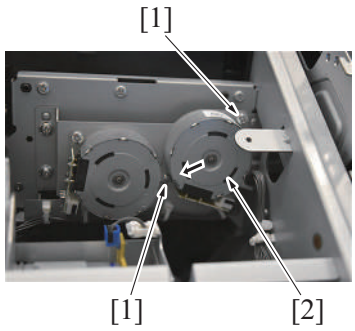
5. Disconnect the connector [1], and remove the alignment motor/Rr [2].



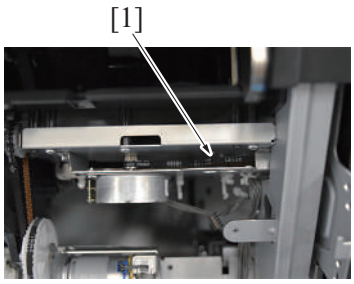
6. To reinstall, reverse the order of removal.

15.26 Alignment motor/Fr (M14) (FS-540/FS-540SD)

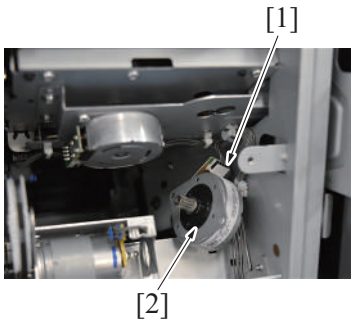
1. Remove the left lower cover.
   F.15.11 Left lower cover (FS-540/FS-540SD)
2. Remove the left upper cover.
   F.15.12 Left upper cover (FS-540/FS-540SD)



3. Remove two screws [1] and remove the alignment motor/Fr [2].



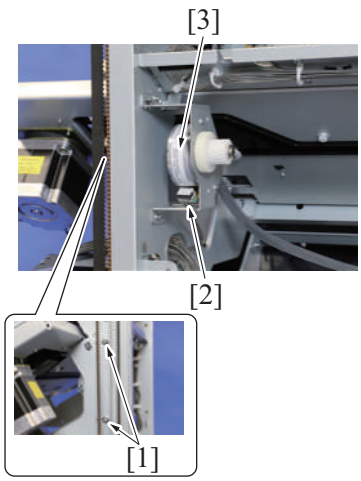
4. **NOTE**
   - **When installing the motor, place the belt [1] on the gear.**



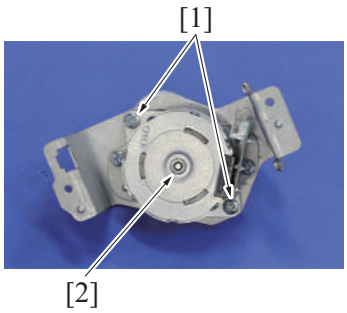
5. Disconnect the connector [1], and remove the alignment motor/Fr [2].
6. To reinstall, reverse the order of removal.

15.27 Paper delivery control motor (M15) (FS-540/FS-540SD)

1. Remove the rear cover.
   F.15.5 Rear cover (FS-540/FS-540SD)
2. Remove the left lower cover.
   F.15.11 Left lower cover (FS-540/FS-540SD)
3. Remove the left upper cover.
   F.15.12 Left upper cover (FS-540/FS-540SD)



4. Remove two screws [1], disconnect the connector [2], and remove the paper delivery control motor assy [3].

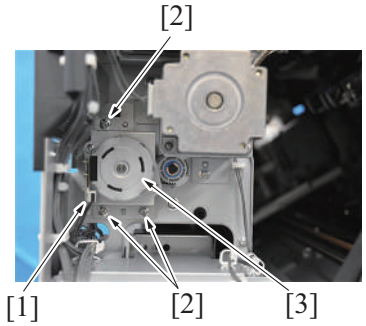


5. Remove two screws [1], and remove the paper delivery control motor [2].

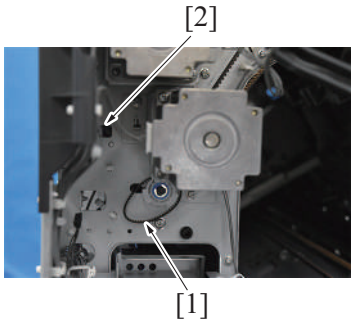
6. To reinstall, reverse the order of removal.

15.28 SD discharge motor (M16) (FS-540/FS-540SD)

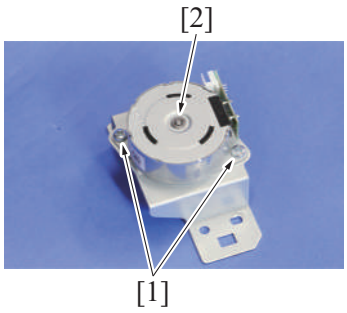
1. Remove the rear cover.
F.15.5 Rear cover (FS-540/FS-540SD)



2. Disconnect the connector [1].
3. Remove three screws [2], and remove the SD discharge motor assy [3].



4. **NOTE**
   - **When installing the motor, place the belt [1] on the gear, then hook it on the tab [2].**

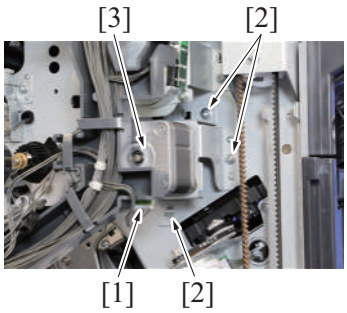


5. Remove two screws [1], and remove the SD discharge motor [2].

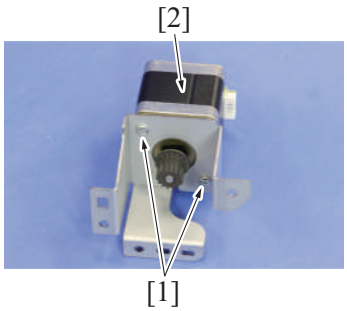
6. To reinstall, reverse the order of removal.

15.29 FNS discharge motor (M17) (FS-540/FS-540SD)

1. Remove the rear cover.
F.15.5 Rear cover (FS-540/FS-540SD)



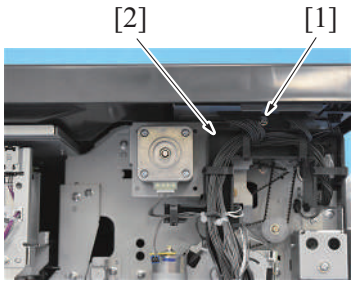
2. Disconnect the connector [1].
3. Remove three screws [2], and remove the FNS discharge motor assy [3].
   NOTE
   - **When installing the motor, place the belt [1] on the gear.**



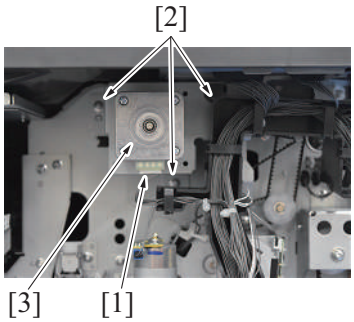
4. Remove two screws [1], and remove the FNS discharge motor [2].
5. To reinstall, reverse the order of removal.

15.30 Sub tray discharge motor (M18) (FS-540/FS-540SD)

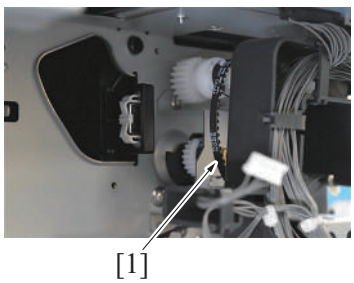
1. Remove the rear cover.
   F.15.5 Rear cover (FS-540/FS-540SD)



2. Remove the screw [1], and loosen the harness guide [2].

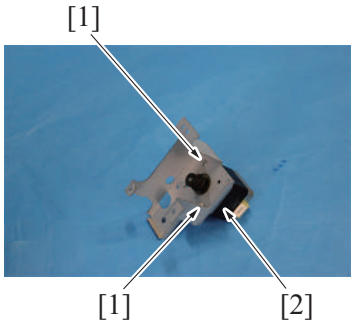


3. Disconnect the connector [1].
4. Remove three screws [2], and remove the sub tray discharge motor assy [3].



5. **NOTE**
   - **When installing the motor, place the belt [1] on the gear.**

6. Remove two screws [1], and remove the sub tray discharge motor [2].

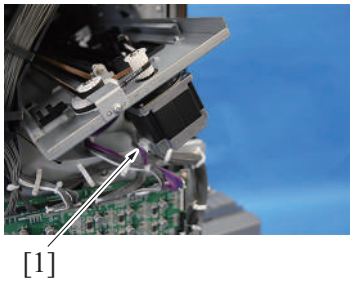


7. To reinstall, reverse the order of removal.

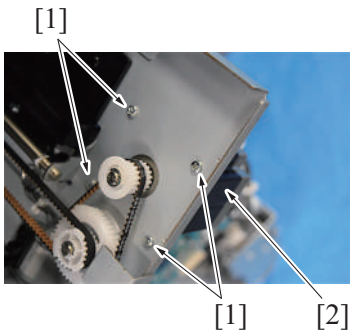
15.31 Stapler movement motor (M19) (FS-540/FS-540SD)

1. Remove the rear cover.
F.15.5 Rear cover (FS-540/FS-540SD)

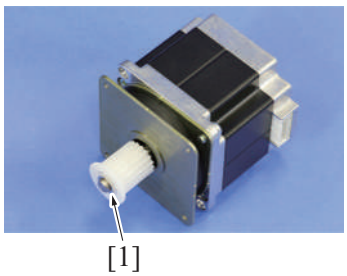
2. Disconnect the connector [1].



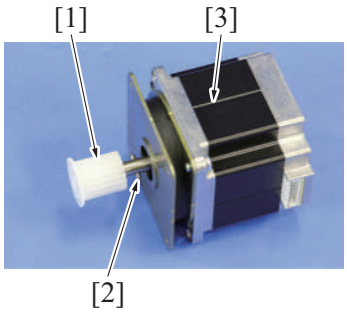
3. Remove four screws [1], and remove the stapler movement motor assy [2].



4. Remove the E-ring [1].



5. Remove the gear [1], pin [2], and remove the stapler movement motor [3].

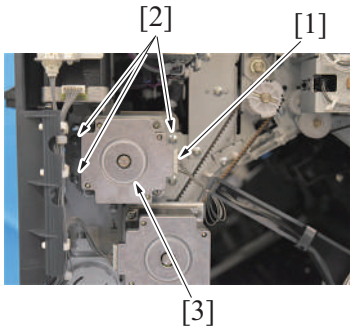


6. To reinstall, reverse the order of removal.

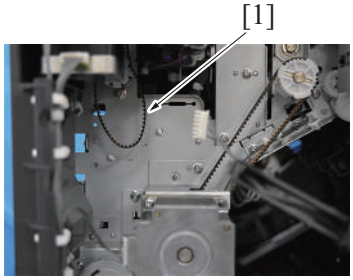
15.32 FNS entry transport motor (M20) (FS-540/FS-540SD)

1. Remove the rear cover.

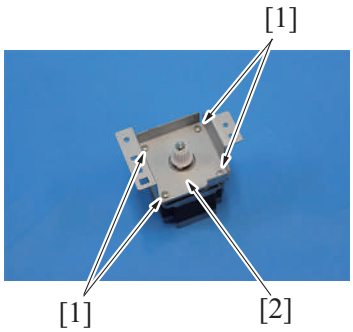
F.15.5 Rear cover (FS-540/FS-540SD)



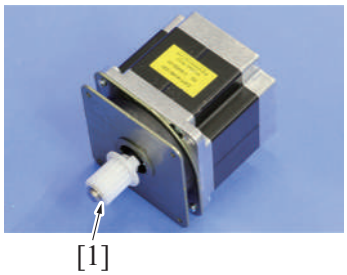
2. Disconnect the connector [1].
3. Remove three screws [2], and remove the FNS entry transport motor assy [3].



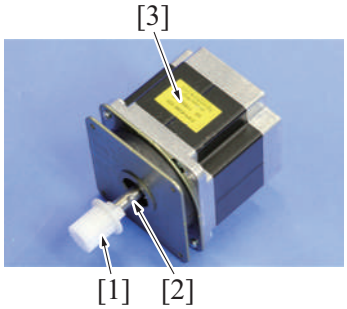
4. **NOTE**
   - **When installing the motor, place the belt [1] on the gear.**



5. Remove four screws [1], and remove the plate [2].



6. Remove the E-ring [1].

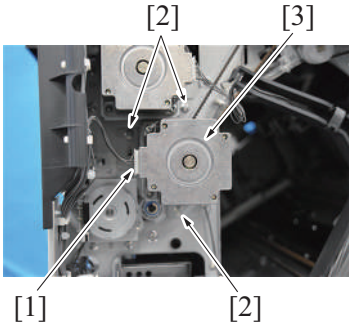


7. Remove the gear [1], pin [2], and remove the FNS entry transport motor [3].

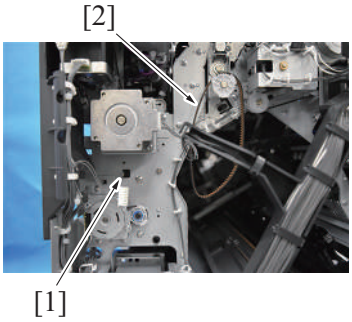
8. To reinstall, reverse the order of removal.

15.33 ZU discharge motor (M21) (FS-540/FS-540SD)

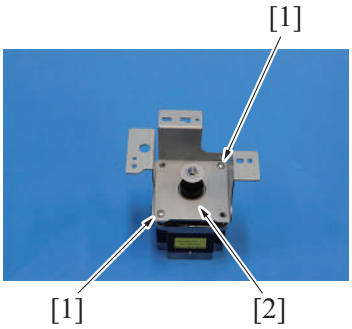
1. Remove the rear cover.
   F.15.5 Rear cover (FS-540/FS-540SD)



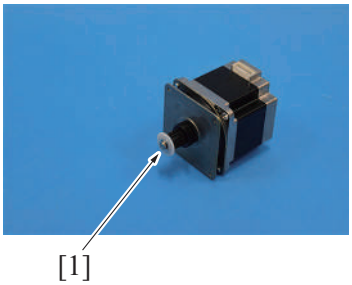
2. Disconnect the connector [1].
3. Remove three screws [2], and remove the ZU discharge motor assy [3].



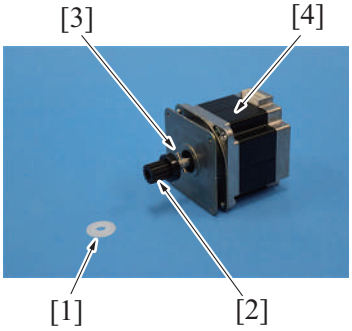
4. **NOTE**
   - **When installing the motor, hook it on the tab [1], then place the belt [2] on the gear.**



5. Remove two screws [1], and remove the plate [2].



6. Remove the E-ring [1].



7. Remove the flange [1], gear [2] and pin [3], and remove the ZU discharge motor [4].

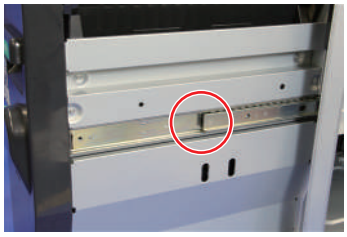
8. To reinstall, reverse the order of removal.

16. FS-540SD saddle section

16.1 Saddle unit (FS-540SD saddle section)

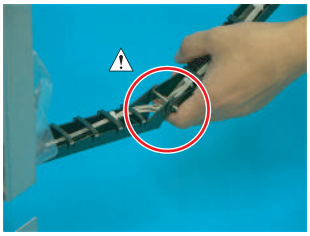
CAUTION

- Be careful not to catch your finger in the edge of the rail when mounting the saddle unit on the right rail for the saddle unit installation.

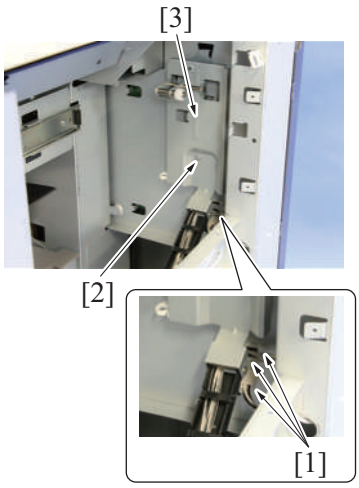


CAUTION

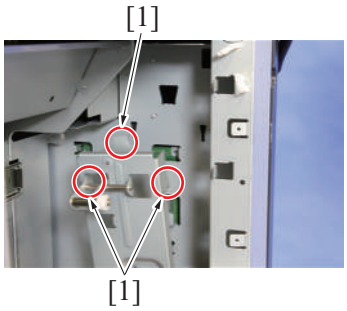
- Be careful not to jam your finger in the connecting section of the pantograph.



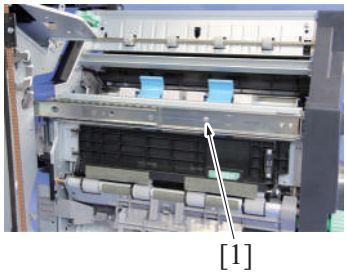
1. Remove the finisher from the main body.
   F.15.1 Finisher (FS-540/FS-540SD)
2. Remove the front door of the finisher.
   F.15.6 Front door (FS-540/FS-540SD)
3. Remove the finisher front lower cover.
   F.15.8 Front lower cover (FS-540/FS-540SD)



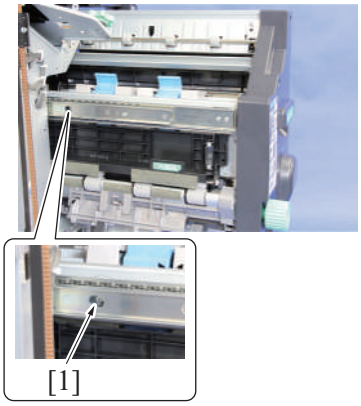
4. Disconnect three connectors [1] on the pantograph.
5. Remove the screw [2] and remove the pantograph [3].



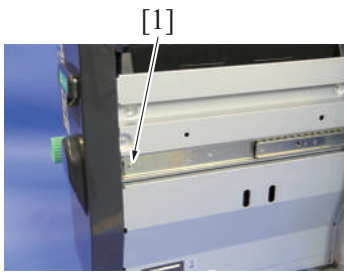
6. **NOTE**
   - **For installation of the pantograph, insert three hooks [1] on the pantograph of the saddle unit into the back holes inside the finisher.**



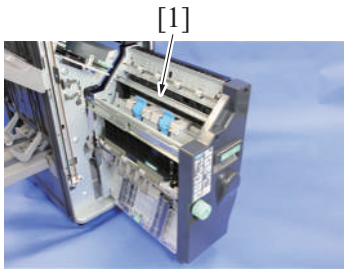
7. Remove the screw [1].

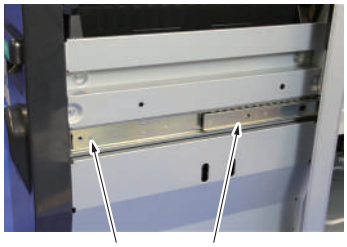


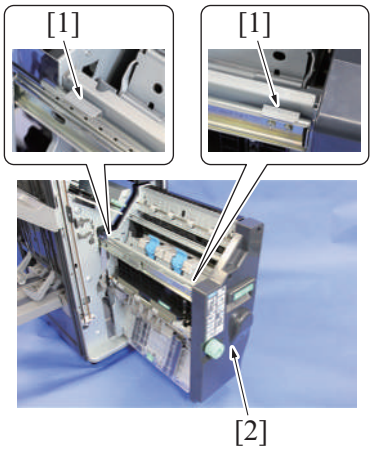
8. Push back the saddle unit into the position of the illustration, and then remove the screw [1].



9. Pull out the saddle unit and remove the screw [1].





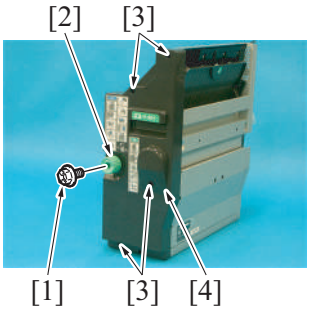


10. Place the right rail [2] to inside the finisher while holding the saddle unit in the section indicated in the figure [1] and raising it.
NOTE
- **Place the boss [3] of the saddle unit into the hole in the right rail when installing the saddle unit.**

11. Remove the saddle unit [2] from two tabs [1].

12. To reinstall, reverse the order of removal.

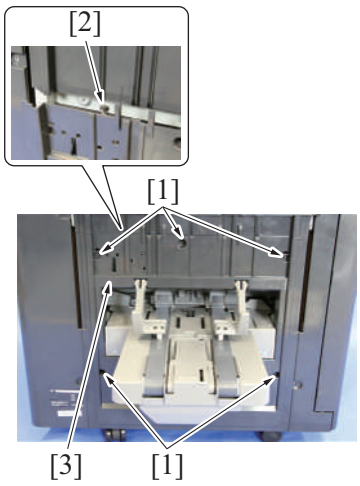
16.2 Front cover (FS-540SD saddle section)



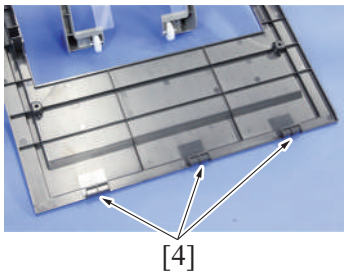
1. Remove the screw [1], and remove the jam clearing dial [2].
2. Remove four screws [3], and remove the front cover [4].

3. To reinstall, reverse the order of removal.

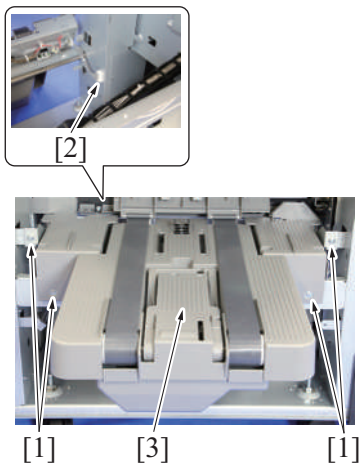
16.3 Exit tray (FS-540SD saddle section)



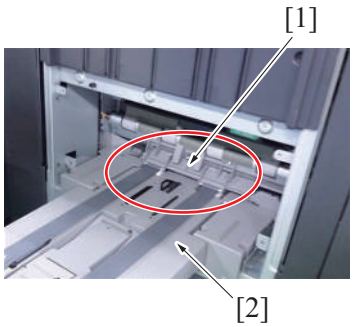
1. Remove five screws [1].
2. Disconnect the connector [2] and remove the left lower cover [3].



3. **NOTE**
   - **Install after hooking three tabs [4] of the left lower cover when installing.**



4. Remove four screws [1].
5. Disconnect the connector [2] and remove the exit tray [3].

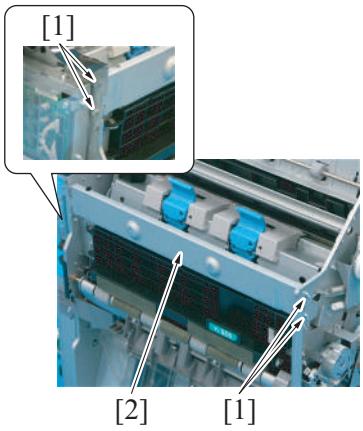


6. **NOTE**
   - **When installing the exit tray, make sure that the roll [1] is located above the exit tray [2].**

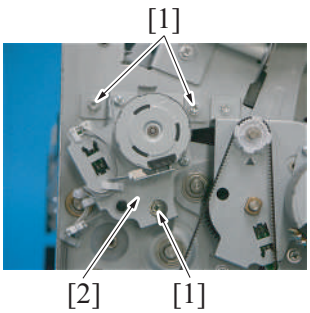
7. To reinstall, reverse the order of removal.

16.4 Stapler unit (FS-540SD saddle section)

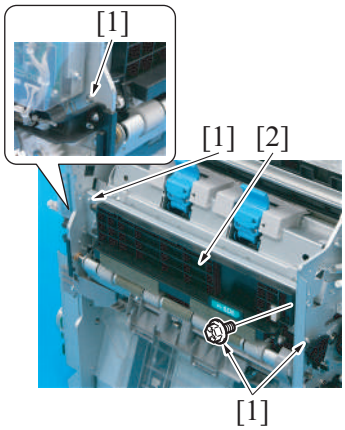
1. Remove the saddle unit.
   F.16.1 Saddle unit (FS-540SD saddle section)
2. Remove the front cover.
   F.16.2 Front cover (FS-540SD saddle section)



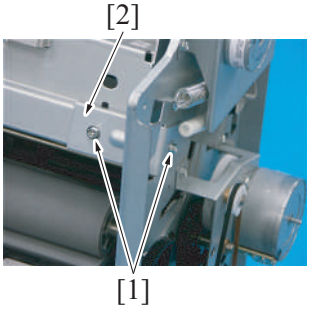
3. Remove four screws [1], and remove the plate [2].



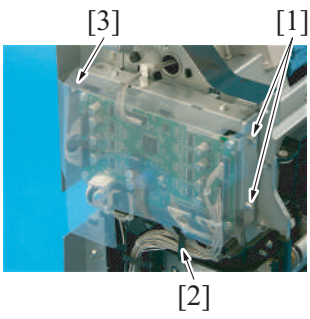
4. Remove three screws [1], and remove the tri-folding guide motor assy [2].



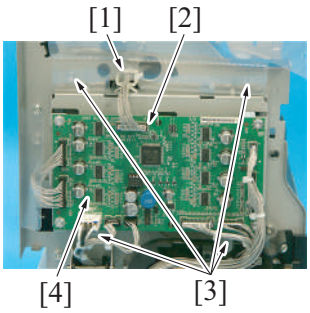
5. Remove four screws [1], and remove the transport assy [2].



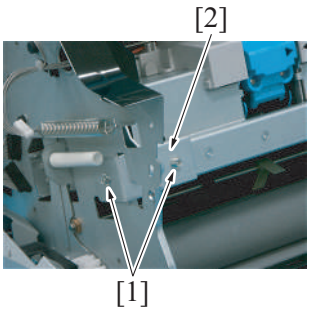
6. Remove two screws [1], and remove the plate [2].



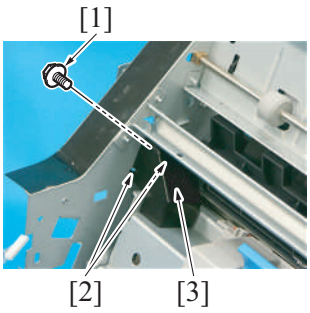
7. Remove two screws [1].
8. Detach the board support film [3] from the harness guide tabs [2].



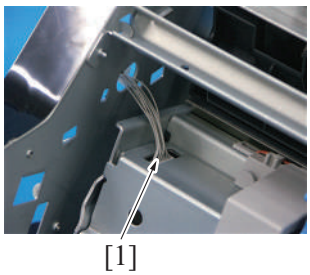
9. Remove the harness from the wire saddle [1].
10. Disconnect the connector [2].
11. Remove four screws [3], and remove the SD control board assy [4].



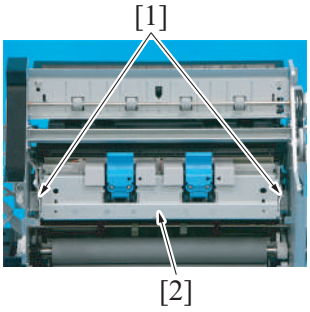
12. Remove two screws [1], and remove the plate [2].



13. Remove the screw [1].
14. Unhook two tabs [2], and remove the cover [3].



15. Disconnect the connector [1].

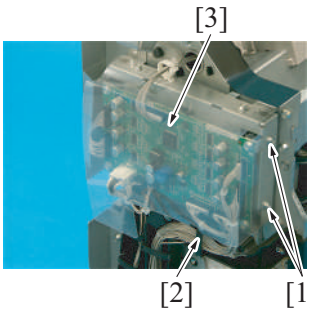


16. Remove two screws [1], and remove the stapler unit [2].

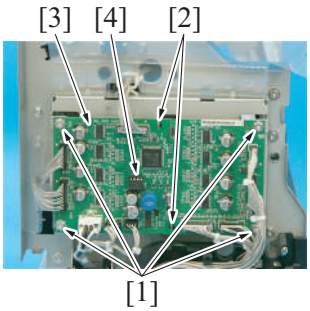
17. To reinstall, reverse the order of removal.

16.5 SD control board (SDCB) (FS-540SD saddle section)

1. Remove the saddle unit.
F.16.1 Saddle unit (FS-540SD saddle section)



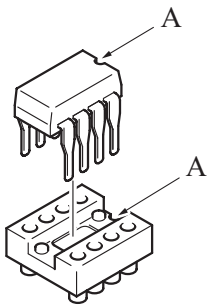
2. Remove two screws [1].
3. Remove the board support film [3] from the harness guide [2].



4. Disconnect all connectors on the SD control board.
5. Remove four screws [1].
6. Remove the SD control board [3] from two tabs [2].

NOTE

- **Remount the EEPROM (U3) [4] when the SD control board (SDCB) is replaced.**
  Install the EEPROM (U3) [4] from the old SD control board on to the new SD control board.



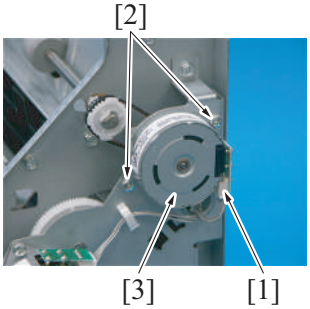
7. **NOTE**
   - **When mounting EEPROM (U3), align the notches (indicated by "A" in the illustration).**
8. To reinstall, reverse the order of removal.

NOTE

- **After replacing the SD control board, be sure to install the latest firmware.**

16.6 SD transport motor (M101) (FS-540SD saddle section)

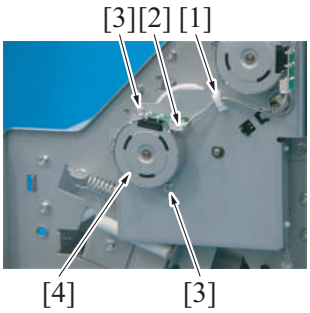
1. Remove the saddle unit.
   F.16.1 Saddle unit (FS-540SD saddle section)
2. Remove the front cover.
   F.16.2 Front cover (FS-540SD saddle section)



3. Disconnect the connector [1].
4. Remove two screws [2], and remove the SD transport motor [3].
5. To reinstall, reverse the order of removal.

16.7 Paper discharge control motor (M102) (FS-540SD saddle section)

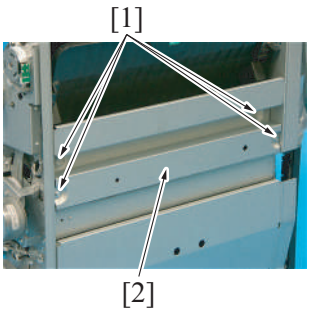
1. Remove the saddle unit.
   F.16.1 Saddle unit (FS-540SD saddle section)
2. Remove the front cover.
   F.16.2 Front cover (FS-540SD saddle section)



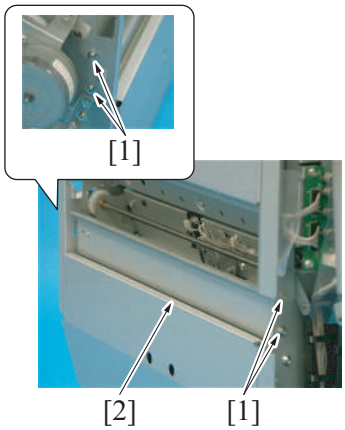
3. Remove the harness from the wire saddle [1], and disconnect the connector [2].
4. Remove two screws [3], and remove the paper discharge control motor [4].
5. To reinstall, reverse the order of removal.

16.8 Alignment motor (M103) (FS-540SD saddle section)

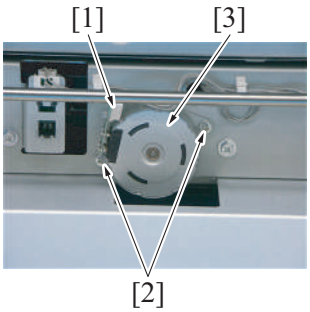
1. Remove the saddle unit.
   F.16.1 Saddle unit (FS-540SD saddle section)
2. Remove the front cover.
   F.16.2 Front cover (FS-540SD saddle section)



3. Remove four screws [1], and remove the plate [2].



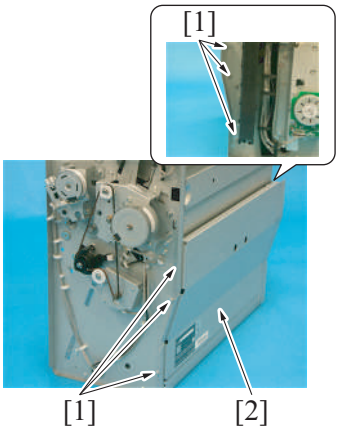
4. Remove four screws [1], and remove the plate [2].



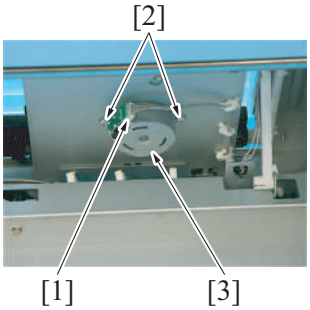
5. Disconnect the connector [1].
6. Remove two screws [2], and remove the alignment motor [3].
7. To reinstall, reverse the order of removal.

16.9 Stopper drive motor (M104) (FS-540SD saddle section)

1. Remove the saddle unit.
   F.16.1 Saddle unit (FS-540SD saddle section)
2. Remove the front cover.
   F.16.2 Front cover (FS-540SD saddle section)



3. Remove six screws [1], and remove the plate [2].

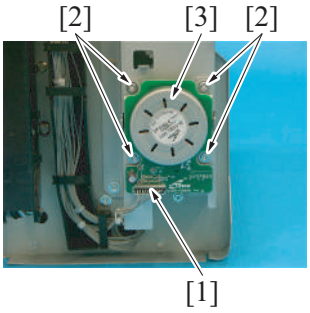


4. Disconnect the connector [1].
5. Remove two screws [2], and remove the stopper drive motor [3].

6. To reinstall, reverse the order of removal.

16.10 Center fold roller motor (M105) (FS-540SD saddle section)

1. Remove the saddle unit.
   F.16.1 Saddle unit (FS-540SD saddle section)

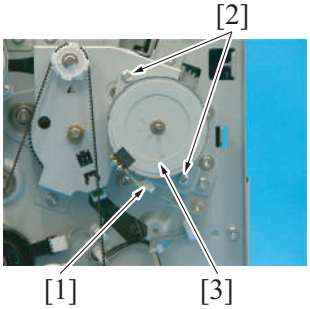


2. Disconnect the connector [1].
3. Remove four screws [2], and remove the center fold roller motor [3].

4. To reinstall, reverse the order of removal.

16.11 Center fold guide motor (M106) (FS-540SD saddle section)

1. Remove the saddle unit.
   F.16.1 Saddle unit (FS-540SD saddle section)
2. Remove the front cover.
   F.16.2 Front cover (FS-540SD saddle section)



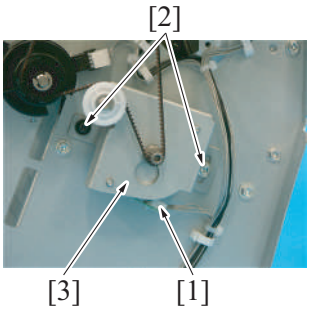
3. Disconnect the connector [1].
4. Remove two screws [2] and remove the center fold guide motor [3].

5. To reinstall, reverse the order of removal.

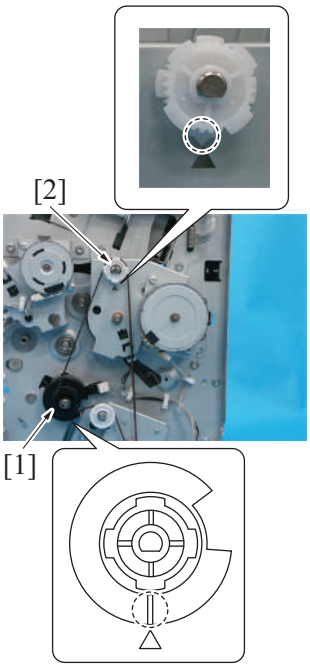
16.12 SD paddle motor (M107) (FS-540SD saddle section)

1. Remove the saddle unit.
   F.16.1 Saddle unit (FS-540SD saddle section)
2. Remove the front cover.

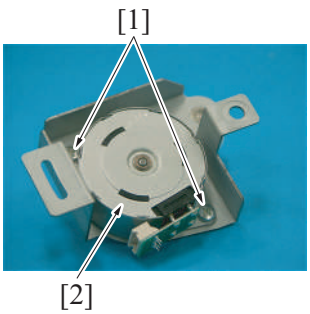
F.16.2 Front cover (FS-540SD saddle section)



3. Disconnect the connector [1].
4. Remove two screws [2], and remove the SD paddle motor assy [3].



5. **NOTE**
   - **When reinstalling the belt, align the portions of the gear [1] and the gear [2] indicated in the illustration with the triangular marking on the metal plate. Then, install the belt.**

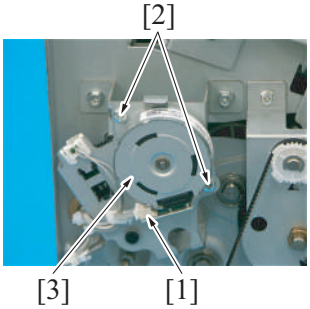


6. Remove two screws [1], and remove the SD paddle motor [2].

7. To reinstall, reverse the order of removal.

16.13 Tri-folding guide motor (M108) (FS-540SD saddle section)

1. Remove the saddle unit.
   F.16.1 Saddle unit (FS-540SD saddle section)
2. Remove the front cover.
   F.16.2 Front cover (FS-540SD saddle section)

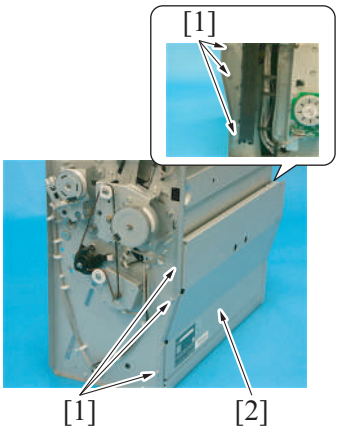


3. Disconnect the connector [1].
4. Remove two screws [2], and remove the tri-folding guide motor [3].

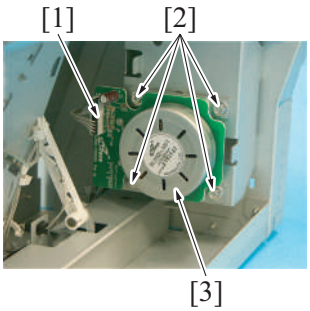
5. To reinstall, reverse the order of removal.

16.14 Center fold knife motor (M109) (FS-540SD saddle section)

1. Remove the saddle unit.
   F.16.1 Saddle unit (FS-540SD saddle section)
2. Remove the front cover.
   F.16.2 Front cover (FS-540SD saddle section)



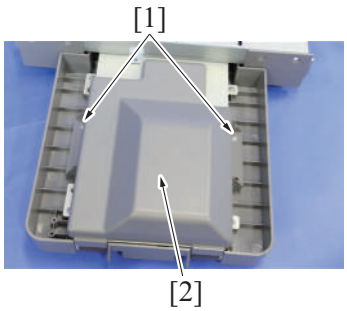
3. Remove six screws [1], and remove the plate [2].



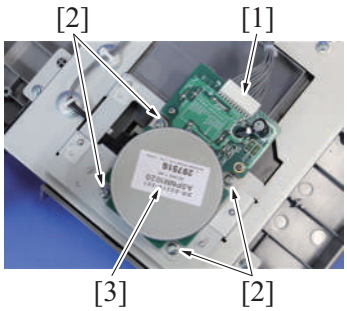
4. Disconnect the connector [1].
5. Remove four screws [2], and remove the center fold knife motor [3].
6. To reinstall, reverse the order of removal.

16.15 Paper transport belt motor (M134) (FS-540SD saddle section)

1. Remove the exit tray.
   F.16.3 Exit tray (FS-540SD saddle section)



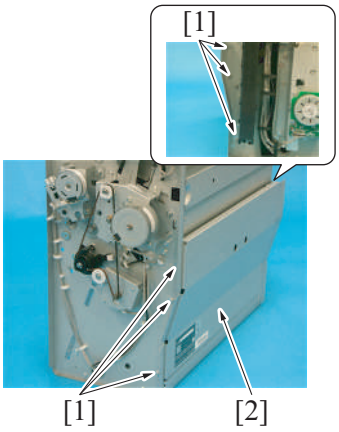
2. Remove two screws [1], and remove the cover [2].



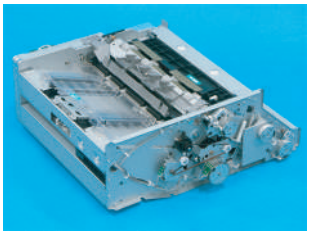
3. Disconnect the connector [1].
4. Remove four screws [2] and remove the paper transport belt motor [3].
5. To reinstall, reverse the order of removal.

16.16 Stopper solenoid (SD101) (FS-540SD saddle section)

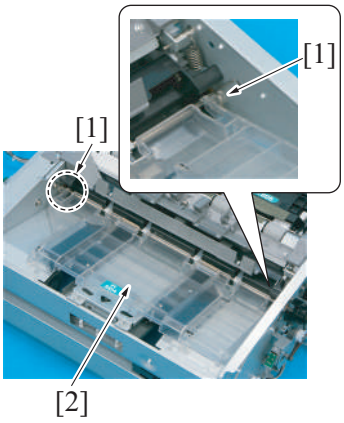
1. Remove the saddle unit.
   F.16.1 Saddle unit (FS-540SD saddle section)
2. Remove the front cover.
   F.16.2 Front cover (FS-540SD saddle section)



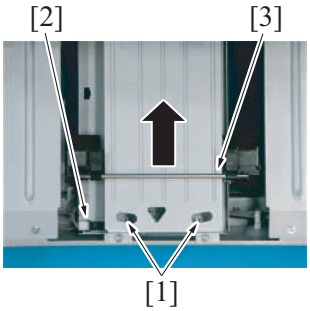
3. Remove six screws [1], and remove the plate [2].



4. Place the saddle unit as shown in the illustration.

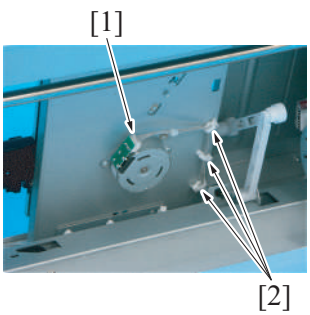


5. Remove two stoppers [1], and remove the guide plate [2].

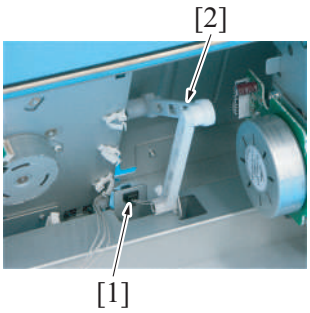


6. Slide the lever unit [3] upward.
7. Remove two screws [1] and disconnect the connector [2].

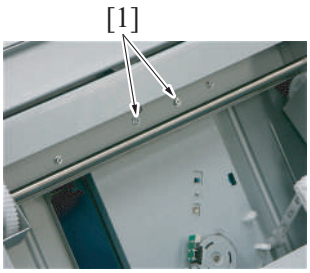
8. Raise the saddle unit.



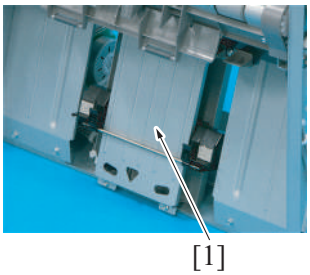
9. Disconnect the connector [1], and remove the harness from three wire saddles [2].



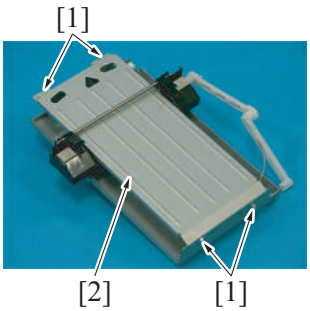
10. Disconnect the connector [1], and remove the drive lever [2].



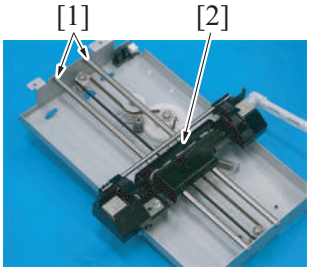
11. Remove two screws [1].



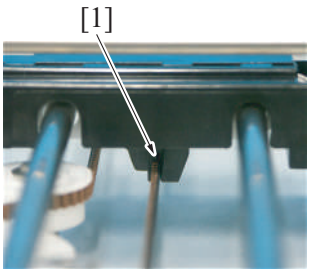
12. Remove the guide plate assy [1].
NOTE
- **When installing the guide plate assy, perform mechanical adjustment.**
  G.10.1 Half-fold skew adjustment



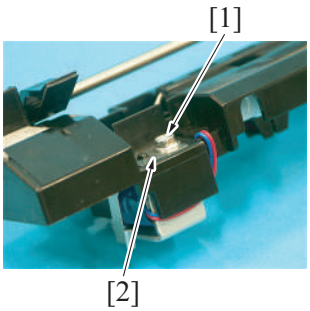
13. Remove four screws [1], and remove the plate [2].



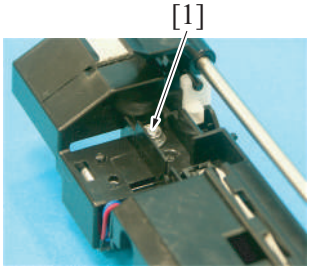
14. Remove two E-rings [1], and remove the stopper guide [2].



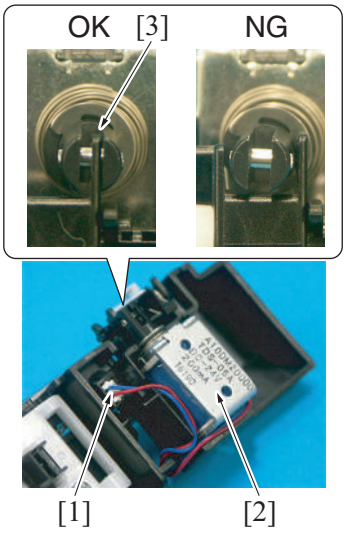
15. **NOTE**
- **When installing the stopper guide, fit the belt into the stopper guide groove [1].**



16. Remove the screw [1], and remove the plate [2].



17. Remove the screw [1].



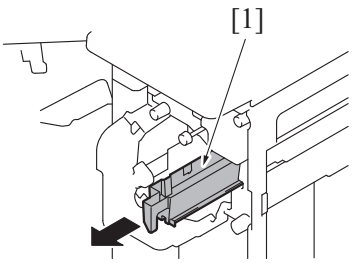
18. Disconnect the connector [1], and remove the stopper solenoid [2].
NOTE
- **When installing the stopper solenoid, fit its tip into the place [3] shown in the illustration.**

19. To reinstall, reverse the order of removal.

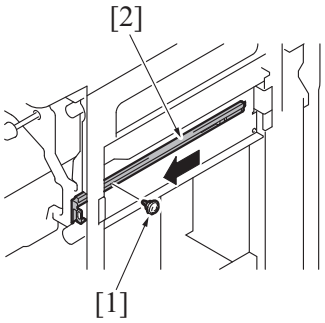
17. PK-526

17.1 Punch Kit (PK-526)

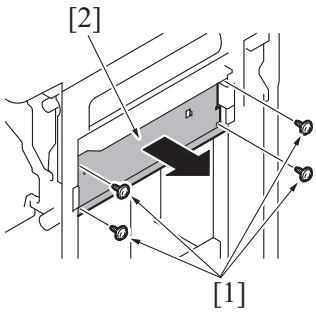
1. Remove the finisher from the main body.
   F.15.1 Finisher (FS-540/FS-540SD)
2. Remove the rear cover of the finisher.
   F.15.5 Rear cover (FS-540/FS-540SD)
3. Open the front door of the finisher.



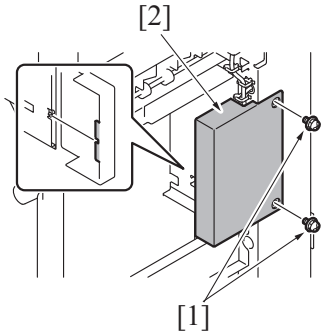
4. Remove the punch-hole scraps box [1].



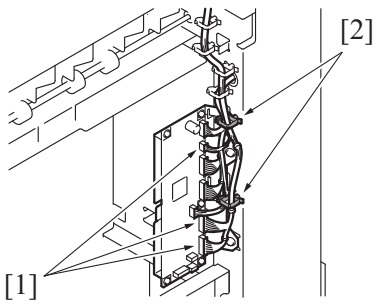
5. Remove the screw [1], and remove the plate [2].



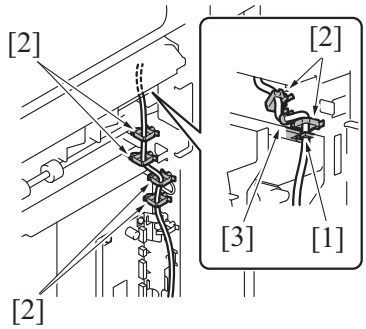
6. Remove four screws [1], and remove the plate [2].



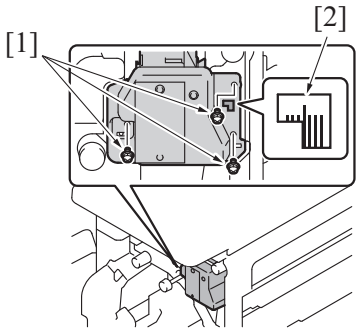
7. Remove two screws [1], and remove the board cover [2].



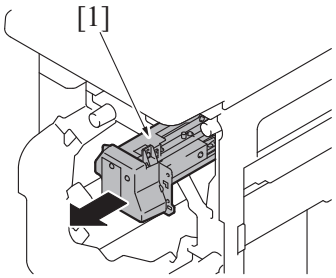
8. Disconnect three connectors [1].
9. Remove the harness from two wire saddles [2].



10. Remove the harness from the harness guide [1].
11. Remove the harness from six wire saddles [2].
NOTE
- **When installing the unit, place the harness clamp [3] between the two top wire saddles.**



12. Remove three screws [1].
NOTE
- **When installing the unit, be sure to fix it along the center line of the gauge lines [2].**

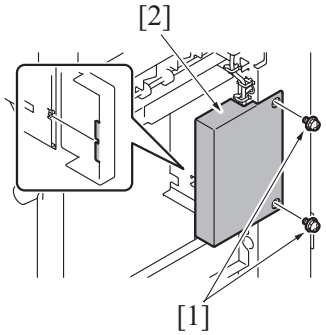


13. Pull out to remove the punch kit [1] from the finisher.

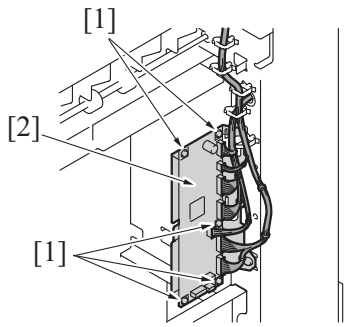
14. To reinstall, reverse the order of removal.
NOTE
If the paper jam error around the punch kit is displayed on the control panel when turning ON the machine after installing the punch kit, check the following:
- **No paper pieces are left on the paper path.**
- **Execute the** I.17.1.6 Punch F. Sensor Intensity Adj.**. After the adjustment, open and close the front door of the finisher to confirm that the JAM displays disappear.**
- **Before turning OFF the main power switch, wait at least 10 seconds after the JAM displays disappear.**

17.2 Punch control board (PKCB) (PK-526)

1. Remove the finisher from the main body.
F.15.1 Finisher (FS-540/FS-540SD)



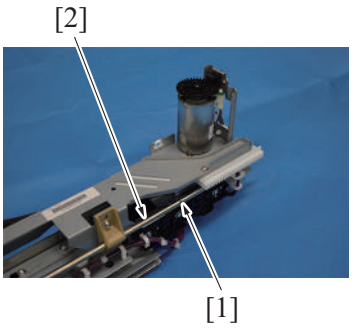
2. Remove two screws [1], and remove the board cover [2].



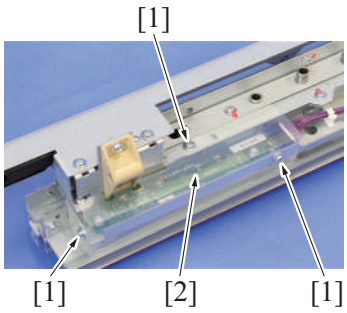
3. Disconnect all connectors from the punch control board.
4. Remove five screws [1], and remove the punch control board [2].
5. To reinstall, reverse the order of removal.

17.3 Paper size detect board (PSDTB) (PK-526)

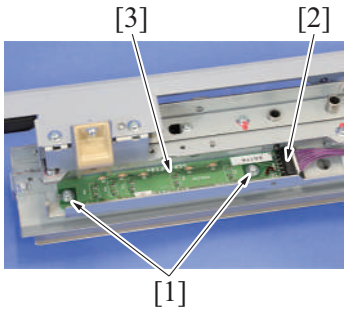
1. Remove the punch kit.
   F.17.1 Punch Kit (PK-526)



2. Remove the E-ring [1], and pull out the punch oscillating section [2].



3. Remove three screws [1], and remove the board protective shield [2].



4. Remove two screws [1], disconnect the connector [2], and remove the paper size detection board [3].
5. To reinstall, reverse the order of removal.

NOTE

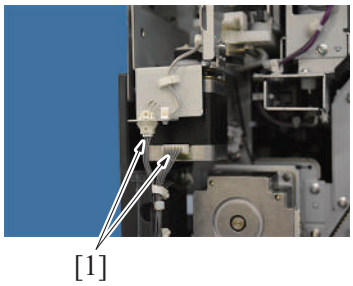
If the paper jam error around the punch kit is displayed on the control panel when turning ON the machine after installing the punch kit, check the following:

- **No paper pieces are left on the paper path.**
- **Execute the** I.17.1.6 Punch F. Sensor Intensity Adj.**. After the adjustment, open and close the front door of the finisher to confirm that the JAM displays disappear.**
- **Before turning OFF the main power switch, wait at least 10 seconds after the JAM displays disappear.**

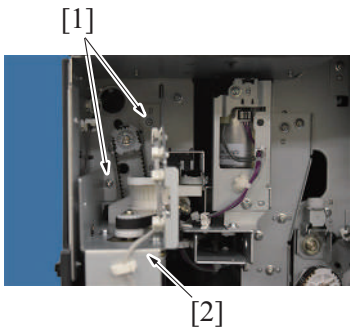
17.4 Punch oscillating motor (M302) (PK-526)

1. Remove the rear cover of the finisher.
   F.15.5 Rear cover (FS-540/FS-540SD)

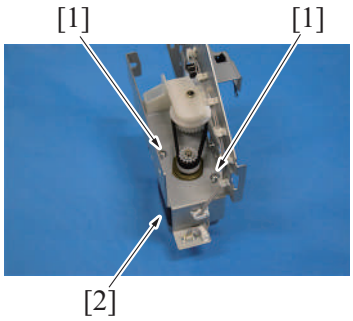
2. Disconnect two connectors [1].



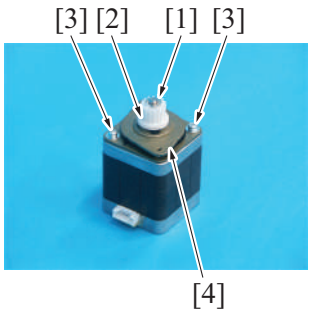
3. Remove two screws [1], and remove the punch oscillating motor unit [2].



4. Remove two screws [1], and remove the punch oscillating motor [2].



5. Remove the E-ring [1], and remove the gear [2].
   NOTE
   - **Take care not to lose the pin.**
6. Remove two screws [3], and remove the plate [4].

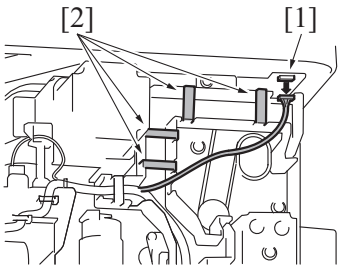


7. To reinstall, reverse the order of removal.
   NOTE
   If the paper jam error around the punch kit is displayed on the control panel when turning ON the machine after installing the punch kit, check the following:
   - **No paper pieces are left on the paper path.**
   - **Execute the** I.17.1.6 Punch F. Sensor Intensity Adj.**. After the adjustment, open and close the front door of the finisher to confirm that the JAM displays disappear.**
   - **Before turning OFF the main power switch, wait at least 10 seconds after the JAM displays disappear.**

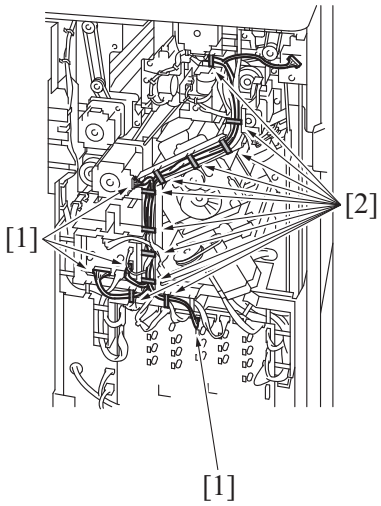
18. ZU-609

18.1 Z Folding Unit (ZU-609)

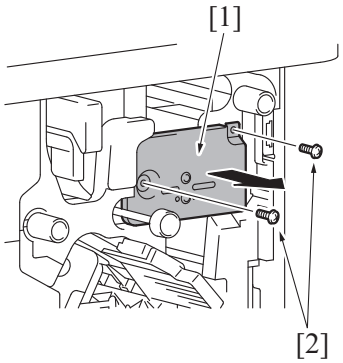
1. Remove the finisher from the main body.
   F.15.1 Finisher (FS-540/FS-540SD)
2. Remove the rear cover of the finisher.
   F.15.5 Rear cover (FS-540/FS-540SD)



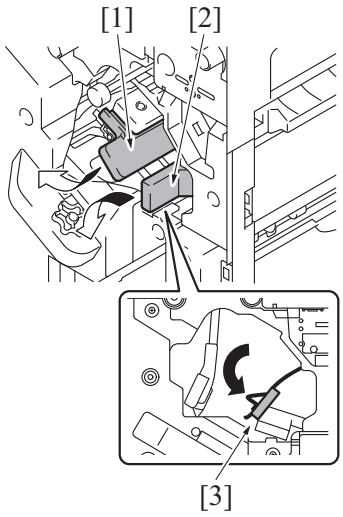
3. Disconnect the connector [1], and pull out the harness from the harness guide [2].



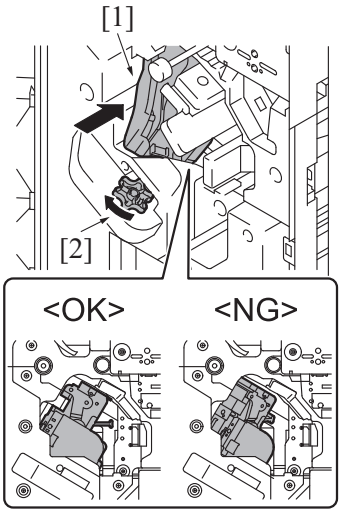
4. Disconnect four connectors [1], and remove the harness from the harness guide [2].
5. Open the front door of the finisher.



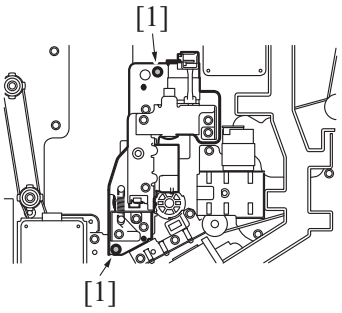
6. When the plate [1] has been installed, remove two screws [2], and remove the plate [1].
7. If the punch kit is mounted, remove the it.
   F.17.1 Punch Kit (PK-526)



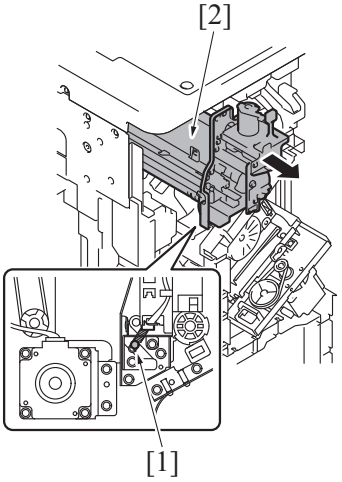
8. Open three jam removal levers. ([1], [2] and [3])



9. **NOTE**
- **If the lever does not open because the stapler [1] is being blocked, rotate the stapler transfer dial [2] and move the stapler [1] towards the rear until the dial stops.**
- **If the stapler rotated (tilted) at the rear of the finisher, move it forward until it becomes straight and again move it backward.**



10. Remove two screws [1].

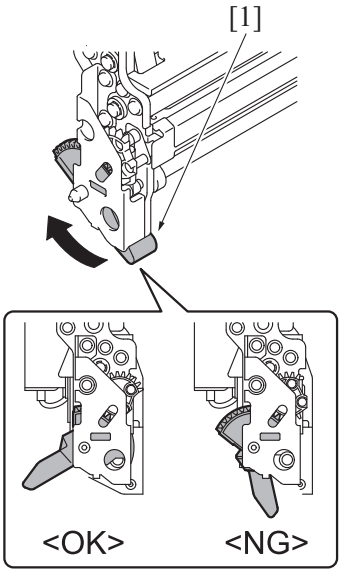


11. Remove the Z folding unit [2] from the finisher by lifting it a little with the shaft lever [1] of the lower part of the Z folding unit slided upper left.

12. To reinstall, reverse the order of removal.

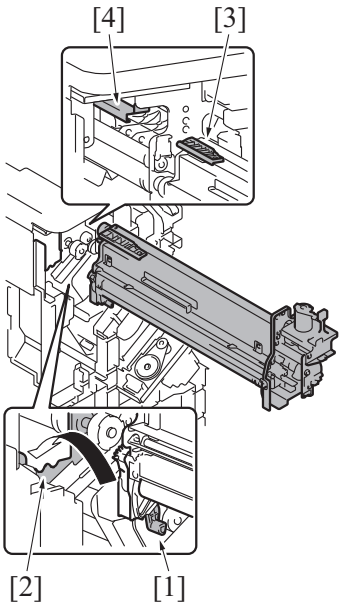
13. **NOTE**
Take note of the following when installing:

- **If the jam removal lever [1] of Z folding unit is not in the position shown in the illustration, pull the lever to set to the position shown in the illustration.**



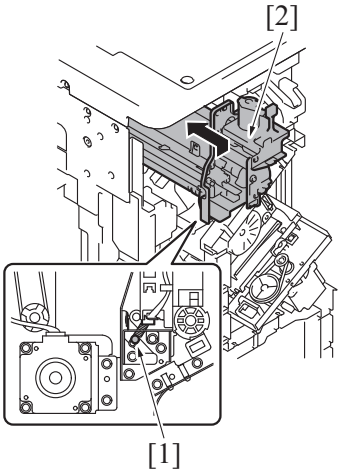
14. **NOTE**

- **Do not make the lever [1] caught on the lower frame [2] of the finisher opening.**
- **Put the upper resin part [3] of the Z folding unit on the rail [4] of the finisher opening.**



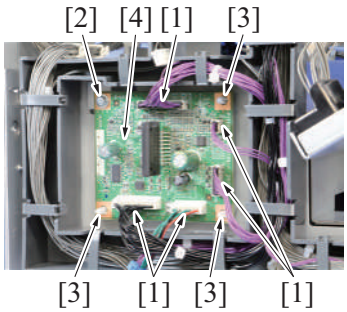
15. **NOTE**

- **Hold up the Z folding unit [2] a little to insert further, with the shaft lever [1] on the lower part of the Z folding unit slided to the upper left.**



18.2 ZU drive board (ZUDB) (ZU-609)

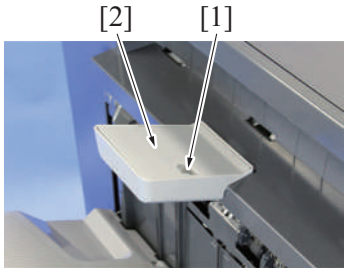
1. Remove the finisher from the main body.
   F.15.1 Finisher (FS-540/FS-540SD)
2. Remove the rear cover of the finisher.
   F.15.5 Rear cover (FS-540/FS-540SD)



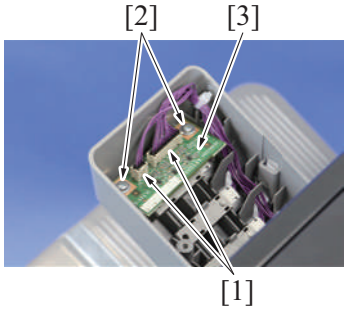
3. Disconnect five connectors [1] from the ZU drive board.
4. Remove the screw [2] and three board supports [3], and remove the ZU drive board [4].
5. To reinstall, reverse the order of removal.

18.3 ZU relay board (ZURB) (ZU-609)

1. Remove the sub tray (paper exit upper tray) from the finisher.
   F.15.10 Sub tray (over the paper exit tray) (FS-540/FS-540SD)



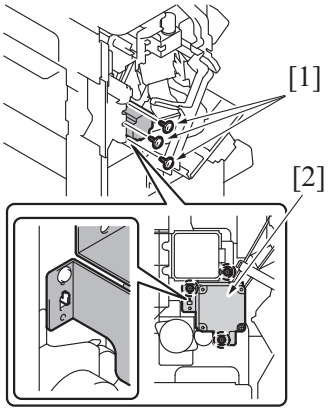
2. Remove the screw [1], and remove the cover [2].



3. Disconnect the two connectors [1] from the ZU relay board.
4. Remove two screws [2], and remove the ZU relay board [3].
5. To reinstall, reverse the order of removal.

18.4 ZU transport motor (M500) (ZU-609)

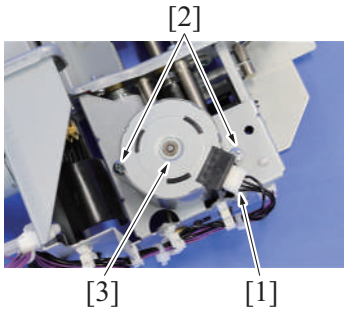
1. Remove the finisher from the main body.
   F.15.1 Finisher (FS-540/FS-540SD)
2. Remove the rear cover of the finisher.
   F.15.5 Rear cover (FS-540/FS-540SD)



3. Disconnect the connector, remove three screws [1], and remove the ZU transport motor [2].
4. To reinstall, reverse the order of removal.

18.5 Folding guide motor (M501) (ZU-609)

1. Remove the Z-folding unit.
   F.18.1 Z Folding Unit (ZU-609)

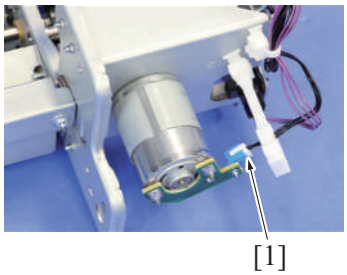


2. Disconnect the connector [1].
3. Remove two screws [2], and remove the folding guide motor [3].
4. To reinstall, reverse the order of removal.

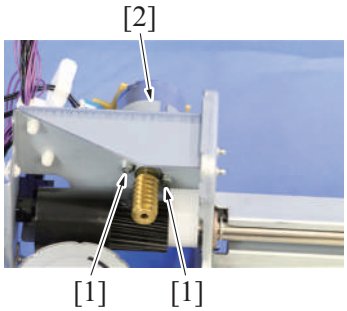
18.6 Pressure motor (M502) (ZU-609)

1. Remove the Z-folding unit.
   F.18.1 Z Folding Unit (ZU-609)

2. Disconnect the connector [1].



3. Remove two screws [1], and remove the pressure motor [2].

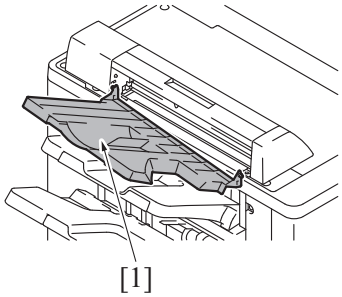


4. To reinstall, reverse the order of removal.

19. JS-602

19.1 Paper exit tray (JS-602)

1. Remove the paper exit tray [1].

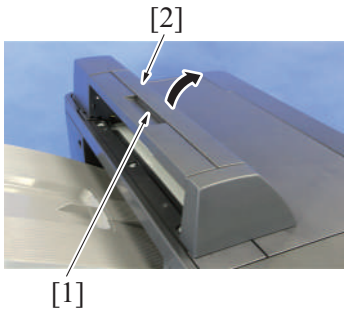


2. Reinstall the above parts following the removal steps in reverse.

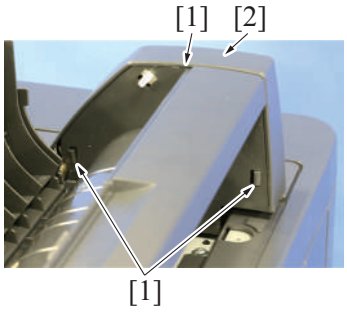
19.2 Front cover (JS-602)

1. Remove the paper exit tray.
F.19.1 Paper exit tray (JS-602)

2. Pull the unlock lever [1] and open the upper door [2].



3. Remove three tabs [1] and remove the front cover [2].

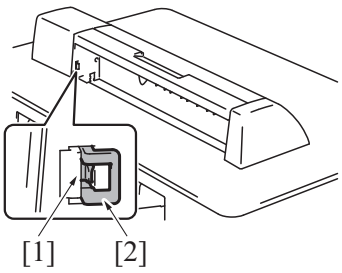


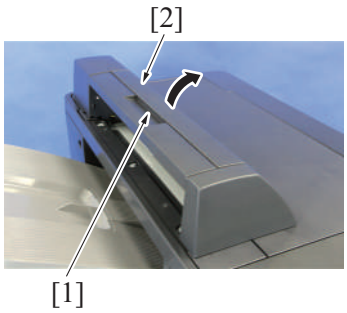
4. To reinstall, reverse the order of removal.

19.3 Rear cover (JS-602)

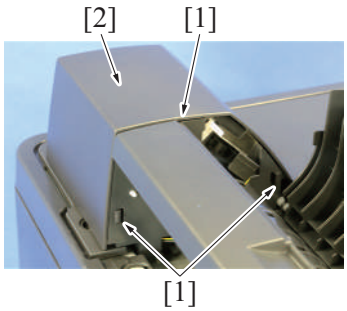
1. Remove the paper exit tray.
F.19.1 Paper exit tray (JS-602)

2. Remove the tab [1] and remove the spacer [2].





3. Pull the unlock lever [1] and open the upper door [2].

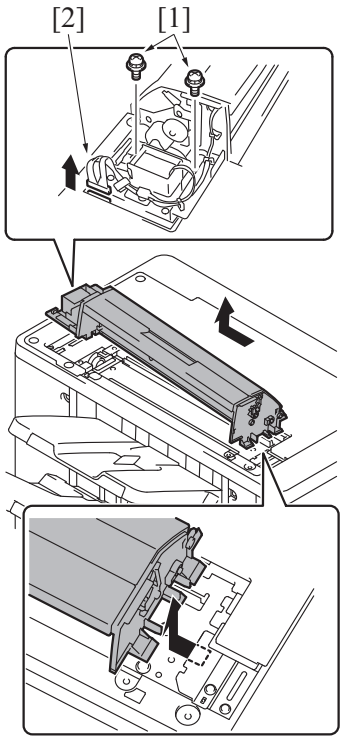


4. Remove three tabs [1] and remove the rear cover [2].

5. To reinstall, reverse the order of removal.

19.4 Job separator (JS-602)

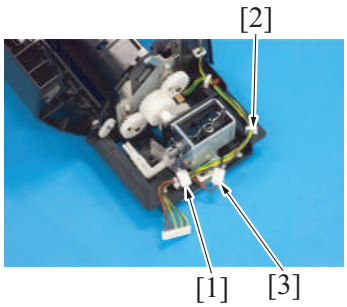
1. Remove the paper exit tray.
   F.19.1 Paper exit tray (JS-602)
2. Remove the front cover.
   F.19.2 Front cover (JS-602)
3. Remove the rear cover.
   F.19.3 Rear cover (JS-602)



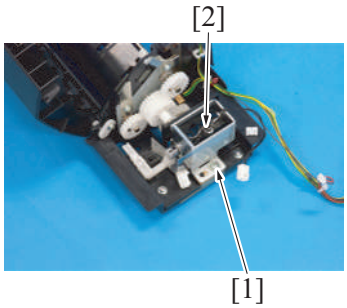
4. Remove two screws [1], disconnect the connector [2], and remove the job separator [3].

19.5 Entrance switching solenoid (SD401) (JS-602)

1. Remove the rear cover.
   F.19.3 Rear cover (JS-602)



2. Remove the harness from the wire saddle [1] and the edge cover [2].
3. Disconnect the connector [3].

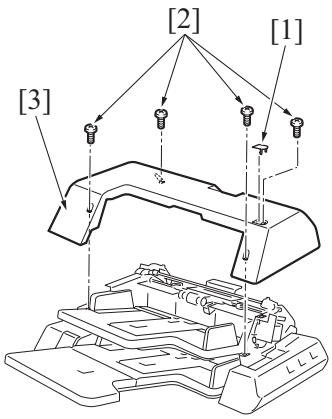


4. Remove the screw [1] and remove the entrance switching solenoid [2].

5. To reinstall, reverse the order of removal.

20. PI-507

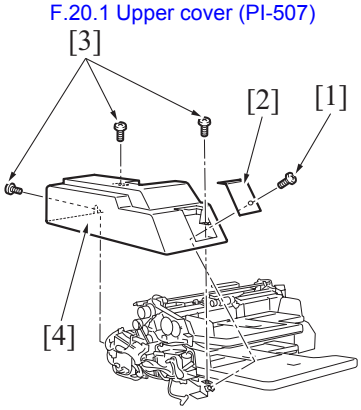
20.1 Upper cover (PI-507)



1. Remove the cap [1].
2. Remove four screws [2] and remove the upper cover [3].
3. To reinstall, reverse the order of removal.

20.2 Rear cover (PI-507)

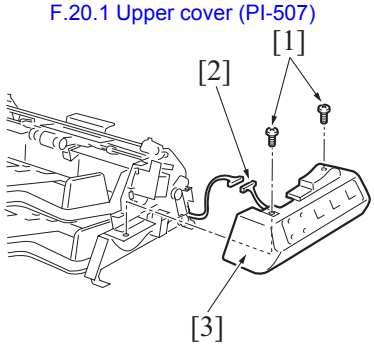
1. Remove the upper cover.
F.20.1 Upper cover (PI-507)



2. Remove the screw [1], and remove the connector cover [2].
3. Remove three screws [3], and remove the rear cover [4].
4. To reinstall, reverse the order of removal.

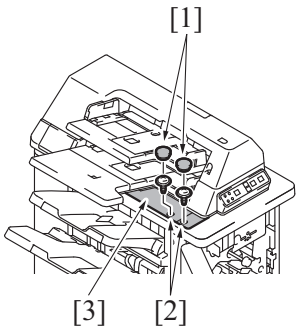
20.3 Operation panel cover assy (PI-507)

1. Remove the upper cover.
F.20.1 Upper cover (PI-507)

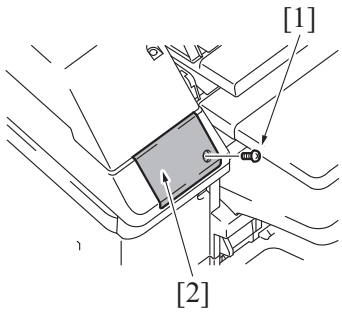


2. Remove two screws [1], disconnect the connector [2], and remove the operational panel cover assy [3].
3. To reinstall, reverse the order of removal.

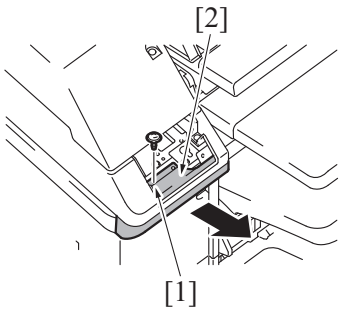
20.4 Post Inserter (PI-507)



1. Remove two caps [1], remove two screws [2], and remove the finisher cover [3].

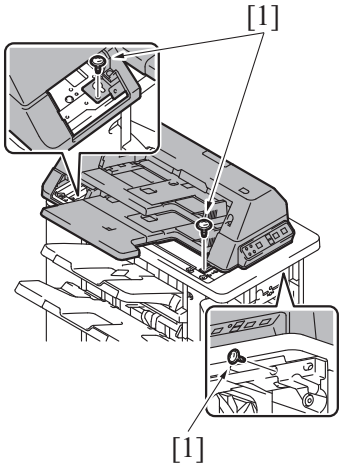


2. Remove the screw [1], and remove the connector cover [2].

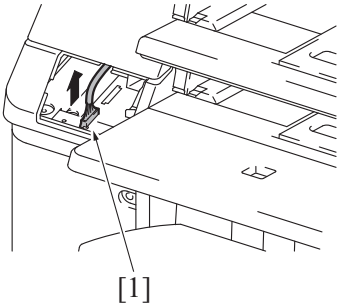


3. Remove the screw [1], and remove the cover [2].

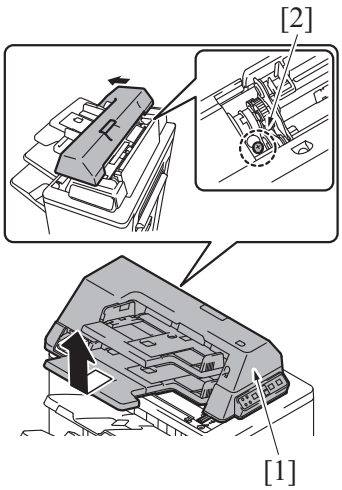
4. Open the front door of the finisher.



5. Remove three screws [1].



6. Disconnect the connector [1].

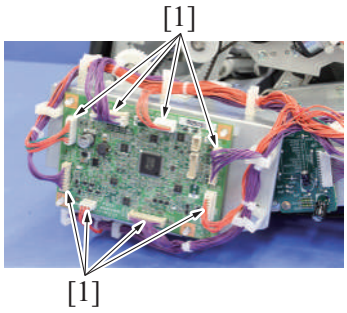


7. Remove the post inserter [1] while moving it in the direction shown with the arrow.
   NOTE
   - **Be sure to install the post inserter while hooking it on the positioning screw [2] attached to the finisher.**

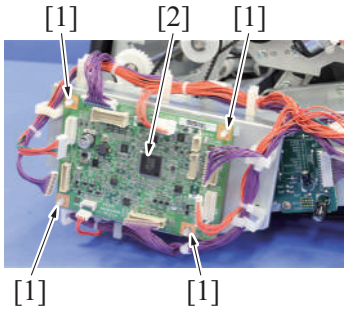
8. To reinstall, reverse the order of removal.

20.5 PI drive board (PIDB) (PI-507)

1. Remove the rear cover.
   F.20.2 Rear cover (PI-507)



2. Disconnect eight connectors [1] on the board.

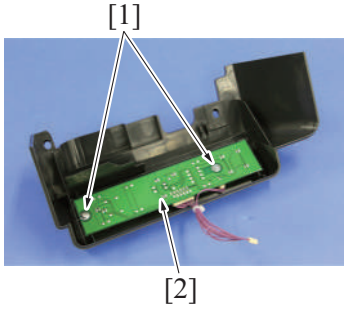


3. Remove four board supports [1] and remove the PI drive board [2].

4. To reinstall, reverse the order of removal.

20.6 PI operation board (PIOB) (PI-507)

1. Remove the operation panel cover assy.
   F.20.3 Operation panel cover assy (PI-507)



2. Remove two screws [1] and remove the PI operation board [2].

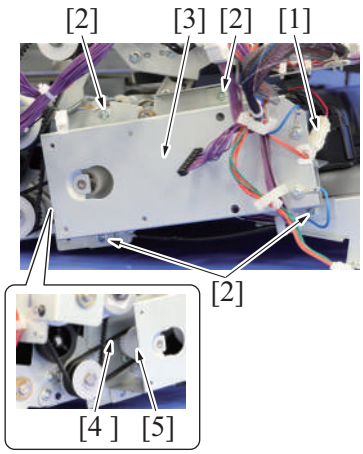
3. To reinstall, reverse the order of removal.

20.7 PI relay board (PIRB) (PI-507)

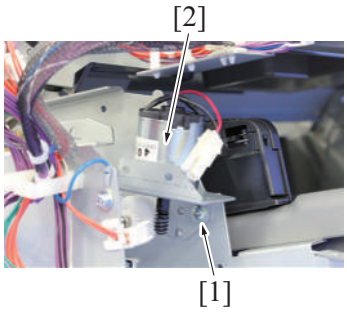
- The removal procedure for the PI relay board (PIRB) is same as that for the ZU drive board (ZUDB) of Z Folding Unit ZU-609. Refer to the removal procedure for the ZU drive board (ZUDB).
  F.18.2 ZU drive board (ZUDB) (ZU-609)

20.8 Tray lift motor /Lw (M202) (PI-507)

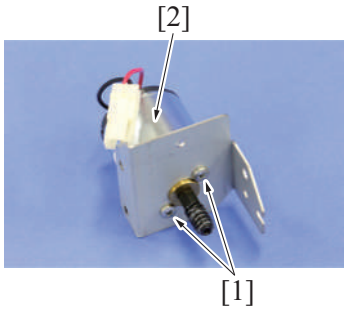
1. Remove the transfer motor (M203).
   F.20.9 Transfer motor (M203) (PI-507)



2. Disconnect the connector [1].
3. Remove four screws [2] and slide the metal plate [3].
   NOTE
   - **Place the belt [4] on the gear [5] during installation.**



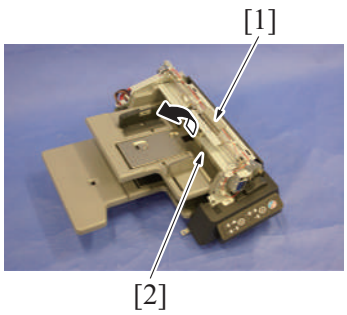
4. Remove the screw [1] and remove the tray lift motor /Lw assy [2].



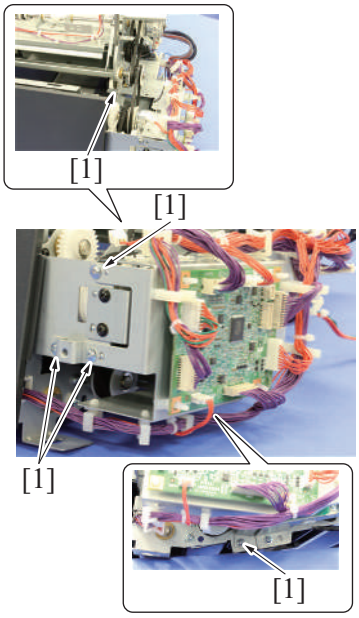
5. Remove two screws [1] and remove the tray lift motor /Lw [2].
6. Reinstall the above parts following the removal steps in reverse.

20.9 Transfer motor (M203) (PI-507)

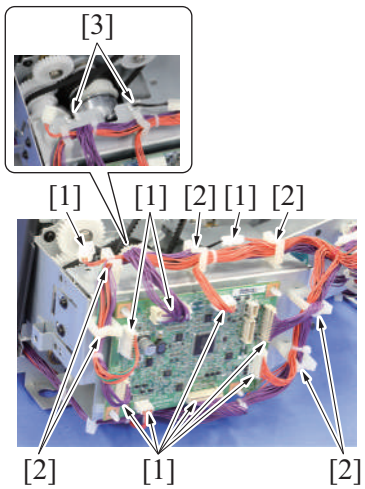
1. Remove the post-inserter.
   F.20.4 Post Inserter (PI-507)
2. Remove the rear cover.
   F.20.2 Rear cover (PI-507)



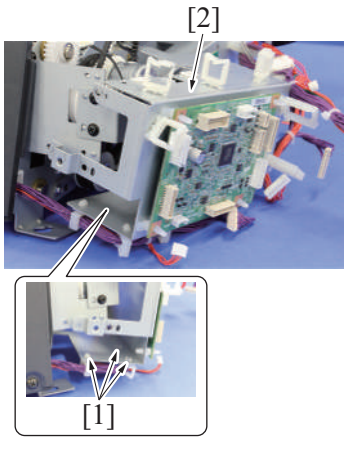
3. Pull the unlock lever [1] and open the upper door [2].



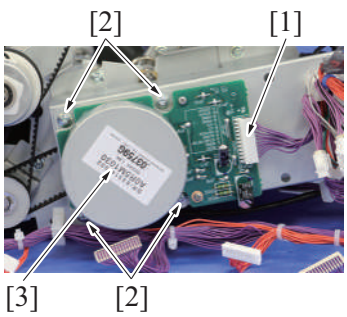
4. Remove five screws [1].



5. Disconnect 10 connectors [1].
6. Remove six wire saddles [2] and remove the harness from the two harness guides [3].



7. Unhook three wire saddle hooks [1] and remove the metal plate [2].



8. Disconnect the connector [1], remove four screws [2], and remove the transfer motor [3].

9. Reinstall the above parts following the removal steps in reverse.

20.10 Transport roller drive motor (M204) (PI-507)

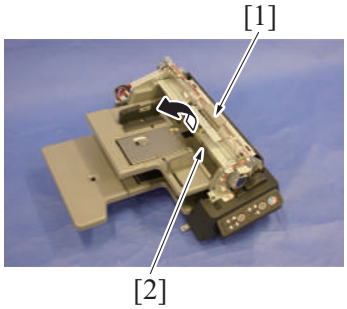
- The removal procedure for the transport roller drive motor (M204) is same as that for the ZU transport motor (M500) of Z Folding Unit ZU-609. Refer to the removal procedure for the ZU transport motor (M500).
F.18.4 ZU transport motor (M500) (ZU-609)

20.11 Folding guide motor (M501) (PI-507)

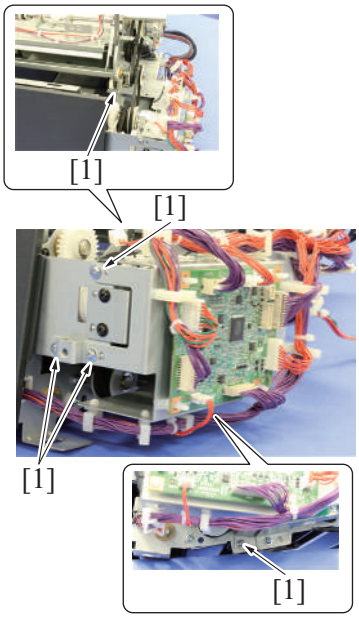
- Removing the folding guide motor (M501) is the same as removing the folding guide motor (M501) of the Z fold unit ZU-609. Refer to the method of removing the folding guide motor (M501).
F.18.5 Folding guide motor (M501) (ZU-609)

20.12 Transfer clutch /Lw (CL202) (PI-507)

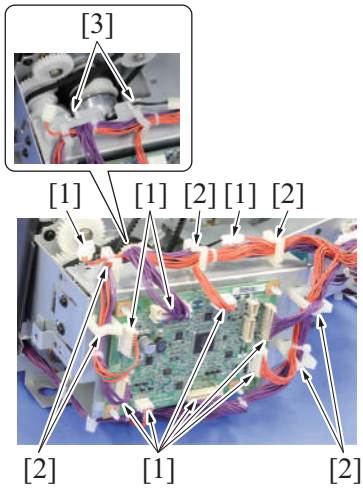
1. Remove the post-inserter.
F.20.4 Post Inserter (PI-507)
2. Remove the rear cover.
F.20.2 Rear cover (PI-507)



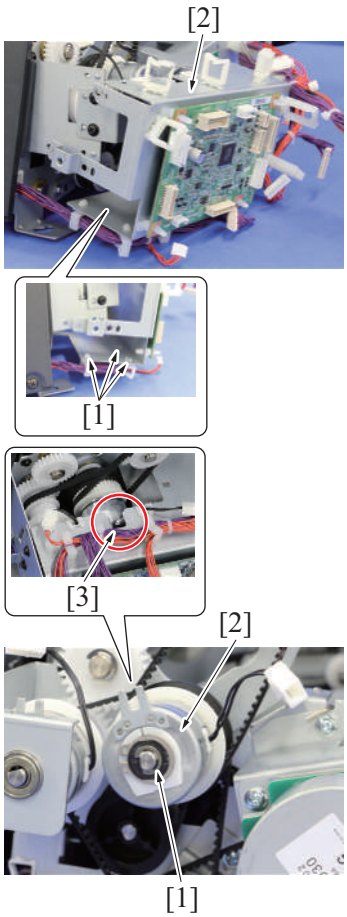
3. Pull the unlock lever [1] and open the upper door [2].



4. Remove five screws [1].



5. Disconnect 10 connectors [1].
6. Remove six wire saddles [2] and remove the harness from two harness guides [3].



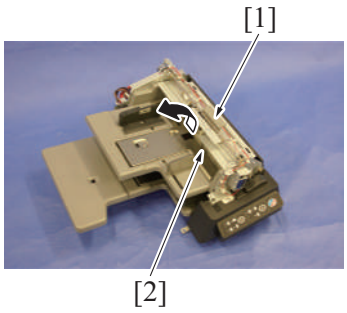
7. Unhook three wire saddle hooks [1] and remove the metal plate [2].

8. Remove the E-ring [1] and remove the transfer clutch /Lw [2].
NOTE
- **During installation, always fit the depressed part of the transfer clutch [3] into the groove of the metal plate.**

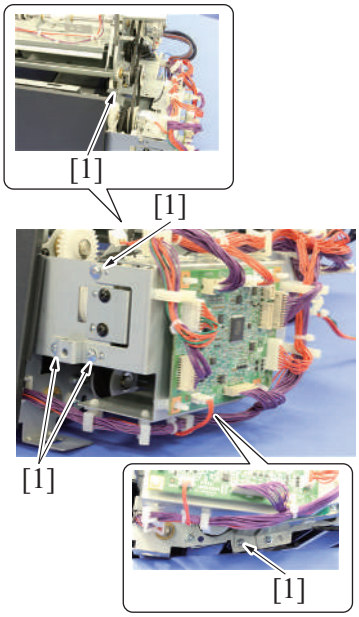
9. Reinstall the above parts following the removal steps in reverse.

20.13 Registration clutch (CL203) (PI-507)

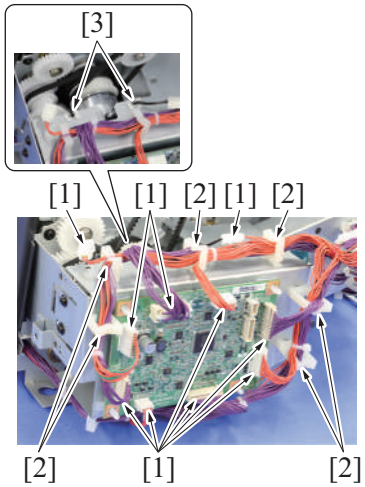
1. Remove the post-inserter.
F.20.4 Post Inserter (PI-507)
2. Remove the rear cover.
F.20.2 Rear cover (PI-507)



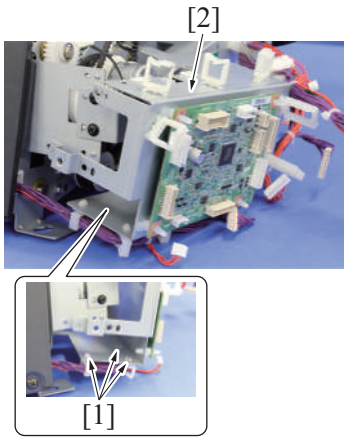
3. Pull the unlock lever [1] and open the upper door [2].



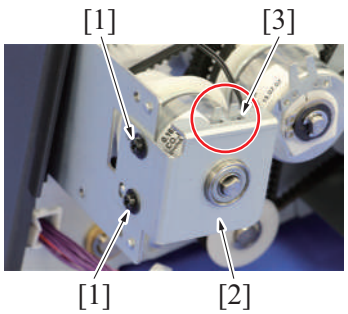
4. Remove five screws [1].



5. Disconnect 10 connectors [1].
6. Remove six wire saddles [2] and remove the harness from two harness guides [3].

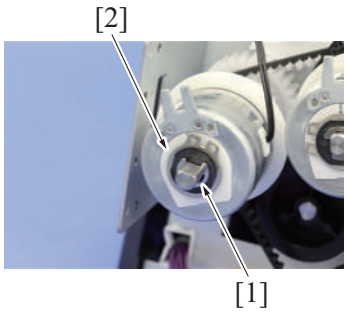


7. Unhook three wire saddle hooks [1] and remove the metal plate [2].



8. Remove two screws [1] and remove the metal plate [2].
NOTE
- **During installation, always fit the depressed part of the registration clutch [3] into the groove of the metal plate.**

9. Remove the E-ring [1], and remove the registration clutch [2].

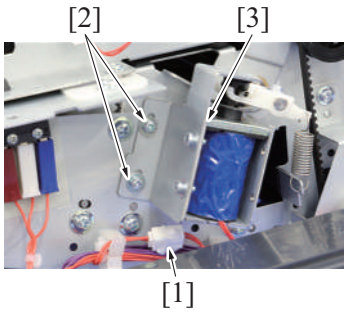


10. Reinstall the above parts following the removal steps in reverse.

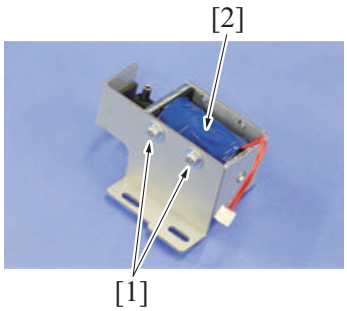
20.14 Pick-up solenoid /Lw (SD202) (PI-507)

1. Remove the post-inserter.
   F.20.4 Post Inserter (PI-507)
2. Remove the control panel cover assy.
   F.20.3 Operation panel cover assy (PI-507)

3. Disconnect the connector [1], remove two screws [2], and remove Pick-up solenoid /Lw assy [3].



4. Remove two screws [1] and remove the pick-up solenoid /Lw [2].

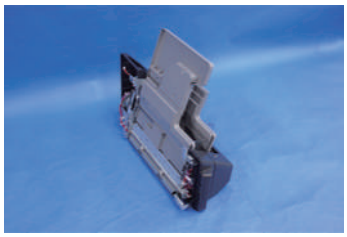


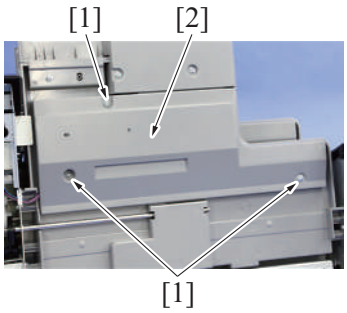
5. Reinstall the above parts following the removal steps in reverse.

20.15 Paper size VR /Lw (VR202) (PI-507)

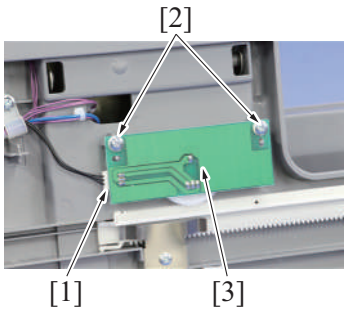
1. Remove the post-inserter.
   F.20.4 Post Inserter (PI-507)

2. Raise the post-inserter as shown in the illustration.





3. Remove three screws [1] and remove the cover [2].



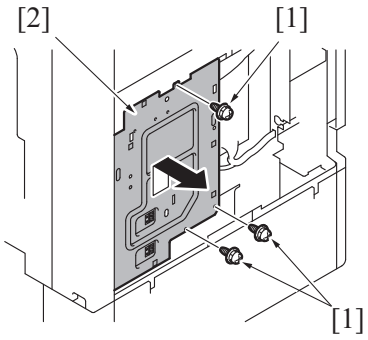
4. Disconnect the connector [1], remove two screws [2], and remove the paper size VR /Lw [3].

5. Reinstall the above parts following the removal steps in reverse.

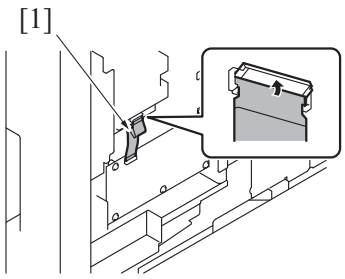
21. SC-509

21.1 DSC board/1 (SC-509)

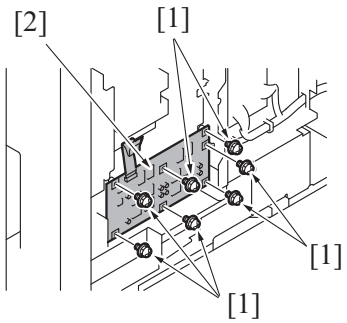
1. Remove the lower rear cover.
F.5.1.23 Lower rear cover



2. Remove three screws [1], and remove the plate [2].



3. Disconnect the flat cable [1].



4. Remove seven screws [1], and remove the DSC board/1 [2].

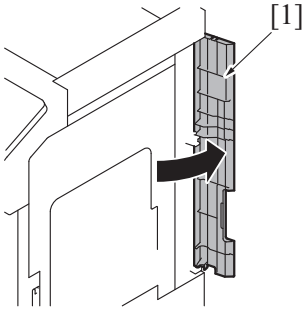
5. To reinstall, reverse the order of removal.

22. FK-514

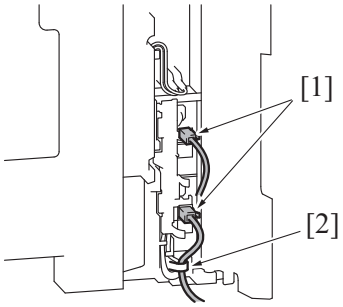
22.1 FAX Kit (Line1), FAX Kit (Line2) (FK-514)

NOTE

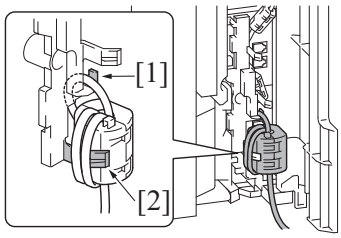
- **Following describe the procedure to be followed when removing the FAX Kit (Line 1) and FAX Kit (Line 2) at the same time. When removing the Fax Kit, make sure of the correct line associated with the Fax Kit to be removed before removing the line.**
- **When installing a new board, check the FAX board switch and make settings involving the line settings.**



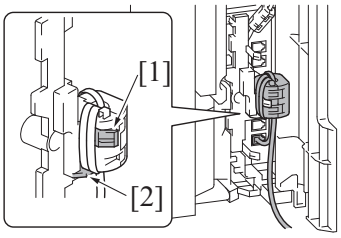
1. Open the cover [1].



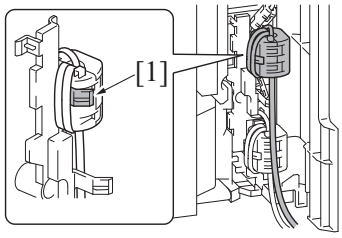
2. Disconnect the modular cable [1], and remove the modular cable from the guide [2].



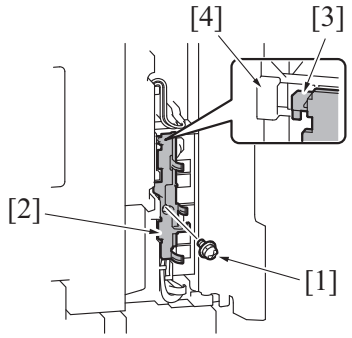
3. **NOTE**
   If there is a ferrite core attached to the modular cable when it is installed, follow the instructions and attach a ferrite core to the modular cable.
   - **Line 1 (LINE): Hook the cable onto the cable hook [1], and align the protrusion [2] between the ferrite core and cable.**



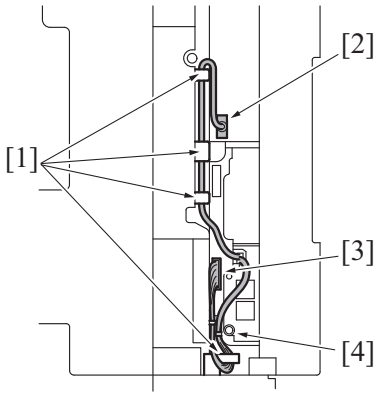
4. **NOTE**
   If there is a ferrite core attached to the modular cable when it is installed, follow the instructions and attach a ferrite core to the modular cable.
   - **Line 1 (TEL): Align the protrusion [1] between the ferrite core and cable, and place the ferrite core on the mounting seat [2].**



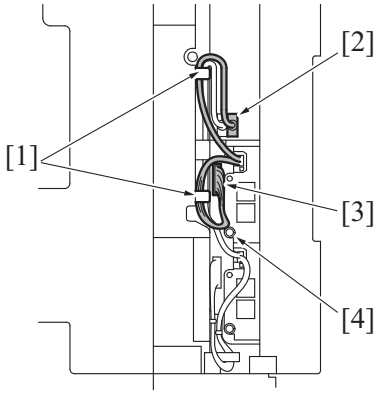
5. **NOTE**
   If there is a ferrite core attached to the modular cable when it is installed, follow the instructions and attach a ferrite core to the modular cable.
   - **Line 2 (LINE): Align the protrusion [1] between the ferrite core and cable.**



6. Remove the screw [1], and remove the connector cover [2].
NOTE
- **When installing the connector cover, insert the protrusion [3] on the connector cover into the holes [4] by taking care not to trap the harness.**



7. Remove the USB cable and harness from the harness guide [1].
8. Disconnect the USB cable [2] and connector [3].
9. Remove the screw [4], and remove the Fax Kit (Line1).

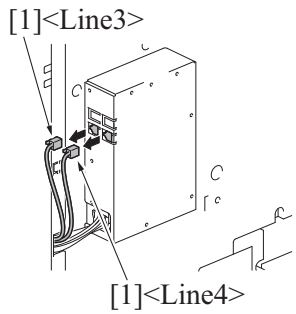


10. Remove the USB cable and harness from the harness guide [1].
11. Disconnect the USB cable [2] and connector [3].
12. Remove the screw [4], and remove the Fax Kit (Line2).

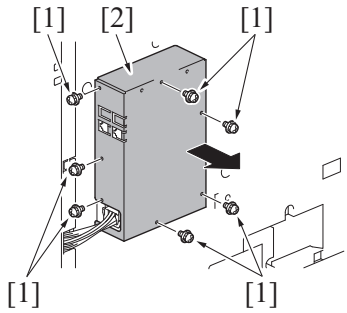
13. To reinstall, reverse the order of removal.

22.2 FAX Kit (Line1), FAX Kit (Line2) (FK-514) (with MK-742)

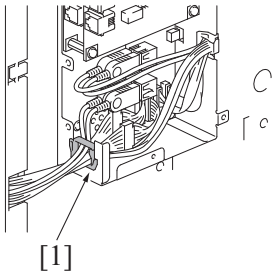
NOTE
- **Following describe the procedure to be followed when removing the FAX Kit (Line 1) and FAX Kit (Line 2) at the same time. When removing the Fax Kit, make sure of the correct line associated with the Fax Kit to be removed before removing the line.**
- **When installing a new board, check the FAX board switch and make settings involving the line settings.**



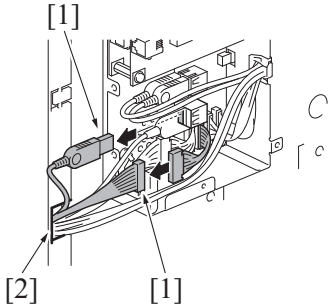
1. Disconnect the modular cable [1].



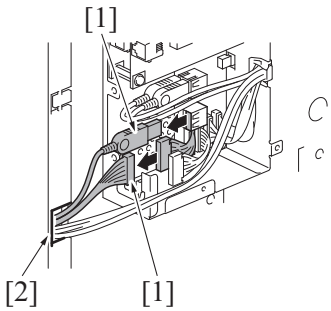
2. Remove seven screws [1], and remove the cover [2].



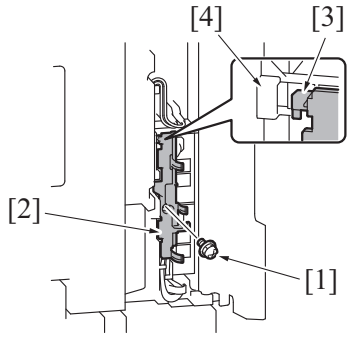
3. Remove the USB cable and harness from the wire saddle [1].



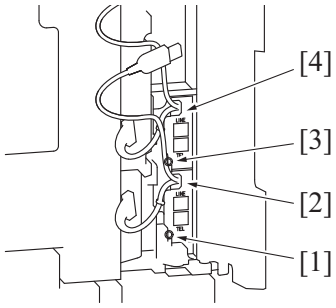
4. Disconnect two connectors [1] of the Line 2.
5. Remove the harness and USB cable from the cut-out section [2] in the cover



6. Disconnect two connectors [1] of the Line 1.
7. Remove the harness and USB cable from the cut-out section [2] in the cover



8. Remove the screw [1], and remove the connector cover [2].
   NOTE
   - **When installing the connector cover, insert the protrusion [3] on the connector cover into the holes [4] by taking care not to trap the harness.**



9. Remove the screw [1], and remove the Fax Kit (Line1) [2].
10. Remove the screw [3], and remove the Fax Kit (Line2) [4].

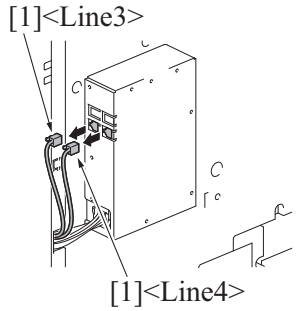
11. To reinstall, reverse the order of removal.

23. FK-515

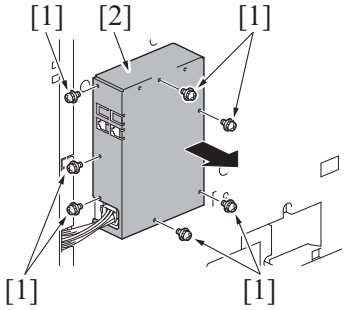
23.1 FAX board (line 3), FAX board (line 4) (FK-515)

NOTE

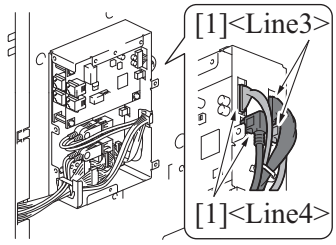
- **When removing the FAX Kit, make sure of the correct line associated with the FAX Kit to be removed before removing the line.**
- **When installing a new board, check the FAX board switch and make settings involving the line settings.**



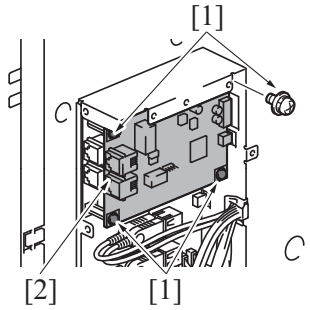
1. Disconnect the modular cable [1].



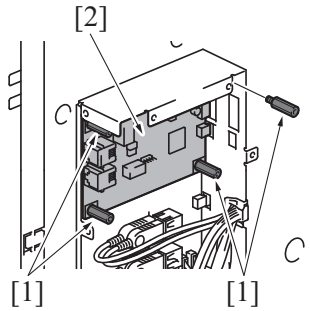
2. Remove seven screws [1], and remove the cover [2].



3. Disconnect four connectors [1].
   NOTE
   - **If the FAX board of Line 4 only is to be removed, there is no need to disconnect the Line 3 connector.**



4. Remove four screws [1], and remove the FAX board (Line4) [2].



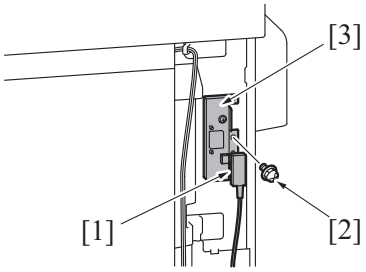
5. Remove four screws [1], and remove the FAX board (Line3) [2].

6. To reinstall, reverse the order of removal.

24. UK-221

24.1 Upgrade kit (UK-221)

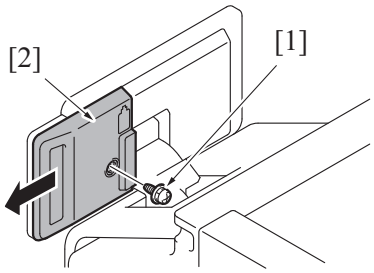
1. Remove the rear right cover.
   F.5.1.18 Right rear cover



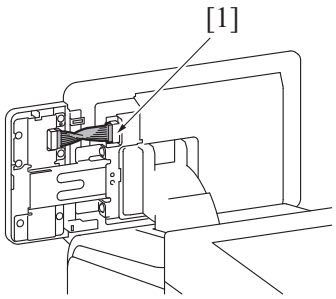
2. Disconnect the USB cable [1].
3. Remove the screw [2], and remove the upgrade kit [3].
4. To reinstall, reverse the order of removal.

25. KP-102

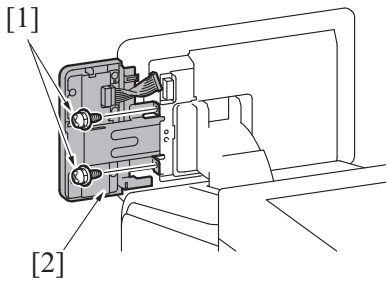
25.1 Keypad (KP-102)



1. Remove the screw [1], and remove the cover [2].



2. Disconnect the connector [1].

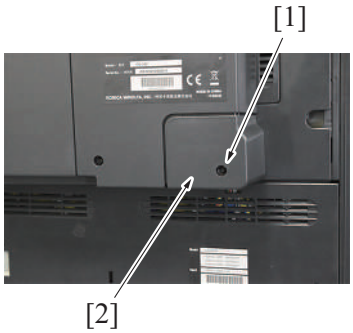


3. Remove two screws [1], and remove the keypad [2].

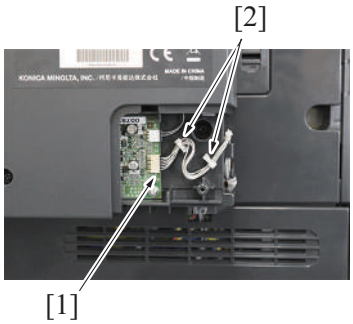
4. To reinstall, reverse the order of removal.

26. CU-102

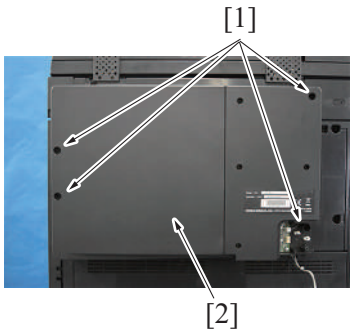
26.1 Clean unit (CU-102)



1. Remove the screw [1], and remove the cover [2].



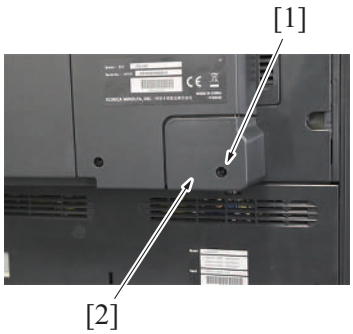
2. Disconnect the connector [1], and remove the harness from two wire saddles [2].



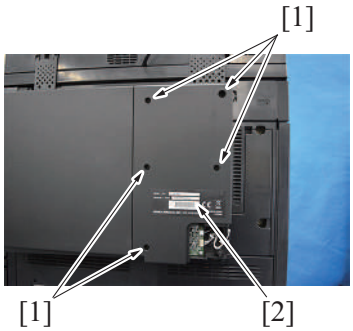
3. Remove four screws [1], and remove the clean unit [2].

4. To reinstall, reverse the order of removal.

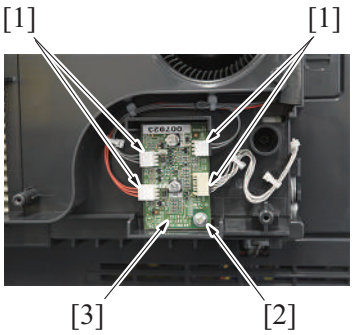
26.2 Clean unit drive board (CUDB)



1. Remove the screw [1], and remove the cover [2].



2. Remove five screws [1], and remove the clean unit cover [2].

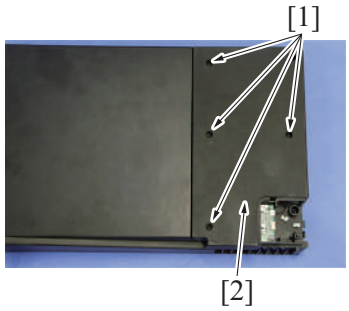


3. Disconnect four connectors [1].
4. Remove the screw [2], and remove the clean unit drive board [3].

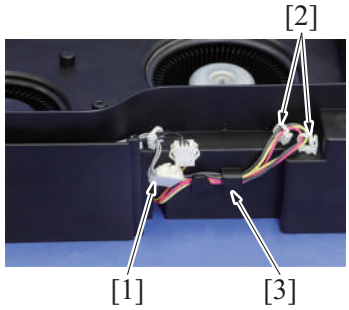
5. To reinstall, reverse the order of removal.

26.3 Exhaust fan/1 (FM14)

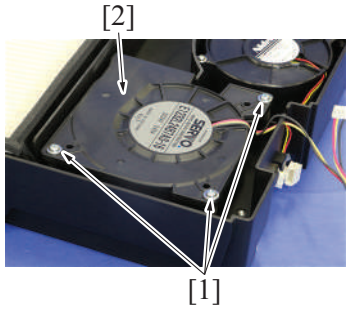
1. Remove the clean unit.
F.26.1 Clean unit (CU-102)



2. Remove four screws [1], and remove the cover [2].



3. Disconnect the connector [1], and remove the harness from two wire saddles [2] and harness guide [3].

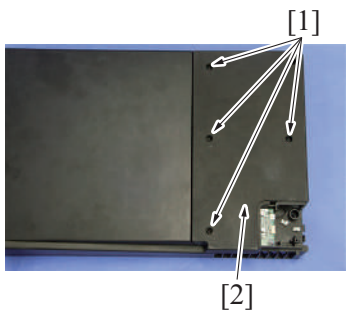


4. Remove three screws [1], and remove the exhaust fan/1.

5. To reinstall, reverse the order of removal.

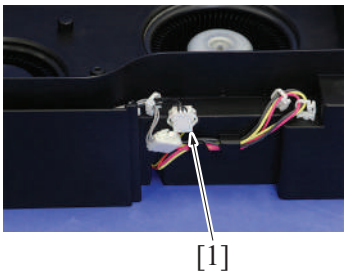
26.4 Exhaust fan/2 (FM15)

1. Remove the clean unit.
F.26.1 Clean unit (CU-102)

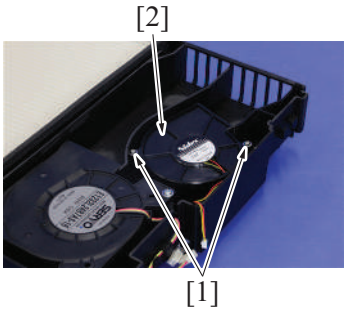


2. Remove four screws [1], and remove the cover [2].

3. Disconnect the connector [1].



4. Remove two screws [1], and remove the exhaust fan/2 [2].

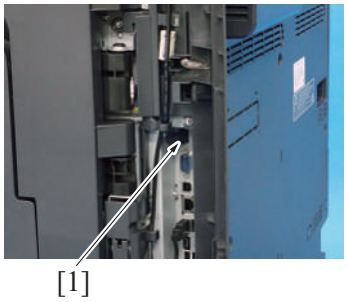


5. To reinstall, reverse the order of removal.

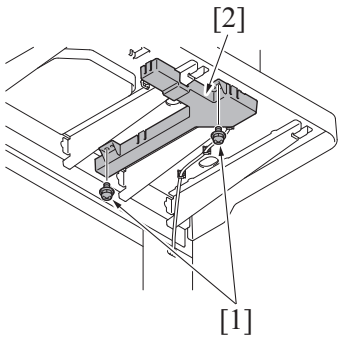
27. WT-519

27.1 Working table (WT-519)

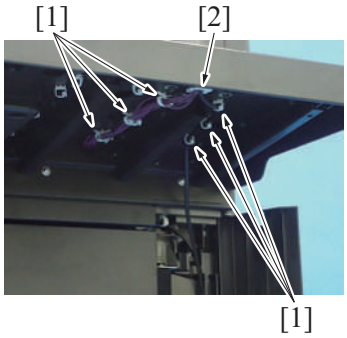
1. Disconnect the connector [1].



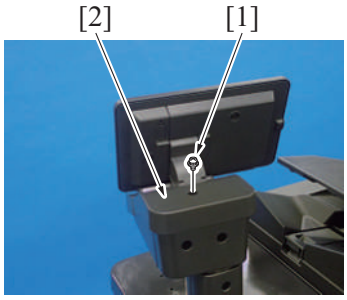
2. Remove two screws [1], and remove the cover [2].



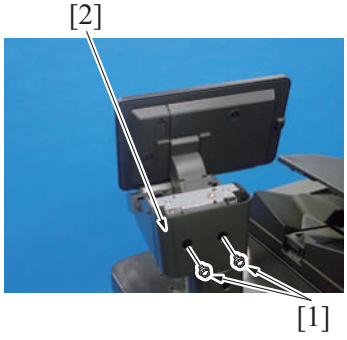
3. Remove six wire saddles [1] and remove the cable and the harness from the edge cover [2].



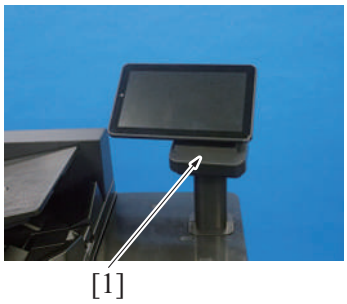
4. Remove the screw [1], and remove the cover [2].



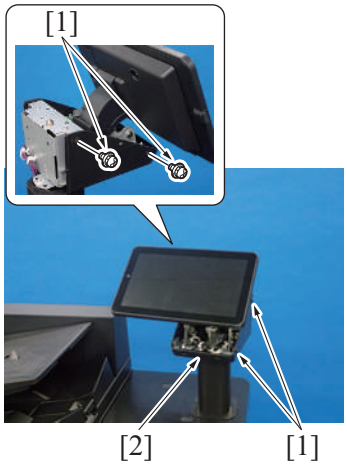
5. Remove two screws [1], and remove the cover [2].



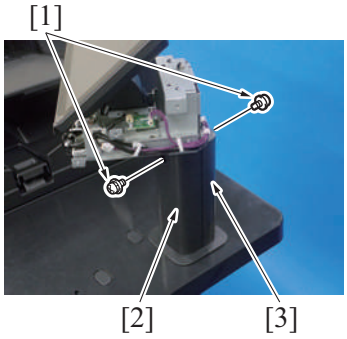
6. Remove the cover [1].



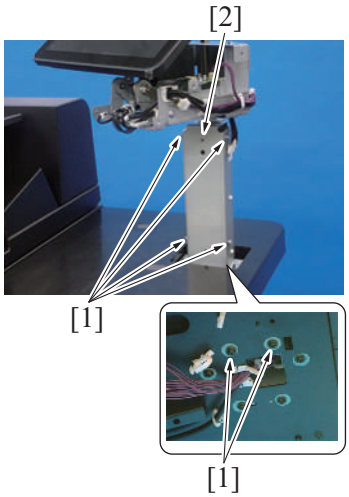
7. Remove four screws [1], and remove the cover [2].

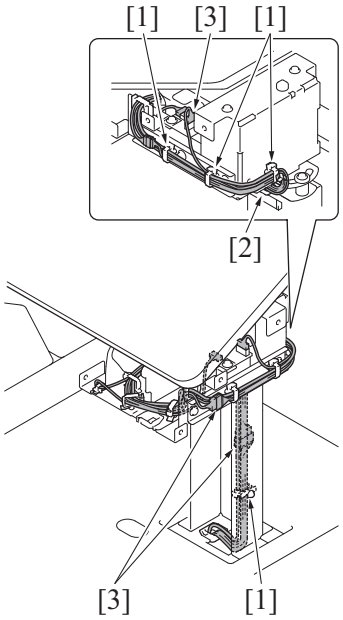


8. Remove two screws [1], and remove the cover [2]/[3].

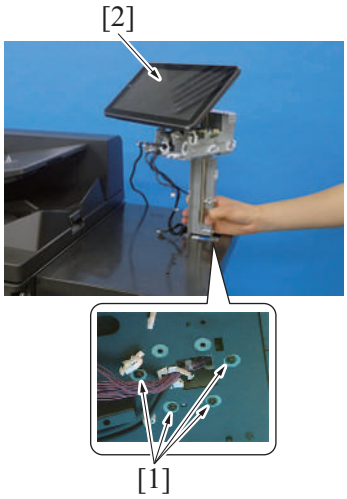


9. Remove six screws [1], and remove the plate [2].

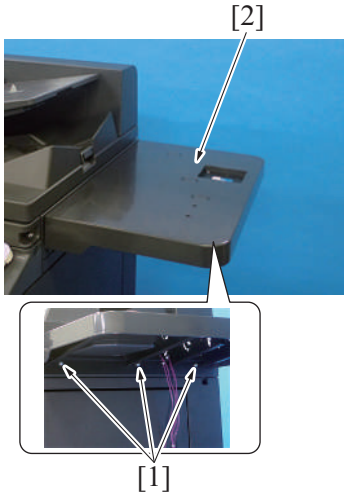




10. Remove four wire saddles [1] and remove the cable and the harness from the edge cover [2].
11. Disconnect three connectors [3].



12. Remove four screws [1], and remove the control panel unit [2].
NOTE
- **Remove the screws while supporting the control panel unit [2] so that it will not fall.**



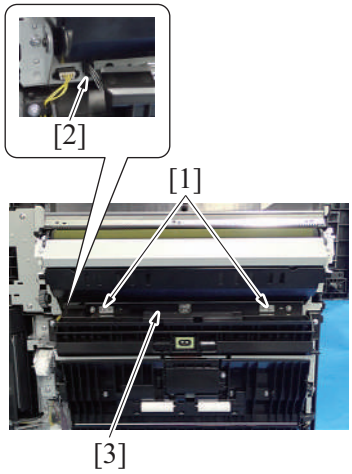
13. Remove three screws [1], and remove the working table [2].

14. To reinstall, reverse the order of removal.

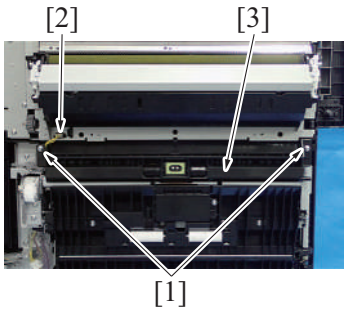
28. IM-102

28.1 Paper basis weight detection board/TX (PBWDB/TX)

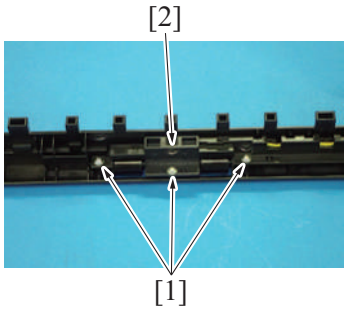
1. Open the right door.



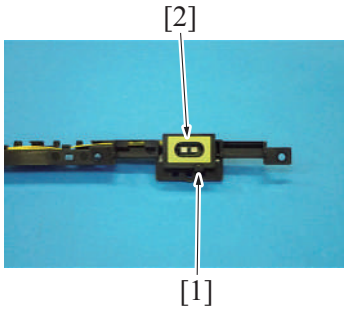
2. Remove two screws [1].
3. Disconnect the connector [2] and remove the paper type automatic detection board assy/2 [3].



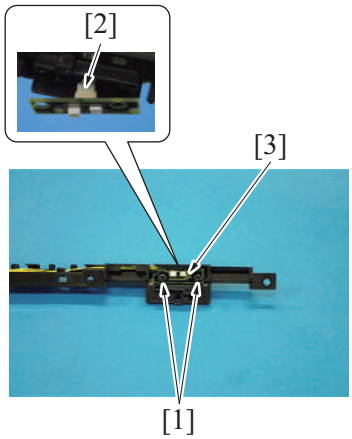
4. Remove two screws [1].
5. Disconnect the connector [2] and remove the paper type automatic detection board assy/1 [3].



6. Remove three screws [1], and remove the paper basis weight detection board/TX assy [2].



7. Remove the screw [1], and remove the cover [2].

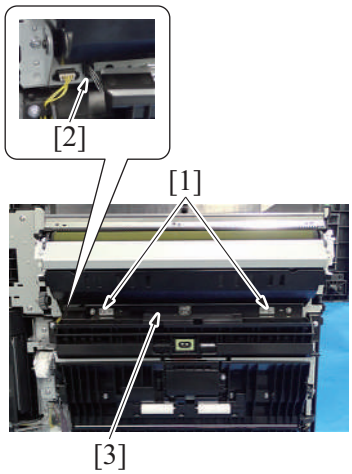


8. Remove two screws [1].
9. Disconnect the connector [2] and remove the paper basis weight detection board/TX [3].

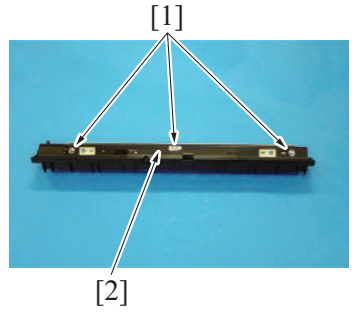
10. To reinstall, reverse the order of removal.
11. Make adjustments from [Service Mode] -> [Machine] -> [Weight calc. default].

28.2 Envelope detection board/RX (ENVDB/RX)

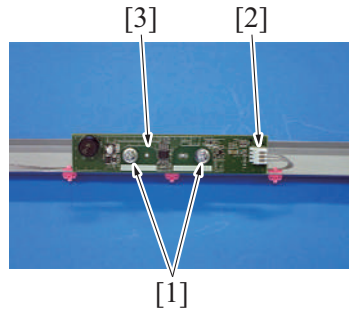
1. Open the right door.



2. Remove two screws [1].
3. Disconnect the connector [2] and remove the paper type automatic detection board assy/2 [3].



4. Remove three screws [1], and remove the cover [2].

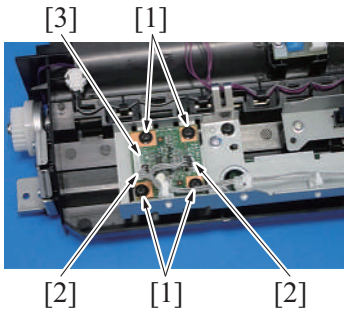


5. Remove two screws [1].
6. Disconnect the connector [2] and remove the envelope detection board/RX [3].

7. To reinstall, reverse the order of removal.

28.3 Envelope detection relay board (ENVDRB)

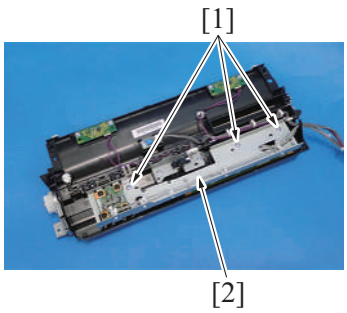
1. Remove the transport unit.
F.5.2.12 Transport unit



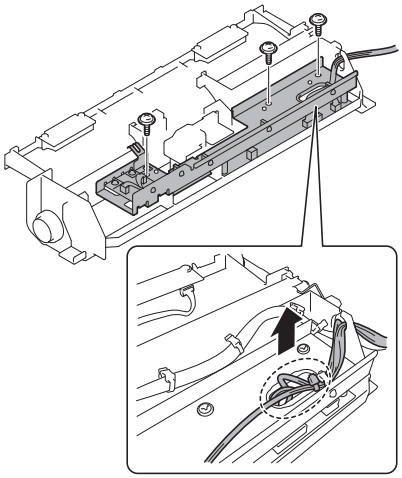
2. Remove four screws [1].
3. Disconnect two connectors [2] and remove the envelope detection relay board [3].
4. To reinstall, reverse the order of removal.

28.4 Envelope detection board/TX (ENVDB/TX)

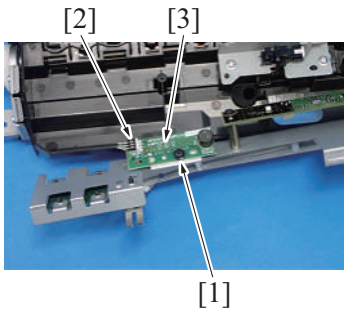
1. Remove the transport unit.
   F.5.2.12 Transport unit



2. Remove three screws [1] and remove the paper type automatic detection board assy/3 [2].



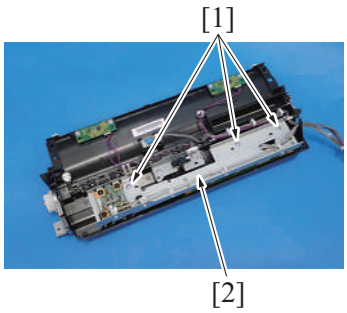
3. **NOTE**
   - **When reinstalling the paper type automatic detection board assy/3, pull out the wire harnesses so that they do not get caught.**



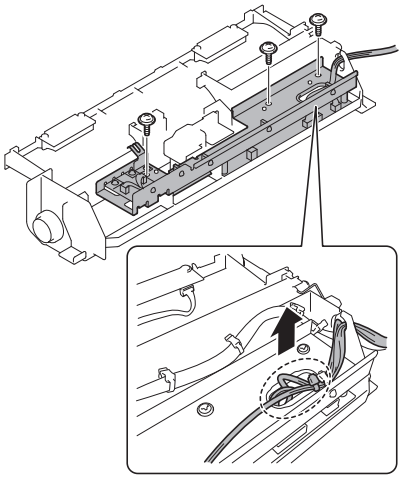
4. Remove the screw [1].
5. Disconnect the connector [2] and remove the envelope detection board/TX [3].
6. To reinstall, reverse the order of removal.
7. Make adjustments from [Service Mode] -> [Machine] -> [Weight calc. default].

28.5 Paper basis weight detection board/RX (PBWDB/RX)

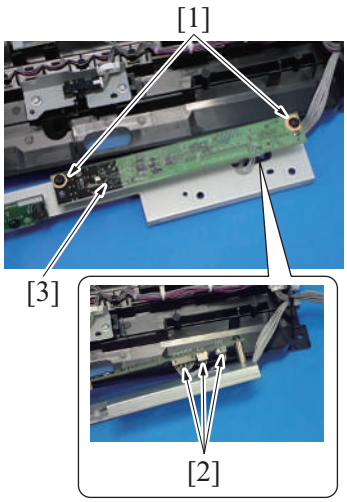
1. Remove the transport unit.
   F.5.2.12 Transport unit



2. Remove three screws [1] and remove the paper type automatic detection board assy/3 [2].



3. **NOTE**
   - **When reinstalling the paper type automatic detection board assy/3, pull out the wire harnesses so that they do not get caught.**



4. Remove two screws [1].
5. Disconnect three connectors [2] and remove the paper basis weight detection board/RX [3].

6. To reinstall, reverse the order of removal.
7. Make adjustments from [Service Mode] -> [Machine] -> [Weight calc. default].

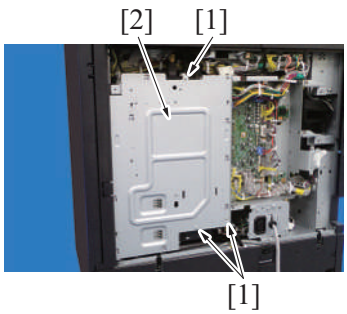
29. EM-908

29.1 Expanded memory unit (EM-908)

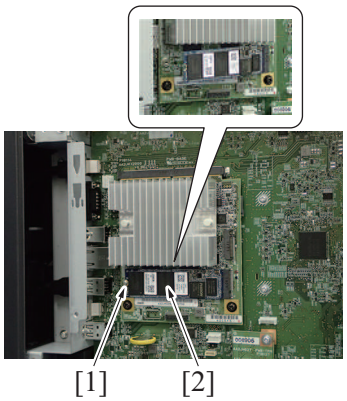
NOTE

- **Never use the combination of the used storage board removed from another machine and the CPU board. This combination causes corruption of stored data. Note that the combination of the original storage board and the used CPU board removed from another machine also causes the same problem.**
- **Never replace the storage board and CPU board with new one at the same time.**

1. Remove the lower rear cover.
   F.5.1.23 Lower rear cover



2. Remove three screws [1], and remove the plate [2].

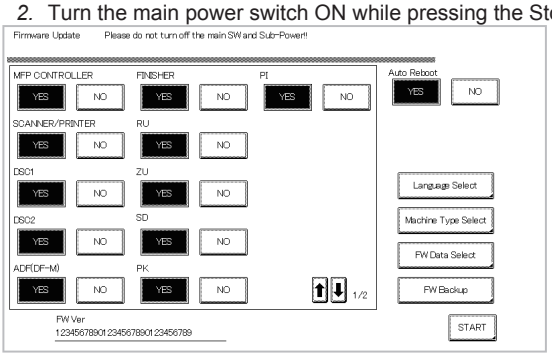


3. Remove the screw [1], and remove the storage board [2].
   NOTE
   - **When mounting the storage board, insert it obliquely.**

4. To reinstall, reverse the order of removal.

Actions after replacement of the board

1. Connect the USB memory containing the firmware into the USB port on the main body.
2. Turn the main power switch ON while pressing the Stop key.



3. A firmware update screen appears, touch [START] and start rewriting of the firmware.
4. After rewriting of the firmware is completed, the machine restarts automatically.



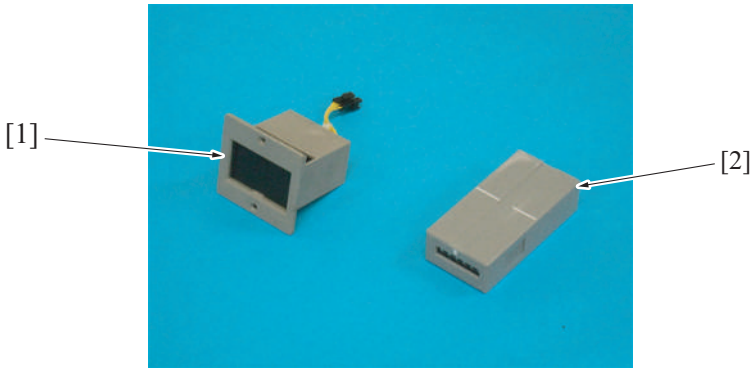
5. When the [Recover Data] appears on the screen, touch [Recover Data].
6. When the confirmation message appears, touch [Yes].
7. When the “Turn the main power switch OFF and ON” screen appears, turn OFF the main power switch and remover the USB memory.
8. Turn ON the main power switch.
9. After starting up the machine, check the firmware version in Service Mode.
10. If the firmware version is not the latest, upgrade the firmware.
11. If there is any data retrieved with backup utility, conduct the recovery of data.

12. Install movie data, voice data, font data and other data as necessary.

30. COMMERCIALLY AVAILABLE PARTS

30.1 Installing the key counter

30.1.1 Configuration



[1]	Key counter socket	[2]	Key counter

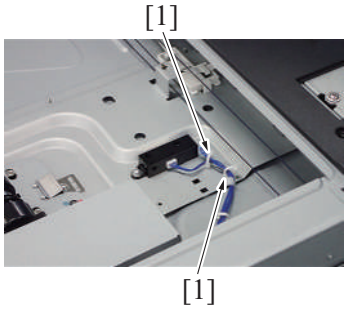
30.1.2 Procedure

NOTE

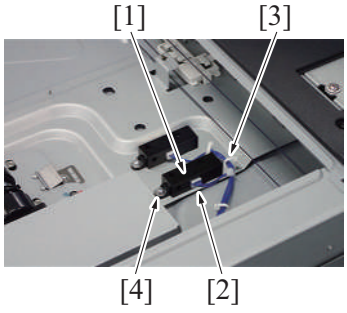
- **When mounting the key counter, the optional key counter kit KIT-1 (4623-485) or key counter kit KIT-CF (4623-484; only for Europe and Japan) is necessary.**
- **When mounting the key counter, the optional working table WT-506 or WT-519 is necessary.**
  For mounting the key counter to the optional working table WT-506 or WT-519, refer to WT-506 or WT-519 installation manual.

30.2 Installing the original size sensor/2 (Option)

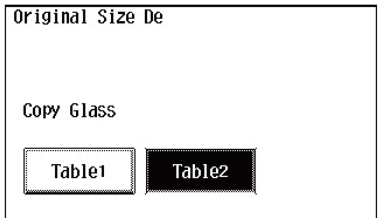
1. Remove the original glass.
   F.5.1.11 Original glass



2. Remove the harness from two wire saddles [1].

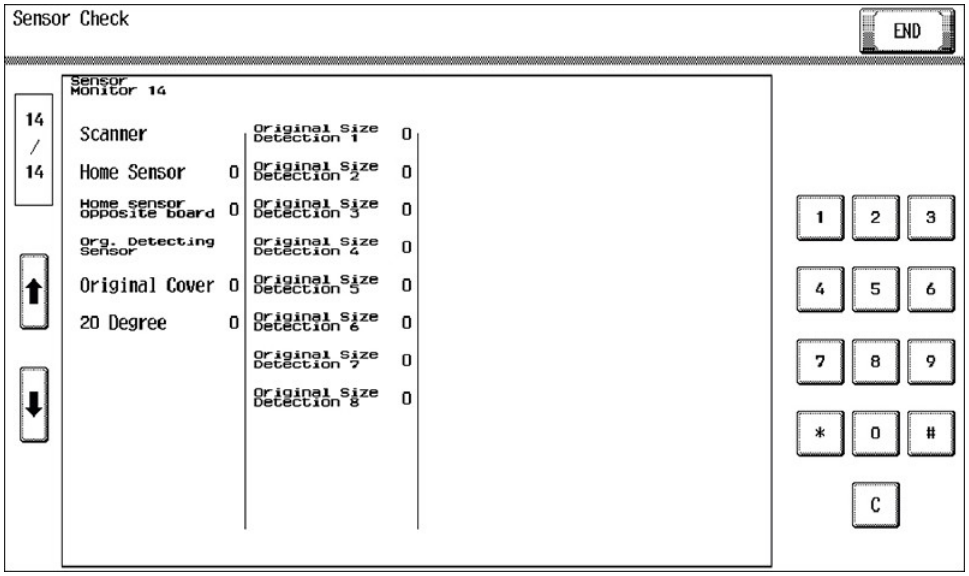


3. Connect the connector [2] to the original size sensor/2 [1].
4. Attach the harness to the wire saddle [3].
5. Fix the original size sensor/2 (PS205) [1] with screw [4].
   NOTE
   - **Refer to the Parts Guide Manual for the part numbers of the wire saddle, screws, and original size sensor.**



6. Select [Service Mode] -> [System 1] -> [Original Size Detection] and then set the original glass to [Table 2].

7. Select [Service Mode] -> [State Confirmation] -> [Sensor Check].



8. Set the original on the original glass, and check that the data for “Original Size Detection 2” changes from “0” to “1” on the screen.

G MECHANICAL ADJUSTMENT

1. ADVANCE CHECKS

Before attempting to work adjustments and settings, the following advance checks must be made. Check to see if:

- The power supply voltage meets the specifications.
- The power supply is properly grounded.
- The machine shares the power supply with any other machine that draws large current intermittently. (e.g., elevator and air conditioner that generate electric noise)
- The installation site is environmentally appropriate:
  - High temperature, high humidity, direct sunlight, ventilation, etc.
  - Levelness of the installation site

  NOTICE
  - A.3.3.2 Installation Requirements
- The original has a problem that may cause a defective image.
- The density is properly selected.
- The original glass, document reading glass, or related part is dirty.
- Correct paper is being used for printing.
- The units, parts, and supplies used for printing (developer, PC drum, etc.) are properly replenished and replaced when they reach the end of their useful service life.
- Toner is not running out.

⚠WARNING

- To unplug the power cord of the machine before starting the service job procedures.
- If it is unavoidably necessary to service the machine with its power turned ON, use utmost care not to be caught in the scanner cables or gears of the exposure unit.
- Special care should be used when handling the fusing unit which can be extremely hot.

⚠CAUTION

- The developing unit has a strong magnetic field. Keep watches and measuring instruments away from it.
- Take care not to damage the PC drum with a tool or similar device.
- Do not touch IC pins with bare hands.

2. bizhub 750i

2.1 Skew Adj.

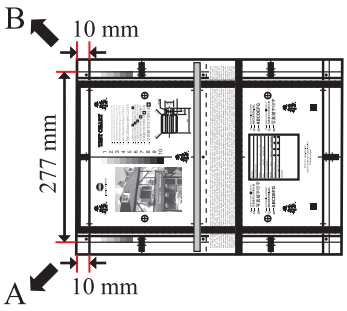
Purpose

- This adjustment must be made in the following case:
  - Images are tilted when scanning or copying images.

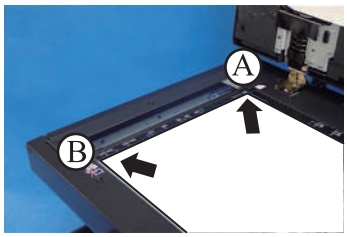
NOTE

- **Perform a test print and make sure the printed image is not tilted.**
- **If printed images are tilted, make adjustments from [Service Mode] -> [Machine] -> [Printer Area] before making this adjustment.**
- **After performing the print head skew adjustment, perform the [Scan Area] function from [Service Mode] -> [Machine].**

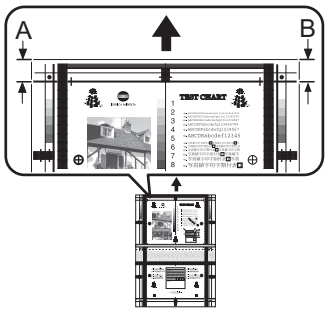
2.1.1 Confirmation procedure



1. Prepare a chart to check for tilting.



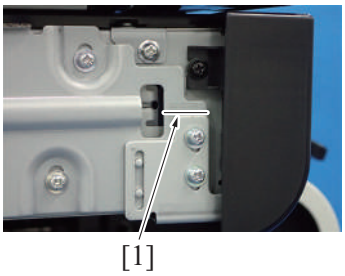
2. Set the test chart on the original document glass.
   NOTE
   - **Set the test chart against the original document scale and make sure the gap between the test chart and original document scale is 0.3 mm or less.**
3. Make sure the original document cover is completely closed.
4. Press the Start key to make a copy.



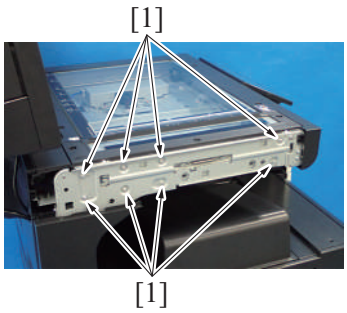
5. Check copy for image tilting.
6. Perform the following adjustment if the image tilt (different between width A and width B) is more than the standard of ±1.4 mm.

2.1.2 Adjustment procedure

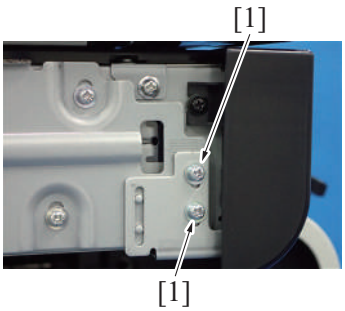
1. Remove the scanner left cover.



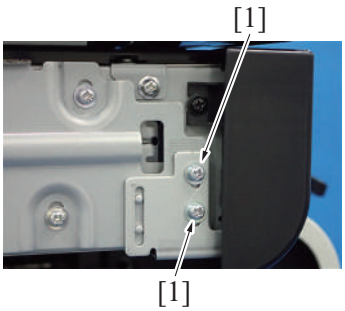
2. Record the default value [1] before making adjustments.



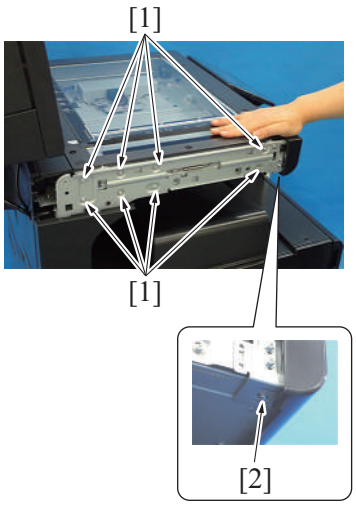
3. Loosen eight screws [1].



4. Loosen two screws [1], and adjust the scanner orientation.
   - Subtract width B from width A to calculate the difference. Use a value of two times this difference as the amount of scanner movement.
     Positive value differences
     Ex.) If the difference is +2, move the scanner up by 4 mm (4 scales).
     Negative value differences
     Ex.) If the difference is -2, move the scanner down by 4 mm (4 scales).



5. Tighten two screws [1].



6. Tighten eight screws [1] while pressing down on the scanner.
   NOTE
   - **Tighten the screws while the bottom of the scanner makes contact with the plate [2].**
   - **Do not press the scanner with too much force that causes the support column to give. (Tightening the screws with too much force applied to the support column will cause skew to occur once you release the scanner.**

2.2 Centering adjustment of the tray 1/2

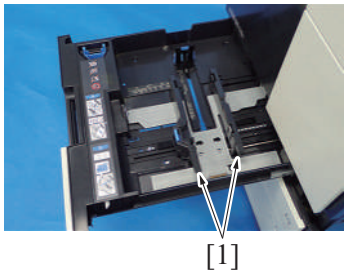
Purpose

- This adjustment must be made in the following case:
  - When an image printed on a copy is displaced from the correct position with the use of the tray1/2.

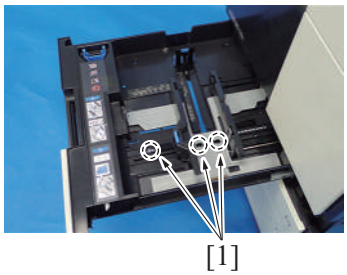
Procedure

1. Make a test print and check the amount of misalignment.
2. Pull out the tray where this adjustment is made.

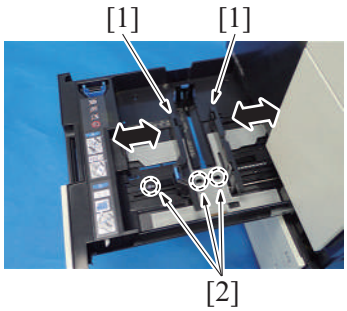
3. Stretch the paper guides [1] to the minimum size position.



4. Loosen three screws [1].



5. Move the paper guides [1] complete according to the amount of the mis-centering you checked in step 1 and adjust the center position of it.
6. Tighten three screws [2].

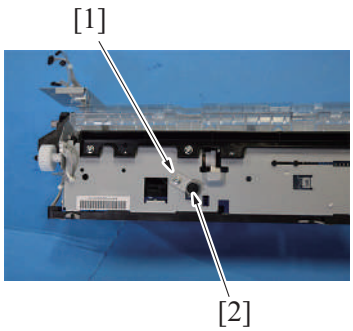


7. Make another test print and check the amount of misalignment.

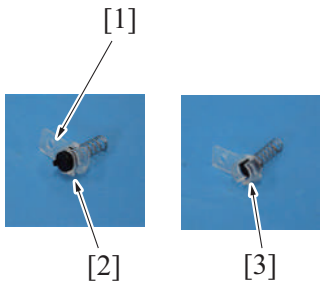
2.3 Adjusting the tray 1 paper pick-up pressure

1. Remove the paper feed unit.
F.5.2.4 Paper feed unit

2. Remove the screw [1], and remove the spring assy [2].



3. Switching the front and back side of the cover [1] installing direction adjusts the pick-up pressure.
4. For the normal spring pressure, install it as [3], and to decrease the spring pressure, install it as [2].



2.4 Adjusting the parallelism of the fusing unit path

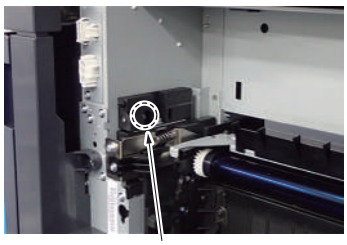
Purpose

- This adjustment must be made in the following case:

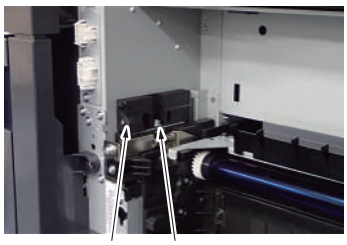
- When the second transfer paper feed path and the fusing section path are not parallel and caused wrinkles on the paper.

Procedure

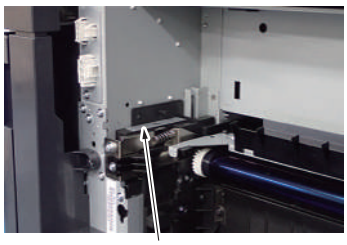
1. Remove the fusing unit.
   E.3.1.11 Replacing the fusing unit



2. Remove the screw [1] for the fusing unit positioning material.



3. Remove the screw [1], and remove the fusing unit positioning material [2].



4. 0.6 mm adjusting shim plate [1] is installed as the standard status. Add or reduce the number of shims to adjust the parallelism.
   - Removing the standard adjusting shim plate: The fusing unit mounting position (front side) will move down by 0.6 mm.
   - Adding one adjusting shim plate: The fusing mounting position (front side) will move up by 0.6mm.

   Adjusting shim plate parts number: A161 1126##

5. To reinstall, reverse the order of removal.
6. Make a test print to check whether paper is fed properly.

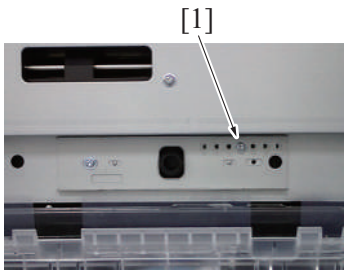
2.5 PH skew adjustment

Purpose

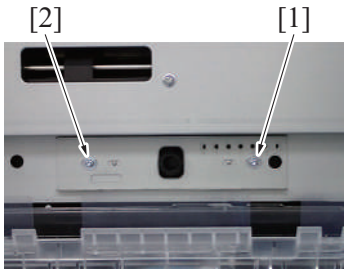
- This adjustment must be made in the following case:
  - The leading edge skew occurs.

Procedure

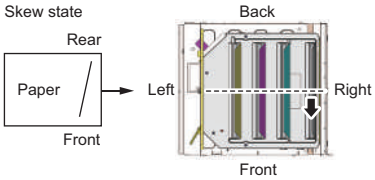
1. Remove the transport unit.
   F.5.2.12 Transport unit

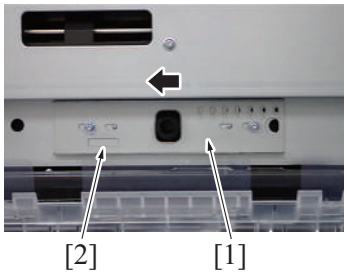


2. Remove the screw [1].

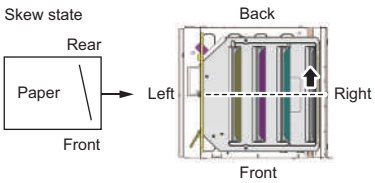


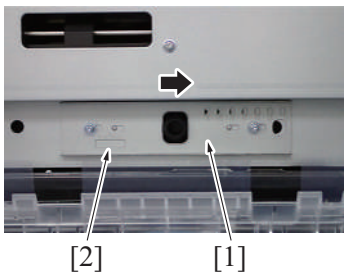
3. Temporarily tighten the screw that removed in step 2 in the long hole [1]. Loosen the fixing screw [2].



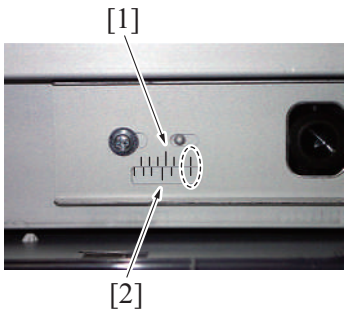


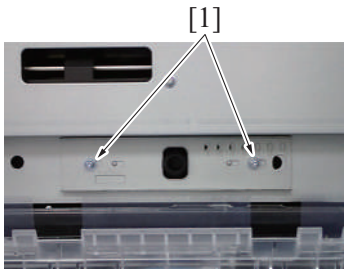
4. Confirm the skew state, and move the slide plate [1] in the adjustment direction to fit the index [2].
   - Upper illustration: Shift the PH forward to accelerate the writing on the front side.
   - Lower illustration: Shift the PH backward to accelerate the writing on the rear side.





5. NOTICE
   The adjust widths are as follows. The illustration shows when the scale is set to +3 (+0.3%).
   - Skew adjust width: -3 (leftmost line) to +3 (rightmost line) (±0.3%)
   - 1 index 0.1% (0.4 mm)
   - Upper index [1]: every 2.2 mm
   - Lower index [2]: every 2.6 mm

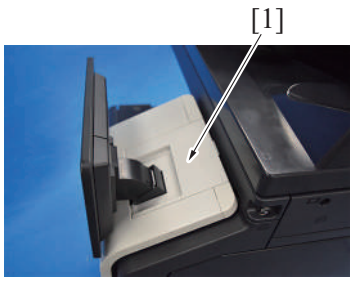




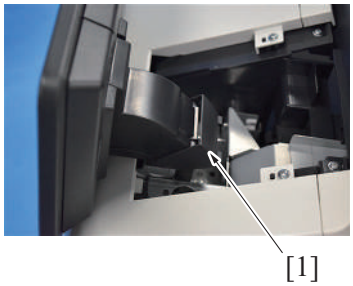
6. Tighten two screws [1].

7. To reinstall, reverse the order of removal.
8. Perform a copy and check the skew result. Repeat steps from 1 through 7 as necessary.

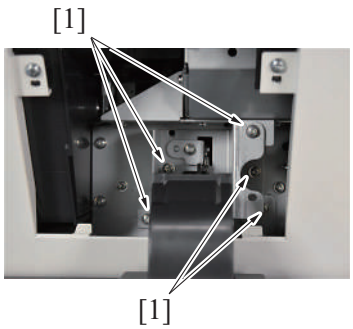
2.6 Control panel tilt adjustment



1. Remove the panel back cover [1]. (snap-fit)



2. Remove the black cover [1] of the panel hinge part. (snap-fit)



3. Loosen five screws [1], and rotate the panel hinge to correct the tilt.

3. Tray 3/4

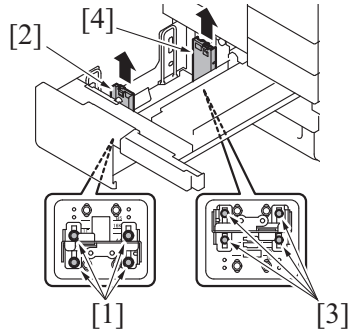
3.1 Changing the paper size of the tray 3/4

Purpose

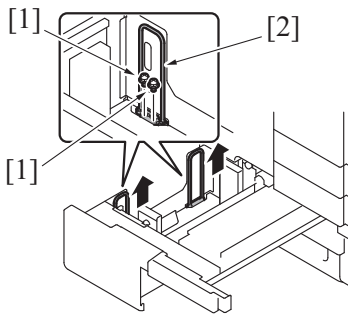
- This adjustment must be made in the following case:
  - The user wants to change the paper size being fed from the tray 3/4.

Procedure

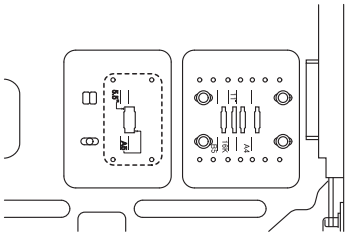
1. Pull out the tray where this adjustment is made.



2. Remove four screws [1], and remove the paper width guide (front) [2].
3. Remove four screws [3], and remove the paper width guide (rear) [4].
   NOTE
   - **When reinstalling the screws, be careful not to install them incorrect, since the screw [1] and the screw [3] are of different types.**

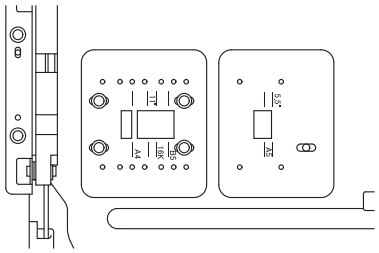


4. Remove two screws [1], and remove the paper length guide [2].



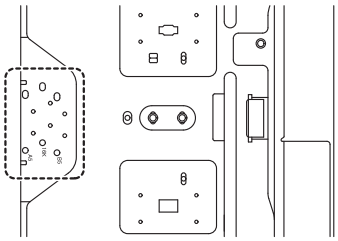
5. Fix the paper width guide (rear) with four screws according to the mark on the bottom plate.
   When setting to A5 size:
   - Insert the paper width guide (rear) into the hole and fix along the back side.

   When setting to $5^1/_2$ size:
   - Insert the paper width guide (rear) into the hole and fix along the front side.



6. Place the paper of the size to be set and set the paper width guide (front) along the paper.
   NOTE
   - **Clearance between the paper and the paper width guide (front): within 0 to 1 mm**
7. Fix the front side of the paper width guide (front) with two screws, unload the paper, and fix the two rear side.

8. Fix the paper length guide according to the mark on the bottom plate.



9. From [Service Mode] -> [System 2] -> [LCT(Built-in) Size Settings], select the tray in which the paper size will be changed and change the paper size.
10. Make a test print.

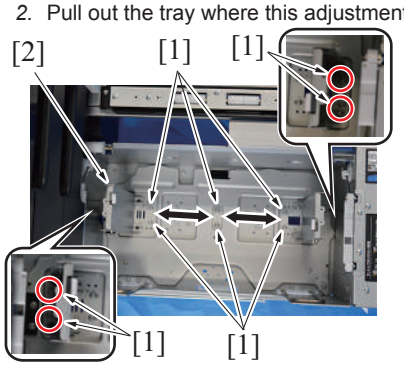
3.2 Centering adjustment of the tray 3/4

Purpose

- This adjustment must be made in the following case:
  - When adjustment in [Service Mode] -> [Machine] -> [Printer Area] -> [Printer Image Centering Side 1] does not resolve a problem.

Procedure

1. Make a test print and check the amount of misalignment.
2. Pull out the tray where this adjustment is made.



3. Loosen 10 screws [1].
4. Move the paper guide [2] according to the amount of the mis-centering and adjust the center position of it.
5. Tighten 10 screws [1].
6. Make another test print and check the amount of misalignment.

4. LU-205

4.1 Changing the paper size

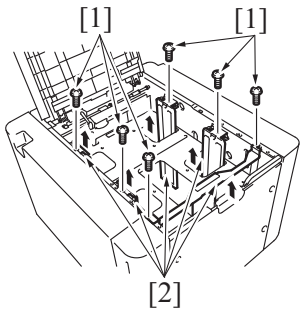
4.1.1 Purpose

This adjustment must be made in the following case:

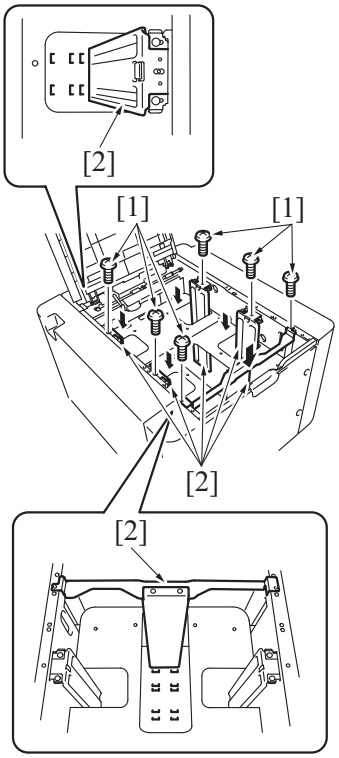
- The user wants to change the size of paper being fed.

4.1.2 Procedure

1. Open the upper door of the paper feed unit.



2. Remove six screws [1] and remove the paper guide side plate [2].



3. Match the paper guide side plate [2] to the size of the loaded paper.
4. Reinstall six screws [1] to attach the paper guide side plate [2].
5. From [Service Mode] -> [System 2] -> [LCT Paper Size Setting], select the tray in which the paper size will be changed and change the paper size.

4.2 Centering adjustment of the LCT

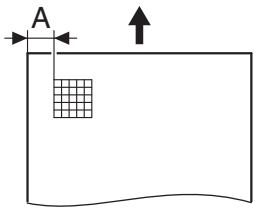
4.2.1 Purpose

This adjustment must be made in the following case:

- When adjustment in [Service Mode] -> [Machine] -> [Printer Area] -> [Printer Image Centering Side 1] does not resolve a problem.

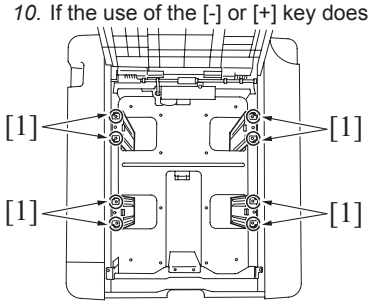
4.2.2 Procedure

1. Call the Service Mode to the screen.
2. Touch [Machine].
3. Touch [Printer Area].
4. Touch [Printer Image Centering Side 1].
5. Touch [LCT].
6. Press the Start key to let the main body produce a test print.

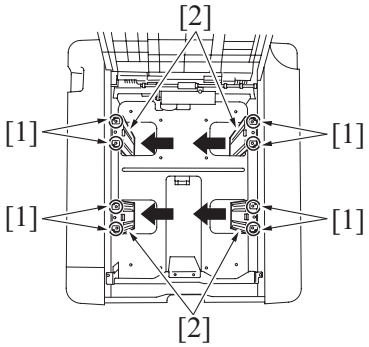


7. Measure the width of printed reference line A. Target A: 3.0 mm ± 1.5 mm

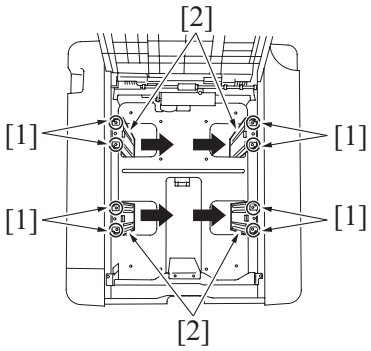
8. If the measured width A falls outside the target, enter the correction value using the [-] or [+] key.
9. Produce another test print and check to see if width A falls within the target.
10. If the use of the [-] or [+] key does not allow the measurement to fall within the target, perform the following steps.



11. Open the upper door of the LCT to loosen eight screws [1].
NOTE
- **During adjustment, in order to keep the same distance between the paper guide side plates, place a sheet of paper between the paper guide side plates with 1.0 mm apart from each of the plates.**



12. When width A is larger than the target. Move the paper guide side plates [2] to the left and tighten eight loosened screws [1].



13. When the width A is smaller than the target. Move the paper guide side plates [2] rightward and tighten eight loosened screws [1].

14. Load paper and let the main body produce another test print. Then, check width A.
15. Make the adjustment until width A falls within the target.

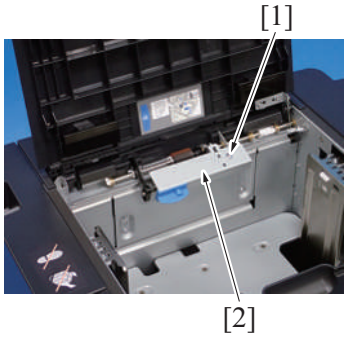
4.3 Pick-up roller load adjustment of the LCT

4.3.1 Purpose

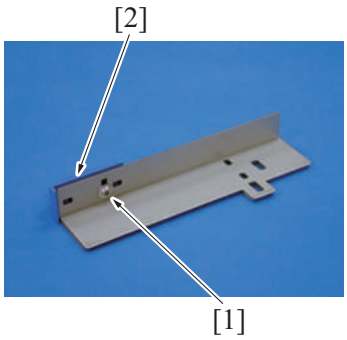
This adjustment must be made in the following case:
- Incase a no feed jam occurs frequently, perform the pick-up roller load adjustment.

4.3.2 Procedure

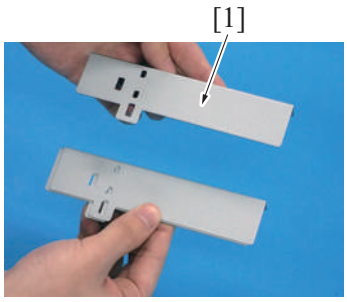
1. Open the upper door.



2. Remove the screw (M3 x 10 mm: V116 031003) [1] and remove the paper assist plate assy [2].



3. Remove the screw [1] and remove the assist handle [2].



4. Add one more paper assist plate (A03N 5604 ##) [1] to the original ones.
NOTE
- **Adding only one paper assist plate is allowed and the total needs to be up to four.**

5. Reinstall the assist handle that was removed in step 3, securing it with the screw.
6. Reinstall the paper assist plate assy with a new screw (M3 X 12 mm: V116 031203). The screw removed in step 2 (M3 X 10 mm: V116 031003) cannot be used to reinstall the assy.
7. Close the upper door.
8. Perform copying/printing to check whether the no feed or the double feed occurs or not.

5. LU-303

5.1 Centering adjustment of the LCT

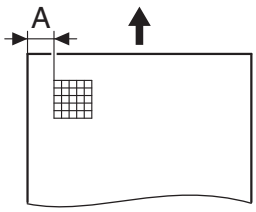
5.1.1 Purpose

This adjustment must be made in the following case:

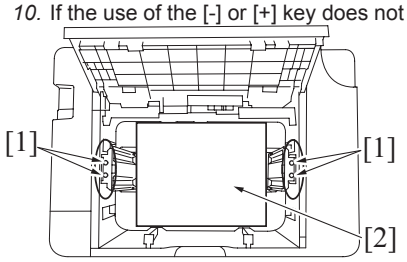
- When adjustment in [Service Mode] -> [Machine] -> [Printer Area] -> [Printer Image Centering Side 1] does not resolve a problem.

5.1.2 Procedure

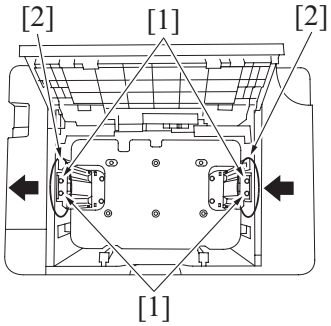
1. Call the Service Mode to the screen.
2. Touch [Machine].
3. Touch [Printer Area].
4. Touch [Printer Image Centering Side 1].
5. Touch [LCT].
6. Press the Start key to let the main body produce a test print.
7. Measure the width of printed reference line A. Target A: 3.0 mm ± 1.5 mm



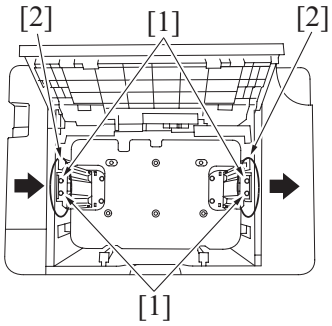
8. If the measured width A falls outside the target, enter the correction value using the [-] or [+] key.
9. Produce another test print and check to see if width A falls within the target.
10. If the use of the [-] or [+] key does not allow the measurement to fall within the target, perform the following steps.
11. Open the upper door on LCT to loosen four screws [1].
    NOTE
    - **During adjustment, in order to keep the same distance between the paper guide side plates, place a sheet of paper [2] between the paper guide side plates with 1.0 mm apart from each of the plates.**



12. When the width A is larger than the target. Move the paper guide side plates [2] leftward and tighten four loosened screws [1].



13. When the width A is smaller than the target. Move the paper guide side plates [2] rightward and tighten four loosened screws [1].



14. Load paper and let the main body produce another test print. Then, check width A.
15. Make the adjustment until width A falls within the target.

5.2 Pick-up roller load adjustment of the LCT

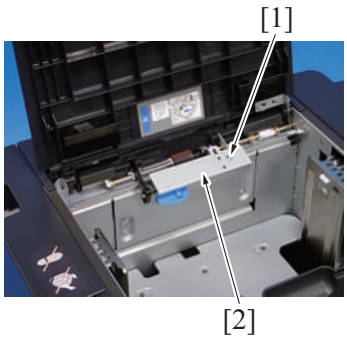
5.2.1 Purpose

This adjustment must be made in the following case:

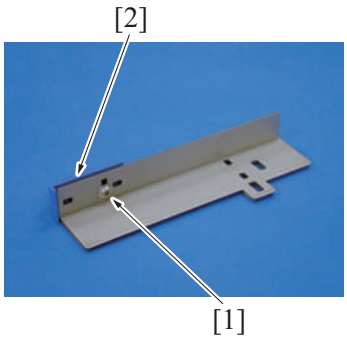
- Incase a no feed jam occurs frequently, perform the pick-up roller load adjustment.

5.2.2 Procedure

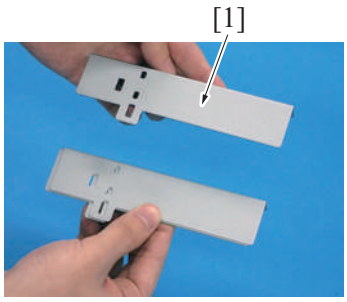
1. Open the upper door.



2. Remove the screw (M3 x 10 mm: V116 031003) [1] and remove the paper assist plate assy [2].



3. Remove the screw [1] and remove the assist handle [2].



4. Add one more paper assist plate (A03N 5604 ##) [1] to the original ones.
NOTE
- **Adding only one paper assist plate is allowed and the total needs to be up to four.**

5. Reinstall the assist handle that was removed in step 3, securing it with the screw.
6. Reinstall the paper assist plate assy with a new screw (M3 X 12 mm: V118 031203). The screw removed in step 2 (M3 X 10 mm: V116 031003) cannot be used to reinstall the assy.
7. Close the upper door.
8. Perform copying/printing to check whether the no feed or the double feed occurs or not.

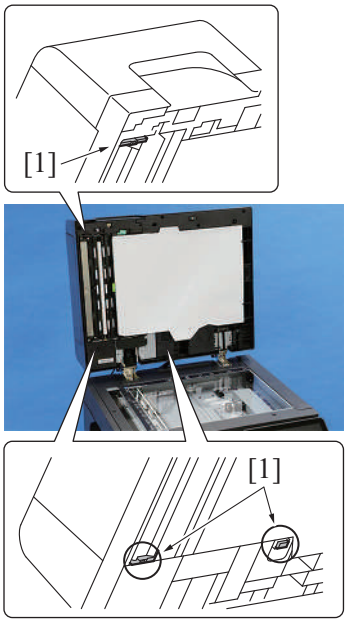
6. DF-713

6.1 Adjusting the height of the dual scan document feeder

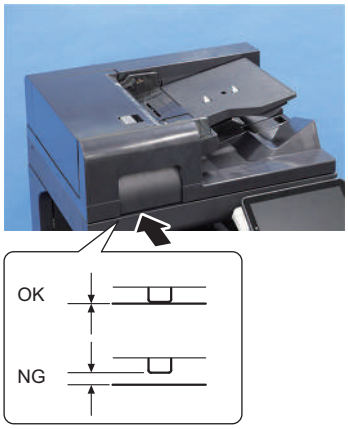
Purpose

- This adjustment must be made in the following case:
  - When the dual scan document feeder has been removed.

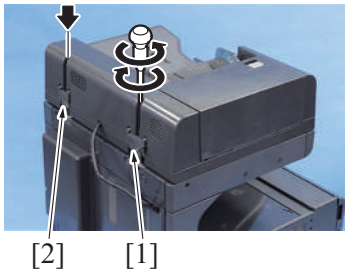
Procedure



1. Check the clearance between the upper face of scanner and the protrusion [1] on the dual scan document feeder (3 spots).



2. **NOTE**
   - **There must be no clearance between the protrusion [1] on the dual scan document feeder and the upper face of scanner.**
3. If there is any clearance, the following adjustment is needed.



4. Remove the clearance by turning the adjusting screw [1].
   - Clockwise rotation: Lifting up the rear side
   - Counterclockwise rotation: Lowering the rear side
5. Use the adjusting screw [2] when further adjustment is needed.
   - Clockwise rotation: Lifting up the rear side
   - Counterclockwise rotation: Lowering the rear side

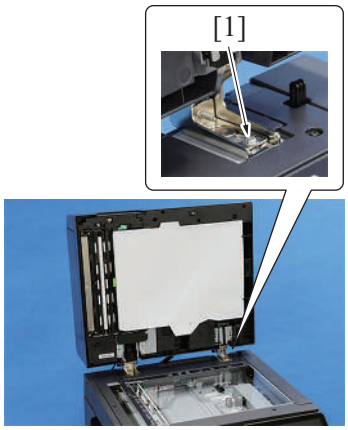
6.2 Adjusting front side skew feed on dual scan document feeder

Purpose

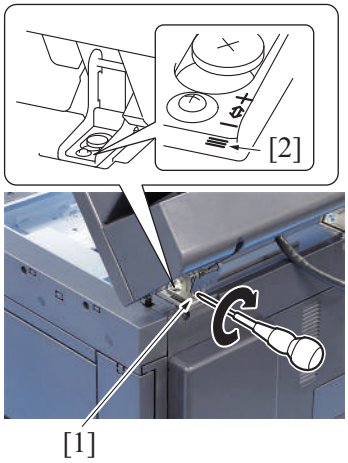
- This adjustment must be made in the following case:
  - When the dual scan document feeder has been removed.

Procedure

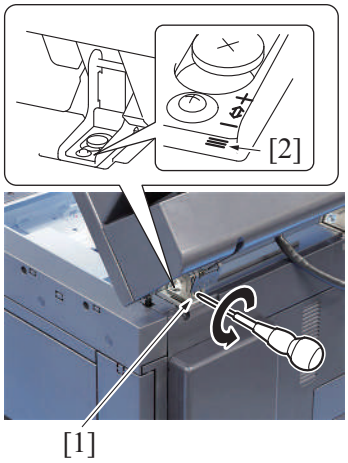
1. Call the Service Mode to the screen, and measure the skew of the dual scan document feeder.
   [Service Mode] -> [ADF] -> [Skew Measurement] -> [DFSkew(Front)].
2. If the value of [Avg. Value] does not fall within the “specified range”, perform the following adjustment.



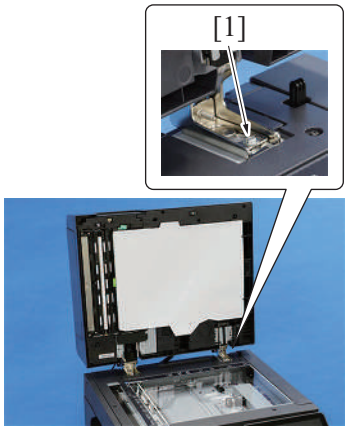
3. Loosen the mounting screw [1] on the right hinge viewed from the front.



4. If “1.0” is displayed in the [Scale], turn the adjusting screw clockwise to move the scale scribe line one graduation in the “+” direction.
Example: If the scribe line is on graduation “3” before adjusting, adjust the scribe line to graduation “4”.
NOTE
- **Look at the guide lines [2] when making the adjustment.**
- **When turning the adjusting screw [1], be sure not to raise the dual scan document feeder until in an upright position. It may damage the adjusting screw [1].**



5. If “-1.0” is displayed in the [Scale], turn the adjusting screw counterclockwise to move the scale scribe line one graduation in the “-” direction.
Example: If the scribe line is on graduation “3” before adjusting, adjust the scribe line to graduation “2”.
NOTE
- **Look at the guide lines [2] when making the adjustment.**
- **When turning the adjusting screw [1], be sure not to raise the dual scan document feeder until in an upright position. It may damage the adjusting screw [1].**



6. After the adjustment is completed, tighten the mounting screw [1] on right side hinge securely with screwdriver.

7. Re-scan the chart five times by selecting [Service Mode] -> [ADF] -> [Skew Measurement] -> [DFSkew(Front)] and measure the average Skew value.
8. Check the [Avg. Value] is within the “specified range”.

9. If the value of [Avg. Value] does not fall within the “specified range”, repeat the adjustment.

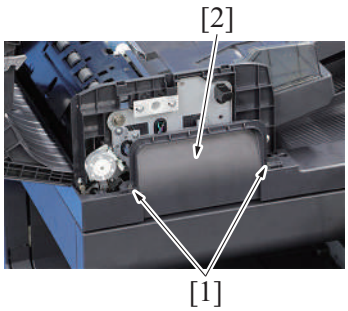
6.3 Adjusting back side skew feed on dual scan document feeder

Purpose

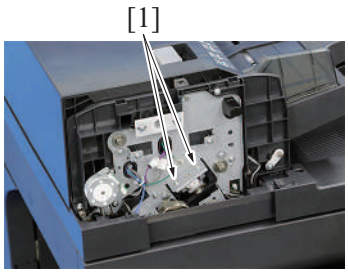
- This adjustment must be made in the following case:
  - When the dual scan document feeder has been removed.
  - When the CIS module has been removed.

Procedure

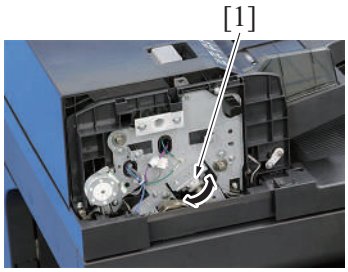
1. Call the Service Mode to the screen, and measure the skew of the dual scan document feeder.
   [Service Mode] -> [ADF] -> [Skew Measurement] -> [DFSkew(Back)].
2. If the value of [Avg. Value] does not fall within the “specified range”, perform the following adjustment.
3. Remove the front cover of the dual scan document feeder.
   F.7.1 Front cover (DF-713)
4. Remove two screws [1], and remove the cover [2].



5. Loosen two screws [1].



6. Depending on the difference of the skew value, turn the adjustment dial [1] and adjust.
   - When the difference is a positive (+) value, turn the dial clockwise.
   - When the difference is a negative (-) value, turn the dial counterclockwise.



7. After completing the adjustment, tighten the screw loosened in step 5.
8. Re-scan the chart five times by selecting [Service Mode] -> [ADF] -> [Skew Measurement] -> [DFSkew(Back)] and measure the average Skew value.
9. Check the [Avg. Value] is within the “specified range”.
10. If the value of [Avg. Value] does not fall within the “specified range”, repeat the adjustment.
11. Attach the front cover.

6.4 Adjusting the pressure of the separation roller

Purpose

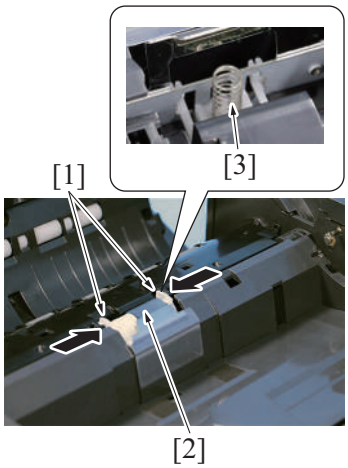
- This adjustment must be made in the following case: The adjustment is available in three different levels.
  - Original misfeed often occurs.

Procedure

1. Open the left cover [1].

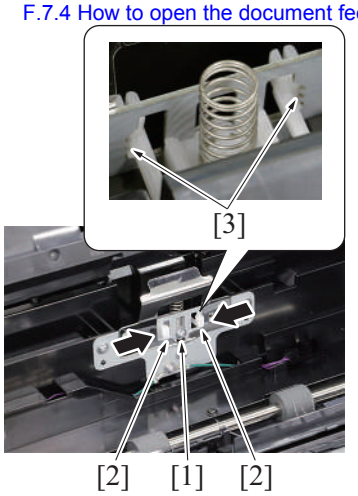


2. Grip both sides [1] of the holder and remove the separation roller assy [2].
NOTE
- **Do not lose the spring [3] at the lower part of the separation roller assy [2].**



3. Open the document feed tray.
F.7.4 How to open the document feed tray (DF-713)

4. Remove the screw [1].
5. Grasp the parts [2] and make the adjustment to align with the metal plate groove [3].
NOTE
- **When align with the upper groove, the spring is stronger.**
- **When align with the lower groove, the spring is weaker.**



6. To reinstall, reverse the order of removal.

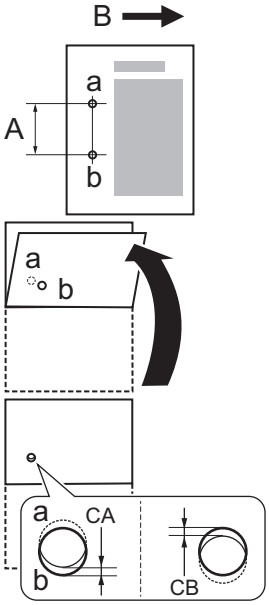
7. PK-524

7.1 Punch hole deviation correction

Purpose

- This adjustment must be made in the following case:
  - The punch holes are on a slanted line.

Procedure

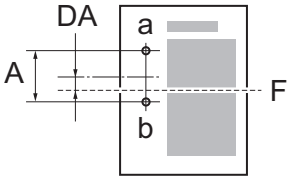


1. Make a 1sided copy sample in the punch mode. Face the printed surface upward.
   - [A]: The distance between holes
   - [B]: Paper feeding direction
   - [a]: Punch hole (upper)
   - [b]: Punch hole (lower)

2. Fold the paper in half along the center in the paper feeding direction.

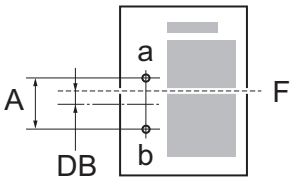
3. Measure the deviation amount [D] between punch holes [a] and [b].
   Target: D = 0 ± 1.0 mm

Ex.1



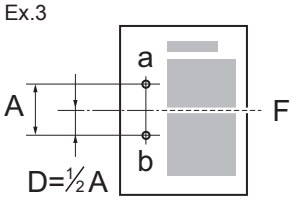
4. If the deviation between the punch holes [a] and [b] is [CA], the punch holes deviate upward in the figure relative to the paper folding line [F] (center in the paper feeding direction).
   - Ex.1: Punch hole deviation amount [DA] = Measured value [CA] 3 mm ÷ 2 = -1.5 mm (hole positions deviate upward)

Ex.2

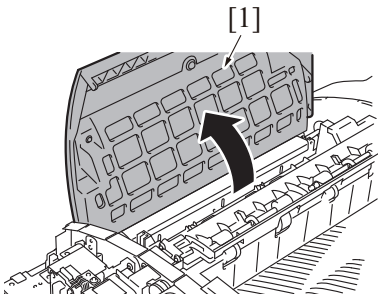


5. If the deviation between the punch holes [a] and [b] is [CB], the punch holes deviate downward in the figure relative to the paper folding line [F] (center in the paper feeding direction).
   - Ex.2: Punch hole deviation amount [DB] = Measured value [CB] 3 mm ÷ 2 = +1.5 mm (hole positions deviate downward)

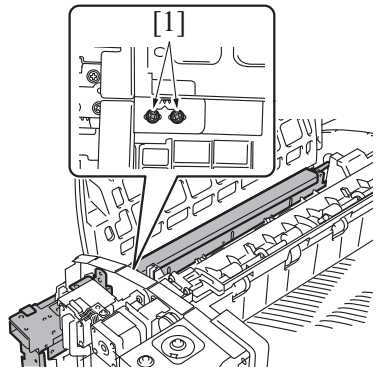
Ex.3



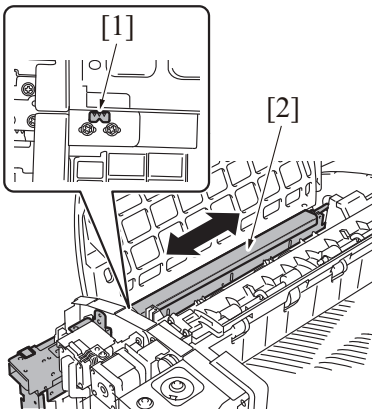
6. Complete the adjustment, if the deviation amount [D] between punch holes [a] and [b] falls within the target (±1.0 mm or less).
   - Ex.3: Punch hole deviation amount [D] = Measured value [C] 0mm÷2 = 0 (punch hole deviation amount falls within the target)



7. In case the figure exceeds the above mentioned target, follow the procedures shown below.
8. Open the upper cover [1].



9. Loosen two screws [1].



10. Using the triangle marks [1] on the plate as a guide, move the punch unit [2] back and forth to adjust its position.

8. PK-526

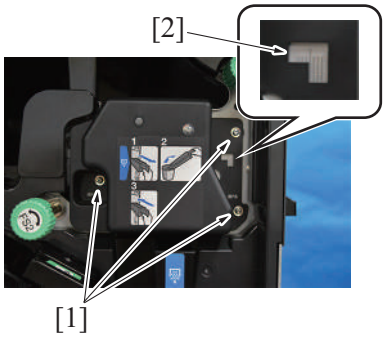
8.1 Punch hole deviation correction

Purpose

- This adjustment must be made in the following case:
  - The punch holes are on a slanted line.

Procedure

1. Turn ON the main power switch, and make a copy in the punch mode.
2. Fold the output paper in half and check whether the punch holes are aligned. If the punch holes are misaligned, make the following adjustment.
3. Open the front door.



4. Loosen three screws [1] and move them to the left and right by the amount of skew using the mark [2] as a guide.
   - When the rear side is wide, move to the left.
   - When the front side is wide, move to the right.
5. Make anther copy in the punch mode, and check the punch hole position.

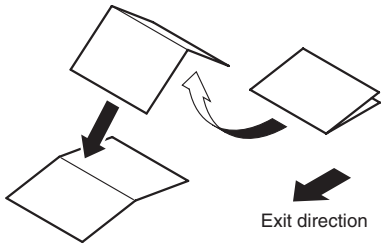
9. FS-539SD

9.1 Half-fold skew adjustment

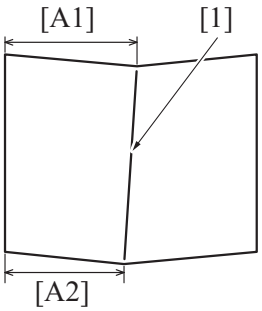
Purpose

- This adjustment must be made in the following case:
  - Fold line goes off the tolerance in the half-fold mode.
  - When reinstalling the guide plate assy, perform mechanical adjustment.

Procedure

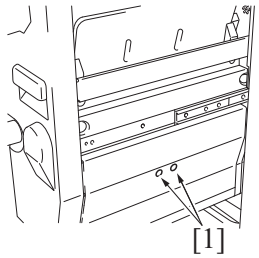


1. Make a copy in the half-fold mode.
2. Unfold the paper that exits the main body and lay the paper with the ridge facing up.

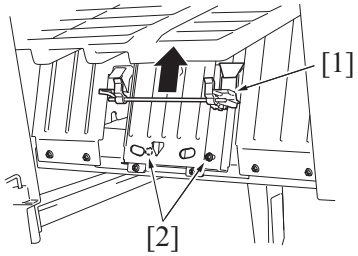


3. Confirm the skew of the fold line [1] of the output copy sample (Widths of A1 and A2)
   - Target: A1-A2=±1.0 mm
4. In case the figure exceeds the above mentioned target, follow the adjustment procedures below.

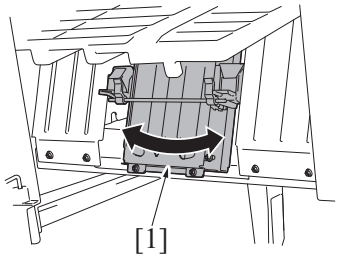
5. Open the front door of the finisher.
6. Pull the saddle unit.



7. Loosen two screws [1].

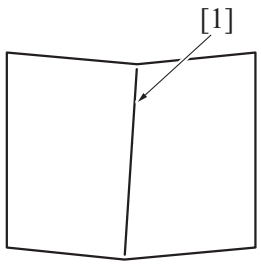


8. Slide the lever unit [1] upward.
9. Loosen two screws [2].



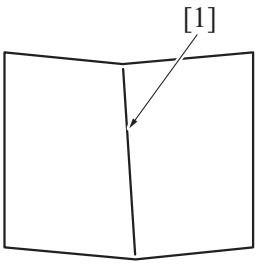
10. Incline the guide plate assy [1] forward or backward according to the deviation of the crease.

In case the cease [1] skews as the right side:



- In case the cease skews as the right side:
  Incline the guide plate assy backward.

In case the cease [1] skews as the left side:



- In case the cease skews as the left side:
  Incline the guide plate assy forward.

11. Make the copy sample again to confirm the cease skew.
12. Reinstall the above parts following the removal steps in reverse.

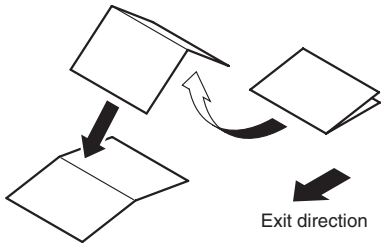
10. FS-540SD

10.1 Half-fold skew adjustment

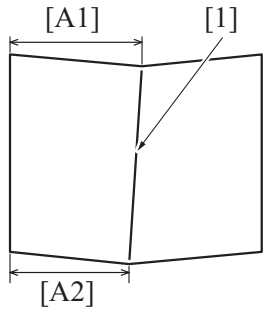
Purpose

- This adjustment must be made in the following case:
  - Fold line goes off the tolerance in the half-fold mode.
  - When reinstalling the guide plate assy, perform mechanical adjustment.

Procedure

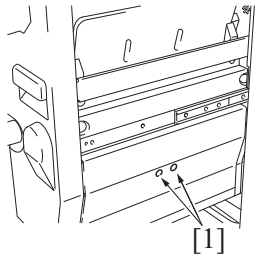


1. Make a copy in the half-fold mode.
2. Unfold the paper that exits the main body and lay the paper with the ridge facing up.

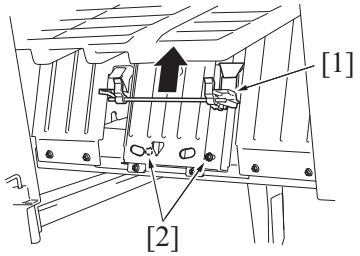


3. Confirm the skew of the fold line [1] of the output copy sample (Widths of A1 and A2)
   Target: A1-A2=±1.0 mm
4. In case the figure exceeds the above mentioned target, follow the adjustment procedures below.

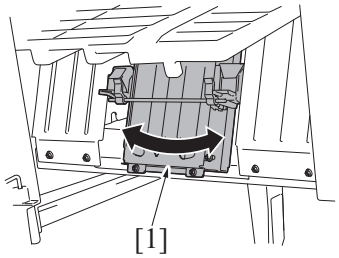
5. Open the front door of the finisher.
6. Pull the saddle unit.



7. Loosen two screws [1].

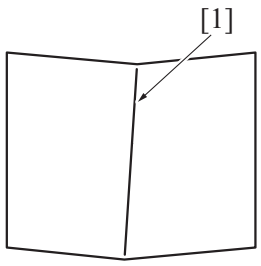


8. Slide the lever unit [1] upward.
9. Loosen two screws [2].



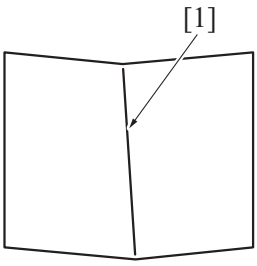
10. Incline the guide plate assy [1] forward or backward according to the deviation of the crease.

In case the cease [1] skews as the right side:



- In case the cease skews as the right side:
  Incline the guide plate assy backward.

In case the cease [1] skews as the left side:



- In case the cease skews as the left side:
  Incline the guide plate assy forward.

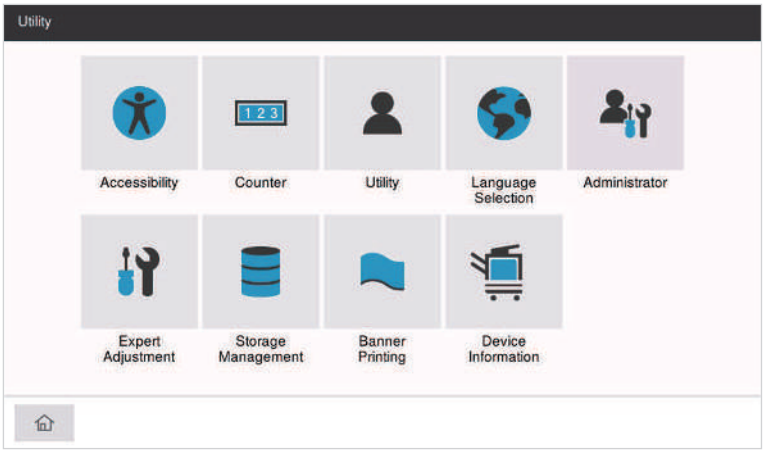
11. Make the copy sample again to confirm the cease skew.
12. Reinstall the above parts following the removal steps in reverse.

H UTILITY

1. Outline

NOTE

- **Keys displayed on screens are different depending on the setting.**
- **For details of the utility functions, refer to "User's Guide."**



Starting procedure

1. Touch [Utility] on the Home screen.
2. The Utility Mode screen will appear.

Exiting procedure

1. Touch the Home key.

2. Accessibility

Key name	Function/Precondition
Brightness Adjustment	-
Key Repeat Start/Interval Time	-
Default Enlarge Display Settings	It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that “Key Counter IF vendor” or “Vendor 2” is mounted. It will be normally unselectable when [Administrator] -> [System Settings] -> [Reset Settings] -> [Job Reset] -> [Default Basic/Enlarge Display Common Setting] is set to “OFF.”
System Auto Reset Confirmation	-
Auto Reset Confirmation	-
Enlarge Display Mode Confirmation	-
Message Display Time	-
Color Reversal Screen Display Setting	-
Sound Setting	-
Voice Guidance Settings	It will be displayed when the voice data is installed, and [Administrator] -> [Voice Guidance Settings] is set to “ON.”
Double tap setting	-
Vibration setting	-

3. Counter

Key name	Function/Precondition
Copy	-
Print	-
Scan/Fax	-
Other	-
Eco Info	[Power Consumption] and [CO2 Emission] will not be displayed when [Service Mode] -> [System 2] -> [Display Eco Index] -> [Power Savings Display Level] is set to “OFF.”

4. Utility

4.1 Information

Key name	Function/Precondition	
Device Information	Consumables	-
Change User Password	• When conducting user authentication (MFP only), it will be displayed when the authentication is complete. • When conducting user authentication or account track input, it will be displayed when login is authenticated as user box administrator. • When [Password Rules] which can be displayed by [Administrator] -> [Security] -> [Security Details] is set to “Enable”, password using the single letter or the password same with the previous one, less than 8-digit will not be modified. • When [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON,” entering the incorrect password three times will cause access lock.	
Synchronize User Authentication / Account Track	• When conducting user authentication (ON (MFP), External Server Authentication, or Main + External Server), it will be displayed only when the authentication is complete. • It will be displayed when [Administrator] -> [User Auth/Account Track] -> [Authentication Type] -> [Synchronize User Authentication / Account Track] is set to “Synchronize by User.”	
Function Permission Information	When conducting user authentication (ON (MFP), External Server Authentication, or Main + External Server), it will be displayed only when the authentication is complete.	
Network Setting Information	-	
Print Setting Information	Set as Default	-
	Font Information	-
	Macro List	-
	PCL Setting	-
	PS Setting	-
	TIFF Setting	-
	Security Setting	-
	OOXML Print Settings	-
	Page Layout Settings	-
Print Information	-	
Change E-Mail Address	• When conducting user authentication (MFP only), it will be displayed when the authentication is complete. • It will be displayed when [Administrator] -> [Security] -> [Administrator Security Levels] is set to “Level 2.”	
Change PIN Code	It will be displayed when a user PIN code is set in [Administrator] -> [User Auth/Account Track] -> [User Authentication Setting] -> [User Registration].	
GPL Regulations	-	

4.2 System Settings

Key name	Function/Precondition	
Measurement Unit Setting	-	
Auto Paper Tray Selection Settings	-	
Paper Tray Setting	Auto Tray Switch ON/OFF	-
	No Matching Paper in Tray Setting	-
Print Lists	• It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted. • It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.” (It will be displayed when the key counter is mounted.)	
Auto Color Level Adjustment	-	
Power Settings	Low Power Mode Setting Sleep Mode Setting	• It will be displayed when the option other than “Restrict” is selected in [Administrator] -> [Security] -> [Administrator Security Levels]. • It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.” • The upper limit can be set up to 240 min. only when the switch number “157” is specified to “02” at HEX assignment by setting [Service Mode] -> [System 2] -> [Software Switch Setting].
bizhub Remote Access Setting	This is displayed when an Android tablet terminal is connected.	
AE Level Adjustment	• It will be displayed when [Administrator] -> [Security] -> [Administrator Security Levels] is set to “Level 2.” • It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.”	
Auto Paper Select for Small Original	-	

Key name	Function/Precondition	
Blank Page Print Settings	• It will be displayed when [Administrator] -> [Security] -> [Administrator Security Levels] is set to “Level 2.” • It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.”	
Page Number Print Position	It will be displayed when [Administrator] -> [Security] -> [Administrator Security Levels] is set to “Level 2.”	
Select Keyboard	The type of keyboard to be displayed when [Local Keyboard] is selected depends on the language selected in [Utility] -> [Language Selection].	
Separate Scan from Platen	-	
Blank Sheet Detection Level	-	
Multi-Feed Detection Setting	It will be displayed when Double feed detection kit is mounted.	
Searchable PDF Setting	To use this function, i-Option LK-105 or i-Option LK-110 is required.	
Network TWAIN	TWAIN Lock Time	-
Left Panel Display Default	-	

4.3 Box

NOTE

- **In a machine where the user authentication function that uses an external server or MFP is set to ON, when you operate the machine without performing user authentication, this menu is not displayed.**
- **It will not be displayed is [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted.**

Key name	Function/Precondition		
User Box List	New Registration	Create User Box (Public/ Personal)	• It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.” (It will be displayed when the key counter is mounted.) • It will not be displayed due to functional restriction upon user authentication when [User Box] is set to “Restrict.” • It will not be displayed when [Administrator] -> [System Settings] -> [User Box Setting] -> [Allow/Restrict User Box] is set to “OFF.”
System User Box List	New Registration	Bulletin Board User Box	• It will be displayed when fax kit is mounted. • It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.” (It will be displayed when the key counter is mounted.) • It will not be displayed due to functional restriction upon user authentication when [User Box] is set to “Restrict.” • It will not be displayed when [Administrator] -> [System Settings] -> [User Box Setting] -> [Allow/Restrict User Box] is set to “OFF.” • It will not be displayed due to functional restriction upon user authentication when [Fax] is set to “Restrict.”
		Relay User Box	• It will be displayed when fax kit is mounted. • It will be displayed when [Service Mode] -> [FAX] -> [System] -> [Display Setting] -> [Relay] is set to “ON.” • It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.” (It will be displayed when the key counter is mounted.) • It will not be displayed due to functional restriction upon user authentication when [User Box] is set to “Restrict.” • It will not be displayed when [Administrator] -> [System Settings] -> [User Box Setting] -> [Allow/Restrict User Box] is set to “OFF.”
		Annotation User Box	• It will be displayed when fax kit is mounted. • It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.” (It will be displayed when the key counter is mounted.) • It will not be displayed due to functional restriction upon user authentication when [User Box] is set to “Restrict.” • It will not be displayed when [Administrator] -> [System Settings] -> [User Box Setting] -> [Allow/Restrict User Box] is set to “OFF.” • When conducting user authentication, it will be displayed when the administrator authentication is complete.

4.4 Copier Settings

Key name	Function/Precondition	
Basic Setting	Auto Zoom for Combine/ Booklet	-

Key name	Function/Precondition	
	Default Copy Settings	• It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted, and user authentication is not conducted. • This menu is not available when the key counter is set or when WARNING appears to inform that the vendor's main power switch needs to be checked or coins (a card) are not inserted under the condition where the "Vendor 2" is set in [Service Mode] -> [Billing Setting] -> [Management Function Choice].
	Default Enlarge Display Settings	-
	Incorrect AMS direction settings	-
	Separate Scan Output Method	-
	Enlargement Rotation	-
	Select Tray for Insert Sheet	-
	Auto Booklet Selection for Saddle Stitching	It will be displayed when the finisher with folding functions is installed.
	Booklet shortcut mode setting	-
	Select Tray for Paper Insertion function.	-
	Auto Zoom (Platen)	It will be displayed when setting other than "Restrict" is selected in [Administrator] -> [Security] -> [Administrator Security Levels].
	Auto Zoom (ADF)	It will be displayed when setting other than "Restrict" is selected in [Administrator] -> [Security] -> [Administrator Security Levels].
	Specify Default Tray when APS Off	It will be displayed when setting other than "Restrict" is selected in [Administrator] -> [Security] -> [Administrator Security Levels].
	Tri-Fold Print Side	It will be displayed when the finisher with folding functions is installed.
	Print Jobs During Copy Operation	It will be displayed when [Administrator] -> [Security] -> [Administrator Security Levels] is set to "Level 2."
	Automatic Image Rotation	It will be displayed when setting other than "Restrict" is selected in [Administrator] -> [Security] -> [Administrator Security Levels].
Finishing Program	• It will be displayed when the finisher is mounted. • When selecting "ON," select the contents to be registered in the finishing program.	
Card Shot	Layout	-
	Zoom	-
	Store Original Size 1	-

4.5 Printer Settings

Key name	Function/Precondition	
Basic Setting	PDL Setting	-
	Image Quality Setting	-
	Edge Definition	-
	Paper Tray	-
	2-Sided Print	-
	Binding Position	-
	Staple	It will be displayed when the staple finisher is installed.
	Punch	It will be displayed when the finisher and punch kit are installed.
	Fold Type Settings	It will be displayed when the finisher with folding functions is installed.
	Half-Fold/Tri-Fold Operation Selection	It will be displayed when the finisher with folding functions is installed.
	Number of Sets	-
	Paper Size	-
	Paper Type	-
	Original Direction	-
	Spool Print Jobs in HDD before RIP	-
	Banner Sheet Setting	-
	Banner Sheet Paper Tray	-
	A4/A3 <--> LTR/LGR Auto Switch	-

Key name	Function/Precondition		
	Binding Direction Adjustment	-	
	Line Width Adjustment (600 dpi)	-	
	Line Width Adjustment (1200 dpi)	-	
	Gray Background Text Correction	-	
	Minimal Print	-	
	OOXML Print Mode	-	
	Toner Save	-	
	Print/Fax Output	Print	• It will be displayed when setting other than “Restrict” is selected in [Administrator] -> [Security] -> [Administrator Security Levels]. • It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.”
		Fax	• It will be displayed when fax kit is mounted. • It will be displayed when setting other than “Restrict” is selected in [Administrator] -> [Security] -> [Administrator Security Levels]. • It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.”
	Output tray	It will be displayed when the finisher is mounted.	
PCL Setting	Symbol Set	-	
	Font Settings	-	
	Font Size	-	
	Line/Page	Default setting value differs depending on the values set in [Utility] -> [Utility] -> [Printer Settings] -> [Basic Setting] -> [Original Direction] and [Paper Size].	
	CR/LF Mapping	-	
	Thin Line	-	
	Bar Code Font Settings	It is displayed when i-Option LK-106 is enabled.	
PS Setting	PS Error Print	-	
TIFF Setting	Auto Paper Select	When “Auto” is selected and paper larger than the image size is not in the paper trays, paper size error occurs.	
Security Setting	XPS/OOXML/PDF Digital Signature	-	
OOXML Print Settings	Sheet/Book Print	-	
	Paper Size	The paper size selected in [Service Mode] -> [System 1] -> [Foolscap Size Setting] is displayed.	
	Paper Type	-	
Page Layout Settings	-		

4.6 Store Address

NOTE

- **In a machine where the user authentication function that uses an external server or MFP is set to ON, when you operate the machine without performing user authentication, this menu is not displayed.**
- **It will not be displayed is [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted.**

Key name	Function/Precondition	
Address Book	E-mail Address	-
	FTP	-
	SMB	-
	User Box	It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that the “Vendor 2” is mounted. (It will be displayed when the key counter is mounted.)
	WebDAV	-
	Fax	-
	IP Address Fax	Setting will be available when [IP Address Fax Function Settings] in [Administrator] -> [Network] -> [Network Fax Setting] is set to “ON.”
	Internet Fax	Setting will be available when [I-Fax Function Setting] in [Administrator] -> [Network Settings] -> [Network Fax Setting] is enabled.
Group	Destination Information	-

Key name	Function/Precondition	
	Limiting Access to Destinations	-
Subject	It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to "Management Device 2."	
Text		
Call Rejection Setting (Only for Japan)	Setting will be available when [Reject Calls] and [Number display] in [Service Mode] -> [FAX] -> [System] is set to "ON." It will be displayed when [Number Display Function] in [Administrator] -> [Fax Settings] -> [Function Setting] -> [Function ON/OFF Setting] is enabled.	

4.7 Scan/Fax Settings

Key name	Function/Precondition	
Basic Setting	JPEG Compression Method key	-
	Black Compression Level	-
	Compact PDF compression method	-
	Default Scan/Fax Settings	• It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted, and user authentication is not conducted. • This menu is not available when the key counter is set or when WARNING appears to inform that the vendor's main power switch needs to be checked or coins (a card) are not inserted under the condition where the "Vendor 2" is set in [Service Mode] -> [Billing Setting] -> [Management Function Choice].
	Default Enlarge Display Settings	-
	Graphic Outlining	-
	Color TIFF Type	-
	Auto Rename Function	-
	Distributed Scan PDF Settings	This displays when the following conditions are satisfied. • The authentication server type is set to Active Directory. • [Distributed Scan Settings] is set to [Use] in [Administrator] -> [Network]. • User allows scan operation.
	Distributed Scan XPS Settings	

4.8 Fax Settings

Key name	Function/Precondition
Output Settings	-
Fax Default Settings	• It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted, and user authentication is not conducted. • This menu is not available when the key counter is set or when WARNING appears to inform that the vendor's main power switch needs to be checked or coins (a card) are not inserted under the condition where the "Vendor 2" is set in [Service Mode] -> [Billing Setting] -> [Management Function Choice].

4.9 Customize

Key name	Function/Precondition	
Copier Settings	Basic Screen	-
	Quick Settings 1	When this setting is enabled, select the copy functions you wish to register.
	Quick Settings 2	
	Default Paper Type Display	This displays when a custom paper is registered.
Fax Settings	-	
Scan/Fax Settings	-	
Search Option Settings	-	
User Box Setting	Default Tab	-
	Shortcut Key 1	When this setting is set to ON, select auxiliary functions to get their shortcut keys displayed on the screen.
	Shortcut Key 2	
Active screen setting	Copy Operating Screen	It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that "Key Counter Only" or "Vendor 2" is mounted. (However, this menu is available when the key counter is installed and [Service Mode] -> [Billing Setting] -> [Management Function Choice] -> [The next job reservation] is set to "License.")
	Fax Active Screen	• It will be displayed when fax kit is mounted.

Key name	Function/Precondition	
		• It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that “Key Counter Only” or “Vendor 2” is mounted.
	Animation Settings	-
	Accessibility Settings	-
	Paper jam release procedure display settings	-
Default Application Screen Type Setting	-	
Function Display Key	Copy/Print	This is not displayed when [Administrator] -> [System Settings] -> [Function Display Key Permission Setting] -> [Copy/Print] is turned OFF.
	Send/Save	This is not displayed when [Administrator] -> [System Settings] -> [Function Display Key Permission Setting] -> [Send/Save] is turned OFF.
	Fax Tx	

5. Language Selection

Key name	Function/Precondition
Language Selection Display	The language as a default depend on the marketing area set in [Marketing Area] available from [System 1] under Service Mode.
Panel Keyboard Language Selection	
External Keyboard Language Selection	

6. Administrator

6.1 Outline

NOTE

- **The Administrator Settings will be available by entering the administrator password (16 digits) set by the Administrator Settings or Service Mode. (The administrator password is initially set to "1234567812345678.")**
- **When [Administrator] -> [Security] -> [Enhanced Security Mode] is enabled, entering the incorrect administrator password three times will cause access lock. The access lock is released after the lapse of a predetermined period of time (Default setting: 5 min.) after the main power switch is turned OFF and then ON more than 10 seconds later. The access lock can be released by [Service Mode] -> [Enhanced Security] -> [Administrator unlocking].**

6.2 Maintenance

Key name	Function/Precondition		
Meter Count	-		
ROM Version	-		
Status Notification Setting	-		
Total Counter Notification Setting	-		
Date/Time Setting	Manual Setting	-	
	Time Adjustment Setting	When this setting is enabled, touch [Data Entry] and modify the time.	
Daylight Saving Time	When this setting is enabled, set the time difference to move up. • Default setting: 60 min. • Setting range: 1 to 150		
Timer Setting	Power Settings	Low Power Mode Setting	The upper limit can be set up to 240 min. only when the switch number "157" is specified to "02" at HEX assignment by setting [Service Mode] -> [System 2] -> [Software Switch Setting].
		Sleep Mode Setting	• When [Service Mode] -> [System 1] -> [Sleep ON/OFF Choice Setting] is set to "Permit", the setting to turn sleep on and off displays and becomes selectable. • The sleep mode will begin in 48 hours even if it sets it to "OFF." • The upper limit can be set up to 240 min. only when the switch number "157" is specified to "02" at HEX assignment by setting [Service Mode] -> [System 2] -> [Software Switch Setting].
		Power Consumption in Sleep Mode	It will not be displayed when image controller is mounted.
		Power Save Settings	-
		Enter Power Save Mode	-
		Power Key Setting	• It will not be displayed when image controller is mounted. • In ErP auto power OFF mode, this machine cannot receive data or faxes, and also it cannot scan or print an original.
		Power Saving Fax/Scan	This function is available when the option other than "Copy" is selected in [Administrator] -> [System Settings] -> [Reset Settings] -> [System auto reset] -> [Start-up display screen after reset].
		Awake from Power Save Mode by Touching Control Panel	-
	Weekly Timer Settings	Use Weekly Timer	-
		Use Power Save	When "Yes" is selected, using the 10-key pad, input the Power Save Start Time and Power Save End Time.
		Use Overtime Password	When the setting is enabled, enter the password (eight digits).
		Enable Tracking Function	-
Network Error Code Display Setting	-		
License Settings	Get Request Code	-	
	Install License	• By making settings in [Service Mode] -> [Billing Setting], CE can also activate functions provided by i-Option.	

Key name	Function/Precondition	
		• When activating i-Option, MFP accesses to KM license server via WebDAV connection. Set the proxy server setting in [Administrator] -> [Network] -> [WebDAV Settings] -> [Proxy Setting for Remote Access] as occasion demands. • For accessing to KM license server, it is necessary to select [Fixed Address] in [Service Mode] -> [Billing Setting] -> [WebDAV Server Setting]. • For details of the functions, refer to " H.13.1.1 License Settings."
	List of Enabled Functions	This appears if there are activated functions.
	Install license from USB flash drive	-
Authorization function Setting	Install License	-
	Install license from USB flash drive	-
	Authorization function list display	This appears if there are authorized functions.
Backup Setting Information	-	
User Box Document Backup	-	
PING TX Address	-	
USB flash drive backup	• It will be displayed when [Service Mode] -> [System 2] -> [Software Switch Setting] shows that switch No.72 is set to [00000100] at Bit assignment/[04] at HEX assignment. • For details of the functions, refer to " H.13.1.2 USB flash drive backup."	
Call Remote Center	For details of the functions, refer to " I.8.1 Remote Care."	
Remote Access Setting	• This displays when using the CS Remote Care system. • For details of the functions, refer to " H.13.1.3 Remote Access Setting."	

6.3 System Settings

6.3.1 Machine Setting

Key name	Function/Precondition
Device Location	-
Administrator Registration	-
Input Machine Address	-

6.3.2 Register Support Information

Key name	Function/Precondition
Register Support Information	-

6.3.3 Reset Settings

Key name			
Job Reset	Default Basic/Enlarge Display Common Setting	-	
	When Account is changed	It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted.	
	When original is set on ADF	-	
	Next Job	Staple Setting	-
		Original Set/Bind Direction	-
		Reset Data After Job	-
System auto reset	• [System Auto Reset Time] will not be displayed when [Low Power Mode Setting] or [Sleep Mode Setting] is set to “1 Minute.” • The screen saver function displays when the screen saver application is registered.		
Auto Reset	-		

6.3.4 User Box Setting

Key name		
Delete Unused User Box	-	
Delete Secure Print File	-	
Delete Time Setting	Auto Delete Secure Document	-
	Encrypted PDF Delete Time Setting	-
Document Delete Time Setting	-	

Key name	Function/Precondition
Document in MFP Shared Folder Delete Time Setting	This is displayed when [Administrator] -> [Network] -> [SMB Setting] -> [SMB Server Settings] -> [Share SMB File Setting] is enabled.
Delete all in SMB folder	
Document Hold Setting	-
USB flash drive function settings	-
User Box Operation	-
ID & Print Delete Time	-
Security Document Setting	-
Delete PIN Print document	-
PIN Print doc.Del.time set.	-

6.3.5 URL Document Management Setting

Key name	Function/Precondition
URL Document Delete Time Setting	-
URL Delete Document	-

6.3.6 Standard Size Setting

6.3.7 Stamp Settings

Key name	Function/Precondition
Header/Footer Registration	-
Fax TX Settings	-

6.3.8 Blank Page Print Settings

Key name	Function/Precondition
Blank Page Print Settings	-

6.3.9 Job Priority Operation Settings

Key name	Function/Precondition
Fax RX Job Priority	-
Skip Job (Fax)	-
Skip Job (Copy, Print)	-

6.3.10 System Connection Setting

Key name	Function/Precondition		
System Connection Setting	-		
Mobile Connection Settings	Simple Connection Setting	QR Code Display Setting	-
		Enable NFC	This setting is synchronized with [Administrator] - [User Auth/Account Track] -> [Authentication Type] -> [Enable NFC].
		Enable Bluetooth LE	• It will be displayed when the optional local interface kit (voice guidance/Bluetooth LE enabled) is mounted. • This setting is synchronized with [Administrator] - [User Auth/Account Track] -> [Enable Bluetooth LE].
	Wireless Connection Setting	When [Administrator] -> [Network Settings] -> [Network I/F Configuration] is set to [Wireless Only], a pairing is established by applying the wireless settings of this machine; therefore, this setting is not displayed.	
	Touch Connection Link Application Settings	-	

6.3.11 Searchable PDF Settings

Key name	Function/Precondition
Searchable PDF Settings	To use this function, i-Option LK-105 or i-Option LK-110 is required.

6.3.12 Compact PDF Settings

Key name	Function/Precondition
Compact PDF Settings	-

6.3.13 Outline PDF Setting

Key name	Function/Precondition
Outline PDF Setting	-

6.3.14 PDF Web Optimization Default Settings

Key name	Function/Precondition
Compact PDF Settings	-

6.3.15 PDF/A Default Settings

Key name	Function/Precondition
Compact PDF Settings	-

6.3.16 Scan File Name Settings

Key name	Function/Precondition
Function Mode Initial	-
Supplementary File Name	-

6.3.17 Set Paper Name by User

Key name	Function/Precondition
Set Paper Name by User	-
Edit Paper Name	It will be displayed when Set Paper Name by User is enabled.

6.3.18 Enlarge Display Settings

Key name	Function/Precondition
Default Enlarge Display Setting	-
Enlarge Display Setting	-
Apply Basic Setting to Enlarge Display	-

6.3.19 Registered Key Settings

Key name	Function/Precondition
Registered Key 1	-
Registered Key 2	-
Registered Key 3	-
Registered Key 4	-
Registered Key 5	-

6.3.20 Main Menu Display Settings

Key name	Function/Precondition
Main Menu Display Settings	-

6.3.21 Preview Settings

Key name	Function/Precondition
Realtime Preview	-
Set key Initial display	-
Original direction Setting	-
Preview Display Conditions (Standard Application)	-
Preview Display Conditions (Registered Application)	-

6.3.22 List/Counter

Key name	Function/Precondition
Meter Count and Device Confirmation Tx Settings	• The counter information is collected via CS Remote Care. • Though this setting is enabled, the information is not sent if [Service Mode] -> [System 2] -> [Acquiring Settings] is set to “OFF.”
Management List	It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.” (It will be displayed when the Key Counter is mounted when [Service Mode] -> [System 2] -> [Software Switch Setting] shows that switch No.33 is set to [00000001] at Bit assignment/[01] at HEX assignment.)
Paper Size/Type Counter	-

Key name	Function/Precondition
Meter Counter List	Setting will be available when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that “Management device 2” or “Vendor 2” is mounted.
Check Consumables List	
TX Operation Log Output	This is displayed when [Administrator] -> [Security] -> [TX Operation Log Setting] is set to “On.”

6.3.23 Custom Function Pattern Selection

Key name	Function/Precondition
Custom Function Pattern Selection	When a custom function pattern is registered or imported in [Service Mode] -> [System 2] -> [Custom Pattern], the pattern ([Custom Pattern 1] to [Custom Pattern 3]) also can be selected.

6.3.24 Custom Function Profile User/Account

Key name	Function/Precondition
Custom Function Profile User/ Account	Setting is disabled if user authentication or account track is not performed.

6.3.25 Function Display Key Permission Setting

Key name	Function/Precondition	
Function Display Key Permission Setting	Copy/Print	When the setting is enabled, [Copy/Print] will be displayed in [Utility] -> [Customize] -> [Function Display Key] and you can configure the setting.
	Send/Save	• When the setting is enabled, [Send/Save] will be displayed in [Utility] -> [Customize] -> [Function Display Key] and you can configure the setting. • When the setting is enabled, [Fax Tx] will be displayed in [Utility] -> [Customize] -> [Function Display Key] and you can configure the setting.

6.3.26 Temporary Change Language

Key name	Function/Precondition
Temporary Change Language	The temporarily enabled language is returned to the language configured in [User Settings] after any of the following operations. • Main power switch OFF • Power key OFF • Sleep mode • Low power mode • System Auto Reset • Logout

6.3.27 Main Menu Default (Classic Style)

Key name	Function/Precondition
Main Menu Default (Classic Style)List	-

6.3.28 Main Menu Default (Basic Style)

Key name	Function/Precondition
Main Menu Default (Basic Style)List	-

6.3.29 Display 10 Keypad when entering Number of Sets

Key name	Function/Precondition
Display 10 Keypad when entering Number of Sets	-

6.3.30 Print end notification lamp ON time settings

Key name	Function/Precondition
Print end notification lamp ON time settings	-

6.3.31 Universal Print Settings

NOTE

- **This setting will be available when optional i-Option LK-114 is enabled.**

Key name	Function/Precondition	
Universal Print Settings *1	Store Print Documents Settings	This setting is disabled when the following settings are made in [Service Mode] -> [Network Settings] -> [2nd Network Setting] -> [Network Interface Settings]. • Wired+Wireless (Secondary Mode) • Wired+Wireless (Primary Mode) • Wired+Wireless (Wi-Fi Direct)

Key name	Function/Precondition	
	Client Function Setting	-
	Universal Print Group Setting	-
	IPP Authentication Settings	-
	Topology Function Setting	-
	Rebuild Serverless Pull Printing Group	-
	Domain group list	-

6.3.32 Widget Function Settings

Key name	Function/Precondition
Widget Function Settings	-

6.3.33 Output Settings

Key name	Function/Precondition	
Print/Fax Output	Print	It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.”
	Fax	• It will be displayed when fax kit is mounted. • It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.”
Output Tray	-	
Shift Output Each Job	-	

6.3.34 Bypass Tray Overwrite Settings for Print PC

Key name	Function/Precondition
Bypass Tray Overwrite Settings for Print PC	-

6.3.35 Network Selection Settings

Key name	Function/Precondition	
Network Selection Settings	Default Network Settings	It will be displayed when [Administrator] -> [Network] -> [VLAN Settings] is enabled.
	Network Name Change	

6.3.36 Job History Display Setting

Key name	Function/Precondition
Communication history sort method	-

6.3.37 Paper Size/Type Settings Screen Display

Key name	Function/Precondition
Paper Size/Type Settings Screen Display	-

6.3.38 Default Bypass Paper Type Setting

Key name	Function/Precondition
Default Bypass Paper Type Setting	-

6.3.39 Page Number Print Position

Key name	Function/Precondition
Page Number Print Position	-

6.3.40 Voice Guidance Settings

Key name	Function/Precondition
Voice guidance	• To use voice guidance, the i-Option LK-104 must be activated. Besides, the local interface kit must be mounted. • For details of the functions, refer to “ H.13.2.1 Voice Guidance Settings.”

6.3.41 ADF Settings

Key name	Function/Precondition
ADF Settings	-

6.3.42 ADF original skew adj.setting

Key name	Function/Precondition
ADF original skew adj.setting	It will be displayed when the ADF is installed.

6.3.43 Paper type auto detection settings

Key name	Function/Precondition
Paper type auto detection settings	This function is enabled when the intelligent media sensor is installed.

6.3.44 Auto envelope detection sett.

Key name	Function/Precondition
Auto envelope detection sett.	This function is enabled when the intelligent media sensor is installed.

6.3.45 Def. operation mode set.

Key name	Function/Precondition
Def. operation mode set.	-

6.3.46 Slide Menu Settings

Key name	Function/Precondition
Slide menu settings	-

6.3.47 Widget Function Settings

Key name	Function/Precondition
Widget Function Settings	-

6.3.48 Change Permission for Default Value Setting

Key name	Function/Precondition
Change Permission for Default Value Setting	-

6.3.49 Manual staple setting

Key name	Function/Precondition	
Manual staple setting	Staple start wait time	It will be displayed when the finisher with manual staple function is installed.
	Setting for Manual Staple	

6.4 Security

Key name	Function/Precondition	
Certificate Verification Settings	-	
Limiting Access to Destinations	-	
Restrict User Access	Registering and Changing Addresses	• It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that the “Vendor 2” is mounted. • If [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON,” selecting [Allow] for [Registering and Changing Addresses] cancels enhanced security mode. • The [Biometric/IC Card Information Registration] key displays if [Authentication Device2] is mounted via [Service Mode] -> [Billing Setting], and [Administrator] -> [User Auth/Account Track] -> [Authentication Type] -> [User Authentication] is set to “ON (MFP).” • The [Synchronize User Authentication / Account Track By User] key displays when [Administrator] -> [User Auth/Account Track] -> [Authentication Type] -> [Synchronize User Authentication / Account Track] is set to “Synchronize by User.”
	Biometric/IC Card Information Registration	
	Changing the “From” Address	
	Synchronize User Authentication / Account Track By User	
	Restrict Program Function Setting	
	Multiple Addresses Restriction Setting	
	Add Dest. Button	
	Select All Groups	
	Changing Job Priority	
	Delete Other User Jobs	
	Changing Zoom Ratio	

Key name	Function/Precondition	
	Change Registered Overlay	
Copy security	It will be displayed when the security kit is mounted.	
Administrator Password Setting	When [Administrator] -> [Security] -> [Security Details] -> [Password Rules] is enabled, the following passwords cannot be accepted: password of single repeated characters, password same as the one before being changed, and password where the number of characters is less than the minimum number specified in [Set Minimum Password Length].	
Copy Program Lock Settings	-	
Delete Saved Copy Program	-	
Administrator Password Change Permission Setting	-	
User Box Administrator Setting	It will be displayed when carrying out the user authentication as well account track.	
Administrator Security Levels	It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that the “Vendor 2” is mounted.	
TX Operation Log Setting	To print the saved sending operation logs or save them in USB memory, select [Administrator] -> [System Settings] -> [List/Counter] -> [TX Operation Log Output].	
Security Details	Password Rules	• This setting cannot be enabled when [Service Mode] -> [Enhanced Security] -> [CE Authentication] is set to “OFF.” “OFF” cannot be set for [CE Authentication] when [Password Rules] is enabled. • If [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON,” disabling this setting cancels enhanced security mode. • When the password rule is enabled, the password cannot be changed or registered unless it follows the above conditions.
	ProhibitFunctions	• If [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON,” selecting “Mode1” in this setting cancels enhanced security mode. Only the number of times for trials up to the access lock can be changed. • For details of the functions, refer to " H.13.3.1 ProhibitFunctions."
	Confidential Document Access Method	It cannot be changed at the operator’s option since it will automatically be set according to the [ProhibitFunctions] setting. • It will be set to “Mode 1” when [ProhibitFunctions] is set to “Mode1.” • It will be set to “Mode 2” when [ProhibitFunctions] is set to “Mode2.”
	Manual Destination Input	-
	Print Data Capture	• To be used when carrying out [Service Mode] -> [System 2] -> [Data Capture]. • If [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON,” enabling this setting cancels enhanced security mode.
	Restrict Fax TX	-
	Address Selection Confirmation Display	It will be displayed when [Administrator] -> [Security] -> [Restrict User Access] -> [Multiple Addresses Restriction Setting] is set to “OFF.”
	Personal Data Security Settings	-
	Initialize	-
	Secure Print Only	-
	Web browser contents access	• It will be displayed when an extended function of the web browser via OpenAPI application is enabled. • When using the application where server authentication is carried out by web browser extensions, [Allow] is automatically selected.
	Export Debug Log	• This is displayed when Switch No. “155” is set to “01” in HEX Assignment in [Service Mode] -> [System 2] -> [Software Switch Setting]. • Use: To select whether or not allow CE to export debug information (logs) from the MFP to use the information to analyze problem in the MFP. • Default setting: Restrict
	Remote Service setting	When “Allow” is selected, [Administrator] -> [Network] -> [Machine Update Settings] -> [Machine Auto Update Settings] -> [Auto Update Settings for This Machine] will not be displayed.
	Web browser setting change	It will be displayed when “ON” is selected in [Administrator] -> [Network] -> [Web Browser Setting] -> [Web Browser Setting].
	Maintenance Mode Access	To “Allow” Maintenance Mode Access, set [Service Mode] -> [System 2] -> [Maintenance Mode] to “Effective.”
	Write the Configuration from USB	-
	Storage data backup	• To set whether to permit our service representative to back up or restore the storage on this machine. • For details of the functions, refer to [Service Mode] -> [Enhanced Security] -> [Storage Data Backup].
	Hide Personal Information (MIB)	If [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON,” disabling this setting cancels enhanced security mode.

Key name	Function/Precondition	
	Display Activity Log	-
Quick Security Setting	For details of the functions, refer to " H.13.3.5 Quick Security Setting."	
USB port connection permission setting	If “Restrict” is selected in [External Memory (Administrator)], [TPM Key Backup] is restricted in addition to the functions that can be set in [ON]. Also, USB memory is not available for the following functions. • [TX Operation Log Output], [Main Menu Display Settings], [License Settings], [Authorization function Setting], [USB flash drive backup - Export], [BootUp Screen]	
Enhanced Security Mode	For details of the functions, refer to " H.13.3.2 Enhanced Security Mode."	
Function Management Settings	Maximum Job Allowance	It will be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that “Vendor 2” is mounted.
	Network Function Settings	This setting is set to “OFF” when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that “Vendor 2” or “Management Device 2” is mounted. Exercise caution since it will stay in “OFF” setting even when “unset” is selected on “Vendor 2” or “Management Device 2” setting in Service Mode later.
Stamp Settings	-	
FW Update (USB) Permission Setting	-	
Image Log Transfer Settings	• This is displayed when Switch No. “63” is set to “01: Type 1” or “02: Type 2” in HEX Assignment in [Service Mode] -> [System 2] -> [Software Switch Setting]. • For details of the functions, refer to " H.13.3.3 Image Log Transfer Settings."	
Driver Password Encryption Setting	For details of the functions, refer to " H.13.3.4 Driver Password Encryption Setting."	
FIPS Settings	-	
TPM Setting	To use this function, i-Option LK-115 is required.	
Job Log Settings	-	
OpenAPI Certification Management Setting	These are communication settings for the application which is developed by the third vendor. Do not set or change these settings without vendor’s instructions.	
Delete Data Backup	-	
FW Update (Network) Perm. Sett.	-	
Secure Boot Function Set.	If [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON,” disabling this setting cancels enhanced security mode.	
User box usage restriction	-	
Virus scan settings	To use this function, i-Option LK-116 is required.	

6.5 User Auth/Account Track

NOTE

- **It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that “Key Counter Only” or “Vendor 2” is mounted.**
- **Before registering a user, select an authentication method. If all management data is cleared after the authentication method was selected, the histories of the registered users, print, send, receive, and save jobs are deleted.**

Key name	Function/Precondition	
Authentication Type	User Authentication	If [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON,” selecting “OFF” cancels enhanced security mode.
	Update Billing Information	-
	Default Authentication Method	• [ON (External Server)] cannot be selected when external servers are not registered in [Administrator] -> [User Auth/Account Track] -> [External Server Settings]. • [ON (External Server)] cannot be selected when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Management Device 2.”
	Public User Access	• This setting is not available without user authentication. • If [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON,” selecting “ON” cancels enhanced security mode.
	Ticket Hold Time Setting (Active Directory)	This setting takes effect only when the authentication server type is set to active directory.
	Account Track	-
	Account Track Input Method	• This setting is not available without the account track. • “Password Only” cannot be set when using both user authentication and account track.
	Synchronize User Authentication / Account Track	The setting is available only when carrying out the user authentication and account track.
	Number of Counters Assigned	• It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Management Device 2.” • The setting is available only when carrying out the user authentication and account track.

Key name	Function/Precondition		
	When Number of Jobs Reach Maximum	-	
	Enable NFC	This setting is synchronized with [Administrator] -> [System Settings] -> [System Connection Setting] -> [Mobile Connection Settings] -> [Simple Connection Setting] -> [Enable NFC].	
	Enable Bluetooth LE	• It will be displayed when the optional local interface kit (voice guidance/ Bluetooth LE enabled) is mounted. • This setting is synchronized with [Administrator] -> [System Settings] -> [System Connection Setting] -> [Mobile Connection Settings] -> [Simple Connection Setting] -> [Enable Bluetooth LE].	
	External Server DN Cache	-	
	Extended User DB	-	
	External Authentication server setting	Temporarily Save Authentication Information	-
		Overwrite User Info	• When the external server authentication is used, authenticated user information is also managed on this machine. If the number of users who have executed the external server authentication reaches the maximum number of users this machine can manage, authentication of any new users will not be permitted. If you select “Allow,” the oldest authenticated user information is erased and the new user is registered. • If [Enhanced Server Authentication] or [Main + Enhanced Server] is selected with [Authentication Method], “Allow” is specified forcibly.
User Authentication Setting	User Registration	• It cannot be entered when conducting authentication by external server. • [Register Auth. Info.] does not appear when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted. • [Custom Function Profile by User] does not appear when [Administrator] -> [System Settings] -> [Custom Function Profile User/Account] is set to “OFF.” • [Synchronize Account Track] does not appear when [Administrator] -> [User Auth/Account Track] -> [Authentication Type] -> [Synchronize User Authentication / Account Track] is unset to “Synchronize by User.”	
	Default Function Permission	This setting is not available without user authentication.	
	Public User	It will be displayed when Public User Access is set to “ON” in [Administrator] -> [User Auth/Account Track] -> [Authentication Type].	
	Administrative Setting	ID & Print Settings	This setting is not available without user authentication.
		Change to Basic Screen after ID & Print	• This setting is not available without user authentication. • It will be displayed when [Service Mode] -> [Billing Setting] shows [Authentication Device2] is mounted.
		Auth. Operation Setting when print Documents are Stored	-
		Login Allowed with Administrative Rights	-
		User Name List	• This setting is not available without user authentication. • If [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON,” selecting “ON” cancels enhanced security mode.
	User Counter	-	
Account Track Settings	Account Track Registration	• When the “Password Only” is selected for [Account Track Input Method], [Account Name] does not appear. • When the “Account Name & Password” is selected for [Account Track Input Method], [Name] does not appear. • [Custom Function Profile by Account] does not appear when [Administrator] -> [System Settings] -> [Custom Function Profile User/ Account] is unset to “ON.”	
	Account Track Counter	-	
Prohibited Function Login Setting	-		

Key name	Function/Precondition	
Print without Authentication	If [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON,” selecting “allow” cancels enhanced security mode.	
Simple Authentication setting	-	
LDAP-IC Card Authentication Setting	• It will be displayed when [Service Mode] -> [Billing Setting] shows that the authentication device 2 is mounted. • When [Administrator] -> [User Auth/Account Track] -> [Authentication Type] -> [User Authentication] is set to [ON (External Server)] or [ON (MFP + External Server)], this function is available.	
Print Counter List	• The setting is available only when carrying out the user authentication or account track. • It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that “Key Counter Only,” “Vendor 2” or “Management Device 2” is mounted.	
External Server Settings	• Neither [NTLM v1] nor [NTLM v2] appear when “OFF” is selected in [Administrator] -> [Network] -> [SMB Setting] -> [Client Setting] -> [User Authentication (NTLM)].	
Authentication Device Settings	• It will be displayed when [Service Mode] -> [Billing Setting] shows [Authentication Device2] is mounted. • It will be displayed when [Administrator] -> [Network] -> [IWS Settings] is set to “ON.” • For details of the functions, refer to “ H.13.4.1 Authentication Device Settings.”	
Public User Box Setting	Set the maximum number of User Boxes	• If the maximum number of user boxes is set to “0”, you cannot create new ones. • If the selected user has already created three user boxes, for example, you can set the number of user boxes within the range of 3 to 1000.
User/Account Common Setting	-	
Scan to Home Settings	-	
URL display enable setting	-	
Scan to Authorized Folder Settings	-	
Max. Allowance Setting when Enhanced Server down	It will be displayed when [Administrator] -> [User Auth/Account Track] -> [Authentication Type] -> [External Authentication server setting] -> [Temporarily Save Authentication Information] is set to “Enable.”	
Authentication Server Connection status	External Server Authentication	When [Administrator] -> [User Auth/Account Track] -> [Authentication Type] -> [User Authentication] is set to “ON (External Server)”, this function is available.
Self-Verification Setting in AD Authentication	If you change [Host Name] or [Domain Name] while Active Directory's single sign-on is enabled on this machine, [Administrator] -> [Network] -> [Single Sign-On Setting] -> [Domain Login Setting] is changed to “OFF.”	

6.6 Network

Key name		Function/Precondition	
VLAN Settings	VLAN ID Settings	-	
TCP/IP Setting	TCP/IP Setting1	Wired Setting (*1)	-
		Wireless Setting (*1)	-
	TCP/IP Setting2	-	
	Filtering Type	-	
	IP Address Filtering	Setting will be available when [Administrator] -> [Network] -> [TCP/IP Setting] -> [Filtering Type] is set to “IP Address Filtering.”	
	Quick IP Filtering	Setting will be available when [Administrator] -> [Network] -> [TCP/IP Setting] -> [Filtering Type] is set to “Quick IP Filtering.”	
	Packet Filtering	Setting will be available when [Administrator] -> [Network] -> [TCP/IP Setting] -> [Filtering Type] is set to “Packet Filtering.”	
	IPsec	-	
E-mail Setting		E-mail RX (POP)	• It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted. • [Check for New Messages] and [Polling Interval] do not display when [Administrator] -> [Network] -> [Network Fax Setting] -> [Network Fax Setting] -> [I-Fax Function Setting] is set to “OFF”.
		E-mail TX (SMTP)	• It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted. • When [SMTP Authentication] is set to “ON,” enter the [User ID], [Password], [Domain Name], [Authentication Setting], and [SMTP Authentication Method].
		S/MIME Comm.Setting	It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted.
		E-mail RX Print	• It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted. • It is displayed when i-Option LK-110 is enabled. • [E-Mail Body Print] displays only when Switch No. “152” is set to “01” in HEX Assignment in [Service Mode] -> [System 2] -> [Software Switch Setting].

Key name	Function/Precondition		
LDAP Setting	Enabling LDAP		It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted.
	Setting Up LDAP		• It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted. • The [Check Connection] does not display when [Enabling LDAP] is set to “OFF.” • [Check Connection] does not display when [Administrator] -> [Security] -> [Security Details] -> [Manual Destination Input] is set to “Restrict.” • [Login Name] and [Password] cannot be configured when authentication method is set to anonymous.
FTP Setting	FTP TX Setting		-
	FTP Server Setting		If [Administrator] -> [Security] -> [Enhanced Security Mode] or [Image Log Transfer Settings] is set to “ON”, selecting “ON” for the [FTP Server Setting] cancels enhanced security mode.
SNMP Setting	• It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted. • If [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON,” enabling [SNMP v1/v2 Setting] cancels enhanced security mode. • If [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON,” setting [Security Level] to “OFF” cancels enhanced security mode.		
SMB Setting	WINS/NetBIOS Settings		It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted.
	Client Setting		• It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted. • Select “ON” for [DFS Setting] when using SMB transmission under an environment that uses a distributed file system (DFS).
	SMB Server Settings		It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted.
	SMB Browsing setting		
DPWS Settings	-		
Distributed Scan Function Settings	• It will be displayed when [Administrator] -> [Network] -> [DPWS Settings] -> [Scanner Settings] is set to “ON.” • It will be displayed when [Administrator] -> [Network] -> [DPWS Settings] -> [DPWS Common Settings] -> [SSL Setting] is set to “ON.”		
Bonjour Setting	-		
Network Fax Setting	SMTP TX Setting		-
	SMTP RX Setting		-
	Network Fax Setting	IP Address Fax Function Settings	• This setting is available when [IP Address Fax] or [Internet Fax] is set to “ON” from [Service Mode] -> [System 2] -> [Network Fax Settings]. • For details of the functions, refer to " H.13.5.1 Network Fax Setting."
		I-Fax Function Setting	
		IP-FAX (T38) Detail Setting	• The main body is required to be provided with the i-Option LK-117. • The main body is required to be provided with the IP Fax (SIP) libraries. • For details of the functions, refer to " H.13.5.1 Network Fax Setting."
WebDAV Settings	WebDAV Client Settings		-
	WebDAV Server Settings		• If [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON,” setting [SSL Setting] to “SSL Only” cancels enhanced security mode. • Press [Initial Password] under [Password Setting] to initialize the password. (Default password: sysadm)
	Proxy Setting for Remote Access		To configure the settings of the proxy server used when MFP accesses to KM license server via WebDAV connection from [Administrator] -> [License Settings] -> [Install License] (WebDAV connection) or [Service Mode] -> [Billing Setting] to activate i-Option function.
OpenAPI Setting	[Specified Application Start Setting] will be displayed when [Service Mode] -> [System 2] -> [Application Change Setting] is set to “Permit.”		
TCP Socket Setting	-		
IEEE802.1X Authentication Setting	IEEE802.1X Authentication Setting		IEEE802.1X authentication settings are made with Web Connection.
	IEEE802.1X Setting		It will be displayed when [Administrator] -> [Network] -> [Network I/F Configuration] is set to “Wireless Only.”
	IEEE802.1x Authentication Trial		-
LLTD Setting	-		
BMLinkS Settings	-		
SSDP Settings	-		

Key name	Function/Precondition		
Web Browser Setting	To enable the Web browser function, this machine is automatically connected to the License Management Server (LMS) on the Internet in order to register the license. Check that this machine can be connected to the Internet before beginning this procedure.		
Single Sign-On Setting	When [Administrator] -> [User Auth/Account Track] -> [Authentication Type] -> [User Authentication] is set to [ON (External Server)] or [ON (MFP + External Server)], this function is available.		
IWS Settings	For details of the functions, refer to " H.13.5.2 IWS Settings."		
Machine Update Settings	Internet ISW Settings	FTP Server Setting	• This is displayed when [Function Setting] is set to “ON” in [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Internet ISW Set]. • This is displayed when [FTP data acquisition setting] is set to “ON” in [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [FTP Setting]. • For details of the functions, refer to " H.13.6.1 Internet ISW Settings."
		Update Firmware at Specified Time	• This is displayed when [Function Setting] is set to “ON” in [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Internet ISW Set]. • This is displayed when [Open Mode Settings] is set to “Set” in [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Internet ISW Set]. • For details of the functions, refer to " H.13.6.1 Internet ISW Settings."
		Firmware Update Parameters	• This is displayed when [Function Setting] is set to “ON” in [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Internet ISW Set]. • This is displayed when [Open Mode Settings] is set to “Set” in [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Internet ISW Set]. • To download the firmware, in addition to the necessary proxy settings configured in [FTP Server Settings], you need to configure appropriate settings in [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [HTTP Setting], [FTP Setting], and [Forwarding Access Setting]. • For details of the functions, refer to " H.13.6.1 Internet ISW Settings."
	Machine Auto Update Settings		• This is displayed when [Function Setting] is set to “ON” in [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Internet ISW Set]. • This function is same as that of the service mode, but it will not be used together with the function of the service mode. • For details of the functions, refer to " H.13.6.2 Machine Auto Update Settings."
	Firmware Update Parameters		-
	HTTP Proxy Settings		For details of the functions, refer to " H.13.6.3 HTTP Proxy Settings."
Remote Panel Settings	• This is not displayed when [Service Mode] -> [Enhanced Security] -> [CE Authentication] is set to “OFF.” • For details of the functions, refer to " H.13.5.3 Remote Panel Settings."		
ThinPrint Setting	It is displayed when i-Option LK-111 is enabled.		
bizhub Remote Access Setting	• To remote-control the Control Panel of this machine using an Android/iOS terminal, you need to install Remote Access on the Android/iOS terminal. Also, [TCP Socket] must be set to “ON” for [Administrator] -> [Network] -> [TCP Socket Setting]. • To connect the device to this machine through bizhub Remote Access using NFC, configure a setting to enable NFC on this machine in advance. • To connect the device to this machine through bizhub Remote Access using Bluetooth LE, configure a setting to enable Bluetooth LE on this machine in advance.		
Network I/F Configuration (*1)	For details of the functions, refer to " H.13.5.4 Network I/F Configuration."		
Wireless Network Setting (*1)	For details of the functions, refer to " H.13.5.5 Wireless Network Setting."		
Domain Send Operation Restriction Setting	-		
SIP Setting	-		
HTTP Server Settings	• It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted. • To use the Web Connection, enable “JavaScript” and “Cookie” of the Web browser. If this machine is connected to the internet via a proxy server, register the Proxy Settings of the Web browser as “Exceptions.” When the Web Connection is not displayed properly even if the above settings have been conducted, delete the cache of the Web browser.		
MAC Address	-		
Network Settings List	-		
Awake from ErP	-		

- *1: It will be displayed when optional wireless LAN devices are mounted.

6.7 Box

Key name	Function/Precondition		
User Box List	New Registration	Create User Box (Public/ Personal)	• It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.” (It will be displayed when the key counter is mounted.)
System User Box List	New Registration	Bulletin Board User Box	• It will be displayed when fax kit is mounted. • It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.” (It will be displayed when the key counter is mounted.)
		Relay User Box	• It will be displayed when fax kit is mounted. • It will be displayed when [Service Mode] -> [FAX] -> [System] -> [Display Setting] -> [Relay] is set to “ON.” • It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.” (It will be displayed when the key counter is mounted.)
		Annotation User Box	• It will be displayed when fax kit is mounted. • It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.” (It will be displayed when the key counter is mounted.)

6.8 Printer Settings

Key name	Function/Precondition	
PCL Setting	Brightness	-
	Contrast	-
PS Setting	Brightness	-
	Contrast	-
Security Setting	Print XPS/OOXML Errors	-
Interface Setting	Network Timeout	-
	USB Timeout	-
Assign Account to Acquire Device Info	-	

6.9 Store Address

Key name	Function/Precondition	
Address Book	E-mail Address	-
	FTP	-
	SMB	-
	User Box	• It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Vendor 2.” (It will be displayed when the key counter is mounted.) • It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted.
	Fax	-
	WebDAV	-
Group	Destination Information	-
	Limiting Access to Destinations	-
Subject	It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] is set to “Management Device 2.”	
Text		
Call Rejection Setting (Only for Japan)	Setting will be available when [Reject Calls] and [Number display] in [Service Mode] -> [FAX] -> [System] is set to “ON.” It will be displayed when [Number Display Function] in [Administrator] -> [Fax Settings] -> [Function Setting] -> [Function ON/OFF Setting] is enabled.	
One-Touch/User Box Registration List	Address Book List	-
	Group Address List	-
	Program List	-
	E-Mail Subject/Text List	-
Prefix/Suffix Setting	-	
Prefix/Suffix	-	
Register address input prohibition rule.	-	

6.10 Fax Settings

NOTE

- **It will be displayed when fax kit is mounted.**

6.10.1 Header/Footer Position

Key name	Function/Precondition
Header Position	“OFF” cannot be used on the USA and Hong Kong models.
TTI Print Position and Character Size	-
Print Receiver’s Name	This setting is not available on the USA and Hong Kong models.
Footer Position	-

6.10.2 Line Parameter Setting

Key name	Function/Precondition
Dialing Method	-
Receive Mode	It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that “Management Device 2” is mounted.
Number of RX Call Rings (Receive Time Interval Setting)	When [Service Mode] -> [FAX] -> [Network] -> [Network Setting 1] -> [Receive Signal Detection Mode] is set to “Time”, [Receive Time Interval Setting] will be displayed.
Number of Redials	It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that the “Vendor 2” is mounted.
Redial Interval	
Manual RX V34 Setting	-
TEL/FAX Auto Switch (Only for Japan)	-
External Phone Call Monitor Sound (Only for Japan)	It will be displayed when [Administrator] -> [Fax Settings] -> [Line Parameter Setting] -> [TEL/FAX Auto Switch] is set to “ON.”
External Phone Call Time (Only for Japan)	
Audio Recognition Setting (Only for Japan)	
External Phone Disconnection (Only for Japan)	-
Answering Machine Connection Settings (Only for Japan)	-
Line Monitor Sound	-
Line Monitor Sound Volume (Send)	-
Line Monitor Sound Volume (Receive)	-
Pause Time	-
Ring Detection Pattern	This setting is available only on the New Zealand model.

6.10.3 TX/RX Settings

Key name	Function/Precondition
Duplex Print (RX)	It will not be displayed when [Administrator] -> [Fax Settings] -> [TX/RX Settings] -> [Print Separate Fax Pages] is set to “ON.”
Letter/Ledger over A4/A3	-
Print Paper Selection	-
Print Paper Size	To make the setting of Print Paper Size enable, set [Administrator] -> [Fax Settings] -> [TX/RX Settings] -> [Paper Tray Setting] to “Auto.”
Incorrect User Box No. Entry	-
RX from Rejected Fax No. (Only for Japan)	• It will be displayed when [Service Mode] -> [FAX] -> [System] -> [Display Setting] -> [Reject Calls] is set to “ON.” • [Administrator] -> [Fax Settings] -> [Function Setting] -> [Function ON/OFF Setting] -> [Number Display Function] is set to “ON.”
Paper Tray Setting	-
Allow Paper Tray Setting	-
Min. Reduction for RX Print	-
Print Separate Fax Pages	It will not be displayed when [Administrator] -> [Fax Settings] -> [TX/RX Settings] -> [Duplex Print (RX)] is set to “ON.”
File After Polling TX	-

Key name	Function/Precondition
No. of Sets (RX)	-
Individual Receiving Line Setup	It will be displayed only when multiple lines are used and [Administrator] -> [Fax Settings] -> [Multi Line Settings] -> [Fax Line 2 to 4] -> [Multi Line Settings] -> [Line 2 to 4 Setting] is set to “TX and RX” or “RX Only”.
Individual Sender Line Setup	It will be displayed only when multiple lines are used and [Administrator] -> [Fax Settings] -> [Multi Line Settings] -> [Fax Line 2 to 4] -> [Multi Line Settings] -> [Line 2 to 4 Setting] is set to “TX and RX” or “RX Only”.
TX-Line Auto Switch Setting	-
Fax Rx Print Setting	-

6.10.4 Function Setting

Key name		Function/Precondition
Function ON/OFF Setting	F-Code TX	-
	Relay RX	It will be displayed when [Service Mode] -> [FAX] -> [System] -> [Display Setting] -> [Relay] is set to “ON.”
	Relay Printing	
	Destination Check Display Function	-
	Number Display Function (Only for Japan)	It will be displayed when [Service Mode] -> [FAX] -> [System] -> [Display Setting] -> [Number display] is set to “ON.”
	Confirm Address (TX)	-
	Confirm Address (Register)	-
	PIN Code Display Mask Function	-
	Reset the setting value after using other functions	-
	Require the use of the use of the External Line key for outside calling	-
	Prohibit fax usage while using ext TEL line	-
Dial-In Settings (Only for Japan)	It will be displayed when [Service Mode] -> [FAX] -> [System] -> [Display Setting] -> [Dial In] is set to “ON.”	
Closed Network RX	It will be displayed when [Service Mode] -> [FAX] -> [System] -> [Display Setting] -> [Closed area RX] is set to “ON.”	
Remote RX Settings (Only for Japan)	It will be displayed when [Service Mode] -> [FAX] -> [System] -> [Display Setting] -> [Remote Rx] is set to “ON.”	
Incomplete TX Hold	• It will be displayed when [Service Mode] -> [FAX] -> [System] -> [Display Setting] -> [Re-Transmission] is set to “ON.” • It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that “Key Counter Only” or “Vendor 2” is mounted.	
RX Data Operation Settings	Memory RX Setting	It will be displayed when [Service Mode] -> [FAX] -> [System] -> [Display Setting] -> [Compulsory Memory RX] is set to “ON.”
	Forward TX Setting	• It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that the “Vendor 2” is mounted. • It will not be displayed when [Service Mode] -> [Billing Setting] shows that [Authentication Device2] is mounted. • A forwarding address except a case of the fax, specify [File Type] a fax can be converted into a file. The file types able to be specified are PDF, XPS, and TIFF. However, when a received job is an Internet Fax or IP Address Fax, you can specify other file types by changing the switch No.124 to [00000001] at Bit assignment/[01] at HEX assignment in [Service Mode] -> [System 2] -> [Software Switch Setting].
	PC-Fax RX Setting	[Dail-In only] will be displayed when [Administrator] -> [Fax Settings] -> [Function Setting] -> [Dial-In Settings] is set to “ON.”
	TSI User Box Settings	-
	None	-
PC-Fax TX Setting	-	
RX Data Deletion Restriction Settings	Password Deletion	• This setting is not available without user authentication. • This setting is not available without the account track. • This function cannot be set if the User Box Administrator has not been set.
	Administrator User Box Deletion	
PBX Connection Setting	-	

6.10.5 Report Settings

Key name	Function/Precondition
TX Result Report	-

Key name	Function/Precondition	
Tx Result Report Print Confirmation Screen	-	
Sequential TX Report	-	
Broadcast Result Report	-	
Bulletin TX Report	-	
Relay TX Result Report	It will be displayed when [Service Mode] -> [FAX] -> [System] -> [Display Setting] -> [Relay] is set to “ON.”	
TX Result Report Print Settings	Print E-mail Notification	• This function can be set if “E-mail address” has been set in [Administrator] -> [System Settings] -> [Machine Setting]. • This function can be set if “ON” is set for [E-mail TX (SMTP)] and “ON” is set for [E-Mail Send] in [Administrator] -> [Network] -> [E-mail Setting].
Activity Report	It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that the “Vendor 2” is mounted.	
Relay Request Report	It will be displayed when [Service Mode] -> [FAX] -> [System] -> [Display Setting] -> [Relay] is set to “ON.”	
PC-Fax TX Error Report	-	
Timer Reservation TX Report	-	
Confidential Rx Report	-	
Remark Column Print Setup	-	
Network Fax RX Error Report	Setting will be available when [IP Address Fax Function Settings] or [I-Fax Function Setting] is set to “ON” in [Administrator] -> [Network] -> [Network Fax Setting] -> [Network Fax Setting].	
Print Job Number	• It will not be displayed when [Report Addition Information] is set to “Diagnosis Code” or “Dial Number” by [Service Mode] -> [FAX] -> [List Output]. • It will not be displayed when [Service Mode] -> [System 2] -> [Software Switch Setting] shows that switch No.77 is set to [00000100] at Bit assignment/[04] at HEX assignment.	
MDN Message DSN Message Print E-mail Message Body	It will be displayed when [Administrator] -> [Network] -> [Network Fax Setting] -> [Network Fax Setting] -> [I-Fax Function Setting] is set to “ON.”	
Legend display Settings	-	

6.10.6 Multi Line Settings

NOTE

- **It will be displayed each only when fax kit (line 2 or line 3 or line 4) is mounted.**

Key name	Function/Precondition		
PC-Fax TX Line Setting	• It will be not displayed when [PC-Fax Permission Setting] is set to “Restrict” in [Administrator] -> [Fax Settings] -> [Function Setting]. • Line 2 to 4 will be displayed when [Administrator] -> [Fax Settings] -> [Multi Line Settings] -> [Fax Line 2 to 4] -> [Multi Line Usage Setting] -> [Line 2 to 4 Setting] is set to “TX and RX” or “TX Only.”		
Fax Line 2 Fax Line 3 Fax Line 4	Line Parameter Setting	Dialing Method	-
		Number of RX Call Rings (Receive Time Interval Setting)	When [Service Mode] -> [FAX] -> [Line 2 to 4] -> [Network] -> [Network Setting 1] -> [Receive Signal Detection Mode] is set to “Time”, [Receive Time Interval Setting] will be displayed.
		Line Monitor Sound	-
		Pause Time	-
	Function Setting	Number Display Function (Only for Japan)	-
	Multi Line Usage Setting	Line Setting	-
		Sender Fax No.	-

6.10.7 Network Fax Setting

Key name	Function/Precondition
Black Compression Level Color/Grayscale Multi-Value Compression Method	It will be displayed when either [IP Address Fax Function Settings] or [I-Fax Function Setting] is set to “ON” in [Administrator] -> [Network] -> [Network Fax Setting] -> [Network Fax Setting].
Internet Fax RX Ability I-Fax Advanced Setting	It will be displayed when [Administrator] -> [Network] -> [Network Fax Setting] -> [Network Fax Setting] -> [I-Fax Function Setting] is set to “ON.”
IP Address Fax Operation Settings	It will be displayed when [Administrator] -> [Network] -> [Network Fax Setting] -> [Network Fax Setting] -> [IP Address Fax Function Settings] is set to “ON.”

6.10.8 Header Information

Key name	Function/Precondition
Header Information	-

6.10.9 Fax Print Quality Settings

Key name	Function/Precondition
Fax Print Quality Settings	-

6.10.10 Fax Setting List

Key name	Function/Precondition
Fax Setting List	It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that the “Vendor 2” is mounted. (It will be displayed when the Key Counter is mounted or [Service Mode] -> [System 2] -> [Software Switch Setting] shows that switch No.33 is set to [00000001] at Bit assignment/[01] at HEX assignment.)

6.11 Copier Settings

Key name	Function/Precondition	
Basic Setting	Auto Zoom (Platen)	-
	Auto Zoom (ADF)	-
	Specify Default Tray when APS Off	-
	Tri-Fold Print Side	It will be displayed when the finisher with folding functions is installed.
	Print Jobs During Copy Operation	-
	Automatic Image Rotation	-
Eco Copier Settings	Combine	-
	Duplex Settings	-

7. Expert Adjustment

NOTE

- **It will not be displayed when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that the "Vendor 2" is mounted. (It will be displayed when the Key Counter is mounted or [Service Mode] -> [System 2] -> [Software Switch Setting] shows that switch No.33 is set to [00000001] at Bit assignment/[01] at HEX assignment.)**

Key name	Function/Precondition	
AE Level Adjustment	-	
Printer Adjustment	Leading Edge Adjustment	This menu is unavailable when the key counter is not inserted while "Key Counter Only" is set by [Service Mode] -> [Billing Setting] -> [Management Function Choice].
	Centering	
	Leading Edge Adjustment (Duplex Side 2)	
	Centering (Duplex 2nd Side)	
	Erase Leading Edge	It will be displayed when [Service Mode] -> [Enhanced Security] -> [Administrator Feature Level] is set to "Level 2." • The adjusted values from [Erase Leading Edge] are also updated to the service mode as the "Lead Edge Erase Adjustment" function in service mode is opened to administrators. • The adjusted values from [Vertical Adjustment] are also updated to the service mode as the "Paper Feed Direction Adj." function in service mode is opened to administrators.
	Vertical Adjustment	
	Media Adjustment	This function is provided to open "Transfer Voltage Fine Adj" of Service Mode up to administrator and the fine-adjusted value is reflected in the Service Mode setting.
Finisher Adjustment	Center Staple Position	It will be displayed when the finisher FS-539SD or FS-540SD is installed.
	Half-Fold Position	
	1st Tri-Fold Position Adjustment	
	2nd Tri-Fold Position Adjustment	
	Tri-Fold Output Setting	It will be displayed when the finisher FS-540SD is installed.
	Punch Vertical Position Adjustment	It will be displayed when the finisher FS-539/FS-539SD and the punch kit PK-524, or the finisher FS-540/FS-540SD and the punch kit PK-526 are installed.
	Punch Horizontal Position Adjustment	
	Punch Regist Loop Size Adjustment	It will be displayed when the finisher FS-539/FS-539SD and the punch kit PK-524, or the finisher FS-540/FS-540SD and the punch kit PK-526 are installed.
	Puncher Edge Sensor Adjustment	It will be displayed when the finisher FS-540/FS-540SD and the punch kit PK-526 are installed.
	Vertical Punch (Z-Fold) Position Adjustment	It will be displayed when the finisher FS-540/FS-540SD, the punch kit PK-526 and the Z folding unit ZU-609 are installed.
	Horizontal Punch (Z-Fold) Position Adjustment	
	1st Z-Fold Position Adjustment	It will be displayed when the finisher FS-540/FS-540SD and the Z folding unit ZU-609 are installed.
	2nd Z-Fold Position Adjustment	
	Punch Unit Size Detect Sensor	It will be displayed when the finisher FS-540/FS-540SD, the punch kit PK-526 and the Z folding unit ZU-609 are installed.
	Post Inserter Tray Size Adjustment	It will be displayed when the finisher FS-540/FS-540SD and the post inserter PI-507 is installed.
	Booklet Position Setting	It will be displayed when the finisher FS-540SD is installed.
Density Adjustment	Thick Type 1	-
	Thick Type2	-
	User Paper 7	-
Image Stabilization	Image Stabilization Only	-
	Image Stabilization Setting	-
Paper Separation Adjustment	-	
Gradation Adjustment	Image Stabilization Only	• This menu is unavailable when the key counter is not inserted while "Key Counter Only" is set by [Service Mode] -> [Billing Setting] -> [Management Function Choice]. • Before executing Gradation adjust, be sure to perform Image Stabilization.
	Printer(600dpi)	
	Print(1200dpi)	
	Copy	
Density Balance Adjust	Reflect Adj Values	-
	Select screen	-

Key name	Function/Precondition	
	Initialize Adjustment Values	-
Scanner Area	Scanner Adjustment: Leading Edge	• It will be displayed when [Service Mode] -> [Enhanced Security] -> [Administrator Feature Level] is set to “Level 2.” • This menu is unavailable when the key counter is not inserted while “Key Counter Only” is set by [Service Mode] -> [Billing Setting] -> [Management Function Choice]. • The adjusted values from [Scanner Area] are also updated to the service mode as the “Scan Area” function in service mode is opened to administrators.
	Scanner Adjustment: Centering	
	Horizontal Adjustment	
	Vertical Adjustment	
ADF Adjustment	Centering	It will be displayed when [Service Mode] -> [Enhanced Security] -> [Administrator Feature Level] is set to “Level 2.”
	Original Stop Position	
	Centering Auto Adjustment	• It will be displayed when [Service Mode] -> [Enhanced Security] -> [Administrator Feature Level] is set to “Level 2.” • When the adjustment result is [Unable], confirm the orientation of the original document and manually adjust the [Original Stop Position].
	Auto Adj. of Stop Position	
Line Detection	Prior Detection Setting	Be aware that selecting “No” and performing the pre-detection with [Service Mode] -> [Machine] -> [Split Line Detect. Setting] will display “NG.”
	Feed Cleaning Settings	-
Trail Edge Adjust	It will be displayed when [Service Mode] -> [Enhanced Security] -> [Administrator Feature Level] is set to “Level 2.”	
User Paper Settings	• It will be displayed when [Service Mode] -> [Enhanced Security] -> [Administrator Feature Level] is set to “Level 2.” • The feature available from [Service Mode] -> [System 2] -> [User Paper Settings] is extended to Administrator. However, the fusing temperature setting is not possible in Administrator Settings.	
Erase Adjustment	Non-Image Area Erase Operation Settings	-
PS Designer Settings	-	
Auto Paper Detection Setting	Switch Local Weight Table	It will be displayed when [Paper type auto detection settings] is set to “ON” in [Utility] -> [Administrator] -> [System Settings].
	Weight Detection Adjustment	
	Weight Class Threshold Adjustment	
	Weight Class Variation Correction	
	Recycled Paper Identif. Adj.	
	Envelope Identification Adjustment	
	Plain Paper Identific. Adj.	

8. Storage Management

Function Name	Function/Precondition
Check Capacity	-
Overwrite All Data + Format	-
Overwrite All Data - Report Settings	-
Storage Lock Password	• Don't forget the lock password. • After setting a lock password, if you replace the MFP storage due to its breakage or other reasons and install a new MFP storage, an error message is displayed. In that case, clear the lock password and set a new password using this function.

Format	• It is subject to logical formatting here, therefore if starting with physical formatting, follow as [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Format].
	• Make sure to configure the following settings after formatting the storage.
	  • Installing the firmware.
	  • Reinstall movie data, voice data, OCR dictionary data, and PDF/A fonts from [Service Mode] -> [System 2] -> [Install Data].
	• Make sure to install the firmware after the format. Otherwise a trouble code “C-D012 Mount error due to storage being unformatted” will appear.

Encryption Settings	• Use: To set a password used to encrypt data when storing it into the MFP storage. • Default setting: None • For details of the functions, refer to "Encryption Settings."
Debug Log Encryption Settings	• Use: To set a password used to encrypt debug data when storing it into the MFP storage. • This is displayed only when Switch No. “155” is set to [00000001] at Bit assignment/[01] in [Service Mode] -> [System 2] -> [Software Switch Setting]. • Default setting: 01234567890123456789 • For details of the functions, refer to “ H.13.7.2 Debug Log Encryption Settings.”

9. Banner Printing

Function Name	Function/Precondition
Allow	-
Restrict	-

10. Device Information

Function Name	Function/Precondition
Function Version	-
IPv4 Address	-
IPv6 Address	-
Serial Number	-
Contact Telephone Number	-
Auth. function list display	-
QR Code Display	It will be displayed when [Administrator] -> [System Settings] -> [System Connection Setting] -> [Mobile Connection Settings] -> [QR Code Display Setting] is set to “ON.”
Contact Fax Number	-
Version Information	-

11. Remote Panel

Function Name	Function/Precondition
Remote Panel Operation	It will be displayed when [Administrator] -> [Network] -> [Remote Panel Settings] -> [Remote Panel Client Settings] is set to “ON.”

12. Card Authentication

Function Name	Function/Precondition
IC Card type setting	It will be displayed when [Service Mode] -> [Billing Setting] -> [Authentication Device2] is set to “Card.”
Operation Settings	
Authentication Card ID Number	

13. Supplementary explanation of utility mode

13.1 Maintenance

13.1.1 License Settings

Get Request Code

- To display and print a request code and serial number used to activate i-Option.

<Procedure>

1. Touch [Get Request Code], and [OK].
2. A serial number and request code are issued.
3. By touching [Print], the serial number and request code are printable.

Install License

- To allow administrator to activate functions provided by i-Option.
- The functions can be activated by entering Function/License Code or Token Code.
- By making settings in [Service Mode] -> [Billing Setting], CE can also activate functions provided by i-Option.

NOTE

- **When activating i-Option, MFP accesses to KM license server via WebDAV connection. Set the proxy server setting in [Administrator] -> [Network] -> [WebDAV Settings] -> [Proxy Setting for Remote Access] as occasion demands.**
- **For accessing to KM license server, it is necessary to select [Fixed Address] in [Service Mode] -> [Billing Setting] -> [WebDAV Server Setting].**
- **When the server connection error "MAE001" is displayed, check the network settings.**
- **If an internal error "MAI001" is displayed, repair repair license management information through [Service Mode] -> [Billing Setting].**

<Procedure (Function/License Code)>

1. Touch [Install License].
2. Touch [Function/License Code].
3. Touch [Function Code].
4. Enter the Function Code.
5. Touch [OK].
6. Touch [License Code].
7. Enter the license code that was issued in the license management server using the key board on the control panel, and touch [OK].
8. Touch [Install].
9. Confirm the message, select [Yes], and touch [OK].
10. Turn OFF and ON the main power switch.

<Procedure (Token Code)>

1. Touch [Token Code].
2. Touch one of the Token Codes 1 to 10.
3. Enter the Token Code.
4. Touch [OK].
5. Touch [Install].
6. Confirm the message, select [Yes], and touch [OK].
7. Turn OFF and ON the main power switch.

List of Enabled Functions

- To display currently activated functions.

13.1.2 USB flash drive backup

NOTE

- **It will be displayed when [Service Mode] -> [System 2] -> [Software Switch Setting] shows that switch No.72 is set to [00000100] at Bit assignment/[04] at HEX assignment.**
- **In the following conditions, data export into the external memory is prohibited.**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] is set to "Restrict."**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] -> [Detail Setting] -> [External Memory(Service)] is set to "Restrict."**
  - **[Administrator] -> [Security] -> [Enhanced Security Mode] is set to "ON".**

Import

- To import various types of setting information from other machine via the USB memory.
- Types of data that can be imported:
  - Address Book, Authentication Data, Network Settings, Remote Access Setting, User Setting, Administrator Setting, Custom Display Settings, Cloud Connection Setting, External Certificate, Accessibility, Custom Auth. Setting, PKI Batch Setting

NOTE

- **The size of the importable file is 700 KByte or less. However, the size of a Custom Auth. Setting data is 1 MByte or less.**

<Procedure>

1. Connect the external memory to the machine.
2. Touch [Import].
3. Touch [Password], enter the password previously set for the import data, and touch [OK].
4. Touch [Start].
5. Import results appear.

NOTE

- **If an error occurs in importing an external certificate, the certificate is returned to the state before it is imported.**
- **Import errors of external certificates are determined in following cases:**
  - **Importing a certificate fails.**
  - **The number of imported certificates exceeds the limit.**

Export

- To export various types of setting information to an external memory (USB memory).

- Types of data that can be exported:
  - Address Book, Authentication Data, Network Settings, User Setting, Administrator Setting, Custom Display Settings, Cloud Connection Setting, External Certificate, Accessibility

<Procedure>

1. Connect the external memory to the machine.
2. Touch [Export].
3. Select the item to be exported.
4. Touch [Password], enter the password of the export data, and touch [OK].
5. Touch [Start].
6. Export results appear.

13.1.3 Remote Access Setting

Import/Export User Data

- To set whether to remotely rewrite (import or export) user data such as address information using the CS Remote Care.

Setting item	Default setting
Allow	
Restrict	○

13.2 System Settings

13.2.1 Voice Guidance Settings

- To select whether or not to enable the voice guidance function.
- Selecting [ON] allows you to configure the settings on the voice guidance function in the [Accessibility] screen.

NOTE

- **To use voice guidance, the i-Option LK-104 must be activated. Besides, the local interface kit must be mounted.**

Setting item	Default setting
ON	
OFF	○

13.3 Security

13.3.1 ProhibitFunctions

- To set the function for prohibiting authentication operation in order to prevent the unauthorized access.
- To use when setting the system to prohibit authentication failure when conducting authentication by password, etc.
- Authentications which are subjected to this function:
  - CE authentication, administrator authentication, user+accounts authentication, secure print authentication, user box authentication, SNMP authentication, WebDAV Server authentication, Remote Panel authentication

Setting item	Contents	Default setting
Mode 1	When failed to authenticate, authentication operation (entering the password) will be prohibited for a certain period of time.	○
Mode 2	When failed to authenticate, authentication operation (entering the password) will be prohibited for a certain period of time. The number of times failure occurred will be counted, and when the number reaches to the specified time, authentication will be prohibited and the access will be locked.	

NOTE

- **If [Administrator] -> [Security] -> [Enhanced Security Mode] is set to "ON", selecting "Mode 1" in this setting cancels enhanced security mode.**

<Procedure>

1. Select a mode.
2. Touch [Release Time Settings] and set a period of time that elapses before access lock is released.
3. When [Mode 2] is selected, set the number of times where checks are made before access is locked.

Procedure for releasing an access lock

Authentication item	How to release
User+Accounts authentication	Touch keys in the following order. [Administrator] -> [Security] -> [Security Details] -> [ProhibitFunctions]. Then touch [Release].
SNMP authentication	
Security print authentication	
User Box authentication	
WebDAV Server authentication	
Remote Panel authentication	
Administrator authentication	After the main power switch is turned OFF and ON, the access lock is released automatically after the lapse of a predetermined period of time.
	[Service Mode] -> [Enhanced Security] -> [Administrator unlocking]
CE authentication	1. Main power switch is turned OFF and ON. 2. Touch Menu -> [Counter] -> [Print List]. 3. Touch [Display Keypad], displaying 10-key pad. 4. The lock release timer starts to operate by input the Stop -> 0 -> 9 -> 3 -> 1 -> 7

Authentication item	How to release
	5. When the timer reaches the time specified in this setting, the access lock is released.

13.3.2 Enhanced Security Mode

- To set whether or not to enhance security.
- To use when enhancing the Security function at user's option.
- The following settings are necessary for setting the security enhancement "ON".
  - Administrator Password: Change it with the one which meets password rules.
  - User Authentication: Set to [ON (MFP)], [ON (External Server)], or [ON (MFP + External Server)].
  - SSL Certificate: Register self-certificate for SSL communication from the Web Connection.
  - CE Password: Change it with the one which meets password rules.
  - CE Authentication: Set to [ON].
  - Management Function Choice: Set to "Unset."

Setting item	Default setting
OFF	○
ON	

NOTE

- **Note that setting Enhanced Security Mode to "ON" disables the following functions.**
  - **Print Data Capture (forcibly prohibited when Enhanced Security Mode is set to "ON")**
  - **Rewriting instructions of firmware from CS Remote Care, communication of the account track counter information, the setting renewal of the machine.**
  - **Firmware upgrading through Internet ISW (When the Enhanced Security Mode is set to ON, the setting of this function cannot be changed from "OFF.")**
- **Setting the Enhanced Security Mode "ON" will change the setting values for the following functions. In addition, the indicator of "not be changed" below indicates that the settings cannot be changed while Enhanced Security Mode is maintained "ON".**

Function Name	Contents	Default setting	When Enhanced Security mode is set to "ON"
Password Rules	To apply the password rule to enhance Security.	Disable	Enable (not to be changed)
ProhibitFunctions	To set the function for prohibiting Authentication operation in order to prevent the unauthorized access.	Mode 1	Mode 2 (not to be changed): Three times is set. * The number of times can be changed to once, twice, or three times. (It is twice, four or six times for WebDAV server password.)
Confidential Document Access Method	To display the status of the Authentication system on the control panel for the Security document access.	Mode 1	Mode 2 (not to be changed) * In association with ProhibitFunctions, the method is changed from "Security using Secure Document ID and password (Mode 1)" to that using the password with the "Secure Document first narrowed down by Security Document ID (Mode 2)."
Public User Access	To permit use by a public user having no user registration if user authentication setting has been made.	Restrict	Restrict (not to be changed)
User Name List	To display the list key for User names on User Authentication screen.	OFF	OFF (not to be changed)
Print without Authentication	To allow or restrict printing which user and account are not specified.	Restrict	Restrict (not to be changed)
Counter Remote Control	To select whether or not to allow the Center to acquire counter information managed by the machine when CS Remote Care is used.	Restrict	Restrict (not to be changed)
URL display enable setting	To set whether or not to enable the Scan to URL function.	ON	OFF (not to be changed)
Print Simple Auth. (Authentication Setting)	You can print from the printer driver using authentication that requires only your user name (without password).	Restrict	Restrict (not to be changed)
User Box Administrator Setting	To set whether to allow or restrict the Box Administrator to use the system.	Restrict	Restrict (not to be changed)
SSL	To set whether to encrypt access by SSL.	OFF	ON (not to be changed)
SSL Encryption Strength	To set the SSL encryption strength for the SSL encryption communication.	AES-256, 3DES-168, RC4-128	AES/3DES (not to be changed to one containing strength lower than AES/3DES)
Automatically Obtain Certificates of S/MIME	-	No	No (not to be changed)
S/MIME Encryption Method	-	3DES	3DES (not to be changed to DES or RC-2)
FTP Server	To set whether to use FTP server or not.	ON	OFF (not to be changed)

Function Name	Contents	Default setting	When Enhanced Security mode is set to "ON"
Server load reduction transmission method	Select the sending method to reduce the load of the E-mail server (SMTP).	OFF	When [Stop URL when max. limit is exceeded] or [Always Send via URL] is selected, this option is set to [OFF].
SNMPv1/v2c	To use when changing Write setting.	Read/Write enable	Only Read is enabled (not to be changed)
SNMP v3 Security Level and auth/priv-password	To set the Security level for the Reading/Writing Authority User which is used for SNMP v3.	auth/priv-password	• The security level can be selected from among [auth-password] and [auth/priv-password]. • An 8-digit-or-more auth-password and priv-password can both be set.
Print Data Capture	To set whether to allow or restrict capturing the Print Job Data.	Allow	Restrict (not to be changed)
Network Setting Clear	To clear the network setting through Web Connection.	Enabled	Restrict
Release Time Settings	To set the period of time to be elapsed before the access lock state is released.	5 min.	The setting value should be 5 min. or more (no value less than 5 can be set)
Destination Registration Change by User (Address Book and Program destination)	-	Allow	Restrict (not to be changed)
Security Print User Box Preview	-	Thumbnail View, Detail View, and Document Details are enabled	Only Detail View is enabled before password authentication (Mode 2)
Initialize (Network Settings)	To clear the network-related settings.	Enabled	Restrict (not to be changed)
Image Log Transfer Settings	Specifies whether to transfer the input or output image data to the server using whenever machine inputs or outputs image data.	OFF	OFF (not to be changed)
Machine Update Settings	To set firmware upgrading by Internet ISW, and enable or disable various settings.	OFF	OFF (not to be changed)
operation Ban release time (CE Authentication)	To set the period of time to be elapsed before the access lock state is released in CE password authentication.	5 min.	The setting value should be 5 min. or more (no value less than 5 can be set)
E-mail RX Print	To print an E-mail attachment, send an E-mail to the E-mail address of this machine.	OFF	OFF (not to be changed)
IWS Settings	Set the operating environment of IWS (Internal Web Server) function.	OFF	OFF (not to be changed)
Report File Attachment	Report File Attachment	With Attachment	Without Attachment (not to be changed)
Storage data backup	To set whether to permit our service representative to back up or restore the storage on this machine.	Restrict	Restrict (not to be changed)
CS Remote Care	CS Remote Care enables the machine and the computer at CS Remote Care center to exchange data through telephone/fax line, network or E-mail in order to control the machine.	Usable	Remote device setting disabled
Maintenance Mode Access	To set whether to permit your service representative to change [Administrator Settings] of a device without authentication.	Restrict	Restrict (not to be changed)
Simple Connection Setting	To set the pairing method to connect to an Android/iOS terminal.	QR Code Display Setting: OFF	OFF (not to be changed)
		Enable NFC: OFF	OFF (not to be changed)
		Enable Bluetooth LE: OFF	OFF (not to be changed)
SSL Settings (WebDAV Server Settings)	Specify whether to use the SSL for communication or not.	Non-SSL Only	SSL Only (not to be changed)
SSL Setting (OpenAPI Settings)	Specify whether to use the SSL for communication or not.	Non-SSL Only	SSL Only (not to be changed)
Web Browser Setting	Select whether to enable a Web Browser.	OFF	OFF
Remote Panel Settings	Configure settings for remotely controlling the Control Panel of this machine from another computer.	Client Settings: OFF	OFF
		Server Setting: OFF	OFF

Function Name	Contents	Default setting	When Enhanced Security mode is set to "ON"
Hide Personal Information (MIB)	Specify whether or not to display the file name, destination, and User Box name and number of the MIB information.	ON	ON
Import/Export User Data	Specify whether to allow importing/exporting of the destinations registered on this machine (one-touch destinations, groups, and programs), authentication information from the remote diagnosis system.	Restrict	Restrict
Administrator Password Change Permission Setting	Specify whether to allow the administrator password to be changed via the IWS application.	Restrict	Restrict (not to be changed)
USB Connection Permission setting	Specify whether to permit a function that requires the USB Port.	Detail Setting	Restrict (not to be changed)
External Memory Function Settings	Specify whether to allow users to print and read files from a USB memory device and to save files to a USB memory device.	Save Document: Restrict	Restrict (not to be changed)
		Print Document: Allow	Restrict (not to be changed)
		External Memory Document Scan: Restrict	Restrict (not to be changed)

13.3.3 Image Log Transfer Settings

- This is displayed only when Switch No. "63" is set to [00000001] at Bit assignment/[01] at HEX assignment (Type 1) or [00000010] at Bit assignment/[02] at HEX assignment (Type 2) in [Service Mode] -> [System 2] -> [Software Switch Setting].
- Perform the following settings according to Software Switch Setting.

Image Log Transfer Settings (Type1)

- Specifies whether to transfer the input or output image data to the server using whenever machine inputs or outputs image data. Makes the settings of the WebDAV Server, the FTP Server, or the SMB Server where image data are transferred.
- Use this settings to keep logs of input and output image data for Security purpose.

Setting item	Default setting
ON	
OFF	○

<Procedure>

- When selecting [ON], configure the following settings.
- Select Forwarding Destination and configure the sever settings.

Forwarding destination	Server setting item
WebDAV Server setting	Host Name, File Path, User Name, Password, Port Number, Proxy, SSL Settings
FTP Server setting	Host Name, File Path, User Name, Password, Port Number, PASV, and Proxy
SMB Server setting	Host Name, File Path, User Name, Password

- Specify Audit Item.

Audit item	Contents
All Items	Applied to Fax TX, Fax RX, Scan, and Others.
Individual Item	Can be selected from Fax, Fax RX, and Scan.

Image Log Transfer Settings (Type2)

- To select whether or not to transfer only input/output images in Fax TX/RX to the server when image data is input or output to or from the machine.

Setting item	Default setting
ON	
OFF	○

<Procedure>

- When selecting [ON], configure the following settings.

1. Configure the file type and scan setting.
2. Select Forward or Do Not Forward for Fax TX/RX.
3. To transfer data, select [Forwarding Dest.] and configure the server settings.

Forwarding destination	Server setting item
FTP Server setting	Host Name, File Path, User Name, Password, Port Number, PASV, and Proxy
SMB Server setting	Host Name, File Path, User Name, Password
WebDAV Server setting	Host Name, File Path, User Name, Password, Port Number, Proxy, SSL Settings

13.3.4 Driver Password Encryption Setting

- To set whether to use the factory default encryption word or user-defined one as a common key that encrypts a password used for a print job.

Setting item	Contents	Default setting
User-Defined	To set the encrypting passphrase. Enter an encryption word of 20 letters.	
Use Factory default settings	Uses the factory default encryption word (undisclosed predefined encryption key).	○

NOTE

- **When selecting [User-Defined], set an encryption key being consisted of the same letters in the printer driver. If the encryption word set in the machine differs from the encryption key set in the printer driver, different encrypted passwords are created and printing cannot be made.**
- **The use of OpenAPI allows an encryption key to be obtained from the machine.**

13.3.5 Quick Security Setting

Administrator Password

- To set and change the administrator password.

NOTE

- **When "Enable" is selected in [Administrator] -> [Security] -> [Security Details] -> [Password Rules], the following passwords cannot be accepted: password of single repeated characters, password same as the one before being changed, and password where the number of characters is less than the minimum number specified in [Set Minimum Password Length].**

<Procedure>

1. Enter the current administrator password
2. Password: Enter the new administrator password to be used
3. Password Confirmation: Re-enter the new administrator password

USB Enable Settings

- Specify whether to permit a function that requires the USB Port.

Setting item	Contents	Setting value	Default setting
Save Document (*1)	Select whether to allow users to save files on a USB memory.	Allow	
		Restrict	○
Print Document (*1)	Select whether to allow users to print files from USB memory.	Allow	○
		Restrict	
External Memory Document Scan (*1)	Select whether to allow users to save files from a USB memory into a User Box.	Allow	
		Restrict	○
Print (*2)	Select whether to enable to print files from a USB-connected computer.	Allow	○
		Restrict	

- *1: This function is available when [ON] is selected in [Administrator] -> [Security] -> [USB Connection Permission setting] -> [Detail Setting] -> [External Memory (User)].
- *2: This function is available when [ON] is selected in [Administrator] -> [Security] -> [USB Connection Permission setting] -> [Detail Setting] -> [PC Connect].

Password Rules

- To apply the password rule to enhance Security.
- Passwords to be covered:
  - CE password, administrator password, user password, account track password, user box password, user box administrator password, Security for confidential documents, WebDAV server password, SNMP password, remote panel server password, Encryption Passphrase
- Details of the password rules:
  - Minimum number of characters specified in [Set Minimum Password Length] (Default: 12 characters)
  - Upper- and lower-case letters are distinguished in alphabetical letters.
  - Only one-byte symbols can be used.
  - Password with only the same letter is prohibited.
  - Password same with the one prior to change is prohibited.

NOTE

- **When the password rule is set to [Enable], the password cannot be changed or registered unless it follows the above conditions.**

Setting item	Contents	Default setting
Enable	To apply the password rules.	
Disable	Do not apply the password rules. When [Enable] is selected, it is possible to determine the minimum number of characters that a password can contain. (8 to 64 characters, Default: 12 characters)	○

NOTE

- **If [Administrator] -> [Security] -> [Enhanced Security Mode] is set to "ON," selecting "Disable" in this setting cancels enhanced security mode.**
- **"Enable" cannot be selected when [Service Mode] -> [Enhanced Security] -> [CE Authentication] is set to "OFF." [CE Authentication] cannot be set to "OFF" when [Password Rules] is set to "Enable."**

Quick IP Filtering

- A function that only allows access to the MFP from devices within the same IP group.
- Determine the receiving IP for the decided IP when setting the address to the MFP by DHCP or manually.

Setting item	Default setting
Synchronize IP Address	○ (Except for North America)
Synchronize Subnet Musk	
No Filtering	○ (North America)

NOTE

- **Quick IP Filtering activates automatically.**

<Synchronize IP Address>

- IPv4 address: Only reception by an IP address with the upper 3 bites same as that of the IP address set in the MFP is allowed.
  NOTICE
  - If the MFP IP address is set to [192.168.0.134], the filtering range is as follows.
    192.168.0.0 to 192.168.0.255
- IPv6 address: Only Global Unicast Address (2000::/3) is available. Only reception by an IP address with the upper 64 bits same as that of the IP address set in the MFP is allowed.
  NOTICE
  - If the MFP IP address is set to “2345:1:2:3:4:5:6:7”, the filtering range is as follows.
    2345:1:2:3::0 to 2345:1:2:3:FFFF:FFFF:FFFF:FFFF

<Synchronize Subnet Musk>

- IPv4 address: Use the IP address set in the MFP and the Subnet Mask to allow receptions by IP addresses within the range belongs to the same network.
  NOTICE
  - If the MFP IP address is set to [150.16.17.134] and the Subnet Mask is set to [255.255.252.0], the filtering range is as follows.
    150.16.16.*** to 150.16.19.****
  - If the Subnet Mask has not been set, or it has been set to [0.0.0.0], only accesses from the IP address with the end differs from that of the IP address set in the MFP are restricted. As a result, filtering runs in the same way as that it has been set in [Synchronize IP Address].
- IPv6 address: Only Global Unicast Address (2000::/3) is available. And use the Global IP address and Prefix to perform filtering.
  NOTICE
  - If the MFP IP address is set to [2345:1:2:3:4:5:6:7], and the Prefix is set to [/64], the filtering range is as follows.
    2345:1:2:3::0 to 2345:1:2:3:FFFF:FFFF:FFFF:FFFF
  - If the Prefix has not been set, filtering runs in the same way as that the Prefix is set to 64 bit.

<No Filtering>

- For both IPv4 address and IPv6 address, no filtering is performed.

Web Conn.setting

- To set whether to use the Web Connection.

NOTE

- **To use the Web Connection, enable “JavaScript” and “Cookie” of the Web browser.**
- **If the MFP is connected to the internet via a proxy server, register the Proxy Settings of the Web browser as “Exceptions.”**
- **When the Web Connection is not displayed properly even if the above settings have been conducted, delete the cache of the Web browser.**

Setting item	Default setting
ON	○
OFF	

Security Warning Display Setting

- To select whether or not to display the Security warning screen if an administrator password is still remained as default setting or does not meet the password rules.

Setting item	Default setting
ON	○ (Except for North America)
OFF	○ (North America)

13.4 User Authentication/Account Track

13.4.1 Authentication Device Settings

- It will be displayed when [Service Mode] -> [Billing Setting] shows that the authentication device 2 is mounted.
- It will be displayed when [Administrator] -> [Network] -> [IWS Settings] is set to “ON.”

Authentication Type

- Specifies a device used for user authentication.

Card Authentication	IC Card type setting	Select the type of the required IC card. • To use the FeliCa card, select [FeliCa], [SSFC], [FCF], [FCF (Campus)] or [FeliCa (Proprietary Card)]. When [SSFC] is selected, detailed information such as the company code or company identification code is registered. • To use the Type A card, select [Type A]. • To use the FeliCa and Type A cards together, select [FeliCa+TypeA], [SSFC+TypeA], [FCF+Type A], [FCF(Campus)+Type A], or [FeliCa(Proprietary Card)+Type A]. When [SSFC+TypeA] is selected, detailed information such as the company code or company identification code is registered. • To use NFC, select [NFC(HCE)]. • To use the Type A card with NFC, select [TypeA+NFC(HCE)].

		• To use the FeliCa card with NFC, select [FeliCa+NFC(HCE)], [SSFC+NFC(HCE)], [FCF +NFC(HCE)], [FCF(Campus)+NFC(HCE)], or [FeliCa(Proprietary Card)+NFC(HCE)]. When [SSFC +NFC(HCE)] is selected, detailed information such as the company code or company identification code is registered.	
		Card Detail Settings	The settings information of for the registered IC card loadable driver can be changed via the Web browser on the machine. This does not display if any of the following conditions are satisfied. • A driver other than the AU-201S loadable driver is installed.
	IC Card Type	The type of the IC card which has been set will be displayed. • This is displayed when the loadable driver used for the YSoft card reader has been installed.	
	Operation Settings	Set how to log in to this machine. • “Card Authentication”: Pass the IC card or NFC-compatible Android device over the authentication unit to log in. • “Card Authentication + Password”: Pass the IC card or NFC-compatible Android device over the authentication unit, and enter the password to log in. • “Card Authentication” is specified by default.	
	Authentication Card ID Number	• Specify whether to notify the counter, which collects the use status of this machine, of the authentication card ID. • “Ignore” is specified by default.	
Bio Authentication	Beep Sound	• Set whether to give a "blip" sound when the finger vein pattern is scanned successfully. • “ON” is specified by default.	
	Operation Settings	Set how to log in to this machine. • “1-to-many authentication”: A user simply needs to place his or her finger to log in. • “1-to-1 authentication”: A user needs to enter the user name and place his or her finger to log in. • “1-to-many authentication” is specified by default.	

• *: Vendor ID and Product ID are identification information to specify USB devices.

<Procedure>

- Select either one of the authentication devices and press the corresponding key to go to the individual operation setting screen.
- The screen displays the authentication device that is selected in [Service Mode] -> [Billing Setting] -> [Authentication Device 2].
- When using SSFC (Shared Security Formats Cooperation) for IC card authentication, acquire the following information from the administrator and convert the value to input using the control panel.

Information to be obtained from the administrator		
Items	Sample-data (decimal number)	Setting value (hexadecimal number)
Room number	37	00 25
Floor number	15	00 0F
Building number	50	00 32
Area number	85	00 55
Security level	2	00 02
Company identification code (CL code) (*1)	06BGLQVX17 (ASCII code)	30 36 42 47 4C 51 56 58 31 37
Company code (*2)	CompanyA (ASCII code)	CompanyA

*1: The character length of the company code is 10 bytes.
*2: Use alphabetical upper case/lower case characters and numeric characters for Company code. When the company code is not set, this space will be left blank.

Logoff Settings

- Select whether or not the user is logged off after a scan or fax is sent or after the copy document is scanned.

Setting item	Default setting
Do not log off	○
Log off	

13.5 Network

13.5.1 Network Fax Setting

- It will not be displayed on the screen when all items are set to “OFF” in [Service Mode] -> [System 2] -> [Network Fax Settings].

SMTP TX Setting

- To set SMTP TX when network fax function is being used.
- To set SMTP TX port number and connecting time out period when network fax function is being used.

Setting item	Contents	Setting value	Default setting
Port No.	To set SMTP TX port number.	1 to 65535	25
Connection Timeout	To set the connection timeout time.	30 to 300 sec.	60 sec.

<Procedure>

1. Touch [Input].
2. Enter the setting value using the 10-key pad, and touch [OK].

SMTP RX Setting

- To set SMTP RX when network fax function is being used.
- To set SMTP RX port number and connecting time out period when network fax function is being used.

Setting item	Contents	Setting value	Default setting
SMTP RX	To set whether or not to use SMTP RX Settings.	ON	
		OFF	○
Port No.	To set SMTP RX port number.	1 to 65535	25
Connection Timeout	To set the connection timeout time.	5 to 1000 sec.	300

<Procedure>

1. To set SMTP Setting to [ON] or [OFF]. When [ON] is selected, configure the following Procedure.
2. Touch [Input] for the target item.
3. Enter the setting value using the 10-key pad, and touch [OK].

Network Fax Setting

- Carry out Network Fax settings.

Setting item	Contents	Setting value	Default setting
IP Address Fax Function Settings	• To set whether or not to use IP address fax function. • Setting will be available when [IP Address Fax] is set to “ON” in [Service Mode] -> [System 2] -> [Network Fax Settings].	ON	
		OFF	○
I-Fax Function Setting	• To set whether or not to use Internet fax function. • Setting will be available when [Internet Fax] is set to “ON” in [Service Mode] -> [System 2] -> [Network Fax Settings].	ON	
		OFF	○
IP-FAX (T38) Function Setting	• To set whether or not to use IP Fax (SIP) function. • The main body is required to be provided with the i-Option LK-117. • Setting will be available when install IP Fax (SIP) data to the main body in [Service Mode] -> [System 2] -> [Install Data].	ON	
		OFF	○

13.5.2 IWS Settings

- To configure the settings of the WebDAV server which is used to transfer data in the IWS (Internal Web Server) function.

NOTE

- **It will be displayed when [Administrator] -> [Security] -> [FIPS Settings] is set to “Disable.”**

Setting item	Default setting
ON	
OFF	○

<Procedure>

- When selecting [ON], configure the following settings.

1. Set the port number in [Port Number] (Web Server/Application Installation) using the 10-key pad.
2. Set Allow/Restrict for the connection of application in [Connect IWS Apps to Network].
3. Select whether to allow an external application to operate the IWS application on this machine in [Permit Access for Communication between Applications].
4. Select whether to notify you of the user name and password of the user who is using this machine, when the IWS application on this machine operates that of a different device in [Login Information Notification Settings].
5. The following settings are available when the IWS application has been registered.
   - Print Data Conversion Setting: Select a print data conversion application.
   - Authentication Screen Setting: Select an authentication screen application.
   - Background Application Setting: Select a background application.
   - Application List: Display the list of the registered applications (up to 50 applications)
   - Administrator Password Change Setting: It will be displayed when [Administrator] -> [Security] -> [Administrator Password Change Permission Setting] -> [IWS Application] is set to “Allow.” Specify whether to allow the administrator password to be changed via the IWS application.

13.5.3 Remote Panel Settings

Outline

- This is not displayed when [Service Mode] -> [Enhanced Security] -> [CE Authentication] is set to “OFF.”
- Issue and install the self-signed certificate from Device Certificate Setting under Security Setting of Web Connection.
- Enable CE Password.
- The control panel of this machine can be operated remotely from a computer on the network.
- During remote operations, display on the control panel can be masked to thereby lock the operation on the machine side (the machine control panel is forced into the locked state when the machine is set into the service mode through remote operation).
- The control panel can also be unlocked through remote operation. The machine control panel is enabled when unlocked remotely.
- Operations performed through the machine control panel while it is in the unlocked state can be reflected in the remote panel side.
- The remote operations are disabled under the following conditions:
  - Service mode operations are being performed on the machine.
  - Remote operations are already performed from another PC.

Methods of the Remote panel

Operating method	Contents
Using the dedicated software	• This method uses the dedicated software that collects screen information of the control panel of this machine periodically, and operates the control panel from a computer on the network. • You must prepare a dedicated remote control software program and server. Despite the burden, this method enables you to control the machine remotely even from a computer located outside the router network.
Accessing the machine directly	• This method accesses this machine directly from another computer on the network, and operates the control panel of the machine using a Web browser. • A dedicated remote control software program is not required, but the computer used for the remote control must be able to access this machine.

Server Settings

- To access this machine directly and control the control panel of the machine remotely, select [ON].

Setting item	Default setting
ON	
OFF	○

<Procedure>

- If [ON] is selected, configure the following settings.

Setting item	Contents
Password Authentication	Select whether to request password entry for connecting with this machine. To request for a password entry, select [Yes], and enter the password (using up to 64 characters).
IP Filtering (Permit Access)	Select [Enable] to specify IP addresses allowed to access. Also enter the range of IP addresses allowed to access.
Port No.	To set the port number.
Connection Timeout	To set the time-out time.

NOTE

- **Starting the remote operations**
  - **Access the machine web server (URL: https://IP_address_of_MFP:Port_Number/panel/top.html) through the web browser.**
  - **If Password Authentication is set, enter the set password.**
  - **If IP Filtering is enabled, connection can be established only through the authorized address.**

Client Settings

- To control the control panel of this machine remotely using the dedicated software, select [ON].

Setting item	Default setting
ON	
OFF	○

<Procedure>

- If [ON] is selected, configure the following settings.

Setting item	Contents	
Port No.	To set the port number.	
Connection Timeout	To set the time-out time.	
Server Address	Enter the address of the server where the dedicated software was installed.	
Certificate Verification Level Settings	Expiration Date	Select whether to check that the server certificate is within the validity period.
	Key Usage	Select whether to check that the server certificate is used according to the purpose approved by the issuer.
	Chain	Select whether to check that the server certificate chain (certification path) is correct.
	Expiration Date Confirmation	Select whether to check that the server certificate is within the validity period. The OCSP service and CRL (Certificate Revocation List) are checked in this order when the expiration date of the certificate is checked.
	CN	Select whether to check that the CN of the server certificate matches the server address.
Synchronize WebDAV Client Setting	Synchronize WebDAV Client Setting: Select whether to use the proxy server for WebDAV transmission as a proxy server for the server where the dedicated software was installed. To use a different proxy server, select [Individual Settings] and enter the proxy server information.	
Launch Remote Panel from vCare	To set whether or not to allow the remote panel to be started from the remote diagnosis system.	

13.5.4 Network I/F Configuration

- It will be displayed when optional wireless LAN devices are mounted.
- To add a network interface to this machine, set a network interface configuration.

Setting item	Contents	Default setting
Wired Only	Select this option to use this machine only in the wired LAN environment.	○
Wireless Only	Select this option to use this machine only in the wireless LAN environment. This machine runs as a wireless LAN adapter in the wireless LAN environment.	

Setting item	Contents	Default setting
Wired+Wireless (Secondary Mode)	Select this option to use this machine in both the wired LAN environment and wireless LAN environment. This machine runs as a wireless LAN adapter in the wireless LAN environment.	
Wired+Wireless (Primary Mode)	Select this option to use this machine in both the wired LAN environment and wireless LAN environment. This machine runs as a wireless LAN access point in the wireless LAN environment.	
Wired+Wireless (Wi-Fi Direct)	Select this option to use this machine in both the wired LAN environment and wireless LAN environment. This machine runs as a wireless LAN access point in the wireless LAN environment. Configuration when this machine is used as a Wi-Fi Direct group owner (*).	

*: Group owners are devices that play almost the same role as a wireless LAN access point. Because it looks like a normal AP from other client devices, the normal wireless LAN client devices that do not support Wi-Fi Direct can also be connected to group owners.

13.5.5 Wireless Network Setting

- Configure settings to use this machine as a wireless LAN access point or wireless LAN adapter.
- It will be displayed when optional wireless LAN devices are mounted.

Wireless Only or Wired+Wireless (Secondary Mode)

- "Wireless Only" or "Wired + Wireless (Secondary Mode)" is selected in [Administrator] -> [Network] -> [Network I/F Configuration]

Awake from ErP	Select the method to return the machine from the ErP Auto Power Off mode. • "OFF": The machine is not returned from the ErP Auto Power Off mode. • "Awake with Magic Packet": The machine returns from the ErP Auto Power Off mode when receiving a magic packet. • "Awake with ARP + Unicast Communication": The machine returns from the ErP Auto Power Off mode when receiving a unicast communication packet. "Awake with Magic Packet" is specified by default.
Easy Setting (WPS)	Configure a setting to automatically obtain connection information from an access point. The access point must support the WPS function. • [Push Button Method]: Select [Push Button Method], and touch [Start Operation] to try a connection with an access point. If you press the WPS setting button at the access point, settings such as SSID and Security required for a connection are configured automatically. • [PIN Method]: Select [PIN Method], and tap [Start Operation] to display the PIN code. If you enter the displayed PIN code at the access point, settings such as SSID and Security required for a connection are configured automatically. This function requires a computer that contains Windows 7 or later as the operating system.

Manual Setting	Manually configure settings items such as SSID and the encryption scheme that are required for a connection.
	• [SSID]: Enter the SSID of the wireless LAN access point connected to the machine (using up to 32 characters).
	• [Authentication/Encryption Algorithm]: Select the algorithm used for authentication or encryption.
	  • If [WEP] is selected, specify [Key Input Method] and [WEP Key]. To specify multiple WEP keys, select the required WEP keys in [Use key settings].
	  • If an algorithm other than WEP is selected, specify [Key Input Method] and [Passphrase].

Connection Status	Allows you to check the access point connected to this machine, the radio field intensity of the access point, and the current communication speed.
Device Setting	Allows you to check the MAC address of the wireless network adapter.

Wired + Wireless (Simple AP Mode)

- "Wired + Wireless (Primary Mode)" is selected in [Administrator] -> [Network] -> [Network I/F Configuration]

Awake from ErP	Select the method to return the machine from the ErP Auto Power Off mode. • "OFF": The machine is not returned from the ErP Auto Power Off mode. • "Awake with Magic Packet": The machine returns from the ErP Auto Power Off mode when receiving a magic packet. • "Awake with ARP + Unicast Communication": The machine returns from the ErP Auto Power Off mode when receiving a unicast communication packet. "Awake with Magic Packet" is specified by default.
Simple AP Mode Setting	Manually configure settings to use this machine as a wireless LAN access point. • [SSID]: Enter the SSID to use this machine as a wireless LAN access point (using up to 32 bytes). • [Authentication/Encryption Algorithm]: The algorithm for authentication or encryption is fixed to [WPA2-PSK(AES)].
Wireless Channel Setting	Specify the frequency band and channel required for wireless LAN connection. • [Frequency Band]: Select the frequency band required for wireless LAN connection. • [2.4GHz]: Select the channel to be used for wireless LAN connection of the 2.4GHz band. Selecting "Auto" searches for a channel that is not being used for other access points, and automatically assigns it to the access point. "Auto" is specified by default. • [5GHz]: Select the channel to be used for wireless LAN connection of the 5GHz band. Selecting "Auto" searches for a channel that is not being used for other access points, and automatically assigns it to the access point. "Auto" is specified by default.
DHCP Server Settings	Configure a setting to use the DHCP server function. • [Enable Settings]: Select whether to enable the DHCP server function. "Disabled" is specified by default. • [IPv4 lease address]: Specify the range of IPv4 addresses to be leased from the DHCP server when enabling the DHCP server function. • [Subnet Mask]: Specify the subnet mask of the IPv4 address to be leased from the DHCP server when enabling the DHCP server function.

	• [Lease Period]: Specify the lease period of the IPv4 address to be leased from the DHCP server when enabling the DHCP server function.
No. of Concurrent Devices Allowed	Enter the number of devices that can be connected simultaneously to the access point. “4” devices is specified by default.
Device Setting	Allows you to check the MAC address of the wireless network adapter.
Display Connected Devices	Displays a list of names and MAC addresses of wireless LAN adapters that are connected to the access point.
Passphrase	Specify the passphrase. • [Key Input Method]: Select the method to enter the passphrase. • [Passphrase]: Enter the passphrase.

13.6 Machine Update Settings

13.6.1 Internet ISW Settings

- This is displayed when [Function Setting] is set to “ON” in [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Internet ISW Set].

FTP Server Settings

- To set whether to connect via a proxy server to access the FTP server.
- To configure the settings of the server related to connection via a proxy server.
- This is displayed when [FTP data acquisition setting] is set to “ON” in [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [FTP Setting].

Setting item	Default setting
ON	
OFF	○

<Procedure>

- If [ON] is selected, configure the following settings.

1. Touch [Host Address] in [Proxy Server Address] to set the host address of the proxy server.
2. Set the port number used to access the proxy server in [Proxy Server Port Number].

Update Firmware at Specified Time

- To update the downloaded firmware at the specified time.
- This is displayed when [Open Mode Settings] is set to “Set” in [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Internet ISW Set].

Setting item	Default setting
Yes	
No	○

<Procedure>

- If [Yes] is selected, set the time to update the firmware.

Firmware Update Parameters

- To download and update the firmware.
- When you wish to update the firmware at the specified time, after downloading it in the way described here, you can specify the time in [Update Firmware at Specified Time].
- This is displayed when [Open Mode Settings] is set to “Set” in [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Internet ISW Set].

<Procedure>

1. Touch [Firmware Download] in [Administrator] -> [Network] -> [Machine Update Settings] -> [Internet ISW Settings] -> [Firmware Update Parameters].
2. Select [Yes] in the confirmation screen and touch [OK].
3. The firmware download starts.
4. The message to show the status will be displayed on the screen while connecting and transferring data.
5. Select [Firmware Upgrade] or [Firmware Delete].
   - Touching [Upgrade] starts updating using the downloaded firmware data. Select [Yes] in the confirmation screen and touch [OK].
   - Touching [Firmware Delete] will delete the downloaded firmware data. Select [Yes] in the confirmation screen and touch [OK].
6. When the firmware is normally upgraded, the main body will automatically be restarted to complete the Internet ISW.

NOTE

- **To download the firmware, in addition to the proxy settings configured in [FTP Server Settings], you need to configure appropriate settings in [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [HTTP Setting], [FTP Setting], and [Forwarding Access Setting].**

13.6.2 Machine Auto Update Settings

- Obtain the update file for the machine from the file storage server, and update the firmware or settings of the machine.
- This function is same as that of the service mode, but it will not be used together with the function of the service mode.
- Refer to I.19.2.1 Auto Update setting for how to create an update file.

(1) Auto Update Settings for This Machine

- To obtain the update file from the specified location, and configure settings to update the machine at the specified time.

Setting item	Default setting
ON	
OFF	○

<Procedure>
- If [ON] is selected, configure the following settings.

NOTE
- **If the machine relay server is used as a server on the data providing side, the SMB protocol will not be used.**

When configuring the settings for SMB with the download protocol

Setting item	Contents
Host Name	Set the host name for the SMB server.
File Path	Set the file path used in the SMB server communication. • Specify the folder in which C_UpdateList.ini is stored. For details, see " I.19.2.1 Auto Update setting."
User Name	Set the user name used to access the SMB server.
Password	Set the password used to access the SMB server.
Number of Retries	Set the number of times to retry when failed to obtain.
Update Time	Touch Clear to set the time to update the machine.
Polling Settings	Set the polling period for obtaining the update list.
Retry Interval	Set the period for retrying when failed to obtain.

When configuring the settings for HTTP with the download protocol

Setting item	Contents
URL	Set the address of the http server. • Specify the folder in which C_UpdateList.ini is stored. For details, see " I.19.2.1 Auto Update setting."
User Name	Set the user name used to access the relay server by http protocol.
Password	Set a password used to access the http server.
Proxy	Select whether to use the proxy server. • If [ON] is selected, set the proxy with [Administrator] -> [Network] -> [Machine Update Settings] -> [HTTP Proxy Settings].
Connection Timeout	Set the timeout period for connecting to the server.
Update Time	Touch Clear to set the time to update the machine.
Polling Settings	Set the polling period for obtaining the update list.
Retry Interval	Set the period for retrying when failed to obtain.

(2) Relay Server Function Settings

- Obtain an update relay data, and configure settings for the relay server function which enables the file to be shared with the other machine.

Update File Download Settings

- Set a relay server to obtain the update relay data from file storage server.

Setting item	Default setting
ON	
OFF	○

<Procedure>
- If [Confirm] is selected, configure the following settings.

Setting item	Contents
URL	Set the address of the file storage server. • Specify the folder in which S_UpdateList.csv is stored. For details, see " I.19.2.2 Relay server setting."
User Name	Set the user name used to access the file storage server.
Password	Set the password used to access the file storage server.
Proxy	Select whether to use the proxy server. • If [ON] is selected, set the proxy with [Administrator] -> [Network] -> [Machine Update Settings] -> [HTTP Proxy Settings].
Polling Settings	Set the polling period for obtaining the update list.
Retry Interval	Set the period for retrying when failed to obtain.
Connection Timeout	Set the timeout period for connecting to the server.

Authentication Setting

- Configure the authentication settings of access management works as an update relay data sharing server.

Setting item	Default setting
ON	
OFF	○

<Procedure>
- If [ON] is selected, configure the following settings.
- DO NOT use the SMB setting

For HTTP Setting

Setting item	Contents
User Name	Set the user name used to access the relay server by http protocol.

Setting item	Contents
Password	Set the password used to access the relay server.

NOTE
- **Once a password is set, be sure not to forget it. It is required for reset.**
- **Please refer to " I.19.2.2 (6) Auto update by relay server" for the file path of relayed data.**

(3) Log TX settings

Update File Download/Update Log
- Save the update file download log for auto update of the machine, and send it to the specified location.

Setting item	Default setting
ON	
OFF	○

<Procedure>
- When [ON] is selected, configure the settings for transmission protocol.

For SMB

Setting item	Contents
Host Name	Set the host name for the SMB server.
File Path	Set the file path used in the SMB server communication.
User Name	Set the user name used to access the SMB server.
Password	Set the password used to access the SMB server.

For WebDAV

Setting item	Contents
URL	Set the address of the WebDAV server.
User Name	Set the user name used to access the WebDAV server.
Password	Set the password used to access the WebDAV server.
Proxy	Select whether to use the proxy server. • If [ON] is selected, set the proxy with [Administrator] -> [Network] -> [Machine Update Settings] -> [HTTP Proxy Settings].

Relay Update File Download Log
- Save the log related to update relay data download for the relay server, and send it to the specified location.

Setting item	Default setting
ON	
OFF	○

<Procedure>
- When [ON] is selected, configure the settings for transmission protocol.

For SMB

Setting item	Contents
Host Name	Set the host name for the SMB server.
File Path	Set the file path used in the SMB server communication.
User Name	Set the user name used to access the SMB server.
Password	Set the password used to access the SMB server.

For WebDAV

Setting item	Contents
URL	Set the address of the WebDAV server.
User Name	Set the user name used to access the WebDAV server.
Password	Set the password used to access the WebDAV server.
Proxy	Select whether to use the proxy server. • If [ON] is selected, set the proxy with [Administrator] -> [Network] -> [Machine Update Settings] -> [HTTP Proxy Settings].

(4) Log Confirmation
- Check the log related to update file download for auto update of the machine or update relay data download for relay server.
- The latest five logs can be checked.

(5) Immediate Update
- To conduct Machine Auto Update manually.
- It will be displayed if all of the following settings are met.
  - [Administrator] -> [Network] -> [Machine Update Settings] -> [Machine Auto Update setting] -> [Auto Update Settings for This Machine] is set to "ON."
  - This is displayed when the update file for auto update settings has been downloaded in MFP storage.

<Procedure>

1. Touch [Immediate Update] to start update.
2. Touch [Yes] on the confirmation screen, and touch [OK].

NOTE

- **Do not set the power to OFF under the following state.**
  - **It takes about 45 seconds from touching [Immediate Update] -> [Start] to the next operation of the MFP (Auto Power OFF).**
  - **About one minute after the download completed screen being displayed, the MFP will restart.**
  - **When rewriting configuration files followed by the firmware, the MFP will restart again.**

(6) Machine Update Password

- To set a password used to decrypt the configuration file(s) of the machine.

<Procedure>

- Enter the decryption password using the on-screen keyboard.

Setting item	Contents
Current Password	Enter the currently used decryption password (only when the decryption password has been set).
New Machine Update Password	Enter the new decryption password.
Confirm Machine Update Password	Enter the new decryption password again.

NOTE

- **Once a password is set, be sure not to forget it. It is required for reset.**
- **Please refer to " I.19.2.1 Auto Update setting" for how to make the configuration file(s).**

13.6.3 HTTP Proxy Settings

- To select whether to connect via a proxy server to access the http server.
- To configure the settings of the server related to connection via a proxy server.

Setting item	Default setting
ON	
OFF	○

<Procedure>

- If [ON] is selected, configure the following settings.

1. Touch [Host Address] in [Proxy Server Address] to set the host address of the proxy server.
2. Set the port number used to access the proxy server in [Proxy Server Port Number].
3. Select whether to perform an authentication to access a proxy server. If [ON] is set, enter the user name and password.

13.7 Storage Management

13.7.1 Encryption Settings

- To set a password used to encrypt data when storing it into the MFP storage.
  - Default setting value: None

NOTE

- **Formatting the storage causes data in the storage to be deleted. We recommend you to back up important data.**
- **This function is not available when the password is specified in Storage Lock Password.**

<Procedure>

1. Tap [Main Storage].
2. Select [Yes], and tap [OK].
3. Enter the encryption passphrase using 20 or 64 characters (case-sensitive).
4. Check that a message is displayed to prompt you to turn the Main Power Switch off and on, and turn the Main Power Switch off and on.
5. After the machine restarted, encryption starts.
   When encryption is completed, this machine restarts automatically, and a message is displayed to prompt you to reformat the storage.
   NOTE
   - **Do not turn the Main Power Switch off and on during the encryption process.**
6. Tap [Utility] –> [Storage Management] –> [Format].
7. Select [Yes], and tap [OK].
   Formatting starts.
8. Check that a message is displayed to prompt you to turn the Main Power Switch off and on, and turn the Main Power Switch off and on.

13.7.2 Debug Log Encryption Settings

- To set a password used to encrypt debug data when storing it into the HDD.
  - Default setting: 01234567890123456789

NOTE

- **This is displayed only when Switch No. "155" is set to [00000001] at Bit assignment/[01] in [Service Mode] -> [System 2] -> [Software Switch Setting].**

<Procedure>

1. Enter the encryption passphrase currently in use.
2. Encryption Passphrase: Enter a new encryption passphrase.
3. Encryption Passphrase Confirmation: Re-enter the new encryption passphrase.

I SERVICE MODE

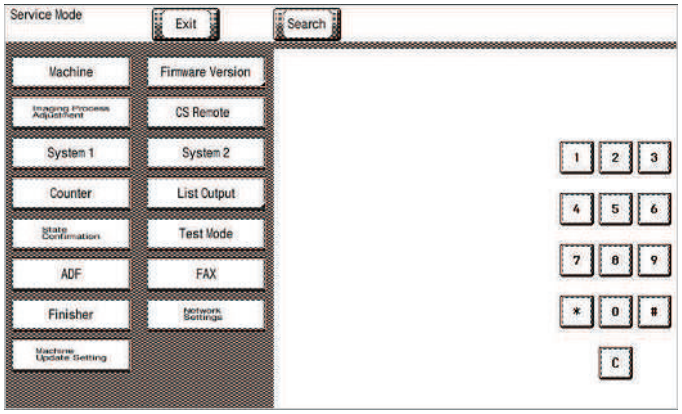
1. Outline

NOTE

- **Ensure appropriate security for Service Mode function setting procedures. They should NEVER be shown to any unauthorized person not involved with service jobs.**

Starting procedure

1. Touch [Utility] on the Home screen.
2. Touch [Counter].
3. Touch [Display Keypad].
4. Press the following keys in this order.
   - Stop -> 0 -> 0 -> Stop -> 0 -> 1
5. Enter the CE password and touch [END]. (The CE password is initially set to "9272927292729272.")
   NOTE
   - **When [Administrator] -> [Security] -> [Enhanced Security Mode] is set to "ON", CE password authentication is necessary.**
   - **If a wrong CE password is entered, re-enter the right password.**
     The machine will not enter Service Mode unless the CE password is entered correctly. To return to the basic screen, turn OFF the main power switch and turn it ON again.
   - **When [Administrator] -> [Security] -> [Security Details] -> [ProhibitFunctions] is set to "Mode 2", operation will be prohibited since it indicates authentication failure by failing to enter the correct CE password within the specified number of times.**
     If the access lock is activated, the lock release timer starts to operate by input the Stop -> 0 -> 9 -> 3 -> 1 -> 7 in [Utility] -> [Counter] -> [Print List] -> [Display Keypad] after the main power switch is turned OFF and On.
     When the timer reaches the time specified in this setting, the access lock is released.
   - **The service code entered is displayed as " * "**
6. The Service Mode menu will appear.



NOTE

- **Be sure to change the CE password from its default value.**
- **For the procedure to change the CE password, see [Enhanced Security] -> [CE Password].**
- **NEVER forget the CE password.**

Setting procedure

1. Press the key corresponding to the function you would like to change the setting for. Keys or setting screens will appear for each function.
2. Press the key for the item that you would like to change the setting for. Setting screens will appear for each item.
3. Press the key for the setting you would like to change. You can also input the numerical value using the 10-key pad. (the [+]/[-] keys can also be used for settings. Follow the directions on the screen to input numerical values.)
   NOTE
   - **For more details, see the description pages for each setting item.**
4. Touch [END]. This closes the setting screen and returns to the Service Mode screen. (If deep within the hierarchy of the setting screen, it may be necessary to touch [END] several times)
5. Touch [Exit]. This will close the Service Mode screen and exit the Service Mode.
6. Turn OFF the main power switch. Wait 10 seconds or longer, then turn ON the main power switch again.
   NOTE
   - **Simply exiting the Service Mode will not make the changed settings take effect. You must turn the main power switch OFF and then ON again.**

Exiting procedure

1. Call the initial screen of Service Mode.
2. Touch [Exit] on the Service Mode screen.
3. Turn OFF the main power switch. Wait 10 seconds or longer, then turn ON the main power switch again.

2. SETUP WIZARD

- Use of the Setup Wizard function allows those items that need to be set during the setup procedure to be extracted from the Service Mode and set.
- This enables efficient selection and setting of Service Mode functions during the setup procedure.

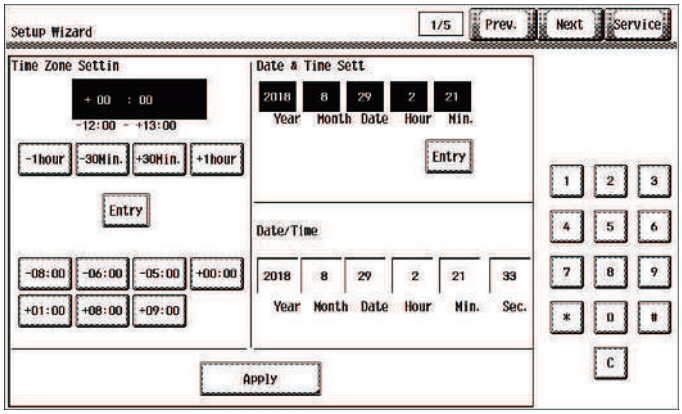
NOTE

- **The specific function may be set either via the "Service Mode" or the "Setup Wizard". The setting made last is the valid setting.**

Starting procedure

1. Call the initial screen of Service Mode.
2. Press the following keys in this order.
   - Stop -> 3
3. Touch the [Prev.] key or [Next] key to select the mode.

e.g.



Exiting procedure

1. Touch [Service]. The home Service Mode screen reappears.
2. Touch [Exit].
3. Turn OFF the main power switch. Wait 10 seconds, then turn ON the main power switch again.

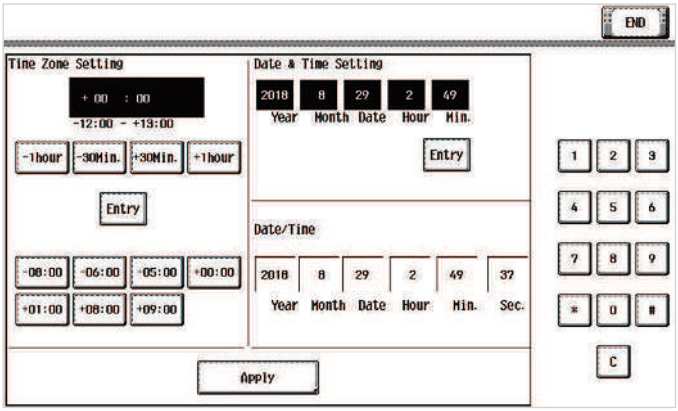
3. Time Zone/Date & Time Input mode

- This mode is used to set time-of-day and date.
- The set time zone/date & time are automatically reflected in the date and time setting of Administrator Settings.

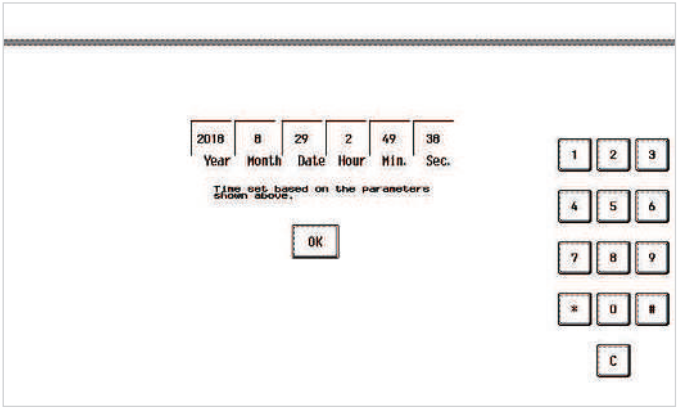
Time Zone Setting	Set the time zone applicable to the area. After the setting, touch [Entry] and then [Apply] to validate the time. The following lists settings of time zones of different areas. -08:00: U.S.: Pacific Standard Time -06:00: U.S.: Central Standard Time -05:00: U.S.: Eastern Standard Time -00:00: England: Greenwich mean time +01:00: Western European countries +08:00: China, Taiwan, western part of Australia +09:00: Japan, Korea
Date & Time Setting	Enter the time from the 10-key pad to set the time-of-day. Before making any entry, first press Clear. After the time has been set, touch [Entry] and then [Apply].

<Procedure>

1. Call the initial screen of Service Mode.
2. Press the following keys in this order.
   - Stop -> 1 -> 1 -> 4 -> 4 -> Clear
3. Enter time zone year, month, day, hour, and minute, in that order, from 10-key pad.
   NOTE
   - **Before entering date and time, touch Clear to delete the present time from the place where data and time is entered.**
   - **When setting the month, day, hour, or minute, enter "0" first if the data one digit.**
4. Make sure that the correct value has been entered, then touch [Entry] and then [Apply].



5. After the confirmation screen appears, touch [OK].

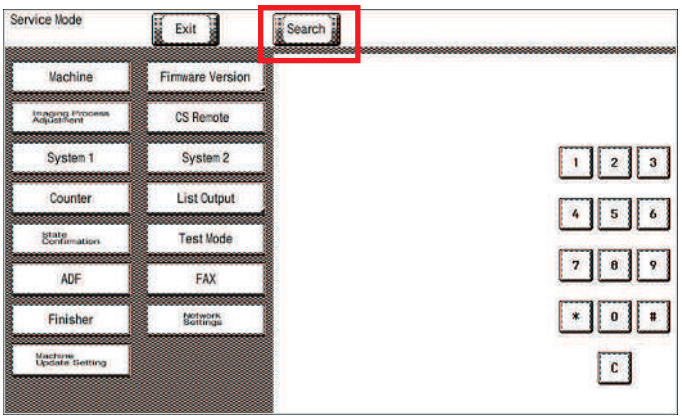


4. Search

- Searches parameters that include the entered keyword.
- You can display the function screen from the search results.

<Procedure>

1. Touch [Search] at the initial screen of Service Mode.



2. Enter the desired search keyword.
3. Touch [END].
4. Select the desired function from the displayed search results and touch [Start].
5. The screen for the selected function displays.

5. Machine

5.1 Trail Edge Color Alignment Adj

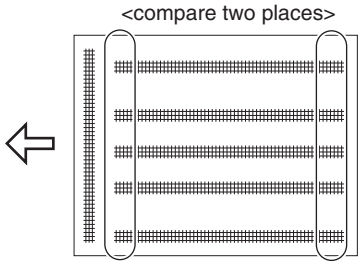
- To change the conveyance speed by the registration motor and executes fine-tune when an error in zoom ratio is detected at the rear edge of the print image on the each paper type.
- To use when an error in zoom ratio occurs at the image rear edge.
- Able to make a setting on a process speed basis independently for each paper type of Normal/Thin Paper, Thick 1/1+ and Thick 2/3/4.

Setting item		Setting range	Default setting
600dpi	Normal/ Thin paper	-5 to +5 (step: 1)	0
	Plain paper+		
	Thick 1/1+		
	Thick 2/3/4		
1200 dpi	Plain paper		

<Procedure>

1. Load manual bypass tray with A3/11 x 17 or A4/8 1/2 x 11 plain paper.
2. Select the paper type to be adjusted.
3. Press the Start key.
4. Compare the error in zoom ratio at the rear edge side of printed test paper to that at the leading edge side, and conduct the following adjustment if the error occurs at the rear edge side.
5. Using the [+] / [-] key, change the setting value as necessary.
   - Reduce the set value (to reduce the conveyance speed) if the zoom ratio at the rear edge side is larger.
6. Produce another test pattern and make sure that there is no deviation.

Check Procedure



5.2 Fusing Temperature

- To adjust individually the temperature of the heating roller for each type of paper, thereby coping with varying fusing performance under changing environmental conditions.
- When fusing performance is poor, or wax streak or offset occurs when the type of paper is changed or environmental conditions change.
- Use when the curling of the paper due to the paper type or environmental change occurred, or when the paper jam, as well as stapling or folding position error occurred due to the curling of the paper.
- By setting the temperature higher (+), gloss of print can be improved.
- By setting the temperature lower (-), exit roller mark can be reduced.

Setting item		Setting range	Default setting
Heating Side 600dpi / Heating Side 1200dpi	Plain paper	- 20°C to +10°C (step: 5°C)	0°C
	Thin paper		
	OHP film		
	Plain paper+		
	Thick 1		
	Thick 1+		
	Thick 2		
	Thick 3		
	Thick 4		
	Post.		
	Enve.		
	Recycled		

<Procedure>

1. Select a setting item.
2. Enter the new setting from the [+] / [-] key.
   - If fusing performance is poor, increase the setting.
   - If wax streaks occur, decrease the setting.
   - If offset is poor, decrease the setting.
   - If curling of the paper occurs, decrease the setting.
3. Touch [END].
4. Return to the basic screen.
5. Output two or three test patterns and check to see whether the image has any problem.

6. Make the adjustment for each type of paper.

5.3 Fusing Transport Speed

- To adjust the speed of the fusing motor so as to match the fusing speed with transport speed.
- Brush effect or blurred image is evident as a result of changes in environmental conditions or degraded durability.

Setting item		Setting range	Default setting
600dpi	Plain paper/Thin paper/ Plain paper+	-20 to +20 (Step: 1)	7
	Thick1/1+/2/3/4		
1200 dpi			

<Procedure>

1. Select a processing speed for the mode where a brush effect or a blurred image occurred.
2. Enter the new setting from the 10-key pad.
   - If brush effect is evident, vary the setting value and check for image.
   - If a blurred image occurs, decrease the setting.
3. Touch [END].
4. Return to the basic screen.
5. Check the print image for any image problem.

5.4 Printer Area

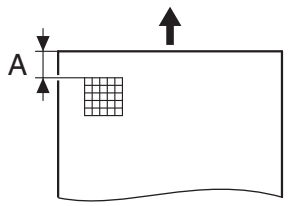
5.4.1 Leading Edge Adjustment

- To vary the print start position in the sub scan direction for each of different paper types. (to adjust the timing starting from the roller connection up to start of transfer output).
- Although the adjustment is made on the manual bypass tray, the adjusted values are reflected to each paper tray.
- The PH unit has been replaced.
- The print image deviates in the sub scan direction.
- A faint image occurs on the leading edge of the image.
- This setting can be made independently for each paper type.

Target	Setting range	Default setting
4.2 ± 1.0 mm	-3.0 mm to +3.0 mm (in 0.2 mm increments)	0.0 mm

<Procedure>

1. Load manual bypass tray with A3 or 11 x 17 plain paper.
   NOTE
   - **Load tray 1 with thin paper when thin paper is selected.**
2. Select a test pattern.
3. Select a paper type.
4. Press the Start key to let the machine produce a test pattern.
5. Check the dimension of width A on the test pattern.



6. If width A falls outside the target, change the setting using the [+] / [-] key.
   - If width A is longer than the target, make the setting value smaller than the current one.
   - If width A is shorter than the target, make the setting value greater than the current one.
7. Press the Start key to let the machine produce a test pattern.
8. Check the dimension of width A on the test pattern.
9. If width A is outside the target, change the setting again and make a check again.
10. If width A falls within the target, touch [END].

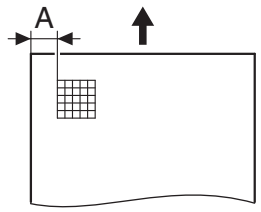
5.4.2 Printer Image Centering Side 1

- To vary the print start position in the main scan direction for each paper source.
- The PH unit has been replaced.
- A paper feed unit has been added.
- The print image deviates in the main scan direction.

Target	Setting range	Default setting
3.0 ± 1.0 mm	-3.0 mm to +3.0 mm (in 0.2 mm increments)	0.0 mm

<Procedure>

1. Load paper to the paper source to be adjusted.
   NOTE
   - **Use A4 or 8 1/2 x 11 plain paper for the manual bypass tray.**
2. Select a test pattern.
3. Select a paper source.
4. Press the Start key to let the machine produce a test pattern.
5. Check the dimension of width A on the test pattern.



6. If width A falls outside the target, change the setting using the [+] / [-] key.
   - If width A is longer than the target, make the setting value smaller than the current one.
   - If width A is shorter than the target, make the setting value greater than the current one.
7. Press the Start key to let the machine produce a test pattern.
8. Check the dimension of width A on the test pattern.
9. If width A is outside the target, change the setting again and make a check again.
10. If width A falls within the target, touch [END].

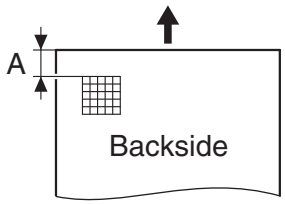
5.4.3 Leading Edge Adj. Side 2 (Duplex)

- For individual types of paper, this function allows the adjustment of the image write start position in the sub scan direction on the 2nd side of duplex printing. (to adjust the timing starting from the roller connection up to start of transfer output).
- Although the adjustment is made on the manual bypass tray, the adjusted values are reflected to each paper tray.
- This adjustment is made when the image on the 2nd side of paper deviates from the original position in the sub scan direction.
- This setting can be made independently for each paper type.

Target	Setting range	Default setting
4.2 ± 1.0 mm	-3.0 mm to +3.0 mm (in 0.2 mm increments)	0.0 mm

<Procedure>

1. Load manual bypass tray with A3 or 11 x 17 plain paper.
   NOTE
   - **Load tray 1 with thin paper when thin paper is selected.**
2. Select a test pattern.
3. Select a paper type.
4. Press the Start key to let the machine produce a test pattern.
5. Check the dimension of width A on the test pattern. For measurement, use the image produced on the backside of the test pattern.



6. If width A falls outside the target, change the setting using the [+] / [-] key.
   - If width A is longer than the target, make the setting value smaller than the current one.
   - If width A is shorter than the target, make the setting value greater than the current one.
7. Press the Start key to let the machine produce a test pattern.
8. Check the dimension of width A on the test pattern.
9. If width A is outside the target, change the setting again and make a check again.
10. If width A falls within the target, touch [END].

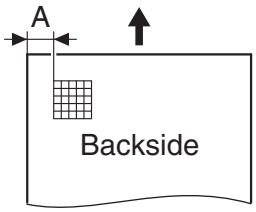
5.4.4 Prt. Image Center. Side 2 (Dup)

- To vary the print start position in the main scan direction for each paper source in the 2-Sided mode.
- The image on the backside of the 2-sided copy deviates in the main scan direction.

Target	Setting range	Default setting
3.0 ± 1.0 mm	-3.0 mm to +3.0 mm (in 0.2 mm increments)	0.0 mm

<Procedure>

1. Load paper to the paper source to be adjusted.
   NOTE
   - **Use A4 or 8 1/2 x 11 plain paper for the manual bypass tray.**
2. Select a test pattern.
3. Select a paper source.
4. Press the Start key to let the machine produce a test pattern.
5. Check the dimension of width A on the test pattern. For measurement, use the image produced on the backside of the test pattern.



6. If width A falls outside the target, change the setting using the [+] / [-] key.
   - If width A is longer than the target, make the setting value smaller than the current one.
   - If width A is shorter than the target, make the setting value greater than the current one.
7. Press the Start key to let the machine produce a test pattern.
8. Check the dimension of width A on the test pattern.
9. If width A is outside the target, change the setting again and make a check again.
10. If width A falls within the target, touch [END].

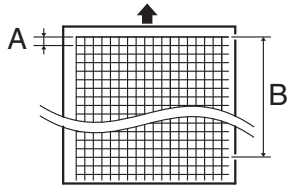
5.4.5 Paper Feed Direction Adj.

- To synchronize the paper transport speed with the image writing speed.
- [Sub Scan Zoom Adj.] becomes necessary.
- The print image on the copy distorts (stretched, shrunk).
- When the print image on the copy is stretched in the sub scan direction.
- This setting can be made independently for each paper type.

Check Item	Target	Setting range	Default setting
Width A: equivalent to one grid	8.13 ± 0.2 mm	-7 to +7	0
Width B: equivalent to 48 grids	390.14 ± 2.0 mm	-7 to +7	0

<Procedure>

1. Load manual bypass tray with A3 or 11 x 17 plain paper.
2. Select a test pattern.
3. Select a paper type.
4. Press the Start key to let the machine produce a test pattern.
5. Check width A (equivalent to one grid) and width B (equivalent to 48 grids) on the test pattern.



6. If width of A or B falls outside the target, change the setting using the [+] / [-] keys.
   - If width A or B is longer than the target, make the setting value smaller than the current one.
   - If width A or B is shorter than the target, make the setting value greater than the current one.
7. Press the Start key to let the machine produce a test pattern.
8. Check width A and width B on the test pattern.
9. If width A is outside the target, change the setting again and make a check again.
10. If width A falls within the target, touch [END].

5.4.6 Tray Printing Position: Tip

- To change and adjust image printing position at vertical scanning direction by each feed. (to adjust the timing starting from the roller connection up to start of transfer output). It is not applicable in case the job is fed at re-feed.
- To be used when [Printer Area-Leading Edge Adjustment] is not enough for full adjustment (as such case that image printing position gets deviated due to pattern of each feed.)
- Adjustment is made for plain paper.
- Setting is available according to feed of 1st. Short (the length of paper at vertical scanning direction is under 276.4 mm), 1st. Long (the length of paper at vertical scanning direction is over 276.4 mm), 2nd, 3rd, 4th and Manual.

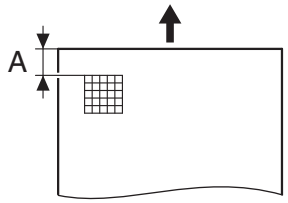
NOTE

- **[Printer Area-Leading Edge Adjustment] should be made within target.**
- **Image printing position at vertical scanning direction is adjusted based on the combination value of this setting figure and [Printer Area-Leading Edge Adjustment] figure. In case the value does not fall in the setting range, the figure should be rounded to the minimum or maximum value.**

Target	Setting range	Default setting
4.2 ± 1.0 mm	-3.0 mm to +3.0 mm (in 0.2 mm increments)	0.0 mm

<Procedure>

1. Set the targeted tray with plain paper, and select the feed tray.
2. Press the Start key to let the machine produce a test pattern.
3. Check the dimension of width A on the test pattern.



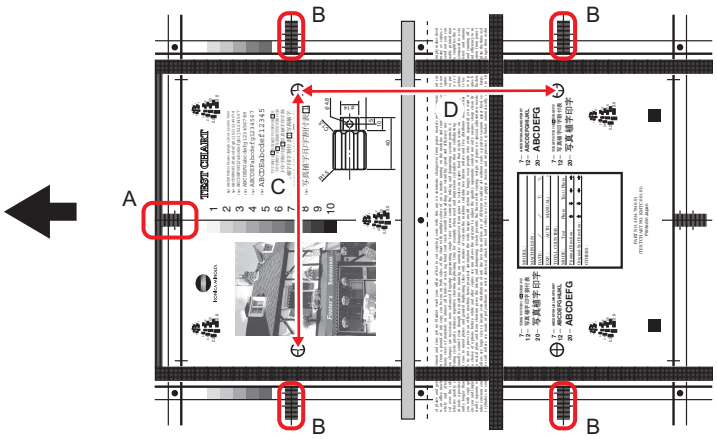
4. If width A falls outside the target, change the setting using the [+] / [-] key.
   - If width A is longer than the target, make the setting value smaller than the current one.
   - If width A is shorter than the target, make the setting value greater than the current one.
5. Press the Start key to let the machine produce a test pattern.

6. Check the dimension of width A on the test pattern.
7. If width A is outside the target, change the setting again and make a check again.
8. If width A falls within the target, touch [END].

5.5 Scan Area

5.5.1 Test chart

- Use the following test chart for the adjustment of the scanner section.
- If the test chart is not available, a scale may be used instead.



Measurement position	Adjustment item
A	Image Position: Leading Edge
B	Scanner Image Side Edge
C	Main Scan Zoom Adj.
D	Sub Scan Zoom Adj.

5.5.2 Image Position: Leading Edge

- To adjust variations in mounting accuracy and sensitivity of the scanner home sensor and in mounting accuracy of the original width scale by varying the scan start position in the sub scan direction.
- When the original glass is replaced.
- The CCD board has been replaced.
- The scanner home sensor has been replaced.

NOTE

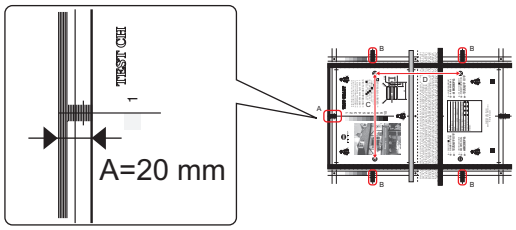
- **Width A on the test chart and one on the test pattern are measured and adjusted so that the difference of width A satisfies the the following target shown below.**
- **An adjustment must have been completed correctly of [Leading Edge Adjustment] of the [Printer Area].**

Target	Setting range	Default setting
Width A: ± 1.5 mm	-3.0 mm to +3.0 mm (in 0.1 mm increments)	0.0 mm

<Procedure>

1. Position the test chart correctly so that the original reference point is aligned with the scale.
2. Press the Start key to make a copy.
3. Check point A on the test pattern.

Enlarged view of the test chart



4. If the test pattern falls outside the target, change the setting using the [+] / [-] key.
   - If the copy image is less than the target, increase the setting value.
   - If the copy image exceeds the target, decrease the setting value.
5. Press the Start key to make another test pattern.
6. Check the image on the test pattern to see if the specifications are met.
7. Make adjustments until the targets are met.

5.5.3 Scanner Image Side Edge

- To adjust part-to-part variations in accuracy of scanner parts and their mounting accuracy by varying the scan start position in the main scan direction.
- When the original glass is replaced.
- The CCD board has been replaced.

NOTE

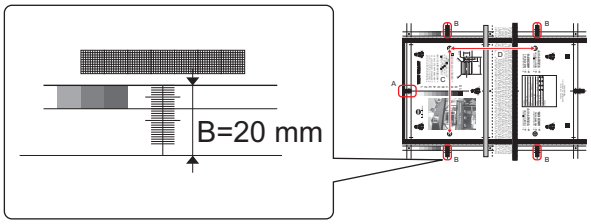
- **Width B on the test chart and one on the test pattern are measured and adjusted so that the difference of width B satisfies the the following target shown below.**
- **An adjustment must have been completed correctly of [Printer Image Centering Side 1] of [Printer Area].**

Target	Setting range	Default setting
Width B: ± 1.5 mm	-5.7 mm to +5.7 mm (in 0.1 mm increments)	0.0 mm

<Procedure>

1. Position the test chart correctly so that the original reference point is aligned with the scale.
2. Press the Start key to make a copy.
3. Check point B on the test pattern.

Enlarged view of the test chart



4. If the test pattern falls outside the target, change the setting using the [+] / [-] key.
   - If the copy image is less than the target, increase the setting value.
   - If the copy image exceeds the target, decrease the setting value.
5. Press the Start key to make another test pattern.
6. Check the image on the test pattern to see if the specifications are met.
7. Make adjustments until the targets are met.

5.5.4 Main Scan Zoom Adj.

- To adjust the zoom ratio in the main scan direction for the scanner section.
- The CCD board has been replaced.

NOTE

- **Width C on the test chart and one on the test pattern are measured and adjusted so that the difference of width C satisfies the the following target shown below.**
- **An adjustment must have been completed correctly of [Printer Area].**

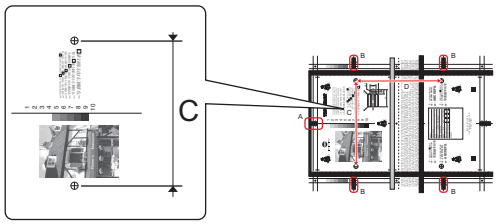
Target	Setting range	Default setting
Width C: ± 1.0 mm	0.990 to 1.010 (Step: 0.001)	1.000

* Standard size when using a scale: 200.0 mm

<Procedure>

1. Position the test chart correctly so that the original reference point is aligned with the scale.
2. Press the Start key to make a copy.
3. Check point C on the test pattern.

Enlarged view of the test chart



4. If the test pattern falls outside the target, change the setting using the [+] / [-] key.
   - If the C width on the copy sample is less than one on test chart, increase the setting.
   - If the C width on the copy sample exceeds one on test chart, decrease the setting.
5. Press the Start key to make another test pattern.
6. Check the image on the test pattern to see if the specifications are met.
7. Make adjustments until the targets are met.

5.5.5 Sub Scan Zoom Adj.

- To adjust the zoom ratio in the sub scan direction for the scanner section.
- The LED exposure unit or the scanner motor has been replaced.

NOTE

- **Width D on the test chart and one on the test pattern are measured and adjusted so that the difference of width D satisfies the the following target shown below.**
- **An adjustment must have been completed correctly of [Printer Area].**

Target	Setting range	Default setting
Width D: ± 1.5 mm	0.990 to 1.010 (Step: 0.001)	1.000

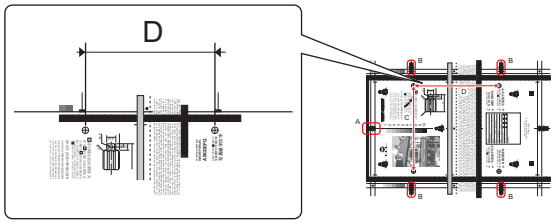
* Standard size when using a scale: 300.0 mm

<Procedure>

1. Position the test chart correctly so that the original reference point is aligned with the scale.
2. Press the Start key to make a copy.

3. Check point D on the output test pattern.

Enlarged view of the test chart



4. If the test pattern falls outside the target, change the setting using the [+] / [-] key.
   - If the D width on the copy sample is less than one on test chart, increase the setting.
   - If the D width on the copy sample exceeds one on test chart, decrease the setting.
5. Press the Start key to make another test pattern.
6. Check point D on the output test pattern again.
7. Make adjustments until the targets are met.

5.6 Printer Reg. Loop Adj.

- To adjust the length of the loop formed in paper before the registration rollers.
- The correction value of the paper loop length is different depending on paper source and paper type.
- Use “Paper Passage” for paper passage check.
- When a paper skew occurs or paper misfeed occurs.

		Tray 1	2-4th Step/LCT	manual	Duplex
600 dpi	Normal/ Thin paper (*)	-11 to +7	-11 to +7	-11 to +8	-12 to +10
	Plain paper+	-11 to +7	-11 to +7	-11 to +7	-11 to +7
	Thick 1/1+	-11 to +7	-11 to +7	-11 to +8	-12 to +10
	Thick 2/3/4	-11 to +7	-11 to +7	-11 to +8	-12 to +10
1200 dpi		-11 to +7	-11 to +7	-11 to +8	-12 to +10

*: Only [Plain paper] is available for manual bypass tray.

<Procedure>

1. Select a paper source and a processing speed where the settings are made by touching the corresponding keys.
2. Enter the new setting from the [+] / [-] keys.
   - To decrease the loop amount: Decrease the setting value.
   - To increase the loop amount: Increase the setting value.

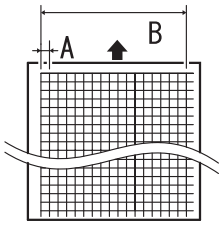
5.7 Main Scanning Direction Zoom

- To adjust the zoom ratio in the main scan direction.
- Load the A3/11x17 or A4/8-1/2x11 paper onto the manual bypass tray, and perform a test print. (A lattice pattern will be printed.)

Target	Setting range	Default setting
A: 8.13 ±0.2 mm	-0.5 to 0.5%(step 0.1)	0.0%
B: 260.10mm±1.3mm		

<Procedure>

1. Load manual bypass tray with A3/11x17 or A4/8-1/2x11 plain paper.
2. Select the paper loaded on the manual bypass tray.
3. Touch [Test Copy] to output the test pattern.
4. Check width A (equivalent to one grid) and width B (equivalent to 32 grids) on the test pattern.



5. If width of A or B falls outside the target, change the setting using the [+] / [-] keys.
   - If width A or B is longer than the target, make the setting value smaller than the current one.
   - If width A or B is shorter than the target, make the setting value greater than the current one.
6. Press the Start key to let the machine produce a test pattern again.
7. Check width A and width B on the test pattern.
8. If width A or B falls outside the target, change the setting value and make a check again.
9. If width A falls within the target, touch [END].

5.8 LD adjustment

5.8.1 LD Timing Adj.

- This function is only available for the products with 2 beam LD exposure system.
- It displays the emission delay value between two laser diode.
- This setting is made after the PH unit is replaced.

- This adjustment is made when the backup of information on position settings is lost.

<Procedure>

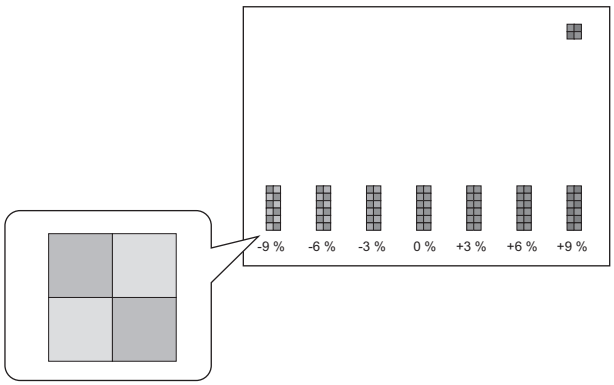
1. Check the LD emission delay value.
2. Touch [OK].

5.8.2 LD 1/2 Balance Adj.

- This function is only available for the products with 2 beam LD exposure system.
- This function adjusts the LD lightness balance between the two LDs to correct the difference of LD lightness between the LDs.
- This setting is made after the PH unit is replaced.
- This adjustment is made when the backup of information on position settings is lost.
- This adjustment is made to prevent uneven density in highlighted halftone area processed with error diffusion being caused by inappropriate laser intensity.
- To eliminate the differences in light intensity between LD1 and LD2, adjust the light intensity of LD2 to that of LD1 (the light intensity of LD1 is fixed).

<Procedure>

1. Select [For adjustment], and press the Start key.
2. A pattern changed to the light intensity of LD2 for LD1 is output.



3. On each pattern composed of four squares, diagonal squares are printed by the same LD. (One which image density changes is LD2)
4. The pattern with the smallest density difference between LD1 and LD2 is selected.
5. Enter the adjustment value (see the figure above) corresponding to the selected pattern or a value close to the adjustment value using the 10-key pad.
6. Select [For effect confirmat.], and press the Start key.
7. Check by the output test pattern.
8. Touch [END].

5.8.3 LD Light Width Adjustment

- To fine-adjust the light-emitting time of the laser that is scanned by the polygon motor.
- Use when the reproducibility of thin line is reduced.

NOTE

- **Adjustment value of this setting will be reflected by the image stabilization control.**

Setting range	Default setting
0 to +6 (Step: 1)	+3

<Procedure>

1. Enter the new setting from the [+] / [-] keys.
   - Increase the adjust value: Light-emitting time will be lengthened.
   - Decrease the value: Light-emitting time will be shortened.

5.9 Manual Bypass Tray Width Adj

- To set the maximum width and the minimum width for the bypass paper width detection resistor of the manual bypass guide.
- Use when the bypass paper width detection resistor of the manual bypass guide has been changed.
- Use when a false paper size is displayed when the manual bypass is used.

<Procedure>

1. Touch [Max. Width].
2. Load the bypass tray with paper having a width of 297 mm.
3. Press the Start key and check that the results are [OK].
4. Touch [Min. Width.].
5. Load the bypass tray with paper having a width of 110 mm.
6. Press the Start key and check that the results are [OK].
7. Make the adjustment again if the results are [NG].

5.10 Lead Edge Erase Adjustment

- To set the leading edge erase amount of the paper.
- Upon user requests, it is possible to specify the void area where image is not printed along the leading edge.
- This adjustment can be made individually for First Side, Second Side, Thin Paper Front, and Thin Paper Back.

Setting item	Setting value	Default setting
First Side/Second Side (*1)	4 mm	○
	5 mm	
	7 mm	
Thin Paper Front/Thin Paper Back	4.0 mm to 10.0 mm (Step: 1.0 mm)	5.0 mm

*1: When “4 mm” is selected, 4.2 mm is the actual amount to be erased in print based on the control system of the machine.

5.11 Non-Image Area Erase Check

- The non-image area erase function may not work properly under bright light source. Incoming light quantity is checked to verify that the non-image area erase function can work properly under the environment.
- Verification results are shown as follows:
- Use this feature when installing a new machine or reinstalling a machine in a new place.
- Use this feature when the non-image area erase function fails to work properly due to the changes of the surrounding environment at the installation site.

<Procedure>

1. Press the Start key to start a check.
   NOTE
   - **Before the check, make sure that the DF or original cover is completely opened. In addition, make sure that no scratch or stain exists on the original glass.**
2. Check the verification results.

Verification results	Contents
OK	Works properly.
NG1	Works properly. However, data that may interfere with the non-image area erase function was found. (This function may not work well with dark original.)
NG2	Data that may interfere with the non-image area erase function was found.

NOTE

- **If the check result is “NG1” or “NG2,” reinstall the machine in another place or adjust the orientation of the machine to reduce light incidence on the machine. Then, perform the check again.**

5.12 Split Line Prior Detection

- To check the stain on the DF original glass and display the result.
- To manually perform the pre-detection of the stain which is normally conducted when the main power switch is turned ON, recovering from the sleep/low power mode, etc.

<Procedure>

1. Press the start key to start the pre-detection.
2. Check the verification results. If the check result is “NG,” clean the glass and check again.

Verification results	Contents
OK	No stain is detected.
NG	Stain is detected. • When dual scan document feeder is mounted, “NG1” or “NG2” is displayed. “NG1” corresponds to the detection of stain on the front side and “NG2” corresponds to that on the back side.

NOTE

- **[ADF Scan Glass Contamination] will be conducted with the detection level set by [Service Mode] -> [System 2] -> [Split Line Prior Detection] -> [ADF Scan Glass Contamin. Sensitivity]. When the above setting is set to “Not Set”, “NG1” or “NG2” will be displayed even though the pre-detection is conducted.**

5.13 PPM Control Choice

- To improve productivity when printing on thin paper or recycled paper.
- To give a higher priority to productivity than to fusing performance, change the setting to “100 %.”

NOTE

- **The recycled paper is not applicable for this machine.**

Setting value	Default setting
100 %	
70 %	○

5.14 High Humidity PPM Adjustment

- When any paper curling occurred in high humidity environments, widen the interval between paper to be transported to prevent paper curling.

Setting item	Setting	Default setting
Thin paper	0 to +2 (step: 1)	0
Plain paper		
Recycled paper		

<Procedure>

1. Enter the new setting from the [+] / [-] keys.
   - 0: Productivity: 100% - No change in PPM. (Same as standard speed/product speed)

- 1: Productivity: 70% - Interval between paper to be transported is widened, PPM becomes slow.
- 2: Productivity: 50% - Interval between paper to be transported is widened much more, PPM becomes slower.

NOTE

- **For thin paper, conform to the setting value in [Service Mode] -> [Machine] -> [PPM Control Choice].**

2. Touch [END].
3. Check the print image for any image problem.

5.15 Move Scanner to Home

- When moving the MFP, move the LED exposure unit to the attachment position (home position) of the scanner locking materials to prevent damages from occurring on the machine.

NOTE

When the following troubles occur, do not move it to the home position.

- IR related troubles

<Procedure>

1. Touch [Machine] -> [Move Scanner to Home].
2. Touch [Start], the scanner slider standby position moves to the home position.
3. Turn OFF the main power switch.
4. Attach the scanner locking materials to fix the scanner.

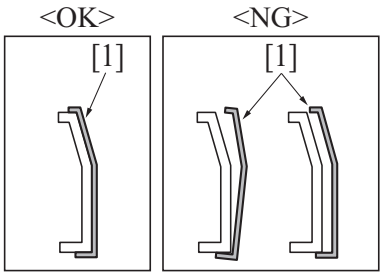
5.16 Weight calc. default

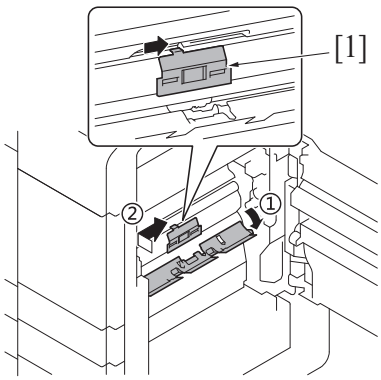
- Using the adjustment jig (reference paper holder) to perform the initial adjustment for the weight detection sensor.
- To be used when the following boards have been replaced.
  - Paper basis weight detection board/TX (PBWDB/TX)
  - Paper basis weight detection board/RX (PBWDB/RX)
  - Envelope detection board/TX (ENVDB/TX)
- This setting is not available to the machine where the intelligent media sensor (IM-102) is not installed.

Initial adjustment

<Procedure>

1. Open the right door, and check no paper is remained.
2. Close the right door.
3. Touch [Measure without paper.].
4. Touch [Start].
   - The measurement results are displayed on the panel.
5. Check result “OK” is displayed for all values.
6. Open the right door.

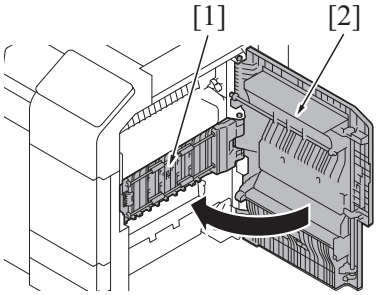




7. Lower the guide of the paper feed unit, and attach the reference paper holder [1].

NOTE

- **Check the reference paper holder is attached correctly.**
- **Do not touch the sheet on the reference paper holder.**
- **Do not damage and deform the film on the guide.**



8. Close the middle right door [1].

NOTE

- **Lock it securely, and check the middle right door does not open.**

9. Close the right door [2].
10. Touch [Measure with paper.].
11. Touch [Start].

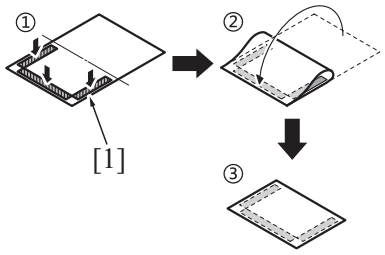
- The measurement results are displayed on the panel.

12. Check result “OK” is displayed for all values.
13. Open the right door.
14. Lower the guide of the paper feed unit, and remove the reference paper holder.
    NOTE
    - **Do not damage and deform the film on the guide.**
    - **Do not touch the sheet on the reference paper holder.**
    - **Store the reference paper holder with care.**
15. Close the right door.
16. Touch [END].
17. Exit the Service Mode.
18. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.
19. After completing the initial adjustment, carry out the paper type auto detection check.

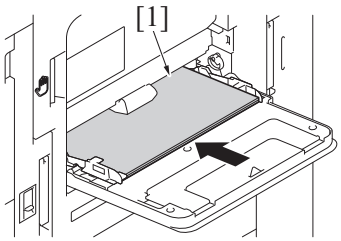
Paper type auto detection check

Prepare the following paper.

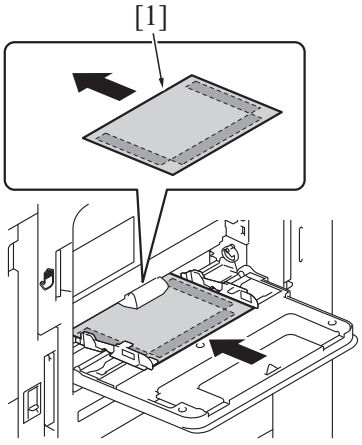
- Thick paper (size: A4, weight: 300 g/m2)
- Envelope, or test paper created as follows
  - Fold the length side of A4 plain paper in half, and stick double-sided tapes [1] on three edges at the half side as shown in the illustration. Then fold back the other half side.



<Procedure>



1. Load the prepared thick paper on the bypass tray.
2. Open the Copy mode screen in Basic Style, and touch [Paper].
3. Touch Paper Setting in [Bypass], and touch [Paper Type].
4. Turn on [Auto Detect].
5. Touch [Start].
6. Check “Envelope” is not displayed in Paper Type.



7. Load an envelope, or test paper prepared beforehand (used instead of the envelope) on the bypass tray.
   NOTE
   - **When using the test paper, insert it until the folded edge [1] touches the back side of the bypass tray.**
8. Touch [Start].
9. Check “Envelope” is not displayed in Paper Type.

6. Firmware Version

- To check the firmware version.
- Use when the firmware is upgraded.

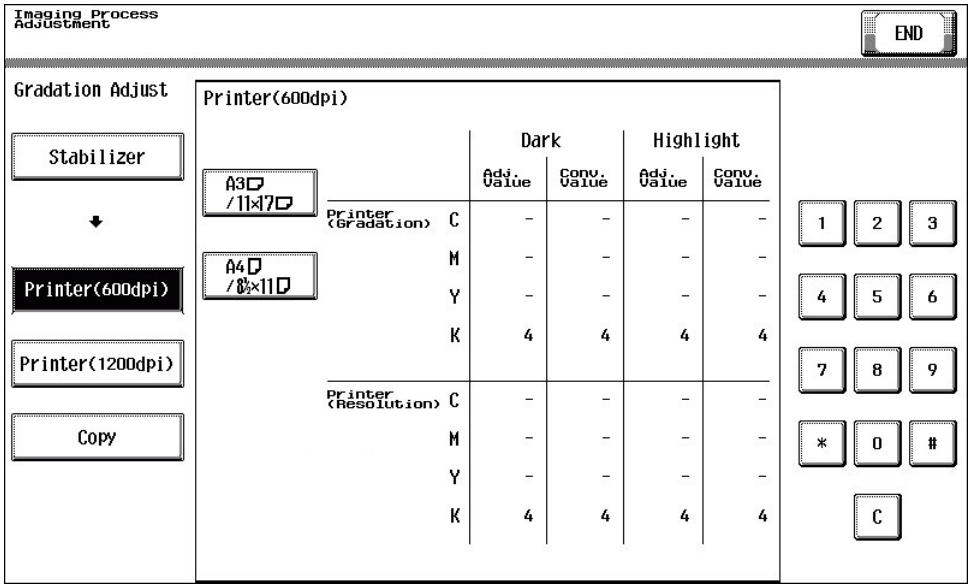
<Procedure>

1. Touch [Firmware Version].
2. Touch the [↑] / [↓] key to check the firmware version.

7. Imaging Process Adjustment

7.1 Gradation Adjust

- To make an automatic adjustment of gradation based on the test pattern produced and the readings taken by the scanner.
- Gradation or density reproduction performance becomes poor.
- The drum unit, developing unit, or transfer belt unit has been replaced.
- The Adj. Values of “Dark” and “Highlight” shown on the gradation adjust screen represent how much corrections are made to produce an ideal image output. Conv. Value shows the difference from the ideal image density.
- The closer the Conv. Value to 0, the more ideal the image.



Mode key	Function
Stabilizer	The image stabilization is performed. The controller reflects the image stabilization result in the gradation adjustment table to update the table. After the image stabilization is performed, [Printer] / [Copy] key will become selectable.
Printer(600dpi)	Detect the gradation reproducibility of the gradation reproduction method (gradation screen, resolution screen) for 600dpi print mode, and correct the gradation adjustment table.
Print(1200dpi)	Detect the gradation reproducibility of the gradation reproduction method (gradation screen, resolution screen) for 1200dpi print mode, and correct the gradation adjustment table.
Copy	Detect the gradation reproducibility of the following gradation reproduction methods, and correct the gradation adjustment table. • Compression screen (reduce the data volume by 1bit from 8bit while maintaining above a certain quality of characters/images) • FFET (reproduce the character edges smoothly without using the screen)

<Procedure>

NOTE

- **When executing the gradation adjustment, make sure to use the white paper for copy.**

1. Touch [Stabilizer] and the Start key to perform image stabilization.
   NOTE
   - **Before executing Gradation adjust, be sure to perform Stabilizer.**
2. Select Print or Copy and select the paper size on which test pattern is printed.
   NOTE
   - **When [Printer (1200 dpi) is specified, [A3S/11x17S] not displayed.**
3. Press the Start key to let the machine produce a test pattern.
   NOTE
   - **When the image stabilization performed in step 1 is NG, the Start key stops functioning.**
   - **When one of the alert codes, P-5 and P-9 is on the screen and [Printer] is selected, the Start key stops functioning.**
   - **When "Printer (1200 dpi)" is specified, two sheets of A4 or 8-1/2x11 paper will be output.**
4. Place the test pattern produced on the original glass.
   NOTE
   - **Depending on the size of the test pattern, it is set in a different position. Set the test pattern according to the instructions displayed on the control panel.**
5. Place ten blank sheets of paper on the test pattern and lower the original cover.
6. Press the Start key. (The machine will then start scanning the test pattern.)
7. Touch [OK] and repeat steps from 4 through 8 twice. (a total of three times)
8. Touch [Gradation Adjust] to display the Adj. Values and Conv. Values for Dark and Highlight.
9. Use the following procedures to check the Conv. Value.
   - Dark: 0 ± 100 and Highlight: 0 ± 60: It completes the adjustment procedure.
   - If neither Dark nor Highlight falls outside the ranges specified above: Perform steps from 4 to 8.
   - If the convergence falls within the specified range after the second Gradation Adjustment, further adjustment may not be necessary.

NOTE

- **If a fault is detected, “0” is displayed for all values. In that case, after turning off the main power switch, turn it on again more than 10 seconds after and then make the gradation adjustment again.**

- **If either dark or highlight still remains outside the specified ranges perform [Service Mode] -> [Imaging Process Adjustment] -> [Max Image Density Adj].**
- **If a total of four sequences of gradation adjust do not bring the values into the specified range, check the image.**
- **If the image is faulty, perform the troubleshooting procedures for image problems.**

7.2 Stabilizer

- Use if an image problem persists even after gradation adjustment has been executed.

Mode	Item
Initialize+Image Stabilization	To carry out an image stabilization sequence after the historical data of image stabilization control has been initialized. After executing the print head skew reset. Use if tone reproduction and maximum density are faulty even after image stabilization has been executed.
Stabilization Only	The image stabilization sequence is carried out without clearing the historical data of image stabilization control. When [Max Image Density Adj] and [Image Background Adj] of Service Mode are changed.

<Procedure>

1. Select an execution mode.
2. Touch the Start key to start Stabilizer. The Start key turns orange and stays lit up orange during the Stabilizer sequence.
3. Stabilizer is completed when the Start key turns blue.

7.3 Density Balance Adjust

- To adjust the density balance of the main scanning direction by scanning the output test pattern.
- The correction value adjusted by this function is applied to the following:

Function	Menu	Correction value adjusted items
Copy function	[Original Type]	• [Photo-Printed] • [Photo-PhotoPaper]
Utility mode	[User Settings] -> [Printer Settings] -> [Basic Settings] -> [Image Quality Setting]	• [Document] • [Photo] • [DTP] • [Web]
Print function (printer driver settings)	[Printer Settings] -> [Quality] -> [Image Quality Setting]	

<Procedure>

1. Select [Printer (resolution)] or [Printer (Gradation)].
2. Load one of Tray 1, Tray 2, Tray 3, and Tray4 with A4 paper. (Load one of them with Letter only if [Marketing Area] is [US].)
3. Press the Start key to let the machine produce a test pattern.
4. Place the test pattern produced on the original glass.
5. Press the Start key and scan the test pattern.
6. If the scanning finishes successfully, start the 2nd scanning following the instruction on the control panel.
7. Set the test pattern rotated by 180 degrees on the original glass.
8. Press the Start key and scan the test pattern.
9. If the scanning finishes successfully, press [Print Test Pattern] to output the adjusted test pattern.
10. Check the adjusted test pattern.
11. To apply the adjusted correction value, press [Reflect Adj Values], then [Reflect] and [OK].

NOTE

- **Select [Do Not Reflect] and press [OK] not to apply the adjusted correct value. In this case, the corrected value is not applied but stored.**
- **Touching [Initialization] clears a stored correction value.**

7.4 Max Image Density Adj

- To adjust image density to target reproduction levels by varying the maximum amount of toner sticking to paper.
- Used when an excessively insufficient solid density is remained even after image stabilization has been run.

Setting item		Setting value	Default setting
Copy, Printer	Black	-10 to +10 (Step: 1) • 1 step corresponds to 0.03 in density difference.	0

<Procedure>

1. Select a setting item.
2. Enter the new setting from the 10-Key pad and [+/-] key.
   - To increase the maximum amount of toner sticking, increase the setting value.
   - To decrease the maximum amount of toner sticking, decrease the setting value.
3. Touch [END].

NOTE

- **If the setting value has been changed, be sure to perform [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only].**

7.5 Image Background Adj

- To adjust the highlight portion (fog level) to the target reproduction level by making an auxiliary manual fine-adjustment of γ of each color after gradation adjust.
- Use when a foggy background occurs due to a printer problem.

Setting item	Setting value	Default setting
Black	-5 to +5 (step: 1) • 1 step corresponds to 10V.	0

<Procedure>
1. Select a setting item.
2. Enter the new setting from the 10-Key pad and [+/-] key.
   - To make the background level foggier, decrease the setting value.
   - To make the background level less foggy, increase the setting value.
3. Touch [END].

NOTE
- **If the setting value has been changed, be sure to perform [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only].**

7.6 Paper Separation Adjustment

- By changing the period between the activation of the registration roller and the 2nd image transfer output, the paper separation position can be adjusted for the 1st and 2nd sides of paper.
- To ensure proper balance between paper separating and image transferring performances by varying the paper separation position applied for duplex printing in hot and humid conditions.

Setting item	Setting value	Default setting
First Side, Second Side, Thin Paper Front, Thin Paper Back	-10 mm to +10 mm (step: 0.1 mm)	0.0 mm

<Procedure>
1. Select a setting item.
2. Enter the new setting from the [+] / [-] keys.
   - Priority on paper separation performance: Increase the setting value
   - Priority on image transfer performance: Decrease the setting value
3. Touch [END] to validate the setting value.
4. Check the print image for any image problem.

7.7 Removable Voltage Adjust

- To allow the basic charge neutralizing voltage to be adjusted.
- To prevent separation failure (jam, paper conveyance failure) that may occur when paper other than recommended one is used by adjusting the neutralization voltage to the one that suits the type of paper the user uses.

Setting item	Setting value	Default setting
First Side, Second Side, Thin Paper Front, Thin Paper Back	Auto	○
	-3 to +3 (step: 1) • 1 step is equivalent to 1000 V.	

<Procedure>
1. Select a setting item.
2. Enter the new setting from the [+] / [-] keys. Select [Auto] to automatically control the neutralization voltage without using the neutralization voltage setting value.
   - To increase the neutralization voltage, increase the setting value.
   - To decrease the neutralization voltage, decrease the setting value.
3. Touch [END] to validate the setting value.
4. Check the print image for any image problem.

7.8 TCR Level Setting

- To adjust the T/C control level when an abnormal image density occurs as a result of a change in the amount of charge of toner and carrier due to an environmental change.
- Use when T/C changes due to changes in environmental conditions of the user site.

Setting item	Setting value	Default setting
Black	-3 to +3 (Step: 1) • 1 step is equivalent to 0.5%. • Center value 0 corresponds to T/C ratio: 6.5%	0

<Procedure>
1. Select a setting item.
2. Enter the new setting from the 10-Key pad and [+/-] key.
   - To increase T/C, increase the setting value.
   - To decrease T/C, decrease the setting value.
3. Touch [END] to validate the adjustment value.
4. Open and close the front door.
5. Check the print image for any image problem.

7.9 Transfer Voltage Fine Adj

7.9.1 Primary transfer adj.

- Adjust the output value for the 1st image transfer voltage.
- To use when white spots appeared.

Color selection	Setting range	Default setting
Black	-8 to +7 (step: 1)	0

Color selection	Setting range	Default setting
	• 1 step is equivalent to 1µA.	

<Procedure>
1. Select [Service Mode] -> [Test Mode] -> [Halftone Pattern] to output the test pattern.
2. When the test pattern image has white spots, adjust with the following procedure.
3. Select [Service Mode] -> [Imaging Process Adjustment] -> [Transfer Voltage Fine Adj] -> [Primary transfer adj.].
4. Enter the new setting from the [+] / [-] keys.
   - Increase the output value for the 1st image transfer voltage: Increase the setting value. (white spots will decrease)
   - Decrease the output value for the 1st image transfer voltage: Decrease the setting value.
5. Touch [END] to validate the setting value.
   - Gradually increase the setting value to the acceptable white spots level while checking the test pattern.

NOTE
- **Photoconductor memory may occur by taking measure to white spots occurred by increasing the 1st image transfer voltage to adjust it.**
- **Check the image on the test pattern or the test chart when adjusting.**

7.9.2 2nd Transfer Adj.

- Adjust the 2nd image transfer output (ATVC) on the 1st page and the 2nd page for each paper type.
- To use when the transfer failure occurs.
- Setting current control to [ON] activates the 2nd image transfer amperage upper and lower limit control. In this case, the machine uses the voltage determined by the auto transfer voltage control and the 2nd image transfer voltage fine adj value does not take effect.

Image side	Setting item	Setting value		Default setting
600dpi - Front	Current control	ON		○
		OFF		
	Paper type	Normal Paper - Black, Thin Paper - Black, Plain Paper+ - Black, Thick Paper 1 - Black, Thick Paper 1+ - Black, Thick2, Thick3, Thick4, Post., Envelope, OHP Film, Banner Thick1+, Banner Thick2, Banner Thick3	-8 to +7 (step: 1) 1 step is equivalent to 100 V.	0
600dpi - Back	Current control	ON		○
		OFF		
	Paper type	Normal Paper - Black, Thin Paper - Black, Plain Paper+ - Black, Thick1, Thick1+, Thick2, Thick3, Thick4, Post.	-8 to +7 (step: 1) 1 step is equivalent to 100 V.	0
1200dpi - Front	Current control	ON		○
		OFF		
	Paper type	Normal Paper - Black, Thin Paper - Black, Plain Paper+ - Black, Thick Paper 1 - Black, Thick Paper 1+ - Black, Thick2, Thick3, Thick4, Post., Envelope, OHP Film	-8 to +7 (step: 1) 1 step is equivalent to 100 V.	0
1200dpi - Back	Current control	ON		○
		OFF		
	Paper type	Normal Paper - Black, Thin Paper - Black, Plain Paper+ - Black, Thick1, Thick1+, Thick2, Thick3, Thick4, Post.	-8 to +7 (step: 1) 1 step is equivalent to 100 V.	0

<Procedure>
1. Select [2nd Transfer Adj].
2. Select the Image side paper type with the transfer failure.
3. Enter the new setting from the [+] / [-] keys.
   - To increase the ATVC value (in the direction of a foggier image), increase the setting value.
   - To decrease the ATVC value (in the direction of a less foggy image), decrease the setting value.
4. Touch [END] to validate the setting value.
5. Check the print image for any image problem.

7.10 Charge AC Output fine adjustment

- Adjusts the charging AC voltage applied to the charge roller.
- Adjusts the voltage when there are image problems (fogging, white spots, etc).
- Increases the setting when there are image problems (fogging, white spots, etc).

Setting item	Setting value	Default setting
Vpp-K	-12 to 8 (step: 1) • 1 step is equivalent to 25 Vpp.	0

<Procedure>
1. Select a setting item.
2. Enter the new setting from the 10-Key pad and [+/-] key.
3. Touch [END].

7.11 Thick Paper Density Adjustment

- To fine-adjust density of printed images for thick paper.

- To change the density of the printed image for each color with thick paper.

Setting item		Setting value	Default setting
Paper type	Setting color		
Thick Type2	Black	-5 to +5 (step: 1)	0

<Procedure>
1. Select a setting item.
2. Touch the Lighter or Darker key to correct the image density.
   - Light color: Touch the Darker key.
   - Dark color: Touch the Lighter key.
3. Touch [END] to validate the setting value.

7.12 Grad/Dev AC Bias V Selection

- Changes the developing AC voltage, charging AC voltage and 1st. image transfer current settings.
- Turn ON to lower the above-mentioned voltages and prevent white spots caused by leakage.
- Used when fine white spots occur on the entire image in the environment of low atmospheric pressure, such as a highland.
- This setting is enabled after the machine is turned OFF and ON.

Setting value	Default setting
ON	
OFF	○

7.13 Black Adjust

- To adjust the image quality by changing the AC output frequency of black image developing bias.
- Normally, depending on the quality image quality information from the controller, proper frequency is selected automatically. Setting is required for fixing and using a specific frequency.

Setting item	Contents	Default setting
Standard	Frequency: Depending on the original image quality information from the controller, proper frequency is selected automatically.	○
K Priority	Frequency: High	
Edge Reduction	Frequency: Low	

7.14 Manual Toner Add

Manual Toner Add

- To adjust the set T/C level by replenishing an auxiliary supply of toner when a low ID occurs due to a lowered T/C after large numbers of prints have been made of originals having a high image density.
- When there is a drop in T/C ratio.

<Procedure>
1. Touch [Manual Toner Add].
2. Select the color, for which supply of toner is to be replenished.
3. Pressing the Start key will let the machine detect the current toner density and; if the density is lower than a reference value, a toner replenishing sequence and then a developer agitation sequence are run. Then a developer agitation sequence are run.
4. Operation above is repeated maximum of ten sets of times with one set consisting of three sequences until it reaches to the reference value. When it is higher than the reference value, only the agitation is conducted.

Hopper Toner Filling

- To fill the sub hopper with toner and perform agitate in the developing unit.
- Used when toner is manually supplied to the toner hopper and agitate in the developing unit is performed.

<Procedure>
1. Touch [Hopper Toner Filling].
2. Press the Start key to start filling and agitating operations.

7.15 Refresh Photoconductor

- Rotate the photoconductor to shave the surface of the degraded photoconductor drum, to get rid off the image noise.

Manual refresh set

- To be used when any fog, colored line or black line occurs at edges of SRA3 paper.

Setting item	Setting	Contents	Default setting
Refresh time	0	Do not execute Refresh photoconductor.	○
	1	When any edge fog or black line occurs in black area. • Execute Refresh photoconductor only for black.	
	2	Do not use (does not work on this machine)	
	3	Do not use (does not work on this machine)	

<Procedure>
1. Enter the new setting from the [+] / [-] keys. If not to execute Refresh photoconductor, set to “0”.
   - [+] key: Increase the setting value.
   - [-] key: Decrease the setting value.
2. Touch [Start] to start operations.
   - When the setting value is set to “0”, [Start] is invalid.

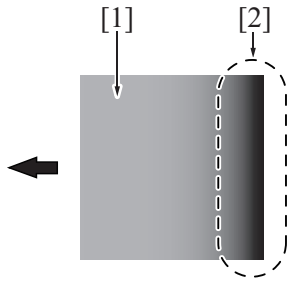
NOTE
When Refresh photoconductor has been continuously performed three times or more, carry out [Imaging Process Adjustment] -> [Manual Toner Add].

Auto refresh set

- Do not use (does not work on this machine)

7.16 Trail Edge Correction

- In anticipation of the pseudo high density part that appears on the trail edge of the image, by correcting in advance so that the trail edge becomes light, control “sweeping” of print image.
- The sweeping is a phenomenon in which toner excessively adheres to the trail edge of the electrostatic latent image in the paper transfer direction.



[1]	Electrostatic latent image	[2]	Sweeping

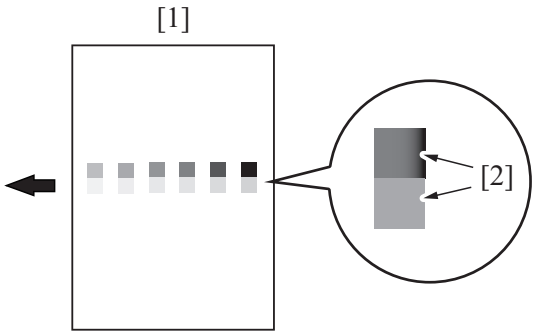
Color selection	Trail edge correction	Correction value	Default setting
Black	ON/OFF	-5 to -1 (step: 1)	-3

NOTE

- **The paper size that can be printed by this adjustment is as follows.**
- **A3, 11 x 17, A4, 8 1/2 x 11**

<Procedure>

1. Touch [Test Print] and press the Start key to print the test pattern.



[1]	Test pattern	[2]	Trail edge density

2. Check the trail edge density on the test pattern.
3. To correct the trail edge density, set the [Black] key to ON. (Default setting is OFF)
   For black set to ON, the correction value can be changed with the [+] key and [-] key.
   - [+]: Reduce the correction.
   - [-]: Increase the correction.
4. Touch [Test Print] and press the Start key. The trail edge density of the color set to ON is corrected and the test pattern is printed out.
5. Repeat the above procedure to correct the image trail edge density.

8. CS Remote

8.1 Remote Care

8.1.1 Outline

- CS Remote Care enables the machine and the computer at CS Remote Care center to exchange data through telephone/fax line, network or E-mail in order to control the machine.
- CS Remote Care enables the machine to call the computer at the center when trouble occurs. It also enables the computer at the center to contact the machine for the necessary data.
- Data which CS Remote Care handles can be divided into the following groups.
  - Data which show the status of use of the machine such as total count, PM count.
  - Data which show the abnormal situation on the machine such as where and how often errors occur.
  - Data on adjustment
  - Data on setting

8.1.2 Setting up

- Setup procedures for using CS Remote Care are shown below.
- Settings differ by each type of system used on CS Remote Care, and should be made according to the procedures.
  - System type: Telephone line, Fax line, E-mail (Bilateral communication), E-mail (Unilateral communication), http (Bilateral communication), http (Unilateral communication)

NOTE

- **For resetting up the machine which CS Remote Care has already been set up, clear the RAM for CS Remote Care before resetting.**
- **When using a telephone line modem for connection, use the data modem which is based on the ITU-T recommendations V.34/ V.32 bis/V.32 and AT command.**
- **When MFP is connected to the Internet via a proxy, the proxy server related settings are necessary in advance. The proxy settings used in the http communication for CS Remote Care is configured in [Administrator] -> [Network] -> [WebDAV Settings] -> [Proxy Setting for Remote Access].**

NOTICE

- CS Remote Care can be set also from Web Connection.
- Enter the following address, then enter the CE password and touch [OK].
  - http://(IP address)/csrc_index.html

Setting procedure

1. Register the device ID to the application at CS Remote Care center.
   NOTE
   - **The initial connection is not available unless the device ID is registered.**
2. Connect or disconnect the telephone line modem depending on which system is to be used.
   - For telephone line: Turn the power for the modem OFF. Connect the machine and the modem with a modem cable. Connect the modem and the modular jack with a modular cable. For connecting the modular cable, see the manual for the modem.
   - For fax line, E-mail (Bilateral/Unilateral communication), http (Bilateral/Unilateral communication): Disconnect the telephone line modem.
3. Touch [Maintenance /Default Settings] -> [ID Code] to input the seven digits ID of the service person. If the ID of the service person is already registered, it will be displayed.
4. Touch [Maintenance/Default Settings] -> [System Setting] to select the system to be used on CS Remote Care.
   - For telephone line: Select [Modem].
   - For fax line: Select [Fax].
   - For E-mail (Bilateral communication): Select [E-Mail1].
   - For E-mail (Unilateral communication): Select [E-Mail2].
   - For http (Bilateral communication): Select [http1].
   - For http (Unilateral communication): Select [http2].
5. Touch [Maintenance/Default Settings] -> [Detail Setting].
6. Touch [Date & Time Setting] to set the date and time for CS Remote Care.
7. Set the center ID, and confirm the Device ID.
   - For telephone line, fax line, http (Bilateral/Unilateral communication): Select [Basic Setting] -> [Center/Device ID].
   - For E-mail (Bilateral/Unilateral communication): Select [Basic Setting] -> [Center Setting].

   NOTE
   - **[Device ID] displays the serial number that is entered in [Service Mode] -> [System 1] -> [Serial Number].**
8. Set the center telephone number and device telephone number.
   - For telephone line, fax line: Select [Basic Setting].
9. Input the AT command for initializing the modem.
   - For telephone line: Select [AT Command].

   NOTE
   - **Change this command only when it is necessary. (They do not need to be changed in normal condition.)**
   - **For details on AT command, see the manual for the modem.**
10. Set the center E-mail address.
    - For E-mail (Bilateral/Unilateral communication): Select [Basic Setting] -> [Center Setting] -> [E-Mail Address].
11. Make encryption setting (select either Yes or No).
    - For E-mail (Bilateral/Unilateral communication): Select [Basic Setting] -> [Center Setting] -> [Encryption].
    - For http (Bilateral/Unilateral communication): Select [Basic Setting] -> [Client Settings] -> [Encryption].
12. Set the schedule and items of notification to the center.
    - For E-mail (Unilateral communication): Select [Basic Setting] -> [Schedule] / [Center Notifi. Item].
    - For http (Unilateral communication): Select [Notification Setting] -> [Schedule] / [Center Notifi. Item].
13. Set the timeout until the response arrives from the center during e-mail communication.
    - For E-mail (Bilateral/Unilateral communication): Select [Response Time Out].

    NOTE
    - **Under normal conditions, there is no need to change the default setting.**
14. To make Heart Beat related settings.
    - For http (Bilateral communication): Select [Basic Setting] -> [Heart Beat].

NOTE
- **Heart Beat is a feature that uploads a Heart Beat file to the registered web server at a specified interval to report that the device is operating. Heart Beat files include total counter and status information.**

15. To set the polling time in http communication.
    - For http (Bilateral communication): Select [Basic Setting] -> [Polling Interval].
16. Touch [Software Switch Setting] to make software SW setting for CS Remote Care.

NOTE
- **This setting is not normally necessary. Take this step only when necessary in a specific connecting condition.**

17. Touch [END].
18. Touch [Maintenance/Default Settings] -> [Server Setting] to make server settings.
    - For E-mail (Bilateral/Unilateral communication): Select [Server for RX] / [Receive] / [Send].
    - For http (Bilateral/Unilateral communication): Select [HTTP Server Settings] / [SSL Settings].
19. Touch [Maintenance/Default Settings] -> [Detail Setting] -> [Basic Setting] -> [Initial Transmission].
20. Touch [Initial Transmission] key on the right bottom of the screen to start initial transmission.

NOTE
- **The [Initial Transmission] key at the right bottom of the screen will be displayed only when all of the following items have been input.**
  - For telephone line, fax line: Center ID, Device ID, Center Telephone Number, Device Telephone Number
  - For E-mail (Bilateral/Unilateral communication): Center ID, Device ID, E-Mail Address
  - For http (Bilateral/Unilateral communication): Center ID, Device ID, URL Address
- **However, if an invalid value is input as the device ID, the initial transmission key is not displayed.**

21. When the machine is properly connected with the center, CS Remote Care setting screen will be displayed.
    - If communication error between the machine and Center occurs, check the error code that appears.
22. For E-mail (Bilateral/Unilateral communication): Sending the initial connection E-mail message from the center to the address of the copier.

NOTE
- **When receiving the initial connection E-mail message from the center while CS Remote Care-related screen is being displayed, the current setting information will be deleted, and CS Remote Care setting will be displayed.**
- **For sending the initial connection E-mail, see the manual for CS Remote Care center.**
- **Messages can be exchanged only between the center with initial connection and the copier.**
- **The initial connection from the center will be carried out, and the E-mail address of the center will be stored in the copier.**
- **When the initial registration is complete, the E-mail address of the center will be displayed by selecting [Service Mode] -> [CS Remote Care] -> [Maintenance/Default Settings] -> [Detail Setting] -> [Basic Setting] -> [E-Mail address].**

8.1.3 Setup confirmation

- Follow the steps below to make sure that CS Remote Care has been properly set up.

<Procedure>
1. Touch [CS Remote Care].
2. Check to make sure that only selected item is displayed.

8.1.4 Calling the maintenance

- When CE starts maintenance, inputting the ID code of CE (seven digits: numbers which CE can identify. They are controlled by the distributor.) will transmit the information to the Center side and tells that the maintenance has started. When the maintenance is finished, touching [Maintenance Complete] key will transmit the information to the center and tells that it is finished.

NOTE
- **The MFP sends the maintenance start information to the Center. While the MFP is in maintenance mode, the communication between the MFP and the Center is unavailable. Therefore, CE must touch [Maintenance Complete] immediately after the completion of maintenance to end maintenance mode.**

When starting the maintenance

1. Touch [CS Remote Care].
2. Touch [Maintenance Start].
3. Input the ID code using the 10-key pad.
4. Select estimated hours that elapse before the completion of the maintenance from the options of [2 hours], [4 hours], [6 hours], [8 hours], [10 hours], or [12 hours].
5. Touch [OK].

NOTE
- **The Start key blinks while maintenance mode is being carried out.**
- **You cannot extend the estimated hours while the maintenance is in progress.**
- **If you forget to touch [Maintenance Complete] after the completion of the maintenance, the maintenance completion information is automatically sent after the lapse of the selected estimated hours and the normal communication becomes available.**

When finishing the maintenance

1. Touch [CS Remote Care].
2. Touch [Maintenance Complete].

8.1.5 Calling the center from the administrator

- When the CS Remote Care setup is complete, the administrator can call the CS Remote Care center.

NOTE
- **When the setup is not complete or another transmission is being carried out, the [Admin. transmission] key will not be displayed, and the transmission is not available.**

<Procedure>
1. Touch [Settings] -> [System Connection]
2. Touch [Admin. transmission].
3. Press the Start key.

NOTE
- **For transmitting data of the machine by calling the center on the specified date and time, refer to the manual for CS Remote Care center.**

8.1.6 Checking the transmission log

- The transmission log list will be output to be checked.

<Procedure>

1. Touch [CS Remove Care] -> [Maintenance/Default Settings] -> [Detail Setting].
2. Touch [Communication Log Print].
3. Load tray 1 or bypass tray with A4S paper.
4. Press the Start key to output transmission log.

8.1.7 Maintenance/Default Settings

(1) System Selection

- To select the system type for remote diagnosis.
- Use to newly build or change the system.

Setting value	Contents	Default setting
E-Mail1	Use E-mail Bilateral communication.	○
E-Mail2	Use E-mail Unilateral communication.	
http1	Use http Bilateral communication.	
http2	Use http Unilateral communication.	
Modem	Use modem communication	
Fax	Use fax communication Fax is available only when the optional fax kit is being installed.	

(2) ID Code

To register the service ID.

<Procedure>

1. Touch [ID code] and enter the service ID.
   - Enter a 7-digit code from the 10-key pad. (0000001 to 9999999)
2. Touch [ID code] to register the ID.
3. The [Detail Setting] will appear when the ID has been registered.

(3) Detail Setting

(a) Basic Settings

- Execute the primary setting.
- Use to register the machine to the CS Remote Care center.

Center Setting

- It will be displayed when “E-Mail1” or “E-Mail2” is selected in System Setting.

Setting item	Contents	Setting value	Default setting
Center ID	Set the center ID. When all setup procedures are completed, the center ID is displayed.	5-digit alphanumeric characters	00000
Device ID	Display the device ID. It can only be displayed but not be changed.	13-digit alphanumeric characters	-
E-mail Address	Set the center E-mail address. When all setup procedures are completed, the center E-mail address is displayed.	Alphanumeric characters and symbols (up to 129 characters)	-
Encryption	Set whether or not to encrypt E-mail. When all setup procedures are completed, the details of setting is displayed.	Yes	
		No	○

Schedule

- It will be displayed when or “E-Mail2” is selected in System Setting.
- To set the schedule of notification to the center.
- Up to three different notification schedules can be registered.

<Procedure>

1. Select the key of the registration number, and then touch [Enable].
2. Select the notification cycle from [Day], [Week], or [Month].
   - When selecting [Day] for the notification cycle, set the Day Frequency.
   - When selecting [Week] for the notification cycle, set the Week Frequency and day of the week.
   - When selecting [Month], set the Month Frequency and the date of the month.
3. Touch [SET] to register the schedule.

Center Notifi. Item

- It will be displayed when or “E-Mail2” is selected in System Setting.
- To set whether or not to report to the Center.
- To report to the center, select the notification item to the center.

Setting item	Contents
No Notification	Select it to disable the report to the center.
[1]	Sales count data

Setting item	Contents
[2]	Error count data
[3]	Service count data
[4]	Life count data, Life cycle data
[5]	CSRC-System data, Device config data
[6]	History data
[7]	EKC data
[8]	Adjustment data
[9]	Coverage data
[10]	Not used
[11]	Not used
[12]	Not used

NOTE

- **Multiple items of data can be selected and sent at one time. However, be sure that only EKC data cannot be sent together with other items of data.**

Center/Device ID

- It will be displayed when or “http1,” “http2,” “Modem” or “Fax” is selected in System Setting.

Setting item	Contents	Setting value	Default setting
Center ID	Set the center ID. When all setup procedures are completed, the center ID is displayed.	5-digit alphanumeric characters	00000
Device ID	Display the device ID. It can only be displayed but not be changed.	13-digit alphanumeric characters	-

Client Settings

- It will be displayed when “http1” or “http2” is selected in System Setting.
- To set whether or not to encrypt communication.
- When all setup procedures are completed, the details of setting is displayed.

Setting value	Default setting
Yes	○
No	

Heart Beat

- It will be displayed when “http1” is selected in System Setting.
- To make Heart Beat related settings.
- Heart Beat is a feature that uploads a Heart Beat file to the registered web server at a specified interval to report that the device is operating. Heart Beat files include total counter and status information.

Setting item	Contents	Setting value	Default setting
Communication	To set whether or not to enable Heart Beat communication.	Yes	○
		No	
Comm. Interval	Set the communication interval to enable Heart Beat communication.	1 to 256 (minutes)	30 (minutes)
Specified Transmission	To set whether or not to enable Heart Beat transmission at a specified interval.	Yes	○
		No	

Polling Interval

- It will be displayed when “http1” is selected in System Setting.
- To set the polling time in http communication.

Setting range	Default setting
1 to 256 (minutes)	5 (minutes)

Center Telephone Number, Device Telephone Number

- It will be displayed when “Modem” or “Fax” is selected in System Setting.
- Set the telephone number of the Center.
- Set the telephone number of the Device.

NOTE

- **When entering the telephone number, 10-key and keys on the screen have following meanings.**

Keys	Contents
[-] Pose	Waits to start transmitting after dialing
[W] Wait	Detects the dial tone of the other end
[T] Tone dial	Carry out tone dialing
[P] Pulse dial	Carry out pulse dialing
[*], [#]	To be used as necessary

Initial Transmission
- Touching the Initial Transmission key will sent the information to the CS Remote Care center to register the machine.

(b) Date & Time Setting
- To set the data and time-of-day.

<Procedure>
1. Touch [Date & Time Setting].
2. Enter the date (month, day and year), time-of-day, and the time zone from the 10-key pad.
3. Touch [SET] to start the clock.

(c) RAM Clear
- To clear the following data at the center.
  - Service ID, Basic setting, Date & time setting (time zone), Software SW setting, AT command
- To be used for setting CS Remote Care.
- To be used for reset the every data of the center to default.

NOTE
- **If RAM clear is selected during transmission, RAM clear processing will be implemented at the time the transmission is completed regardless of whether it is done properly or not.**

Setting value	Default setting
Set	
Unset	○

(d) Communication Log Print
- To print out the communication log.
- It will be displayed when “Fax” is selected in System Setting.

<Procedure>
1. Touch [Communication Log Print].
2. Load a paper tray with A4S/A4 or 81/2 x 11S/81/2 x 11 paper.
3. Select [1-Sided] or [2-Sided].
4. Press Start key to print out the communication log.

(e) Software Switch Setting
- To change the CS Remote Care settings.

NOTE
- **Software SW bits data are written into the MFP storage every time a change is made. In case you changed bit data by accident, be sure to restore the previous state.**
- **Do not change any bit not described on this table.**

<Procedure>
1. Touch [Software Switch Setting].
2. Touch [Switch No.], and input the software switch number (two digits) using the 10-key pad.
3. Touch [Bit Assignment], and select software switch bit number using the arrow keys, and input 0 or 1 using the 10-key pad. (For setting by hexadecimal numbers, touch [HEX Assignment] key, and input using the 10-key pad or A to F keys.)
   - Refer to “ I.8.2 Software SW setting for Remote Care” for the setting items.
4. Touch [Fix].

(f) Response Time Out
- Set the timeout until the response arrives from the center during e-mail communication.
- This setting is available only when “E-Mail1” or “E-Mail2” is selected in [System Setting].

Setting range	Default setting
10 to 1440	60 minutes

(g) AT Command
- To set the command to be issued at the time of modem initialization.
  - Enter the command and touch [SET] to register.
- This setting is available only when [Modem] is selected in [System Setting].

(h) Notification Setting
- To make the settings of notification to the center that is performed under unilateral communication via http.
- This setting is available only when [http2] is selected in [System Setting].

Schedule
- Set the schedule of notification to the center.
- Up to three different notification schedules can be registered.

<Procedure>
1. Select the key of the registration number, and then touch [Enable].
2. Select the notification cycle from [Day], [Week], or [Month].
   - When selecting [Day] for the notification cycle, set the Day Frequency.
   - When selecting [Week] for the notification cycle, set the Week Frequency and day of the week.
   - When selecting [Month], set the Month Frequency and the date of the month.
3. Touch [SET] to register the schedule.

Center Notifi. Item
- To set whether or not to notify the Center.

- To notify the Center, select the notification item to the Center.

Setting item	Contents
No Notification	Select it to disable the report to the center.
[1]	Sales count data
[2]	Error count data
[3]	Service count data
[4]	Life count data, Life cycle data
[5]	CSRC-System data, Device config data
[6]	History data
[7]	EKC data
[8]	Adjustment data
[9]	Coverage data
[10]	Not used
[11]	Not used
[12]	Not used

NOTE

- **Multiple items of data can be selected and sent at one time. However, be sure that only EKC data cannot be sent together with other items of data.**

8.1.8 Server Setting

(1) E-Mail1 or E-mail2 is selected

Server for RX

Setting item	Contents	Setting value	Default setting
POP3 Server	To set the POP3 server address used for the CS Remote Care. It can be set by the IP address or the domain name. • Input IP Address: Input in version 4 format. • FQDN input: Enter the domain name.	Input IP Address [0 to 255].[0 to 255]. [0 to 255].[0 to 255]	-
		FQDN input Alphanumeric characters and symbols (up to 63 characters)	-
POP3 Login Name	To set the login name for the POP3 server used for the CS Remote Care.	Alphanumeric characters and symbols (up to 64 characters)	-
POP3 password	To set the logon password for the POP3 server used for the CS Remote Care.	Alphanumeric characters and symbols (up to 15 characters)	-
POP3 Port Number	To set the POP3 port number used for the CS Remote Care.	1 to 65535	110

Receive

Setting item	Contents	Setting value	Default setting
E-Mail Address	To set the e-mail address used for the CS Remote Care.	Alphanumeric characters and symbols (up to 129 characters)	-
Mail Check	To set whether or not to use mail check and the time interval for the POP server used for the CS Remote Care.	No	○
		1 to 120 min	
Connection Time-out	To set the timeout period for connection during reception.	30 to 300 Sec	60 Sec
APOP Authentication	To set whether or not to authenticate the APOP during reception.	Yes	
		No	○

Send

Setting item	Contents	Setting value	Default setting
SMTP Server	To set the SMTP sever address for transmission used for the CS Remote Care. It can be set by the IP address or the domain name. • Input IP Address: Input in version 4 format. • FQDN input: Enter the domain name.	Input IP Address [0 to 255].[0 to 255]. [0 to 255].[0 to 255]	-
		FQDN input Alphanumeric characters and symbols (up to 63 characters)	-
SMTP port Number	To set the SMTP port number for transmission used for the CS Remote Care.	1 to 65535	25

Setting item	Contents	Setting value	Default setting
Connection Time-out	To set the timeout period for transmission.	30 to 300 Sec	60 Sec
Authentication Setting	To set whether or not to authenticate during transmission via SMTP server. To use when authenticating during transmission.	OFF	○
		POP Before SMTP	
		SMTP Authentication	

<Making Authentication Setting>

- If “POP Before SMTP” is set in “Authentication Setting”, set the time for POP Before SMTP.

Setting range	Default setting
0 to “60 Sec”	60 Sec

- If “SMTP Authentication” is set in “Authentication Setting”, touch the “Setting Check” key for authentication.

Setting item	Contents	Setting value
User ID	Enter the user ID for SMTP authentication.	Alphanumeric characters and symbols (up to 255 characters)
Password	Enter the password for SMTP authentication.	Alphanumeric characters and symbols (up to 128 characters)
Domain Name	Enter the domain name for SMTP authentication.	Alphanumeric characters and symbols (up to 253 characters)

TX/RX Test

- To determine the correct transmission and reception using CS Remote Care.

<Procedure>

1. Press the Start key to let the machine start the transmission and reception test.
2. The test procedure and result will be displayed on the screen.

Data Initialization

- To initialize the contents for the sever setting.

Setting value	Default setting
Yes	
No	○

(2) http1 or http2 is selected

HTTP Server Settings

Setting item	Contents	Setting value	Default setting
URL	To set an address of the http server that is used in CS Remote Care. It can be set by the IP address or the domain name. • Input IP Address: Input in version 4 format. • FQDN input: Enter the domain name.	Input IP Address [0 to 255].[0 to 255].[0 to 255].[0 to 255]	-
		FQDN input Alphanumeric characters and symbols (up to 253 characters)	-
account	To set an account that is used to access the http server used in CS Remote Care.	Alphanumeric characters and symbols (up to 63 characters)	-
Password	To set a password that is used to access the http server used in CS Remote Care.	Alphanumeric characters and symbols (up to 63 characters)	-
Port Number	To set a port number that is used to access the http server used in CS Remote Care.	1 to 65535	80

SSL Settings

- To make SSL settings of the http server at the other end that is used in CS Remote Care.

Setting value	Contents	Default setting
Yes	To set to use SSL communication.	
No	To set not to use SSL communication.	○

Data Initialization

- To initialize the contents for the sever setting.

Setting value	Default setting
Yes	
No	○

8.1.9 Product Auth. Settings

Product Authentication

- To set whether or not to enable product authentication.

NOTE

- **When changing this setting under the condition where http is used for CS Remote Care communication, you need to perform RAM Clear and then initial transmission again.**

Setting value	Default setting
Yes	
No	○

WebDAV

- To set a WebDAV server for the product authentication.

Setting item	Contents
URL	Set the address of the WebDAV server.
account	To set an account that is used to access the WebDAV server.
Password	Set the password that is used to access the WebDAV server.
Port Number	Set the port number that is used to access the WebDAV server.

Register Manually

- To install the certificate to be used in product authentication.

<Procedure (LMS)>

1. Touch [Register Manually] -> [LMS].
2. Touch [Start] to communicate with LMS (License Management System) and install the certificate.
3. Check that the "Install OK" message appears.

<Procedure (USB)>

NOTE

- **In the following conditions, installation of the certificate from a USB memory is prohibited.**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] is set to [Restrict].**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] -> [Detail Setting] -> [External Memory(Service)] is set to [Restrict].**
  - **[Administrator] -> [Security] -> [Enhanced Security Mode] is set to "ON".**

1. Connect the USB flash drive where the certificate obtained from LMS (License Management System) is stored to the USB port of MFP.
2. Touch [Register Manually] -> [USB].
3. Touch [Start] to install the certificate.
4. Check that the "Install OK" message appears.

8.1.10 Import/Export Settings

WebDAV Setting

- To configure WebDAV server settings used to remotely export or import MFP data (address book data, authentication setting data).

Setting item	Contents
URL	To set the address of the WebDAV server.
Folder Name	To set a folder name of the WebDAV server that is used to transfer data.
Account	To set an account that is used to access the WebDAV server.
Password	Set the password that is used to access the WebDAV server.

Port Number

- To set a port number that is used to access the WebDAV server.
  - Enter the port number using the 10-key pad.

SSL Settings

- To configure the WebDAV server's SSL settings.

Setting value	Default setting
Yes	
No	○

Data Initialization

- To initialize the settings on the server.

Setting value	Default setting
Yes	
No	○

8.1.11 Auto Initial Dial Setting

- To set whether to configure the Auto Initial Dial Setting for each CSRC communication method.
- Execute the CSRC Auto Initial Dial automatically at the first time of startup after importing [Remote Access Settings] from [Machine Import Setting].

NOTE

- **This function is enabled only when "Set" is selected and the following conditions are satisfied.**
  - **No registrations to the CSRC server have been made.**

- **At the first time that the main power is turned ON (reboot) after importing the CSRC server information under [Service Mode] -> [Machine Update Settings] -> [Machine Auto Update Setting] -> [Machine Import Setting].**

Setting value	Default setting
Set	
Unset	○

8.2 Software SW setting for Remote Care

8.2.1 List of software SW for CS Remote Care

SW No.	Functions	Ref. page
01	• Dial Mode, Line for send only, Baud rate	" I.8.2.2 SW No. 01"
02	• Emergency transmission, Date specified transmission, Call parts replace date, Call drum replace date, Call regular service date (PM), Auto call on the IC Life, Auto call of the IR shortage, Auto call on the zero reset of the fixed parts replacement	" I.8.2.3 SW No. 02"
03	• Trouble display setting, Auto call on the toner empty, Auto call on the waste toner bottle full	" I.8.2.4 SW No. 03"
04	• CS Remote Care communication mode	" I.8.2.5 SW No. 04"
05	• Modem redial interval	" I.8.2.6 SW No. 05"
06	• Modem redial times	" I.8.2.7 SW No. 06"
07	• Redial for response time out	" I.8.2.8 SW No. 07"
08	• Retransmission interval on E-Mail/http delivery error	" I.8.2.9 SW No. 08"
09	• Retransmission times on E-Mail/http delivery error	" I.8.2.10 SW No. 09"
10	• Time zone settings	" I.8.2.11 SW No. 10"
11	• Timer 1 RING reception -> CONNECT reception	" I.8.2.12 SW No. 11"
12	• Timer 2 Dial request completed -> CONNECT reception	" I.8.2.13 SW No. 12"
13	• Reservation	-
14	• Timer 4 Line connection -> Start request telegram delivery	" I.8.2.14 SW No. 14"
15	• Timer 5 Wait time for other side's response	" I.8.2.15 SW No. 15"
16	• Reservation	-
17	• Reservation	-
18	• Attention display To set whether to give the alarm display when using the modem but the power for the modem is OFF.	" I.8.2.16 SW No. 18"
19	• Reservation	-
20	• Reservation	-
21	• Transmission of paper-based misfeed frequent occurrence warning, Transmission of original-based misfeed frequent occurrence warning, Automatic transmission of chronological misfeed data at the time of transmission of misfeed frequent occurrence warning	" I.8.2.17 SW No. 21"
22	• Paper-based misfeed frequent occurrence threshold value	" I.8.2.18 SW No. 22"
23	• Original-based misfeed frequent occurrence threshold value	" I.8.2.19 SW No. 23"
24 : 40	• Reservation	-

8.2.2 SW No. 01

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	1	0	0	0	0	0	0	1
HEX Assignment	81							

Functions

Bit	Setting item	Setting		Description
		0	1	
7	Baud rate	0110		9600 bps
6		0111		19.2 bps
5		1000		38.4 bps
4		Others		Not available
3	Reservation			

Bit	Setting item	Setting		Description
		0	1	
2				
1	Line for send only	Disable	Enable	
0	Dial Mode	Pulse	Tone	

8.2.3 SW No. 02

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	1	1	1	1	1	1	1	1
HEX Assignment	FF							

Functions

Bit	Functions	Setting value		Description
		0	1	
7	Auto call on the zero reset of the fixed parts replacement	Disable	Enable	
6	Auto call of the IR shortage	Disable	Enable	
5	Auto call on the IC Life	Disable	Enable	
4	Call regular service date (PM)	Disable	Enable	
3	Call drum replace date	Disable	Enable	
2	Call parts replace date	Disable	Enable	
1	Date specified transmission	Disable	Enable	
0	Emergency transmission	Disable	Enable	

8.2.4 SW No. 03

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	0	0	0	0	1	0	1	0
HEX Assignment	0A							

Functions

Bit	Functions	Setting value		Description
		0	1	
7	Reservation			
6				
5				
4				
3	Auto call on the waste toner bottle full	Disable	Enable	
2	Reservation			
1	Auto call on the toner empty	Disable	Enable	
0	Trouble Display setting	When the CSRC is not connected	When the CSRC is connected	Select the type of message to be displayed at the time of automatic trouble notification made when the CSRC is connected, either the message when the CSRC is connected or that when the CSRC is not connected. If "When the CSRC is not connected" is selected when the CSRC is connected, an automatic notification is made to the center when a trouble occurred. Only the display on the control panel shifts to the massage when the CSRC is not connected.

8.2.5 SW No. 04

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	0	0	0	0	0	0	0	1
HEX Assignment	02							

Functions

Bit	Functions	Setting value		Description
		0	1	
7	Reservation			
6				
5				
4				
3				
2				
1	CS Remote Care communication mode	00		DATA
0		01		FAX
		10		E-mail
		11		Not available

8.2.6 SW No. 05

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	0	0	0	0	0	0	1	1
HEX Assignment	03							

Functions

Bit	Functions	Setting		Description
		0	1	
7	Reservation			
6				
5				
4	Modem redial interval	00001		1 minute
3		00010		2 minutes
2		00011		3 minutes
1		00100		4 minutes
0		00101		5 minutes
		00110		6 minutes
		00111		7 minutes
		01000		8 minutes
		01001		9 minutes
		01010		10 minutes
		Others		Not available

8.2.7 SW No. 06

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	0	0	0	0	1	0	1	0
HEX Assignment	0A							

Functions

Bit	Functions	Setting		Description
		0	1	
7	Modem redial times	0000 0000		0 times
6		0000 0001		1 time
5		:		:
4		0000 1010		10 times
3		:		:
2		0110 0010		98 times
1		0110 0011		99 times
0		Others		Not available

8.2.8 SW No. 07

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	0	0	0	0	0	0	0	1
HEX Assignment	01							

Functions

Bit	Functions	Setting		Description
		0	1	
7	Redial for response time out	0000 0000		0 times
6		0000 0001		1 time
5		Others		Not available
4				
3				
2				
1				
0				

8.2.9 SW No. 08

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	0	0	0	0	0	1	1	0
HEX Assignment	06							

Functions

Bit	Functions	Setting		Description
		0	1	
7	Retransmission interval on E-Mail/http delivery error	0000 0000		0 minutes
6		0000 0001		10 minutes
5		:		:
4		0000 0110		60 minutes
3		:		:
2		0000 1011		110 minutes
1		0000 1100		120 minutes
0		Others		Not available

8.2.10 SW No. 09

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	0	0	0	0	1	0	1	0
HEX Assignment	0A							

Functions

Bit	Functions	Setting value		Description
		0	1	
7	Retransmission times on E-Mail/http delivery error	0000 0000		0 times
6		0000 0001		1 time
5		:		:
4		0000 1010		10 times
3		:		:
2		0110 0010		98 times
1		0110 0011		99 times
0		Others		Not available

8.2.11 SW No. 10

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	0	0	0	0	0	0	0	0
HEX Assignment	00							

Functions

Bit	Functions	Setting value		Description
		0	1	
7	Time zone settings	0000 0000		0
6		0000 0001		+1
5		:		:
4		0000 1100		+12
3		1111 0100		-12
2		:		:
1		1111 1111		-1
0		Others		Not available

8.2.12 SW No. 11

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	0	0	1	0	0	0	0	0
HEX Assignment	20							

Functions

Bit	Functions	Setting value		Description
		0	1	
7	Timer 1 RING reception -> CONNECT reception	0000 0000		0 sec
6		0000 0001		1 sec
5		:		:
4		0010 0000		32 sec
3		:		:
2		1111 1110		254 sec
1		1111 1111		255 sec
0				

8.2.13 SW No. 12

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	0	1	0	0	0	0	0	0
HEX Assignment	40							

Functions

Bit	Functions	Setting value		Description
		0	1	
7	Timer 2 Dial request completed -> CONNECT reception	0000 0000		0 sec
6		0000 0001		1 sec
5		:		:
4		0100 0000		64 sec
3		:		:
2		1111 1110		254 sec
1		1111 1111		255 sec
0				

8.2.14 SW No. 14

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	0	0	1	0	0	0	0	0
HEX Assignment	20							

Functions

Bit	Functions	Setting value		Description
		0	1	
7	Timer 4 Line connection -> Start request telegram delivery	0000 0000		0 msec
6		0000 0001		100 msec
5		:		:
4		0010 0000		3,200 msec
3		:		:
2		1111 1110		25,400 msec
1		1111 1111		25,500 msec
0				

8.2.15 SW No. 15

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	0	0	0	1	1	1	1	0
HEX Assignment	1E							

Functions

Bit	Functions	Setting value		Description
		0	1	
7	Timer 5 Wait time for other side's response	0000 0000		0 sec
6		0000 0001		1 sec
5		:		:
4		0001 1110		30 sec
3		:		:
2		1111 1110		254 sec
1		1111 1111		255 sec
0				

8.2.16 SW No. 18

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	0	0	0	0	0	0	0	1
HEX Assignment	01							

Functions

Bit	Functions	Setting value		Description
		0	1	
7	Reservation			
6				
5				
4				
3				
2				
1				
0	Attention display To set whether to give the alarm display when using the modem but the power for the modem is OFF.	OFF	ON	

8.2.17 SW No. 21

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	0	0	0	0	0	1	1	1
HEX Assignment	07							

Functions

Bit	Functions	Setting value		Description
		0	1	
7	Reservation			
6				
5				
4				
3				
2	Automatic transmission of chronological misfeed data at the time of transmission of misfeed frequent occurrence warning	OFF	ON	
1	Transmission of original-based misfeed frequent occurrence warning	OFF	ON	If the number of jams exceeds the threshold specified per day (0:00 to 23:59). Jam Frequent Occurrence Warning is sent. At 12 a.m. of the next day, the counter is reset.
0	Transmission of paper-based misfeed frequent occurrence warning	OFF	ON	

8.2.18 SW No. 22

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	0	0	0	0	0	1	0	1
HEX Assignment	05							

Functions

Bit	Functions	Setting value		Description
		0	1	
7	Paper-based misfeed frequent occurrence threshold value	0000 0001		1
6		0000 0010		2
5		:		:
4		0000 0101		5
3		:		:
2		0000 1110		14
1		0000 1111		15
0		Others		Not available

8.2.19 SW No. 23

Default

Setting value	Bit							
	7	6	5	4	3	2	1	0
Bit Assignment	0	0	0	0	0	1	0	1
HEX Assignment	05							

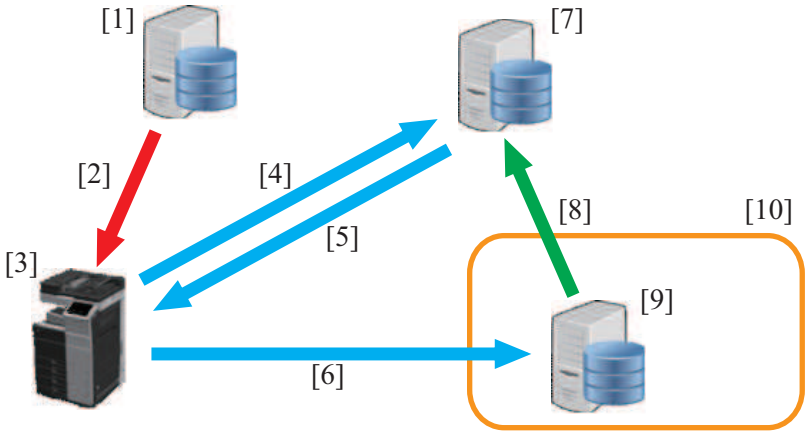
Functions

Bit	Functions	Setting value		Description
		0	1	
7	Original-based misfeed frequent occurrence threshold value	0000 0001		1
6		0000 0010		2
5		:		:
4		0000 0101		5
3		:		:
2		0000 1110		14
1		0000 1111		15
0		Others		Not available

8.3 Remote Analysis

8.3.1 Outline

- CSRA (CS Remote Analysis) is a system which analyzes the data retrieved from the MFP for parts replacement prediction, and trouble diagnosis/prediction.
- Make settings to have the MFP send CSRA analysis data.



[1]	Command server	[2]	Conducting CSRA settings/setting change remotely
[3]	MFP	[4]	Request for notification of data destination information
[5]	Notification of data destination information	[6]	Sending analysis data
[7]	Pre-check server	[8]	Sending load condition of data destination server
[9]	Data destination server	[10]	CSRA

<Conducting CSRA settings>

1. The command server notifies the MFP of information related to pre-check server settings and schedule, and conducts CSRA settings remotely. Alternately, inputs setting details through the control panel.
2. Connection with the pre-check server is checked from [Function Setting] -> [Check Connection].

<Communication flow of analysis data>

1. Following the set schedule, the MFP request the notification of the data destination server information from the pre-check server.
2. The pre-check server checks the data destination server condition, then notifies the MFP of the data destination server, storage location and data sending timing.
3. According to the information notified from the pre-check server, the MFP sends the analysis data to the data destination server.

8.3.2 Function Setting

Function Setting

- To set whether to enable or disable CSRA connection functions.
- Each setting such as Server Settings will be valid by setting this to “ON.”

Setting value	Contents	Default setting
ON	To enable CSRA connection functions.	

Setting value	Contents	Default setting
Disable	To disable CSRA connection functions.	○

Server Settings
- To make settings for the pre-check server.

Setting item	Contents	Setting value	Default setting
URL	To set the address of the server.	Input IP Address • IPv4 format	-
		FQDN input • Alphanumeric characters and symbols (up to 253 characters)	-
account	To set an account that is used to access the server.	Alphanumeric characters and symbols (up to 63 characters)	-
Password	To set the password that is used to access the server.	Alphanumeric characters and symbols (up to 63 characters)	-
Port Number	To set the port number.	1 to 65535	80

Company Code

Setting item	Contents	Setting range	Default setting
Company Code	To set the company code.	001 - 999	-

Check Connection
- To check the connection with the pre-check server.
- To display the connection server.
- To notify of communication status during connecting.
- To notify of details when an error occurs.

8.3.3 Send

Upd. Schedule
- To set whether or not to permit overwriting from server.

Setting item	Setting value	Default setting
Overwrite from Server	Permit	○
	Prohibit	

Schedule Set.
- To set the frequency of data sending.

Setting item	Setting value	Default setting
Day Frequency	1 - 6	1
Select Day of the Week	Sun, Mon, Tue, Wed, Thu, Fri, Sat	Sun
Select Day	1 - 28	1

Time Setting
- To set the time of data sending.

Setting item		Setting value	Default setting
Time Zone	00:00 - 03:59	Permit	
		Prohibit	○
	04:00 - 07:59	Permit	
		Prohibit	○
	08:00 - 11:59	Permit	○
		Prohibit	
	12:00 - 15:59	Permit	○
		Prohibit	
	16:00 - 19:59	Permit	○
		Prohibit	
	20:00 - 23:59	Permit	
		Prohibit	○
Time	Time	00 - 23	00
	Minute	00 - 59	00

Timeout Settings

Setting item	Contents	Setting range	Default setting
Timeout Settings	To set the timeout of data sending.	5 - 120 Sec.	30 Sec.

8.3.4 History Output

- To output the CSRA communication history in the CSV file format into an external memory.
  - Communication history with pre-check server
  - Communication history with destination WebDAV server

NOTE

- **In the following conditions, export of MFP setting data is prohibited.**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] is set to [Restrict].**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] -> [Detail Setting] -> [External Memory(Service)] is set to [Restrict].**
  - **[Administrator] -> [Security] -> [Enhanced Security Mode] is set to "ON".**

<Procedure>

1. Insert the USB memory to the MFP.
2. Touch [USB save] in "CSV Output" to start forwarding data to the USB memory.
3. Confirm that "OK" is displayed as the result of data saving.

8.3.5 CS Remote Analysis Error Code List

Error code	Contents	Solution
0000	Communication finished normally (both TX and RX)	-
0###	Transmission error ###: http responding code (hexadecimal) For http responding code, see RFC issued by IETF after converting hexadecimal number into decimal one.	Check the user's http server system settings. • Authentication setting for address of the destination where the server is connected • Location indicated for a folder • Connection ID • Password
1030	Machine ID mismatching • Received file which tells that machine ID mismatches.	• Check the machine ID setting. • Check the machine ID setting on host side.
1050	Grammar error • Received file did not define the CS Remote Care command (2 digits). • The Type of Subject and the command of file are not consistent.	Check file content.
1061	Modifying not allowed • The host sent a command file that asked modifying data of item where setting change is not allowed.	Ask the host to send another instruction file for modifying.
1062	Modifying not available due to the copy job currently performing • When informing the host that it cannot be modified due to the copy job currently performing.	Ask the host to send another instruction file for modifying.
1080	Data length problem • LEN value of TEXT data and actual data length are not consistent.	Ask the host to send another instruction file for modifying.
1081	Frame No. error • The last frame has not been received. • There are missing frame No.	Check the status of the machine registration on host side.
1082	Subject Type problem • Received code did not define the Type of Subject.	Ask the host to send another instruction file for modifying.
1084	Date expired • Expiration date for data modification command has passed.	Ask the host to send another instruction file for modifying.
1091	Oversized command • Received file exceeds the machine's receive buffer size.	Ask the host to send another instruction file for modifying.
1099	Illegal request • Status not predicted in design is detected.	Contact KM and inform the error code.
2001	http request result problem • Internal status error	Check the user's http server system settings. • Authentication setting for address of the destination where the server is connected • Location indicated for a folder • Connection ID • Password
2002	http request result problem • File list acquisition result problem	
2003	http request result problem • Request header transmission failure	
2004	http request result problem • Request body transmission failure	
2005	http request result problem • Response header receive response failure	
2006	http request result problem • Response body receive response failure	
2007	http request result problem • Session ID inconsistent	
3002	http request result problem • Unopened client ID was specified	Check the user's http server system settings. • Authentication setting for address of the destination where the server is connected • Location indicated for a folder • Connection ID • Password
3003	http request result problem • Receive time out occurred	
3004	http request result problem	

Error code	Contents	Solution
	• Receive error occurred. Or wrong request URL was specified.	
3005	http request result problem • Content-Length or receive size exceeded the specified max. transfer size. Message body size was too large.	
3006	http request result problem • Due to reset, process was stopped. Or message body size exceeded the specified max. transfer size.	
3007	http request result problem • Internal error occurred. Or due to internal reset, process was stopped.	
3008	http request result problem • Connection to WebDAV server failed.	
3009	http request result problem • Error occurred during transmission to the WebDAV server.	
3010	http request result problem • Time out occurred during transmission to the WebDAV server.	
3011	http request result problem • Connection to the proxy server failed.	
3012	http request result problem • The proxy server refused CONNECT request.	
3013	http request result problem • The proxy server was set to enabled, but the proxy server host was not set.	
3014	http request result problem • Proxy server authentication failed.	
3015	http request result problem • Other error was returned from the proxy server.	
3016	http request result problem • Internal error occurred.	
3017	http request result problem • As the device application specified MIO_REQBODY_ERROR, process was stopped.	
4103	After the main power switch is switched ON, HTTP communication is attempted under the condition where HTTP communication is not ready.	Wait for a while and try transmitting again.
5###	MIO detects error when sending an attached file.	Check the SMTP server and POP3 server on user side.
6###	MIO detects error during a sending sequence.	Check the SMTP server and POP3 server on user side.
7000	Failure occurs when a certificate for product authentication is acquired from a USB device.	Acquire a new certificate (within 6 days after the issue).

9. System 1

9.1 Marketing Area

- To make the various settings (language, paper size, fixed zoom ratios, etc.) according to the applicable marketing area.
- Upon setup.

Marketing Area

- Set the applicable marketing area.

Setting item
Japan, US, Europe, Others1, Others2, Others3, Others4, Others5

<Procedure>

1. Select the applicable marketing area.
2. Touch [END].

Wireless LAN Destination

- Set the wireless LAN destination.

NOTE

- **This setting is available only when optional wireless LAN devices are mounted.**

Setting item
OT, US, CA, JP, AU, NZ, DE, GB, FR, CH, NL, BE, AT, NO, SE, FI, IE, DK, IT, ES, PT, PL, ZA, TW, SA, CN, MY, SG, KR, HK, AR, BR, VN, PH, RU, MX, IN, TH, ID, AE, KW, GR, TR, HU, SK, CZ, UA, CL

<Procedure>

1. Touch the [Wireless LAN Destination].
2. Select the applicable marketing area using [+] / [-] key.
3. Touch [decision].

Fax Target

- Set the applicable fax destination.

Setting item
JP, AU, NZ, EU, DE, GB, FR, CH, NL, BE, AT, NO, SE, FI, IE, DK, IT, ES, PT, PL, ZA, TW, SA, CN, MY, SG, KR, HK, AR, BR, VN, PH, RU, OT, US, CA

<Procedure>

1. Touch the [Fax Target].
2. Select the applicable marketing area using [+] / [-] key.
3. Touch [END].

9.1.1 List of functions affected by marketing area setting

- The listed are the functions of which setting is automatically changed depending on the selected marketing area.

Marketing Area / Setting item	Japan	US	Europe	Others1	Others2	Others3	Others4	Others5
Language Selection (Default)	Japanese	English	English	English	English	Simplified Chinese	Traditional Chinese	English
Language Selection (Selectable language)	Japanese English French Italian German Spanish Simplified Chinese Traditional Chinese Hangul	English French Italian German Spanish Japanese Simplified Chinese Traditional Chinese Hangul	English French Italian German Spanish Japanese Simplified Chinese Traditional Chinese Hangul	English French Italian German Spanish Japanese Simplified Chinese Traditional Chinese Hangul	English French Italian German Spanish Japanese Simplified Chinese Traditional Chinese Hangul	Simplified Chinese English French Italian German Spanish Japanese Traditional Chinese Hangul	Traditional Chinese English French Italian German Spanish Japanese Simplified Chinese Hangul	English French Italian German Spanish Japanese Simplified Chinese Traditional Chinese Hangul
Foolscap Size Setting	8 x 13	8 x 13	8 x 13	8 x 13	8 x 13	8 x 13	8 x 13	8 x 13
LCT(Built-in) size	A4 LEF	Letter LEF	A4 LEF	A4 LEF	A4 LEF	A4 LEF	A4 LEF	A4 LEF
Unit	Metric	Inch	Metric	Metric	Metric	Metric	Metric	Metric
Total counter mode	Mode1	Mode2	Mode2	Mode2	Mode2	Mode2	Mode2	Mode2
Size counter	No count	A3, 11 x 17	A3, B4, 11 x 17, 8 1/2 x 14	A3, B4, 11 x 17, 8 1/2 x 14	A3, B4, 11 x 17, 8 1/2 x 14	A3, B4, 11 x 17, 8 1/2 x 14	A3, B4, 11 x 17, 8 1/2 x 14	A3, B4, 11 x 17, 8 1/2 x 14
Unit Change	Japan	US	Europe	Europe	Europe	Europe	Europe	Europe

NOTE

- **The language used in the service mode depends on the language selected from [Utility] -> [Language Selection], and changes to the language as following table.**

Setting item in Language Selection	Language used in the service mode
Japanese	Japanese
Simplified Chinese	Simplified Chinese
Traditional Chinese	Traditional Chinese

Setting item in Language Selection	Language used in the service mode
Hangul	Hangul
Other than the above	English

9.2 Tel/Fax Number

- To enter the tel/fax number of the service contact that will appear on the control panel when a malfunction occurs in the machine.
  - Enter the tel/fax number from the 10-key pad. (19 digits)
- Upon setup.

9.3 Serial Number

- To register the serial numbers of the machine and options.
- To display the serial number of the PH unit.
  NOTE
  - **The serial number of a PH unit can only be displayed but not be changed.**
- The numbers will be printed on the list output.
- To use the serial number as device ID during CS Remote Care communication.
- Upon setup.

NOTE

- **When main power switch was turned ON while the serial number was not entered, the message to require entering the serial number will be displayed.**
- **Do not change the serial number registered in the machine. If memory data is lost and entering the serial number is required, enter the original correct serial number.**
  Be careful to enter the correct serial number since characters other than alphanumeric can be also entered. CSRC communication is not available if a wrong serial number is entered.
- **The serial number of "Printer" can be checked through the following: [Utility] -> [Counter].**

9.4 Sleep ON/OFF Choice Setting

- To display the option of "No" for the [Sleep Mode Setting] screen available from [Administrator] -> [Maintenance] -> [Timer Setting] -> [Power Settings].

Setting item	Contents	Default setting
Permit	To display "OFF" in the sleep mode setting screen.	
Prohibit	No to display "OFF" in the sleep mode setting screen.	○

9.5 Foolscap Size Setting

- To set the size for foolscap paper.
- Upon setup.

Setting item	Default setting
$8^1/_2$ x $13^1/_2$	
220 x 330 mm	
$8^1/_2$ x 13	
$8^1/_4$ x 13	
$8^1/_8$ x $13^1/_4$	
8 x 13	○

NOTE

- **"$8^1/_8$ x $13^1/_4$ " and "220 x 330 mm" setting are corresponding to paper fed from the manual bypass tray only.**

9.6 Original Size Detection

Copy Glass

- To change the size detection table for the original glass.

Setting item	Default setting
Table1	○
Table2	

NOTE

- **Table 2 can be set only when original size sensor/2 is being mounted. (For destinations other than Japan)**
- **On models for Japan, original size sensor/2 is not required, but Table 2 can be set.**

$8^1/_2$ x 14/Foolscap Size Detection

- To set whether paper of $8^1/_2$ x $13^1/_2$ size is detected as $8^1/_2$ x 14 or foolscap in original glass or DF size detection.
  When Table 1 is selected in Copy Glass, paper of $8^1/_2$ x $13^1/_2$ size is detected as Foolscap despite of the setting of $8^1/_2$ x 14/Foolscap Size Detection.
- Not available for Japan models.

Setting item	Default setting
$8^1/_2$ x 14	○
Foolscap	

ADF Size Detection

- To set whether or not to give a priority to the detection of 8K/16K size when DF is used.
- Not available for Japan models.

Setting item	Default setting
K Size	○
B series	

9.7 Minimum Paper Size Setting

- To set the paper size recognized when the paper width guide and paper length guide in the tray are set to fit the minimum-sized paper.
- The following trays are available.
  - Tray 1

Destination	Setting value	Default setting
Japan	Postcard	○
	A6	
	B6	
North America	4 x 6	○
Europe	A6	
	B6	○
	A6 card	

9.8 Install Date

- To register the date the main body was installed.
- Upon setup.

NOTE

- **When using without setting the install date, the date/month/year at which the total counter reaches more than 100 sheets of paper will be set as an install date automatically.**

<Procedure>

1. Touch Clear.
2. Enter the date from the 10-key pad. (Year 4 digit -> Month 2 digit -> date 2 digit)
3. Touch [Entry] to set the date of installation.

9.9 Initialization

Clear All Data

- To initialize the setting data.
- For details on items to be cleared, see “List of Clear Item.”

<Procedure>

1. Touch [Clear All Data].
2. Press the Start key.
3. When [OK] is displayed, turn off the main power switch and turn it on again more than 10 seconds after.

Clear Individual Data

- Select the data, then start clearing data.

Function for clearing	Contents
Copy Program Data	To clear data registered as copy program.
Address Registration Data	To clear address registration data. The following are address registration data: • Group address data, Program key data, One-touch destination data, Mail body data, Subject data, Prefix/suffix data
Fax Setting Data	To clear fax-related settings and parameters. However, address-related data is not cleared.
All History Data	To clear history data. The following are history data: • Job history, Journal history, Receive reject history, Destination history, Job secure counter (Internal data for history management)
Network Setting Data	To clear the network-related settings. Use this feature to initialize and set network-related settings again when the machine does not work properly upon change of network-related settings.
Server Cache Data	To clear user information cached from the external authentication server. When [Administrator] -> [User Auth/Account Track] -> [Authentication Type] -> [External Authentication server setting] -> [Temporarily Save Authentication Information] is set to "Enable," the corresponding user information is cached each time when authentication by the external server is successful. The information is used when MFP cannot be connected to the external server.

<Procedure>

1. Select items to be cleared.
   NOTE
   - **This setting enables you to select and clear multiple items at a time.**
2. Press the Start key.
3. When [OK] is displayed, turn off the main power switch and turn it on again more than 10 seconds after.

System Error Clear

- To reset the trouble data.
- Use to clear the [Jam], [Trouble], [Error] displays, and other improper displays.
- For details on items to be cleared, see “List of Contents to be cleared.”

<Procedure>

1. Touch [System Error Clear].
2. Press the Start key.
3. When [OK] is displayed, turn off the main power switch and turn it on again more than 10 seconds after.

9.9.1 List of Clear Item

Contents to be cleared		Clear All Data	Clear Individual Data						System Error Clear
			Copy Program Data	Address Registration Data	Fax Setting Data	All History Data	Network Setting Data	Server Cache Data	
JAM display		○	-	-	-	-	-	-	○
Malfunction display	Rank A	○	-	-	-	-	-	-	○
	Rank B	○	-	-	-	-	-	-	○
	Rank C	○	-	-	-	-	-	-	○
Erratic operation / display		○	-	-	-	-	-	-	○
Utility (Except items on engine adjustment)		○	-	-	-	-	-	-	-
Copy Program Data		○	○	-	-	-	-	-	-
Address registration data		○	-	○	-	-	-	-	-
Fax setting data (Excluding destination related data)		○	-	-	○	-	-	-	-
History data		○	-	-	-	○	-	-	-
Network setting data (Excluding destination related data)		○	-	-	-	-	○	-	-
Cache data of external authentication server		○	-	-	-	-	-	○	-
Service Mode (System 1/2)		△*1	-	-	-	-	-	-	-
Billing Setting	Management Function Choice	○	-	-	-	-	-	-	-
Adjustment of the touch panel position		○	-	-	-	-	-	-	-
Trouble auto release retry count		○	-	-	-	-	-	-	○

○: Will be cleared (initialized)
- : Will not be cleared

△ *1: Items to be cleared	
System 1	Marketing Area (Fax Target only)
System 2	Storage type setting

9.10 Problem Unit Isolation Set.

- When a problem occurs, this function enables the use of the units or options that are not affected by separately controlling them and isolating other units or options that have a problem.

  NOTE
  - **The malfunction detection mechanism is not applied to units and options that are being isolated.**

Setting item	Setting value	Contents	Default setting
Tray 1 Tray 2 Tray 3 Tray 4 LCT Manual Center Stapling/Half-Fold/Tri-Fold Post inserter Z-folding Punch Staple Scanner ADF Expansion Fun. (Storage)	Set	To normally isolate the units. • This status will continue even after turning OFF and ON the main power switch.	
	Unset	No to isolate the units. • When corresponding troubles occur, pressing the [Continue] key on the warning screen, the user can isolate the problem units temporarily. (*) • This status will not continue after turning OFF and ON the power switch.	○

- * For corresponding troubles, see “TROUBLE CODE.”

<Procedure>

1. Select the units or options to be set.
2. Specify [Set] or [Unset].
   NOTE
   - **“Set” and “Unset” can be specified separately for each unit or option.**
3. Touch [Apply].
4. The new setting becomes effective by turning the main power switch OFF and ON again.

9.11 Post card transfer table

- For the use of thick 3 postcards, you can select the transfer table suitable for postcards.
- This setting is used to improve transfer performance to postcards.

Setting item	Contents	Default setting
Post.	The postcard image transfer table is used when printing on thick 3 postcards.	○
Thick 3	The normal thick 3 image transfer table is used when printing on thick 3 postcards.	

9.12 Warm-up

9.12.1 Change Warm Up Time

- To change warm up completion time.
- Mode is changed to Mode 2 in case the paper gets curled significantly when black printing is conducted immediately after warm up at Mode 1.
- Mode is changed to Mode 3 or 4 in case the paper gets curled immediately after normal warm up or the curled paper causes paper jam, paper exit failure, punch/staple/fold position failure or etc.

Setting item	Contents	Default setting
Mode 1	Makes warm-up time shortest.	○
Mode 2	The warm-up time will be as specified value.	
Mode 3	To prevent curling of the paper immediately after the warm-up, printing productivity is decreased by PPM control. The warm-up time will be as specified value.	
Mode 4	By having a longer warm-up time and warming up the fusing unit, curling of the paper immediately after the warm-up can be prevented.	

Fusing operation mode

- Warm-up related control can be changed by using [Warm Up] setting and [Choice of high humidity circumstance] setting in Engine FW DipSW.
  When the main power switch is turned on, the mode is defined according to each choice setting.
- The following table shows the features of each operation mode.

Operation mode	Service Mode		Target user	Advantages	Disadvantages
	Warm-up	Choice of high humidity circumstance			
1 (Default setting)	Mode 1	OFF	Want to print quickly	Makes warm-up time shortest	Curling may occur in high humidity
2		ON	Want to prevent curling	Warm-up time is made shortest except when in high humidity Decreases possibility curling occurs in high humidity	Warm-up time is long in high humidity (65 seconds or less)
3	Mode 2	OFF	Want to print quickly	Warm-up time is as specified value or later High productivity even in high humidity	Curling may occur in high humidity
4		ON	Want to prevent curling	Warm-up time is as specified value or later except in high humidity Decreases possibility curling occurs in high humidity	Warm-up time is long in high humidity (65 seconds or less)
5	Mode 3	OFF	Want to print quickly Want to prevent curling immediately after warm-up	Warm-up time is as specified value or later Decreases the curling in normal circumstance	Productivity immediately after warm-up decreases Curling may occur in high humidity
6		ON	Want to prevent curling immediately after warm-up Want to print quickly Want to prevent curling when humidity is high	Warm-up time is as specified value or later Decreases possibility curling occurs	Productivity immediately after warm-up decreases Warm-up time long in high humidity (65 seconds or less)
7	Mode 4	OFF	Want to prevent curling immediately after warm-up	Decreases possibility curling occurs	Long warm-up time (65 seconds or less)
		ON			

9.13 Machine State LED Setting

- Configure the display method used when displaying the main body status with state display LEDs.

Setting item	Setting value	Default setting
Warning Status	Type1	
	Type2	○
Paper Remainder	Type1	
	Type2	○

<LED display forms for each type>

Machine State LED Setting		Type1	Type2
Warning Status	Attention • Toner supply door open • Toner cartridge install failure • Toner Empty	Blinking	Blinking
	• Near life • Toner Near Empty	Blinking	Blinking
	Malfunction code	Blinking	Blinking
	Problem Unit Isolation	Blinking	Blinking
	Fatal error • Trouble code • Jam • Door opened • Life stop • Toner Empty Stop	Lit	Lit
Paper Remainder (Tray 1/2/3/4 paper empty lamp)	100 % to near empty	Unlit	Unlit
	Near empty	Blinking	Unlit
	Empty	Lit	Lit
	Being lifted up Cassette Open	Unlit	Unlit
Paper Remainder (LCC/LCT paper empty lamp)	100 % to near empty	Unlit	Unlit
	Near empty	Blinking	Unlit
	Empty	Lit	Lit
	Being lifted up Cassette Open	Unlit	Unlit

9.14 TP Level

- To adjust the selectivity of the touch panel.

Setting range	Default setting
-2 to +2 (step: 1*)	0

<Procedure>

1. Enter the new setting from the [+] / [-] key.
   - To increase sensitivity of the touch panel, increase the setting value.
   - To decrease sensitivity of the touch panel, decrease the setting value.
2. Touch [END].

NOTE

- **When the setting has been changed, turn off the main power switch and turn it on again more than 10 seconds after.**

9.15 Burn Prevention Settings

- To prompt to prevent a burn injury by displaying a message indicating that the fusing unit is at a high temperature when the right door has to be opened in order to get rid of a paper jam.

Setting item	Default setting
Enable	○
Disable	

10. System 2

10.1 Set storage type

- To set the installation status of the MFP storage.

Setting value	Default setting
Storage (It will be displayed when 256GB of storage is mounted.)	○
Extended Storage (It will be displayed when 1TB of storage is mounted.)	
microSD	

10.2 Option Board Status

- To be used for setup of the optional fax kit or the security kit.

Setting item	Setting value	Default setting
FAX (circuit 1)	Set	
	Unset	○
FAX (circuit 2)	Set	
	Unset	○
FAX (circuit 3)	Set	
	Unset	○
FAX (circuit 4)	Set	
	Unset	○
DSC1	Set	
	Unset	○

10.3 Consumable Life Reminder

- To select whether or not to give the display of PM parts lifetime
  NOTICE
  - PM parts lifetime display: An entire screen warning is given when the service life of a specific unit has been reached, prompting the user to replace the part.
- Applicable units:
  - Transfer belt unit, fusing unit, developing unit, drum unit, transfer roller unit

Setting value	Contents	Default setting
Yes	When the service life has been reached, a malfunction code and an entire screen warning appear on the control panel.	
No	When the service life has been reached, a malfunction code and a message appear in one line on the upper side of the screen.	○

10.4 Unit Change

10.4.1 Unit Change

- To select who is to replace a unit.
- When the unit life arrives, the warning display is intended for the specific person who is going to replace the unit.
  - When "User" is selected: Printing is inhibited.
  - When "Service" is selected: Life warning.

Setting item	Setting value	Default setting		
		Japan	US	Europe
Toner Cartridge	User	○	○	○
	Service			
Drum Unit	User			
	Service	○	○	○
Waste Toner Box	User		○	○
	Service	○		
Hole-punch Scrap Box	User	○	○	○
	Service			
Staple waste box	User	○	○	○
	Service			

10.4.2 Warning display

Toner Near Empty

- To set whether to display a toner near empty warning.

Setting value	Default setting
Yes	○
No	

Near Empty Display Time

- To change the timing of toner cartridge near empty detection in order to optimize the timing of the toner cartridge replacement depending on individual use (PV).

NOTE

- **The Near Empty Display Time will be displayed when "Bit Assignment 00000010 / HEX Assignment 02" is set for the Switch No. "151" through the following settings. [Service Mode] -> [System 2] -> [Software Switch Setting].**
- **The toner cartridge is not provided with a mechanism that detects the amount of residual toner in the cartridge. So note that when the toner cartridge is replaced in the midway, the display timing that was set as a reference and the amount of the residual toner inside the toner cartridge may get mismatched.**
- **When [0] is specified, and the toner near empty warning display is specified to [No], no toner near empty warning will be displayed but a toner empty stop warning will appear.**

Setting item		Contents	Setting	Default setting
Display timing (Toner Level)	Display timing			
Toner Level	K	To specify the timing for displaying toner near empty warning at a percentage against 100% of a full toner cartridge state.	0 to +25 (step: 1)	19
Toner (days left)	K	To set the days left until empty to display a toner near empty warning.	3 to 30 (step: 1)	14

DU PreNear Life Display Time

- Specifies when to display the near life for the drum unit.
- Specifies whether to display the archive at a set number of months before the estimated the consumables check list life cycle is reached.
- When [0] is specified, the near life is not displayed.

Setting item	Setting value	Default setting
K	0 to +6 (Step: 1)	0

Near Life Display Settings

- To set whether or not to display the life warning of individual consumables.
- When [Do Not Display] is selected, a warning is not displayed at the time of life detection.
  However, in CS Remote Care, life warning is normally sent to the center regardless of this setting.

NOTE

- **The settings of software Dip switch No.227 (bit7) and switch No. 230 (bit3) have priority.**

Setting item	Setting value	Default setting
Individual consumables	Display	○
	Do Not Display	

Pre-Near Life Display Setting

- To set whether or not to display the near life warning of drum unit.
- When [Do Not Display] is selected, a warning is not displayed at the time of near life detection.
  However, in CS Remote Care, near life warning is normally sent to the center regardless of this setting.

NOTE

- **When the Pre-Near Life Display Setting is specified to [Do Not Display], the near life warning display is disabled.**

Setting item	Setting value	Default setting
Drum unit	Display	○
	Do Not Display	

10.5 Software Switch Setting

- To set the operating characteristic of each function from software switch depending on what types of printing are normally made.

<Procedure>

1. Touch [Switch No.] and enter the intended switch number with the 10-key pad.
2. Touch [Bit Assignment].
3. Use [<-] or [->] to select a bit. To set the bit, enter 0 or 1 with the 10-key pad.
4. To set the bit in hex, touch [HEX Assignment] and use the 16key pad and [A] to [F] keys to enter numbers and characters.
5. Touch [Fix].

Software Switch Setting list

The list of the setting values of Software Switch Setting can be print from [Service Mode] -> [List Output] -> [Machine Management List].

NOTE

- **For switches not mentioned in the list below, use them in the default value unless indicated otherwise.**

Switch No.	Function
012	Addition of the authentication device
025	FW function version setting
033	Renders some functions, which were available when both administrator authentication and key counter were provided with when using the vendor, available only with administer authentication.
040	Settings for use of copy kit counter

Switch No.	Function	
049	HEX 00 - HEX0A	The upper limit of copies that can be input through the control panel of this machine is set.
	HTML 80	Scan setting only when Sort is selected for a copy cycle to be run with originals placed on the original glass.
051	Settings for the life warning/replace display of the units	
069	When printing using the manual bypass tray in a custom size, allows for printing only with a printer driver settings.	
070	Setting for alarm sound and screen display for communication errors occurring due to CSRC causes.	
072	Import/export function of the address book through the USB memory	
121	Operation when an original multi-feed is detected during using the ADF	
124	Function to restrict the file type of TX Fax	
135	Setting for ID length of the HID Prox card	
143	Expansion setting of the touch panel sensitive area when the web browser function is used	
145	HEX 01	Switching to Auto detection for paper size in manual bypass tray
	HEX 02	Switching paper feed mode if the size of paper fed from the manual bypass tray is mismatched
	HEX 04	Displaying message when the paper size in manual bypass tray is mismatched with the paper size specified on the control panel
	HEX 08	When running a copy cycle with originals placed on the original glass, and [Auto] is displayed in "Group/Sort" of the finishing function, [Auto] will be set as default. ("Sort" and "Offset" will be executed when [Auto] is selected.)
	HEX 10	Switch-over settings of Duplex printing and Billing permission Setting for allowing/prohibiting billing on exited paper when a paper size error occurred at the time of duplex printing
146	HEX 04	Setting for enabling use of Non-Image Area Erase, Centering, and Original Size when the book original is used in the fax/scanner mode
	HEX 10	Setting for allowing/prohibiting billing on exited paper when a paper size error occurred at the time of duplex printing
147	Setting for allowing/prohibiting use of Archive Paper	
151	Setting for displaying/hiding the Near Empty Display Time	
152	The E-mail body print settings of E-Mail RX Print	
155	Validation/invalidation of the debug setting of the log.	
157	Change the upper limit of the time for switching to power save mode.	
163	Setting for the auto execution of Self-diag.(Full)	
172	Setting to automatically install MarketPlace Client App	
188	Operation setting for print status LED	
203	Setting to automatically change log-in authorization to a second user when the second user attempts card authentication after a first user has been authenticated through card authentication.	
206	Setting whether to enable Coverage Counter	
226	HEX 10	Setting for allowing/prohibiting use of fax mis-sending prevention function when line is used by TEL terminal connection devices
	HEX 80	Setting for allowing/prohibiting use of functions to allow administrator to change PBX function settings when an external line button is added for direct input of an address with the PBX function enabled
227	Setting for the display of consumable level and warning. (Control panel, PSWC, Fiery)	
230	HEX 08	Setting for the display of consumable level and warning. (PSES, MIB, Printfleet, SiteAudit)
	HEX 40	Setting for allowing/prohibiting use of functions for preventing a unintentional sending to a wrong destination
237	HEX 20	Setting for displaying/hiding the VoIP Setting.

10.5.1 SW No.012

- Addition of the authentication device

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Standard	00000000 / 00
00000010	02	PKI (NIPRNet) [Card3] choice is added in Service Mode.	
00000100	04	PKI (SIPRNet) [Card3] choice is added in Service Mode.	

Reference

- [Service Mode] -> [Billing Settings] -> [Authentication Device 2]

10.5.2 SW No.025

- FW function version setting

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00010000	10	FW compatible with version 2.0	00100000/20

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00100000	20	FW compatible with version 2.1	

Reference
- [Utility] -> [Device Information List]

10.5.3 SW No.033

- Renders some functions, which were available when both administrator authentication and key counter were provided with when using the vendor, available only with administer authentication.

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Available with the combination of administer authentication and key counter.	00000000 / 00
00000001	01	Available only with administrator authentication.	

Reference
- [Utility] -> [Expert Adjustment]
- [Administrator] -> [System Settings] -> [List/Counter]

10.5.4 SW No.049

HEX 00 - HEX0A
- The upper limit of copies that can be input through the control panel of this machine is set.

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Unlimited	00000000 / 00
00000001	01	1 copy	
00000010	02	3 copies	
00000011	03	5 copies	
00000100	04	9 copies	
00000101	05	10 copies	
00000110	06	20 copies	
00000111	07	30 copies	
00001000	08	50 copies	
00001001	09	99 copies	
00001010	0A	250 copies	

HEX 80
- Scan setting only when Sort is selected for a copy cycle to be run with originals placed on the original glass.

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	“Change Setting” and “Finish” keys become available after the document has been scanned.	00000000 / 00
10000000	80	Keys unavailable (copy cycle is started)	

10.5.5 SW No.051

HEX 00 - HEX80
- Settings for the life warning/replace display of the units

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Normal display	00000000 / 00
00010000	10	Does not show the life warning/replace display of the imaging unit/Y,M,C. Does not show the life warning/replace display of the drum unit/K.	
00100000	20	Does not show the life warning/replace display of the developing unit.	
01000000	40	Does not show the life warning/replace display of the transfer belt unit.	
10000000	80	Does not show the life warning/replace display of the fusing unit.	

Reference
- [Service Mode] -> [Counter] -> [Life]

10.5.6 SW No.069

- When printing using the manual bypass tray in a custom size, allows for printing only with a printer driver settings.

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	After setting a paper in the manual bypass tray, touch [complete] key to start printing.	00000001 / 01

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000001	01	Start printing with the paper settings specified by the printer driver as the manual bypass tray paper settings without giving a warning.	

10.5.7 SW No.070

- Setting for alarm sound and screen display for communication errors occurring due to CSRC causes.

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Communication error sound/screen display enabled.	00000000 / 00
00010000	10	Communication error sound/screen display disabled.	

10.5.8 SW No.072

- Import/export function of the address book through the USB memory

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Import/export function is disabled.	00000000 / 00
00000100	04	Import/export function is enabled.	

Reference
- [Administrator] -> [Maintenance] -> [USB flash drive backup] - [Import]
- [Administrator] -> [Maintenance] -> [USB flash drive backup] - [Export]

10.5.9 SW No.121

- Operation when an original multi-feed is detected during using the ADF

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Stops immediately.	00000000 / 00
00000010	02	Stops after exiting the original.	

10.5.10 SW No.124

- Function to restrict the file type of TX Fax

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Restrict the file type.	00000000 / 00
00000001	01	Do not restrict the file type.	

Reference
- [Administrator] -> [Fax Settings] -> [Function Setting] -> [RX Data Operation Settings] -> [Forward TX Setting]

10.5.11 SW No.135

- Setting for ID length of the HID Prox card

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Reports that the 1st byte shows the ID length of the card, the 2nd byte and after shows the card ID.	00000000 / 00
00000001	01	Reports the card ID with the ID length including the 1st byte.	

10.5.12 SW No.143

- Expansion setting of the touch panel sensitive area when the web browser function is used

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	26 dots: 26 dots from the perimeter of the touch panel is a nonsensitive area.	00000000 / 00
00000001	01	16 dots: 16 dots from the perimeter of the touch panel is a nonsensitive area.	
00000010	02	9 dots: 9 dots from the perimeter of the touch panel is a nonsensitive area.	

NOTE
- **The sensitive area of the control panel can be expanded by selecting “16 dots” or “9 dots” on the software switch No.143. Note that the control panel’s sensitive area expanded in this manner may not detect touches properly.**

10.5.13 SW No.145

HEX 01
- Switching to Auto detection for paper size in manual bypass tray

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Enable	00000000 / 00
00000001	01	Disable	

HEX 02
- Switching paper feed mode if the size of paper fed from the manual bypass tray is mismatched

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Stop immediately	00000010 / 02
00000010	02	Stop accordingly Stop immediately in the following cases as an exception. • "1" is set at bit4 for the Switch No.145 • For jobs where center stapling, half-folding, tri-folding and Z-folding are set with a finisher equipped	

HEX 04

- Displaying message when the paper size in manual bypass tray is mismatched with the paper size specified on the control panel

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Enable	00000000 / 00
00000100	04	Disable	

HEX 08

- When running a copy cycle with originals placed on the original glass, and [Auto] is displayed in "Group/Sort" of the finishing function, [Auto] will be set as default. ("Sort" and "Offset" will be executed when [Auto] is selected.)

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Enable	00000000 / 00
00001000	08	Disable	

HEX 10

- Switch-over settings of Duplex printing and Billing permission
- Setting for allowing/prohibiting billing on exited paper when a paper size error occurred at the time of duplex printing

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Allow (billing on one side of the paper)	00000000 / 00
00010000	10	Prohibit	

10.5.14 SW No.146

HEX 04

- Setting for enabling use of Non-Image Area Erase, Centering, and Original Size when the book original is used in the fax/scanner mode

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Prohibits use of Non-Image Area Erase, Centering, and Original Size.	00000000 / 00
00000100	04	Enables use of Non-Image Area Erase, Centering, and Original Size.	

HEX 10

- Setting for allowing/prohibiting billing on exited paper when a paper size error occurred at the time of duplex printing

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Stops	00010000 / 10
00010000	10	Outputs paper.	

10.5.15 SW No.147

- Set whether allow or prohibit use of Archive Paper Enable.

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Not to use Archive Paper.	00000000 / 00
00001000	08	Use Archive Paper.	

10.5.16 SW No.151

- Setting for displaying/hiding the Near Empty Display Time

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Hide	00000010 / 02
00000010	02	Display	

Reference

- [Service Mode] -> [System 2] -> [Unit Change]

10.5.17 SW No.152

- The E-mail body print settings of E-Mail RX Print

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Disables the E-mail body print settings.	00000000 / 00
00000001	01	Allows the E-mail body print settings.	

- This function supports the following languages.
  - Japanese, English, French, Italian, Germany, Spanish

10.5.18 SW No.155

- Validation/invalidation of the debug setting of the log.

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Debug setting is disabled.	00000000 / 00
00000001	01	Debug setting is enabled.	

Reference
- [Service Mode] -> [Debug Settings] -> [Basic mode]

10.5.19 SW No.157

- Change the upper limit of the time for switching to power save mode.

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Do not change the upper limit.	00000000 / 00
00000010	02	Change the upper limit to 240 minutes.	

Reference
- [Administrator] -> [Maintenance] -> [Timer Setting] -> [Power Settings] -> [Low Power Mode Setting]

10.5.20 SW No.163

- Setting for the auto execution of Self-diag.(Full)

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Disable	00000010 / 02
00000010	02	Enable The Self-diag. (Full) will be executed automatically only when the rank B/C trouble codes are detected.	

10.5.21 SW No.172

- Setting to automatically install MarketPlace Client App

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000101	05	At the time of installation, the MarketPlace Client App is installed automatically.	00000101 / 05 (Except for Japan)
00000001	01	At the time of installation, the MarketPlace Client App is not installed automatically.	00000001 / 01 (Japan)

NOTE
- **The installed MarketPlace Client App is not uninstalled even if it is changed to 0x01.**

10.5.22 SW No.188

- Operation setting for print status LED

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000001	00	Blinking	00000001 / 01
00000010	02	Unlit	

10.5.23 SW No.203

- Setting to automatically change log-in authorization to a second user when the second user attempts card authentication after a first user has been authenticated through card authentication.

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Log-in not authorized.	00000000 / 00
00000100	04	Log-in authorized.	

10.5.24 SW No.206

- Setting whether to enable Coverage Counter

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Disable	00000000 / 00
00000001	01	Enable	

Reference
- [Service Mode] -> [Billing Setting] -> [Coverage Rate Clear], [Print Counter Clear], [Coverage Counter Detail]

10.5.25 SW No.226

HEX 10
- Setting for allowing/prohibiting use of fax mis-sending prevention function when line is used by TEL terminal connection devices

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Do not use functions for preventing fax mis-sending.	00010000 / 10
00010000	10	Use functions to prevent fax mis-sending.	

HEX 80

- Setting for allowing/prohibiting use of functions to allow administrator to change PBX function settings when an external line button is added for direct input of an address with the PBX function enabled

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Do not use the functions.	10000000 / 80
10000000	80	Use the functions.	

10.5.26 SW No.227

- Setting for the display of consumable level and warning. (Control panel, Web Connection, Fiery)
- Toner level is displayed regardless of this setting at all time.

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Display	10000000 / 80 (Japan/North America/ Europe) 00000000 / 00 (Others)
10000000	80	Do not display	

10.5.27 SW No.230

HEX 08

- Setting for the display of consumable level and warning. (PSES, MIB, Printfleet, SiteAudit)

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Display	00001000 / 08 (Japan/North America/ Europe) 00000000 / 00 (Others)
00001000	08	Do not display	

HEX 40

- Setting for allowing/prohibiting use of functions for preventing a unintentional sending to a wrong destination

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Do not use the functions.	01000000 / 40
01000000	40	Use the functions.	

10.5.28 SW No.237

- Setting for displaying/hiding the Near Empty Display Time

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Hide	00000010 / 02
00000010	02	Display	

Reference

- [Service Mode] -> [System 2] -> [Unit Change]

10.6 CCD Calibration

Front side/back side

- To set whether to use the calibration adjustment value set prior to the shipping. To display the current calibration adjustment value.
- When CCD board (front side)/CIS (back side: only when dual scan document feeder is mounted) has been replaced, set to “OFF.”
  NOTICE
  - After replacing the CCD board or CIS, the default generic value needs to be set since the calibration value set for each unit changes to control the differences in reading performance on each scanner (CCD).
- The original calibration adjustment value can be disabled to address image failure and other problems caused by individual CCD or CIS performance difference.

Setting item	Setting value	Default setting
Front side/back side	ON	○
	OFF	

NOTE

- **The [Front Side] and [Back Side] keys are displayed when dual scan document feeder is mounted.**

10.7 LCT Paper Size Setting

- To set the optional large capacity unit type and the paper size.
- Use this feature upon the optional large capacity unit set-up.

NOTE

- **When the LCT type setting is changed, the Paper size setting in the LCT is returned to the default.**
- **A3LCT is not available on products which the LCT for large sized paper cannot be mounted.**

Setting item		Default setting
Type	Paper size	
A4LCT	A4	○ (Except for North America)

Setting item		Default setting
Type	Paper size	
	$8^1/_2$×11	○ (North America)
A3LCT	SRA3	
	A3	○ (Except for North America)
	B4	
	A4	
	A4S	
	12×18	
	11×17	○ (North America)
	$8^1/_2$×14	
	$8^1/_2$×11	
	$8^1/_2$×11S	

10.8 Paper Reuse Box Setting

- Not used

10.9 Line Mag Setting

- To set whether to use the offset value which has been set prior to the shipping. To display the current magnification offset value.
- When CCD board (front side)/CIS (back side: only when dual scan document feeder is mounted) has been replaced, set to “OFF.”
  NOTICE
  - After replacing the CCD board or CIS, the default generic value needs to be set since the magnification offset value between the lines set for each unit changes to control the differences in reading performance on each scanner (CCD).
- The original offset value can be disabled to address image failure and other problems caused by individual CCD performance difference.

Setting item	Setting value	Default setting
Front side/back side	ON	○
	OFF	

NOTE

- **The [Front Side] and [Back Side] keys are displayed when dual scan document feeder is mounted.**

10.10 Data Capture

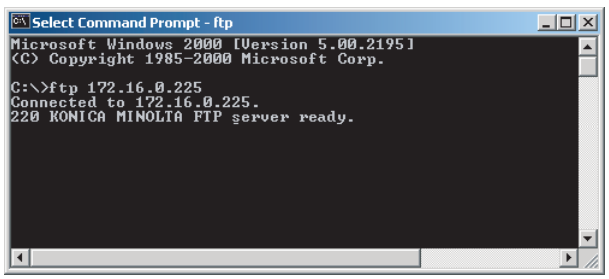
- When an error occurs, it acquires the print job data in order to analyze the cause of the error.
- When an error occurs, this will be used to analyze the cause of the error according to the print job data.

NOTE

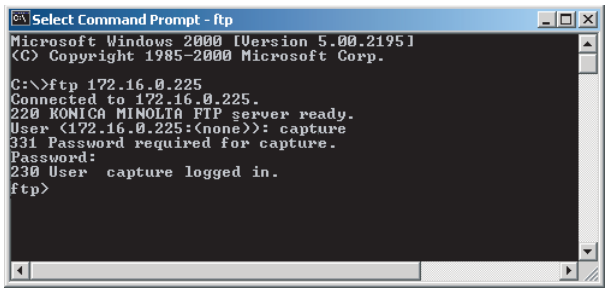
- **The following conditions are necessary for this function.**
  - **“Allow” must be set when selecting [Administrator] -> [Security] -> [Security Details] -> [Print Data Capture].**
  - **The MFP storage must be installed.**
  - **“ON” must be set when selecting [Administrator] -> [Network] -> [FTP Setting] -> [FTP Server Setting].**
  - **This function also allows print job data stored in the MFP storage to be obtained from [Debug Settings] -> [Debug Log Output]. For more details, see “Debug Log Output.”**

<Procedure>

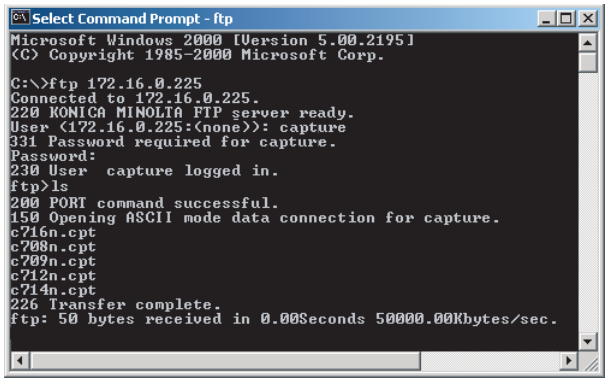
1. Select [Service Mode] -> [System 2], and touch [Data Capture]. Select “ON.” (While the Data Capture setting is [ON], the print job data from the PC will be stored in the Main body storage disk.)
   NOTE
   - **Maximum 5 print job data can be stored. The data will be overwritten beginning with the chronologically oldest one.**
2. Check the IP address of the machine.
3. Connect the PC (Windows) and the machine with ethernet cable.
4. Start the DOS command prompt of the PC, and specify the IP address of the machine to start FTP.



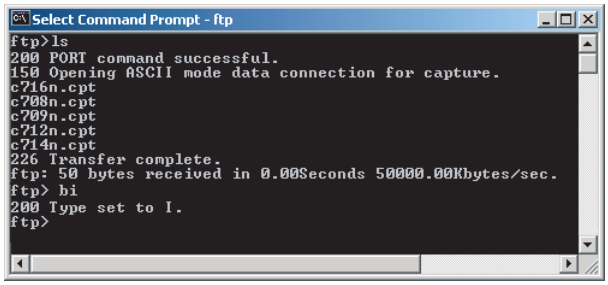
5. Input the user name and the password.
   - User name: capture
   - Password: sysadm



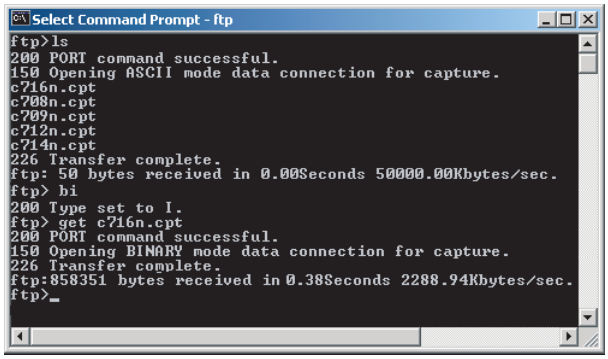
6. Using the “ls” command, display the list of the file available for capture.



7. Using the “binary” command, set the File transfer mode to the binary transfer.



8. Using the “get” command, transfer the data for capture to PC.



9. Finish the command prompt.

NOTE

- **After receiving capture data, select [Administrator] -> [Security] -> [Security Details] -> [Print Data Capture], and select [Restrict] for the print data capture setting in order to delete the job data stored in the MFP storage.**
- **When Storage Format or Overwrite Temporary Data is performed, job data is deleted.**

10.11 Split Line Detect. Setting

- To make each settings for contamination detection.
- When a dual scan document feeder is mounted, make the settings separately for the front side and the back side.

ADF Scan Glass Contamin. Sensitivity

- To set the detection level for the pre-detection of stain on the DF original glass (or the CIS glass). In the back side pre-detection, stains of not only the CIS glass but also the back side glass cleaning roller are detected.
- Use when changing the setting for whether or not to detect the stain on the DF original glass when opening/closing DF as well as its detection level as the main power switch being ON, recovering from the sleep/low power mode, etc.

Setting value	Contents	Default setting
Not Set	Detection of stain on the glass will not be conducted.	
Low	Stain on the glass will not be detected easily.	
Normal	Normal detection level	○
High	Stain on the glass will easily be detected.	

NOTE

- **Be aware that selecting "Not Set" and performing the pre-detection with [Service Mode] -> [Machine] -> [Split Line Prior Detection] will display "NG."**
- **When "Not Set" is selected, the original glass cleaning operation after the job ends does not operate.**

ADF Scan Glass Contamin. Warn/Level

- To set how to display the warning when stain on the DF original glass (or the CIS glass) is detected.
- Use when changing the display of the warning which requests the cleaning of the stain on the glass detected by the [ADF Scan Glass Contamin. Sensitivity] of the lines.

Setting value	Contents	Default setting
0	Warning will not be displayed.	
1	Warning will be displayed by the maintenance mark. (Malfunction code: D-1/D-3)	○
2	Warning will be displayed on the message area on the basic screen.	
3	Warning will be displayed on all screens.	

Feed Cleaning Settings

- To set the operation for detection and cleaning operation of stain on the DF original glass when feeding the original.
- Use when changing the operation for detection and cleaning operation of stain on the DF original glass when feeding the original.

NOTE

- **This setting is displayed when [Front Side] is selected in the Split Line Detection Setting with the dual scan document feeder mounted.**

Setting value	Contents	Default setting
0	The cleaning brush will stop moving when the original is fed, and will not perform cleaning the stain.	
1	The cleaning brush will move between originals when feeding the original.	○

Display timing

- To set the timing at which a warning is displayed when contamination is detected on the surface of the CIS glass in a pre-detection process.
- This setting is displayed when [Back Side] is selected in the Split Line Detection Setting with the dual scan document feeder mounted.

Setting value	Contents	Default setting
Warning Detection	Displays the warning whenever contamination is detected.	
Back Scan Time	Displays the warning only when back side scanning mode is selected.	○

NOTE

- **This setting is enabled only when [Back Side] is selected.**

10.12 Stamp

- To set the mounting status of the optional stamp unit.
- To use when setting up the stamp unit.

Setting value	Default setting
Set	
Unset	○

10.13 Network Fax Settings

- To set whether or not to use network fax function.
- To set when using network fax function.
- Selection will be available when each network fax function is set to "ON" in [Administrator] -> [Network] -> [Network Fax Setting] -> [Network Fax Setting].

Setting item	Setting value	Default setting
IP Address Fax	ON	
	OFF	○
Internet Fax	ON	
	OFF	○

10.14 RX File Change Page Name

- To set whether to change the document file name to forward TX or take out a file from the Memory RX Box.

Setting value	Default setting
Change	
Do Not Change	○

10.15 ADF Settings

- Not used

10.16 User Paper Settings

- To set and register individual user paper that includes a different basic weight, fusing temperature, 2nd image transfer fine adjustment value.
- [User Paper Settings] is also available from [Utility] -> [Expert Adjustment].
- To register a paper type that is suitable for individual customer's intended use and use environment.

Registered Key	Paper Type	Basic weight	Fusing Temperature		2nd Transfer Adj.	
		Setting range	Setting item	Setting range	Setting item	Setting range
User Paper 1	Plain paper	60 to 90 g/m^2 (Step: 1)	600dpi 1200dpi	- 20°C to +10°C (step: 5°C)	600dpi - Front - Black 600dpi - Back - Black 1200dpi - Front - Black 1200dpi - Back - Black	-8 to +7 (step: 1)
User Paper 2	Plain paper+	91 to 105 g/m^2 (Step: 1)				
User Paper 3	Thick 1	106 to 120 g/m^2 (Step: 1)				
User Paper 4	Thick 1+	121 to 157 g/m^2 (Step: 1)				
User Paper 5	Thick 2	158 to 209 g/m^2 (Step: 1)	600dpi 1200dpi	- 20°C to +10°C (step: 5°C)	600dpi - Front 600dpi - Back 1200dpi - Front 1200dpi - Back	-8 to +7 (step: 1)
User Paper 6	Thick 3	210 to 256 g/m^2 (Step: 1)				
User Paper 7	-	91 to 209 g/m^2 (Step: 1)	600dpi 1200dpi	- 20°C to +10°C (step: 5°C)	600dpi - Front - Black 600dpi - Back - Black 1200dpi - Front - Black 1200dpi - Back - Black	-8 to +7 (step: 1)

NOTE

- **The user paper 7 is set for coated paper, and adjusts the fusing temperature and the 2nd transfer fine adjustment according to the coated paper used by the user.**
- **The following values suitable for the recommended coated paper are set as the default values.**

Recommended coated paper

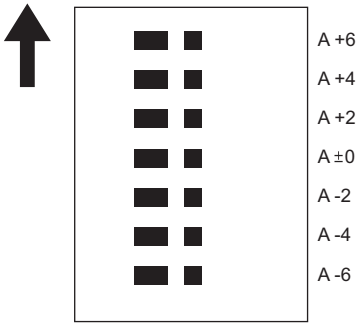
- **Japan: POD Gloss Coat [128 g/m^2]**
- **North America: Verso Sterling Premium Digital Gloss Text 100lb [148 g/m^2]**
- **Europe: Color Copy Coated Gloss (Mondi) [135 g/m^2]**

<Procedure>

1. Select the desired key from [User Paper 1] to [User Paper 7] to register user paper.
2. Select [Basic Weight] and enter a value with the [+] / [-] key.
3. Select a target item of Fusing Temperature and enter a fusing temperature with the [+] / [-] key.
4. Select a target item of 2nd Transfer Adj., and enter a 2nd image transfer fine adjustment value with the [+] / [-] key.
5. Load the manual bypass tray with paper.
   - Paper Size: A4S, B4S, A3S, 81/2×14S, 81/2×11S, 11×17S
6. Select [1Side] (only front side) or [Front Side] (only back side) and press the Start key.
7. Check the image of the output test pattern.
   - If the image is not acceptable, adjust the settings and output the test pattern again.

Test Pattern in User Paper Settings

- The printable test pattern for user paper settings is provided to ease determining the most appropriate 2nd image transfer output value when customizing user paper.
- The test pattern outputs a pattern for Standard value A (2nd image transfer output control) according to the 2nd image transfer fine adjustment setting range. (Every two steps)



- Refer to the printed pattern, and select the 2nd image transfer fine adjustment setting.

10.17 Coverage Rate Screen

- To set whether or not to display a coverage rate on the sales counter screen and sales counter list.
- Coverage Counter instead of Coverage Rate is displayed when Switch No. 206 is set to [00000001] at Bit assignment/[01] at HEX assignment in [Service Mode] -> [System 2] -> [Software Switch Setting].

Setting value	Default setting
Display	
Do Not Display	○

10.18 JAM Code Display Setting

- To set whether or not to add a jam code to a jam warning display on the control panel when a jam occurs.

Setting value	Default setting
Display	
Do Not Display	○

10.19 Purge Setting

- When a finisher equipped with a horizontal transport unit is mounted, set whether to use the reverse roller to discharge paper remained in the machine when a paper jam occurs in the transport path downstream from the exit port (inside the finisher equipped with the horizontal transport unit).
- When [Yes] is selected, paper remained in the machine when a paper jam occurs will be discharged into the horizontal transport unit.

Setting value	Default setting
Yes	○
No	

10.20 Import Config. Data

10.20.1 BootUp Screen

- To customize the BootUp Screen displayed upon machine start-up.
- Use this feature when changing the Konica Minolta logo displayed on the control panel upon start-up for client's intended use of the machine.

NOTE

- **In the following conditions, import of BootUp Screen data is prohibited.**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] is set to [Restrict].**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] -> [Detail Setting] -> [External Memory(Service)] is set to [Restrict].**
  - **[Administrator] -> [Security] -> [Enhanced Security Mode] is set to "ON".**

Preparation of registrable image data

Specifications of registrable image data

Items	Contents
Image format	PNG format
File extension	".bin" or ".zip"
FileName	BootUpScreen*.bin or BootUpScreen*.zip (* represents user-defined text)
Image size	1024 x 600 dots (When the size of the control panel is 10.1-inch) 800 x 480 dots (When the size of the control panel is 7-inch)
Color	256 colors (Palette that the machine specifies is used.)

<Procedure>

1. Using the dedicated image creation tool to create the image data satisfying the specifications mentioned above.
2. To create a data as a zip format file, compress the bin file of the same name (image data) and the Version.txt file (version information) in one zip file.
   NOTE
   - **Character type usable in version information is limited to ASCII (7-bit ASCII). Text strings of up to 21 characters can be used.**
3. Save the created data in the root directory of the USB memory.

NOTE
- **Be careful that the machine is unable to recognize data saved in any directories other than the root directory.**

Procedure of data import
1. Connect the USB memory to the USB port of the machine.
2. Touch [Import Config. Data] -> [BootUp Screen].
3. Touch [Set].
   NOTE
   - **If a USB memory is not connected or a nonconforming USB memory is connected, “USB NG” is displayed and logo data cannot be registered.**
   - **If the file name of registrable image data does not conform to the above specifications, "File NG" message is displayed and the data cannot be registered.**
4. Check result “OK” is displayed and touch [END].
   NOTE
   - **If logo data is already registered, new logo data overwrites the existing logo data.**
   - **The color of logo data may look different between the machine control panel and some PC screens. After registering logo data, restart the machine and check the color of the logo data on the BootUp screen.**
   - **To delete registered data, touch [Delete] and make sure that "OK" appears.**

10.20.2 Machine Image

- To customize the exterior view of the machine displayed on the control panel.
- Use this function to change the exterior view of the machine displayed on the control panel to the exterior view of the customer business office according to the user's need.
- Check the version of the installed exterior view data. (When the USB memory is not connected)

NOTE
- **In the following conditions, import of BootUp Screen data is prohibited.**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] is set to [Restrict].**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] -> [Detail Setting] -> [External Memory(Service)] is set to [Restrict].**
  - **[Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON”.**

<Procedure>
1. Save the exterior view data in the root directory of the USB memory.
   NOTE
   - **Be careful that the machine is unable to recognize data saved in any directories other than the root directory.**
2. Connect the USB memory to the USB port of the machine.
3. Touch [Import Config. Data] -> [Machine Image].
4. Touch [Set].
5. Check result “OK” is displayed.
6. Turn OFF and ON the main power switch.
   NOTE
   - **Any exterior view data that has previously been registered will be overwritten by subsequent new data as it is registered.**
   - **To delete registered data, touch [Delete] and make sure that "OK" appears.**

10.20.3 Custom Auth. Setting

- To install the authentication customize data used to customize the authentication process.

NOTE
- **Only when one of the following conditions is met, the authentication customize data can be imported.**
  - **A USB memory is inserted in the USB port.**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] -> [Detail Setting] -> [External Memory(Service)] -> [Storage data backup] is set to [ON].**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] -> [Detail Setting] -> [External Memory(Service)] -> [Firmware Update Parameters] is set to [Allow].**
  - **[Administrator] -> [Security] -> [Enhanced Security Mode] is set to “OFF.”**

<Procedure>
1. Save the authentication customization data in the root directory of a USB memory.
   NOTE
   - **Be careful that the MFP is unable to recognize data saved in any directories other than the root directory.**
2. Connect the USB memory to the USB port of the machine.
3. Touch [Import Config. Data] -> [Custom Auth. Setting].
4. Touch [Set].
5. Check result “OK” is displayed.
6. Turn OFF and ON the main power switch.
   NOTE
   - **The new data will overwrite any existing authentication customization data.**
   - **To delete registered data, touch [Delete] and make sure that "OK" appears.**

10.21 Install Data

- To install voice data, movie data, OCR dictionary data, PDF/A font, or IPFAX(SIP) data into the main body.
- Selection of [OEM] makes customization of driver name, etc. possible by writing the OEM extended character string in the firmware package and downloading it.

NOTE
- **In the following conditions, import of data is prohibited.**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] is set to [Restrict].**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] -> [Detail Setting] -> [External Memory(Service)] is set to [Restrict].**
  - **[Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON.”**

- **To create PDF/A-compliant PDF files where voice guidance function, OCR function and PDF/A font is used, supportable i-Option must be enabled.**
- **To install the voice guidance, check if [Administrator] -> [System Settings] -> [Voice Guidance Settings] -> [Voice Guidance] is set to "Yes".**
- **To use IPFAX(SIP), supportable i-Option must be enabled.**

<Procedure>

1. Save installation data (*.tar) into the root directory of a USB memory device.
2. Connect the USB memory device to the machine USB port.
3. Touch [Install Data].
4. Select the type of the data to be installed.
   - You can select multiple types of data at a time and install them.
5. Touch [Set].
6. Press the Start key to install the data.
7. Check result "OK" is displayed and touch [END].

NOTE

- **If data is already installed, it is necessary to delete old data before installing new one.**
- *** To delete registered data, select the data to be deleted, and touch [Delete] -> [Fix]. Check result "OK" is displayed.**

10.22 Local Interface Kit Setting

- To set whether to enable or disable the Bluetooth function.
- Use this setting upon set-up of the optional local interface kit.

Setting value	Default setting
Set	
Unset	○

10.23 CIS Image Adjustment

- To compensate colors so that the brightness, saturation, and hue of the back side image data (CIS image scanning quality) become consistent with those of the front side image data.
- It will be used only when dual scan document feeder is mounted.

Setting item	Contents	Setting range	Default setting
Brightness	Increase in the positive (+) direction makes the data brighter (paler) and increase in the negative (-) direction makes the data darker (deeper).	-3 to +3 (step: 1)	0
Saturation	Increase in the positive (+) direction makes the data clearer and increase in the negative (-) direction makes the data more subdued.	-3 to +3 (step: 1)	0
Hue	Increase in the positive (+) direction processes and outputs the data in the way that corresponds to the clockwise rotation on the hue circle. Increase in the negative (-) direction processes and outputs the data in the way that corresponds to the counterclockwise rotation on the hue circle.	-3 to +3 (step: 1)	0

<Procedure>

1. Select [Brightness], [Saturation] or [Hue].
2. Enter the new setting from the [+] / [-] key.
3. Touch [END].

10.24 Display Eco Index

- To set whether or not to display [Power Consumption] and [CO2 Emission] in [Utility] -> [Counter] -> [Eco Info].
  NOTE
  - **The amount of power consumption displayed on the machine is an estimated value calculated from the average amount of power consumption and the operating hours of the machine, so that is not an exact power consumption value. Therefore, explain this to users before selecting the option of displaying these items.**
- To set an emission coefficient used to calculate the amount of CO2 emission.
  NOTE
  - **As the CO2 emission coefficient is different depending on the electric power provider with whom the user contracts and the user's machine use environment, the coefficient needs to be set individually.**

Setting item	Setting	Default setting
Power Savings Display Level	ON	
	OFF	○
Output Coefficient Settings	0.0001 - 0.9999	0.4166

<Procedure>

1. Explain to users that [Power Consumption] and [CO2 Emission] displayed on the machine are estimated values, and obtain their consent.
2. Select [ON] in [Power Savings Display Level].
3. Depending on the user's MFP use environment, configure [Output Coefficient Settings] using the 10-key pad.
4. Touch [END].

10.25 Internal Error. Auto Cancel

- To set whether or not to automatically reset trouble when a trouble code classified as rank B or C occurs.

Setting item	Setting value	Default setting
Rank B	Yes	○

Setting item	Setting value	Default setting
	No	
Rank C	Yes	○
	No	

<Operation when set to “Yes”>
1. When specified trouble occurs, the trouble warning screen displays for about 10 seconds the message that the trouble is automatically reset. Then automatic trouble reset is performed.
2. If the trouble reset is successful, MFP can be used.
   - If the trouble reset fails, retry is performed. (The number of retries is up to 2 times.)

10.26 Acquiring Settings

- To count frequency of use by each function and collect machine configuration information.
- This setting allows us to understand the trend in the market and the usage of MFP by collecting and counting frequency of use by each function.
- The collected information can be obtained only via CSRC and cannot be displayed on the control panel or printed.
- To send the collected information, [Administrator] -> [System Settings] -> [List/Counter] -> [Meter Count and Device Confirmation Tx Settings] must be set to “Allow.”

Setting value	Default setting
ON	○
OFF	

10.27 Driver Install

- To install/uninstall the loadable device driver.
- Used when the authentication device that needs the loadable device driver is attached.

NOTE

- **Only when one of the following conditions is met, the driver can be installed/uninstalled.**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] -> [Detail Setting] -> [External Memory(Service)] -> [Storage data backup] is set to [ON].**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] -> [Detail Setting] -> [External Memory(Service)] -> [Firmware Update Parameters] is set to [Allow].**
  - **[Administrator] -> [Security] -> [Enhanced Security Mode] is set to “OFF.”**

<Installation procedure>
1. Prepare a USB memory where only the loadable device driver directory is stored in the root directory.
   - Only one loadable device driver must be stored in the USB memory, and please do not save any other data in the USB memory. Please do not save any other data in the USB memory.
2. Connect the USB memory to the USB port of the MFP.
3. Touch [Driver Install] -> [Install].
4. Touch [Loadable Driver] and touch [Start] to install the data.
5. Check that data is normally installed from the message that appears on the control panel.
6. Touch [Reboot].
7. Remove the USB memory.

<Uninstallation procedure>
1. Touch [Driver Install] -> [Uninstall].
2. Select a driver to be uninstalled.
3. Touch [Start] to uninstall the data.
4. Check that data is normally uninstalled from the message that appears on the control panel.
5. Touch [Reboot].

10.28 Application Change Setting

- To set whether to allow a change of the settings for the specified application start.
- If “Permit” is set, [Specified Application Start Setting] of [Administrator] -> [Network] -> [OpenAPI Setting] can be configured.

Setting value	Default setting
Permit	○
Prohibit	

10.29 Custom Pattern

- To register or delete custom patterns.
- To customize the panel display by allowing the machine to read the setting file (CPD file) that defines whether or not to display the various setting keys that appear on the control panel.

NOTE

- **In the following conditions, installation of the custom pattern is prohibited.**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] is set to [Restrict].**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] -> [Detail Setting] -> [External Memory(Service)] is set to [Restrict].**
  - **[Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON.”**

Preparing setting file (CPD file)

- When making the setting file (CPD file), use the “Panel Customization Tool.”

Operation Environment of Panel Customization Tool

Items	Contents
PC	PC-AT compatible machine
CPU	Conforms to the specifications of the operating system
Memory (RAM)	Conforms to the specifications of the operating system
HDD	100 MB or more free space is required
Display	1280 x 800 pixels or more, 24bit full color
OS	• Windows 7 Professional (SP1 or later) • 32-bit (x86) and 64-bit (x64) editions of Windows are supported.

<Create a new setting file>

1. Start up the Panel Customization Tool.
2. Set a name for your customization in [Name]. (1 to 24 characters consisting of one-byte alphanumerics and symbols. Comma cannot be used.)
3. Select a model in [Model].
4. Select a preset pattern or marketing area in [Preset]. (The number of functions displayed in the Function list below decreases in the order of Full > Standard > Basic.)
5. Select whether items should be displayed (ticked) or hidden (unticked) in [Function]. (Make this setting both in the Copy tab and the Scan/Fax tab.)
6. Save the setting file (CPD file) with one-byte alphanumerics and symbols in [Save as…].

<Edit an existing setting file>

1. Start up the Panel Customization Tool.
2. Select a model in [Model].
3. Select an existing setting file (CPD file) in [File] -> [Open].
4. Select whether items should be displayed (ticked) or hidden (unticked) in [Function].
5. Save the setting file (CPD file) with one-byte alphanumerics and symbols in [Save as…].

Importing setting file (CPD file)

1. Copy the setting file (CPD file) to the root directory of a USB memory.
2. Connect the USB memory to the USB port of the machine.
3. Touch [Custom Pattern].
4. Select [Custom Pattern 1], [Custom Pattern 2] or [Custom Pattern 3].
5. Touch [Import] to select the data to be imported.
6. Press Start Key to import the data.
7. Select the registered custom pattern in [Administrator] -> [System Settings] -> [Custom Function Pattern Selection].

NOTE

- **To delete registered data, select the target Custom Display Pattern from the [Administrator] -> [System Settings] -> [Custom Function Pattern Selection], touch [Delete] -> [Fix] and check that the result "OK" appears.**

10.30 Maintenance Mode

- The authentication procedure to log on to Administrator Settings or Service Mode is canceled during setup or setup change to thereby achieve a shorter operating time.
- The following functions are enabled.
  - The Administrator password is skipped (there is no need to enter the password)
  - The CE password is skipped. (there is no need to enter the CE password)
  - Import/export setting can be displayed even without the setting made for switch number "72" of the Software Switch Setting.
- A bar appears in the upper row of the control panel in the Maintenance Mode.

NOTE

- **To enable the maintenance mode, set [Administrator] -> [Security] -> [Security Details] -> [Maintenance Mode Access] -> to [Allow].**

Setting item	Contents	Setting value	Default setting
Maintenance Mode	Set whether to enable or disable the Maintenance Mode.	Invalid	○
		Effective	
Display language	Select the language to be displayed in the Maintenance Mode. When [Not Set] is selected, the displayed language is that valid before the machine enter the Maintenance Mode.	Not Set	○
		Display language	
Job History Clear Upon Job Completion	Set whether to erase the past job history and the job history during the Maintenance Mode.	Set	○
		Unset	

<Exiting the Maintenance Mode>

- To exit the Maintenance Mode, select [Service Mode] -> [System 2] -> [Maintenance Mode] and touch [Invalid], or touch the arrow key on the control panel and select [Yes] from the confirmation screen.

10.31 Smart Fusing Control

- Specifies whether or not to apply low power fusing control.

Setting value	Contents	Default setting
Permit	Applies low power fusing control by lowering the target temperature as much as possible in response to the single sheet data. In this way, the power consumption (TEC value) is controlled.	○
Prohibit	Controls the adjustment of the specified fusing temperature.	

10.32 Cleaning Unit Setting

- Use this feature upon the optional clean unit set-up.

Setting value	Default setting
Installed	
Not Installed	○

10.33 Auth. Function Enable

Activation

- Use to activate the advanced function after certification.

<Procedure of entering function codes manually>

1. Touch [Activation].
2. Confirm that [Function Code] is selected, and the press the [Function Code].
3. Enter the function code and touch [END].
4. Confirm the instructions on-screen and touch [Apply].

<Procedure of importing function codes via a USB device>

1. Connect the USB device that contains the functions codes to be activated.
2. Touch [Activation].
3. Confirm that [USB] is selected.

   NOTE

   - **[USB] is only displayed when a USB device that contains functions codes to be activated is connected.**
4. Confirm the instructions on-screen and touch [Apply].

List

- To display a list of currently activated functions.

11. Counter

11.1 Outline

- The counter displays the counts of various counters to allow the technical representative to check or set as necessary.

<Common procedure>

1. Call the Service Mode to the screen.
2. Touch [Counter] to show the counter menu.
3. Select the specific counter to be displayed.
4. To clear the counts of two or more counters within a group or across different groups at once, touch [Counter Reset], select the specific counters to be cleared, and touch [END]. Two or more counters can be selected. (However, the [service call], [Service Total], [Jam], and [Detail code history] counters cannot be selected.)

11.2 Life

- To check the number of hours or times each of the different maintenance parts has been used.
- To clear the count of each counter.
- To perform New Release in fusing unit and transfer belt unit.
- To check how many times maintenance parts have been used.
- When each of the maintenance parts is replaced.

<Count method of each life counter>

Counter item	Counting method
Fusing unit press times (Total)	Counts the number of press time .
Fusing unit drive time (Press)	Counts the total driving distance when pressuring.
Fusing unit drive mileage (Light press)	Counts the total driving distance when lightly pressuring.
Fusing unit drive time (Press)	Counts the total driving time when pressuring.
Fusing unit drive time (Light press)	Count the total driving time when lightly pressuring.
Fusing unit edge predetermined tmp.	Counts the total printing time when the fusing unit edge reaches the predetermined temperature.
Fusing unit edge predetermined tmp. accumul. time(In standby)	Counts the total stand-by time when the fusing unit edge reaches the predetermined temperature.
Fusing unit center predetermined tmp. accumul. time(In printing)	Counts the total printing time when the fusing unit center reaches the predetermined temperature.
Fusing unit center predetermined tmp. accumul. time(In standby)	Counts the total stand-by time when the fusing unit center reaches the predetermined temperature.
Fusing unit CD width of max. mileage	Counts the total paper feeding distance by each paper width, and shows paper width with the longest total paper feeding distance.
Fusing unit max. mileage from each CD width.	Counts the total paper feeding distance by each paper width, and shows the longest total paper feeding distance.
Fusing Unit Page Count	Counts how many sheets have been ejected. The counter of paper length increases by 1 per every 216 mm and shows the total count. For the paper with the paper length less than 216 mm, the counter uses 216 mm as the paper length.
Transfer Belt Unit Rotation Time	Counts how many hours the transfer belt unit has turned.
Transfer Belt Unit Page Count	Counts how many sheets have been ejected. The counter of paper length increases by 1 per every 216 mm and shows the total count. For the paper with the paper length less than 216 mm, the counter uses 216 mm as the paper length.
Transfer Roller Unit	Counts how many hours the transfer roller has turned and how many sheets the transfer roller has printed. The number of prints is converted into rotation hours, and the larger one of the two values is displayed as the life counter value.
Toner Filter	Counts how many sheets have been ejected. The counter of paper length increases by 1 per every 216 mm and shows the total count. For the paper with the paper length less than 216 mm, the counter uses 216 mm as the paper length.
Drum Unit(C) Rotation Time	Not used
Drum Unit(M) Rotation Time	
Drum Unit(Y) Rotation Time	
Drum Unit(K) Rotation Time	Counts how many hours PC drum has turned.
Developing Unit(C) Print count	Not used
Developing Unit(M) Print count	
Developing Unit(Y) Print count	
Developing Unit(K) Print count	Counts how many sheets have been printed. The counter of paper length increases by 1 per every 216 mm and shows the total count. For the paper with the paper length less than 216 mm, the counter uses 216 mm as the paper length.
TCR new article detection(C)	Not used
TCR new article detection(M)	
TCR new article detection(Y)	
TCR new article detection(K)	Count the number of the replacement of the toner cartridge.
1st Feed Count	Number of sheets of paper fed from tray 1
2nd Feed Count	Number of sheets of paper fed from tray 2

Counter item	Counting method
3rd Feed Count	Number of sheets of paper fed from tray 3
4th Feed Count	Number of sheets of paper fed from tray 4
Manual Tray Feed Count	Number of sheets of paper fed from the manual bypass tray
1st Feed Retry Count	Count the frequency of paper feed retry of tray 1.
2nd Feed Retry Count	Count the frequency of paper feed retry of tray 2.
3rd Feed Retry Count	Count the frequency of paper feed retry of tray 3.
4th Feed Retry Count	Count the frequency of paper feed retry of tray 4.
Manual Tray Feed retry Count	Count the frequency of paper feed retry of manual bypass tray.
LCT Feed Retry Count	Count the frequency of paper feed retry of LCT (large capacity unit).
LCT Parts	Number of sheets of paper fed from the LCT (large capacity unit)
LCT (Built-in) Parts	Number of sheets of paper fed from the built-in LCC (large capacity cabinet)
ADF Feed	Number of sheets of original fed through the take-up section of the DF
Scan Count (Original Glass)	Count the number of reads via the original glass.
ADF Reverse	Number of sheets of original fed through the turnover unit of the DF (Only for reverse automatic document feeder)

Counter clear

- To clear the count of a counter, select the specific part and touch Clear.
- It is not possible to clear the count of the counters for the fusing unit, transfer belt unit, drum unit, developing unit, and TCR new article detection.

New Release

- After replacing a fusing unit or transfer belt unit, perform New Release to clear its life counter.

<Procedure>

1. Touch [New Release].
2. Open the front door or the lower front door.
3. Select a unit where New Release is made.
4. Press the Start key and perform New Release.

New Release Disable mode

- To enable a unit that is used temporarily for troubleshooting to be used again as a new unit in another machine, the New Release Disable mode is provided.
- Applicable units are the following units that have the new unit detection feature.
  - Drum unit, developing unit
- See the “Notes when using the New Release Disable mode” for the method of enabling the New Release Disable mode.

11.3 Service Call

- To count and display how many times trouble has been detected on a trouble type basis.
- Use this feature to check how many times trouble has occurred.

NOTE

- **In the service call counter list, “Reboot” shows how many times abort code (C-FXXX) has occurred.**

11.4 Section Service Call

- To count and display how many times trouble has been detected during a certain period, i.e. an interval between service visits, on a trouble type basis.
- Use this feature to check how many times trouble has occurred in a certain period, i.e. an interval between service visits.
- By clearing the counter at the time of visit to your customer, i.e. service visit, you can check how many times trouble has occurred since the previous visit. To reset the counter, use [Counter Reset].

NOTE

- **In the zone service call list, “Reboot” shows how many times abort code (C-FXXX) has occurred.**

11.5 Warning

- To count and display how many times malfunction code has been detected on a malfunction code type basis.
- To clear of count value.
- To check the number of warning conditions detected according to the warming type.

<Procedure>

1. To clear the count of a counter, select the specific part and touch Clear.
2. If a counter is cleared mistakenly, touch Interrupt which will undo the clearing operation.

11.6 Maintenance

- To set a count value for maintenance of any given part.
- When any given part is replaced.

<Procedure (Maint.-Set)>

1. Touch [Maint.-set] and enter the maintenance counter value from the 10-key pad.

<Procedure (Maint.-Count)>

1. Touch [Maint.-Count]. And touch Clear will clear the count and set the Count Start Day to the current date.
2. The number of sheets that have been ejected is counted up. (1 sided: 1 count, 2 sided: 2 count)
3. Touch Clear will clear the count.

11.7 Service Total

- Use to check the total number of printed pages including the ones printed by the Service Mode.
  - Total number of printed pages: No. of pages printed by user mode and Service Mode.
- To display the count value for the service total counter.
- To display the count value for service total counter of each paper size.

Display item	
Total	Service Total, Service Total(Duplex)
Paper Size 1	SRA3, A3, A4, A4S, A5, A6, B4, B5, B5S, B6, Postcard, 12×18, 11×17, $8^1/_2$×14, $8^1/_2$×11, $8^1/_2$×11S, $7^1/_4$×$10^1/_2$, $5^1/_2$×$8^1/_2$, 4×6, Foolscap
Paper Size 2	8K, 16K, Banner Paper, Others

11.8 Counter Of Each Mode

- To display the printed pages in the following specified modes; copy, printer, scanner, and fax. It also displays the count value of using the specified mode.

Items	Contents
Copy/Print/Scanner counter	Displays individual counts in copy, printer, and scan mode.
Fax-related counter	Displays individual counts in fax mode.
Counter by finishing option	Displays individual counts on a finishing option basis.
Stabilization counter	Displays individual counts on a basis of the factors that cause image stabilization. The counter helps to understand what causes image stabilization and how to improve image stabilization control.
P/J counter	Job modes of jobs processed by the main unit are classified and labeled using count values 1P/J, 2P/J, ..., 10P/J, 11P/J, and so on. The counter is used to understand how the machine has been used in the field.

11.9 Service Call History (Data)

- To display the trouble history in chronological order.
- Display the latest 50 trouble codes.

11.10 ADF Paper Pages

- To display the number of sheets and mixed originals fed to the automatic document feeder.

11.11 Paper Jam History

- To display the jam history in chronological order.

NOTE

- **[Code] displayed on the screen of JAM history indicates JAM code. For details of JAM code, see "List of the JAM code."**

11.12 Fax Connection Error

- To display the number of fax transmission errors occurred.

11.13 ADF Scan Glass Contamin. Counter

- To display the average number of detected stain on the DF original glass (front side)/CIS glass (back side) at the pre-detection.
- Split line detection of CIS glass (back side) is available only when dual scan document feeder is mounted.
- To clear each counter value, select the items to be cleared, and touch Clear.

Counter item	Contents
Pre-detection size (Front Side)	Small-sized detected stain divided by the number of times pre-detection is practiced (average number of detected lines) will be displayed.
Pre-detection small size (Back Side)	Small-sized detected stain divided by the number of times pre-detection is practiced (average number of detected lines) will be displayed.
Cleaning brush rotation count (Front Side)	Total rotation count is displayed by counting 1 per one rotation of cleaning brush.
Cleaning brush rotation count (Back Side)	Total rotation count is displayed by counting 1 per one rotation of cleaning brush.

11.14 Parts Counter (Fixed)

- When the optional finisher is mounted, the parts counter screen displays the relevant parts and their counts.
- When the relevant parts are replaced, their counters need to be reset to update the service history.

NOTE

- **It will be displayed only when the optional finisher is mounted.**

<Procedure>

1. Check the parts counter or display the relevant part of which counter will be reset.
2. Check the part count. To reset the count value, touch the key of the part where the counter is reset. Touch the Clear key.

11.14.1 Fixed parts to be counted

No.	CSRC parameter	Parts name		Parts No.	Limit value	Count condition	FS-539/ FS-539SD	FS-540/ FS-540SD
001	22	FNS 2-Staple Stapler		A3EP5601	300,000	1 count for each sheet ejection in both 1 staple and 2 staple mode	○	-
				AAR57200	500,000		-	○
002	23	FNS Center Staple & Fold Stapler		A3ER9293	200,000	1 count for each sheet ejection in both 1 staple and 2 staple mode	○	○
003	3A	Stacker Accessory Plate Movement Motor		A87HPPA9	3,000,000	1 count for each sheet ejection in front 1 staple, rear 1 staple, 2 staples in sort staple mode as well as shift sort mode	-	○
004	26	FNS 1st Mid Fold Knife Motor		A3ERPP4S	2,000,000	1 count for each sheet ejection in half-fold, saddle stitch, and tri-fold mode	○	○
005	56	FNS 2nd Mid Fold Knife Motor		A3ERPP5R	2,000,000	1 count for each sheet ejection in tri-fold mode	○	○
006	34	FNS Output roller/A		A87HPPA6	2,000,000	1 count for each sheet ejection to the FNS main tray. 1 count for each sheet ejection in staple mode	-	○
007	57	FNS FD Alignment Roller		A2YUPPG0/4	1,000,000	-	-	-
008	29	PI sheet paper feed clutch (Upper)		13QN8201	1,000,000	1 count for each sheet fed from the PI upper tray	-	○
009	2A	PI sending Roller Pair/A (Upper)		50BA-574	200,000		-	○
010	2B	PI sending Roller Pair/B (Upper)		13QN-575	100,000		-	○
011	2C	PI Reversal Rubber Pair (Upper)		13QN-443	100,000		-	○
012	2D	PI Torque Limiter (Upper)		13QN4073	600,000		-	○
013	3C	PI Tray Up/Down Motor (Up)		12GQ8002	1,000,000	1 count for each job where paper is fed from the PI upper tray	-	○
014	2E	PI sheet paper feed clutch (Lower)		13QN8201	1,000,000	1 count for each sheet fed from the PI lower tray	-	○
015	2F	PI sending Roller Pair/A (Lower)		50BA-574	200,000		-	○
016	30	PI sending Roller Pair/B (Lower)		50BA-575	100,000		-	○
017	31	PI Reversal Rubber Pair (Lower)		13QN-443	100,000		-	○
018	32	PI Torque Limiter (Lower)		13QN4073	600,000	1 count for each sheet fed from the PI lower tray	-	○
019	3D	PI Tray Up/Down Motor (Down)		12GQ8002	1,000,000	1 count for each job where paper is fed from the PI lower tray	-	○
020	33	PI Regist		13QN8201	1,000,000	1 count each time a sheet is ejected from PI	-	○
021	3B	Punch Drive Motor		A4JUM101	1,000,000	Number of sheets ejected in punch mode	○	○
022	37	PK Counter	2-Holes	AC289121	1,000,000	Number of punch kit punching	○	-
				ACF5PP13			-	○
			2-Holes/3-Holes	AC289122			○	-
				ACF5PP14			-	○
			2-Holes/4-Holes	AC289123			○	-
				ACF5PP15			-	○
			SWE4 holes	AC289124			○	-
				ACF5PP16			-	○
023	38	Punch scrap transportation motor pair		12GQ-417	1,000,000	-	-	-
024	39	Punch clutch		13NKK001	1,000,000	-	-	-

11.15 Jam

- To count and display how many times jam has been detected on a jam location basis.

11.16 Section JAM

- To count and display how many times jam has been detected in a certain period, i.e. an interval between service visits, on a jam location basis.
- Use this feature to check how many times jam has occurred in a certain period, i.e. an interval between service visits.
- By clearing the jam counter at the time of visit to your customer site, i.e. service visit, you can check how many times jam has occurred since the previous visit.
  To reset the counter, use [Counter Reset].

11.17 Instantaneous Power Failure

- To display the latest 10 power shutdown events during operation of this machine in time axis.
- To reset the counter, use [Counter Reset].

11.18 Detail code history

- To display up to 250 detailed codes of the trouble code FA14 (thread soft error) and E301 by “Time series order”, “Monthly occurrence” or “Detailed Code Differentiator”.

11.19 Recoverable error counter

- To count the detected network error and an error that can be recovered with a function via the network by each root cause.
- To reset the counter.

NOTE

- **This function is displayed only when touching [Counter Reset].**
- **Check the detailed codes of this function as shown below.**
  - **Check with the Machine Management List which is output by setting [Service Mode] -> [List Output] -> [USB save].**
  - **Check the count of network error using CSRC.**

12. List Output

12.1 Individual list print output

- Output the selected list data on the paper.
- You can select multiple lists. However, only items displayed on the same screen can be selected at a time.
- To be used at the end of setup or when a trouble occurs.
- The output time, day and date will also be printed.

List item		Contents
Machine Management List		To produce an output of a list of setting values, adjustment values, total counter values, and others. To produce an output of a list of Software Switch Setting.
Adjustments List		To output the adjustment list for machine adjustment, process adjustment, etc. in Service Mode.
Parameter List		Output a nonvolatile parameter list.
Service Parameter		Output a FAX Service Mode set value list.
Protocol Trace	Last	The facsimile protocol of the communication which was executed previously is output.
	Error	Output the facsimile procedure for the last error communication.
Fax Setting List		Output a FAX user set value list. (Items vary depending on models.)
Fax Analysis List		Following list is output. • Parameter List • Machine Management List • Protocol Trace List (Error) • Fax Setting List • Activity Report • Service Parameter List

NOTICE
- When performing Machine Management List output, a detail code history list will be output. This [Detail code] is set to analyze the cause of the C-FA14 error or the C-E301 error. The refer, to send inquiries to KM, also send the “detail code history list”.

<Procedure>
1. Load the A4S/A4 or 8 1/2 x 11S/8 1/2 x 11 plain paper to a paper source.
2. Select the List item to be output.
3. Select [1-Sided] or [2-Sided].
4. Press the Start key, which will let the machine produce the list.
   NOTE
   - **If no item is selected, the Start key has no response.**

12.2 Batch list CSV output

- This setting only appears when the following conditions are satisfied.
  - [Detail Settings] is selected under [Administrator] -> [Security] -> [USB Connection Permission setting].
  - [ON] is selected under [Administrator] -> [Security] -> [USB Connection Permission setting] -> [External Memory (Service)].
  - [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “OFF.”
- To save various lists data into a USB memory device all together with the CSV format.
- Various list data has its file name in accordance with the following file name rule.
  - [2-digit data symbol that corresponds to each list (see the following table) + [_(underscore)] + [13-digit serial number] + [6-digit date (year, month, and day)] + [2-digit hour] + [2-digit minute].csv
- Compared to output to paper, outputting various lists data to the USB memory device can save time, paper, and toner. With the output data, analyzing the machine statistically becomes easier.

List of all lists data

Target list	Data symbol
Machine Management List	S1
Adjustments List	S2
Parameter List	S3
Service Parameter	S4
Protocol Trace List	S5
Fax Setting List	S6
Network Error Counter List	S7
FAX Activity Report	S8
Management List	A1
Paper Size/Type Counter	A2
Network Settings List	A3
Configuration Page	U1
PCL Font List	U2
PS Font List	U3
Meter Count	C1

<Procedure>
1. Insert the USB memory device to the USB port (for user).
2. Touch [USB save] displayed in the Batch List CSV Output.
3. Press the Start key, the list data are transferred to the USB memory device.

4. Confirm that “OK” is displayed as the result of data saving.

13. State Confirmation

13.1 Sensor Check

- To display the states of the input ports of sensors and switches when the machine remains stationary.
- Used for troubleshooting when a malfunction or a misfeed occurs.
- The operation of each of the switches and sensors can be checked on a real-time basis.
- It can be checked as long as the 5-V power line remains intact even when a door is open.

NOTE

- **Depending on options mounted in the MFP, the sensor check screens to be displayed may vary.**

<Procedure>

1. Select the sensor check screen contains target electrical parts.
2. Change the state of the electrical parts.
3. Check the sensor check screen display.

13.1.1 bizhub 750i

Sensor Monitor 1

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
Paper feed tray 1	Paper empty	Tray 1 paper empty sensor	PS24	Paper not present	Paper present
	Paper Near Empty	Tray 1 paper near empty sensor	PS11	Near empty	Other than near empty
	Paper feed	Tray 1 paper feed sensor	PS23	Paper present	Paper not present
	Upper Limit of Lift-up	Tray 1 upper limit sensor	PS25	At raised position	Not at raised position
Paper feed tray 2	Paper empty	Tray 2 paper empty sensor	PS21	Paper not present	Paper present
	Paper Near Empty	Tray 2 paper near empty sensor	PS12	Near empty	Other than near empty
	Vertical transport	Tray 2 vertical transport sensor	PS19	Paper present	Paper not present
	Paper feed	Tray 2 paper feed sensor	PS20	Paper present	Paper not present
	Upper Limit of Lift-up	Tray 2 upper limit sensor	PS22	At raised position	Not at raised position
Paper feed tray 3	Device detection	Tray 3 Set Sensor	PS155	Set	Unset
	Paper empty	Tray 3 paper empty sensor	PS154	Paper not present	Paper present
	Paper Near Empty	Tray 3 paper near empty sensor	PS155	Near empty	Other than near empty
	Vertical transport	Tray 3 vertical transport sensor	PS153	Paper present	Paper not present
	Paper feed	Tray 3 paper feed sensor	PS152	Paper present	Paper not present
	Upper Limit of Lift-up	Tray 3 upper limit sensor	PS156	At raised position	Not at raised position
Paper feed tray 4	Device detection	Tray 3 Set Sensor	PS165	Set	Unset
	Paper empty	Tray 4 paper empty sensor	PS164	Paper not present	Paper present
	Paper Near Empty	Tray 4 paper near empty sensor	PS165	Near empty	Other than near empty
	Vertical transport	Tray 4 vertical transport sensor	PS163	Paper present	Paper not present
	Paper feed	Tray 4 paper feed sensor	PS162	Paper present	Paper not present
	Lift Up Limit	Tray 4 upper limit sensor	PS166	At raised position	Not at raised position
Manual	Bypass Length Sensor 1	Bypass tray FD paper size sensor/1	PS28	Paper present	Paper not present
	Bypass Length Sensor 2	Bypass tray FD paper size sensor/2	PS29	Paper present	Paper not present
	Push up Position	Bypass tray lift-up position sensor	PS26	Paper feed position	Standby position
	Paper empty	Bypass tray paper empty sensor	PS27	Paper not present	Paper present
Tray 3/4	Intermediate Front Roller Sensor	Intermediate Roller Front Sensor	PS153	Paper present	Paper not present
	Horizontal transport sensor	Horizontal transport sensor	PS158	Paper present	Paper not present
	Reg. roller front sensor	Registration sensor/1	PS1	Paper present	Paper not present
	Paper exit	Paper exit sensor	PS3	Paper present	Paper not present
	Fusing Loop Detect	Fusing loop sensor	PS2	Loop present	Loop not present
	Registration sensor 2	Registration sensor/2	PS72	Paper present	Paper not present
	Paper width sensor (front)	Feeding paper size sensor/1	PS50	Paper present	Paper not present
	Paper width sensor (back)	Feeding paper size sensor/2	PS51	Paper present	Paper not present

Sensor Monitor 2

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
LCT	Paper feed	LU paper feed sensor	PS3	Paper present	Paper not present
	LCT detection	LCT identification signal	-	Set	Unset
	Paper empty	LU paper empty sensor	PS4	Paper not present	Paper present

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
	Tray set sensor	LU set sensor	PS1	Set	Out of position
	Upper Limit Sensor	LU upper limit sensor	PS2	At raised position (Blocked)	Not at raised position (Unblocked)
	Paper Near Empty 1	LU paper near empty sensor/1	PS5	Near empty	Unblocked
	Paper Near Empty 2	LU paper near empty sensor/2	PS6	Near empty	Unblocked
	Upper Door	LU door switch	MS1	Closed	Open

Sensor Monitor 3

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
Duplex	Paper passage 1	ADU paper passage sensor/1	PS40	Paper present	Paper not present
	Paper passage 2	ADU paper passage sensor/2	PS41	Paper present	Paper not present
Waste toner	Waste toner full	Waste toner full sensor	PS101	Blocked	Unblocked
Fusing	Roller Retraction	Fusing pressure home sensor	PS38	Not released	Released
Transfer belt	Retraction	1st transfer pressure sensor	PS39	Not released	Released

Sensor Monitor 4

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
Scanner	Home Sensor	Scanner home sensor	PS201	At home	Out of home
	Home sensor opposite board	Document reading glass cleaning sensor	PS13/ PS12	At home	Not at home
Org. Detecting Sensor	Original Cover	Original cover sensor	RS201	Closed	Open
	20 Degree	Angle sensor	PS202	Less than 14.5 degree	14.5 degree or more
	Original Size Detection 1	Original size sensor/1	PS204	Original loaded Not mounted	Original not loaded
	Original Size Detection 2	Original size sensor/2	PS205	Original loaded Not mounted	Original not loaded
	Original Size Detection 3	Not used	-	-	-
	Original Size Detection 4	Not used	-	-	-
	Original Size Detection 5	Not used	-	-	-
	Original Size Detection 6	Not used	-	-	-
	Original Size Detection 7	Not used	-	-	-
	Original Size Detection 8	Not used	-	-	-

13.1.2 FS-539/FS-539SD

- It will be displayed when FS-539/FS-539SD is mounted.

Finisher 1

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
Finisher 1	Roller Casing Pressure Isolate Sensor	Receiving roller retraction sensor	PS11	Not released	Released
	Paper Delivery Control	Paper delivery control home sensor	PS28	At home	Not at home
	diverter home sensor	Route change gate home sensor	PS30	At home	Not at home
	Gripper Position Detection	Gripper position sensor	PS19	Middle position	Except for middle position
	Gripper Home Position Detection	Gripper home sensor	PS18	At home	Not at home
	Trail Edge Stopper Position Detect	Pre-eject away sensor	PS22	Paper exit position	Except for paper exit position
	Trail Edge Stopper Home Position	Pre-eject home sensor	PS21	At home	Not at home
	Upper Paddle Home Position Detection	Upper paddle home sensor	PS14	At home	Not at home
	FNS Entrance	FNS entrance sensor	PS4	Paper present	Paper not present
	Main Tray Output	Main tray exit sensor	PS16	Paper present	Paper not present
	Saddle Output	Saddle exit sensor	PS5	Paper present	Paper not present

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
	Sub Tray Output	Sub tray exit sensor	PS8	Paper present	Paper not present
	Hole-Punch Scrap Full Detection	Punch dust full sensor (out/in)	PS4/PS5	Full	Other than full
	Punch Home	Punch home sensor	PS1	At home	Not at home
	Punch Position	Punch position sensor	PS2	At home	Not at home
	RU Cover Open/Close Detection	RU cover open/close detection sensor	PS3	Open	Closed
	RU Entrance	RU entrance sensor	PS2	Paper present	Paper not present
	Stapler 45° Rear sensor	Corner staple position sensor/Rr	PS23	Staple position	Except for staple position
	Stapler Position Home (Back)	Stapler center position sensor	PS24	Middle position	Except for middle position
	Stapler Head Home	-	-	At home	Not at home
	Stapler Head Low	Staple empty sensor	-	Staple present	Staple not present
	Staple Head Ready	-	-	Staple available	Staple unavailable

Finisher 2

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
Finisher 2	Alignment Plate F Home	Alignment plate/ Fr home sensor	PS12	At home	Not at home
	Alignment Plate R Home	Alignment plate/ Rr home sensor	PS13	At home	Not at home
	Main Tray Beam	Main tray upper sensor (out/in)	PS6/PS7	Paper present	Paper not present
	Main Tray Full Detection	Main tray full detection sensor	PS29	Full	Other than full
	Main Tray Surface Detection/ F	Main tray upper position sensor/Fr	PS27	Upper position	Other than upper position
	Main Tray Surface Detection/ R	Main tray upper position sensor/Rr	PS26	Upper position	Other than upper position
	Sub Tray Full Detection	Sub tray full sensor	PS38	Full	Other than full
	Upper Cover Open/Close Detection	Upper cover door open/close detection sensor	PS32	Open	Closed
	Front Door Open	Front door open detect switch/ Front door open/close detection sensor	SW1/ PS37	Open	Closed
	Main Tray Upper Limit Detection	Main tray empty sensor	PS39	Upper position	Other than upper position
	Trail Edge Stopper Home	Trail edge stopper home sensor	PS20	At home	Not at home
	Empty Booklet Tray Detection	Booklet tray empty detection sensor (in/out)	PS113/ PS114	Paper present	Paper not present
	Staple Stacker Paper Detection	Alignment tray paper detection sensor	PS31	Paper present	Paper not present
	stapler div1 sensor	-	-	Side-staple staple position	Except for side-staple staple position

Finisher 3

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
Finisher 3	Stopper Home	Stopper home sensor	PS106	At home	Not at home
	Center Staple/Fold Home	-	-	At home	Not at home
	Needling Empty Detection (Back)	Staple switch	-	Staple present	Staple not present
	Needling Empty Detection (Front)	Staple switch	-	Staple present	Staple not present
	Center Fold Knife Home	Center fold knife home sensor	PS108	At home	Not at home
	Guide Home	Guide home sensor	PS107	At home	Not at home
	Exchange Folded Paper Output	Tri-folding gate home sensor	PS111	At home	Not at home
	Adjustment Home	Alignment home sensor	PS104	At home	Not at home
	Paddle Home	Paddle home sensor	PS105	At home	Not at home
	Saddle Entrance	SD entrance sensor	PS101	Paper present	Paper not present

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
	Center Staple/Fold Stacker Paper Detect	Center staple/fold stacker paper detect sensor	PS103	Paper present	Paper not present
	Fold Output	Fold exit sensor	PS112	Paper present	Paper not present
	Curl Cover Detection	Curl cover detection sensor	PS102	Not at home	At home
	Stapler 45° Front sensor	Corner staple position sensor/Fr	PS34	Front 45° staple position	Except for front 45° staple position
	Stapler flat limit sensor	Flat staple position sensor/Rr	PS33	At limit	Not at limit
	Manual staple sensor	Stapler home sensor	PS35	Manual staple position	Except for manual staple position
	Manual staple paper sensor	Manual staple sensor	PS36	Paper present	Paper not present
	Main tray intermediate	Main tray middle position sensor	PS10	Upper middle position	Lower middle position

13.1.3 FS-540/FS-540SD

- It will be displayed when FS-540/FS-540SD is mounted.

Finisher 1

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
Finisher 1	Roller Casing Pressure Isolate Sensor	Receiving roller retraction sensor	PS22	Not retracted	Retracted
	Paper Delivery Control	Paper delivery control home sensor	PS11	At home	Not at home
	diverter home sensor	Route change gate home sensor	PS21	Paper path: Sub tray	Paper path: Main tray
	Gripper Home Position Detection	Gripper home sensor	PS3	At home	Not at home
	Trail Edge Stopper Home Position	Trail edge stopper home sensor	PS31	At home	Not at home
	Upper Paddle Home Position Detection	Upper paddle home sensor	PS25	At home	Not at home
	FNS Entrance	FNS entrance sensor	PS34	Paper present	Paper not present
	Main Tray Output	Main tray exit sensor	PS37	Paper present	Paper not present
	Saddle Output	SD discharge sensor	PS35	Paper present	Paper not present
	Sub Tray Output	Sub tray exit sensor	PS24	Paper present	Paper not present
	RU Cover Open/Close Detection	RU cover open/close detection sensor	PS3	Open	Closed
	RU Entrance	RU entrance sensor	PS2	Paper present	Paper not present
	Stapler 45° Rear sensor	Corner staple position sensor/Rr	PS19	Staple position	Except for staple position
	Stapler Position Home (Back)	Stapler center position sensor	PS20	Middle position	Except for middle position
	Stapler Head Home	-	-	At home	Not at home
	Stapler Head Low	Staple empty sensor	-	Staple present	Staple not present
	Staple Head Ready	-	-	Staple available	Staple unavailable
	Staple waste box full	-	-	Full	Other than full
	Alignment Plate F Home	Alignment plate/ Fr home sensor	PS9	At home	Not at home
	Alignment Plate R Home	Alignment plate/ Rr home sensor	PS6	At home	Not at home
	Main Tray Beam	Main tray upper sensor (out/in)	PS38/ PS40	Blocked	Unblocked
	Main Tray Full Detection	Main tray full detection sensor	PS12	Full	Other than full

Finisher 2

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
Finisher 2	Main Tray Surface Detection/ F	Main tray lift up detection sensor/ Fr	PS16	Not at home	At home
	Main Tray Surface Detection/ R	Main tray lift up detection sensor/ Rr	PS17	Not at home	At home
	Sub Tray Full Detection	Sub tray full sensor (out/in)	PS39/ PS41	Full	Other than full
	ZU main tray upper position	Upper limit sensor/1/2/3/4	PS503 PS504	Upper position	Other than upper position

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
			PS505 PS506		
	Front Door Open	Front door open detect switch/ Front door open/close detection sensor	SW1/ PS55	Open	Closed
	Main Tray Upper Limit Detection	-	-	Main tray upper position	Under main tray upper position
	Trail Edge Stopper Home	Trail edge stopper home sensor	PS31	At home	Not at home
	Empty Booklet Tray Detection	SD exit full sensor	PS135	Paper present	Paper not present
	Staple Stacker Paper Detection	Alignment tray paper detection sensor	PS32	Paper present	Paper not present
	tray main level 2 front sensor	Main tray lift down detection sensor/Fr	PS14	Not at home	At home
	tray main level 2 rear sensor	Main tray lift down detection sensor/Rr	PS15	Not at home	At home
	stack empty sensor	Main tray empty sensor	PS13	Paper not present	Paper present
	stack ready sensor	-	-	At home	Not at home
	end fence rear home sensor	Trail edge stopper sensor/Rr	PS7	At home	Not at home
	bero home sensor	Stacker plate home sensor	PS30	At home	Not at home
	bero away sensor	Stacker plate position sensor	PS29	Not at home	At home
	side-staple stapler cartridge	Staple empty detect sensor	-	Cartridge present	Cartridge not present
	stapler div1 sensor	Flat staple position sensor/Rr	PS18	Side-staple corner position	Except for side-staple corner position
	stapler div2 sensor	Corner staple position sensor/Fr	PS53	Side-staple corner position	Except for side-staple corner position

Finisher 3

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
Finisher 3	Stopper Home	Stopper home sensor	PS106	At home	Not at home
	Center Staple/Fold Home	-	-	At home	Not at home
	Needling Empty Detection (Back)	Staple switch	-	Staple present	Staple not present
	Needling Empty Detection (Front)	Staple switch	-	Staple present	Staple not present
	Center Fold Knife Home	Center fold knife home sensor	PS108	At home	Not at home
	Guide Home	Guide home sensor	PS107	At home	Not at home
	Exchange Folded Paper Output	Tri-folding gate home sensor	PS111	At home	Not at home
	Adjustment Home	Alignment home sensor	PS104	At home	Not at home
	Paddle Home	Paddle home sensor	PS105	At home	Not at home
	Saddle Entrance	SD entrance sensor	PS101	Paper present	Paper not present
	Center Staple/Fold Stacker Paper Detect	Center staple/fold stacker paper detect sensor	PS103	Paper present	Paper not present
	Fold Output	Fold exit sensor	PS112	Paper present	Paper not present
	Curl Cover Detection	Curl cover detection sensor	PS102	Not at home	At home

Finisher 4

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
Finisher 4	sm sensor	FNS middle sensor	PS36	Paper present	Paper not present
	pusher home sensor	Arm home sensor	PS26	At home	Not at home
	paddle_arm_home sensor	Paddle up/down home sensor	PS27	At home	Not at home
	tamp front mid sensor	-	-	Alignment plate/Fr center position	Except for alignment plate/Fr center position
	tamp rear mid sensor	-	-	Alignment plate/Rr center position	Except for alignment plate/Rr center position
	sd belt ready sensor	Fold exit sensor	PS112	Paper present	Paper not present

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
	sd belt full sensor	SD exit full sensor	PS135	Full	Other than full
	sd belt tray lift sensor	SD exit tray lift sensor	PS143	Lift up	Not lift up
	js exit sensor	Job tray paper exit sensor	PS402	Paper present	Paper not present
	diverter home sensor 2	Sub tray/JS route change gate home sensor	PS23	At home	Not at home
	js cover sensor	Job tray door sensor	PS401	Open	Closed
	js full sensor	Job tray full sensor	PS403	Full	Other than full
	zu chopper home sensor	Chopper home sensor	PS501	At home	Not at home
	zu guide home sensor	Guide home sensor	PS500	At home	Not at home
	zu press home sensor	Press home sensor	PS502	At home	Not at home
	pi ent sensor	PI discharge sensor	PS33	Paper present	Paper not present

Finisher 5

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
Finisher 5	punch swing drive M HP detection	Punch oscillating home sensor	PS303	At home	Not at home
	Punch Home Sensor/1	Puncher home sensor	PS307	Not at home	At home
	Punch Home Sensor/2	Punch home sensor	PS301	Not at home	At home
	Punch-Hole Scraps Box Full Detection	Punch hole scraps box full sensor	PS302	Other than full	Full
	Punch-Hole Scraps Box Install Detection	Punch scraps box set sensor	PS28	Set	Unset
	Edge detection sensor	Paper size detect board	PSDTB	Paper edge not detected	Paper edge detected
	PI Upper Tray lower limit detection	Tray lower limit sensor /Up	PS205	At lower position	Not at lower position
	PI Upper Tray upper limit detection	Tray upper limit sensor /Up	PS204	At upper position	Not at upper position
	PI Lower Tray lower limit detection	Tray lower limit sensor /Lw	PS210	At lower position	Not at lower position
	PI Lower Tray upper limit detection	Tray upper limit sensor /Lw	PS209	At upper position	Not at upper position
	PI Upper Sheet Path Detection	Paper entrance sensor /Up	PS201	Paper present	Paper not present
	PI Lower Sheet Path Detection	Paper entrance sensor /Lw	PS206	Paper present	Paper not present
	PI Upper Tray Sheet detection	Paper empty sensor /Up	PS202	Paper present	Paper not present
	PI Upper Sheet Set Detection (Middle)	Paper set sensor /Up	PS203	Paper present	Paper not present
	PI Lower Tray Sheet Detection	Paper empty sensor /Lw	PS207	Paper present	Paper not present
	PI Lower Sheet Set Detection (Middle)	Paper set sensor /Lw	PS208	Paper present	Paper not present
	PI Lower Sheet Size Detection (Large)	L size sensor /Lw	PS212	Paper present	Paper not present
	PI Door Open	Upper door open/close switch	MS205	Open	Closed
	Function select button	Post inserter manual function select button switch	-	ON	OFF
	Punch button	Post inserter manual punch button switch	-	ON	OFF
	Start/Clear button	Post inserter manual function start/ clear switch	-	ON	OFF

Finisher 6

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
Finisher 6	Stapler 45° Front sensor	Corner staple position sensor/Fr	PS53	Staple position	Except for staple position

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
	Stapler flat limit sensor	Flat staple position sensor/Rr	PS18	At home	Not at home
	Manual staple sensor	Flat staple position sensor/Fr	PS52	Staple position	Except for staple position
	Manual staple paper sensor	Manual staple sensor	PS54	Paper present	Paper not present
	Main tray intermediate	Main tray middle position sensor	PS51	Upper middle position	Lower middle position
	Staples near empty	-	-	Near empty	Other than near empty

13.2 Table Number

Vdc/ Vg

- When IDC is detected, for plain paper, Thick, and Black, the machine independently displays each Vg or Vdc output value that is calculated based on the density (toner amount stuck on the belt) of the test pattern created on the transfer belt.
- Used for troubleshooting of image problems.
  - If the value is high: In IDC detection, the image density is judged as low, thus the Vdc/ Vg value is to be adjust higher.
  - If the value is low: In IDC detection, the image density is judged as high, thus the Vdc/ Vg value is to be adjust lower.

Display item	Reference value
Vdc	Around 300 V to 500 V.
Vg	Around 400 V to 600 V.

LD Light Value

- Shows the LD light value of toner during print image formation.

Charging AC Output Value 1

- Shows the AC voltage value applied to the charging roller of toner during print image formation.

Charging AC Output Value 2

- Shows the current value applied to the charging roller of toner during print image formation.

13.3 Level History 1

- To display TCR (T/C ratio), IDC/registration sensor output values, and fusing temperature.
- Used for troubleshooting of image problems.

Display item	Contents
TCR-K	Shows the T/C output reading taken last. (*)
IDC1/IDC2	Shows the latest IDC data.
Middle heat temperature	Not used
Medium Heating Temperature	Displays the latest detected temperature of the heating roller thermistor/Ctr.
Heat edge temperature	Displays the latest detected temperature of the heating roller thermistor/Edg.
Main Heating Temperature	Displays the latest detected temperature of the heating roller temperature sensor.

- *: “Reading taken last” means
  - Density of toner of the latest image.
  - When a test pattern is produced by pressing the Start key while level history 1 is being displayed.

13.4 Level History 2

- IDC Sensor (Transfer belt bare surface level) as adjusted through the image stabilization sequence and ATVC value.
- Used for troubleshooting of image problems.

Display item	Contents
IDC Sensor Adjust 1/2	Shows the intensity adjustment value (0 to 255) of the IDC sensor. The normal value is 70, but the value increases depending on how long the machine has been used.
ATVC-K	Shows the first image transfer nearest output value. (5 to 40 µA)
ATVC-2nd	Shows the second image transfer nearest output value. (300 to 4,800 V)

13.5 Temp. /Humidity/Atmospheric Press

- Displays the temperature, humidity and atmospheric pressure in the machine.
- Used as reference information when a malfunction occurs.

Display item	Contents
Temp-Inside	0 to 80 °C in 1 °C increments
Humidity	10 to 90 % in 1 % increments
Absolute Humidity	0 to 255 in 1 increments
paper temperature	0 to 100 °C in 1 °C increments

Display item	Contents
Atmospheric Pressure	0 hPa (*)

- *: 0 hPa will be displayed when the atmospheric pressure sensor is not installed.

13.6 CCD Check

- To display the D/A value of CCD clamp/gain for R, G, and B.
- To display the D/A value of CIS clamp/gain. (Only when dual scan document feeder is mounted)
- Used for troubleshooting for the CCD sensor/CIS.

CCD Check

- CLAMP: 0 (remain static)
- GAIN: The maximum value and the minimum value of the output value should be within the range shown below.

Acceptable gain range	Minimum value	Maximum value
R	20	238
G	10	222
B	70	247

CIS Check

- It will be displayed only when dual scan document feeder is mounted.
- CLAMP: -36 to +36 (normal), 37 (abnormal) * Show the maximum value for controlling the black level of the CIS.
- GAIN: 70 to 255 * Show data themselves

13.7 Memory/Storage Adjustment

13.7.1 Memory Check

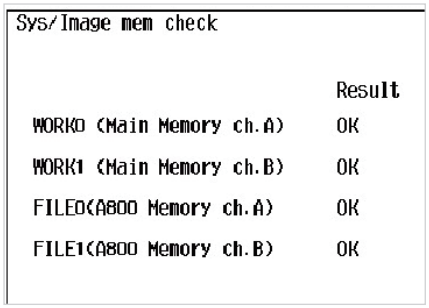
- If the copy image is faulty.
- To check correspondence of data written to and that read from memory through write/read check.
- The following shows the memory names that correspond to each memory where check is made.

Memory area	Corresponding memory
WORK0 (main memory ch.A)	CPU board (CPUB) LPDDR4 main memory ChA/B
WORK0 (main memory ch.B)	CPU board (CPUB) LPDDR4 main memory ChA/B
FILE0 (A800 memory ch.A)	A800 board (MEMB) image memory ChA
FILE0 (A800 memory ch.B)	A800 board (MEMB) image memory ChB

Rough Check

- A check is made for each memory to see if the image data reading and writing are correctly made in a very limited area.
- This sequence is performed for all memories.

Typical rough check result display: Exemplary display when all memories have been checked okay



<Rough check procedure>

1. Touch [Memory Check] -> [Rough Check].
2. Press the Start key to start the check procedure.
   NOTE
   - **The rough check procedure can be interrupted by pressing the Stop key.**
3. The progress of the check sequence is displayed in percentage. (calculated based on all checks)
4. When the rough checks of all memories are completed, the diagnosis is finished automatically, and results are shown on the screen. (OK/NG)

Detail Check

- A write check and a read check are repeated in all areas for each memory.
  NOTE
  - **For a write check, a specific write value is set and the specific value is written in all areas of the memory and the written data is thereafter read. This sequence is performed for all memories. (which forms one cycle of the check sequence)**

- **When one cycle of the check sequence is completed, the write value is changed automatically and a new check cycle is performed. This sequence is repeated with the write value changed for each sequence.**
- **Unlike the rough check, the detail check is not automatically terminated. The check cycle is repeated until the Stop key is pressed.**

• The press of the Stop key will terminate the detail check.

<Detail check procedure>

1. Touch [Memory Check] -> [Detail check].
2. Press the Start key to start the detail check procedure.
3. The progress of the check sequence is displayed in percentage. (calculated based on all checks)

   NOTE
   - **The check progress status display is 100% when one cycle of the check sequence is completed.**
   - **The check progress status display is automatically reset to 0% and restarted as soon as a new check sequence is started.**
4. When the check progress status display is 100%, the first check cycle is completed.
   • The results are displayed on the screen. (The sequence has been checked okay, if NG does not appear.)

   NOTE
   - **If a write/read error is detected, NG appears beside the memory display and the check sequence is automatically terminated.**
5. Press the Stop key at any timing to terminate the detail check procedure.

If the results are NG:

NG memory area	Solution
WORK0 (main memory ch.A)	Check the CPU board for connection or replace it with new one.
WORK0 (main memory ch.B)	Check the CPU board for connection or replace it with new one.
FILE0 (A800 memory ch.A)	Check the A800 board for connection or replace it with new one.
FILE0 (A800 memory ch.B)	Check the A800 board for connection or replace it with new one.

13.7.2 Compress / Decompression Check

• To check whether compression and decompression are carried out properly.
• If the copy image is faulty.

<Procedure>

1. Touch [Compress/Decompression Check].
2. Press the Start key to start the check procedure.
3. The check result will be displayed.

13.7.3 JPEG check

• To check whether compression and decompression are carried out properly.
• If the copy image is faulty.

Items	Contents
JPEG1	For sending scan data
JPEG2	For creating bizhubRA image

<Procedure>

1. Touch [JPEG check].
2. Press the Start key to start the check procedure.
3. The check result will be displayed.

13.7.4 Memory Bus Check

• To check to see if image data is correctly transferred from scanner to memory, and from memory to printer.
• Bus check between scanner and memory has two steps; the scanner internal check step as internal processing and the check step between scanner and memory. If either of the two steps is NG, NG1 or NG2 is displayed respectively.
• If the copy image is faulty.

<Procedure>

1. Press [Memory Bus Check].
2. Select either [Scanner -> Memory], [Memory -> PRT], or both.
3. Press the Start key to start the check procedure.
4. The check result will be displayed.

13.7.5 DSC Bus Check

• To check the connection between the DSC board and the scanner section when the optional security kit installed.
• When an error is detected after checking, NG1 or NG2 is displayed depending on the location of the board where the defect is found.

<Procedure>

1. Touch [DSC Bus Check].
2. Select “Front side”, “Back side”, or both, and touch [Scanner -> DSC].

   NOTE
   - **The DSC bus check for the back side can be performed only when dual scan document feeder is mounted.**
3. Press the Start key to start the check procedure.
4. The check result will be displayed.

13.7.6 Storage R/W Check

• To check to see if the MFP storage is connected properly, and if read/write operation of the storage is correctly performed.

<Procedure>

1. Touch [Storage R/W Check].
2. Press the Start key to start the check procedure.
3. The check result will be displayed.

13.7.7 Format

- Clear the data from the MFP storage.

NOTE

- **Data stored in the firmware space and backup space are not cleared.**
- **And after setting the HDD encryption key, the movie data, voice data, OCR dictionary data, PDF/A font, OCR font, and Unicode font need to be reinstalled as necessary since these data will be deleted by HDD format.**

Physical format

1. Touch [Format] -> [Physical Format].
2. Press the Start key to start the formatting sequence.
3. The sequence will be automatically terminated as it is completed.
4. Turn off the main power switch and turn it on again more than 10 seconds after.

NOTE

- **After termination of physical formatting, start the sequence of logical formatting.**

Logical format

1. Touch [Format] -> [Logical Format].
2. Press the Start key to start the formatting sequence.
3. The sequence will be automatically terminated as it is completed.
4. Turn off the main power switch and turn it on again more than 10 seconds after.

13.8 Memory/Storage Status

- To display the condition and amount of the memory and MFP storage.

13.9 Load Check

- To check each device (electric component) for proper condition by individually activating the load associated with the device.
- To identify faults at the time of troubleshooting.

NOTE

Take note of the following during the load check mode.

- **No malfunction is detected and no count is taken of consumables life and related items.**
- **Two or more devices (motors, clutches, solenoids, and fans) cannot be checked simultaneously.**
- **Detection of proper installation of various types of units and waste toner box does not function. During the check procedure, therefore, make sure that the unit in question is installed correctly or yet to be installed.**

<Procedure>

1. Open the front door, lower front door or the right door.
2. Touch [Start Load Check].
3. Close the door opened on step 1.
4. Referring to the load check list, enter a check code.
5. Referring to the load check list, enter a multi code.
6. Press the Start key.
   - When pressing the Start key, the specified load is activated. The Start key blinks in orange.
7. Check the load operation and output of signals.
8. Press the Stop key to stop the check operation and check the result.
   NOTE
   - **Depending on the type of load being activated, after the lapse of the specified time or after the transition to the specified state, the corresponding device automatically stops working.**
   - **When 'NG' is displayed, check the wiring and connectors.**
9. To check another load or signal output, repeat steps 4 to 8.
10. Turn OFF the main power switch and turn it ON again more than 10 seconds after.

NOTE

- **To exit from the load check mode, be sure to turn off and on the main power switch.**
  At the point when you display [Service Mode] -> [State Confirmation] -> [Load Check], the machine enters into load check mode. Regardless of whether load check is actually performed or not, the main power switch must be turned off and on to exit from load check mode.

13.9.1 Load check list

Check code	Multi code	Symbol	Load name	Operation outline	Note
20	2	CL1	Tray 2 paper feed clutch	Drives the specified clutch.	-
	3	CL7	Bypass tray paper feed clutch		-
23	1	-	Bypass tray lift-up plate elevator motor / down	Drives the transport motor in the specified direction.	The motor stops when the upper limit sensor or lower limit is detected.
	3	SD1	Bypass tray lift-up solenoid	Turns ON the solenoid.	The solenoid will stop after a lapse of predetermined time.
	4	M12	Tray 1 lift-up motor	Starts the lift-up operation.	The motor stops when the upper limit sensor or lower limit is detected.
	5	M13	Tray 2 lift-up motor		

Check code	Multi code	Symbol	Load name	Operation outline	Note
	8	M1	LU lift-up motor	Starts the lift-up operation.	• Only when LU-205 or LU-303 is mounted. • The motor stops when the upper limit sensor or lower limit is detected.
26	1	M24	Registration motor high speed	Drives the motor at the specified speed.	
	2		Registration motor middle speed		
	3		Registration motor middle/low speed		
	4		Registration motor low speed		
	5		Registration motor middle/high speed		
28	31	M22	Paper feed motor high speed	Drives the motor at the specified speed.	-
	32		Paper feed motor middle speed		
	33		Paper feed motor middle/low speed		
	34		Paper feed motor middle speed		
	35		Paper feed motor middle/high speed		
	36	M23	Tray 2 vertical transport motor high speed	Drives the motor at the specified speed.	No paper must exist on the vertical paper transport path.
	37		Tray 2 vertical transport motor middle speed		
	38		Tray 2 vertical transport motor middle/low speed		
	39		Tray 2 vertical transport motor low speed		
	40		Tray 2 vertical transport motor middle/high speed		
	41	M2	LU paper feed motor high speed	Drives the motor at the specified speed.	• Only when LU-205 or LU-303 is mounted. • The LU must not be at upper limit position.
	42		LU paper feed motor middle speed		
	43		LU paper feed motor middle/low speed		
	44		LU paper feed motor low speed		
	45		LU paper feed motor middle/high speed		
	46	M3	LU transport motor high speed	Drives the motor at the specified speed.	• Only when LU-205 or LU-303 is mounted. • No paper must exist on the vertical paper transport path.
	47		LU transport motor middle speed		
	48		LU transport motor middle/low speed		
	49		LU transport motor low speed		
	50		LU transport motor middle/high speed		
	51	M152	Transport motor high speed	Drives the motor at the specified speed.	No paper must exist on the vertical paper transport path.
	52		Transport motor middle speed		
	53		Transport motor middle/low speed		
	54		Transport motor low speed		
	55		Transport motor middle/high speed		
	56	M151	Intermediate motor high speed	Drives the motor at the specified speed.	No paper must exist on the vertical paper transport path.
	57		Intermediate motor middle speed		
	58		Intermediate motor middle/low speed		
	59		Intermediate motor low speed		
	60		Intermediate motor middle/high speed		
29	1	-	Tray 1 paper feed roller drive high speed	-	The paper lifting plate of the tray 1 must not be at upper limit position.
	2		Tray 1 paper feed roller drive middle speed		
	3		Tray 1 paper feed roller drive middle/low speed		
	4		Tray 1 paper feed roller drive low speed		
	5		Tray 1 paper feed roller drive middle/high speed		
	6	-	Tray 2 paper feed roller drive high speed	The paper feed motor and tray 2 paper feed clutch are driven.	The paper lifting plate of the tray 2 must not be at upper limit position.
	7		Tray 2 paper feed roller drive middle speed		

Check code	Multi code	Symbol	Load name	Operation outline	Note
	8		Tray 2 paper feed roller drive middle/low speed		
	9		Tray 2 paper feed roller drive low speed		
	10		Tray 2 paper feed roller drive middle/high speed		
	11	-	Tray 3 paper feed roller drive high speed	-	The paper lifting plate of the tray 3 must not be at upper limit position.
	12		Tray 3 paper feed roller drive middle speed		
	14		Tray 3 paper feed roller drive low speed		
	15		Tray 3 paper feed roller drive middle/high speed		
	16	-	Tray 4 paper feed roller drive high speed	-	The paper lifting plate of the tray 4 must not be at upper limit position.
	17		Tray 4 paper feed roller drive middle speed		
	18		Tray 4 paper feed roller drive middle/low speed		
	19		Tray 4 paper feed roller drive low speed		
	20		Tray 4 paper feed roller drive middle/high speed		
	21	-	Manual bypass paper feed roller drive high speed	The paper feed motor and manual bypass paper feed clutch are driven.	The manual bypass tray must not be at upper limit position.
	22		Manual bypass paper feed roller drive middle speed		
	23		Manual bypass paper feed roller drive middle/low speed		
	24		Manual bypass paper feed roller drive low speed		
	25		Manual bypass paper feed roller drive middle/high speed		
	31	-	Tray 2 vertical transport roller drive high speed	-	No paper must exist on the vertical paper transport path.
	32		Tray 2 vertical transport roller drive middle speed		
	33		Tray 2 vertical transport roller drive middle/ low speed		
	34		Tray 2 vertical transport roller drive low speed		
	35		Tray 2 vertical transport roller drive middle/ high speed		
	36	-	Tray 3 paper feed roller drive high speed	The transport motor and tray 3 paper feed clutch are driven.	The paper lifting plate must not be at upper limit position.
	37		Tray 3 paper feed roller drive middle speed		
	38		Tray 3 paper feed roller drive middle/low speed		
	39		Tray 3 paper feed roller drive low speed		
	40		Tray 3 paper feed roller drive middle/high speed		
	41	-	Horizontal transport roller 1 drive high speed	The transport motor and tray 3 transport clutch are driven.	The paper lifting plate must not be at upper limit position.
	42		Horizontal transport roller 1 drive middle speed		
	43		Horizontal transport roller 1 drive middle/ low speed		
	44		Horizontal transport roller 1 drive low speed		
	45		Horizontal transport roller 1 drive middle/ high speed		
	46	-	Horizontal transport roller 2 drive high speed	The transport motor and horizontal transport clutch are driven.	The paper lifting plate must not be at upper limit position.
	47		Horizontal transport roller 2 drive middle speed		
	48		Horizontal transport roller 2 drive middle/ low speed		

Check code	Multi code	Symbol	Load name	Operation outline	Note
	49		Horizontal transport roller 2 drive low speed		
	50		Horizontal transport roller 2 drive middle/ high speed		
	51	-	Tray 4 paper feed roller drive high speed	The transport motor and tray 4 paper feed clutch are driven.	The paper lifting plate must not be at upper limit position.
	52		Tray 4 paper feed roller drive middle speed		
	53		Tray 4 paper feed roller drive middle/low speed		
	54		Tray 4 paper feed roller drive low speed		
	55		Tray 4 paper feed roller drive middle/high speed		
32	1	M14	Polygon motor high speed	Drives the motor at the specified speed. Drives the PH/power supply cooling fan at the same timing.	-
	2		Polygon motor middle speed		
	3		Polygon motor middle/low speed		
	4		Polygon motor low speed		
	5		Polygon motor middle/high speed		
40	1	M1	Transport motor high speed	Drives the motor at the specified speed. **NOTE** **Perform the operation check after the drum unit/K and the transfer belt unit have been removed. (*2)**	-
	2		Transport motor middle speed		
	3		Transport motor middle/low speed		
	4		Transport motor low speed		
	5		Transport motor middle/high speed		
42	1	FM1	PH/power supply cooling fan	Drives the specified fan.	-
	2	FM4	Toner cartridge cooling fan full speed		
	3		Toner cartridge cooling fan half speed		
	8	FM11	Toner suction fan		
	9	FM8	Paper cooling fan full speed		
	10		Paper cooling fan half speed		
	12	FM17/ FM18	UFP exhaust fan		
	13	FM2	Transfer belt cleaner cooling fan full speed		
	14		Transfer belt cleaner cooling fan half speed		
	15	FM19	DV cooling fan full speed		
	16		DV cooling fan half speed		
	17	FM5	HaCS power supply cooling fan full speed		
	18		HaCS power supply cooling fan half speed		
	19	FM21/ FM22	Fusing edge cooling fan full speed		
	20		Fusing edge cooling fan half speed		
	21	FM23	Tacking fan/Fr full speed		
	22		Tacking fan/Fr half speed		
	23	FM24	Tacking fan/Rr full speed		
	24		Tacking fan/Rr half speed		
	25	FM25	Machine internal cooling fan full speed		
	26		Machine internal cooling fan half speed		
44	0	M20	Waste toner transport motor	The waste toner transport motor is driven.	-
45	1	M3	Fusing motor high speed	Drives the motor at the specified speed.	-
	2		Fusing motor low speed		
	3		Fusing motor middle/low speed		
	4		Fusing motor low speed		
	5		Fusing motor middle/high speed		
	6		Fusing motor standby speed		
	7	M11	Fusing pressure motor drive pressure	Starts the pressure/release operation of the pressure roller. **NOTE**	-
	8		Fusing pressure motor drive release		
	9		Fusing pressure motor drive full release		

Check code	Multi code	Symbol	Load name	Operation outline	Note
				Be sure to perform the release operation whenever the pressure/ release operation has been performed. (*3)	
	10	-	Fusing shutter full open	Open and close the fusing shutter.	-
	11		Fusing shutter full closed		
60	1	M1	Document feed motor: Speed 1/normal rotation	• Drives the motor at the specified speed. • Stop rotating when pressing the Stop key.	Dual scan document feeder
	2		Document feed motor: Speed 2/normal rotation		
	3		Document feed motor: Speed 3/normal rotation		
	17	M2	Document registration motor: Speed 1/ normal rotation	• Drives the motor at the specified speed. • Stop rotating when pressing the Stop key.	
	18		Document registration motor: Speed 2/ normal rotation		
	19		Document registration motor: Speed 3/ normal rotation		
	20		Document registration motor: Speed 4/ normal rotation		
	21		Document registration motor: Speed 5/ normal rotation		
	22		Document registration motor: Speed 6/ normal rotation		
	33	M3	Document reading motor: Speed 1/normal rotation	• Drives the motor at the specified speed. • Stop rotating when pressing the Stop key.	
	34		Document reading motor: Speed 2/normal rotation		
	35		Document reading motor: Speed 3/normal rotation		
	36		Document reading motor: Speed 4/normal rotation		
	49	M4	Document exit motor: Speed 1/normal rotation	• Drives the motor at the specified speed. • Stop rotating when pressing the Stop key.	
	50		Document exit motor: Speed 2/normal rotation		
	51		Document exit motor: Speed 3/normal rotation		
	52		Document exit motor: Speed 4/normal rotation		
	65	M8	Document reading glass cleaning motor normal rotation	Drives the front side cleaning motor.	
	66		Document reading glass cleaning motor reverse rotation		
	67		Document reading glass cleaning motor high-speed sweeping		
	97	M5	Document exit tray moving up	Drives the DF lift-up motor in the specified direction.	
	98		Document exit tray moving down		
	113	FM	DF cooling fan motor	Drives the specified fan.	
	129	SD1	Stamp solenoid	Turns ON the solenoid.	
	145	CL1	Document feed clutch	Turns ON the clutch.	
	161	MFDB/ TX MFDB/ RX	Multi feed detection board/TX Multi feed detection board/RX	Outputs multi feed detection signals. (Only when multi feed detection board being connected)	
	769	M7	Facing plate home detection operation	Drives the CIS cleaning motor.	
	770		Facing plate brush return operation		
	771		Facing plate high-speed rotation operation		
	785	-	Rear panel lamp turns ON	Turns OFF after 60 seconds or by pressing the Stop key.	
83	0	SD3	Exit path switch solenoid	Turns ON the solenoid.	The solenoid will stop after a lapse of predetermined time.

Check code	Multi code	Symbol	Load name	Operation outline	Note
84	1	M4	Paper exit/reverse motor normal rotation high speed	Drives the motor at the specified speed and direction.	-
	2		Paper exit/reverse motor normal rotation middle speed		
	3		Paper exit/reverse motor normal rotation middle/low speed		
	4		Paper exit/reverse motor normal rotation low speed		
	5		Paper exit/reverse motor normal rotation middle/high speed		
	6		Paper exit/reverse motor reverse rotation high speed		
	7		Paper exit/reverse motor reverse rotation middle speed		
	8		Paper exit/reverse motor reverse rotation middle/low speed		
	9		Paper exit/reverse motor reverse rotation low speed		
	10		Paper exit/reverse motor reverse rotation middle/high speed		
85	1	M5	ADU transport motor 1 high speed	Drives the motor at the specified speed.	-
	2		ADU transport motor 1 middle speed		
	3		ADU transport motor 1 middle/low speed		
	4		ADU transport motor 1 low speed		
	5		ADU transport motor 1 middle/high speed		
	6	M26	ADU transport motor 2 high speed		
	7		ADU transport motor 2 middle speed		
	8		ADU transport motor 2 middle/low speed		
	9		ADU transport motor 2 low speed		
	10		ADU transport motor 2 middle/high speed		

NOTE

- ***1: If the PC motor is energized with the 1st transfer roller in its pressed position, the transfer belt and the photoconductor drum may be damaged.**
- ***2: The cleaning blades of the drum unit/K and the transfer belt unit, if driven with no toner deposited, may be curved to warp.**
- ***3: The pressure roller, if left to stand in the pressed position, may be deformed. The drive gear may be damaged if the fusing unit is removed with the pressure roller in the pressed position.**

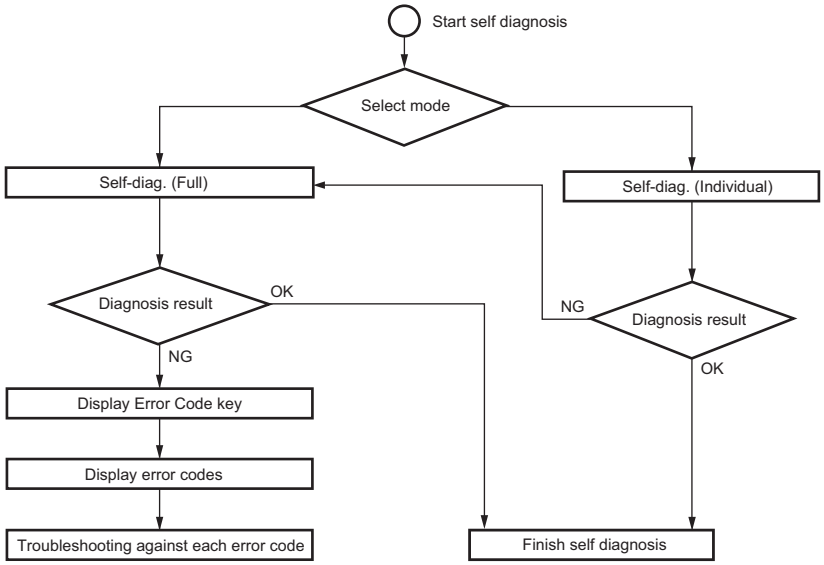
13.10 Adjustment Data List

- To display the adjustment and setting value set in the main body.

13.11 Self-diag. (Full/Individual)

13.11.1 Overview of self-diagnostic function

- Conducts diagnosis for the defective and replaced areas of memory and various boards in main body when a trouble code is output or a trouble such as main body activation failure occurs, and identifies the parts need to be replaced.
- The self-diagnostic function is divided into two functions, the “Self-diag. (Full)” function and the “Self-diag. (Individual)” function.
- “Self-diag. (Full)” diagnoses all items together, those are diagnosed individually with “Self-diag. (Individual)”, and identifies the area where trouble occurred and the parts need to be replaced. The diagnosis result is displayed as [OK] or [NG], and if [NG] is detected, the [Error Code] key will be displayed on the [Full Self Diagnostic] screen. Touch the [Error Code] key to display the [Error Code] screen.
- “Self-diag. (Individual)” diagnoses each item individually, and identifies the area where trouble occurred. The diagnosis result is displayed as [OK] or [NG].



Self-diagnostic item

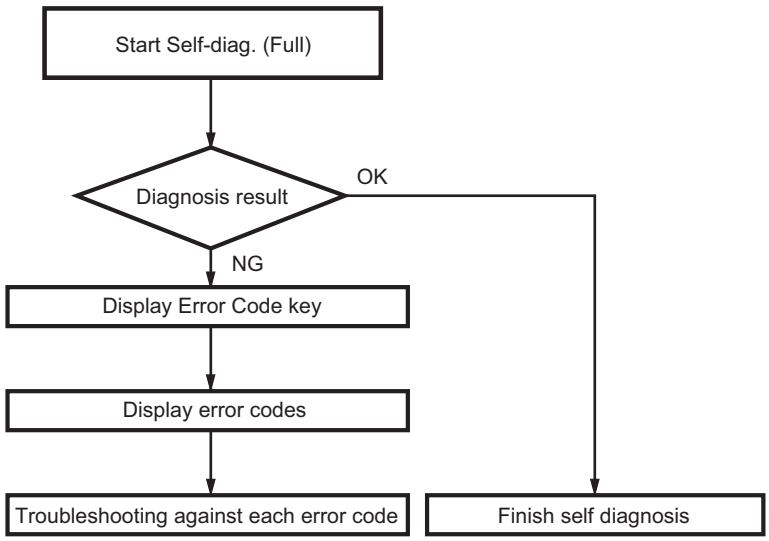
Check item	
NVMe Storage Check	Device recognition
	R/W Check
	S.M.A.R.T diag.
	MFP FW checksum
	Partition check
I2C Check	TPM
	AUDIO (Control)
	PS-CPU
I2S Check (*)	AUDIO (Voice)
Sys/Image mem check	WORK0 (Main Memory ch.A)
	WORK0 (Main Memory ch.B)
	FILE0 (A800 Memory ch.A)
	FILE0 (A800 Memory ch.B)
Various USB Check	USB Device
	Keyboard (*)
	USB Memory (*)
CCD Board Check	I/P Image Bus Check
	Line RAM comparison
CIS Board Check	I/P Image Bus Check
	Line RAM comparison
ADF Board Check	MINET communication check
A800 board Check	Compress Decompression Check
DSC Board	Image Bus Check (Front Side)
	Image Bus Check (Back Side)
FAX Board Check (*)	Line 1
	Line 2
	Line 3
	Line 4
CPU Board Check	S800 Compress/ Decompression
	S800 Output image path
	LAN-IF Ping Test (*)
PCIe Check	PCIe device check

- *: The item can be diagnosed with Self-diag. (Individual) only.

13.11.2 Self-diag. (Full)

- To diagnose all items together, those are diagnosed individually with “Self-diag. (Individual)”, and identify the area where trouble occurred and the parts need to be replaced.
- When a trouble code is displayed, by performing “Self-diag. (Full)”, troubles on the hardware device can be diagnosed.
- The diagnosis result is displayed as [OK] or [NG], and if [NG] is detected, the [Error Code] key will be displayed on the [Full Self Diagnostic] screen. Touch the [Error Code] key to display the [Error Code List] screen.

Self-diag. (Full) Flow



NOTE
- **Only displays the detected error codes.**

Diagnosis procedure
1. Display the [Self-diag. (Full)] screen.
   - Display by selecting [Service Mode] -> [State Confirmation] -> [Self-diag. (Full)].
   - Turn the main power switch on while pressing the power key. After a short beep sound is made once, release the power key and wait to display the Self-diag. (Full) screen.
2. Press the Start key to start the check procedure.
3. The result of the diagnosis is displayed for every item. (OK/NG)
   NOTE
   - **If a trouble code is detected during executing the Self-diag. (Full), the trouble screen will be displayed, and the Self-diag. (Full) will be interrupted. When the trouble screen is displayed, turn OFF the main power switch to finish the Self-diag. (Full). Then, turn ON the main power switch while pressing the power key to restart the Self-diag. (Full).**
4. After completing the Self-diag. (Full), load A4/A4S paper in the manual bypass tray, the [Printing] key will appear in the top area of the screen. If the self-diagnosis result report is required, touch the [Printing] key to print out the “Self-diagnosis result report.”
   NOTE
   - **If there is no paper loaded on the manual bypass tray, the [Printing] key will not appear. Also, if any paper with a size other than A4/A4S is loaded, the [Printing] key will not appear.**
   - **The “Self-diagnosis result report.” can be printed out after completing the Self-diag. (Full). (Printable even if NG is displayed)**
5. If [OK] is displayed for all diagnosis items, finish the Self-diag. (Full).
   - If starts from the Service Mode, touch [END].
   - If starts by turning ON the main power switch, turn OFF the main power switch.
6. If [NG] is displayed, carry out procedure “Troubleshooting when NG is detected.”

NOTE
- **It takes approx. 200 seconds for check if all items are OK.**
- **When the trouble code (C6###, C91##, CE301, CE304) is displayed, the self-diag. (Full) may not complete. In that case, finish the Self-diag. (Full), and perform the troubleshooting against each trouble code.**
- **When operation is disabled (screen frozen) during displaying the diagnosis result confirmation screen, turn OFF the main power switch to finish the diagnosis. Wait for 10 sec. or more, and turn ON the main power switch.**
- **If Self-diag. (Full) is started by turning ON the main power switch, it cannot move to Normal Mode or Service Mode. To change the mode, turn OFF the main power switch, and turn it ON again after 10 seconds.**

Auto Execution of Self-diag. (Full)
- Set the [Switch NO.163] to [00000010] at [Bit assignment] and [02] at [HEX assignment] in [Service Mode] -> [System 2] -> [Software Switch Setting], so that the “Self-diag. (Full)” can be executed automatically when a “trouble code” occurred.

NOTE
- **If this function is set on a client MFP, make sure to reset the settings after completing an operation check and troubleshooting.**

Sequence of Auto Execution of Self-diag. (Full)
1. Errors are detected. (Trouble codes are displayed, and the machine stops.)
2. The MFP reboots automatically. (The machine reboots automatically up to three times.)
3. The Self-diag. (Full) is executed automatically.
4. After completing the Self-diag. (Full), the machine stops with the self diagnosis screen being displayed.
5. If [OK] is displayed for all diagnosis items, turn OFF the main power switch to finish the Self-diag. (Full).
6. If [NG] is displayed, carry out “Procedure (when NG is detected).”

When NG is detected
1. If [NG] is displayed, the [Error Code] key appears to the self diagnosis screen.
2. Touch the [Error Code] key to display the [Error Code] screen.
3. Check the displayed “Error Code”, and turn OFF the main power switch.
4. Refer to [TROUBLESHOOTING/Error code list], and preform the troubleshooting against each error code.

13.11.3 Self-diag. (Individual)

(1) NVMe Storage Check

- To check each item of NVMe Storage individually.

Diagnosis item	Relevant electrical parts
Device recognition	Storage board (STRGB), CPU board (CPUB)
R/W Check	Storage board (STRGB)
S.M.A.R.T diag.	Storage board (STRGB)
MFP FW checksum	-
Partition check	Storage board (STRGB)

<Procedure>

1. Select the desired diagnosis key. (Two or more keys can be selected.)
2. Press the Start key to start the check procedure.
3. The check result will be displayed. (OK/NG)
4. If [OK] is displayed, touch [END].
5. If [NG] is displayed, execute the Self-diag. (Full).

(2) I2C Check

- To check each item of the I2C individually.

Diagnosis item	Relevant electrical parts
TPM	TPM board (TPMB), CPU board (CPUB), Base board (BASEB)
AUDIO (Control)	CPU board (CPUB), Base board (BASEB)
PS-CPU	CPU board (CPUB), Base board (BASEB)

<Procedure>

1. Select the desired diagnosis key. (Two or more keys can be selected.)
2. Press the Start key to start the check procedure.
3. The check result will be displayed. (OK/NG)
4. If [OK] is displayed, touch [END].
5. If [NG] is displayed, execute the Self-diag. (Full).

(3) I2S Check

- To check each item of the I2S individually.

Diagnosis item	Relevant electrical parts
AUDIO (Voice)	CPU board (CPUB), Base board (BASEB)

<Procedure>

1. Select the desired diagnosis key.
2. Press the Start key to start the check procedure.
3. The check result will be displayed. (OK/NG)
4. If [OK] is displayed, touch [END].
5. If [NG] is displayed, execute the Self-diag. (Full).

(4) Sys/Image mem check

- To check each item of system memory and image memory.

Diagnosis item	Relevant electrical parts
WORK0 (Main Memory ch.A)	CPU board (CPUB)
WORK0 (Main Memory ch.B)	CPU board (CPUB)
FILE0 (A800 Memory ch.A)	A800 board (MEMB)
FILE0 (A800 Memory ch.B)	A800 board (MEMB)

<Procedure>

1. Press the Start key to start the check procedure.
2. The check result will be displayed. (OK/NG)
   NOTE
   - **If a trouble occurs on the memory, the self diagnosis may not complete. In that case, finish the Self-diag. (Full) forcibly, and perform the troubleshooting against each trouble code.**
   - **Turning OFF the main power switch will finish the Self-diag. (Full) forcibly.**
3. If [OK] is displayed, touch [END].
4. If [NG] is displayed, execute the Self-diag. (Full).
   NOTE
   - **NG will also be displayed if no DIMM is mounted. If an additional DIMM is not used, no error occurs even if NG is displayed, and no troubleshooting is required.**

(5) Various USB Check

- To check each item of the USB Device individually.

Diagnosis item	Relevant electrical parts
USB Device	CPU board (CPUB), Base board (BASEB), USB hub board (USBHB), Fax board (FAXB), Wireless LAN board (WLANB), Authentication unit
Keyboard	USB keyboard
USB memory	USB memory

<Procedure>
1. Select the desired diagnosis key. (Two or more keys can be selected.)
2. Press the Start key to start the check procedure.
3. The check result will be displayed. (OK/NG)

NOTE
- **When checking [USB Device], [NG] will be displayed if the fax board is mounted and the mounting settings are not enabled.**
- **When checking [Keyboard] or [USB Memory], [NG] will be displayed if no device is connected.**

1. If [OK] is displayed, touch [END].
2. If [NG] is displayed, perform the following procedures.

- If [NG] is displayed for [USB Device], execute the Self-diag. (Full).
- If [NG] is displayed for [Keyboard], perform “TROUBLESHOOTING/ Troubleshooting when NG is detected on keyboard.”
- If [NG] is displayed for [USB Memory], perform the “TROUBLESHOOTING/ when NG is detected on USB memory.”

(6) CCD Board Check

- To check each item of the CCD board individually.

Diagnosis item	Relevant electrical parts
I/P image bus check	Connection cable, CCD board (CCDB), CPU board (CPUB), Base board (BASEB)
Line RAM comparison	CCD board (CCDB)

<Procedure>
1. Select the desired diagnosis key. (Two or more keys can be selected.)
2. Press the Start key to start the check procedure.
3. The check result will be displayed. (OK/NG)

NOTE
- **If a trouble occurs on the CCD board, the self diagnosis may not complete. that case, finish the self diagnosis forcibly, and perform the troubleshooting against the trouble code C-6756.**
- **Turning OFF the main power switch will finish the self diagnosis forcibly.**

4. If [OK] is displayed, touch [END].
5. If [NG] is displayed, execute the Self-diag. (Full).

(7) CIS Board Check

- To check each item of the CIS board individually.

Diagnosis item	Relevant electrical parts
I/P image bus check	CIS cable, CIS board, CPU board (CPUB), Base board (BASEB)
Line RAM comparison	CIS Board

<Procedure>
1. Select the desired diagnosis key. (Two or more keys can be selected.)
2. Press the Start key to start the check procedure.
3. The check result will be displayed.

NOTE
- **If a trouble occurs on the CIS board, the self diagnosis may not complete. that case, finish the self diagnosis forcibly, and perform the troubleshooting against the trouble code C-6753.**
- **Turning OFF the main power switch will finish the self diagnosis forcibly.**

4. If [OK] is displayed, press the [OK] key.
5. If [NG] is displayed, execute the Self-diag. (Full).

(8) ADF Board Check

- To check each item of the ADF board individually.

Diagnosis item	Relevant electrical parts
MINET communication check	DF control board cable, DF control board (DFCB), CPU board (CPUB), Base board (BASEB)

<Procedure>
1. Select the desired diagnosis key.
2. Press the Start key to start the check procedure.
3. The check result will be displayed.
4. If [OK] is displayed, touch [END].
5. If [NG] is displayed, execute the Self-diag. (Full).

(9) A800 Board Check

- To check each item of the A800 board individually.

Diagnosis item	Relevant electrical parts
Compress Decompression Check	A800 board (MEMB)

<Procedure>
1. Select the desired diagnosis key.
2. Press the Start key to start the check procedure.

3. The check result will be displayed.
4. If [OK] is displayed, touch [END].
5. If [NG] is displayed, execute the Self-diag. (Full).

(10) DSC Board Check

- To check each item of the DSC board individually.

NOTE

- **It will be displayed when the DSC board is installed and enabled.**
  - **[Service Mode] -> [System2] -> [Option Board Status] -> [DSC1] and [DSC2]**

Diagnosis item	Relevant electrical parts
Image Bus Check (Front Side)	DSC board/1 (DSCB/1)
Image Bus Check (Back Side)	DSC board/1 (DSCB/1)

<Procedure>

1. Select the desired diagnosis key. (Two or more keys can be selected.)
2. Press the Start key to start the check procedure.
3. The check result will be displayed. (OK/NG)
4. If [OK] is displayed, touch [END].
5. If [NG] is displayed, execute the Self-diag. (Full).

(11) FAX Board Check

- To check each item of the FAX board individually.

Diagnosis item	Relevant electrical parts
Line 1	Fax board/1 (FAXB/1)
Line 2	Fax board/2 (FAXB/2)
Line 3	Fax board/3 (FAXB/3)
Line 4	Fax board/4 (FAXB/4)

<Procedure>

1. Select the line to perform diagnosis.
2. Select [Signal Send Test], [Signal Receive Test], or [NCU Test].
   For the details of each item, refer to [Service Mode] -> [Test Mode] -> [FAX Test].
3. Select a test item.
4. Select the parameter you would like to test.
5. Press the Start key to start the check procedure.
6. If [OK] is displayed, press the [OK] key.
7. If [NG] is displayed, execute the Self-diag. (Full).

(12) CPU Board Check

- To check each item of the CPU board individually.

Diagnosis item	Relevant electrical parts
S800 Compress/ Decompression	CPU board (CPUB)
S800 Output image path	CPU board (CPUB)
LAN-IF Ping Test	CPU board (CPUB), Base board (BASEB)

<Procedure (S800 Compress/ Decompression / S800 Output image path)>

1. Select the desired diagnosis key. (Two or more keys can be selected.)
2. Press the Start key to start the check procedure.
3. The check result will be displayed. (OK/NG)
4. If [OK] is displayed, touch [END].
5. If [NG] is displayed, execute the Self-diag. (Full).

<Procedure (LAN-IF Ping Test)>

1. Touch he [LAN-IF Ping Test] key.
2. Select the input method according to the IP address of the destination.
3. [Input IPv4 Address] / [Input IPv6 Address]
4. Input IP address of destination with the numeric keypad or the alphabet key.
5. Press the Start key to start the check procedure.
6. When the self diagnosis procedure is completed, the result will be displayed. (OK/NG)
7. If [OK] is displayed, touch [END].
8. If [NG] is displayed, execute “TROUBLESHOOTING/ Troubleshooting when NG is displayed for Ping Test.”

(13) PCIe Check

- To check each item of the PCIe Device individually.

Diagnosis item	Relevant electrical parts
PCIe device check	CPU board (CPUB), Storage board (STRGB), A800 board (MEMB)

<Procedure>

1. Select the desired diagnosis key.
2. Press the Start key to start the check procedure.
3. The check result will be displayed. (OK/NG)
4. If [OK] is displayed, touch [END].
5. If [NG] is displayed, execute the Self-diag. (Full).

13.12 Media detection

- Displays detected paper weight and sensor detected results for each tray.
- Displays the default corrected value used on weight detection.
- It will be displayed when the Intelligent media sensor IM-102 is installed.

14. Test Mode

14.1 Test Pattern

- Output the test pattern to check the image on the printer side.
- The machine searches through the paper sources in the order of tray 2, tray 3, tray 4, and tray 1 for paper of the maximum size for printing.

<Input procedure>

1. Touch [Test Mode] to display the test mode menu.
2. Touch the desired test pattern key.
3. Set up the desired functions and press the Start key.

14.1.1 Gradation Pattern

- To produce a gradation pattern.
- Used for checking gradation reproducibility.

Setting item	Setting value	
Output operation mode	SINGLE	Copies (1 to 999)
	MULTI	
Screen pattern setting	FEET	
	HYPER	Gradation, Resolution, Error diffusion
1-Sided/2-sided print mode	1-Sided, 2-sided1 (print on both front and back sides), 2-sided2 (print on back side only)	
Resolution	600dpi, 1200dpi	
Single color gradation setting	12 gradations, 24 gradations, 256 gradations	
Printable area	Full Bleed	
Color mode	Black(1PC)	

Sample



- SINGLE
- HYPER
- Gradation
- Black (1PC)

14.1.2 Halftone Pattern

- To produce a solid halftone pattern.
- Used for checking uneven density and pitch noise.

Setting item	Setting value	
Output operation mode	SINGLE	Copies (1 to 999)
	MULTI	
Screen pattern setting	FEET	
	HYPER	Gradation, Resolution, Error diffusion
1-Sided/2-sided print mode	1-Sided, 2-sided1 (print on both front and back sides), 2-sided2 (print on back side only)	
Printable area	Full Bleed	
Color mode	Black(1PC)	
Density	0 to 255	

Sample



- SINGLE
- HYPER
- Gradation
- Black(1PC)
- Density: 255

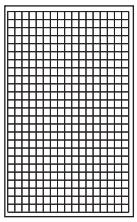
14.1.3 Lattice Pattern

- To produce a lattice pattern.
- Used for checking fine line reproducibility and uneven density.
- A reverse pattern is also used to check for fine line reproducibility of white letters on a solid background.

Setting item	Setting value	
Output operation mode	SINGLE	Copies (1 to 999)
	MULTI	

Setting item	Setting value	
Screen pattern setting	FEET	
	HYPER	Gradation, Resolution, Error diffusion
1-Sided/2-sided print mode	1-Sided, 2-sided1 (print on both front and back sides), 2-sided2 (print on back side only)	
Resolution	600dpi, 1200dpi	
Color mode	Black(1PC)	
CD Width	0 to 191 dots	
FD Width	0 to 191 dots	
Density	0 to 255	
Output pattern	Normal, Reverse	

Sample



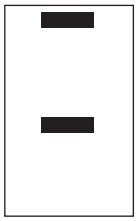
- SINGLE
- FEET
- Black (1PC)
- CD Width: 5
- FD Width: 5
- Density: 255
- Normal

14.1.4 Solid Pattern

- To produce a solid pattern.
- Used for checking reproducibility of image density.

Setting item	Setting value	
Output operation mode	SINGLE	Copies (1 to 999)
	MULTI	
Screen pattern setting	FEET	
	HYPER	Gradation, Resolution, Error diffusion
1-Sided/2-sided print mode	1-side	
Density	0 to 255	

Sample



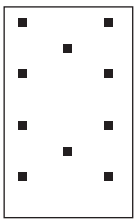
- SINGLE
- HYPER
- Gradation
- Density: 255

14.1.5 Solid Pattern 2

- To produce a solid pattern.
- Used for checking image density and uneven density.

Setting item	Setting value	
Output operation mode	SINGLE	Copies (1 to 999)
	MULTI	
Screen pattern setting	FEET	
	HYPER	Gradation, Resolution, Error diffusion
1-Sided/2-sided print mode	1-side	
Density	0 to 255	

Sample



- SINGLE
- HYPER
- Gradation
- Density: 255

14.2 Paper Passage Test

- To test the printing operation in paper passage test.
- Use to check the printing operation in paper passage test from each paper source.

Setting item	Setting
Pattern Printing	Yes, No
Resolution	600dpi, 1200dpi
Select Tray	Tray 1, Tray 2, Tray 3, Tray 4, Manual, LCT
Paper Size	A3, A4, 11 x 17, $8^1/_2$ x 11 Post, A6 card, 4 x 6
Paper Type	Plain Paper, Plain Paper+, Thick1, Thick 1+, Thick2, Thick3, Thick4, OHP Film, Enve.

NOTE

- **[Resolution] is selectable only when [Pattern Printing] is set to [Yes].**
- **[Paper Size] is selectable only when [Manual] is selected in Select Tray.**

<Procedure>

1. Select a setting item.
2. Press the Start key to start the paper passage test.
3. Pressing the Stop key will stop operation.

14.3 Fax Test

- It will be displayed only when the optional fax kit is mounted.
- Specifiable for each line when there are multiple fax lines

Signal Send Test

- Image information signals, control signals and DTMF can be individually output.
- Signal sounds are monitored by the monitor speaker.

Setting item	Setting value	Default setting
V34 Main CH	2400 to 33600 (step: 2400)	33600
V8	-	CM
V17	14400 bps	○
	12000 bps	
	9600 bps	
	7200 bps	
V29	9600 bps	○
	7200 bps	
V27ter	4800 bps	○
	2400 bps	
V21	-	-
PB	0 to 9, *, #, A, B, C, D	0
DP	0 to 9	0
Special Tone	1100 Hz	○
	1300 Hz	
	1650 Hz	
	2100 Hz	
Optional Tone	200 to 4000 Hz (step: 100 Hz)	200 Hz
PB Tone (High)	1209 Hz	○
	1336 Hz	
	1477 Hz	
	1633 Hz	
PB Tone (Low)	697 Hz	○
	770 Hz	
	852 Hz	
	941 Hz	
Pseudo Ring	-	-

<Procedure>

1. Touch [Fax Line Test].
2. Select the Line, and touch the [Signal Send Test].
3. Select a test item.
4. Select the parameter you would like to test.
5. Press the Start key. (In order to move to another test, select the next test item after pressing the [Stop] key.)

NOTICE

- Signal is output from pressing [Start] to pressing [Stop].
- To check Line 1, [Administrator] -> [Fax Settings] -> [Line Parameter Setting] -> [Line Monitor Sound] should be set to “ON.”
- To check Line 2 to 4, [Administrator] -> [Fax Settings] -> [Multi Line Settings] -> [Fax Line 2 to 4] -> [Line Parameter Setting] -> [Line Monitor Sound] should be set to “ON.”

Signal Receive Test

- Check a signaling tone by connecting the machine to the line to output a test signal of the fax board.
- Signal sounds are monitored by the monitor speaker.

Setting item	Setting value	Default setting
V17	14400 bps	○
	12000 bps	
	9600 bps	
	7200 bps	
V29	9600 bps	○
	7200 bps	
V27ter	4800 bps	○
	2400 bps	
V21	-	-
PB	0 to 9, *, #, A, B, C, D	0
Special Tone	1100 Hz	○
	1300 Hz	
	2100 Hz	

<Procedure>

1. Touch [Fax Line Test].
2. Select the Line, and touch the [Signal Receive Test].
3. Select a test item.
4. Select the parameter you would like to test.
5. Press the Start key. (In order to move to another test, select the next test item after pressing the [Stop] key.)

NOTICE

- Signal is output from pressing [Start] to pressing [Stop].
- To check Line 1, [Administrator] -> [Fax Settings] -> [Line Parameter Setting] -> [Line Monitor Sound] should be set to “ON.”
- To check Line 2 to 4, [Administrator] -> [Fax Settings] -> [Multi Line Settings] -> [Fax Line 2 to 4] -> [Line Parameter Setting] -> [Line Monitor Sound] should be set to “ON.”
- The status of testing or results of tests are shown in the title line as follows

RCV	Waiting signals
OK/NG	Results of signal reception

NCU Test

- To check the operation of NCU.

Contents of test	Device to be tested
CML Relay	**IC201, IC202**
CTL Relay	**RL201**
TEL Relay	**RL501 ***
DC-LOOP Detect	
Speaker	
Outside Ring Send	
Audio Response Send	

- *** RL501 mounts only the Japan.**

<Procedure>

1. Touch [Fax Line Test].
2. Select the Line, and touch the [NCU Test].
3. Select a test item.
4. Press the Start key. (In order to move to another test, select the next test item after pressing the [Stop] key.)

NOTE

- **When CML / CTL / TEL relay test is selected and the Start key is pressed, ON is displayed in the parameter and relay is turned to ON. When [Stop] is pressed, relay is turned OFF.**
- **When the DC-LOOP detection test is selected and Start key is pressed, DT=0001 is shown in the title row in case of detecting the DC-LOOP. If not detected, DT=0000 is displayed.**

Dial Test

- Not used

Off-hook Test

- Not used

14.4 User Paper 7 Mode

- This mode prints a test pattern using paper (coated paper) registered in user paper 7.
- Check the print quality of the paper type (coated paper) registered in the user paper 7.
- There are three types of test patterns can be output: gradation pattern, halftone pattern, and lattice pattern.
- Only the manual bypass tray is available paper feed port.
- Each test pattern is printed in black mode.
- The output setting value of each test pattern is as follows.

Test pattern	Setting item	Setting value (not to be changed)
Gradation pattern	Output operation mode	SINGLE
	Screen pattern setting	HYPER (Gradation priority)
	1-Sided/2-Sided print mode	1-Sided
	Resolution	600dpi
	Single color gradation	12 gradations
	Printable area	Full Bleed
Halftone pattern	Output operation mode	SINGLE
	Screen pattern setting	HYPER (Gradation priority)
	1-Sided/2-Sided print mode	1-Sided
	Single color gradation	12 gradations
	Printable area	Full Bleed
	Density	255
Lattice pattern	Output operation mode	SINGLE
	Screen pattern setting	FEET
	1-Sided/2-Sided print mode	1-Sided
	Resolution	600dpi
	CD Width	6 dots
	FD Width	6 dots
	Density	255
	Output pattern	Normal

<Procedure>

1. Select [Service Mode] -> [Test Mode] -> [User Paper 7 Mode].
2. Select a test pattern.
3. Load the paper registered in the user paper 7 to the manual bypass tray.
4. Press the Start key to print the test pattern.
5. When the output of the test pattern is completed, the operation stops.
   If you want to stop halfway, press the Stop key.

15. ADF

15.1 Original Stop Position

- To manually adjust the original stop position and the read position in each of the DF modes.
- When the result is Unable in the automatic adjustment of the original stop position.

Sub Scanning Direction 1-Side

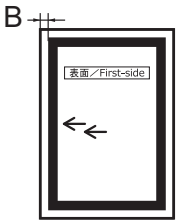
Target	Setting range	Default setting
0.0 ± 2.0 mm	-4.0 to +4.0 mm (1 step: 0.1 mm)	0.0 mm

NOTE

- **Before performing this adjustment, the "feed zoom" adjustment needs to be complete.**

<Procedure>

1. Place the chart in the document feed tray.
   - DF reading chart (for Duplex): with the front side facing up.
2. Make a full size copy of the chart.
3. Check that the difference in the widths of B between the chart and the copy sample falls within the target.



4. Touch [Sub Scanning Direction 1-Side].
5. Enter the value from the 10-key pad. (Press the [+/-] key to change the +/- code.)
   - If the difference in the widths of B is greater than the target, enter the [+] value.
   - If the difference in the widths of B is smaller than the target, enter the [-] value.
6. Make a copy of the chart again.
7. Check the difference in the width B between the chart and the discharged copy sample.
8. If width B is outside the target, change the setting again and make a check again.
9. If width B falls within the target, touch [END].

Sub Scanning Direction 2-Side

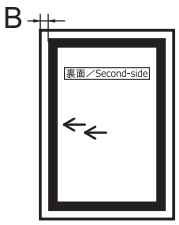
Target	Setting range	Default setting
0.0 ± 2.0 mm	-4.0 to +4.0 mm (1 step: 0.1 mm)	0.0 mm

NOTE

- **Before performing this adjustment, the "feed zoom" adjustment and the "FD-Mag. Adj. (B)" adjustment need to be complete.**

<Procedure>

1. Place the chart in the document feed tray.
   - DF reading chart (for Duplex): with the front side facing up.
2. Make a full size copy of the chart.
3. Check that the difference in the widths of B between the chart and the copy sample falls within the target.



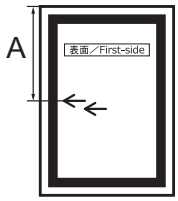
4. Touch [Sub Scanning Direction 2-Side].
5. Enter the value from the 10-key pad. (Press the [+/-] key to change the +/- code.)
   - If the difference in the widths of B is greater than the target, enter the [+] value.
   - If the difference in the widths of B is smaller than the target, enter the [-] value.
6. Make a copy of the chart again.
7. Check the difference in the width B between the chart and the discharged copy sample.
8. If width B is outside the target, change the setting again and make a check again.
9. If width B falls within the target, touch [END].

Main Scanning (Front)

Target	Setting range	Default setting
0.0 ± 2.0 mm	-4.4 to +4.4 mm (1 step: 0.1 mm)	0.0 mm

<Procedure>

1. Place the chart in the document feed tray.
   - DF reading chart (for Duplex): with the front side facing up.
2. Make a full size copy of the chart.
3. The difference in the widths of A between the chart and the copy sample should fall within the following target.



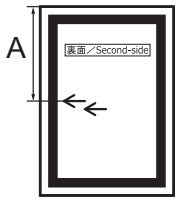
4. Touch [Main Scanning (Front)].
5. Enter the value from the 10-key pad. (Press the [+/-] key to change the +/- code.)
   - If the difference in the widths of A is greater than the target, enter the [+] value.
   - If the difference in the widths of A is smaller than the target, enter the [-] value.
6. Make a copy of the chart again.
7. Check the difference in the width A between the chart and the discharged copy sample.
8. If width A is outside the target, change the setting again and make a check again.
9. If width A falls within the target, touch [END].

Main Scanning (Back)

Target	Setting range	Default setting
0.0 ± 2.0 mm	-4.4 to +4.4 mm (1 step: 0.1 mm)	0.0 mm

<Procedure>

1. Place the chart in the document feed tray.
   - DF reading chart (for Duplex): with the front side facing up.
2. Make a full size copy of the chart.
3. The difference in the widths of A between the chart and the copy sample should fall within the following target.



4. Touch [Main Scanning (Back)].
5. Enter the value from the 10-key pad. (Press the [+/-] key to change the +/- code.)
   - If the difference in the widths of A is greater than the target, enter the [+] value.
   - If the difference in the widths of A is smaller than the target, enter the [-] value.
6. Make a copy of the chart again.
7. Check the difference in the width A between the chart and the discharged copy sample.
8. If width A is outside the target, change the setting again and make a check again.
9. If width A falls within the target, touch [END].

15.2 Registration Loop Adj.

- To adjust the length of the loop to be formed in paper before the registration rollers.
- When an original misfeed or skew occurs.

Setting item	Setting range	Default setting
1-side	-5 mm to +5 mm (step: 1 mm)	0 mm
Second Side	-5 mm to +5 mm (step: 1 mm)	0 mm

<Procedure>

1. Select a setting item for the adjustment.
2. Touch clear and change the setting value using the 10-key pad. Press the [+/-] key to change the +/ code.
   - To increase the loop amount: Increase the setting value.
   - To decrease the loop amount: Decrease the setting value.
3. Touch [END].

15.3 Auto Stop Position Adjustment

- To automatically adjust the read position for the Sub Scanning Direction.
- To check skew feed.
- When DF has been replaced.
- When CIS module has been replaced.

NOTE

- **Before performing this adjustment, the "Feed Zoom" adjustment and "FD-Mag. Adj. (B)" adjustment need to be complete.**

<Procedure>

1. Select either [Sub Scanning Direction 1-Side], [Sub Scanning Direction 2-Side], [Main Scanning (Front)] or [Main Scanning (Back)] for the adjustment.
2. Place the chart in the document feed tray.
   - DF reading chart (for Duplex): with the front side facing up.
3. Press the Start key.
4. Make sure that result is OK. Then, touch [SET].

NOTE
- **If the result is [Unable]:**
  - **Check and correct the skew of the document.**
  - **Manually correct the value of [Original Stop Position].**

15.4 Paper Passage

- To check for paper passage through the DF in each of the DF modes.
- Used for checking the document path for any abnormal condition when a document misfeed occurs.

Setting item	Contents
1-Sided No Detect	Select it to perform paper passage test from the 1-Sided No Detect mode.
1-Sided Mixed Org.	Select it to perform paper passage test from the 1-Sided Mixed Org. mode.
2-Sided	Select it to perform paper passage test from the 2-Sided mode.

<Procedure>
1. Select a paper passage mode to be tested.
2. Set the original in the feed tray.
3. The Start key changes from orange to blue.
4. Press the Start key. The operation starts.

NOTE
- **After starting the operation by pressing the Start key, if the Start key is pressed during the operation, the operation will be suspended. Then, if the Start key is pressed again during the suspension, the operation will be resumed.**
- **If the Stop key is pressed during the test operation, the test will be forced to end.**
- **If there is no Original set in the feed tray, the Start key will not work.**
- **All Originals set in the feed tray are passed through. Upon the completion of all Originals passed through, the paper through test ends.**

15.5 Sensor Check

- To check sensors on the DF.
- To check sensors on the paper path.
- When a document misfeed occurs.
- Operate the sensor to check by using paper or the like, and check the screen display.

Sensor check list

Symbol	Panel display	Part/signal name	Operation characteristics/panel display	
			1	0
PS16	Feed Open&Close	Upper door sensor	Open	Closed
PS20	Read Open&Close	CIS cover sensor	Open	Closed
PS5	Registration Sensor	Document registration sensor	Paper present (blocked)	Paper not present (unblocked)
PS4	After Separate	After separate sensor	Paper present (unblocked)	Paper not present (blocked)
PS7	Paper Exit	Document exit sensor	Paper present (unblocked)	Paper not present (blocked)
-	Document reading roller	-	Release	Pressure
PS21	Paper feed	Document feed sensor	Paper present	Paper not present
RS201	DF Open	Original cover sensor	Open	Closed
PS6	Before Read	Document reading sensor	Paper present (blocked)	Paper not present (unblocked)
VR1	Original Width Sensor	Document width size sensor	Analog value	
PS10	Length Sensor1	Document length sensor/1	Paper present	Paper not present
PS11	Length Sensor2	Document length sensor/2	Blocked	Unblocked
PS18	Glass cleaning home position	Document reading glass cleaning sensor	At home	Not at home
PS1	Original Detection Sensor	Document empty sensor	Paper present	Paper not present
PS2	Upper Limit of Lift-up	DF lift-up upper limit sensor	At upper position	Not at upper position
PS3	Lower Limit of Lift-up	DF lift-up lower limit sensor	At lower position	Not at lower position
PS13	Mixed Original 1	Mixed Original sensor/1	Paper present	Paper not present
PS14	Mixed Original 2	Mixed Original sensor/2	Paper present	Paper not present
PS15	Mixed Original 3	Mixed Original sensor/3	Paper present	Paper not present
-	Fan Lock Detection	-	-	-
TH	Temp-Inside	DF temperature sensor	-	-

15.6 Original Tray Width

- To set the values of maximum (A3 position) and minimum (B6S position) widths on the restriction plate positional volume.
- When a document misfeed occurs.

- When an original size detection error occurs.
- When the DF control board has been replaced.
- When the document width sensor has been replaced.

<Procedure>

1. Touch [ADF] -> [Original Tray Width].
2. Set the A3 or A4 paper on the original feed tray, and widen the width across the edge guides by sliding them to the “A3” position.
3. Touch [Max. Width].
4. Press the Start key.
5. OK is displayed when the adjustment has been completed.
6. Set the B6S paper on the original feed tray, and narrow the width across the edge guides by sliding them to the “B6S” position.
7. Touch [Min. Width].
8. Press the Start key.
9. OK is displayed when the adjustment has been completed.
10. Touch [END].

NOTE

- **If the result is NG**
  - **Possible causes includes failure or wrong wiring of the document width sensor and failure of the DFCB.**

15.7 Read Pos Adj

- To adjust the original read position.
- When the scanner home sensor have been replaced.

Read Pos Adj

Setting range	Default setting
-73 through +73	Intrinsic values (adjusted at the factory)

<Procedure>

1. Touch [Read Pos Adj].
2. Touch [C].
3. Enter the value using the [+] / [-] keys.
   - Set the setting value to a positive number to move the stop position of the LED exposure unit to the right when viewed from the front.
   - Set the setting value to a negative number to move the stop position of the LED exposure unit to the left when viewed from the front.
4. Touch [END].

Auto Adjust

- To automatically adjust the original read position.

<Procedure>

1. Touch [Auto Adjust].
2. Open the DF.
3. Place the DF reading chart [1] so that a triangular mark may become the original glass side (downward) and the pointed tip of the triangle points toward the black sheet on the left side.
4. Press the Start key.
   NOTE
   - **Be sure that the DF reading chart is in position.**
   - **Place the DF reading chart [1] so that it comes in contact with the step sheet [2].**
   - **Keep the document feeder open while making the adjustment.**
   - **When the edge deviation at DF reading after carrying out this adjustment becomes larger, conduct the “Original Stop Position.”**
5. Make sure that the result is OK.
6. Touch [END].

NOTE

- **If the result is [Unable]:**
  - **Check that the chart is in the correct place.**
  - **Make the adjustment on the [Original Stop Position] screen.**

15.8 Feed Zoom

- To adjust the feed zoom in the front side feeding direction on the DF.
- When DF has been replaced.

Orig. Feed Zoom Ad

Target	Setting range	Default setting
0 ± 1.0 mm	-2.00% to +2.00% (1 step: 0.1%)	0.00%

<Procedure>

1. Place the chart in the document feed tray.
   - DF reading chart (for Duplex): with the front side facing up.
2. Make a full size copy of the chart.
3. C width on the chart and one on the copy sample are measured and adjusted so that the difference of C width satisfies the target shown below.



4. Touch [Orig. Feed Zoom Ad].
5. Enter the value using the [+] / [-] keys.
   - If the difference in the widths of C is greater than the target, enter the - value.
   - If the difference in the widths of C is smaller than the target, enter the + value.
6. Make a copy of the chart again.
7. Check the difference in the width C between the chart and the discharged copy sample.
8. If width C is outside the target, change the setting again and make a check again.
9. If width C falls within the target, touch [END].

Auto Adjust

- To automatically adjust the sub scanning zoom.

<Procedure>

1. Touch [Auto Adjust].
2. Place the chart in the document feed tray.
   - DF reading chart (for Duplex): with the front side facing up.
3. Press the Start key.
4. Make sure that the result is OK.
5. Touch [SET] and then [END].

15.9 Scanning Light Adjustment

- To adjust the scanning light of DF.
- Used for adjusting the difference in the scanning lights between scanning from the original glass and scanning from the DF original glass.

Setting item	Setting range	Default setting
Red	-4 to +4 (step: 1)	0
Green		
Blue		

<Procedure>

1. Select a color by pressing [Red], [Green], or [Blue].
2. Press the value using the [+] / [-] key.
   - Increasing the setting value to lighten the selected color. (Thinner)
   - Decreasing the setting value to deepen the selected color. (Thicker)

   NOTE
   - **It is recommended that the scanning light adjustment should be made by the same steps for all the three colors of red, green, and blue.**
3. Touch [END].

15.10 Mixed original size adjustment

- To adjust paper length detection accuracy used during paper feed in DF mixed original mode.
- To set the threshold for each size detection based on the length detected when feeding standard sizes (A4S).
- When the DF control board has been replaced.

NOTE

- **Before performing this adjustment, the feed zoom adjustment needs to be complete.**

<Procedure>

1. Place the chart in the document feed tray. (SEF direction)
2. Press the Start key.
3. Make sure that the result is OK.
4. Touch [END].

15.11 Home Read Position Adjust

- To adjust the shading shaft home position.
- To be used when image failure occurs due to the dirty back side shading shaft on the DF.
- Adjust the home position of the shading shaft and to change a shading reference plate.

Setting range	Default setting
-4 to +4 (step: 1)	0

<Procedure>

1. Press the value using the [+] / [-] key.
2. Touch [END].

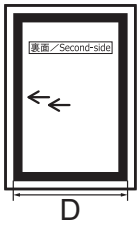
15.12 FD-Mag. Adj. (B)

- To adjust the feed zoom in the back side feeding direction on the DF.
- When DF and CIS has been replaced.

Orig. Feed Zoom Ad

Target	Setting range	Default setting
0 ± 1.0 mm	-2.00% to +2.00% (1 step: 0.1%)	0.00%

<Procedure>
1. Place the chart in the document feed tray.
   - DF reading chart (for Duplex): with the front side facing up.
2. Make a full size copy of the chart.
3. D width on the chart and one on the copy sample are measured and adjusted so that the difference of D width satisfies the target shown below.



4. Touch [Orig. Feed Zoom Ad].
5. Enter the value using the [+] / [-] keys.
   - If the difference in the widths of D is greater than the target, enter the - value.
   - If the difference in the widths of D is smaller than the target, enter the + value.
6. Make a copy of the chart again.
7. Check the difference in the width D between the chart and the discharged copy sample.
8. If width D is outside the target, change the setting again and make a check again.
9. If width D falls within the target, touch [END].

Auto Adjust

- To automatically adjust the FD-Mag. Adj. (B).

<Procedure>
1. Touch [Auto Adjust].
2. Place the chart in the document feed tray.
   - DF reading chart (for Duplex): with the front side facing up.
3. Press the Start key.
4. Make sure that the result is OK.
5. Touch [SET] and then [END].

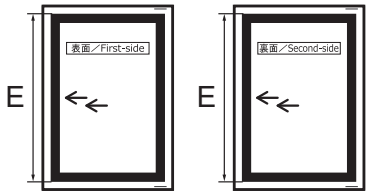
15.13 Main Scanning Direction Zoom

- To adjust the feed zoom in the back side main scanning direction on the DF.
- When DF and CIS has been replaced.

Main scanning direction zoom adj

Target	Setting range	Default setting
0 ± 2.0 mm	-1.00% to +1.00% (1 step: 0.1%)	0.00%

<Procedure>
1. Place the chart in the document feed tray.
   - DF reading chart (for Duplex): with the front side facing up.
2. Make a full size copy of the chart.
3. E width on the chart and one on the copy sample are measured and adjusted so that the difference of E width satisfies the target shown below.



4. Touch [Main scanning direction zoom adj].
5. Enter the value using the [+] / [-] keys.
   - If the difference in the widths of E is greater than the target, enter the - value.
   - If the difference in the widths of E is smaller than the target, enter the + value.
6. Make a copy of the chart again.
7. Check the difference in the width E between the chart and the discharged copy sample.
8. If width E is outside the target, change the setting again and make a check again.
9. If width E falls within the target, touch [END].

Auto Adjust

- To automatically adjust the main scanning direction zoom.

<Procedure>
1. Touch [Auto Adjust].
2. Place the chart in the document feed tray.
   - DF reading chart (for Duplex): with the front side facing up.

3. Press the Start key.
4. Make sure that the result is OK.
5. Touch [SET] and then [END].

15.14 Skew Measurement

- Measure the DF skew, adjust accordingly.

Measurement item	Contents
DFSkew (Front)	To display information for adjusting the skew on front side of the DF.
DFSkew (Back)	To display information for adjusting the skew on back side of the DF. It will be displayed only when dual scan document feeder unit is mounted.

<Procedure>
1. Select an adjustment item.
2. Place the chart in the document feed tray.
   - DF reading chart (for Duplex): with the front side facing up.
3. Press the Start key.
4. The measurement results are displayed on the panel.
5. Repeat procedures 2 to 4 five times.
6. Check the [Avg. Value] displayed on the panel is within the "specified range".
   - Specified range: +/- 0.5 %
7. If the value of [Avg. Value] does not fall within the "specified range", repeat the adjustment.

DF	Measurement item	Reference
DF-713 (standard)	DFSkew(Front)	G.6.2 Adjusting front side skew feed on dual scan document feeder
	DFSkew(Back)	G.6.3 Adjusting back side skew feed on dual scan document feeder

15.15 ADF automatic Adjustment

Adjustment item	Contents
Skew Measurement	Measure the DF skew, adjust accordingly.
Sub Scanning	This adjustment is the same as performing [Auto Stop Position Adjustment] of the ADF sub scanning (1-Side and 2-Side) and [Auto Adjust] of [FD-Mag. Adj.] (1-Side and 2-Side) at the same time.
Main Scanning	This adjustment is the same as performing of the ADF main scanning (1-Side and 2-Side) and [Auto Adjust] of [Main Scanning Direction Zoom] (1-Side and 2-Side) at the same time.

NOTE
- **Use the DF reading chart (for Duplex).**
- **[2-Side] is displayed only when the dual scan document feeder is installed.**
- **Since the adjustment of [Sub Scanning] and [Main Scanning] uses the result of [Skew Measurement], make adjustment after executing [Skew Measurement].**

<Procedure (Skew Measurement)>
1. Touch [Skew Measurement].
2. Place the chart in the document feed tray.
   - Place the chart with the surface facing upwards.
3. Press the Start key.
4. The measurement results are displayed on the panel.
5. Repeat procedures 2 to 4 five times.
6. Check the [Avg. Value] displayed on the panel is within the "specified range".
   - Specified range: +/- 0.5 %
7. If the value of [Avg. Value] does not fall within the "specified range", repeat the adjustment.

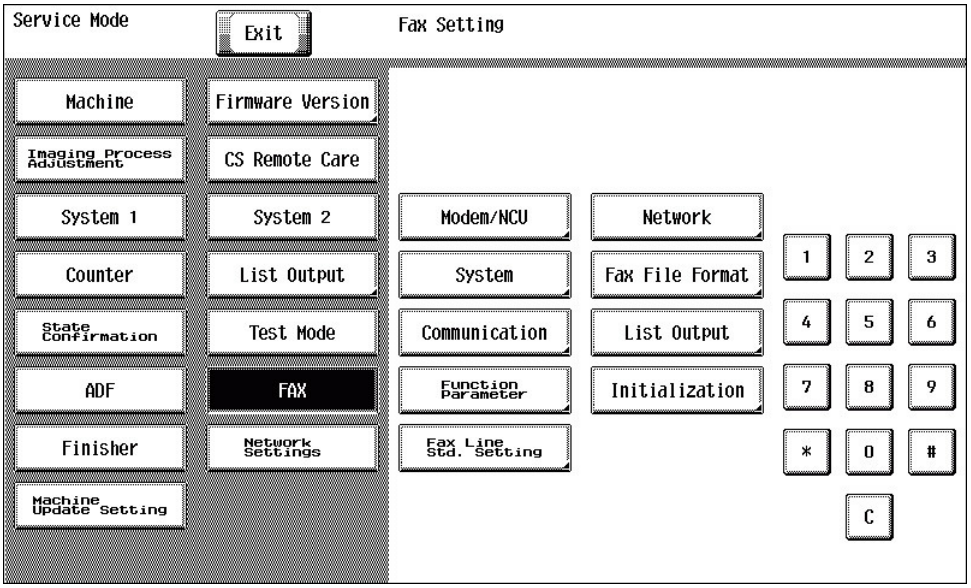
DF	Reference
DF-713 (standard)	G.6.2 Adjusting front side skew feed on dual scan document feeder
	G.6.3 Adjusting back side skew feed on dual scan document feeder

<Procedure (Sub Scanning/Main Scanning)>
1. Measure the skew in [Skew Measurement].
2. Touch [Sub Scanning] or [Main Scanning].
3. Place the chart in the document feed tray.
   - Place the chart with the surface facing upwards.
4. Press the Start key.
5. The measurement results are displayed on the panel.
6. Repeat procedures 3 to 5 five times.
7. Touch [Apply].
   NOTE
   - **By touching [Apply], the adjustment value will be updated to the current value in [Avg. Value].**

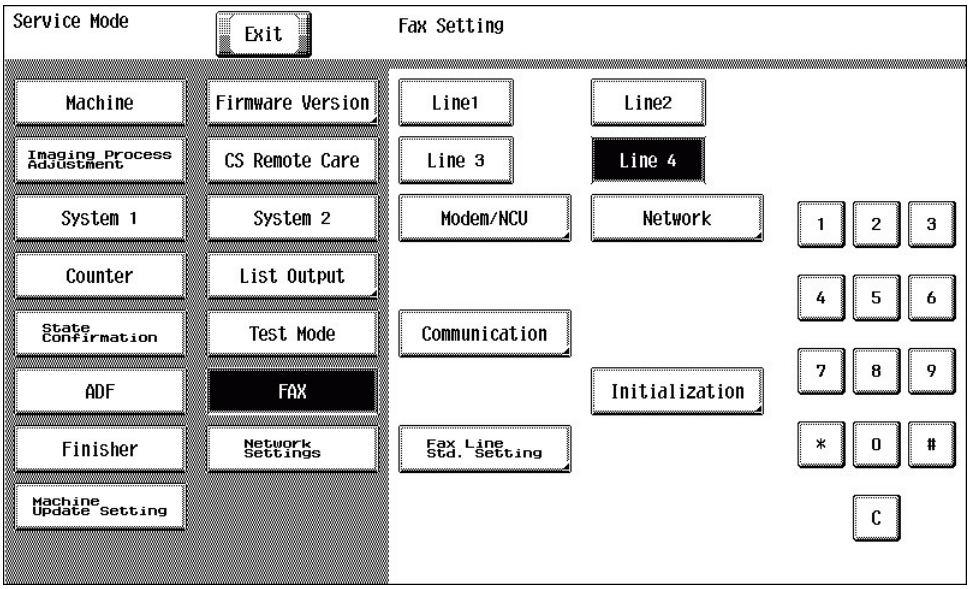
16. FAX

16.1 Outline

- It will not be displayed when [Service Mode] -> [System 2] -> [Option Board Status] shows that FAX (circuit 1) is set to “Unset”.
- To configure settings for fax line 1 when only the FAX (circuit 1) is “Set” in [Service Mode] -> [System 2] -> [Option Board Status].



- To configure settings for each selected fax line when multiple fax lines are “Set” in [Service Mode] -> [System 2] -> [Option Board Status].



The following setting items are displayed only when “Line1” is selected.

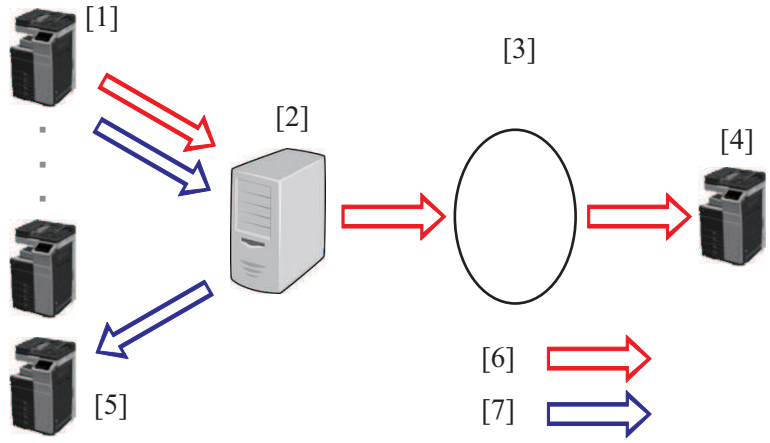
- System, Fax File Format, List Output, Function Parameter

NOTE

- **Fax lines that can be set may vary by different MFPs. For details, see “PRODUCT OUTLINE.”**

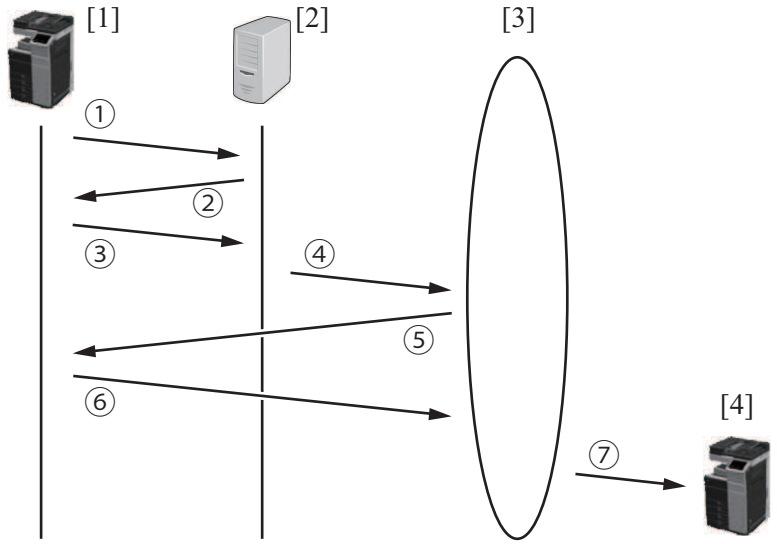
16.1.1 PBX operating environment

Overview



[1]	Fax source	[2]	PBX (Private Branch Exchange)
[3]	Public line	[4]	Fax destination (external line)
[5]	Fax destination (internal line)	[6]	External fax communication
[7]	Internal fax communication	-	-

External fax communication flow



[1]	Fax source	[2]	PBX (Private Branch Exchange)
[3]	Public line	[4]	Fax destination (external line)

<External communication flow>

1. Call from the fax source to the PBX. (In an off-hook state)
2. From the PBX, a PBX dial tone signal is sent to a fax source, which informs that connection is established.
3. The fax source detects the PBX dial tone signal, and sends an external number.
   - Make settings in [Network Settings4] to properly detect the PBX dial tone signal.
4. When the external number is received, the PBX connects to the public line.
5. From the public line, the 1st dial tone signal is sent to the fax source, which informs that connection is established.
6. The fax source detects the 1st dial tone signal, and sends a fax destination number.
   - To properly detect the 1st dial tone signal, make settings in [Network Settings5].
7. The public line connects to the fax destination, and starts the fax communication.

16.2 Modem/NCU

V34

Setting item	Contents	Setting value	Default setting
RX Max. Bit Speed	To set the max. bit speed for reception in V.34.	2400 to 33600 bps (step: 2400 bps)	33600 bps
TX Max. Bit Speed	To set the max. bit speed for transmission in V.34.	2400 to 33600 bps (step: 2400 bps)	33600 bps

Setting item	Contents	Setting value	Default setting
Control CH Speed	A bit speed of the control channel. The negotiation of 2400/1200 is performed in the V.34 start-up procedure.	1200 bps	○
		2400 bps	
Max. SYMB Speed	Maximum modulation speed (baud rate) of V.34 • 3429 SYMB: 3429 33.6 k to 4.8 k • 3200 SYMB: 3200 31.2 k to 2.4 k • 3000 SYMB: 3000 28.8 k to 2.4 k • 2800 SYMB: 2800 • 2400 SYMB: 2400 The modulation speed of both sending and receiving change by change of setting. The upper limit value of V.34 maximum bit speed is determined. Normally you do not need to change the value. In case that a V.34 error frequently occurs, you can attempt to set up 3000 SYMB and decrease the symbol rate, for instance.	2400 SYMB	
		2800 SYMB	
		3000 SYMB	
		3200 SYMB	
		3429 SYMB	○
V34 Point Number	Select the optimal Eye Pattern in accordance with the line state obtained from V.34 transmission training.	Auto	○
		16Point	
		4Point	

V17 Send Max Speed

Setting item	Contents	Setting value	Default setting
TX Max. Speed	To set the max. speed for transmission.	V17-14400 bps	○
		V17-12000bps	
		V17-9600bps	
		V17-7200bps	
		V29-9600bps	
		V29-7200bps	
		V27-4800bps	
		V27-2400bps	
RX Max. Speed	To set the max. speed for reception.	V17-14400 bps	○
		V29-9600bps	
		V27-4800bps	

TxATT

Setting item	Contents	Procedure
PIX TxATT	To set the output level of PIX TxATT. Directly sets modem. There are no external attenuator.	The setting value are different depending on the country.
TONE/Procedure Signal TxATT	To set the output level of TONE/Procedure Signal TxATT. Directly sets modem. There are no external attenuator.	
CED/ANSam TxATT	To set the output level of CED/ANSam TxATT. Directly sets modem. There are no external attenuator.	
DTMF TxATT	To set the output level of DTMF TxATT. Directly sets modem. There are no external attenuator.	

Level

Setting item	Contents	Setting value	Default setting
CD/SED ON Level	To set reception signal sensitivity level. SED is not used.	-48 to -33 dBm (Step: 5 dBm)	-48 dBm
DTMF H-L Level Difference	To set DTMF H-L level difference.	1.0 to 4.0 dB (Step: 0.5 dB)	2.0 dB

Cable EQL

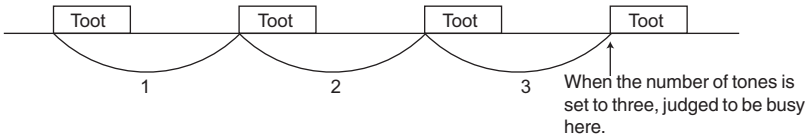
Setting item	Contents	Setting value	Default setting
Send/Rec.	To correct the delay characteristics of the communication line.	0 Km	○
		1.8 Km	
		3.6 Km	
		7.2 Km	

16.3 Network

Network Setting 1

Setting item	Contents	Setting value	Default setting
Receive Signal Detection Mode	To set whether to detect the receive signal by the number of times or by time. Sets to “Time” when ringer can not be detected by the number.	No. of Times	○
		Time	
BUSY TONE Detection	To set whether or not to use the Busy Tone detection.	ON	○ (JP/US)
		OFF	○ (EU)
No. of Times of Busy Tone Detection	To set the number of times of Busy Tone detection. 0 time shows no detection is done.	0 to 15 count (Step: 1 count)	2 (JP/US) 3 (EU)

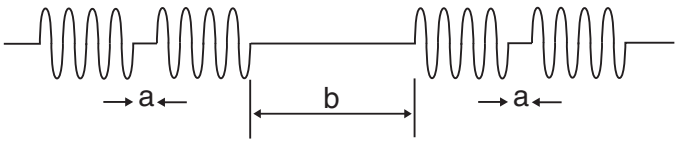
- *: No. of Times of Busy Tone Detection



Network Setting 2

Setting item	Contents	Setting value	Default setting
1300Hz Detection	To set whether or not to use the 1300 Hz detection. Set this function to “ON” if the facsimile network (F-net) is to be used.	ON	
		OFF	○
Dial Tone Detection	To set whether or not to use the Dial Tone detection.	ON	○
		OFF	
DC-LOOP Check	Checks the DC loop current before dialing. When the current is zero, an error occurs. (T.80) You can change the setting to be compliant to standards in other countries. In Japan, set this parameter to OFF.	ON	
		OFF	○
min. RING OFF Time	Minimum time to recognize ringer interval.	0 to 1000 ms (Step: 100 ms)	200 ms (JP) 0 ms (US/EU)
Response Waiting Time	To set the response waiting time. Response waiting timer (55 sec.) • Calling: Starts after dialing. Until CED is received.	35 to 115 s (Step: 1 s)	55 s
Pause Time	The pause time for one pause key (pause between digits)	1 to 7 s (Step: 1 s)	1 s

- *: min. RING OFF Time



- a: To avoid judging “a” as a ring-off time.
- b: Ring-off time

Network Setting 3

NOTE

- **This setting is displayed only when “Line1” is selected.**
- **This setting is displayed only when the “Fax Target” is set to “JP.”**

Setting item	Contents	Setting value	Default setting
Pseudo-RBT Format	To set a pseudo ring back tone format to be send back to the calling side.	Japan	○
		US	
		GB	
		GE	
		None	
Pseudo-RBT TX Level	To set the transmission level for the pseudo ring back tone.	-15 to -10 dBm (Step: 1 dBm)	-10 dBm

Network Settings4, Network Settings5

- Network Settings4: To make settings for PBX dial tone signals received from PBX.
- Network Settings5: To make settings for 1st dial tone signals received from public line.

Setting item	Contents	Setting value	Default setting	
			Network Settings4	Network Settings5
Tone Det. Set.	To execute the tone detection setting.	Continuous Sound		○

Setting item	Contents	Setting value	Default setting	
			Network Settings4	Network Settings5
		Intermittent Sound	○ (JP)	
		OFF	○ (US/EU)	

- To make the following settings according to the setting value in Tone Det. Set.

When [Continuous Sound] is selected in Tone Det. Set.

Setting item	Contents	Setting range	Default setting
Wait Time	To set the dial tone waiting time.	1 to 10 s (Step: 1 s)	3 s
Detection Time	To set the dial tone detection time.	20 to 5000 ms (Step: 20 ms)	1000 ms
Interr. Det. Time	To set the interruption detection time.	0 to 1000 ms (Step: 20 ms)	0 ms
Tone Det. Frequency (*)	To set the dial tone detection frequency pattern.	1 to 23 (Step: 1)	8

When [Intermittent Sound] is selected in Tone Det. Set.

Setting item	Contents	Setting range	Default setting
Minimum ON Time	To set the minimum ON time.	20 to 5000 ms (Step: 20 ms)	100 ms
Maximum ON Time	To set the maximum ON time.	20 to 5000 ms (Step: 20 ms)	1000 ms
Minimum OFF Time	To set the minimum dial tone OFF time.	20 to 5000 ms (Step: 20 ms)	100 ms
Maximum OFF Time	To set the maximum dial tone OFF time.	20 to 5000 ms (Step: 20 ms)	400 ms
Detection Count	To set the number of times of tone detection.	1 to 10 count (Step: 1 count)	3 count
Wait Time	To set the dial tone waiting time.	1 to 10 s (Step: 1 s)	3 s
Tone Det. Frequency (*)	To set the dial tone detection frequency pattern.	1 to 23 (Step: 1)	8

When [OFF] is selected in Tone Det. Set.

Setting item	Contents	Setting range	Default setting
Pre-PauseTime	To set the pre-pause time.	1 to 10 s (Step: 1 s)	3 s
Tone Det. Frequency (*)	To set the dial tone detection frequency pattern.	1 to 23 (Step: 1)	8 (400±100Hz)

- *: The setting values of Tone Det. Frequency are shown as below.

*: Details of Tone Det. Frequency setting.

Setting value	Contents	Setting value	Contents	Setting value	Contents
1	155±65Hz	9	425±100Hz	17	425±150Hz
2	1155±25Hz	10	440±100Hz	18	440±150Hz
3	375±75Hz	11	375±125Hz	19	465±205Hz
4	400±75Hz	12	400±125Hz	20	350±25Hz (Dual)
5	425±75Hz	13	425±125Hz	21	620±25Hz (Dual)
6	440±75Hz	14	440±125Hz	22	400±75Hz (Dual)
7	375±100Hz	15	375±150Hz	23	550±100Hz (Dual)
8	400±100Hz	16	400±150Hz	-	-

16.4 System

NOTE

- **This setting is displayed only for "Line1."**

Display Setting

Setting item	Contents	Setting value	Default setting
Closed area Rx	To set whether or not to use the menu display for closed reception function by using F-code for junk fax messages.	ON	○
		OFF	
Re-Transmission	To set whether or not to use the re-transmission function.	ON	○
		OFF	

Setting item	Contents	Setting value	Default setting
	• This setting is “OFF” when [Service Mode] -> [Billing Setting] -> [Management Function Choice] shows that key counter or vendor 2 is mounted.		
Compulsory Memory RX	To set whether or not to use the compulsory memory reception function. • When set to “ON”, the function permits selection of ON or OFF setting for the compulsory memory reception function that allows a document when received not to be printed automatically and, instead, to be printed through manual operation.	ON	○
		OFF	
Dial In (Only for Japan)	To set whether or not to use the modem dial-in function.	ON	○
		OFF	
Reject Calls	To set whether or not to use the reject calls function. (Only for Japan) • When set to “ON”, the function displays the function that allows the user to be rejected as a reject call number.	ON	○
		OFF	
Remote Rx (Only for Japan)	To set whether or not to use the remote reception function.	ON	○
		OFF	
Relay	To set whether or not to use the relay function.	ON	○
		OFF	
Number display (Only for Japan)	To set whether or not to use the number display function.	ON	○
		OFF	

Scan Setting

Setting item	Contents	Setting value	Default setting
Frame Erasure HP	To set the frame erasure size during reading. The four edges of the original are erased by the same width. Erases the outer lines to prevent black lines from appearing. Effective in the book transmission.	5 mm	○
		10 mm	
		15 mm	

System Function

Setting item	Contents	Setting value	Default setting
Fax Board Watchdog	To set whether or not to enable watchdog by the fax board CPU. • ON: Reset when hung up. • OFF: Keeps being hung up.	ON	○
		OFF	
Fax BOOT Rewrite on ISW	Required when a BOOT BLOCK program is upgraded or a hardware is changed.	ON	
		OFF	○
Error Code Display Time	To set the communication error code display time.	HOLD	20 s
		10 to 250 s (Step: 10 s)	

Communication Setting

Setting item	Contents	Setting value	Default setting
Auto Rotation Send (LT)	To set whether or not to rotate the Letter size original automatically for transmission. • ON: Transmits in the A4 width. • OFF: Transmits in the A3 width.	ON	○
		OFF	
Auto Rotation Send (A4T)	To set whether or not to rotate the A4 size original automatically for transmission. • ON: Transmits in the A4 width. • OFF: Transmits in the A3 width.	ON	○
		OFF	
Error Page Resending	To set whether to retransmit, after a communication error occurs, the document starting with the error page or all pages.	Error Page	○
		All Page	
Number of Redials (Error Page)	To set the number of redials for the error page. Counted as a busy redial when the error page redial is busy.	0 to 7 (Step: 1)	3

16.5 Fax File Format

- To initialize the following data.
  - All of the scan/fax documents stored in the box are erased.
  - All of the boxes produced automatically by the F code are erased.

NOTE

- **This setting is displayed only for “Line1.”**

<Procedure>

1. Press the Start key.
2. The Fax File Format is executed.

16.6 Communication

Protocol

Setting item	Contents	Setting value	Default setting
V8/V34 Protocol	To set whether or not to use the V.8/V.34 protocol.	ON	○
		OFF	
V17 EP TONE	Whether the EP tone (Echo Protect: 2100Hz) is added to the top of the training signal. This setting is displayed only when “Line1” is selected.	ON	○
		OFF	
V29 EP TONE	Whether the EP tone (Echo Protect: 2100Hz) is added to the top of the training signal. This setting is displayed only when “Line1” is selected.	ON	
		OFF	○
V17 Selection Mode “-”	V.34 is not used when a dash (-) is added at the top of dial number. This setting is displayed only when “Line1” is selected.	ON	
		OFF	○
ANSam Send Time	To set the transmission time for the V.8 protocol signal ANSam. Usually not need to be changed. This setting is displayed only when “Line1” is selected.	1.0 to 5.5 s (Step: 0.5 s)	4.0 s

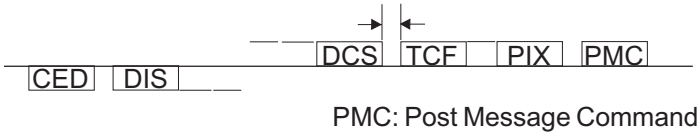
Int’l Comm. Function

Setting item	Contents	Setting value	Default setting
Foreign Communication Function	To set whether or not to use the mode that employs the number of DIS waiting times.	ON	○
		OFF	
No. of DIS Waiting Times at Foreign Communication	To set the number of DIS waiting times.	1	○
		2	
V34 Speed	To set the V.34 international communication mode speed.	16800 to 33600 bps (Step: 2400 bps)	28800 bps
V17 Speed	To set the V.17 international communication mode speed.	7200 to 14400 bps (Step: 2400 bps)	7200 bps
V29 Speed	To set the V.29 international communication mode speed.	2400 to 9600 bps (Step: 2400 bps)	4800 bps

TIMER1

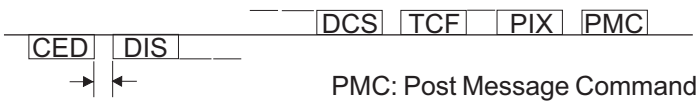
Setting item	Contents	Setting value	Default setting
T1	T1 timer (T.30 standard) • Calling: Designate by the response waiting timer • Called: Starts after DIS is output. The waiting time until DCS is received. Response waiting timer (55sec) • Calling: Starts after dialing. Until CED is received.	30 to 90 s (Step: 5 s)	35 s
DCS-TCF DELAY	To set the delay time between DCS and TCF. (*1)	50 to 150 ms (Step: 10 ms)	80 ms
CED-DIS DELAY	To set the delay time between CED and DIS. (*2)	50 to 150 ms (Step: 10 ms)	80 ms
PIX-PMC DELAY	To set the delay time between PIX and PMC. (*3)	50 to 150 ms (Step: 10 ms)	80 ms

- *1: DCS-TCF DELAY



PMC: Post Message Command

- *2: CED-DIS DELAY



PMC: Post Message Command

- *3: PIX-PMC DELAY



PMC: Post Message Command

TIMER2

Setting item	Contents	Setting value	Default setting
EOL-EOL	To set the transmission time between EOLs. (*)	4.0 to 25.5 s (Step: 0.5 s)	13.0 s
CFR-PIXWAIT	Sets the waiting time from CFR is sent to the image signals are received. Radio fax on boats occasionally requires more than 6 sec.	6.0 to 25.5 s (Step: 0.5 s)	6.0 s
EOM-PIXWAIT	Waiting time to receive PIX before sending DIS when EOM is used. Some fax machines sends PIX without returning to Phase B in spite of EDM.	5.5 to 25.5 s (Step: 0.5 s)	5.5 s
JM WAIT	Time to continue outputting CM until receiving JM.	6.0 to 25.5 s (Step: 0.5 s)	9.0 s

- *: EOL-EOL



Others

Setting item	Contents	Setting value	Default setting
ECM Function	Set whether or not to cancel reception ECM (error correction mode).	ON	○
		OFF	
Frame Size at ECM TX	To set the frame size at ECM transmission.	64	
		256	○
Cording Ability	To set the coding ability. Effective to both sending and reception.	MH	
		MH/MR	
		MH/MR/MMR	
		MH/MR/MMR/JBIG	○

16.7 List Output

NOTE

- **This setting is displayed only for "Line1."**

Report Addition Information

- To set whether or not to add the diagnosis code or dial number to the communication journal.

Setting value	Contents	Default setting
Diagnosis Code	The diagnosis code is printed on the communication journal.	
Dial Number	The dial number is printed on the communication journal.	
OFF	Do not apply diagnosis codes and dial numbers.	○

TX Result Report

- To set whether or not to add image to the transmission result report.
- Even if set to "With image" images are not attached at the time of the quick memory transmission and the manual transmission.

Setting value	Default setting
With image	○
Without image	

Protocol Trace Auto Output

- To set the timing for the protocol trace auto output.

Setting value	Default setting
Always	
Error	
OFF	○

16.8 Function Parameter

Function parameters can be set through addressing.

NOTE

- **To change the value in this address parameter list, comply with the telephone line regulation for each country.**
- **Depending on values that have been changed, compliance with the phone line standards of other countries may not be obtained.**

<Procedure>
1. Select [Address] and then, enter the address using [A] to [F] or keypad.
   A Cursor is movable if [<-] or [->] is pushed.
2. Next, select [Data] and enter a value using binary numbers with keypad.
3. Confirm the setting in [Address] and the entered numbers, then touch [Apply].
4. After the settings have been completed, touch [END].

16.9 Initialization

- To initialize selected data.

Data	Contents
Fax Function Parameter	The function set condition is initialized into the Factory Default condition.
Communication Journal Data	All of the Communication Journal is erased. This setting is displayed only when “Line1” is selected.
Rx Refusal Fax Number	To clear all reception refusal fax numbers (reception refusal telephone numbers). This setting is displayed only when “Line1” is selected.

NOTICE
- For the formats of the Abbreviated Registration Data, the Program Registration Data, The Group Registration Data, and the F-code Box Data, see “ I.16.5 Fax File Format.”

<Procedure>
1. Select data you want to initialize.
   Supplement: Two or more selections are possible for data.
2. Touch [Yes].
3. When a verification message is displayed, touch [Yes].
4. The data selected is initialized.

16.10 Fax Line Std. Setting

- Used to confirm fax settings.

NOTE
- **If the following settings are changed, the settings from [Service Mode] -> [FAX] -> [Network] and [System] are also changed.**
  - **Fax Line Std. Setting 1: Receive Signal Detection Mode, BUSY TONE Detection, No. of Times of Busy Tone Detection**
  - **Fax Line Std. Setting 2: Dial Tone Detection, Pause Time, Response Waiting Time**
  - **Fax Line Std. Setting 3: Error Page Resen, Number of Redial**
- **If the following settings are changed, the settings from [Administrator] -> [Fax Settings] -> [Line Parameter Setting] is also changed.**
  - **Fax Line Std. Setting 1: Number of RX Call Rings, Receive Time Interval Set**
  - **Fax Line Std. Setting 4: Number of Redials, Redial Interval, Line Monitor Sound Volume (Send), Line Monitor Sound Volume (Receive)**

V17 RX Error

- This configures whether or not to lower the reception speed when reattempting to receive data after a receive error occurs.
- When this is set to [ON], the device will use V17 to receive data the next time after a receive error occurs.

Setting value	Default setting
ON	○
OFF	

<Procedure>
1. Touch [Fax Line Std. Setting 3].
2. Select either [ON] or [OFF] for [V17 RX Error].

16.11 Function parameter list (for all fax lines)

16.11.1 Job setting

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
Redial interval	000B0000	7-4	-	-	00000011
		3-0	Redial interval (unit: 1 min.) 0000: 0 min. to 1111: 15 min.	3 min.	
No. of busy redials	000B0001	7	Redial number of times at the time of T82 on US/CA standard 0: 1 time 1: Depending on bit3-0 (administrator menu)	1 time	00000011
		6-4	-	-	
		3-0	No. of busy redials (unit: No. of times) 0000: 0 time to 1111: 15 times	3 times	
No. of error redials	000B0002	7-4	-	-	00000011
		3-0	Number of redials (error page) (unit: No. of times) 0000: 0 time to 1111: 15 times	3 times	
Setting related to FAX memory	000B0003	7	-	-	00001000
		6	V34 mode at the time of error page redial 0: Inhibited	Inhibited	

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
			1: Enabled		
		5	-	-	
		4	Resend from the first page at the time of error page redial 0: Retransmitted from error page 1: Retransmitted from initial page	Retransmitted from error page	
		3	Call acceptance operation with toner empty 0: Refused 1: Permitted	Permitted	
		2-0	-	-	
FAX communication HP	000B0004	7-6	-	-	00000101
		5	Quick memory transmission 0: OFF 1: ON	OFF	
		4	File deleted after polled transmission 0: Yes 1: No	Yes	
		3	Reception mode 0: Auto 1: Manual	Auto	
		2	V.34 0: OFF 1: ON	ON	
		1	International transmission 0: OFF 1: ON	OFF	
		0	ECM transmission 0: OFF 1: ON	ON	
Forward TX	000B0005	7	-	-	00000000
		6	Two-sided recording of FAX 0: Possible 1: Impossible	Possible	
		5-4	-	-	
		3-2	Default setting of forward TX 00: Not specified 01: Line 1 10: Line 2	Not specified	
		1-0	Forward TX 00: No forwarding 01: Forwarding + Always (print) 10: Forwarding + Only when not delivered (print)	No forwarding	
FAX reception automatic output setting	000B0006	7	Two-sided recording	×	00000001
		6	-	-	
		5	Inched recording paper selection	×	
		4	Page unit recording	×	
		3	Face-up output	×	
		2	Page division recording	×	
		1-0	Output tray HP 00: Tray 1 01: Tray 2 10: Tray 3 11: Tray 4	Tray 2	
FAX reception automatic output setting 2	000B0007	7	STOP is effected for printing during reception	○	11010100 (JP/EU) 11110100 (US)
		6	STOP is effected for printing after reception	○	
		5	Inched paper priority	× (JP/EU) ○ (US)	
		4-2	Paper tray fixing 000: Tray 1 001: Tray 2 010: Tray 3 011: Tray 4 100: LCT 101: Auto	Auto	

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
		1	LG is used.	×	
		0	LT is used.	×	
Setting of recording paper for reception	000B0008	7	Selection without A5S 0: A4->B5 1: B5->A4	A4->B5	00000000
		6-2	-	-	
		1-0	Paper select mode 00: APS 01: Recording paper designation mode 1 10: Recording paper designation mode 2	APS	
Setting of recording paper size for reception	000B0009	7-5	-	-	00001111 (JP/EU) 00011111 (US)
		4-0	01000: A3 01001: B4 01111: A4 10001: $8^1/_2$×14 11000: 11 x 17 11111: $8^1/_2$×11	A4 (JP/EU) $8^1/_2$×11 (US)	
Target reduction rate when A4/LTR is used	000B000A	7-0	Target reduction rate when A4/LTR is used (%)	90%	01011010
Other target reduction rate	000B000B	7-0	Other target reduction rate (%)	93%	01011101
BOOT rewrite on FAX ISW	000B000C	7-1	-	-	00000000
		0	Boot area rewrite 0: No 1: Yes	No	
Reduction rate used in APS	000B000D	7-0	Received image reduction rate at APS (%)	93%	01011101
Minimum reduction rate	000B000E	7-0	Received image reduction rate at APS (A3/B4 width) (%)	96%	01100000
Incomplete TX hold	000B000F	7	Debug mode 0: OFF 1: ON (3 min.)	OFF	00000000
		6-4	-	-	
		3-0	File holding time 0000: 12 hours 0001: 24 hours 0010: 48 hours 0011: 72 hours	12 hours	
Inter-station timer	000B0010	7-0	Inter-station timer (unit: sec.) 00000000 to 11111111: 255 sec. (00000000 means 3 sec.)	3 sec.	00000011
PC-FAX reception	000B0016	7	TSI routing function 0: OFF 1: ON	OFF	00010000
		6	At operation with PC-FAX reception code unspecified 0: PC reception 1: Print	PC reception	
		5	PC-FAX reception print 0: No 1: Yes	Yes	
		4	-	-	
		3-1	PC-FAX reception mode 000: OFF 001: ON + Received at fixed box 010: Dialin + Received at fixed box 011: ON + Received at specified box 100: Dialin + Reception at specified box	OFF	
		0	Password check 0: OFF 1: ON	OFF	
PC-FAX reception password	000B0017 - 000B002A	7-0	ASCII 20 digits	0x20	00000010
FAX reception automatic output setting 3	000B002B	7-4	-	-	00000001
		3-0	Output No. of sets setting range (unit: sets) 0000: 0 set to 1111: 15 sets	1 set	
Setting for 2 lines	000B002C	7-6	Line 2 transmission setting 00: Transmission/Reception	Transmission/ Reception	00000000

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
			01: Reception only 10: Transmission only		
		5-0	-	-	
PC-FAX setting	000B002D	7-2	-	-	00000000
		1-0	PC-FAX transmission line specification 00: Not specified 01: Line 1 10: Line 2	Not specified	
I-Fax encoding system capability (default for auto transmission capability)	000B0032	7-4	-	-	00000100
		3-0	0000: (Setting prohibited) 0001: MH 0010: MR/MH 0100: MMR/MR/MH	MMR/MR/MH	
Auto forwarding mode	000B0034	7-2	-	-	00000000
		1	Inched transmission 0: mm 1: inch	mm	
		0	Auto forwarding destination 0: FAX 1: E-Mail	FAX	
I-Fax related default settings	000B0035	7-5	-	-	00000000
		4	RTI position setting 0: Outer 1: Inner	Outer	
		3	TTI position setting 0: Outer 1: Inner	Outer	
		2	RTI setting 0: ON 1: OFF	ON	
		1	TTI setting 0: ON 1: OFF	ON	
		0	Stamp default value setting 0: OFF 1: ON	OFF	
Communication function	000B0039	7	Interception of 1-address transmission in broadcasting transmission 0: Permitted 1: Inhibited	Permitted	01000100
		6	TTI printing, unit ID preference function 0: Not preferred 1: Preferred	Preferred	
		5	Abandoning error pages during transmission 0: Not abandoned 1: Abandoned	Not abandoned	
		4	F code transmission function 0: Yes 1: No	Yes	
		3	Dial number duplication check during broadcasting transmission 0: Checked 1: Not checked	Checked	
		2	Incomplete TX hold function 0: Yes 1: No	No	
		1	Relay reception function 0: Yes 1: No	Yes	
		0	Confidential reception function 0: Yes 1: No	Yes	
Character ID [46]	000B003A - 000B0067	7-0	ASCII [46] When ID is less than 46 digits, justify to the left and insert space at the top. (With NULL terminators)	0x00	00000000
Reception refuse	000B0068	7-1	-	-	00000000

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
		0	Call acceptance rejected - Number display 0: Disconnected line 1: No response	Disconnection line	
Recording paper priority selection	000B0069	7-2	-	-	00000000
		1-0	00: Automatic selection 01: Fixed size 10: Priority	Automatic selection	
Box number error operation	000B006A	7-5	-	-	00000000
		4	Print or not print the images received when the TSI transfer terminates normally. 0: OFF 1: ON	ON	
		3	Operation with no routing registration or no registered BOX upon the TSI routing turned ON 0: Print output 1: Saved in forced memory reception BOX	Print output	
		2-1	Reception of unregistered box sub No. 00: Print 01: Communication error 10: Auto create	Print	
		0	-	-	

16.11.2 Function setting

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
Error line processing/judgment	000E0000	7	RTP transmission	× (JP/US) ○ (EU)	00000001 (JP/US) 10000010 (EU)
		6	-	-	
		5	Error line recirculation	×	
		4	Addition of error sign	×	
		3	-	-	
		2	Judgment of No. of sequential error lines	×	
		1	Error line rate judgment	× (JP/US) ○ (EU)	
		0	Judgment of No. of error lines	○ (JP/US) × (EU)	
No. of error lines-very good	000E0001	7-0	No. of lines-very good No. of error lines≦VeryGoodErrorNum, MCF is transmitted.	16	00010000
No. of error lines-good	000E0002	7-0	No. of error lines-good VeryGoodErrorNum<No. of error lines≦GoodErrorNum, RTP is transmitted	64 (JP/US) 128 (EU)	01000000 (JP/US) 10000000 (EU)
No. of error lines-bad	000E0003	7-0	No. of error lines-bad GoodErrorNum<No. of error lines≦BadErrorNum, RTN is transmitted. No. of error lines>BadErrorNum, it is considered to be error line over.	128 (JP/US) 255 (EU)	10000000 (JP/US) 11111111 (EU)
Rate of error lines-very good	000E0004	7-0	Rate of error lines-very good (%) Rate of error lines≦VeryGoodErrorPercent, MCF is transmitted.	5%	00000101
Rate of error lines-good	000E0005	7-0	Rate of error lines-good (%) VeryGoodErrorPercent<Rate of error lines≦GoodErrorPercent, RTP is transmitted. Rate of error lines>GoodErrorPercent, RTN is transmitted.	10%	00001010
No. of continuous error lines-bad	000E0006	7-0	No. of bad judgment sequential error lines (Normal) No. of sequential error lines≦ErrorContNormal, MCF is transmitted. No. of sequential error lines>ErrorContNormal, RTN is transmitted.	3	00000011
No. of continuous error lines-bad	000E0007	7-0	No. of bad judgment sequential error lines (Fine) No. of sequential error lines≦ErrorContNormal, MCF is transmitted.	6	00000110

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
			No. of sequential error lines>ErrorContNormal, RTN is transmitted.		
No. of continuous error lines-bad	000E0008	7-0	No. of bad judgment sequential error lines (300 dpi) No. of sequential error lines≦ErrorContNormal, MCF is transmitted. No. of sequential error lines>ErrorContNormal, RTN is transmitted.	9	00001001
No. of continuous error lines-bad	000E0009	7-0	No. of bad judgment sequential error lines (Super fine) No. of sequential error lines≦ErrorContNormal, MCF is transmitted. No. of sequential error lines>ErrorContNormal, RTN is transmitted.	12	00001100
EP tone addition	000E000A	7-3	-	-	00000110
		2	V.17	○	
		1	-	-	
		0	V.29	×	
CED detection transmission frequency	000E000B	7-2	-	-	00000000
		1	CED detection 0: Detect 1: Not detect	Detect	
		0	CED transmission frequency 0: 2100 Hz	2100 Hz	
TSI/CSI/CIG parameter	000E000C	7	TSI transmission 0: No 1: Always	Always	11100000
		6	CSI transmission 0: No 1: Always	Always	
		5	CIG transmission 0: No 1: Always	Always	
		4-1	-	-	
		0	Character ID is put on CSI.	0	
G3 mode error	000E000D	7	Ph-C8 min. limit timer at Non-ECM 0: No 1: Yes	No	00000000 (JP/US) 01000100 (EU)
		6	Selection of “-” at dial top 0: OFF 1: ON	OFF (JP/US) ON (EU)	
		5	RTN reception 0: step down 1: Line disconnect	step down	
		4	Remote reception ID received 0: After Ring detection only 1: No limit	After Ring detection only	
		3	DIS retransmission interval in manual reception 0: 4.5 sec. 1: 3.0 sec.	4.5 sec.	
		2	DCN transmission at T200	0 (JP/US) 1 (EU)	
		1	DIS length at reception limited to 4byte 0: No limit 1: Limit	No limit	
		0	DCN transmitted at stop of ph.C	0	
Step up/down	000E000E	7	Strict TCF check 0: Normal 1: Strict check	Normal	00000000
		6-1	-	-	
		0	The PC/BC of the PostMsg is checked while in the ECM reception. 0: Yes 1: No	Yes	
Delay timer between DCS-TCF	000E000F	7-0	DCS - TCF delay timer (unit: 10 ms)	80 ms	00001000
Delay timer between PIX-PMC	000E0010	7-0	PIX - PMC delay timer (unit: 10 ms)	80 ms	00001000

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
Delay timer between CED-DIS	000E0011	7-0	CED - DIS delay timer (unit: 10 ms)	80 ms	00001000
T1 timer for calling	000E0012	7-0	T1 timer for transmission (unit: 1 sec.)	35 sec.	00100011
T1 timer for called	000E0013	7-0	T1 timer for reception (unit: 1 sec.)	35 sec.	00100011
ph.C reception limited time	000E0014	7-0	Max. reception time per page (unit: min.) 00000001: 1 min. to 11111111: 255 min.	15 min.	00001111
Timer between EOLs	000E0015	7-0	EOL - EOL timer (unit: 100 ms)	13000 ms	10000010
Timer between frames	000E0016	7-0	Timer between frames (unit: sec.)	35 sec.	00100011
ANSam signal transmission time	000E0017	7-0	ANSam signal transmission time (unit: 100 ms)	4000 ms	00101000
Ci signal transmission time	000E0018	7-0	Ci signal transmission time (unit: 100 ms)	500 ms	00000101
High-speed signal transmission waiting delay timer	000E0019	7-0	High-speed signal transmission waiting delay timer (unit: 10 ms) (Between CFR-PIX/MPS-PIX/CTR-PIX)	550 ms	00110111
ph.C top dummy data transmitting time	000E001A	7-0	ph.C top dummy data transmission time (unit: 100 ms) (Dummy data for non-ECM / Preamble at ECM)	400 ms	00000100
RTC counter	000E001B	7-3	-	-	00000001
		2-0	The EOL counter judged to be RTC 000: EOL*2 001: EOL*3 010: EOL*4 011: EOL*5 100: EOL*6	EOL*3	
Closed area communication	000E001C	7-3	-	-	00000000
		2	Polling TX	×	
		1	Polling RX	×	
		0	-	-	
Machine password [20]	000E001D - 000E0030	7-0	ASCII [20] When ID is less than 20 digits, justify to the left and insert space at the top. (No NULL terminator)	0x20	00100000
CSRC password [20]	000E0031 - 000E0044	7-0	ASCII [20] When ID is less than 20 digits, justify to the left and insert space at the top. (No NULL terminator)	0x20	00100000
Watch dog	000E0045	7-1	-	-	00000001
		0	Watch dog 0: OFF 1: ON	ON	
T2 timer after CFR	000E0046	7-0	T2 timer value after CFR x100 ms	6000 ms	00111100
T2 timer after EOM	000E0047	7-0	T2 timer after EOM x100 ms	5500 ms	00110111
JIM waiting timer	000E0048	7-0	JM waiting timer value x100 ms	9000 ms	01011010
Destination	000E0049	7-0	00000000: US 00000001: Canada 00000010: Japan 00000011: Australia 00000100: New Zealand 00000101: Europe 00000110: Germany 00000111: UK 00001000: France 00001001: Switzerland 00001010: Netherlands 00001011: Belgium 00001100: Australia 00001101: Norway 00001110: Sweden 00001111: Finland 00010000: Ireland 00010001: Denmark 00010010: Italy 00010011: Spain 00010100: Portugal 00010101: Poland 00010110: South Africa 00010111: Taiwan 00011000: Saudi Arabia 00011001: China 00011010: Malaysia 00011011: Singapore	Japan (JP) US (US) Europe (EU)	00000010 (JP) 00000000 (US) 00000101 (EU)

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
			00011100: Korea 00011101: Hong Kong 00011110: Generic (OT) 00011111: Argentina 00100000: Brazil 00100001: Vietnam 00100010: Philippines 00100011: Russia		
Function when DIS signal is created	000E004A	7-2	-	-	00000001
		1	Change-over of the silent interval between ANSam and DIS (For revision T.30) 0: Silent interval of 450 ms 1: 75 ms	Silent interval of 450 ms	
		0	V8 capability, if available, of DIS to transmit with V.21 0: V.8 bit ON 1: V.8 bit OFF	V.8 bit OFF	
Signal check at the time of F code communication	000E004B	7-1	-	-	00000000
		0	Check of PWD and SID received signal in F code communication 0: Signal checked 1: PWD and SID not distinguished	Signal checked	
No. of CI signal transmission in manual transmission	000E004C	7-0	CI signal repetitive transmission frequency when no ANSam received after CI transmission (unit: No. of times)	3 times	00000011
Tone detection time (PB)	000E004D	7-4	PB OFF time integration (x10 ms) 0000 to 1111 (Translated to 50 ms when the value is "0000")	50 ms	01010101
		3-0	PB ON time integration (x10 ms) 0000 to 1111 (Translated to 50 ms when the value is "0000")	50 ms	
Time for modem response waiting timeout	000E004E	7-0	Waiting event from modem/Response waiting timeout time (x10 sec.) (00000000 counted as 90 sec.)	90 sec.	00000000
Continuous CRP reception frequency resulting in an error	000E004F	7-0	Sequential CRP reception frequency resulting in error (unit: No. of time) (00000000 counted as 3 times)	3 times	00000000
1300 Hz line seizure parameter detection time	000E0050	7-0	1300 Hz tone detection time for no ringing reception (x100 ms)	2300 ms	00010111
1300 Hz tone detection frequency pattern	000E0051	7-1	-	-	00000000
		0	1300 Hz tone detection frequency pattern 00: 1300 Hz ±30 Hz 01: 1300 Hz ±10 Hz	1300 Hz ±30 Hz	
German specifications	000E0052	7	Custom Mode (clears the FP overwrite of the error line relationship for EU destinations)	×	00000000 (JP/US) 00001111 (EU)
		6-4	-	-	
		3	ERR transmission (DTS sequence)	× (JP/US) ○ (EU)	
		2	DCN reception error ignored	× (JP/US) ○ (EU)	
		1	Line disconnected within 6 sec. after CD OFF in ph.C	× (JP/US) ○ (EU)	
		0	Line disconnected upon reception of DIS to DTC	× (JP/US) ○ (EU)	
Retransmission intervals of DIS (Auto reception)	000E0053	7-0	DIS re-transmission interval in automatic reception (x0.1 sec.)	3 sec.	00011110
TTI for transmission	000E0054	7-2	-	-	00000011
		1-0	TTI in transmission TTI added 00: OFF 01: (OFF) 10: INSIDE 11: OUTSIDE	OUTSIDE	
Image reduction parameter	000E0055	7-1	-	-	00000000
		0	Reduction parameter in main scanning direction 0: Thick line kept 1: Thick line not kept	Thick line kept	

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
Main body polling transmission command wait timer	000E0056	7-0	Timer for waiting a transmission command (+FDT) from the main body during turnaround of polling transmission (unit: sec.) (Translated to 8 sec. when the value is "00000000")	8 sec.	00001000
Guaranteed time to switch post message command receive modes	000E0057	7-0	Guaranteed time to switch post message command receive modes (unit: 1-ms increments) (Translated to 50 ms when the value is "00000000")	50 ms	00000000
V.8 time out (transmission)	000E0059	7-0	V.8 sequence timeout time (transmission)	0	00000000
V.8 time out (reception)	000E005A	7-0	V.8 sequence timeout time (reception)	0	00000000
Delay timer between TCF and CFR	000E005B	7-0	Delay timer between TCF and CFR (unit: 10 ms)	0	00000000
TCF instantaneous interruption allowable time	000E005C	7-0	TCF instantaneous interruption allowable time (Disconnection confirmation time) (unit: 10 ms)	0	00000000
V.21 time at high/low speed judgment	000E005D	7-0	V.21 time judged at high/low speed judgment (unit: 10 ms) (Translated to 500 ms when the value is “00000000”)	500 ms	00000000
V.21 CD OFF time at high/low speed judgment	000E005E	7-0	CD OFF time after V.21 judgment at high/low speed judgment (unit: 10 ms) (Translated to 2000 ms when the value is “00000000”)	2000 ms	00000000
Image data signal CD OFF judgment time	000E005F	7-0	Image data signal CD OFF judgment time (unit: 10 ms) (Translated to 2000 ms when the value is “00000000”)	2000 ms	00000000
V.21 send time after V.21 RX	000E0060	7-0	V.21 send time after V.21 reception (unit: 1 ms) (Translated to 75 ms when the value is “00000000”)	75 ms	00000000
1stDialTone detection method during PBX calls	000E0061	7	Continuous tone judgment 0: Yes 1: No	Yes	00000000
		6-4	-	-	
		3-0	Instantaneous break detection time (unit: 20 ms) (Translated to 80 ms when the value is “0000”)	80 ms	

16.11.3 Report setting

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
TTI/RTI setting	00120000	7	-	-	00000011
		6	SW for prohibiting the printing of the TTI address 0: Printing of the address allowed 1: Printing of the address not allowed	Printing of the address allowed	
		5-4	RTI addition 00: OFF 01: (OFF) 10: INSIDE 11: OUTSIDE	OFF	
		3	TTI denominator display 0: Total 1: Individual	Total	
		2	Inhibition of TTI setting menu INSIDE display 0: No 1: Yes	No	
		1-0	-	-	
Report setting 1	00120001	7	-	-	01101100
		6	Addition of image 0: No 1: Yes	Yes	
		5	Automatic output of reserved report 0: No 1: Yes	Yes	
		4-3	TX result report 00: Not output 01: Output only at errors 10: Always output 11: (Normal output)	Output only at errors	
		2	Automatic output of sequential communication report 0: No 1: Yes	Yes	
		1-0	-	-	

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
Report setting 2	00120002	7	The FAX CSRC communication log is printed on the Activity Report 0: No 1: Yes	No	00000100
		6-4	-	-	
		3	Automatic daily output of journal 0: No 1: Yes	No	
		2	Automatic output of journal 100 communication 0: No 1: Yes	Yes	
		1	Automatic output or error trace list 0: No 1: Yes	No	
		0	Automatic output of trace list 0: No 1: Yes	No	
Output time of daily automatic output of journal	00120003	7-0	Designation of 24 hours ASCII four digit Output time [0]: hour (grade of 10) Output time [1]: hour (grade of 1) Output time [2]: Minute (grade of 10) Output time [3]: Minute (grade of 1) Default: “09:00”	0x30 (0)	00110000
	00120004			0x39 (9)	00111001
	00120005			0x30 (0)	00110000
	00120006			0x30 (0)	00110000
Output settings	00120007	7	Setting of daily difference for daily mode set for automatic output 0: Daily difference not limited 1: Daily difference limited	Daily difference not limited	00000000
		6	-	-	
		5	Transmission result report selection screen 0: Not displayed 1: Displayed	Not displayed	
		4	Broadcast result report output method 0: All destinations 1: Each destination	All destinations	
		3	-	-	
		2	Output order of journal transmission result reservation report 0: From old one 1: From new one	From old one	
		1-0	-	-	
Invisible mode	00120008	7-3	-	-	00000000
		2	Display of PC-FAX TX [PC] in Note of report 0: No 1: Yes	No	
		1	-	-	
		0	Details of remote station display during program direct registered calls and abbreviated dialing 0: Display of registered name 1: Display of number	Display of registered name	
Report settings	0012000A	7	Stop during automatic output of report	○	10100011
		6-4	Tray selection during reports output (HP at manual output) 000: Manual bypass tray 001: Tray 1 (upper) 010: Tray 2 (lower) 011: Tray 3 (DB upper) 100: Tray 4 (DB middle) 101: Tray 5 (DB lower) Others: Tray 2 (lower)	Tray 2 (lower)	
		3	Face-up output	×	
		2	-	-	
		1-0	Output tray HP 00: Tray 1 01: Tray 2 10: Tray 3 11: Tray 4	Tray 4	

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
F code report setting	0012000B	7-4	-	-	00001111
		3	Relay request report output 0: No 1: Yes	Yes	
		2	Relay TX result report output 0: No 1: Yes	Yes	
		1	Bulletin polling transmission report output 0: No 1: Yes	Yes	
		0	Confidential reception report output 0: No 1: Yes	Yes	
Internet Fax report setting	0012000C	7	-	-	01100001
		6	Network Fax RX Error Report 0: No 1: Yes	Yes	
		5	Internet Fax Broadcast Result Report 0: No 1: Yes	Yes	
		4	Error E-Mail Message Body printing 0: ON 1: OFF	OFF	
		3	Normal RX E-Mail Message Body printing 0: ON 1: OFF	ON	
		2	TX Error Report printing 0: ON 1: OFF	ON	
		1	MDN Message printing 0: ON 1: OFF	ON	
		0	DSN Message printing 0: ON 1: OFF	OFF	
FAX report setting	0012000D	7-2	-	-	00000000
		1	PC-Fax Error report output 0: No 1: Yes	No	
		0	Relay print 0: No 1: Yes	No	

16.11.4 Panel settings

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
FAX scan HP2	00130001	7-6	Frame erasure HP 01: 5mm 10: 10mm 11: 15mm	5mm	01000001
		5-0	-	-	
FAX scan HP3	00130002	7-3	-	-	00000100
		2-1	Original reading mode 00: Normal 01: Mixed size 10: DF irregular	DF irregular	
		0	Page transfer read mode 0: Scans from the left 1: Scans from the right	Scans from the left	
HP for FAX main screen	00130007	7-4	FAX main screen selection 0000: Program 0001: Group 0010: Address book 0011: Keypad 0100: i-Fax	Program	00001001
		3	Automatic screen switching at the time of reception	OFF	

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
			0: ON 1: OFF		
		2-0	-	-	
Rotation setting HP	00130008	7-2	-	-	00000011
		1	Letter 0: No 1: Yes	Yes	
		0	A4 0: No 1: Yes	Yes	
Error display time	0013000B	7-0	Error display time 00001010: 10 sec. to 11111010: 250 sec. 00000000: Error display HOLD	20 sec.	00010100
Utility mode display setting	00130035	7	Relay display 0: Yes 1: No	Yes	00000000 (JP) 00001011 (US/EU)
		6	-	-	
		5	Incomplete TX hold display 0: Yes 1: No	Yes	
		4	Compulsory memory reception display 0: Yes 1: No	Yes	
		3	Caller No./Name display 0: Yes 1: No	Yes (JP) No (US/EU)	
		2	Closed communication display 0: Yes 1: No	Yes	
		1	Remote reception display 0: Yes 1: No	Yes (JP) No (US/EU)	
		0	DialIn display 0: Yes 1: No	Yes (JP) No (US/EU)	
Utility mode display setting 2	00130036	7-4	-	-	00000101 (JP) 00001111 (US) 00000111 (EU)
		3	OFF display of header position 0: Yes 1: No	Yes (JP/EU) No (US)	
		2	-	-	
		1	Receive reject display 0: Yes 1: No	Yes (JP) No (US/EU)	
		0	-	-	
Destination default screen setting	00130038	7-0	00000000: Group 00000001: FAX 00000010: E-mail 00000011: BOX 00000100: I-Fax 00000101: IP address FAX 00000110: SMB 00000111: FTP 00001000: WebDAV	Group	00000000
Destination input error prevention setting	00130041	7-1	-	-	00000000
		0	Destination input error prevention display setting 0: OFF 1: ON	OFF	
I-Fax E-mail body message default setting	00130043	7-0	00000000: 0 to 00001001: 9 11111111: No default	1	00000001
I-Fax E-mail title default setting	00130044	7-0	00000000: 0 to 00001001: 9 11111111: No default	1	00000001
DialIn additional No. (FAX) [12]	00130045 - 00130050	7-0	ASCII 11 digits + NULL	0x00	00000000
DialIn additional No. (PC-FAX) [12]	00130051 - 0013005C	7-0	ASCII 11 digits + NULL	0x00	00000000

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
DialIn additional No. (telephone) [12]	0013005D - 00130068	7-0	ASCII 11 digits + NULL	0x00	00000000
Upper limit for signal transmission level setting	00130069	7-0	Upper limit for signal transmission level setting (-dBm)	-10 dBm (JP/US) -8 dBm (EU)	00001010 (JP/US) 00001000 (EU)
Lower limit for call termination no. of times setting range	0013006A	7-0	Lower limit for call termination no. of times setting range (unit: No. of times)	0 time	00000000
Upper limit for call termination no. of times setting range	0013006B	7-0	Upper limit for call termination no. of times setting range (unit: No. of times)	15 times	00001111
Dial method setting	0013006C	7-2	-	-	00000000 (JP) 00100010 (US) 00010001 (EU)
		1-0	Dial method setting 00: PB/10pps/20pps 01: PB 10: PB/10pps 11: PB/10pps/16pps	PB/10pps/20pps (JP) PB/10pps (US) PB (EU)	
Upper limit for redial no. of times setting range	0013006D	7-0	Upper limit for redial no. of times setting range (unit: No. of times)	7 times (JP/EU) 1 time (US)	00000111 (JP/EU) 00000001 (US)
Upper limit for redial interval setting range	0013006E	7-0	Upper limit for redial interval setting range (unit: min.)	1 min.	00000001
Lower limit for redial interval setting range	0013006F	7-0	Lower limit for redial interval setting range (unit: min.)	15 min.	00001111
Telephone-related function setting menu display (1)	00130070	7	-	-	01111111 (JP) 00000000 (US/EU)
		6	Remote reception 0: OFF 1: ON	ON (JP) OFF (US/EU)	
		5	Dial In 0: OFF 1: ON	ON (JP) OFF (US/EU)	
		4	Number display 0: OFF 1: ON	ON (JP) OFF (US/EU)	
		3	Pesudo RBT form 0: OFF 1: ON	ON (JP) OFF (US/EU)	
		2	Pesudo RBT transmission level 0: OFF 1: ON	ON (JP) OFF (US/EU)	
		1	Connection to answering machine 0: OFF 1: ON	ON (JP) OFF (US/EU)	
		0	TEL/FAX switching 0: OFF 1: ON	ON (JP) OFF (US/EU)	
Number display related function setting	00130071	7-2	-	-	00000000
		1-0	Name displayed type of display at fax reception 00: No display 01: Display of number 10: Display of name	No display	
Setting of lower limit for DTMF transmission level setting range	00130072	7-0	Setting of lower limit for DTMF transmission level setting range (-dBm)	-14 dBm (JP) -15 dBm (US) -9 dBm (EU)	00001110 (JP) 00001111 (US) 00001001 (EU)
Setting of upper limit for DTMF transmission level setting range	00130073	7-0	Setting of upper limit for DTMF transmission level setting range (-dBm)	-10 dBm (JP/US) -5 dBm (EU)	00001010 (JP/US) 00000101 (EU)
Setting of lower limit for DTMF H-L level difference setting range	00130074	7-0	Setting of lower limit for DTMF H-L level difference setting range (dB)	1 dB	00000001
Setting of upper limit for DTMF H-L level difference setting range	00130075	7-0	Setting of upper limit for DTMF H-L level difference setting range (dB)	4 dB	00000100

Items	Address	Data		Default	
		Bit	Contents	Setting	Data
For transmission	00130076	7-3	-	-	00000000
		2	Restrict plural fax destination 0: OFF 1: ON	OFF	
		1	Destination check display function 0: OFF 1: ON	OFF	
		0	Screen display during transmission 0: OFF 1: ON	OFF	
Lower limit setting of the signal send-out level setting range	00130077	7-0	Lower limit setting of the signal send-out level setting range (-dBm)	-15 dBm	00001111
Character-to-search default for FAX main screen	00130078	7-0	00000000 00000000 00000000 00000001: [Favorite] 00000000 00000000 00000100 00000000: [ABC] 00000000 00000000 00001000 00000000: [DEF] 00000000 00000000 00010000 00000000: [GHI] 00000000 00000000 00100000 00000000: [JKL] 00000000 00000000 01000000 00000000: [MNO] 00000000 00000000 10000000 00000000: [PQRS] 00000000 00000001 00000000 00000000: [TUV] 00000000 00000010 00000000 00000000: [WXYZ] 00000000 00000100 00000000 00000000: [etc]	[Favorite]	00000001
	00130079				00000000
	0013007A				00000000
	0013007B				00000000
Initial program display page	0013007D	7-0	00000001: 1 page to 00011011: 27 pages 00000000: Temporary distribution	1 page	00000001
Destination type display setting	00130080	7-0	0: Do not display 1: Display	Do not display	00000000
	00130081				00000000
	00130082				00000000
	00130083				00000001
No. of destination display characters setting	00130084	7-0	00001110: 14 characters 00011000: 24 characters	14 characters	00001110
Lower limit of receive time interval setting	00980000	7-0	Lower limit of receive time interval setting (unit: sec.)	0 sec.	00000000
Upper limit of receive time interval setting	00980001	7-0	Upper limit of receive time interval setting (unit: sec.)	45 sec.	00101101

16.12 Function parameter list (for separate line)

16.12.1 Function setting 1

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
Transmission ATT	000E0090	000E01A0	000E02B0	000E03C0	7-4	Tone signal/FSK transmission ATT (-dBm) 0000: 0 dBm to 1111: -15 dBm	-10 dBm	10101010
					3-0	High-speed signal transmission ATT (-dBm) 0000: 0 dBm to 1111: -15 dBm	-10 dBm	
CED transmission ATT	000E0091	000E01A1	000E02B1	000E03C1	7-4	-	-	00001010
					3-0	CED/ANS transmission ATT (-dBm) 0000: 0 dBm to 1111: -15 dBm	-10 dBm	
CD/SED ON level	000E0092	000E01A2	000E02B2	000E03C2	7-2	-	-	00000011
					1-0	CD/SED ON level 00: -33 dBm 01: -38 dBm 10: -43 dBm 11: -48 dBm	-48 dBm	
Cable equalizer	000E0093	000E01A3	000E02B3	000E03C3	7-6	-	-	00000000
					5-4	Cable EQL transmission selection 00: OFF 01: Send only 10: Receive only 11: Send and receive	OFF	

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
					3-2	-	-	
					1-0	Cable EQL parameter selection 00: 1.8 km 01: 3.6 km 10: 7.2 km 11: NTT4	1.8 km	
V34 point number	000E0094	000E01A4	000E02B4	000E03C4	7-2	-	-	00000000
					1-0	V34 Point 00: Auto 01: 16-point 10: 4-point	Auto	
TEL/FAX switching (For Line 1 and Japan model only)	000E0095	000E01A5	000E02B5	000E03C5	7	Time from vocal response to RBT transmission (CNG detection waiting time 2) 0: 4 sec. 1: 2 sec.	4 sec.	00000000
					6	Time from reception to voice response transmission (CNG detection waiting time 1) 0: 2 sec. 1: 4 sec.	2 sec.	
					5	TEL/FAX switching mode 0: Disabled 1: Enabled	Disabled	
					4	External telephone no ringing setting 0: Disabled 1: Enabled (disconnected)	Disabled	
					3	TEL/FAX switching ON response details 0: Voice response + RBT transmission 1: RBT transmission only	Voice response + RBT transmission	
					2-0	-	-	
Ring Back Tone parameter (For Line 1 and Japan model only)	000E0096	000E01A6	000E02B6	000E03C6	7-5	RBT form 000: None 001: JP 010: US 011: GB 100: GE 101 to 111: Others	JP (JP) US (US) GB (EU)	00101010 (JP) 01001010 (US) 01101000 (EU)
					4	CED transmitted upon TEL/FAX switching	×	
					3-0	RBT transmission level (-dBm) 0000: 0 dBm to 1111: -15 dBm	-10 dBm (JP/US) -8 dBm (EU)	
International com mode operation	000E0097	000E01A7	000E02B7	000E03C7	7	DIS waiting frequency 0: Always once 1: Twice in overseas communication	Always once	01000000
					6	Overseas communication 0: No 1: Yes	Yes	
					5-0	-	-	
Starting speed in international com mode (V29 modem)	000E0098	000E01A8	000E02B8	000E03C8	7-5	-	-	00000010
					4	9600 bps/V.29	×	
					3	7200 bps/V.29	×	
					2	-	-	
					1	4800 bps/V.27 ter	○	
					0	2400 bps/V.27 ter	×	
Starting speed in international com mode (V17 or V33 modem)	000E0099	000E01A9	000E02B9	000E03C9	7	14400 bps/V.17	×	00010000
					6	12000 bps/V.17	×	
					5	9600 bps/V.17	×	

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
					4	7200 bps/V.17	○	
					3-0	-	-	
Starting speed in international com mode (V34)	000E009A	000E01AA	000E02BA	000E03CA	7	33600 bps/V.34	×	00100000
					6	31200 bps/V.34	×	
					5	28800 bps/V.34	○	
					4	26400 bps/V.34	×	
					3	24000 bps/V.34	×	
					2	21600 bps/V.34	×	
					1	19200 bps/V.34	×	
					0	16800 bps/V.34	×	
CD OFF timer	000E009B	000E01AB	000E02BB	000E03CB	7-0	CD OFF timer (unit: 100 ms)	2000 ms	00010100
CD ON integration time	000E009C	000E01AC	000E02BC	000E03CC	7-0	CD ON integration time (unit: 100 ms)	600 ms	00000110
Max. allowable symbol speed	000E009D	000E01AD	000E02BD	000E03CD	7	V34 control ch data rate 0: 1200 1: 2400	1200	00000101
					6-4	-	-	
					3-0	Max. allowable symbol speed 0000:2400 0001: Reserved 0010: 2800 0011: 3000 0100: 3200 0101: 3429	3429	
V34 primary channel fallback	000E009E	000E01AE	000E02BE	000E03CE	7-0	No. of frame errors subjected to fallback	3	00000011
V34 off Rx-V34 off time after error	000E00A0	000E01B0	000E02C0	000E03D0	7-0	Timer value after V.34 reception error used to reset V34 off reception (unit: min.) (Valid only when transmission side cannot be specified)	10 min.	00001010
V34 off Rx-V17 OK Rx times to reset V34 off Rx	000E00A1	000E01B1	000E02C1	000E03D1	7-0	No. of continuous success of V17 receptions used to reset V34 off reception after V.34 reception error (unit: No. of times) (Valid only when transmission side can be specified with Caller ID)	10 times	00001010
(Inhibit of) V34 off Rx-Function ON/ OFF	000E00A2	000E01B2	000E02C2	000E03D2	7	V.34 off function for manual reception (Line 1 only) 0: Enable 1: Disable	Enable	00000000 (JP) 00000010 (US/EU)
					6-2	-	-	
					1	V.34 OFF reset mode = No. of successful consecutive V.17 reception times (ID specified) 0: Enabled 1: Disabled	Enabled (JP) Disabled (US/EU)	
					0	V.34 OFF reset mode = time (ID cannot be specified) 0: Enabled 1: Disabled	Enabled	
JBIG parameter	000E00A3	000E01B3	000E02C3	000E03D3	7-2	-	-	00000001
					1	Use of following FP JBIG option LO size at reduction 0: No 1: Yes	No	
					0	JBIG optional LO capacity 0: No 1: Yes	Yes	
JBIG LO size	000E00A4	000E01B4	000E02C4	000E03D4	7-0	JBIG optional LO size used for reduction	0	00000000
	000E00A5	000E01B5	000E02C5	000E03D5			0	00000000

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
	000E00A6	000E01B6	000E02C6	000E03D6		00000001: 1 to 11111111: 255 [0] = HH, [1] = HL, [2] = LH, [3] = LL	0	00000000
	000E00A7	000E01B7	000E02C7	000E03D7			128	10000000
(Inhibit of) JBIG off Rx-Function ON/ OFF	000E00A8	000E01B8	000E02C8	000E03D8	7-2	-	-	00000000
					1	JBIG off function at A3 high-definition reception (DIS retransmission) 0: OFF 1: ON	OFF	
					0	JBIG off function after JBIG reception error 0: Enable 1: Disable	Enable	
JBIG off Rx-JBIG off time after error	000E00A9	000E01B9	000E02C9	000E03D9	7-0	Timer value after JBIG reception error to reset JBIG off reception (unit: min.) (10 min. if 00000000)	10 min.	00001010

16.12.2 Function setting 2

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
PBX dial tone detection frequency pattern	000E00AA	000E01BA	000E02CA	000E03DA	7	-	-	00001000 (JP) 01010100 (US) 00010011 (EU)
					6	Tone type 0: Single 1: Dual	Single (JP/EU) Dual (US)	
					5	-	-	
					4-0	PBX dial tone detection frequency pattern reference (*1)	400 ±100 Hz (JP) 350 ±25 Hz (Dual) (US) 465 ±205 Hz (EU)	
PBX dial tone detection time	000E00AB	000E01BB	000E02CB	000E03DB	7-0	PBX dial tone detection time or max. ON time value (unit: 20 ms)	1000 ms (JP/US) 520 ms (EU)	00110010 (JP/US) 00011010 (EU)
PBX dial tone ON time min. value	000E00AC	000E01BC	000E02CC	000E03DC	7-0	PBX dial tone ON time min. value (unit: 20 ms)	100 ms	00000101
PBX dial tone OFF time max. value	000E00AD	000E01BD	000E02CD	000E03DD	7-0	PBX dial tone OFF time max. value (unit: 20 ms)	400 ms	00010100
PBX dial tone OFF time min. value	000E00AE	000E01BE	000E02CE	000E03DE	7-0	PBX dial tone OFF time min. value (unit: 20 ms)	100 ms	00000101
PBX dial tone waiting time	000E00AF	000E01BF	000E02CF	000E03DF	7-0	PBX dial tone waiting time or pre-pause time (unit: sec.)	3 sec.	00000011
PBX dial tone instantaneous break detection time	000E00B0	000E01C0	000E02D0	000E03E0	7-0	Instantaneous shutdown detection time (unit: 20 ms) or tone detection no. of times (unit: No. of times)	60 ms	00000011
1st dial tone detection frequency pattern	000E00B1	000E01C1	000E02D1	000E03E1	7	-	-	00001000 (JP) 01010100 (US) 00010011 (EU)
					6	Tone type 0: Single 1: Dual	Single (JP/EU) Dual (US)	
					5	-	-	
					4-0	PBX dial tone detection frequency pattern reference (*1)	400 ±100 Hz (JP) 350 ±25 Hz (Dual) (US) 465 ±205 Hz (EU)	
1st dial tone detection time	000E00B2	000E01C2	000E02D2	000E03E2	7-0	1st dial tone detection time or ON time max. value (unit: 20 ms)	1000 ms (JP/US) 520 ms (EU)	00110010 (JP/US) 00011010 (EU)
1st dial tone ON time min. value	000E00B3	000E01C3	000E02D3	000E03E3	7-0	1st dial tone ON time min. value (unit: 20 ms)	0 ms	00000000
1st dial tone OFF time max. value	000E00B4	000E01C4	000E02D4	000E03E4	7-0	1st dial tone OFF time max. value (unit: 20 ms)	0 ms	00000000
1st dial tone OFF time min. value	000E00B5	000E01C5	000E02D5	000E03E5	7-0	1st dial tone ON time min. value (unit: 20 ms)	0 ms	00000000

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
1st dial tone waiting time	000E00B6	000E01C6	000E02D6	000E03E6	7-0	1st dial tone waiting time or pre-pause time (unit: 1 sec.)	3 sec. (JP/US) 4 sec. (EU)	00000011 (JP/US) 00000100 (EU)
1st dial tone instantaneous break detection time	000E00B7	000E01C7	000E02D7	000E03E7	7-0	Instantaneous shutdown detection time (unit: 20 ms) or tone detection no. of times (unit: No. of times)	0 ms (JP/US) 100 ms (EU)	00000000 (JP/US) 00000101 (EU)
2nd dial tone detection pattern	000E00B8	000E01C8	000E02D8	000E03E8	7	-	-	00001000 (JP) 01010100 (US) 00010011 (EU)
					6	Tone type 0: Single 1: Dual	Single (JP/EU) Dual (US)	
					5	-	-	
					4-0	PBX dial tone detection frequency pattern reference (*1)	400 ±100 Hz (JP) 350 ±25 Hz (Dual) (US) 465 ±205 Hz (EU)	
2nd dial tone detection time	000E00B9	000E01C9	000E02D9	000E03E9	7-0	2nd dial tone detection time or ON time max. value (unit: 20 ms)	160 ms (JP) 1000 ms (US) 520 ms (EU)	00001000 (JP) 00110010 (US) 00011010 (EU)
2nd dial tone ON time min. value	000E00BA	000E01CA	000E02DA	000E03EA	7-0	2nd dial tone ON time min. value (unit: 20 ms)	40 ms (JP) 0 ms (US/EU)	00000010 (JP) 00000000 (US/EU)
2nd dial tone OFF time max. value	000E00BB	000E01CB	000E02DB	000E03EB	7-0	2nd dial tone OFF time max. value (unit: 20 ms)	200 ms (JP) 0 ms (US/EU)	00001010 (JP) 00000000 (US/EU)
2nd dial tone OFF time min. value	000E00BC	000E01CC	000E02DC	000E03EC	7-0	2nd dial tone OFF time min. value (unit: 20 ms)	80 ms (JP) 0 ms (US/EU)	00000100 (JP) 00000000 (US/EU)
2nd dial tone waiting time	000E00BD	000E01CD	000E02DD	000E03ED	7-0	2nd dial tone waiting time or pre-pause time (unit: 1 sec.)	3 sec.	00000011
2nd dial tone instantaneous break detection time	000E00BE	000E01CE	000E02DE	000E03EE	7-0	Instantaneous shutdown detection time (unit: 20 ms) or tone detection no. of times (unit: No. of times)	60 ms (JP) 0 ms (US/EU)	00000011 (JP) 00000000 (US/EU)
3rd dial tone detection pattern	000E00BF	000E01CF	000E02DF	000E03EF	7	-	-	00001000 (JP) 01010100 (US) 00010011 (EU)
					6	Tone type 0: Single 1: Dual	Single (JP/EU) Dual (US)	
					5	-	-	
					4-0	PBX dial tone detection frequency pattern reference (*1)	400 ±100 Hz (JP) 350 ±25 Hz (Dual) (US) 465 ±205 Hz (EU)	
Busy dial tone detection pattern	000E00C0	000E01D0	000E02E0	000E03F0	7	-	400 ±100 Hz (JP) 620 ±25 Hz (Dual) (US) 425 ±100Hz (EU)	00001000 (JP) 01010101 (US) 00001001 (EU)
					6	Tone type 0: Single 1: Dual		
					5	-		
					4-0	PBX dial tone detection frequency pattern reference (*1)		
Busy tone ON time max. value	000E00C1	000E01D1	000E02E1	000E03F1	7-0	Busy tone ON time max. value (unit: 20 ms)	600 ms (JP/US) 540 ms (EU)	0x1e (JP/US) 0x1b (EU)
Busy tone ON time min. value	000E00C2	000E01D2	000E02E2	000E03F2	7-0	Busy tone ON time min. value (unit: 20 ms)	400 ms (JP/US) 100 ms (EU)	0x14 (JP/US) 0x05 (EU)
Busy tone OFF time max. value	000E00C3	000E01D3	000E02E3	000E03F3	7-0	Busy tone OFF time max. value (unit: 20 ms)	600 ms (JP/US) 620 ms (EU)	0x1e (JP/US) 0x1f (EU)

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
Busy tone OFF time min. value	000E00C4	000E01D4	000E02E4	000E03F4	7-0	Busy tone OFF time min. value (unit: 20 ms)	400 ms (JP/US) 180 ms (EU)	0x14 (JP/US) 0x09 (EU)

*1: PBX dial tone detection frequency pattern

Data					Contents
Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	
0	0	0	0	1	155±65Hz
0	0	0	1	0	1155±25Hz
0	0	0	1	1	375±75Hz
0	0	1	0	0	400±75Hz
0	0	1	0	1	425±75Hz
0	0	1	1	0	440±75Hz
0	0	1	1	1	375±100Hz
0	1	0	0	0	400±100Hz
0	1	0	0	1	425±100Hz
0	1	0	1	0	440±100Hz
0	1	0	1	1	375±125Hz
0	1	1	0	0	400±125Hz
0	1	1	0	1	425±125Hz
0	1	1	1	0	440±125Hz
0	1	1	1	1	375±150Hz
1	0	0	0	0	400±150Hz
1	0	0	0	1	425±150Hz
1	0	0	1	0	440±150Hz
1	0	0	1	1	465±205Hz
1	0	1	0	0	350±25Hz (Dual)
1	0	1	0	1	620±25Hz (Dual)
1	0	1	1	0	400±75Hz (Dual)
1	0	1	1	1	550±100Hz (Dual)

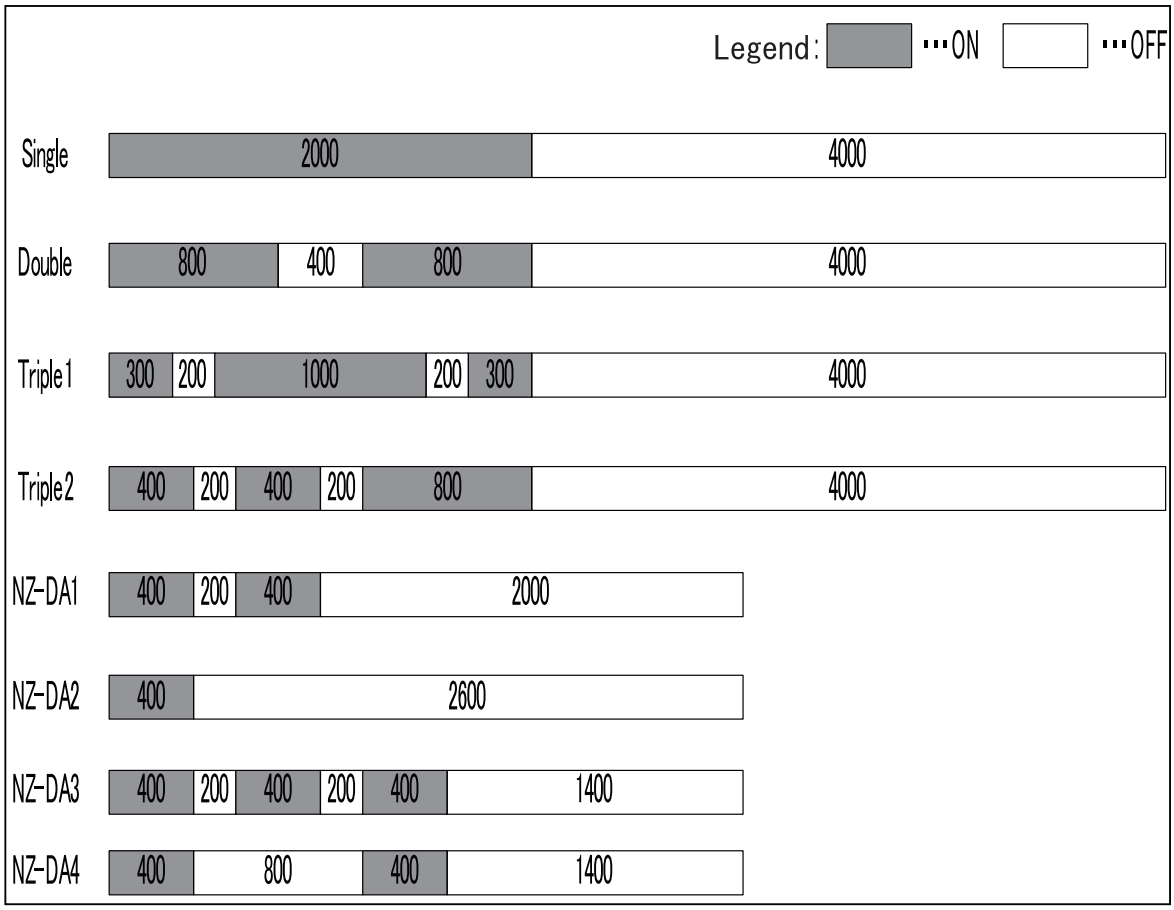
16.12.3 Function setting 3

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
Ringer detection pattern	000E00C5	000E01D5	000E02E5	000E03F5	7	Custom mode 0: OFF (in accordance with bits 3-0) 1: ON (in accordance with bits 5-4)	OFF (in accordance with bits 3-0)	00000000
					6	-	-	
					5-4	Custom mode ringer detection pattern 00: Single 01: Double 10: Triple * The standard time is configured with DRPD_Custom[]. Configure commonly with DRPD_1st[] through 3rd[] to adjust the detection time.	Single	
					3-0	Ringer detection pattern 0000: Nomal 0001: DRPD_Single 0010: DRPD_Double 0011: DRPD_Triple1 0100: DRPD_Triple2 0101: DRPD_NZDA1 0110: DRPD_NZDA2 0111: DRPD_NZDA3 1000: DRPD_NZDA4 1001: DRPD_Duet	Nomal	

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
						* Normal conforms to Ringer[2] through [5] as usual. * For DRPD, configure the margin time (min, max) from the standard time (*1).		
Ringer detection frequency upper limits	000E00C6	000E01D6	000E02E6	000E03F6	7-0	Ringer detection frequency upper limit (unit: 1 Hz)	70 Hz	01000110
Ringer detection frequency lower limits	000E00C7	000E01D7	000E02E7	000E03F7	7-0	Ringer detection frequency lower limits (unit: 1 Hz)	12 Hz	00001100
Ringer ON time max. value	000E00C8	000E01D8	000E02E8	000E03F8	7-0	Ringer ON time max. value (unit: 20 ms)	0 ms	00000000
Ringer ON time min. value	000E00C9	000E01D9	000E02E9	000E03F9	7-0	Ringer ON time min. value (unit: 20 ms)	200 ms (JP/US) 160 ms (EU)	00001010 (JP/US) 00001000 (EU)
Ringer OFF time max. value	000E00CA	000E01DA	000E02EA	000E03FA	7-0	Ringer OFF time max. value (unit: 100 ms)	6000 ms (JP/US) 7000 ms (EU)	00111100 (JP/US) 01000110 (EU)
Ringer OFF time min. value	000E00CB	000E01DB	000E02EB	000E03FB	7-0	Ringer OFF time min. value (unit: 100 ms)	200 ms (JP) 0 ms (US/EU)	00000010 (JP) 00000000 (US/EU)
DRPD ringer ON time max. value	000E00CC	000E01DC	000E02EC	000E03FC	7-0	DRPD ringer ON time max. value (unit: 20 ms)	180 ms	00001001
DRPD ringer ON time min. value	000E00CD	000E01DD	000E02ED	000E03FD	7-0	DRPD ringer ON time min. value (unit: 20 ms)	180 ms	00001001
DRPD ringer OFF time max. value	000E00CE	000E01DE	000E02EE	000E03FE	7-0	DRPD ringer OFF time max. value (unit: 20 ms)	180 ms	00001001
DRPD ringer OFF time min. value	000E00CF	000E01DF	000E02EF	000E03FF	7-0	DRPD ringer OFF time min. value (unit: 20 ms)	180 ms	00001001
DRPD max. adjustment value for max. OFF time	000E00D0	000E01E0	000E02F0	000E0400	7-0	DRPD max. adjustment value for max. OFF time (unit: 100 ms)	500 ms	00000101
DRPD min. adjustment value for max. OFF time	000E00D1	000E01E1	000E02F1	000E0401	7-0	DRPD ringer min. adjustment value for max. OFF time (unit: 100 ms)	500 ms	00000101
DRPD single ring stop detection time	000E00D2	000E01E2	000E02F2	000E0402	7-0	DRPD single ring stop detection time (unit: 100 ms)	8000 ms	01010000
DRPD double ring stop detection time	000E00D3	000E01E3	000E02F3	000E0403	7-0	DRPD double ring stop detection time (unit: 100 ms)	8000 ms	01010000
DRPD Triple1 ring stop detection time	000E00D4	000E01E4	000E02F4	000E0404	7-0	DRPD Triple1 ring stop detection time (unit: 100 ms)	8000 ms	01010000
DRPD Triple2 ring stop detection time	000E00D5	000E01E5	000E02F5	000E0405	7-0	DRPD Triple2 ring stop detection time (unit: 100 ms)	8000 ms	01010000
DRPD NZ-DA1 ring stop detection time	000E00D6	000E01E6	000E02F6	000E0406	7-0	DRPD NZ-DA1 ring stop detection time (unit: 100 ms)	6000 ms	00111100
DRPD NZ-DA2 ring stop detection time	000E00D7	000E01E7	000E02F7	000E0407	7-0	DRPD NZ-DA2 ring stop detection time (unit: 100 ms)	6000 ms	00111100
DRPD NZ-DA3 ring stop detection time	000E00D8	000E01E8	000E02F8	000E0408	7-0	DRPD NZ-DA3 ring stop detection time (unit: 100 ms)	5000 ms	00110010
DRPD NZ-DA4 ring stop detection time	000E00D9	000E01E9	000E02F9	000E0409	7-0	DRPD NZ-DA4 ring stop detection time (unit: 100 ms)	5000 ms	00110010
Custom 1st ringer ON time specified value	000E00DA	000E01EA	000E02FA	000E040A	7-0	Custom 1st ringer ON time specified value (unit: 100 ms)	0 ms	00000000
Custom 1st ringer OFF time specified value	000E00DB	000E01EB	000E02FB	000E040B	7-0	Custom 1st ringer OFF time specified value (unit: 100 ms)	0 ms	00000000
Custom 2nd ringer ON time specified value	000E00DC	000E01EC	000E02FC	000E040C	7-0	Custom 2nd ringer ON time specified value (unit: 100 ms)	0 ms	00000000

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
Custom 2nd ringer OFF time specified value	000E00DD	000E01ED	000E02FD	000E040D	7-0	Custom 2nd ringer OFF time specified value (unit: 100 ms)	0 ms	00000000
Custom 3rd ringer ON time specified value	000E00DE	000E01EE	000E02FE	000E040E	7-0	Custom 3rd ringer ON time specified value (unit: 100 ms)	0 ms	00000000
Custom 3rd ringer OFF time specified value	000E00DF	000E01EF	000E02FF	000E040F	7-0	Custom 3rd ringer OFF time specified value (unit: 100 ms)	0 ms	00000000
Custom ring OFF detection time	000E00E0	000E01F0	000E0300	000E0410	7-0	Custom ring OFF detection time (unit: 100 ms)	0 ms	00000000

- *1: DRPD standard time



16.12.4 Function setting 4

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
PB dial signal transmission time	000E00E1	000E01F1	000E0301	000E0411	7-0	PB dial signal transmission time (unit: 5 ms)	105 ms (JP/EU) 125 ms (US)	00010101 (JP/EU) 00011001 (US)
PB dial inter-digit pause	000E00E2	000E01F2	000E0302	000E0412	7-0	PB dial inter digit pause time (unit: 5 ms)	85 ms (JP/EU) 105 ms (US)	00010001 (JP/EU) 00010101 (US)
10 pps pulse dial make time	000E00E3	000E01F3	000E0303	000E0413	7-0	10 pps pulse dial make time	15 (JP) 18 (US/EU)	00001111 (JP) 00010010 (US/EU)
10 pps pulse dial break time	000E00E4	000E01F4	000E0304	000E0414	7-0	10 pps pulse dial break time	31 (JP) 28 (US/EU)	00011111 (JP) 00011100 (US/EU)
10 pps pulse dial inter-digit pause	000E00E5	000E01F5	000E0305	000E0415	7-0	10 pps pulse dial inter digit pause (unit: 10 ms)	1040 ms (JP/US) 940 ms (EU)	01101000 (JP/US)

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
								01011110 (EU)
20 pps pulse dial make time	000E00E6	000E01F6	000E0306	000E0416	7-0	20 pps pulse dial make time	7 (JP) 9 (US/EU)	00000111 (JP) 00001001 (US/EU)
20 pps pulse dial break time	000E00E7	000E01F7	000E0307	000E0417	7-0	20 pps pulse dial break time	16 (JP) 14 (US/EU)	00010000 (JP) 00001110 (US/EU)
20 pps pulse dial inter-digit pause	000E00E8	000E01F8	000E0308	000E0418	7-0	20 pps pulse dial inter digit pause (unit: 10 ms)	890 ms (JP) 640 ms (US) 920 ms (EU)	01011001 (JP) 01000000 (US) 01011100 (EU)
PB signal transmission level	000E00E9	000E01F9	000E0309	000E0419	7-0	PB signal transmission level (unit: 1 dBm)	10 dBm (JP/US) 6 dBm (EU)	00001010 (JP/US) 00000110 (EU)
PB signal level difference (H-L)	000E00EA	000E01FA	000E030A	000E041A	7-0	PB signal level difference (H-L) (unit: 0.5 dBm)	2 dBm	00000100
DC-LOOP integration time at CML OFF	000E00EB	000E01FB	000E030B	000E041B	7-0	DC-LOOP integration time at CML relay OFF (unit: 5 ms) (Lower limit 20 ms)	400 ms	01010000
DC-LOOP integration time at CML ON	000E00EC	000E01FC	000E030C	000E041C	7-0	DC-LOOP integration time at CML relay ON (unit: 5 ms) (Lower limit 20 ms)	80 ms	00010000
Pause time	000E00ED	000E01FD	000E030D	000E041D	7-3	-	-	00000001
					2-0	Pause time (unit: sec.)	1 sec.	
DC-LOOP check mode	000E00EE	000E01FE	000E030E	000E041E	7	DC-LOOP check 0: No 1: Always	No	00000000
					6-1	-	-	
					0	T81 line disconnection check (T80 if line disconnected) 0: Yes 1: No	Yes	
DC-LOOP waiting time	000E00EF	000E01FF	000E030F	000E041F	7-0	DC-LOOP waiting time (unit: 100 ms)	0 ms	00000000
DC-LOOP instantaneous break allowable time (ph.A)	000E00F0	000E0200	000E0310	000E0420	7-0	DC-LOOP instantaneous break allowable time (unit: 10 ms) (at the time of calling, CML ON to end of dialing)	0 ms	00000000
DC-LOOP instantaneous break allowable time (ph.B)	000E00F1	000E0201	000E0311	000E0421	7-0	DC-LOOP instantaneous break allowable time (unit: 10 ms) (after completion of dialing and after CML ON at the time of reception)	0 ms	00000000
Dial mode RING DET mode	000E00F2	000E0202	000E0312	000E0422	7	Wrong dial determination function 0: Disable 1: Enable	Disable	00010010 (JP) 00010000 (US/EU)
					6	-	-	
					5-4	RING detection mode 01: No. of times 10: Time	No. of times	
					3-2	Pulse format 00: General 01: SW 10: NO	General	
					1-0	Dialing method 00: PB 01: 10 pps 10: 20 pps 11: 16 pps	20 pps (JP) PB (US/EU)	

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
1st/2nd DT detection parameter	000E00F3	000E0203	000E0313	000E0423	7-4	-	-	00000000
					3	At 2nd DT detection DP dialing only	×	
					2-1	-	-	
					0	1st DT2 type	×	
Tone detection	000E00F4	000E0204	000E0314	000E0424	7-6	-	-	00010001 (JP/US) 00000001 (EU)
					5	1300 Hz 0: No 1: Yes	No	
					4	Busy Tone 0: No 1: Yes	Yes (JP/US) No (EU)	
					3	PBX DT 0: No 1: Yes	No	
					2	3rd DT 0: No 1: Yes	No	
					1	2nd DT 0: No 1: Yes	No	
					0	1st DT 0: No 1: Yes	Yes	
No. of busy tone detection times	000E00F5	000E0205	000E0315	000E0425	7-0	No. of busy tone detection times	2 times (JP/US) 0 time (EU)	00000010 (JP/US) 00000000 (EU)
No. of RING detection times	000E00F6	000E0206	000E0316	000E0426	7-0	No. of RING detection times (unit: No. of times)	2 times	00000010
RING detection time	000E00F7	000E0207	000E0317	000E0427	7-0	RING detection time (unit: sec.)	6 sec.	00000110
Remote station response waiting time	000E00F8	000E0208	000E0318	000E0428	7-0	Remote station response waiting time at calling (unit: sec.)	55 sec.	00110111
Answering machine function	000E00F9	000E0209	000E0319	000E0429	7-5	Answering machine CNG detection time (unit: 10 sec.) 001: 10 sec. to 111: 70 sec.	30 sec.	01100100
					4	Answer mode 0: OFF 1: ON	OFF	
					3-0	Answering machine DC-LOOP detection time (unit: 5 sec.) 0001: 5 sec. to 1111: 75 sec.	20 sec.	
Remote reception password (Line 1 only available)	000E00FA	000E020A	000E031A	000E042A	7-0	ASCII [2]	0x2a	00101010
	000E00FB	000E020B	000E031B	000E042B			0x20	00100000
RBT transmission time	000E00FC	000E020C	000E031C	000E042C	7-0	RingBackTone signal transmission time (unit: 1000 ms)	20000 ms	00010100
CAR signal ON time max. value	000E00FD	000E020D	000E031D	000E042D	7-0	CAR ON time max. value (unit: 20 ms)	800 ms (JP) 0 ms (US/EU)	00101000 (JP) 00000000 (US/EU)
CAR signal ON time min. value	000E00FE	000E020E	000E031E	000E042E	7-0	CAR ON time min. value (unit: 20 ms)	200 ms (JP) 0 ms (US/EU)	00001010 (JP) 00000000 (US/EU)
CAR signal OFF time max. value	000E00FF	000E020F	000E031F	000E042F	7-0	CAR OFF time max. value (unit: 20 ms)	800 ms (JP) 0 ms (US/EU)	00101000 (JP) 00000000 (US/EU)
CAR signal OFF time min. value	000E0100	000E0210	000E0320	000E0430	7-0	CAR OFF time min. value (unit: 20 ms)	200 ms (JP) 0 ms (US/EU)	00001010 (JP)

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
								00000000 (US/EU)
No. of CAR signal detection times	000E0101	000E0211	000E0321	000E0431	7-0	CAR (information receiving terminal start signal) detection no. of times (unit: No. of times)	1 time (JP) 0 time (US/EU)	00000001 (JP) 00000000 (US/EU)
Caller ID signal waiting time	000E0102	000E0212	000E0322	000E0432	7-0	ID waiting time after Caller ID/ DIAL-IN primary response (unit: 1000 ms)	5000 ms (JP) 0 ms (US/EU)	00000101 (JP) 00000000 (US/EU)
Remote reception password entry waiting time	000E0103	000E0213	000E0323	000E0433	7-0	Password signal (DTMF) detection waiting time (unit: 100 ms)	2000 ms	00010100

16.12.5 Function setting 5

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
Normal/number display automatic line distinction function	000E0104	000E0214	000E0324	000E0434	7	Automatic judgment function 0: OFF 1: ON	ON (JP) OFF (US/EU)	10000011 (JP) 00000000 (US/EU)
					6-4	-	-	
					3-0	V23 signal detection waiting time when judged (unit: sec.)	3 sec. (JP) 0 sec. (US/EU)	
Monitor speaker (Transmission signal sound)	000E0105	000E0215	000E0325	000E0435	7	PB tone monitoring at the time of offhook	×	00000011
					6-5	Monitor speaker in communication 00: OFF 01: Up to DIS 10: Up to DIS + RBT transmissions 11: ON	OFF	
					4-0	Speaker volume 00000: 0 to 01000: 8	3	
Numeric ID [20]	000E0106 - 000E0119	000E0216 - 000E0229	000E0326 - 000E0339	000E0436 - 000E0449	7 -0	ASCII [20] When ID is less than 20 digits, justify to the left and insert space at the top. (No NULL terminator)	0x20	00100000
PBX connection mode	000E011A	000E022A	000E033A	000E044A	7-4	-	-	00001111
					3-0	PBX call 0000: Keypad 0 to 1001: Keypad 9 1111: PBX unconnected	PBX unconnected	
Protocol monitor	000E011B	000E022B	000E033B	000E044B	7-6	-	-	00000000
					5	TEL/FAX switching RBT monitor sound 0: OFF 1: ON	OFF	
					4	Inhibit the speaker to sound when off-hook key is pressed 0: Not inhibit 1: Inhibit	Not inhibit	
					3-0	-	-	
Reception function (disable)	000E011C	000E022C	000E033C	000E044C	7	-	-	00111111
					6	Auto transmission not available (Line 1 only) 0: Enable 1: Disable (Manual RX)	Enable	
					5	Name display 0: Not inhibit 1: Inhibit	Inhibit	
					4	Compulsory memory RX 0: Not inhibit 1: Inhibit	Inhibit	

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
					3	No. of caller / name display (number display / (display of subscribers for trace-back system)) 0: Not inhibit 1: Inhibit	Inhibit	
					2	Closed area communication 0: Not inhibit 1: Inhibit	Inhibit	
					1	Remote RX 0: Not inhibit 1: Inhibit	Inhibit	
					0	Dialin 0: Not inhibit 1: Inhibit	Inhibit	
PBX outside line access code 1 (BCD)	000E011D	000E022D	000E033D	000E044D	7-4	1st digit	0xFF	11111111
					3-0	2nd digit		
PBX outside line access code 2 (BCD)	000E011E	000E022E	000E033E	000E044E	7-4	3rd digit	0xFF	11111111
					3-0	4th digit		
Limit of long size reception	000E011F	000E022F	000E033F	000E044F	7-1	-	-	00000000
					0	Limit of long size reception 0: Limit 1: Unlimited	Limit	
Max. size of long original received (In the case of 400 dpi or less)	000E0120	000E0230	000E0340	000E0450	7-0	When the resolution for reception is 400 dpi or less, the size of a long original received that is regarded as an error (The maximum length is a decimal value x 10 mm.) (00000000 is regarded as 1000 mm.)	1000 mm	01100100
Max. size of long original received (In the case of 600 dpi)	000E0121	000E0231	000E0341	000E0451	7-0	When the resolution for reception is 600 dpi, the size of a long original received that is regarded as an error (The maximum length is a decimal value x 10 mm.) (00000000 is regarded as 1000 mm.)	1000mm	01100100
Voice response output level adjustment	000E0122	000E0232	000E0342	000E0452	7-4	-	-	01100010
					3-0	Voice response volume 0000: 0 to 1111: 15	2	
Monitor speaker (Received signal sound)	000E0123	000E0233	000E0343	000E0453	7-5	-	-	00000100
					4-0	Speaker volume 00000: 0 to 01000: 8	4	
VoIP mode	000E0127	000E0237	000E0347	000E0457	7	Check remote station disconnection and detail error code 0: No 1: Yes	No	00000000
					6	Disconnect remote station after disconnection check 0: No 1: Yes	No	
					5	V.21 detection priority mode during RX setup for V.17 or lower 0: OFF 1: ON	OFF	
					4	Allowable number of times of the post message reception timeout 0: 1 time 1: 3 times	1 time	

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
					3	Single detection for V.17 or lower during V.21 setup 0: OFF 1: ON	OFF	
					2	Ignore DIS for V.17 or lower 0: OFF 1: ON	OFF	
					1-0	-	-	
Over-current protection function with current setting	000E0129	000E0239	000E0349	000E0459	7-0	Current detection threshold (×1 mA)	160 mA	00000000
Over-current protection function with voltage setting	000E012A	000E023A	000E024A	000E045A	7	-	-	00000000
					6-0	Voltage threshold (x1 V)	21 V	
Over-current protection function with resistance setting	000E012B	000E023B	000E034B	000E045B	7	-	-	00000000
					6-0	Voltage threshold (×10 Ω)	190 Ω	
Timer for adjusting Phase B retransmission interval (V.17)	000E012D	000E023D	000E034D	000E045D	7-6	Phase B re-transmission interval at manual receiving (available at polling transmission) 00: 3.0 s 01: 3.5 s 10: 4.0 s 11: 4.5 s	3.0 s	00000000
					5-4	Phase B re-transmission interval at manual sending 00: 3.0 s 01: 3.5 s 10: 4.0 s 11: 4.5 s	3.0 s	
					3-2	Phase B re-transmission interval at automatic receiving (available at polling transmission) 00: 3.0 s 01: 3.5 s 10: 4.0 s 11: 4.5 s	3.0 s	
					1-0	Phase B re-transmission interval at automatic sending 00: 3.0 s 01: 3.5 s 10: 4.0 s 11: 4.5 s	3.0 s	
Timer for adjusting Phase D retransmission interval (V.17)	000E012E	000E023E	000E034E	000E045E	7-4	-	-	00000000
					3-2	Phase D re-transmission interval at manual sending 00: 3.0 s 01: 3.5s 10: 4.0 s 11: 4.5 s	3.0 s	
					1-0	Phase D re-transmission interval at automatic sending 00: 3.0 s 01: 3.5s 10: 4.0 s 11: 4.5 s	3.0 s	
Conexant Modem Function selection	000E012F	000E023F	000E034F	000E045F	7-5	-	-	00000000
					4	ANSam/CED detection method 0: Determined by ATV25 only 1: Determined by ATV25 and TONEA	Determined by ATV25 only	
					3	Fix training data to normal RX value before V.17 reception 0: No 1: Yes	Yes	

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
					2	Training data fix operation mode 0: During V.17 RX 1: During V.17/V.27ter/V.29 RX	During V.17 RX	
					1	EQFZ operation 0: Yes 1: No	Yes	
					0	EQFZ operation mode 0: During V.17 RX 1: During V.17/V.27ter/V.29 RX	During V.17 RX	
FED OFF waiting time during V.21 set-up	000E0130	000E0240	000E0350	000E0460	7-0	FED OFF waiting time during V.21 set-up (unit: 5 ms) (Translated to 400 ms when the value is “00000000”)	400 ms	00000000
Operation at V.17 RX error	000E0134	000E0244	000E0354	000E0464	7-2	R06 error detection	×	00000000
					1	V.29 communication at V.17 RX error 0: No 1: Yes	Yes	
					0	Condition for V.29 communication at V.17 RX error 0: For R06 error (equivalent) only 1: For all RX errors	For R06 error (equivalent) only	
V.29 communication time at V.17 RX error	000E0135	000E0245	000E0355	000E0465	7-0	Time limited for V.29 communication from V.17 error occurrence (unit: min.)	0 min.	00000000

16.12.6 Fax capacity setting

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
Reception main scan line resolution ability	000F0000	000F0020	000F0040	000F0060	7	400 dpi	○	10101010
					6	300 dpi	×	
					5	200 dpi	○	
					4	-	-	
					3	16 pels/mm	○	
					2	-	-	
					1	8 pels/mm	○	
					0	-	-	
	000F0001	000F0021	000F0041	000F0061	7-3	-	-	00000001
					2	(1200 dpi)	×	
					1	(800 dpi)	×	
					0	600 dpi	○	
Reception sub scanning resolution ability	000F0002	000F0022	000F0042	000F0062	7	400 dpi	○	10111011
					6	300 dpi	×	
					5	200 dpi	○	
					4	100 dpi	○	
					3	15.4 l/mm	○	
					2	-	-	
					1	7.7 l/mm	○	
					0	3.85 l/mm	○	
	000F0003	000F0023	000F0043	000F0063	7-3	-	-	00000001
					2	(1200 dpi)	×	
					1	(800 dpi)	×	
					0	600 dpi	○	

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
Reception coding method ability	000F0004	000F0024	000F0044	000F0064	7-6	-	-	00011111
					5	(JPEG)	×	
					4	JBIG	○	
					3	MMR	○	
					2	MR	○	
					1	MH	○	
					0	THRU	○	
Received document width ability	000F0005	000F0025	000F0045	000F0065	7-6	-	-	00001110
					5	(Legal)	×	
					4	(Letter)	×	
					3	A3	○	
					2	B4	○	
					1	A4	○	
					0	(A5)	×	
Received document length ability	000F0006	000F0026	000F0046	000F0066	7	-	-	01000110
					6	Unlimited	○	
					5	(Legal)	×	
					4	(Letter)	×	
					3	-	-	
					2	B4	○	
					1	A4	○	
					0	(A5)	×	
Reception speed ability	000F0007	000F0027	000F0047	000F0067	7-5	-	-	00011011
					4	V.29-96	○	
					3	V.29-72	○	
					2	-	-	
					1	V.27-48	○	
					0	V.27-24	○	
	000F0008	000F0028	000F0048	000F0068	7	V.17-144	○	11110000
					6	V.17-120	○	
					5	V.17-96	○	
					4	V.17-72	○	
					3	V.33-144	×	
					2	V.33-120	×	
					1	(TCM-96)	×	
					0	(TCM-72)	×	
	000F0009	000F0029	000F0049	000F0069	7	V.34-192	○	11111111
					6	V.34-168	○	
					5	V.34-144	○	
					4	V.34-120	○	
					3	V.34-96	○	
					2	V.34-72	○	
					1	V.34-48	○	
					0	V.34-24	○	
	000F000A	000F002A	000F004A	000F006A	7-6	-	-	00111111
					5	V.34-336	○	
					4	V.34-312	○	
					3	V.34-288	○	
					2	V.34-264	○	
					1	V.34-240	○	
					0	V.34-216	○	

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
Reception MSLT ability	000F000B	000F002B	000F004B	000F006B	7-0	T3.85 or 200*100 dpi (ms) 00000000: 0 ms to 00101000: 40 ms	5 ms	00000101
	000F000C	000F002C	000F004C	000F006C	7-0	T7.7 or 200*200 dpi (ms) 00000000: 0 ms to 00101000: 40 ms	5 ms	00000101
	000F000D	000F002D	000F004D	000F006D	7-0	T11.55 or 300*300 dpi (ms) 00000000: 0 ms to 00101000: 40 ms	5 ms	00000101
	000F000E	000F002E	000F004E	000F006E	7-0	T15.4 or 400*400 dpi or 600*600 dpi (ms) 00000000: 0 ms to 00101000: 40 ms	5 ms	00000101
Reception ECM ability	000F000F	000F002F	000F004F	000F006F	7-1	-	-	00000001
					0	ECM reception capability 0: OFF 1: ON	ON	
Reception protocol ability	000F0010	000F0030	000F0050	000F0070	7-6	-	-	00111001
					5	FAX-CSRC (Line 1 only)	○	
					4	V.8/V.34	○	
					3	DIAG (Line 1 only)	○	
					2-1	-	-	
					0	G3S	○	
Reception option frame ability	000F0011	000F0031	000F0051	000F0071	7-5	-	-	00000111
					4	(BFT)	×	
					3	(BTM)	×	
					2	PWD	○	
					1	(SEP)	○	
					0	SUB	○	

16.12.7 HP setting

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
Transmission main scan line resolution instruction	00100000	00100020	00100040	00100060	7	400 dpi	×	00100010
					6	300 dpi	×	
					5	200 dpi	○	
					4	-	-	
					3	16 pels/mm	×	
					2	-	-	
					1	8 pels/mm		
					0	-	-	
	00100001	00100021	00100041	00100061	7-3	-	-	00000001
					2	(1200 dpi)	×	
					1	(800 dpi)	×	
					0	600 dpi	○	
Transmission sub scanning resolution instruction	00100002	00100022	00100042	00100062	7	400 dpi	×	00010001
					6	300 dpi	×	
					5	200 dpi	×	
					4	100 dpi	○	
					3	15.4 l/mm	×	
					2	-	-	
					1	7.7 l/mm	×	
					0	3.85 l/mm	○	
	00100003	00100023	00100043	00100063	7-3	-	-	00000001
					2	(1200 dpi)	×	
					1	(800 dpi)	×	

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
					0	600 dpi	○	
Transmission coding method instruction	00100004	00100024	00100044	00100064	7-6	-	-	00011111
					5	(JPEG)	×	
					4	JBIG	○	
					3	MMR	○	
					2	MR	○	
					1	MH	○	
					0	THRU	○	
Transmission document width instruction	00100005	00100025	00100045	00100065	7-6	-	-	00001110
					5	(Legal)	×	
					4	(Letter)	×	
					3	A3	○	
					2	B4	○	
					1	A4	○	
					0	(A5)	×	
Transmission document length instruction	00100006	00100026	00100046	00100066	7	-	-	01000110
					6	Unlimited	○	
					5	(Legal)	×	
					4	(Letter)	×	
					3	-	-	
					2	B4	○	
					1	A4	○	
					0	(A5)	×	
Transmission speed instruction	00100007	00100027	00100047	00100067	7-5	-	-	00011011
					4	V.29-96	○	
					3	V.29-72	○	
					2	-	-	
					1	V.27-48	○	
					0	V.27-24	○	
	00100008	00100028	00100048	00100068	7	V.17-144	○	11110000
					6	V.17-120	○	
					5	V.17-96	○	
					4	V.17-72	○	
					3	V.33-144	×	
					2	V.33-120	×	
					1	(TCM-96)	×	
					0	(TCM-72)	×	
	00100009	00100029	00100049	00100069	7	V.34-192	○	11111111
					6	V.34-168	○	
					5	V.34-144	○	
					4	V.34-120	○	
					3	V.34-96	○	
					2	V.34-72	○	
					1	V.34-48	○	
					0	V.34-24	○	
	0010000A	0010002A	0010004A	0010006A	7-6	-	-	00111111
					5	V.34-336	○	
					4	V.34-312	○	
					3	V.34-288	○	
					2	V.34-264	○	
					1	V.34-240	○	

Items	Address				Data		Default	
	Line 1	Line 2	Line 3	Line 4	Bit	Contents	Setting	Data
					0	V.34-216	○	
Transmission MSLT instruction	0010000B	0010002B	0010004B	0010006B	7-0	T3.85 or 200*100 dpi (ms) 00000000: 0 ms to 00101000: 40 ms	5 ms	00000101
	0010000C	0010002C	0010004C	0010006C	7-0	T7.7 or 200*200 dpi (ms) 00000000: 0 ms to 00101000: 40 ms	5 ms	00000101
	0010000D	0010002D	0010004D	0010006D	7-0	T11.55 or 300*300 dpi (ms) 00000000: 0 ms to 00101000: 40 ms	5 ms	00000101
	0010000E	0010002E	0010004E	0010006E	7-0	T15.4 or 400*400 dpi or 600*600 dpi (ms) 00000000: 0 ms to 00101000: 40 ms	5 ms	00000101
Transmission ECM instruction	0010000F	0010002F	0010004F	0010006F	7-2	-	-	00000001
					1	ECM transmission frame size 0: 256 1: 64	256	
					0	ECM transmission instruction 0: OFF 1: ON	ON	
Transmission protocol instruction	00100010	00100030	00100050	00100070	7-6	-	-	00010001
					5	FAX-CSRC (Line 1 only)	×	
					4	V.8/V.34	○	
					3	DIAG (Line 1 only)	×	
					2-1	-	-	
					0	G3S	○	
Transmission option frame instruction	00100011	00100031	00100051	00100071	7-5	-	-	00000000
					4	(BFT)	×	
					3	(BTM)	×	
					2	PWD	×	
					1	(SEP)	×	
					0	SUB	×	

16.13

17. Finisher

17.1 FS-FN adjustment

17.1.1 Center Staple Position

- Adjust the stapling position for each paper size when printing with the center staple function.
- To adjust the center staple position by making the staple position match the folding position.

<Target model>

- FS-539SD, FS-540SD

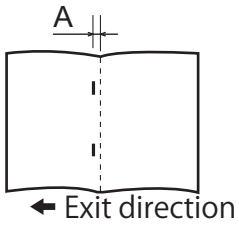
Target	Setting range
0 ± 1.0 mm	-10.0 mm to +10.0 mm (1 step: 0.1 mm)

NOTE

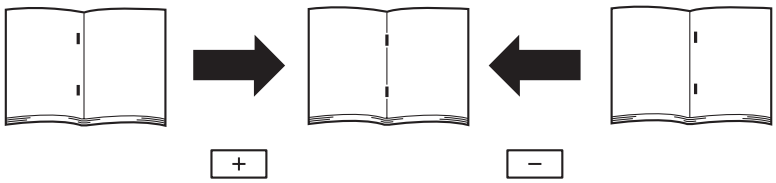
- **After [Half-Fold Position] adjustment, make this [Center Staple Position] adjustment.**

<Procedure>

1. Place five sheets of originals on the DF.
2. Make a set of copy in the saddle stitching mode.
3. Width A should fall within the following target.



4. If width A is out of the target, make the following adjustment.
5. Touch the paper size where staple position is adjusted.
6. Look at the copy and adjust the staple position with the [+] / [-] key.



NOTE

- **The adjustment setting value used for each paper size is the value set with [ALL] plus the value set for each paper size.**

7. Touch [Test Copy].
8. Select the tray loading paper for the test copy.
9. Touch [Center Staple and Fold], and press the start key.
10. Check the staple positions deviate.

17.1.2 Half-Fold Position

- Use this adjustment to adjust the half-fold position in half-fold printing.

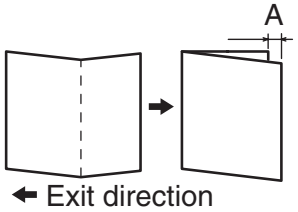
<Target model>

- FS-539SD, FS-540SD

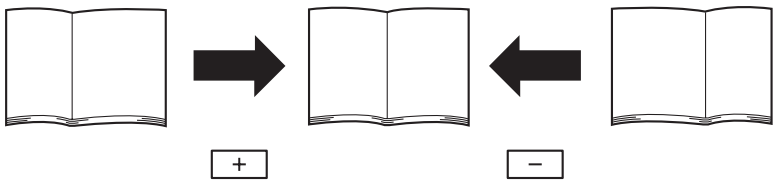
Target	Setting range
A = Less than 1.0 mm	-10.0 mm to +10.0 mm (1 step: 0.1 mm)

<Procedure>

1. Place two sheets of originals on the ADF.
2. Make a copy in the folding mode.
3. Fold the copies along the crease.
4. Measure the amount of width A.



5. If width A is out of the target, make the following adjustment.
6. Touch the paper size where half-fold position is adjusted.
7. Look at the copy and adjust the half-fold position with the [+] / [-] key.



NOTE

- **The adjustment setting value used for each paper size is the value set with [ALL] plus the value set for each paper size.**

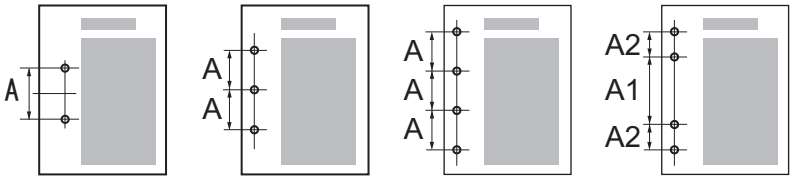
8. Touch [Test Copy].
9. Select the tray loading paper for the test copy.
10. Touch [Half-Fold], and press the start key.
11. Check the crease positions deviate.

17.1.3 Punch Centering Fine Adj (for English)

- To be used to change the vertical position of the punch holes.

<Target model>

- PK-526



- The positions of the punch holes relative to the center in the paper feeding direction should fall within the following target.

Number of punch holes	Target	Setting range
2 holes/4 holes	• The distance A between holes: 80 mm (*) • Deviation amount in the vertical direction relative to the center in the paper feeding direction: ± 1.0 mm	-5.0 mm to +5.0 mm (1 step: 0.1 mm)
2 holes/3 holes (2 holes)	• The distance A between holes: 70 mm (*) • Deviation amount in the vertical direction relative to the center in the paper feeding direction: ± 1.0 mm	
2 holes/3 holes (2 holes)	• The distance A between holes: 108 mm (*) • Deviation amount in the vertical direction relative to the center in the paper feeding direction: ± 1.0 mm	
SWE4 hole	• The distance A between holes: 80 mm (*) • Deviation amount in the vertical direction relative to the center in the paper feeding direction: ± 1.0 mm	

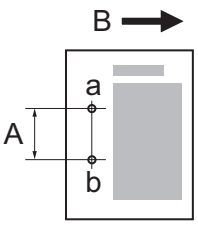
- *: Unable to adjust the distance between holes.

NOTE

- **The following example shows how to make adjustment for 2-hole type. For other types, adjustment should be made in the same way.**

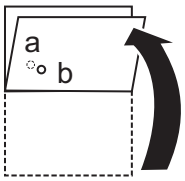
<Procedure>

1. Make a 1sided copy sample in the punch mode. Face the printed surface upward.

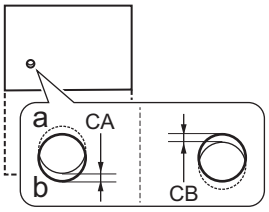


- [A]: The distance between holes
- [B]: Paper feeding direction
- [a]: Punch hole (upper)
- [b]: Punch hole (lower)

2. Fold the paper in half along the center in the paper feeding direction.

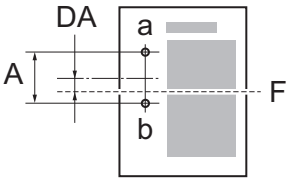


3. Measure the deviation amount [C] between punch holes [a] and [b].



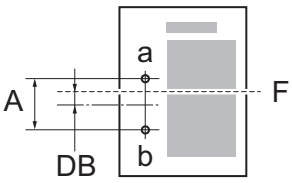
4. If the deviation between the punch holes [a] and [b] is [CA], the punch holes deviate upward in the figure relative to the paper folding line [F] (center in the paper feeding direction).
   - Ex.1: Punch hole deviation amount [DA] = Measured value [CA] 3 mm ÷ 2 = -1.5mm (hole positions deviate upward)

   Ex.1



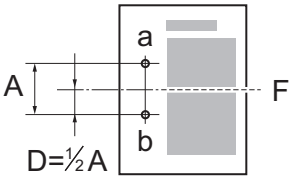
5. If the deviation between the punch holes [a] and [b] is [CB], the punch holes deviate downward in the figure relative to the paper folding line [F] (center in the paper feeding direction).
   - Punch hole deviation amount [DB] = Measured value [CB] 3 mm ÷ 2 = +1.5 mm (hole positions deviate downward)

   Ex.2

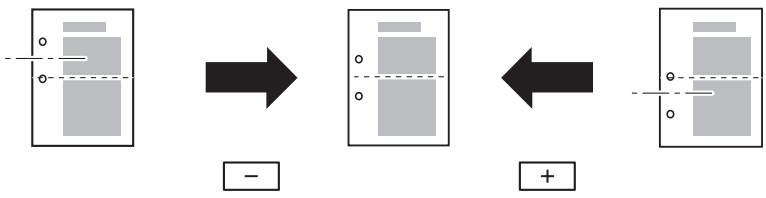


6. Complete the adjustment, if the deviation amount [D] between punch holes [a] and [b] falls within the target (±1.0 mm or less).
   - Ex.3: Punch hole deviation amount [D] = Measured value [C] 0mm ÷ 2 = 0 (punch hole deviation amount 0 mm falls within the target)

   Ex.3



7. Touch the paper size where punch centering is adjusted.
8. Look at the copy and adjust the punch centering with the [+] / [-] key.
   - To move the hole position downward: Enter the value of [-].
   - To move the hole position upward: Enter the value of [+].



NOTE
- **The adjustment setting value used for each paper size is the value set with [ALL] plus the value set for each paper size.**

9. Touch [Test Copy].
10. Select the tray loading paper for the test copy.
11. Select the number of punch holes in the “Punch” list, and then press the Start key.
12. Check the punch hole hole positions.

17.1.4 Punch Edge Adj

- To change the horizontal position of the punch holes.

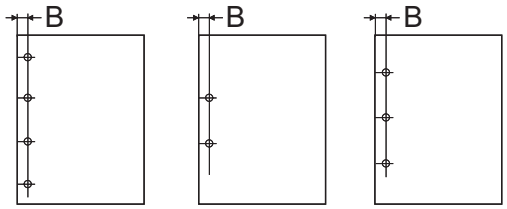
<Target model>
- FS-539 + PK-524, FS-540 + PK-526

Number of punch holes	Target	Setting range
2 holes/3 holes	12.0 mm ±1.0 mm	-10 to +10 (1 step: 1) (*)
2 holes/4 holes	11.0 mm to 1.0 mm	
SWE4 holes	10.5 mm to 1.0 mm	

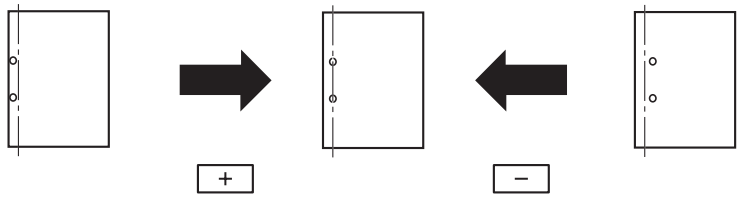
- *: The adjustment 1 is equivalent to 0.5 mm.

<Procedure>

1. Make a copy sample in the punch mode.
2. Measure the width B from the copy paper to the punch hole.



3. If width B is out of the target, make the following adjustment.
4. Touch the paper type where punch horizontal position is adjusted.
5. Look at the copy and adjust the punch horizontal position with the [+] / [-] key.
   - To make width B greater: Enter the value of [+]
   - To make width B smaller: Enter the value of [-]



6. Touch [Test Copy].
7. Select the tray loading paper for the test copy.
8. Select the number of punch holes in accordance with the punch kit, then press the Start key.
9. Check the punch hole positions.

17.1.5 Punch Regist Loop Size

- Adjusts the punch loop size used for paper exited from the main body.
- Used when tilted punched hole position, wrinkled paper, or jam at punch registration section occurs.

<Target model>

- FS-539 + PK-524

Setting range	Default setting
-4.0 to +4.0 mm (1 step: 1 mm)	0.0 mm

<Procedure>

1. Select a paper type where the punch hole position needs adjustment.
2. Set the target using the [+] / [-] keys.
   - Misaligned punched holes: Enter the value of [+]
   - Wrinkled paper: Enter the value of [-]
3. Touch [OK].

17.1.6 Punch F. Sensor Intensity Adj.

- Adjusts the sensitivity (light intensity) of the PK punch front sensor of the punch kit.

<Target model>

- PK-526

<Procedure>

1. Touch [Start].
2. Make sure that the result is OK.

NOTE

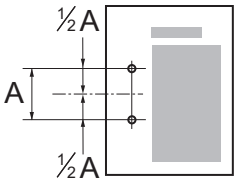
- **When NG appears, check whether the punch kit is properly installed.**

17.1.7 Vertical Punch (Z-Fold) Position (for English)

- Adjusts the vertical position of the punch holes.

<Target model>

- ZU-609

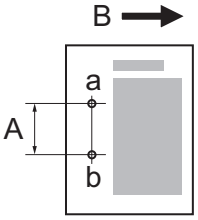


- The positions of the punch holes relative to the center in the paper feeding direction should fall within the following target.

Target	Setting range
• The distance A between holes: 80 mm (Unadjustable) • Deviation amount in the vertical direction relative to the center in the paper feeding direction: ± 1.0 mm	-5.0 mm to +5.0 mm (1 step: 0.1 mm)

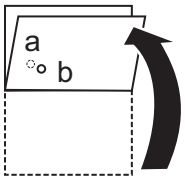
<Procedure>

1. Make a 1-sided copy sample in the Z-Fold + Punch mode. Face the printed surface upward.

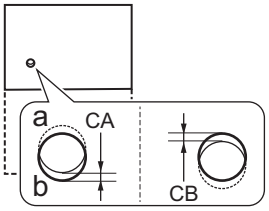


- [A] The distance between holes
- [B] Paper feeding direction
- [a] Punch hole (upper)
- [b] Punch hole (lower)

2. Fold the paper in half along the center in the paper feeding direction.

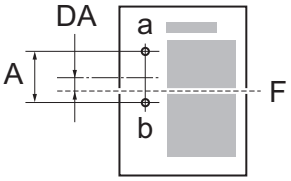


3. Measure the deviation amount [C] between punch holes [a] and [b].



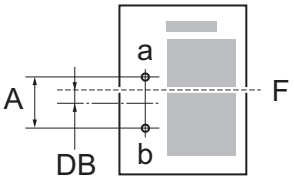
4. If the deviation between the punch holes [a] and [b] is [CA], the punch holes deviate upward in the figure relative to the paper folding line [F] (center in the paper feeding direction).
   - Ex.1: Punch hole deviation amount [DA] = Measured value [CA] 3 mm ÷ 2 = -1.5 mm (hole positions deviate upward)

Ex.1



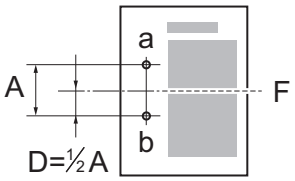
5. If the deviation between the punch holes [a] and [b] is [CB], the punch holes deviate downward in the figure relative to the paper folding line [F] (center in the paper feeding direction).
   - Punch hole deviation amount [DB] = Measured value [CB] 3 mm ÷ 2 = +1.5 mm (hole positions deviate downward)

Ex.2

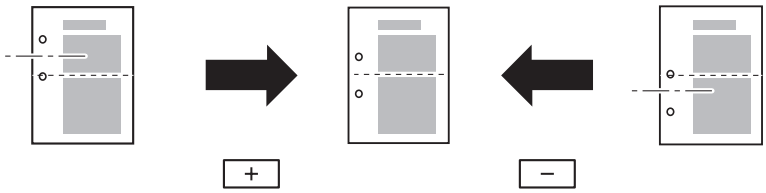


6. Complete the adjustment, if the deviation amount [D] between punch holes [a] and [b] falls within the target (±1.0 mm or less).
   - Ex.3: Punch hole deviation amount [D] = Measured value [C] 0mm ÷ 2 = 0 mm (punch hole deviation amount falls within the target)

Ex.3



7. Enter the target using the [+] / [-] keys.
   - To move the hole position downward: Enter the value of [+].
   - To move the hole position upward: Enter the value of [-].



8. Touch [Test Copy].
9. Select the tray loading paper for the test copy.
10. Touch [Z-Fold].
11. Select the number of punch holes in the “Punch” list, and then press the Start key.
12. Check the punch hole positions.

17.1.8 Horizontal Punch (Z-Fold) Position (for English)

- Adjusts the horizontal position of the punch holes for the Z-fold mode.

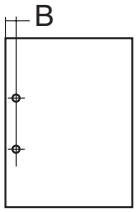
<Target model>

- ZU-609

Target	Setting range
12.0 mm ±3.0 mm	-5.0 mm to +5.0 mm (1 step: 0.1 mm)

<Procedure>

1. Make a copy sample in the punch mode.
2. Measure the width B from the edge of the copy paper to the punch hole.



3. If width B is out of the target, make the following adjustment.
4. Enter the target using the [+] / [-] keys.
   - To make width B greater: Enter the value of [+]
   - To make width B smaller: Enter the value of [-]
5. Touch [Test Copy].
6. Select the tray loading paper for the test copy.
7. Touch [Z-Fold].
8. Select the number of punch holes in the “Punch” list, and then press the Start key.
9. Check the punch hole positions.

17.1.9 Resist loop size(Z-fold)

- Adjusts the size of the punch resist loop that is applied for the Z-fold mode.
- Used when tilted punched hole position or wrinkled paper occurs.

<Target model>

- PK-526 + ZU-609

Setting range	Default setting
-5.0 mm to +5.0 mm (1 step: 0.1 mm)	0.0 mm

<Procedure>

1. Make a copy sample in the Z-Fold + Punch mode, and check the sample.
2. Make the following adjustment when tilted punched hole position or wrinkled paper occurs.
3. Select the paper type where resist loop size is adjusted.
4. Enter the target using the [+] / [-] keys.
   - Misaligned punched holes: Enter the value of [+]
   - Wrinkled paper: Enter the value of [-]
5. Touch [Test Copy].
6. Select the tray loading paper for the test copy.
7. Touch [Z-Fold].
8. Select the number of punch holes in the “Punch” list, and then press the Start key.
9. Check the punch hole positions.

17.1.10 Punch Registration Loop Adj

- Corrects the tilt of paper (change the loop amount) before punching operation. (Paper conveyed from the main body)
- Used when tilted punched hole position, wrinkled paper, or jam at punch section occurs.

<Target model>

- FS-540 + PK-526

Setting range	Default setting
-5.0 mm to +5.0 mm (1 step: 0.1 mm)	0.0 mm

<Procedure>

1. Select a paper type where the punch hole position needs adjustment.
2. Set the target using the [+] / [-] keys.
   - Misaligned punched holes: Enter the value of [+]
   - Wrinkled paper: Enter the value of [-]

17.1.11 Punch Resist Loop Size (PI)

- Corrects the tilt of paper (change the loop amount) before punching operation. (Paper conveyed from the post inserter)
- Used when tilted punched hole position, wrinkled paper, or jam at punch section occurs.

<Target model>

- PK-526 + PI-507

Setting range	Default setting
-5.0 mm to +5.0 mm (1 step: 0.1 mm)	0.0 mm

<Procedure>

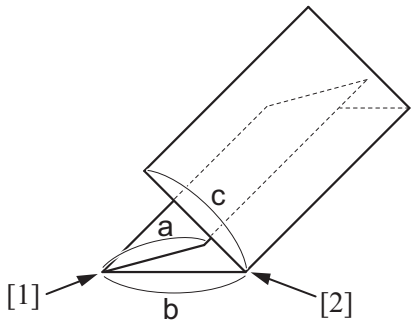
1. Touch [Upper] or [Lower].
2. Select the paper type to be adjusted.
3. Set the target using the [+] / [-] keys.
   - Misaligned punched holes: Enter the value of [+]
   - Wrinkled paper: Enter the value of [-]

17.1.12 1st Tri-Fold Adjustment/2nd Tri-Fold Adjustment

- To adjust the positions of the 1st Tri-fold and 2nd Tri-fold for the Tri-fold printing.

<Target model>

- FS-539SD, FS-540SD



[1]	Position of the first tri-fold	[2]	Position of the second tri-fold

Paper size	Target	Setting range
A4S	Length a: 95 mm ± 2 mm Length b: 102 mm ± 2 mm	-10.0 mm to +10.0 mm (1 step: 0.1 mm)
$8^1/_2$ x 11S	Length a: 89.4 mm ± 2 mm Length b: 96.0 mm ± 2 mm	
16KS	Length a: 88 mm ± 2 mm Length b: 92 mm ± 2 mm	

<Procedure>

1. Make copies in the tri-fold mode.
2. Measure the tri-fold widths “a” and “b” of ejected copy samples.
3. If width “a” is out of the target, make the following adjustment.
4. Select a paper size where the tri-fold position needs adjustment.
5. While checking the copy samples, touch [+] or [-] to adjust the tri-fold position.
   - To increase the 1st tri-fold (width a) and 2nd tri-fold (width b), enter a positive value with [+].
   - To decrease the 1st tri-fold (width a) and 2nd tri-fold (width b), enter a negative value with [-].
6. Touch [Test Copy].
7. Select the tray loading paper for the test copy.
8. Touch [Tri-Fold], and press the start key.
9. Check displacement of the fold position on the fed out copies.

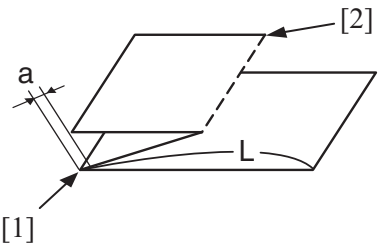
17.1.13 1st Z-Fold Position/2nd Z-Fold Position

- Adjusts the positions of the 1st Z-fold and 2nd Z-fold for the Z-fold mode.

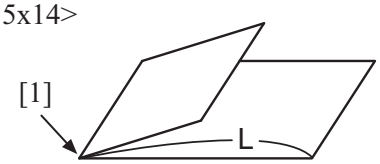
<Target model>

- ZU-609

<11x17, A3,B4,8K>



<8.5x14>



[1]	Position of the first fold	[2]	Position of the second fold
[L]	Length of the first fold	[a]	Length of the second fold

Paper Size	Target	Setting range
11 x 17	• Width a: 4.0 mm ± 2.0 mm • Length L: 215 mm +0/-7.0 mm	-12.8 mm to +12.7 mm (1 step: 0.1 mm)
A3	• Width a: 4.0 mm ± 2.0 mm • Length L: 209 mm +0/-7.0 mm	
B4	• Width a: 4.0 mm ± 2.0 mm • Length L: 181 mm +0/-7.0 mm	
$8^1/_2$ x 14 (*)	• Length L: 278 mm +0/-7.0 mm	
8K	• Width a: 4.0 mm ± 2.0 mm • Length L: 194 +0/-7.0 mm	

- *: $8^1/_2$ x 14 is available for only an half fold.

<Procedure>

1. Make a copy sample in the Z-fold mode.
2. Measure the widths “a” and “L” of the ejected copy sample.
3. If widths “a” and “L” are out of the target, make the following adjustment.
4. Touch [ALL] and set the target using the [+] / [-] keys.
   - To increase the length of the 1st fold (L) or 2nd fold (a), enter a negative value with [+] key.
   - To decrease the length of the 1st fold (L) or 2nd fold (a), enter a positive value with [-] key.

   NOTE
   - **The adjustment setting value used for each paper size is the value set with [ALL] plus the value set for each paper size.**
   - **Width “a” should not be 2 mm or less.**
5. Touch [Test Copy].
6. Select the tray loading paper for the test copy.
7. Touch [Z-Fold], and touch [Start].
8. Check the widths “a” and “L” of the ejected copy sample.

17.1.14 PI Size Detection

- To specify paper sizes that the post inserter detects.
- To set a paper size with which size detection is made when a paper having a similar size is placed on the feeder.

<Target model>

- PI-507

<Procedure>

1. Touch [Mode 1].
2. Select a desired paper size with which size detection is made.
3. Make the same setting in [Mode 2] to [Mode 6].

17.1.15 Post Inserter Adjustment

- To make automatic post inserter size detection adjustments separately in each of the upper and lower trays.
- Make this adjustment when the post inserter cannot make proper size detection.
- Make this adjustment after performing PI displacement adjustment.

<Target model>

- PI-507

<Procedure>

1. Touch [Upper Tray].
2. Place A4S paper on the upper tray and touch [A4 ▭].
3. Touch [Start].
4. Make sure that the result is OK.

5. Touch [Lower Tray].
6. Place A4S paper on the lower tray and touch [A4 ▭].
7. Touch [Start].
8. Make sure that the result is OK.

17.1.16 Finisher Components Test Mode

- Use this adjustment to check finisher's operation.

<Procedure>

1. Select a mode.
2. Press the Start key to start finisher operation.
3. Press the Stop key to stop ongoing finisher operation.

(1) Finisher Components Test Mode

(a) FS-539/FS-539SD/PK-524

Mode	
Finisher check 1	Paper Transport Motor
	Paper Entrance Motor
	Paper Exit Motor
	Paper Alignment Plate Motor/F
	Main Tray Up/Down Motor
	Paper Alignment Plate Motor/R
	Side Stopper Guide Motor
	Paper Exit Belt Motor
	Exit Roller Retraction Motor
	Paper Discharge Control Motor
	Side Stapler Movement Motor
	Pre-Discharge Drive Motor
	Punch Drive Motor
	Paddle Motor
Finisher check 2	Switch Output Tray Motor
	SD Paper Transport Motor
	Folding Roller Motor
	Leading Edge Gripper Solenoid
	Leading Edge Stopper Motor
	CD Alignment Plate Motor
	Folding Knife Motor
	Chip Box Change Motor
	Tail Edge Holding Plate Motor
	SD Paddle Motor
	Tri-folding Knife Motor

(b) FS-540/FS-540SD/PK-526/PI-507/ZU-609

Mode	
Finisher check 1	Paper Transport Motor
	Paper Entrance Motor
	Paper Exit Motor
	Paper Alignment Plate Motor/F
	Main Tray Up/Down Motor
	Paper Alignment Plate Motor/R
	Side Stopper Guide Motor
	Paper Exit Belt Motor
	Exit Roller Retraction Motor
	Paper Discharge Control Motor
	Side Stapler Movement Motor
	Pre-Discharge Drive Motor
	Paddle Motor
	exit divert
Finisher check 2	FD Stopper Drive Motor
	paddle arm motor
	pusher motor

Mode	
	sub tray exit motor
	bero motor
	ZU feed motor
	JS exit feed guide
	sd ent feed motor
	SD belt tray feed motor
	zu chopper
	ZU Guide Motor
	ZU Press Motor
	M302/Oscillating Drive M: HP Search
	M302/Oscillating Drive M: Edge Sensor Control
Finisher check 3	M301/Punch Drive M: HP Search
	M301/Punch Drive M: Execute Punch (2-Hole)
	M301/Punch Drive M: Execute Punch (3- or 4-Hole)
	M203(PI divert M) paper line velocity
	MC201 (upper paper feed clutch) ON
	MC202 (lower paper feed clutch) ON
	M201 (Upper rise descent M) Down(HP search)
	M201 (Upper rise descent M)Up
	M202 (Lower rise descent M) Down(HP search)
	M202 (Lower rise descent M)Up
	SD201 (upper row move solenoid) ON
	SD202 (the lower move solenoid) ON
	MC203 (registration transportation clutch) ON
	SD Paper Transport Motor
Finisher check 4	Folding Roller Motor
	Leading Edge Gripper Solenoid
	Leading Edge Stopper Motor
	CD Alignment Plate Motor
	Folding Knife Motor
	Chip Box Change Motor
	Tail Edge Holding Plate Motor
	SD Paddle Motor
	Tri-folding Knife Motor

17.1.17 Paper Alignment Guides W. Adj.

- To fine adjust the horizontal width of the aligning plate.
- Use this feature to fine adjust the aligning plate that aligns ejected paper.

<Target model>

- FS-539, FS-539SD, FS-540, FS-540SD

Setting range	Default setting
-10.0 mm to +10.0 mm (1 step: 0.1 mm)	0.0 mm

<Procedure>

1. Select a mode you want to adjust.
2. Set and adjust a value with the [+] / [-] key.
3. Touch [OK].

17.1.18 ZFold1st Fold Loop Size

- Adjusts the variation in the 1st fold position of Z-Fold.
- Forming a loop of stiff and slippery paper is difficult and a folding position on the paper may not be constant. This function adjusts loop amount to make the folding position constant.

<Target model>

- ZU-609

Setting range	Default setting
-5.0 mm to +5.0 mm (1 step: 0.1 mm)	0.0 mm

<Procedure>

1. Select the paper type where 1st Z-Fold loop size is adjusted.
2. Enter the target using the [+] / [-] keys.
   - To increase the loop amount: Increase the adjustment value.
   - To decrease the loop amount: Decrease the adjustment value.
3. Touch [END].

17.1.19 ZFold2nd Fold Loop Size

- Adjusts the variation in the 2nd fold position of Z-Fold.
- Forming a loop of stiff and slippery paper is difficult and a folding position on the paper may not be constant. This function adjusts loop amount to make the folding position constant.

<Target model>
- ZU-609

Setting range	Default setting
-5.0 mm to +5.0 mm (1 step: 0.1 mm)	0.0 mm

<Procedure>
1. Select the paper type where 2nd Z-Fold loop size is adjusted.
2. Enter the target using the [+] / [-] keys.
   - To increase the loop amount: Increase the adjustment value.
   - To decrease the loop amount: Decrease the adjustment value.
3. Touch [END].

17.1.20 ZFold2nd Fold Speed

- Not used

17.1.21 ZFold Adjust Custom

- Not used

17.2 Max Staple Limit Setting

- Enables setting the maximum number of sheets that can be stapled together.
- Used to change the maximum number of sheets that can be stapled together.

<Target model>
- FS-540, FS-540SD

Setting item	Setting value	Default setting
Staple option setting	2 to 100	100 Pieces
Large size staple limit restriction	-20 pieces	
	Do not do.	○

<Procedure>
1. Enter a desirable maximum number with the 10-key pad.
2. Select [-20 pieces] or [Do not do.] for Large size staple limit restriction.

NOTE
- **If mixed originals includes one or more large size ones (A3/11 x 17 or more), the maximum that can be stapled together is subject to the setting of large size staple limit restriction.**
- **If large size staple limit restriction is set to [-20 pieces] and the maximum number of sheets to be stapled together less 20 is 2 or less, then the restricted number of sheets as the maximum is 2.**
- **When the staples for 50 sheets are detected, 50 sheets becomes the upper limit even though the setting of the upper limit up to which sheets can be stapled exceeds 50 sheets.**

17.3 Punch Option Setting

- Specifies punch settings depending on the optional punch kit attached to the finisher.
- An individual punch setting needs to be made according to the type of the punch option.

Setting item	Setting	Default setting
Punch kit (*)	Non-installat.	○
	(Punch kit)	
Number of punch holes	2-Holes	○
	SWE4 holes	
	2-Holes/3-Holes	
	2-Holes/4-Holes	

*: Setting may vary by installed finisher.

<Procedure>
1. Select the type of the punch kit.
2. Select the number of punch holes in accordance with the punch kit destination type.
3. Touch [decision].

17.4 Max. # of Folded Sheets Setting

- Imposes restriction on the number of sheets to be folded in each of different folding modes.
- To change the maximum number of sheets to be folded in each of different folding modes.

<Target model>
- FS-539SD, FS-540SD

Setting item	Setting	Default setting
Center Fold	1 to 5 Pieces	5 Pieces
Center Staple	2 to 20 Pieces	20 Pieces

Setting item	Setting	Default setting
Tri-Fold	1 to 3 Pieces	3 Pieces
Z fold/staple using together (*)	2 to 10 Pieces	10 Pieces
Z fold (*)	50 pieces	○
	40 pieces	
	30 pieces	
	20 pieces	

- (*): It will be displayed only when the finisher FS-540SD is mounted.

<Procedure>
1. Select a folding mode where the maximum is restricted and enter a desirable maximum number with the 10-key pad.
2. Touch [END].

17.5 Tri-Fold Output Setting

- To set the position where paper is ejected when paper is conveyed to the saddle stitcher in tri-fold mode.

<Target model>
- FS-540SD

Setting value	Default setting
Normal Output	○
Extend Output	

17.6 Job Separator

- Checks the job separator's operation.

<Procedure>
1. Select the mode where you wish to check the operation.
2. Press the Start key to start job separator operation.
3. Press the Stop key to stop ongoing job separator operation.

17.7 Center Staple Output Setting

- To set the position where paper is ejected when paper is conveyed to the saddle stitcher in center staple mode.

<Target model>
- FS-540SD

Setting value	Contents	Default setting
Output to normal pos.	Output to the normal position.	○
Extend Output	After driving the belt for about two seconds, output to a position slightly away from the normal position.	
Output to External unit.	After driving the belt for about seven seconds, output to a post processing unit.	

18. Network Settings

18.1 2nd Network Setting

NOTE

- **Before making settings, note the network environment of the customer and make the settings to suit the environment.**

2nd network card settings

- To be configured when an optional Upgrade Kit (wireless LAN) has been installed in this machine.

NOTICE

- To perform a remote control from an Android tablet terminal or iOS terminal, bizhub Remote Access are required.

Setting item	Contents	Default setting
Set	To be selected to install optional wireless LAN devices.	
Unset	To be selected not to install optional wireless LAN devices.	○

NOTE

- **When [Set] is selected, make sure that the set wireless LAN is displayed, and configure the following settings.**

Network interface structure

- To connect the MFP main unit as a wireless LAN adapter to a wireless LAN access point connected to the LAN environment. (when Wireless Only or Wired+Wireless (Secondary Mode) is selected)
- To perform direct communication between the MFP main unit and a mobile device. (when Wired+Wireless (Primary Mode) or Wired +Wireless (Wi-Fi Direct) is selected)

Network Interface Settings	Description
Wired Only	Select this option to use this machine only in the wired LAN environment.
Wireless Only	Select this option to use this machine only in the wireless LAN environment. A job is received from the client via the wireless LAN access point and executed.
Wired+Wireless (Secondary Mode)	Select this option to use this machine in both the wired LAN environment and wireless LAN environment. To execute a job received from a client via the LAN. A job is received from the client via the wireless LAN access point and executed.
Wired+Wireless (Primary Mode)	Select this option to use this machine in both the wired LAN environment and wireless LAN environment. The main body is used as a wireless LAN access point. When starting up the main body, perform wireless LAN communication between the main body and the mobile device (Android device, iOS device, or devices supporting Wi-Fi) without via wireless LAN access point.
Wired+Wireless (Wi-Fi Direct)	Select this option to use this machine in both the wired LAN environment and wireless LAN environment. The main body is used as a wireless LAN access point. With this mode, a mobile device (excluding iOS) can be connected to Wi-Fi Direct authentication devices easily.

18.2 Remote Service Setting

18.2.1 Function Setting

Enable Settings

- To set whether to use the remote service.

NOTE

- **When [ON] is selected, [Service Mode] -> [Machine Update Setting] -> [Machine Auto Update setting], [Auto Update setting] will not be displayed.**
- **When [ON] is selected, [Service Mode] -> [Machine Update Setting] -> [Machine Auto Update setting], [Relay server setting] will not be displayed.**

Setting item	Default setting
ON	
Disable	○

Server Settings

- To set URL, ID and password of the server to be used on remote service communication.

Setting item	Setting
URL	(Address or host name): port number • Address: IPv4 or IPv6 address • Host name: Alphanumeric characters and symbols up to 253 characters
ID	Alphanumeric characters and symbols: 1-64 characters
Password	Alphanumeric characters and symbols: 0-64 characters

18.2.2 Proxy Server Setting

Enable Settings

- To set whether to use the proxy server.
- When [ON] is set, the [WebDAV Synchronize] and [Proxy Server] settings can be configured.

Setting item	Default setting
ON	
Disable	○

WebDAV Synchronize

- To set whether to synchronize with [WebDAV Client Settings] in Administrator settings.
- When [Synchronize] is set, operation is performed in accordance with the configuration of the [WebDAV Client Settings] within the Administrator settings.

Setting item	Default setting
Synchronize	
Do not Synchronize	○

Proxy Server

- To configure the proxy server settings.

NOTE

- **It will be not displayed when [WebDAV Synchronize] is set to [Synchronize].**

Setting item	Setting
Host Name	Address or host name • Address: IPv4 or IPv6 address • Host name: Alphanumeric characters and symbols up to 253 characters
User Name	Alphanumeric characters and symbols: 0 to 63 characters
Password	Alphanumeric characters and symbols: 0 to 63 characters
Port Number	1 to 65535

18.2.3 Maintenance Setting

Identification Code

- To enter the identification code used to organize and manage multiple machines on a per-customer basis.

Setting range	Description
0 to 99999999 (8-digit number)	Note the hierarchical order: First 2 digits represent the region code and the last 6 digits represent the management code.

Operator Name

- To enter the keywords used by maintenance personnel to easily search for corresponding machines on the remote service server UI screen.

Setting range	Description
Alphanumeric characters/symbols/space (up to 64 characters)	Specify the operator name.

Setup

- To connect to the remote service server manually.
- Touch Start to send the identification code and operator name to the remote service server.

18.2.4 XMPP Settings

Function setting

- To set whether to use sessions when communicating with the XMPP server.

NOTE

- **When [Disable] is set, initial commands cannot be received from the remote service server via the XMPP server.**

Setting item	Default setting
ON	○
Disable	

Connection Setting

Setting item	Description	Setting	Default setting
Repeat Interval	To set the repeat interval used when communication with the XMPP server fails.	1 to 5 Minutes	3 Minute
Connection Time-out	To set the timeout used for communication with the XMPP server.	5 to 300 Sec	60 sec.
SSL	To set whether to use the SSL when communicating with the XMPP server.	ON	○
		OFF	
BOSH	To set whether to use the BOSH connection when communicating with the XMPP server.	ON	○
		OFF	

Connection server info

- To confirm the URL, ID, domain name, port number and connection status.

18.2.5 Always Connection Setting

Maintenance Time

- Specify the maintenance time.

Setting item	Description	Default setting
User Power Save Settings	Operates when maintenance can be performed in accordance with power save settings.	
Always Connection	Maintenance can be performed at any time.	

Setting item	Description	Default setting
Individual Settings	Maintenance start and end times are configured individually.	○

Existence Notice Interval

- To set the time interval used to send existence notice packets for existence notice from the machine to the XMPP server.

Setting range	Default setting
1 to 3600 sec.	55 sec.

Learning Function

- To set whether to enable “Learning function” used to change the packet transmission interval in accordance with the XMPP session state when sending existence notice.

Setting item	Description	Setting	Default setting
Learning Function	To set whether to enable the learning function. • When [Enable] is set, the adjust value and lower limit must be configured.	Enable	
		Disable	○
Adjust Value	To lengthen the next packet transmission interval by the amount of the "adjust value" when a existence notice is sent successfully. To shorten the next packet transmission interval by the amount of the "adjust value" when a existence notice is sent unsuccessfully.	1 to 3600 sec.	30 sec.
Lower Limit	To make sure not to set the packet transmission interval shorter than the "lower limit".	1 to 3600 sec.	30 sec.

18.3 Port Settings

- To set the threshold value for determining the load state of the Raw port.

Setting range	Default setting
1 to 60 minutes	3 minutes

18.4 MTU Param. set.

- Set the maximum value (MTU) of data that can be transmitted at once.
- Set operations of Path MTU Discovery.

NOTICE

- Path MTU Discovery detects the minimum MTU on the communication path and uses it to automatically set the MTU size.

Path MTU Discovery Settings

- Set whether to enable Path MTU Discovery.

Setting	Description	Default setting
0	To enable Path MTU Discovery.	○
1	To disable Path MTU Discovery.	

Minimum MTU Size Setting

- This setting is available when Path MTU Discovery is enabled.

Setting range	Description	Default setting
68 byte to 1500 byte	The setting value is used as the minimum MTU size of the packet to be sent.	552 byte

Fixed MTU Size Setting

- This setting is available when Path MTU Discovery is disabled.

Setting range	Description	Default setting
1280 byte to 1500 byte	The setting value is used as the fixed MTU size of the packet to be sent.	1500 byte

19. Machine Update Setting

19.1 Internet ISW

19.1.1 Internet ISW Set

- To use when upgrading the firmware by Internet ISW.
- Each setting such as Server setting will be valid by setting this to “ON”.

NOTE

- **If [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON”, this setting will automatically be set to “OFF” and cannot be changed.**

Setting item	Description	Setting	Default setting
Function setting	To set whether or not to enable each setting for Internet ISW.	ON	
		OFF	○
Open Mode Settings	This setting is available when Function Setting is set to “Set.” When “Set” is set, download and update of firmware by Internet ISW is enable by administrator settings.	Set	
		Unset	○

19.1.2 HTTP Setting

To use when accessing the server using the HTTP protocol.

Setting item	Description	Setting	Default setting
HTTP data acquisition setting	To set whether or not to enable downloading using the HTTP protocol. When “ON” is set, set Connection Time-out.	ON	
		OFF	○
Connection Time-out	To set the time for the timeout for accessing the server.	30 to 300 sec.	60 sec.

19.1.3 FTP Setting

To use when accessing the server with FTP protocol.

Setting item		Description	Setting	Default setting
FTP data acquisition setting		To set whether or not to enable downloading using FTP protocol.	ON	○
			OFF	
Connection Setting	Port Number	To set the port number.	1 to 65535	21
	Connection Timeout	To set the timeout time.	1 to 60 (Minute)	1 (Minute)
	PASV Mode:	To set whether to enable or disable connection by the PASV (passive) mode (FTP server side will inform the connection port before connecting).	ON	
			OFF	○

19.1.4 Forwarding Access Setting

Setting item	Description	Setting
User ID	To register the user ID for accessing the program server where firmware is to be stored.	Alphanumeric characters and symbols (up to 64 characters)
Password	To register the password for accessing the program server where firmware is to be stored.	Alphanumeric characters and symbols (up to 64 characters)
URL	To register the user ID for accessing the program server where firmware is to be stored. • When connecting to http “http:// (Host name or IP address)/ directory name” or “https:// (Host name or IP address)/directory name”. • When connecting to ftp “ftp:// (Host name or IP address)/directory name”.	Alphanumeric characters and symbols (up to 256 characters)
FileName	To register the file name of the firmware data to be downloaded.	Alphanumeric characters and symbols (up to 63 characters)

<Procedure>

1. Select a setting item.
2. Enter information using the on-screen keyboard.

19.1.5 Download

NOTE

- **To connect the machine to the Internet via a proxy, the proxy server related settings must be configured in addition to [Forwarding Access Setting]. The settings of the proxy used in Internet ISW communications is configured in [Administrator] -> [Network] -> [Machine Update Settings] -> [Internet ISW Settings] -> [FTP Server Setting] or [Administrator] -> [Network] -> [Machine Update Settings] -> [HTTP Proxy Settings].**
- **If connection to the program server or data download fails, an error code and a message are displayed. Identify the cause of the problem with the error code and reconfigure the settings following the message. Refer to “ L.6 ERROR CODE FOR THE INTERNET ISW” for the error codes.**

Download/Update

- Access the program server according to the Internet ISW setting, and download the firmware.
- To use when updating the firmware via network.

- The firmware is downloaded and updated successively. During the firmware download and update, the machine cannot be used.

<Procedure>

1. Select [Download/Update].
2. Touch [Start] to start downloading the firmware.
3. The message to show the status will be displayed on the screen while connecting and transferring data.
4. When the firmware is normally upgraded, the main body will automatically be restarted to complete the Internet ISW.

Download

- To access the program server and download the firmware in accordance with the settings configured in Internet ISW Settings.
- As the firmware is downloaded in the background, the machine can be used during download.
- If firmware data already downloaded exits in the MFP storage, the data is overwritten and replaced by the new data.

<Procedure>

1. Select [Download].
2. Touch [Start] to start downloading the firmware.
3. The message to show the status will be displayed on the screen while connecting and transferring data. In the middle of downloading, the task can be cancelled by touching [Cancel].
4. When the firmware download is successfully completed, the result "OK" appears.

Update

- To update the firmware by using the firmware downloaded and saved in the storage.
- During the firmware download and update, the machine cannot be used.
- This button is not appeared if there is no firmware in the storage.

<Procedure>

1. Touch [Update].
2. Check the firmware file version in the storage.
3. Touch [Start] to update the firmware.
4. When the firmware is normally upgraded, the main body will automatically be restarted to complete the Internet ISW.

Delete

- To delete the firmware file saved in the storage.
- This button is not appeared if there is no firmware in the storage.

<Procedure>

1. Touch [Delete].
2. Touch [Start] to delete the firmware.

19.1.6 Update Start Time Settings

- To set the start time in order to automatically update the downloaded firmware.

NOTE

- **If updated firmware has not been downloaded by the specified time, firmware update is not performed.**
- **If the main power switch is turned OFF during a firmware update, the firmware is updated next time when the main power switch is turned ON.**
- **If a job is in process when the specified time comes, the firmware is updated after the completion of the job.**

<Procedure>

1. Select [Set] for [Update Firmware at Specified Time].
2. Touch [Hour] and [Min.] and set the firmware update start time.

19.2 Machine Auto Update setting

19.2.1 Auto Update setting

(1) Outline

- "Auto Update" is the function, which makes the main body access the program server periodically through the network to obtain a new firmware data, then rewrites it automatically.
- To use the Auto Update function, the main body must be connected to such a network environment that the update data can be downloaded on the network using the SMB or http protocol.
- The Auto Update function will not operate when the main body is under the following conditions.
  - Main power switch is set to OFF.
  - Sub power OFF mode (power key is orange) or ErP auto power OFF mode (power key flashes orange) enabled
  - [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON”.
  - The machine is operating, or there are jobs present (including appointed jobs).
  - The machine is in idle with suspended job.
  - Trouble has occurred.
  - Image file is in the memory.
  - Model or the circuit board of the program does not match.

(2) Preparations

- For using this function effectively, before executing the following procedures contact with the administrator to obtain an agreement.
- Set the network parameter, program server address as well as firewall address to the main body.
- Create a program update information file (C_UpdateList.ini) and store a set of data for updating in the program server.

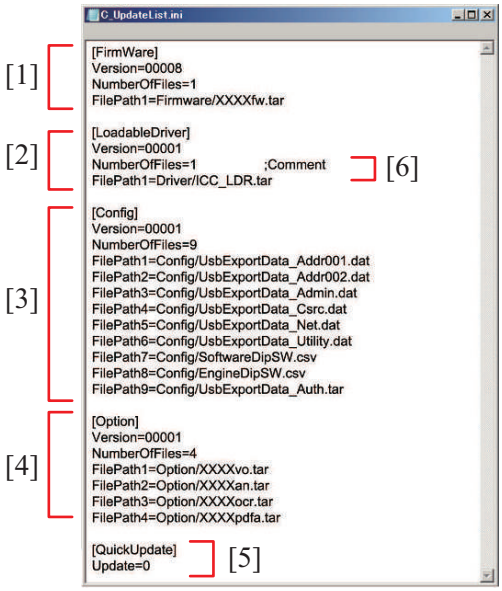
Creating the program update information file (C_UpdateList.ini)

- Specify the firmware, loadable driver, configuration files as shown below.

  NOTE

  - **[FirmWare], Version, FilePath, [LoadableDriver], NumberOfFiles, [Config], [Option], [QuickUpdate] and Update must be specified by using the capital letters and small letters properly.**

A sample of C_UpdateList.ini



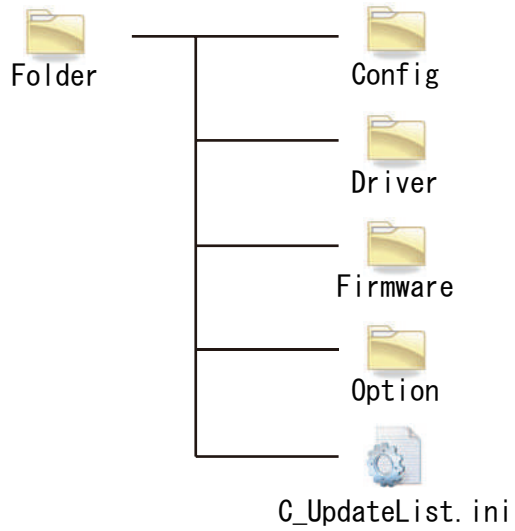
	Setting item	Description	Parameter list
[1]	[FirmWare]	Firmware updating information	Version, NumberOfFiles, FilePath
[2]	[OSS]	OSS update information (for independent OSS update)	Version, NumberOfFiles, FilePath
[3]	[LoadableDriver]	Loadable driver updating information	Version, NumberOfFiles, FilePath
[4]	[Config]	Configuration files updating information	Version, NumberOfFiles, FilePath
[5]	[Option]	Options updating information • Voice guidance data, movie help data, OCR data, PDF/A font, OEM name customize data and authentication customize data are to be updated.	Version, NumberOfFiles, FilePath
[6]	[QuickUpdate]	Timing for updating data	Update
[7]	-	Comment	A comment can be inserted between "#" or ";" and the line break code.

Parameter list

Parameter	Description
Version	Specify the version information of update data using a number including up to five digits.
NumberOfFiles	Specify the number of update data to up to three digits. Specify “NumberOfFiles=0” not to include the data to update.
FilePath	Specify a location to store the update data. A relative path should be specified from the program update information. If there are multiple files, give sequence numbers like “FilePath1,” “FilePath2.” Even if there is only one file, “1” must be given as “FilePath1.”
Update	Specify the data update timing. “Update=0”: Rewrite in accordance with the update time settings. “Update=1”: Rewrite soon after downloading.

Configuration of files and folders

- The folder configuration of the sample of C_UpdateList.ini is as shown below.



Create a configuration file

1. Select [Service Mode] -> [Machine Update Setting] -> [Machine Auto Update Setting] -> [Machine Export Setting].
2. Insert a USB memory into the USB port.
3. Enter a password.
   NOTE
   - **The password specified at above step 3 must be set beforehand by selecting [Service Mode] -> [Machine Update Setting] -> [Machine Auto Update setting] -> [Machine Update Password].**
4. Select [START].
5. [Result: OK] will be displayed.
6. Complete the data export.
7. Store the export file to the directory described in C_UpdateList.ini.

Create the Software switch setting/Engine FW DipSW setting file

- Create CSV files for the data with the required switch number as SoftwareDipSW.csv and EngineDipSW.csv.
- Store the file to the directory described in C_UpdateList.ini.

A sample of SoftwareDipSW.csv

	A	B	C
1	69	00000001	00000001
2	188	00000011	00000011
3			

Example	Description
A row	Software switch number
B row	Set 1 on the bit to be overwritten (bit7 to bit0 from left side)
C row	Set 1 or 0 for new setting at selected bit(s) on B row. (bit7 to bit0 from left side)

A sample of EngineDipSW.csv

	A	B
1	5	0
2	11	1
3	13	0
4		

Example	Description
A row	Engine FW DipSW number
B row	0 (not select) or 1 (select)

Create the user DB data file

1. Create UsbExportData_Auth.tar with a making tool of user DB data.
2. Store created file (UsbExportData_Auth.tar) to the directory described in C_UpdateList.ini.

(3) Auto Update setting

- Obtain the machine update file from the program server, and configure settings to update the machine at the specified time.
- This function is same as that of the [Administrator] -> [Network], but it will not be used together with the function of the service mode.

NOTE

- **It will not be displayed when [Service Mode] -> [Network Settings] -> [Remote Service Setting] -> [Function Settings] -> [Enable Settings] is set to "ON." [Machine Auto Update setting] in "Administrator" is not applicable.**
- **When the SMB protocol used, the machine uses static IP addresses.**

Server 1 Settings

Setting item		Description	Setting	Default setting
Auto Update		To set whether or not to use the auto update setting. • When [ON] is selected, configure the settings for Acquisition protocol.	ON	
			OFF	○
Server Name		To set an arbitrary server name to identify the connection destination.	Alphanumeric characters (up to 20 characters)	Server1
Download Protocol		To set the protocol for acquiring an update data. • If the machine relay server is used as a server on the data providing side, select [HTTP].	SMB	○
			HTTP	
SMB Setting	Host Name	Set the host name for the SMB server.	Alphanumeric characters and symbols (up to 253 characters)	-
	File Path	Set the file path used for SMB server communication. • Specify the folder in which C_UpdateList.ini is stored.	Up to 255 characters	-
	User Name	Set the user name used to access the SMB server.	Up to 64 characters	-
	Password	Set the password used to access the SMB server.	Alphanumeric characters and symbols (up to 64 characters)	-
	Number of retries	Set the number of times to retry when failed to obtain.	0 to 10 count	3 times
HTTP Setting	URL	Set the address of the http server. • Specify the folder in which C_UpdateList.ini is stored.	Alphanumeric characters and symbols (up to 253 characters)	-
	User Name	Set the user name used to access the relay server by http protocol.	Up to 64 characters	-
	Password	Set a password used to access the http server.	Alphanumeric characters and symbols (up to 64 characters)	-
	Proxy	To set whether or not to use the proxy server. • If [ON] is selected, set the proxy with [Administrator] -> [Network] -> [Machine Update Settings] -> [HTTP Proxy Settings].	ON	
			OFF	○
	Connection Time-out	To set the time for the timeout for accessing the server.	30 - 300	60 Sec.

Server 2 settings

Setting item		Description	Setting	Default setting
Auto Update		To set whether or not to use the auto update setting. • When [ON] is selected, configure the settings for Acquisition protocol.	ON	
			OFF	○
Server Name		To set an arbitrary server name to identify the connection destination.	Alphanumeric characters (up to 20 characters)	Server2
HTTP Setting	URL	To set the address of the http server. • Specify the folder in which C_UpdateList.ini is stored.	Alphanumeric characters and symbols (up to 253 characters)	-
	User Name	Set the user name used to access the relay server by http protocol.	Up to 64 characters	-
	Password	Set a password used to access the http server.	Alphanumeric characters and symbols (up to 64 characters)	-
	Proxy	To set whether or not to use the proxy server. • If [ON] is selected, set the proxy with [Administrator] -> [Network] -> [Machine Update Settings] -> [HTTP Proxy Settings].	ON	
			OFF	○
	Connection Time-out	To set the time for the timeout for accessing the server.	30 - 300	60 Sec.

Common Settings

- Configure the common settings for [Server 1 settings] and [Server 2 settings].

Setting item	Description	Setting	
Update Time	Touch Clear to set the time to update the machine.	Time	00 to 23 o'clock
		Minute	00 to 59 Minutes
Polling Settings	To set the polling period or day of the week and clock for obtaining the update list.	Set Interval.	1 to 240 Minutes
		Select Day of the Week	To set the day of the week and clock.
Repeat Interval	Set the period for retrying when failed to obtain.	• 1 to 240 Minutes	

(4) Data Update

Download the update data

- The machine confirms the program update information file in the program server with an interval set at [Polling Interval].
- The machine compares the program update information file in the program server with that in the machine, and starts downloading the update data with a changed Version number.

Data auto update

- If the machine power is set to ON at the time set with [Service Mode] -> [Machine Update Setting] -> [Machine Auto Update setting] -> [Auto Update setting] -> [Common Settings] -> [Update Time], the firmware will be rewritten automatically. If the power is set to OFF at that time, no rewriting will be executed.

Data update from control panel

- Select [Service Mode] -> [Machine Update Setting] -> [Machine Auto Update setting] -> [Manually Update] -> [Start], then execute rewriting.

NOTE

- **Do not set the power to OFF under the following state.**
  - **Touch [Manually Update] -> [Start] to the next operation of the machine (Auto Power OFF).**
  - **About one minute after the download completed screen being displayed, the machine will restart.**
  - **When rewriting configuration files followed by the firmware, the machine will restart again.**

(5) Error code

- The error code can be displayed using [Service Mode] -> [Machine Update Setting] -> [Machine Auto Update setting] -> [Update Log Display], or viewed on the PC where the log which saves up to 100 records sent by using [Transmission log Update] is received.

When using SMB protocol

Error code	Cause of error	Solution
N00107	• Cannot access the SMB server	• Set the IP address of the server or the server name correctly. • Confirm that if the server runs normally.
N04096		
N04097	• Authentication error	• Set the ID and the password correctly.
N04098		
N04105	• SMB connection error	• Check the SMB connection setting again.
N04106	• Cannot obtain C_UpdateList.ini • Cannot find the data described in C_UpdateList.ini	• Confirm that if C_UpdateList.ini is stored in the server, and set the file path for accessing C_UpdateList.ini correctly. • Set the folder name and the file path correctly.

When using the HTTP protocol

Error code	Cause of error	Solution
N00107	• Cannot access the HTTP server	• Set the IP address of the server or the server name correctly. • Confirm that if the server runs normally.
N00401	• Authentication error	• Set the ID and the password correctly.
N00404	• Cannot obtain C_UpdateList.ini • Cannot find the data described in C_UpdateList.ini	• Confirm that if C_UpdateList.ini is stored in the server, and set the file path for accessing C_UpdateList.ini correctly. • Set the folder name and the file path correctly.

Common in all cases

Error code	Cause of error	Solution
C00000	• XML setting error	• Make sure that the settings in each configuration file are correct.
C00001	• Decryption error	• Set the decryption password for the configuration files correctly.
D00001	• Format related error (software SW)	• Check for errors in the SoftwareDipSW.csv file.
D00010	• DipSW number not defined (software SW)	
D10001	• Format related error (Engine DipSW)	• Check for errors in the EngineDipSW.csv file.
D10010	• DipSW number not defined (Engine DipSW)	
F00000	• Firmware update error	• Check to see if the file on the server is correct.
F10107	• The file is not the firmware file	• Check to see if the file on the server is correct.
F10109		
N00100	• Network communication error	• Check the connection to the network cable and communications settings.
N00110		

Error code	Cause of error	Solution
T10001	• The C_UpdateList. data has not been properly downloaded • The C_UpdateList. data is corrupted	• Download the file again. • Check to see if the file on the server is correct.
T10010	• Descriptions in C_UpdateList.ini are not correct	• Set the descriptions in C_UpdateList.ini correctly.
T10020		

19.2.2 Relay server setting

(1) Outline

- The “Relay Server Function” is possible to share the update data obtained from the network with other machine, and operate the machine as a program server for the “Auto Update function.”
- To use the Relay Server function, the main body must be connected to such a network environment that the update data can be downloaded on the network using the http protocol.
- The relay server function will not operate under the following conditions.
  - Main power switch is set to OFF.
  - Sub power OFF mode (power key is orange) or ErP auto power OFF mode (power key flashes orange) enabled
  - [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON”.

NOTE

- **This function is disabled when the Marketing Area of the service mode is set to US or Others5.**

(2) Preparations

- For using this function effectively, before executing the following procedures contact with the administrator to obtain an agreement.
- Set the network parameter, program server address as well as firewall address to the main body.
- Create one set of data used to the auto update function as the relay data, and store it in the program server.
- Create a data update information file (S_UpdateList.csv) and store it in the program server for managing the relay data saved on one relay server machine.

Creating the data update information file (S_UpdateList.csv)

- Create a CSV file by specifying the model name, data update date and time, and path for accessing the Data update folder used to the Auto Update function.
- Specify up to four (four types) folders of relay data set.

  NOTE

  - **Information of five or more folders (five types) will be invalid.**

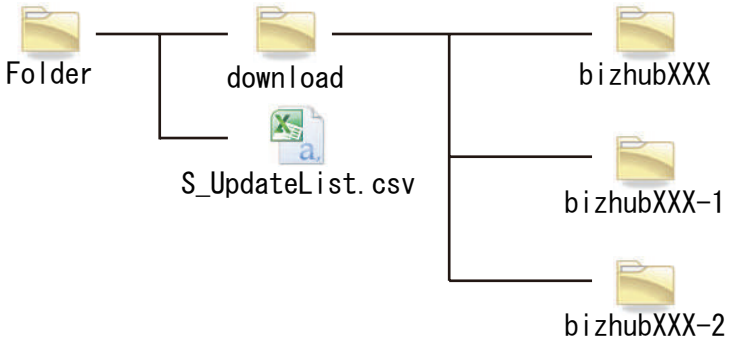
A sample of S_UpdateList.csv

	A	B	C
1	bizhubXXX Standard	YYYY/MM/DD hh:mm:ss	download/bizhubXXX
2	bizhubXXX Customer1	YYYY/MM/DD hh:mm:ss	download/bizhubXXX-1
3	bizhubXXX Customer2	YYYY/MM/DD hh:mm:ss	download/bizhubXXX-2

A row	Model name (any character string)
B row	Data update date and time
C row	Path for accessing the update data folder used to the Auto Update function

How to store data in program server

- The folder configuration of the sample data of S_UpdateList.csv is as shown below.



(3) Relay server setting

- Configure settings to use the relay server to obtain the update relay data.
- This function is same as that of the [Administrator] -> [Network], but it will not be used together with the function of the service mode.

Setting item		Description
Update File Download		Access the program server periodically, and set whether or not to use the function to obtain the latest update file.
Obtain Setting File	URL	Set the address of the file storage server. • Specify the folder in which S_UpdateList.csv is stored.
	User Name	Set the user name used to access the file storage server.
	Password	Set the password used to access the file storage server.
	Proxy	Select whether to use the proxy server. • If [ON] is selected, set the proxy with [Administrator] -> [Network] -> [Machine Update Settings] -> [HTTP Proxy Settings].
	Connection Time-out	To set the time for the timeout for accessing the server.
Polling Settings		Set the polling period or day of the week and clock for obtaining the update list. • Set Interval: Specify in range of 1 to 240 minutes. • Select Day of the Week: Select Day of the Week To set the day of the week and clock.
Repeat Interval		Set the period for retrying when failed to obtain. • Specify in range of 1 to 240 minutes.
SMB Authentication		Do not use SMB Authentication.
Distribution Server (HTTP)	Distribution Server (HTTP)	Set whether or not to use the Distribution Server (HTTP) function for the update file.
	User Name	Set the user name used to access the relay server by http protocol.
	Password (*)	Set a password used to access the http server.

NOTE

- ***: Be sure not to forget the password used to access the http server. It is required for reset.**

(4) Acquiring update data

1. The machine confirms the data update information file in the program server with an interval set at [Polling Interval].
2. The machine compares the data update information file in the program server with that in the machine, and starts downloading the relay data with a changed update date and time.
3. The downloaded relay data is stored in the machine storage.

(5) Error code

- The error code can be displayed using [Service Mode] -> [Machine Update Setting] -> [Machine Auto Update setting] -> [Relay Server Log Confirmation], or viewed on the PC where the log which saves up to 100 records sent by using [Transmission Server Log] is received.

Error code	Cause of error	Countermeasure
N00107	• Cannot access the HTTP server	• Set the IP address of the server or the server name correctly. • Confirm that if the server runs normally.
N00401	• Authentication error	• Set the ID and the password correctly.
N00404	• Cannot obtain S_UpdateList.csv • Cannot find the data described in S_UpdateList.csv	• Confirm that if S_UpdateList.csv is stored in the server, and set the file path for accessing S_UpdateList.csv correctly. • Set the folder name and the file path correctly.

(6) Auto update by relay server

- Configure the following settings on the machine where auto update function due to relay server update data is used.

1. Select [Service Mode] -> [Machine Update Setting] -> [Machine Auto Update setting] -> [Auto Update setting].
2. Select either [Server 1 Settings] or [Server 2 Settings] as the connection to configure.
3. Touch [Auto update], then select [ON].
4. Select [HTTP] in [Download Protocol].
5. Specify the folder including C_UpdateList.ini in [HTTP Setting] -> [URL].
   in the case of the sample of S_UpdateList.csv
   - http://IP address or host name of the machine to become the relay server/DAV/Service/download/bizhubXXX
   - File paths are case sensitive, so enter the portion after "DAV/Service/" exactly is it appears in the C column in S_UpdateList.csv.
   - If activate the relay server function in Administrator settings, the file path will be changed as "/DAV/Admin/".
6. Set the item in [HTTP Setting] -> [User Name] and [Password] that has been set in [Relay server setting] -> [Distribution Server (HTTP)].
7. Touch [OK].
8. Make settings in [Common Settings].

19.2.3 Transmission log Update

- Save the log related to machine auto update, and send it to the specified location.
- The log file saves up to 100 records.

Setting item	Description	Setting	Default setting
Update log transmission.	To set whether or not to use Transmission log Update. When [ON] is selected, configure the settings for transmission protocol and server.	ON	
		OFF	○
Transmission protocol	Configure settings for the transmission protocol.	SMB	○
		WebDAV	

Setting item		Description	Setting	Default setting
SMB Setting	Host Name	Set the host name for the SMB server.	Alphanumeric characters and symbols (up to 253 characters)	-
	File Path	Set the file path used for SMB server communication.	Up to 255 characters	-
	User Name	Set the user name used to access the SMB server.	Up to 64 characters	-
	Password	Set the password used to access the SMB server.	Alphanumeric characters and symbols (up to 64 characters)	-
WebDAV Setting	URL	To set the address of the WebDAV server.	Alphanumeric characters and symbols (up to 253 characters)	-
	User Name	Set the user name used to access the WebDAV server.	Up to 64 characters	-
	Password	Set the password used to access the WebDAV server.	Alphanumeric characters and symbols (up to 64 characters)	-
	Proxy	Set whether or not to use the proxy server. • If [ON] is selected, set the proxy with [Administrator] -> [Network] -> [Machine Update Settings] -> [HTTP Proxy Settings].	ON	-
			OFF	-

19.2.4 Transmission Server Log

- Save the log related to the update relay data download at relay server, and send it to the specified location.
- The log file saves up to 100 records.

Setting item		Description	Setting	Default setting
Transmission Server Log		To set whether or not to use Transmission Server Log. When [ON] is selected, configure the settings for transmission protocol and server.	ON	
			Disable	○
Transmission protocol		Configure settings for the transmission protocol.	SMB	○
			WebDAV	
SMB Settings	Host Name	Set the host name for the SMB server.	Alphanumeric characters and symbols (up to 253 characters)	-
	File Path	Set the file path used for SMB server communication.	Up to 255 characters	-
	User Name	Set the user name used to access the SMB server.	64 characters maximum	-
	Password	Set the password used to access the SMB server.	Alphanumeric characters and symbols (up to 64 characters)	-
WebDAV Setting	URL	To set the address of the WebDAV server.	Alphanumeric characters and symbols (up to 253 characters)	-
	User Name	Set the user name used to access the WebDAV server.	64 characters maximum	-
	Password	Set the password that is used to access the WebDAV server.	Alphanumeric characters and symbols (up to 64 characters)	-
	Proxy	To set whether or not to use the proxy server. • If [ON] is selected, set the proxy with [Administrator] -> [Network] -> [Machine Update Settings] -> [HTTP Proxy Settings].	ON	-
			Disable	-

19.2.5 Update Log Display

- To check the log related to the file download of the machine auto update.
- The latest five logs can be checked.

19.2.6 Relay Server Log Confirmation

To check the log related to the file download of the relay server.

The latest five logs can be checked.

19.2.7 Manually Update

- This is displayed when [Auto Update] is set to [ON] in [Service Mode] -> [Machine Update Setting] -> [Machine Auto Update setting] -> [Auto Update setting], and the update file has been downloaded.
- To execute update manually by using the downloaded file.
- Touch [Start] to start update.

NOTE

- **Do not set the power to OFF under the following state.**
  - **Touch [Manually Update] -> [Start] to the next operation of the machine (Auto Power OFF).**
  - **About one minute after the download completed screen being displayed, the machine will restart.**
  - **When rewriting configuration files followed by the firmware, the machine will restart again.**

19.2.8 Machine Import setting

- This is displayed only when Switch No. “72” is set to “04” in HEX Assignment in [Service Mode] -> [System 2] -> [Software Switch Setting].
- To import all importable files those are saved in the root folder of the USB memory.
  NOTE
  - **In the following conditions, export of MFP setting data is prohibited.**
    - [Administrator] -> [Security] -> [USB Connection Permission setting] is set to [Restrict].
    - [Administrator] -> [Security] -> [USB Connection Permission setting] -> [Detail Setting] -> [External Memory(Service)] is set to [Restrict].
    - [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON.”

Importable setting file	FileName
Address Book (*1)	UsbExportData_Addr.dat
Authentication Data (*1)	UsbExportData_Auth.dat
Network Settings (*1)	UsbExportData_Net.dat
Remote Access Setting	UsbExportData_Csrc.dat
User Settings	UsbExportData_Utility.dat
Administrator Setting (*1)	UsbExportData_Admin.dat
Service Settings	UsbExportData_Service.dat
Cloud Connection	UsbExportData_Cloud.dat
Display Custom Settings (*1)	UsbExportData_Topmenu.dat, TopMenuGadget.tar
External Cert (*1)	UsbExportData_ExtCertificates.tar
Custom Settings (*1) (*2)	UsbExportData.dat
UserBox Config Information (*1)	UsbExportData_BackUpBoxConf***.dat
Accessibility (*1)	UsbExportData_Universal.dat
Authentication customize data (*2)	AuthCustomMaster_***.xml
Copy Program	UsbExportData_CopyProgram.dat
PKI Batch Setting (*1)	UsbExportData_PKI.dat

- *1: It will be displayed when [Service Mode] -> [System 2] -> [Maintenance Mode] is set to [Effective], and [Administrator] -> [Security] -> [Maintenance Mode Access] is set to [Allow].
- *2: This file can be imported without inputting password, because it is not encrypted.

<Procedure>

1. Insert a USB memory into the USB port.
2. Enter a password.
3. Touch [Start].
   NOTE
   - **“OK” appears on the item that is imported successfully.**
   - **“NG” appears on the item where the password is mismatched or an error occurred.**
   - **“-” appears when no importable file is saved in the USB memory.**
4. Follow the massage appearing on the screen and turn OFF and ON the main power switch.
   NOTE
   - **If no “OK” appears in the import result, no message will be displayed.**

19.2.9 Machine Export setting

- Output the main unit configuration in XML format to a USB memory device or the SMB folder in the main unit.

NOTE

- **In the following conditions, export of the machine setting data is prohibited.**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] is set to [Restrict].**
  - **[Administrator] -> [Security] -> [USB Connection Permission setting] -> [Detail Setting] -> [External Memory(Service)] is set to [Restrict].**
  - **[Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON.”**

Data to be exported
Address Book (*)
Authentication Data (*)
Network Settings (*)
Remote Access Setting

Data to be exported
User Settings
Administrator Setting (*)
Service Settings (Excluding the setting of Software switch and Engine FW DipSW)
Cloud connection (*)
Display Custom Settings (*)
External Cert (which is retained) (*)
UserBox Config Information (*)
Accessibility (*)
Authentication customize data
Copy Program
PKI Batch Setting (*)

- *: It will be displayed when [Service Mode] -> [System 2] -> [Maintenance Mode] is set to [Effective], and [Administrator] -> [Security] -> [Maintenance Mode Access] is set to [Allow].

<Procedure>

1. Select the item to be output.
2. Select either [USB] or [SMB] as the [Export Destination].
   NOTE
   [SMB] displays when the following settings are made.
   - [Administrator] -> [Network] -> [SMB Setting] -> [SMB Server Settings] -> [Share SMB File Setting] -> [ON]

   If you select [USB], connect a USB memory device to a USB port.
3. Enter a password.
   NOTE
   - **If an XML file is to be used on the Auto Update function, register the same password beforehand to the machine where a data is to be downloaded as [Machine Update Password].**
4. Touch [Start].
5. [Result: OK] will be displayed.
6. Complete the data export.

NOTE

- **When [SMB] is selected, the data is exported to the SMB folder of this machine.**
  - **Check of the SMB folder: \\(IP address)\FWData_out$**
- **If [ON] is selected for [CE Authentication], "User Name" and "CE Password" are required to access the folder.**
  - **User name: CE**
  - **Password: CE password**

19.2.10 Machine Update Password

- To set a password used to decrypt the update file of the machine.

<Procedure>

1. Current Password: Enter the currently used decryption password. (only when the decryption password has been set)
2. New Password: Enter the new decryption password.
3. Re-input Password: Enter the new decryption password again.

NOTE

- **Be sure not to forget the decryption password. It is required for reset.**

19.3 Firmware Update

- Not used

19.4 Firmware Rollback

NOTE

- **It will be displayed when the machine storage is installed.**
- **If there is no backed up firmware, the firmware version will not be displayed.**
  For details, see K.6 Creating back up files when updating firmware.

Firmware Rollback

- To be used when rewriting to the backed up firmware.
- To be used when error occurs at the time of firmware updating.

<Procedure>

1. Check the version of the firmware to be rewritten.
2. Touch [Start].
3. A reboot is started.
4. Following the reboot, a firmware update screen appears. Then, check the version of each firmware.
5. Turn OFF and ON the main power switch.
6. Make sure that a message notifying the completion of the firmware rollback appears. Then, touch [OK].

Open Mode Settings

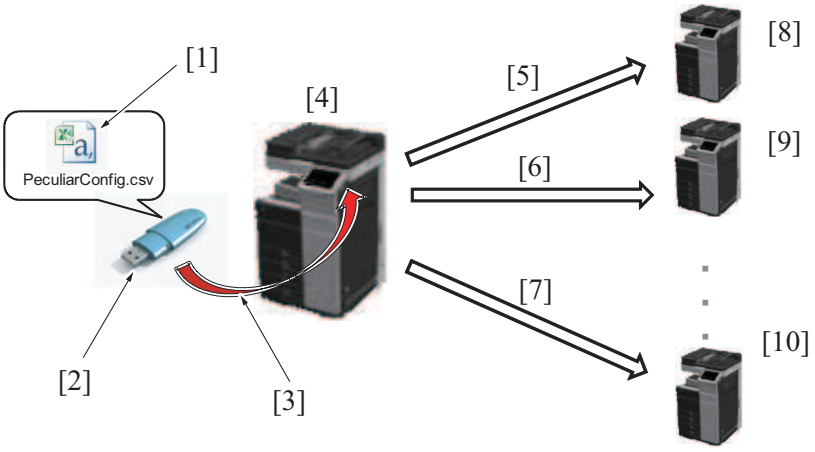
- To set whether to display/hide [Firmware Rollback] when selecting [Administrator] -> [Network] -> [Machine Update Settings].
- Even an administrator can rewrite to the backed up firmware.

Setting item	Default setting
Set	○
Unset	

19.5 Copy Network Settings

19.5.1 Outline

- To deliver the network-related information saved in the USB memory to, and set it in, other MFPs.
- One MFP is an originating side that delivers the network connection setting values to other MFPs within the same network.
- Setting values described in the CSV file and associated with the serial number of the recipient MFP are delivered and set.



[1]	CSV file containing setting values for network connection	[2]	USB memory
[3]	Connection	[4]	Recipient MFP
[5]	Delivering and setting values of recipient MFP (serial No.1X)	[6]	Delivering and setting values of recipient MFP (serial No.2)
[7]	Delivering and setting values of recipient MFP (serial No.X)	[8]	Recipient MFP (serial No.1)
[9]	Recipient MFP (serial No.2)	[10]	Recipient MFP (serial No.X)

19.5.2 Environmental preparations

- It is necessary to set and prepare in advance the originating MFP, recipient MFPs, USB memory, and the CSV file that describes the network settings.

Setting the originating MFP

- Check that the originating MFP and the recipient MFPs are connected to the same network (segment).
- Set a fixed IP address in the originating MFP.
- Set [Administrator] -> [Network] -> [OpenAPI Setting] -> [Access Setting] to “ON”.
- Set [Administrator] -> [Network] -> [OpenAPI Setting] -> [External Application Connection] to “ON”.

Setting the recipient MFP

- Check that the originating MFP and the recipient MFPs are connected to the same network (segment).
- Check that the TCP/IP setting of the recipient MFP is enabled to permit network communications.
- Check that a serial number is set in the MFP.
- Set all settings in [Administrator] -> [System Connection] -> [OpenAPI Setting] to the default values.

USB memory

- The following shows the requirements for the USB memory to be used for copying in the network settings:
  - USB flash memory compatible with the USB (1.1/2.0) interface
  - Formatted to the FAT32 file system
  - Not including security features (Possible to turn OFF security features)
  - A USB memory that is recognized by the computer as two or more drives cannot be used.
  - Use any write-protected USB memory in the write-enabled condition.

CSV file

- Appropriate the format of the CSV file, and prepare a CSV file where the recipient MFP and network setting value to be delivered and set have been input.
  - Setting item: Corresponding to the “Column” of a CSV file format
  - Setting value of recipient MFP: Corresponding to the “row” of a CSV file format

NOTICE

- CSV file format (PeculiarConfig.xls)

<Procedure>

1. Enter the serial number and the IP address v4 validation method.
2. Enter the other setting details in accordance with the CSV file format.
   For items that can be delivered and set and the detailed descriptions, see the CSV file format.
3. Enter the setting value of one recipient MFP against one row. And to set multiple MFPs, create setting value for each MFP while adding rows from top in order.

NOTE

- **The serial number and the IP address v4 validation method should invariably be entered.**
- **In any items left blank in the file, the items set in the MFP are automatically set.**
- **The file name should read “PeculiarConfig” with an extension of CSV.**
- **All MFPs having serial numbers contained in the CSV file will be the recipient MFPs. If any MFP that is to be excluded is included in the network, do not include the serial number of such an MFP in the file.**
- **Even when the serial number of the originating MFP is included in the CSV file, the originating MFP is not a recipient MFP.**

- **Up to 255 MFPs are recognized as the recipient MFP. Any serial numbers of the 256th MFP and onward contained in the CSV file will be excluded from the recipient MFPs.**

19.5.3 Deliver/setting procedure

1. Prepare a CSV file (PeculiarConfig.csv) that describes the setting values to be delivered into the root directory under the USB memory, and connect the USB memory to the originating MFP
2. Set the time-out time in [Copy Network Settings] -> [Connection Timeout].
   - Setting range: 1 to 300 sec.
   - Default value: 30 sec.
3. Touch [Copy Network Settings] -> [Copy Setting] -> [Check Connection] -> [Start].
4. Check the number of MFPs displayed at “Result” against the number of MFPs displayed “OK”.
5. Touch [Copy] -> [Start]. This delivers the setting value information to the recipient MFPs one by one.
   NOTE
   - **Screen operations are displayed in the MFP in which the setting values are being rewritten.**
   - **Do not remove the USB memory until the procedure is completed.**
6. When the delivery of the setting values to all recipient MFPs and rewriting of the setting values in all recipient MFPs are completed, the recipient MFPs are restarted.
7. The CSV file (PeculiarConfig_Result.csv) that contains the delivery result is stored in the USB memory inserted in the originating MFP.
8. Check the delivery result file in the USB memory to thereby determine that the procedure has been normally terminated.
   NOTE
   - **When an error that disables continued delivery occurs, a corresponding error code appears on the control panel.**
   - **When a delivery error occurs in any of the recipient MFPs, a message appears that prompts a check of the delivery result file.**
   - **For details of the delivery error, check the specific details of the delivery result file.**

Error code list

Error code	Description
N*****	Communication error
E00001	The USB memory is not connected to the originating MFP.
E00002	The CSV file in the USB memory cannot be read.
E00003	The delivery result file cannot be created in the USB memory connected to the originating MFP.
E00004	The CSV file format is illegal.
E00005	Communication is not successful with an MFP having a serial number contained in the CSV file.
E00006 (*)	“OFF” is set in [OpenAPI Setting] -> [Access Setting].
E00007 (*)	“ON” is set in [OpenAPI Setting] -> [Authentication].
E00008 (*)	“SSL Only” or “SSL/Non-SSL” is set in [OpenAPI Setting] -> [SSL/Port Settings].
E00009 (*)	Any data other than “50001” is set in [OpenAPI Setting] -> [SSL/Port Settings].
E00010 (*)	“No” is set in [OpenAPI Setting] -> [External Application Connection].
E00011	No response is received from the recipient MFP even after the lapse of a predetermined period of time after the CSV file has been delivered. (Timeout error)
E00012	The recipient MFP is not at timing at which it can accept the OpenAPI message.
E00013	The recipient MFP fails in updating.
E00014	“Cancel” is selected during delivery.
E00015	The USB memory is removed from the originating MFP during delivery.
E00016	A serial number in the CSV file is illegal.
E00099	A network system error. Any of the network settings is not the default value.

- *: Check the settings in the originating MFP when the error code appears on the control panel; check the settings in the recipient MFP when the error code is included in the delivery result file.

19.6 OSS Update

- Not used

J BILLING SETTING/ENHANCED SECURITY/DEBUG SETTINGS

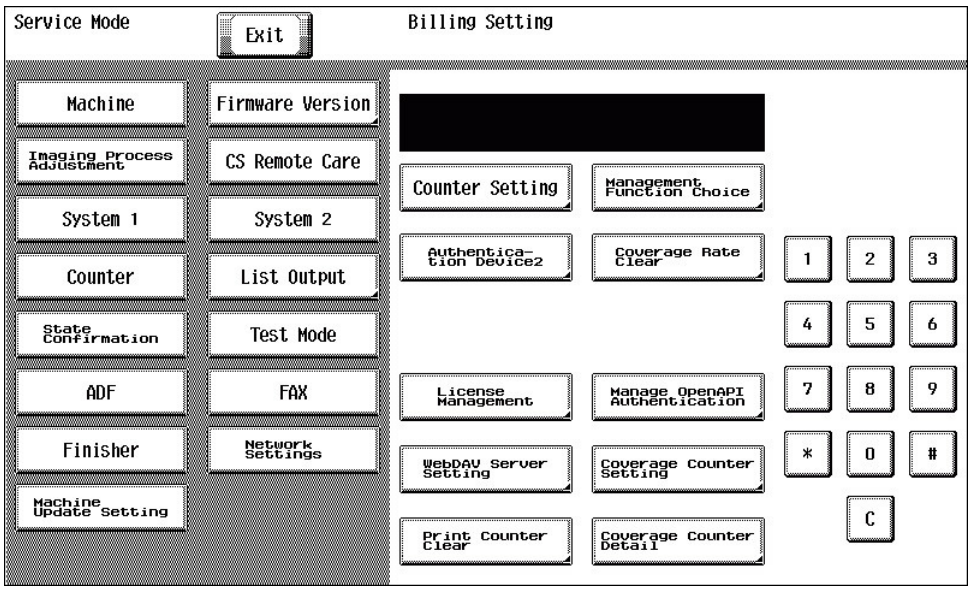
1. BILLING SETTING

1.1 Outline

Starting procedure

1. Call the initial screen of Service Mode.
2. Press the following keys in this order.
   - Stop -> 9
3. Call the Billing Setting screen.

An example of the Billing Setting screen



Exiting procedure

1. Touch [Exit].
2. Turn OFF the main power switch. Wait 10 seconds, then turn ON the main power switch again.

1.2 Counter Setting

1.2.1 Total Counter Mode

- To set the counting method for the total counter.

Setting item	Contents	Default setting
Mode 1	1 count per copy cycle	○
Mode 2	Large size is double counts	

Count-up table

Total Counter mode	Print mode	Paper size	Total	Large size	2-Sided Total
Mode 1	1-Sided	Except for large size	1 count	0 count	0 count
		Large size	1 count	1 count	0 count
	2-Sided	Except for large size	2 count	0 count	1 count
		Large size	2 counts	2 counts	1 count
Mode 2	1-Sided	Except for large size	1 count	0 count	0 count
		Large size	2 counts	1 count	0 count
	2-Sided	Except for large size	2 counts	0 count	1 count
		Large size	4 counts	2 counts	1 count

1.2.2 Large Size Counter Mode

- To set the size regarded as the large size.

Setting item	Contents	Default setting
No count	No count the large size counter.	○
A3/11 x 17	When it exceeds 279 mm in the main scan direction and 420 mm in the sub scan direction (exceeds 399 mm at fax scan), it is regarded as the large size.	
A3/B4/11 x 17/8 $^1/_2$ x 14	When it exceeds 215 mm in the main scan direction and 355 mm in the sub scan direction (exceeds 337 mm at fax scan), it is regarded as the large size.	
A3/11 x 17/B4/8 $^1/_2$ x 14/ Foolscap	When it exceeds 203 mm in the main scan direction and 330 mm in the sub scan direction (exceeds 313 mm at fax scan), it is regarded as the large size. (However the size in the main scan direction changes according to the foolscap size setting.)	

1.2.3 Banner Paper Counter Mode

- When printing on the long paper (457.2 mm or over), the counting value will be the total of the value set by the total counter mode and the value by this setting.

Setting item	Contents	Default setting
Mode 1	0 count	
Mode 2	1 count	
Mode 3	+2 counts (457.2 to 915.0 mm will be +1 count)	
Mode 4	+3 counts (457.2 to 686.0 mm will be +1 count, and 686.1 to 915.0 mm will be +2 count)	○

1.2.4 Banner Counter Double Count Mode

- To set whether to use normal count or double count when printing long size paper.
- When “ON” is selected, double count is applied to only long size paper.

Setting item	Contents	Default setting
ON	Normal count	
OFF	Double count	○

1.2.5 Count by the combination of each setting

- The count method depends on the combination of the Counter Setting.
- The following shows count methods that are the combination of each setting.

Total Counter	Large Size Counter Mode	Banner Paper Counter Mode	Paper size		Banner Counter Double Count Mode	
					OFF	ON
Mode 1	No count	-	-		1 count	1 count
	Other than No count	Mode 1	Except for large size		1 count	1 count
			Large size		1 count	1 count
			Long size	457.3 to 686.0 mm	1 count	2 counts
				686.1 to 915.0 mm	1 count	2 counts
				915.1 mm or more	1 count	2 counts
		Mode 2	Except for large size		1 count	1 count
			Large size		1 count	1 count
			Long size	457.3 to 686.0 mm	2 counts	4 counts
				686.1 to 915.0 mm	2 counts	4 counts
				915.1 mm or more	2 counts	4 counts
		Mode 3	Except for large size		1 count	1 count
			Large Size		1 count	1 count
			Long size	457.3 to 686.0 mm	2 counts	4 counts
				686.1 to 915.0 mm	2 counts	4 counts
				915.1 mm or more	3 counts	6 counts
		Mode 4	Except for large size		1 count	1 count
			Large size		1 count	1 count
			Long size	457.3 to 686.0 mm	2 counts	4 counts
				686.1 to 915.0 mm	3 counts	6 counts
				915.1 mm or more	4 counts	8 counts
Mode 2	No count	-	-		1 count	1 count
	Other than No count	Mode 1	Except for large size		1 count	1 count
			Large size		2 counts	2 counts
			Long size	457.3 to 686.0 mm	2 counts	4 counts
				686.1 to 915.0 mm	2 counts	4 counts
				915.1 mm or more	2 counts	4 counts
		Mode 2	Except for large size		1 count	1 counts
			Large size		2 counts	2 counts
			Long size	457.3 to 686.0 mm	3 counts	6 counts
				686.1 to 915.0 mm	3 counts	6 counts
				915.1 mm or more	3 counts	6 counts
		Mode 3	Except for large size		1 count	1 count
			Large size		2 counts	2 counts
			Long size	457.3 to 686.0 mm	3 counts	6 counts
				686.1 to 915.0 mm	3 counts	6 counts
				915.1 mm or more	4 counts	8 counts

Total Counter	Large Size Counter Mode	Banner Paper Counter Mode	Paper size		Banner Counter Double Count Mode	
					OFF	ON
		Mode 4	Except for large size		1 count	1 count
			Large size		2 counts	2 counts
			Long size	457.3 to 686.0 mm	3 counts	6 counts
				686.1 to 915.0 mm	4 counts	8 counts
				915.1 mm or more	5 counts	10 counts

1.3 Management Function Choice

- To set whether or not the Key Counter, Management Device (Data controller), Authentication Device, or Vendor are to be mounted.

NOTE

- **This is not displayed when [Administrator] -> [Security] -> [Enhanced Security Mode] is set to "ON".**
- **When the setting shows that [Management Device 2] or [Vendor 2] is mounted, the following applications will be invalid.**
  PC FAX transmission / HDD TWAIN/PS Box Operator / PS Scan Direct / PS Job Spooler / Fiery: Scan to Box
  Also, [Administrator] -> [Security] -> [Function Management Settings] -> [Network Function Settings] will be set to "OFF".

1.3.1 Key counter only

- To set whether or not the key counter is installed.
- Set when the key counter is mounted.

(1) Key counter

Color mode

- Not used

Message

- Select the message type when the key counter is mounted.

Setting item	Contents
Type 1	Message for key counter
Type 2	Message for card scanning
Type 3	Message for ID management
Type 4	Message for remote SW

Confirmation copy

- Set whether to allow a confirmation copy when a key counter is installed.

Setting item	Contents	Default setting
License	Allow a confirmation copy.	
Ban	Prevent a confirmation copy.	○

The next job reservation

- Set whether to allow the reservation of the next job when a key counter is installed.

NOTE

- **The setting is available only when user authentication and account track are set "OFF" with [Administrator] -> [User Auth/ Account Track] -> [Authentication Type].**

Setting item	Contents	Default setting
License	Allow a next job reservation.	
Ban	Prevent a next job reservation.	○

Count Setting

- To set the count timing used when the key counter is installed.

Setting item	Contents	Default setting
Paper feed	Counts when paper fed.	○
Paper out	Counts when paper exit.	

1.3.2 Management Device 2

- To set whether or not the management device 2 is installed.
- Set when the management device 2 is mounted.

(1) Management setting

- To set the management method when the management device 2 is mounted.

NOTE

- **The setting is not available when either "External Authentication server setting" of user authentication, "Password Only" of account track, "Do Not Synchronize" of user authentication and account track or "ON" of public user access has been set with [Administrator] -> [User Auth/Account Track] -> [Authentication Type].**

Setting item	Contents
Mode 1	Use contact type device. (Logout with ID key is not allowed.)
Mode 2	Use non-contact type device. (Logout with ID key is allowed.)

(2) Billing Line

- To set which of fax line 1 or fax line 2 is used for billing fax line 3 and fax line 4.

NOTE

- **To be displayed only when [Fax (circuit 3)] and [Fax (circuit 4)] are set to [Set] in [Service Mode] -> [System 2] -> [Option Board Status].**

Line 3

Setting item	Contents	Default setting
Line 1	Fax line 1 is used for billing fax line 3.	○
Line 2	Fax line 2 is used for billing fax line 3.	

Line 4

Setting item	Contents	Default setting
Line 1	Fax line 1 is used for billing fax line 4.	
Line 2	Fax line 2 is used for billing fax line 4.	○

1.3.3 Vendor 2

- To set whether or not the vendor 2 is installed.

NOTE

- **When using the vendor along with the key counter, inserting the key counter will set it to the "Key Counter Mode" and removing it will set it to the "Vendor Mode".**

(1) Key counter

Color mode

- Not used

Message

- Select the message type when the key counter is mounted.

Setting item	Contents
Type 1	Message for key counter
Type 2	Message for card scanning
Type 3	Message for ID management
Type 4	Message for remote SW

Confirmation copy

- Set whether to allow a confirmation copy when a key counter is installed.

Setting item	Contents	Default setting
License	Allow a confirmation copy.	
Ban	Prevent a confirmation copy.	○

The next job reservation

- Set whether to allow the reservation of the next job when a key counter is installed.

NOTE

- **The setting is available only when user authentication and account track are set "OFF" with [Administrator] -> [User Auth/ Account Track] -> [Authentication Type].**

Setting item	Contents	Default setting
License	Allow a next job reservation.	
Ban	Prevent a next job reservation.	○

Count Setting

- To set the count timing used when the key counter is installed.

Setting item	Contents	Default setting
Paper feed	Counts when paper fed.	○
Paper out	Counts when paper exit.	

(2) Vendor

Message

- Select message of vendor.

Setting item	Contents
Type 1	Message for coin vendor

Setting item	Contents
Type 2	Message for card keeper
Type 3	Message for both coin and card

(3) Billing Line

- To set which of fax line 1 or fax line 2 is used for billing fax line 3 and fax line 4.

NOTE

- **To be displayed only when [Fax (circuit 3)] and [Fax (circuit 4)] are set to [Set] in [Service Mode] -> [System 2] -> [Option Board Status].**

Line 3

Setting item	Contents	Default setting
Line 1	Fax line 1 is used for billing fax line 3.	○
Line 2	Fax line 2 is used for billing fax line 3.	

Line 4

Setting item	Contents	Default setting
Line 1	Fax line 1 is used for billing fax line 4.	
Line 2	Fax line 2 is used for billing fax line 4.	○

1.3.4 Key Counter IF Vendor

Color mode

- Not used

Message

- Select message of vendor.

Setting item	Contents
Type 1	Message for coin vendor
Type 2	Message for card keeper
Type 3	Message for both coin and card

1.4 Authentication Device 2

- To set whether or not the authentication device 2 is installed.
- Set when the authentication unit (biometric type or card type) is mounted.

Setting item	Contents
Card	Uses IC card authentication system (AU-201S/OMNIKEY 5427CK (AU-205H)/YSoft card reader/USB keyboard emulation card reader). A response timeout interval is displayed. (The interval is unchangeable.)
Body	Uses biometrics (finger vein) authentication system (AU-102) Set a film timeout interval, capture trial time and authentication trial time.
Card 3	Uses IC card authentication device for PKI card system It will be displayed only when [Service Mode] -> [System 2] -> [Software Switch Setting] shows that switch No. 12 is set to [00000010]/[02] (bit value/HEX value).

1.4.1 Installation procedures of authentication unit

(1) AU-102

1. Install the AU-102 loadable driver (BIO_LDR.tar) to the main unit. (*1)
2. Install the AU-102 to the main unit.
3. Select [Body] in [Service Mode] -> [Billing Settings] -> [Authentication Device 2].
4. Turn off the main power switch and turn it on again more than 10 seconds after.
5. Register the authentication user data.

Note *1

- **Use the loadable driver in advanced combination with the firmware version.**

Authentication device	Compatible IC cards
AU-102	**Body**

(2) AU-201S

1. Install the loadable driver (ICC_LDR.tar) to the main unit. (*1)(*2)(*3)
2. Install the AU-201S to the main unit.
3. Select [Card] in [Service Mode] -> [Billing Settings] -> [Authentication Device 2].
4. Turn off the main power switch and turn it on again more than 10 seconds after.
5. Register the authentication card data.

Note *1

- **A combination of the loadable driver and the IC card information setting file will be supplied as a loadable driver by KM.**

Note *2

- **The loadable driver to be installed varied according to the type of the card. Identify the type of the card requiring authentication and install the correct loadable driver.**
- **Use the loadable driver in advanced combination with the firmware version.**

Authentication device	Loadable driver name (KM standard setting)	Compatible IC cards
AU-201S	**AU-201S loadable driver**	**FeliCa IDm, FeliCa SSFC, FeliCa FCF, FeliCa FCF(Campus), TypeA FeliCaPrivate**

Note *3

- **If FeliCa IDm, FeliCa SSFC, FeliCa Private, or related card requiring detailed settings is to be used, make the detailed settings by using either one of the following methods:**
  1. Using the Auth Device Tool Advanced for AU-201S, prepare a combination of the loadable driver and the IC card information setting file and export it as a loadable driver.
  D.2.1 IC card information setting tool of card reader
  2. Using the Auth Device Tool Advanced for AU-201S, prepare the IC card information setting file only and install the loadable driver in the MFP. Then, using the Data Administrator, write the IC card information setting file in the MFP.
  D.2.1.2 IC card information setting procedures

E.g.: Information setting sample when the FeliCa SSFC card is used

Information to be obtained from the administrator		
Items of FeliCa SSFC detail setting	Sample-data (decimal number)	Setting value (hexadecimal number)
Room number	37	00 25
Floor number	15	00 0F
Building number	50	00 32
Area number	85	00 55
Security level	2	00 02
Company identification code (CL code) (*1)	06BGLQVX17 (ASCII code)	30 36 42 47 4C 51 56 58 31 37
Company code (*2)	CompanyA (ASCII code)	CompanyA

*1: The character length of the company code is 10 bytes.
*2: Use alphabetical upper case/lower case characters and numeric characters for Company code. When the company code is not set, this space will be left blank.

(3) USB keyboard emulation card readers

1. Install the loadable driver (ICC_LDR.tar) to the main unit. 1
2. Select [Card] in [Service Mode] -> [Billing Settings] -> [Authentication Device 2].
3. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.
4. Set Vendor ID and Product ID of the card reader in [Administrator] -> [User Auth/Account Track] -> [Authentication Device Settings] -> [Card Authentication] -> [USB Device identification information]. 2
5. Turn OFF the main power switch.
6. Install the USB keyboard emulation card readers to the main unit.
7. Turn ON the main power switch.
8. Register the authentication card data.

NOTE

- **Use the card reader supporting US keyboards.**
- **The length of card ID is 1 to 512 bytes.**
- **Send data as card ID data received until the reception of the key code that has been set as a delimiter (Enter).**

Note *1

- **Use the loadable driver in advanced combination with the firmware version.**

Authentication device	Loadable driver name (KM standard setting)	Compatible IC cards
USB keyboard emulation card readers	**KeyboardEmu loadable driver**	**Depends on the card reader ***

- ***: The card type is reported to the authentication program as an extended card type.**

Note *2

- **Vendor ID and Product ID are identification information to specify USB devices.**
- **Check Vendor ID and Product ID of the USB device to be connected as follows:**
  - **Refer to the specification of the device or ask the vendor.**
  - **Connect the device to a Windows PC and check "Property" in "Device Manager."**

(4) Miscellaneous card readers

- The same setting method as that for AU-201S applies for other card readers.
- The following loadable drivers are necessary.
- Use the loadable driver in advanced combination with the firmware version.

Authentication device	Loadable driver name (KM standard setting)	Compatible IC cards
SCL-010	SCL-010 loadable driver (Default: TypeA) (*1)(*2)	TypeA, FeliCa IDm, Mifare
OMNIKEY 5427CK (AU-205H)	5427CK (AU-205H) loadable driver (*2)	HID Prox, HID iCLASS, TypeA, FeliCa IDm (*4)
KM USB Reader v2 MultiReader HF	Loadable driver for YSoft card reader (Default: HID Prox) (*3)	Mifare
KM USB Reader v2 Legic Advant		LEGIC
KM USB Reader v2 ASK FSK 125kHz		EM4100, EM4102, RFID 125kHz

Authentication device	Loadable driver name (KM standard setting)	Compatible IC cards
KM USB Reader v2 Mot/Ind W26		Indala
KM USB Reader v2 HID Prox		HID Prox
KM USB Reader v2 HID iCLASS		HID iCLASS

Note *1
- **A combination of the loadable driver and the IC card information setting file will be supplied as a loadable driver by KM.**

Note *2
- **If cards of HID iClass of OMNIKEY 5427CK (AU-205H) that require detailed settings are to be used, make the detailed settings by using either one of the following methods:**
  - **Using the Auth Device Tool Advanced for 5427CK (AU-205H), prepare a combination of the loadable driver and the IC card information setting file and export it as a loadable driver.**
  - **Using the Auth Device Tool Advanced for 5427CK (AU-205H), prepare the IC card information setting file only and install the loadable driver in the MFP. Then, using the Data Administrator, write the IC card information setting file in the MFP.**
  - **Reference " D.2.1.2 IC card information setting procedures"**

Note *3
- **If a YSoft card reader is used, all types of card will be reported as HID Prox card to the authentication program.**
- **To report the card type other than HID Prox to the authentication program, choose the corresponding card type shown in the following list.**

Card Reader Name	Readable Card Type	Card type to be reported to the authentication program (Default) (*3-3,*3-5)	IC Card Information Setting (card type to be reported) (*3-4)
KM USB Reader v2 MultiReader HF	Mifare	HID Prox	TypeA (1) (*3-1,*3-2)
KM USB Reader v2 Legic Advant	LEGIC	HID Prox	TypeA (1) (*3-1,*3-2)
KM USB Reader v2 ASK FSK 125kHz	EM4100, EM4102, RFID 125kHz	HID Prox	EM4100/ EM4102/ RFID 125kHz
KM USB Reader v2 Mot/Ind W26	Indala	HID Prox	Indala
KM USB Reader v2 HID Prox	HID Prox	HID Prox	HID Prox (1) (*3-2)
KM USB Reader v2 HID iCLASS	HID iCLASS	HID Prox	HID iCLASS (1) (*3-2)

- ***3-1 The content (ID) to be read from the type A card setting differs from which to be read by using AU-201S.**
- ***3-2 When add the YSoft card reader to the authentication network composed of the present AU-201S, the ID may vary depending on the card reader. Therefore, it is required to set the card type to TypeA (1), HID Prox (1) or HID iCLASS (1) and register the card again.**
- ***3-3 For the content to be read from the HID Prox card, since the ID length is fixed to 16 bytes, the unused part will be bridged with 0xFF.**
- ***3-4 If a card type other than HID Prox is selected, the card ID type will be set to up to 512 bytes, the card ID length will be reported together with the card ID.**
- ***3-5 If the card type is set to HID Prox by using the LDAP-IC card authentication, specify the card ID type to be sent to the LDAP server as shown below.**
  1. Software switch No.135 Hex: 00 Reports that the 1st byte shows the ID length of the card, the 2nd byte and after shows the card ID. (Default)
  2. Software switch No.135 Hex: 01 Reports the card ID with the ID length including the 1st byte.

Note *4
- **To use FeliCa, make either of the following settings.**
  - **Select [FeliCa] at [Administrator] -> [User Auth/Account Track] -> [Authentication Device Settings] -> [Card Authentication] -> [IC Card type].**
  - **Although [Use Card Reader Settings] is also selectable at [Administrator] -> [User Auth/Account Track] -> [Authentication Device Settings] -> [Card] -> [IC Card type], "FeliCa" is dedicated for the card reader (OMNIKEY5427CK) settings.**
  - **Make card reader (OMNIKEY5427CK) settings with the tool that is exclusively used for PC settings and downloaded from the HID web page.**

1.5 Setting items that automatically change the setting values

NOTE
- **Performing the setup for each unit to be mounted will internally change the setting values below. It needs resetting when cancelling the setting in order to set back to "not mounted" because the setting value will remain.**

1.5.1 When the vendor2 is mounted

Setting Item		Vendor 2
Utility	Default Copy Settings	Factory Default
	Default Scan/Fax Settings	Factory Default
	Copy Operating Screen	[Yes]
	Fax Active Screen	Tx/Rx Display [Yes]
	Scan/Fax Settings -> Default Tab	Direct Input
	Custom Display Settings -> Left Panel Display Default	Change Left Panel Display Default to "Bookmark."

Setting Item		Vendor 2
Administrator Settings	Usage Settings for Each Function	Copy, PC print, and Send Data will be set to “ON”. Others Prints will be set to “OFF”.
	Administrator Security Levels	Restrict
	Restrict Access to Job Settings	Changing Job Priority, Delete Other User Jobs, and Changing Zoom Ratio will be set to “Restrict”.
	Job Priority Operation Settings	“Skip Job (Fax)" will be set to “Yes”. “Skip Job (Copy, Print)" will be set to “Yes”. Change “Fax RX Job priority” to “No.”
	External Memory Function Settings	External Memory Document Scan will be set to "OFF".
	Forward TX Setting	No
	Fax Settings -> Memory RX Setting	Password for Memory RX Setting is set to the default value of the administrator password
	DPWS Settings -> Printer Settings/ Scanner Settings	OFF
	Image Log Transfer Settings	OFF
Service Mode	Software Switch Setting	SW No. 63 will be set to [00000000] at Bit assignment/[00] at HEX assignment.
	FAX	[System] -> [Display Setting] -> [Re-Transmission] will be set to “OFF”.

1.5.2 When the key counter IF vendor is mounted

Setting item		Key counter IF Vendor
Utility	Default Copy Settings	Factory Default
	Default Scan/Fax Settings	Factory Default
	Copy Operating Screen	[Yes]
	Fax Active Screen	Tx/Rx Display [Yes]
	Scan/Fax Settings -> Default Tab	Direct Input
	Custom Display Settings -> Left Panel Display Default	Change Left Panel Display Default to “Bookmark.”
Administrator Settings	Usage Setting for Each Function	Copy, PC print will be set to “ON”. Send Data, Others Prints will be set to “OFF”.
	Administrator Security Levels	Restrict
	Weekly Timer ON/OFF Settings	OFF
	Restrict Access to Job Settings	Changing Job Priority, Delete Other User Jobs, Registering and Changing Addresses, Changing Zoom Ratio will be set to “Restrict”.
	Job Priority Operation Settings	Change “Fax RX Job priority” to “No.”
	External Memory Function Settings	External Memory Document Scan will be set to "OFF".
	Fax Settings -> Memory RX Setting	Password for Memory RX Setting is set to the default value of the administrator password
	Forward TX Setting	No
	OpenAPI Settings	Access Setting will be set to “Restrict” and Authentication will be changed to “OFF” setting.
	Apply Stamps/Stamp	No
	Apply Stamps/Copy Protect	No
	Apply Stamps/Stamp Repeat	No
	Apply Stamps/Registered Overlay	No
	Apply Stamps/Header/Footer	No
	Apply Stamps/Page Number/Text Color	Black
	Apply Stamps/Date/Time/Text Color	Black
	DPWS Settings -> Printer Settings/Scanner Settings	OFF
	Image Log Transfer Settings	OFF
Service Mode	Software Switch Setting	SW No. 63 will be set to [00000000] at Bit assignment/ [00] at HEX assignment.
	FAX	[System] -> [Display Setting] -> [Re-Transmission] will be set to “OFF”.

1.5.3 When the management device 2 is mounted

Setting item		Management Device 2
Administrator Settings	Usage Setting for Each Function	Copy, PC print, Send Data, and Others Prints will be set to “ON”.
	Line Parameter Setting	Receive Mode will be changed to “Auto RX”.

Setting item		Management Device 2
	DPWS Settings -> Printer Settings/Scanner Settings	OFF

1.5.4 When the authentication device 2 is mounted

Setting item		Authentication Device 2 (Card/Body)
Administrator Settings	User Auth/Account Track -> Authentication Type -> User Authentication	This setting will be set to “ON(MFP)” if External Server Authentication has been set.

1.6 Coverage Rate Clear

To clear the coverage rate.

Setting value	Contents	Default setting
Set	Select [Set] and [END] key will clear the coverage rate.	
Unset	Not cleared	○

1.7 License Management

1.7.1 Activation

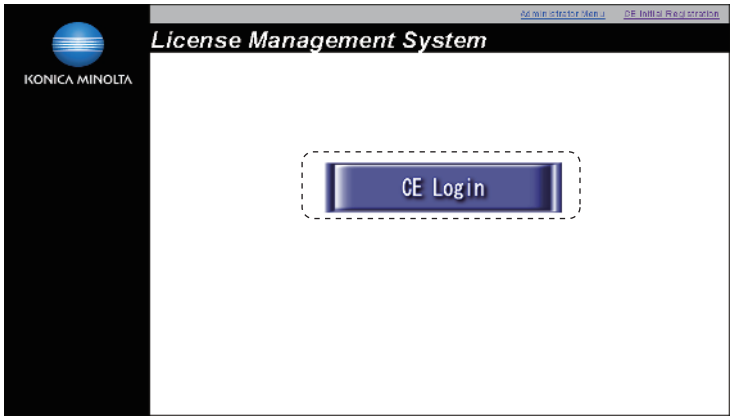
- To activate i-Option functions.
- The functions can be activated by selecting the desired function and enter the appropriate license code and function code.
- Administrators also can carry out the procedure No.14 or later step to activate i-Option functions through Administrator Settings.

NOTE

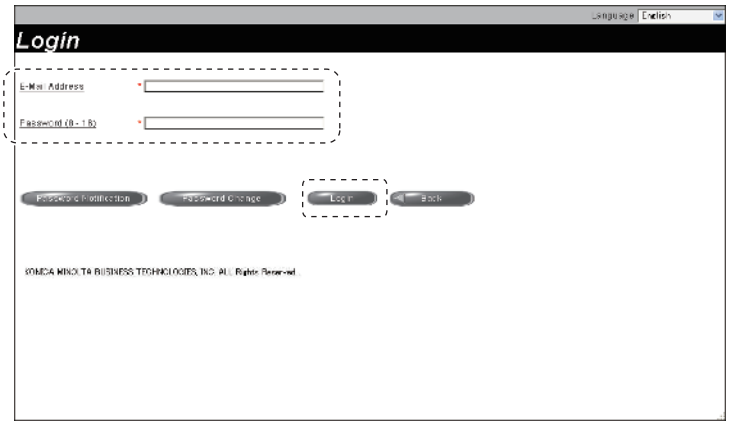
- **You need to access License Management System (LMS) to implement each function setting.**
- **Before accessing the LMS, CE are required to register the E-mail address and the password in the LMS. To register, click [CE Initial Registration] that is located in the upper right of CE Login screen.**

<Procedure>

1. Prepare “token certification.”
2. Access the following URL using the PC connected to the Internet.
   https://lms.konicaminolta.com/license/KM/support.aspx
3. Click [CE Login].



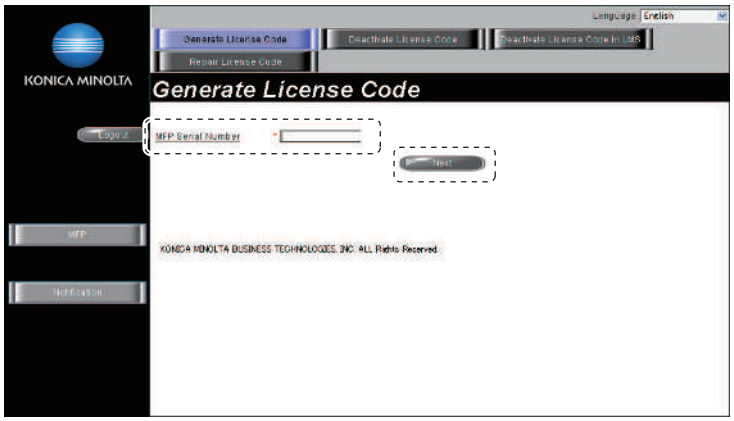
4. Enter [E-Mail Address] and [Password], and click [Login].



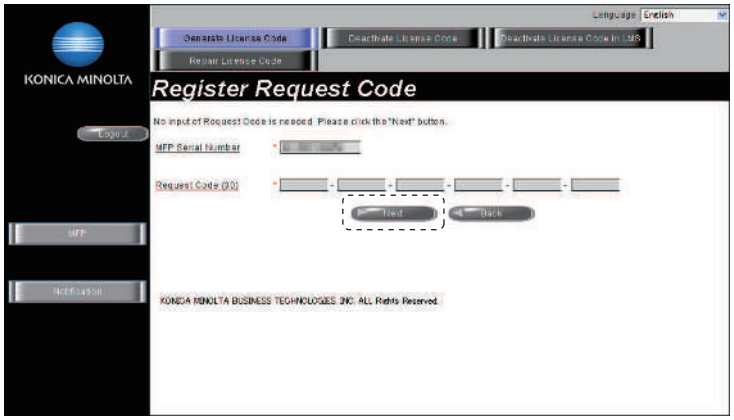
5. Click [Generate License Code].



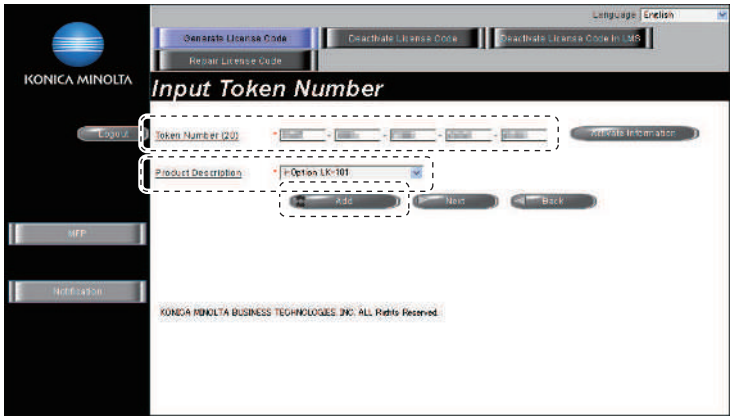
6. Enter the serial number of the target MFP, and click [Next].
   NOTE
   - **Make sure to enter alphabet letters of the serial number in all capital letters.**



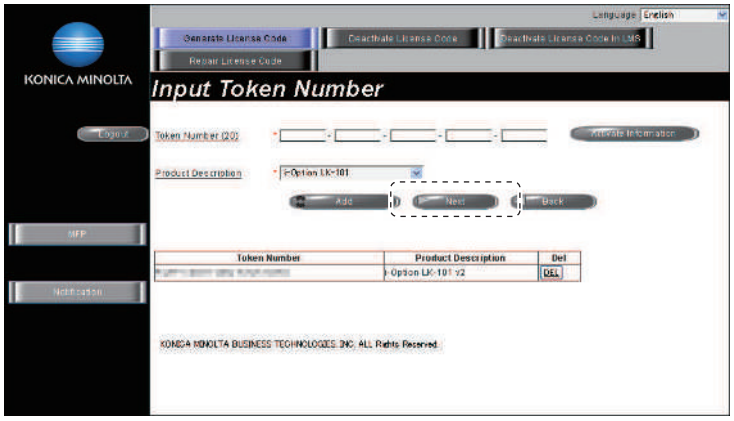
7. Click [Next].



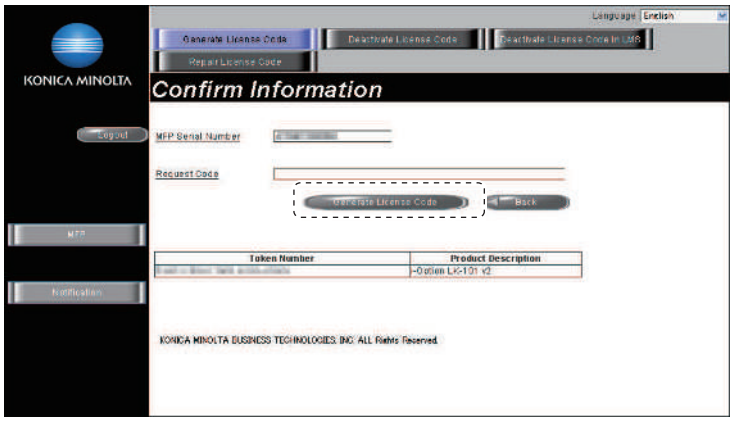
8. Enter the token number written in the token certification, and select the product description.
9. Click [Add].



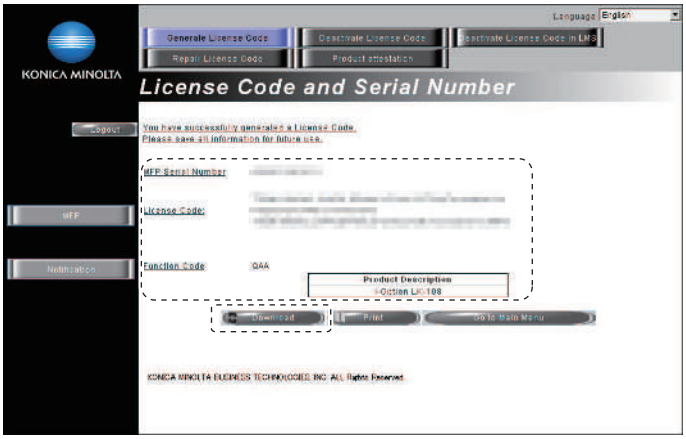
10. Confirm the registered items, and click [Next].



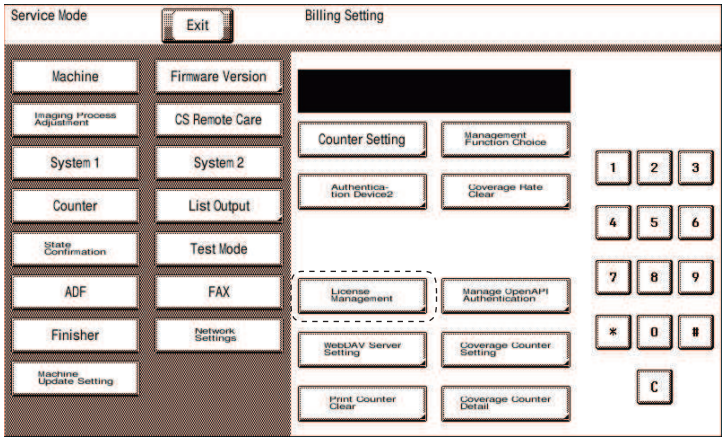
11. Click [Generate License Code].



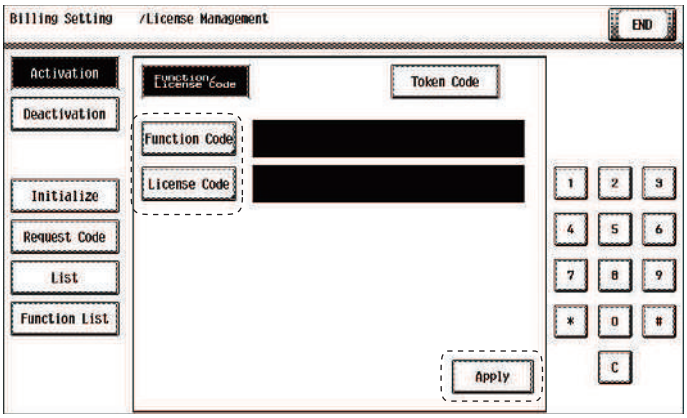
12. LMS issues license code and function code.
13. Write down the serial number, license code and function code.
<When activating with an USB memory>
Click [Download], and save a "***.fek" file to the root directory of the USB memory.



14. Select [Service Mode] -> [Billing Setting] -> [License Management].



15. Select [Activation] -> [Function Code] or [License Code], and enter the function code and the license code confirmed at Step13.
    <When activating with an USB memory>
    Connect the USB memory to the USB port on the side of the control panel, and select [Activation] -> [USB].
16. Touch [Apply].



17. Follow the massage appearing on the screen and turn OFF and ON the main power switch.
    <When activating with an USB memory>
    This step is unnecessary. Proceed to the next step.
18. Select [Service Mode] -> [Billing Setting] -> [License Management] -> [Function List], and confirm that the activated function is displayed at the list.

1.7.2 Deactivation

- To deactivate i-Option functions.
- To deactivate i-Option functions due to registration error, expiration of lease term, change to other MFP or etc.
- The functions can be deactivated by selecting the desired function and enter the appropriate deactivation code.

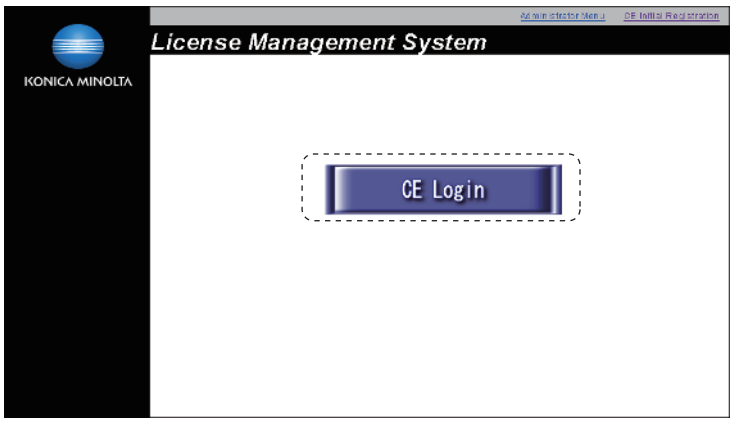
NOTE

- **You need to access License Management System (LMS) to implement each function setting.**
- **Before accessing the LMS, CE are required to register the E-mail address and the password in the LMS. To register, click [CE Initial Registration] that is located in the upper right of CE Login screen.**

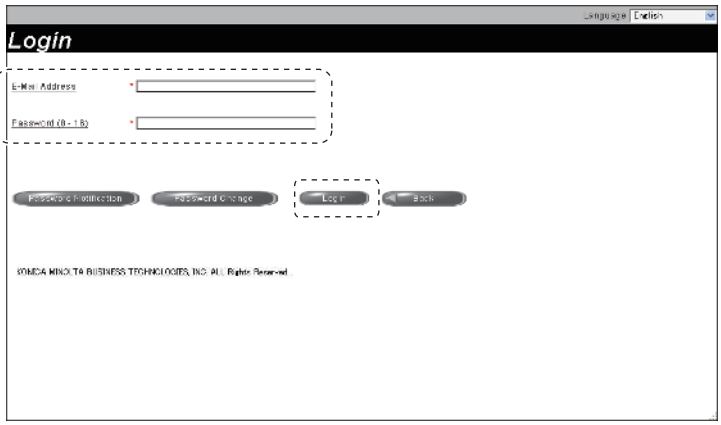
<Procedure>

1. Check the serial number of the target MFP.

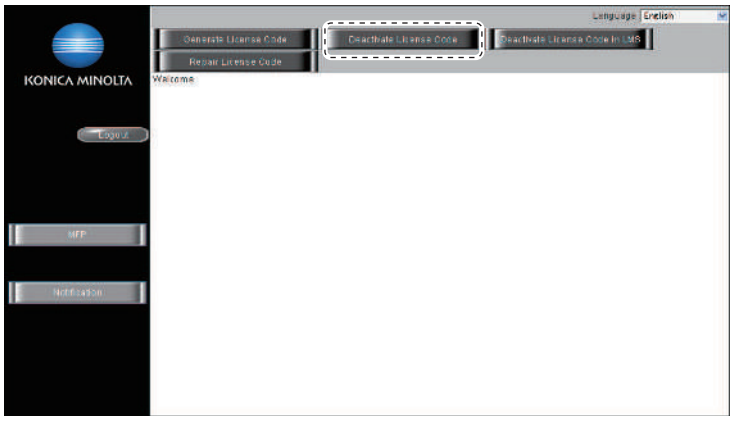
2. Access the following URL using the PC connected to the Internet.
   https://lms.konicaminolta.com/license/KM/support.aspx
3. Click [CE Login].



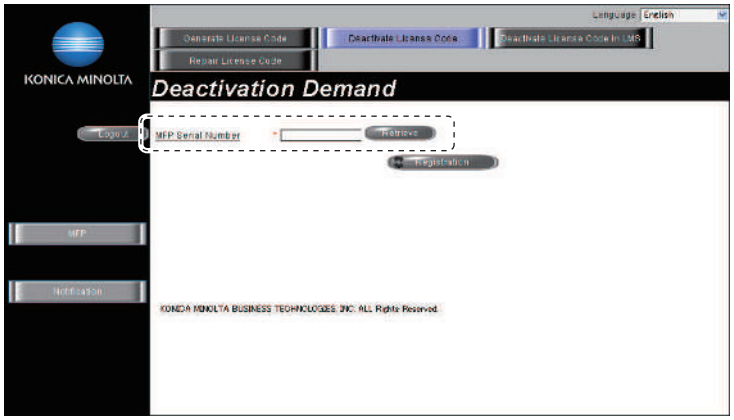
4. Enter [E-Mail Address] and [Password], and click [Login].



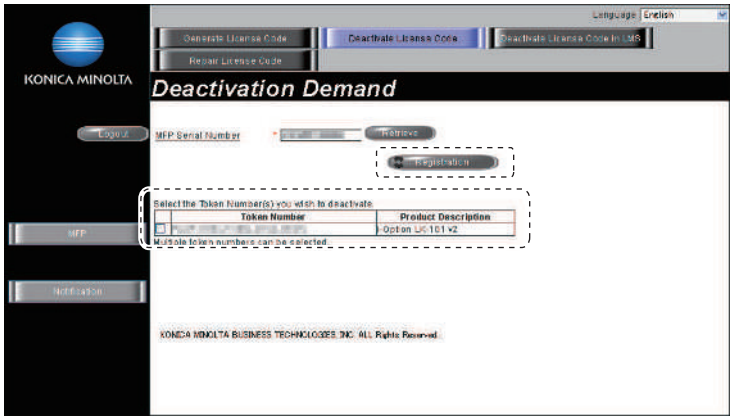
5. Click [Deactivate License Code].



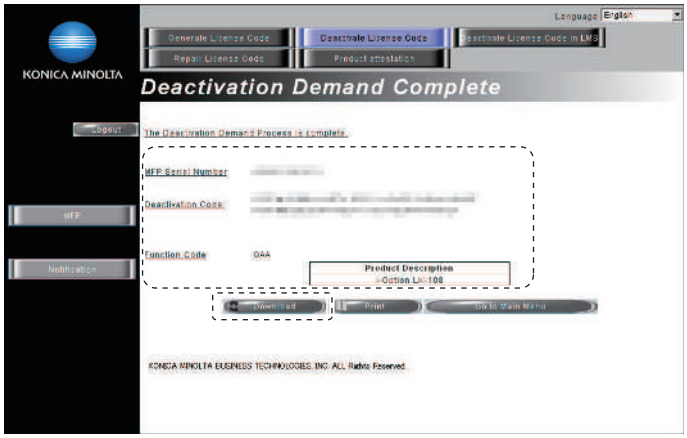
6. Enter the serial number of the target MFP, and click [Retrieve].
   NOTE
   - **Make sure to enter alphabet letters of the serial number in all capital letters.**



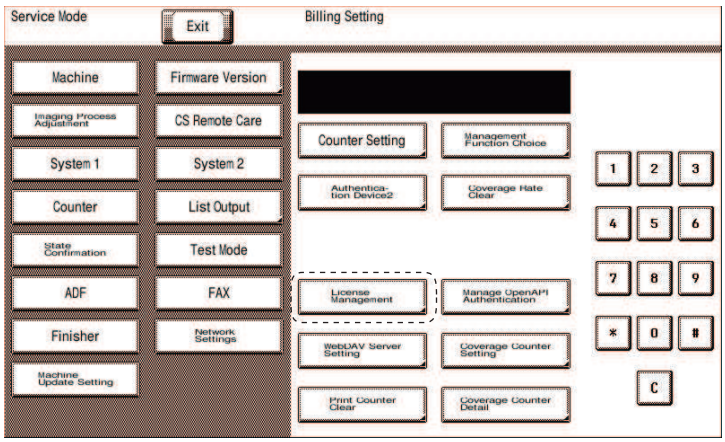
7. Select the token to be deactivated, and click [Registration].



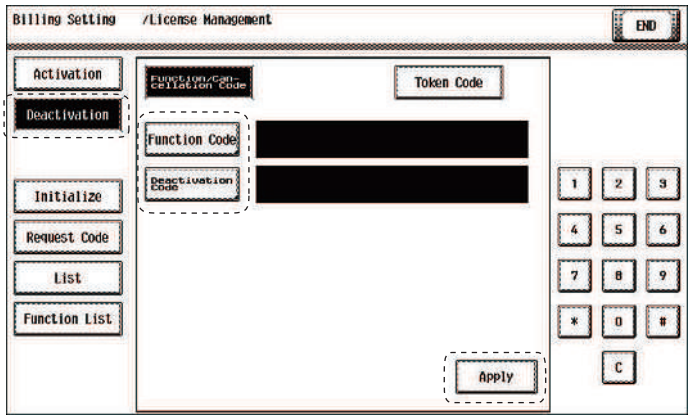
8. LMS issues deactivation code and function code.
9. Write down the serial number, deactivation code and function code.
   <When deactivating with an USB memory>
   Click [Download], and save a "***.fek" file to the root directory of the USB memory.



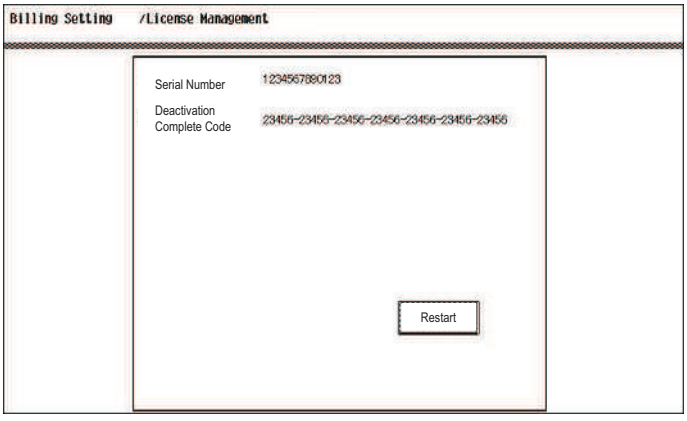
10. Select [Service Mode] -> [Billing Setting] -> [License Management].



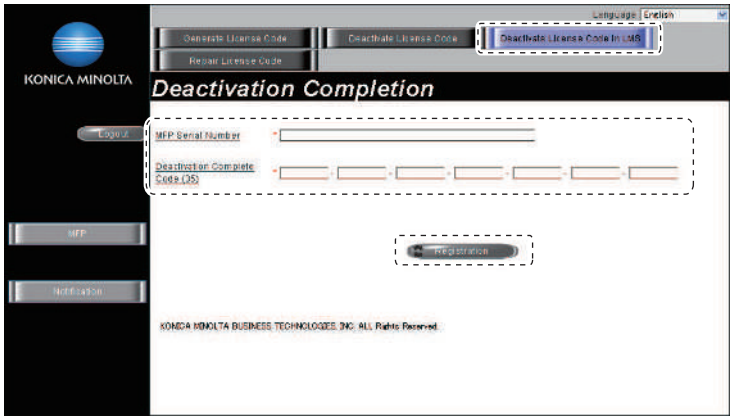
11. Select [Deactivation] -> [Function Code] or [Deactivation Code], and enter the function code and the deactivation code confirmed at Step9.
<When deactivating with an USB memory>
Connect the USB memory to the USB port on the side of the control panel, and select [Deactivation] -> [USB].
12. Touch [Apply].



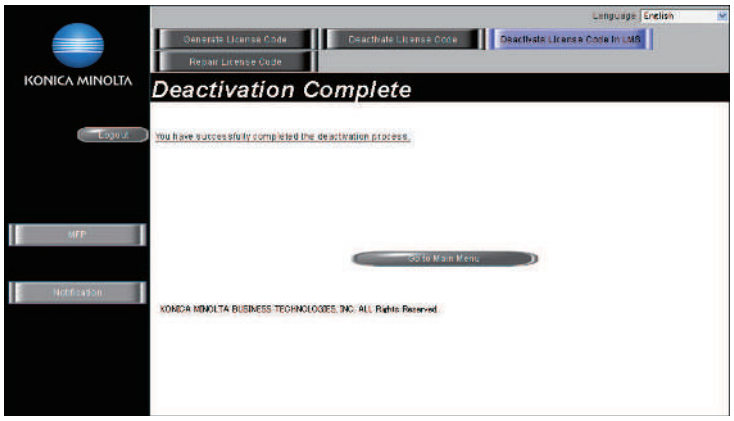
13. Write down or print out the serial number and deactivation complete code.
<When deactivating with an USB memory>
MFP will restart automatically. After MFP restarts, write down or print out the serial number and deactivation complete code.
NOTE
- **When A4S or 8 1/2 x 11S is set to the paper feed tray, the above-mentioned serial number and deactivation complete code can be printed out by pressing the start key.**
- **Serial number and deactivation complete code can be confirmed in [List] available from [License Management].**



14. Touch [Restart].
<When deactivating with an USB memory>
This step is unnecessary. Proceed to the next step.
15. Access to the LMS and login again.
For detail of the login method, refer to step 2 to step 4.
16. Click [Deactivate License Code in LMS].
17. Enter the serial number and the deactivation complete code confirmed at step13.
NOTE
- **Make sure to enter alphabet letters of the serial number in all capital letters.**



18. "Deactivation Complete" message will be displayed.
The license become invalid at both MFP and LMS, and deactivated token number can be used for another MFP.

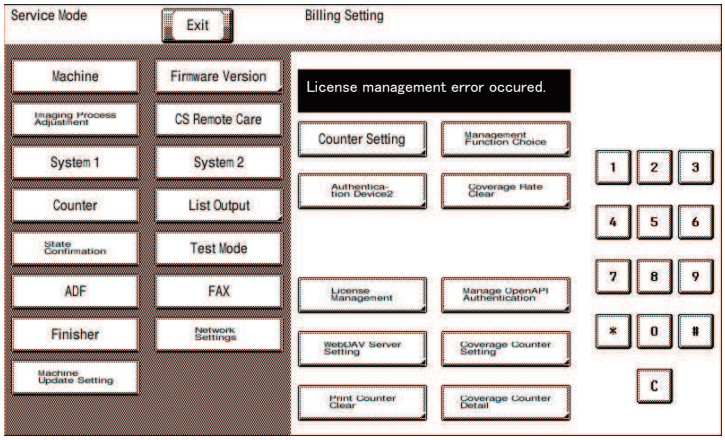


1.7.3 Repair

- To repair license management information.
- To be used when license management information is lost due to replacement of CPU board or the storage board, or some other trouble.
- License management information can be repaired by acquiring repair code with repair request code, and entering the repair code.

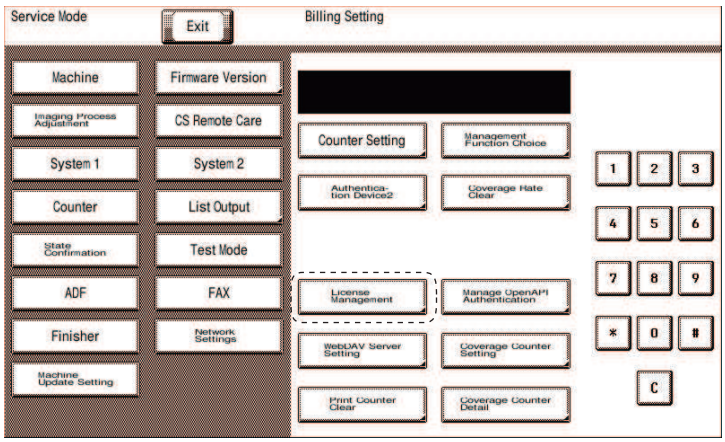
NOTE

- **You need to access License Management System (LMS) to implement each function setting.**
- **Before accessing the LMS, CE are required to register the E-mail address and the password in the LMS. To register, click [CE Initial Registration] that is located in the upper right of CE Login screen.**
- **When the message "License management error occurred." is displayed, carry out the repair operation with the following steps.**

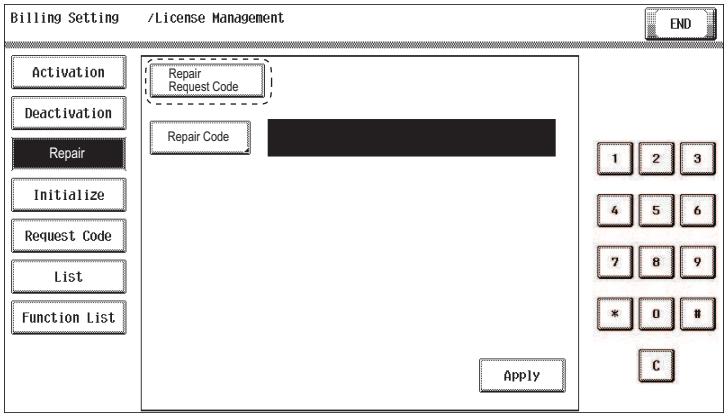


<Procedure>

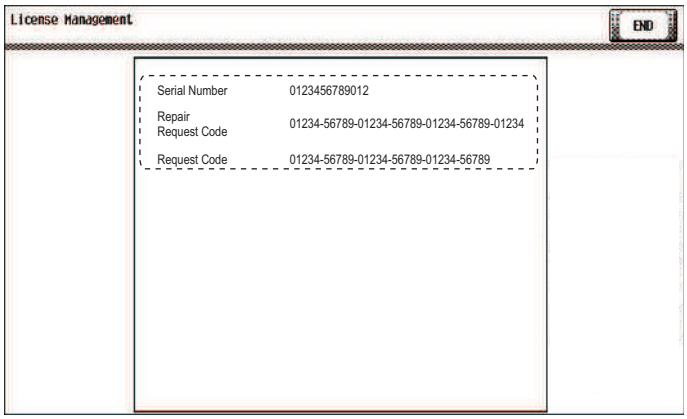
1. Select [Service Mode] -> [Billing Setting] -> [License Management].



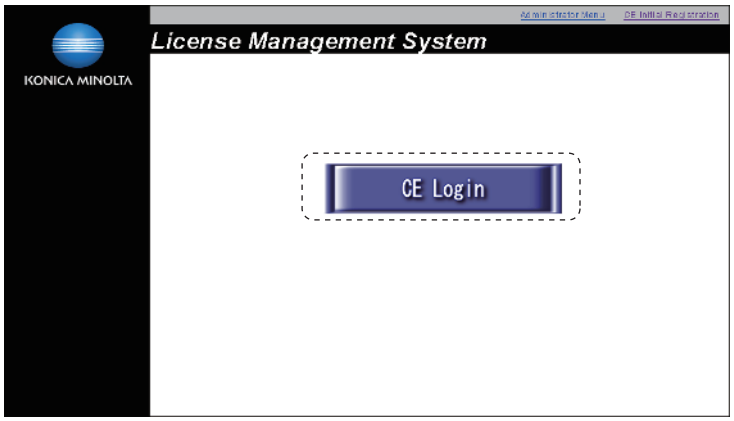
2. Select [Repair] -> [Repair Request Code].



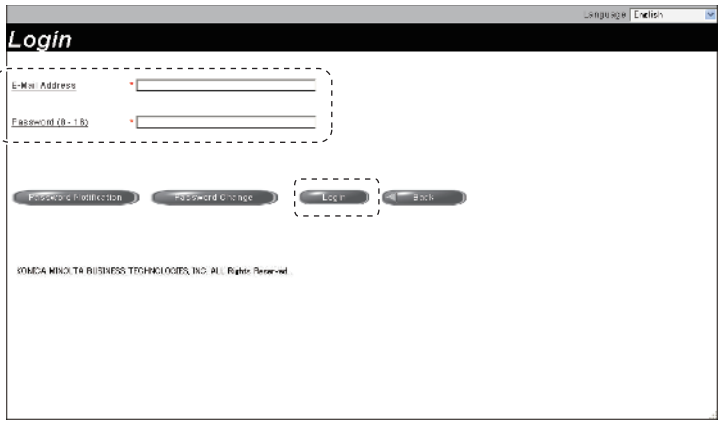
3. Write down or print out the serial number, repair request code and request code.
NOTE
- **When A4S or 8 1/2 x 11S is set to the paper feed tray, the above-mentioned serial number and repair request code can be printed out by pressing the start key.**



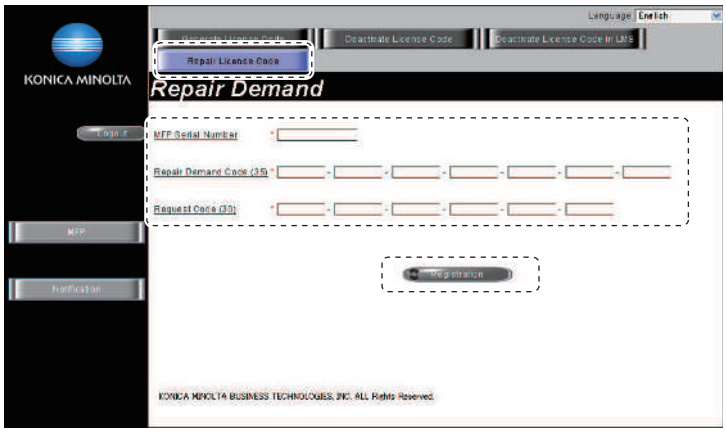
4. Access the following URL using the PC connected to the Internet.
   - https://lms.konicaminolta.com/license/KM/support.aspx
5. Click [CE Login].



6. Enter [E-Mail Address] and [Password], and click [Login].



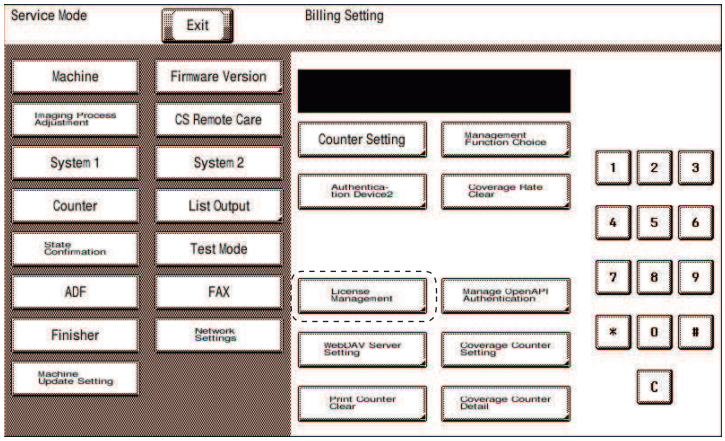
7. Click [Repair License Code].
8. Enter the serial number, repair request code and request code confirmed at step3, and click [Registration].
   NOTE
   - **Make sure to enter alphabet letters of the serial number in all capital letters.**



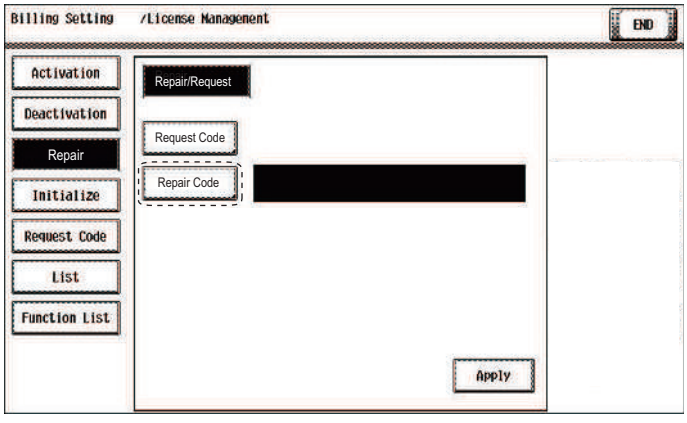
9. LMS issues repair permission code.
10. Write down the serial number and repair permission code.



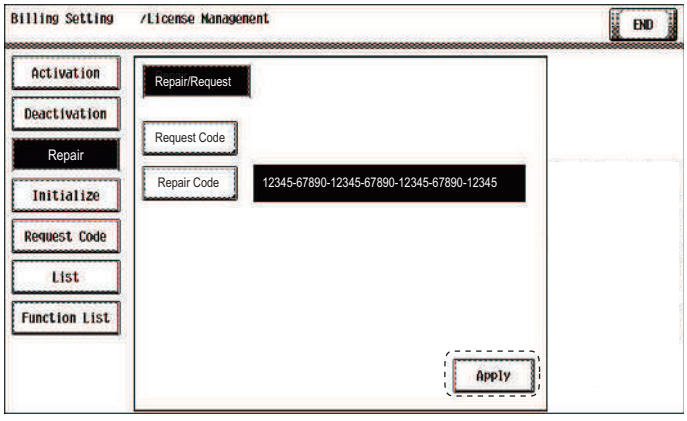
11. Select [Service Mode] -> [Billing Setting] -> [License Management].



12. Select [Repair] -> [Repair Code], and enter the repair code confirmed at step10.



13. Touch [Apply].



14. After repair is completed, the machine restarts automatically.

1.7.4 Initialize

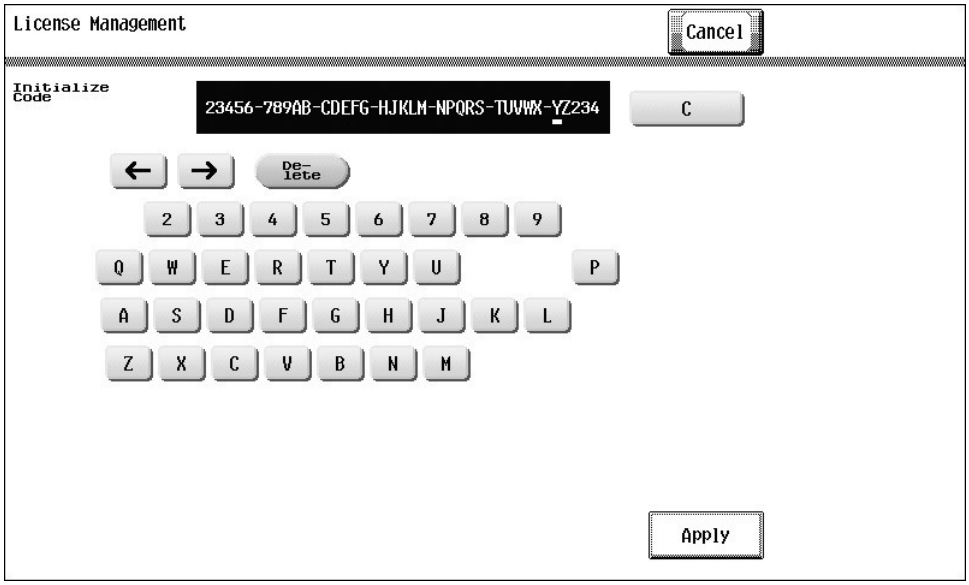
- To initialize license management information.
- To be used when license management information cannot be repaired.
- License management information should be initialized when the machine fails to generate request code or repair request code due to any trouble and the information cannot be repaired.

NOTE

- **You need to access License Management System (LMS) to implement each function setting.**
- **When license management information cannot be repaired, initialize the information with the following procedure.**

<Procedure>

1. Contact the license management section of sales company to report the information necessary to issue the initialize code.
2. The license management section of sales company supplies the initialize code.
3. Call the Billing Setting to the screen.
4. Touch [License Management] -> [Initialize].
5. Enter the initialize code issued by call center using the keyboard on the screen, and touch [Apply].



6. After completing the initialization, follow the message appearing on the screen and turn OFF and ON the main power switch.

1.7.5 Request Code

- To display and print request code and serial number.
- To check the request code and serial number.

NOTE

- **When the license management error is occurred, it will not be displayed until the repair code is input.**

<Procedure>

1. Set A4S or 8 1/2 x 11S paper to the tray.
2. Press start key at request code screen to print.

1.7.6 List

- To display and print deactivation complete code and serial number.
- To check deactivation complete code and serial number.

<Procedure>

1. Set A4S or 8 1/2 x 11S paper to the tray.
2. Press start key at deactivation complete code screen to print.

1.7.7 Function List

- To display currently activated functions.
- To display activated functions.

1.8 Manage OpenAPI Authentication

Restriction Code

- These are communication settings for the application which is developed by the third vendor. Do not set or change these settings without vendor's instructions.

Region Code

- These are communication settings for the application which is developed by the third vendor. Do not set or change these settings without vendor's instructions.

1.9 WebDAV Server Setting

Select Address

- To select the address of the LMS server used to manage the license of i-Option.

- Used to change the LMS server address set at the time of shipment.

Setting item	Contents	Default setting
Fixed Address	Uses the LMS server address set at the time of shipment. The specified address cannot be changed.	○
Specify Address	Specifies a desired LMS server address. When selecting [Specify Address], [Server Setting] is displayed.	

Server Setting

- To configure the settings on the WebDAV server that communicates with MFP when selecting [Specify Address] in [Select Address].

Setting item	Contents	Setting value	Default setting
Host Name	Set the host name of the WebDAV server.	Up to 253 one-byte alphameric characters and symbols	-
File Path	Set the file path used in the WebDAV server communication.	Up to 47 one-byte alphameric characters and symbols	-
User Name	Set the user name used to access the WebDAV server.	Up to 64 one-byte alphameric characters and symbols	-
Password	Set the password that is used to access the WebDAV server.	Up to 64 one-byte alphameric characters and symbols	-
Port Number	Set the port number that is used to access the WebDAV server.	1 to 65535	80

Polling

- To set the number of times and interval at which MFP polls the WebDAV server.

Setting item	Contents	Setting value	Default setting
Polling Count	Set the number of times that MFP polls the WebDAV server.	10 to 30 times	30 times
Polling Interval	Set the interval at which MFP polls the WebDAV server.	20 to 30 sec.	20 sec.

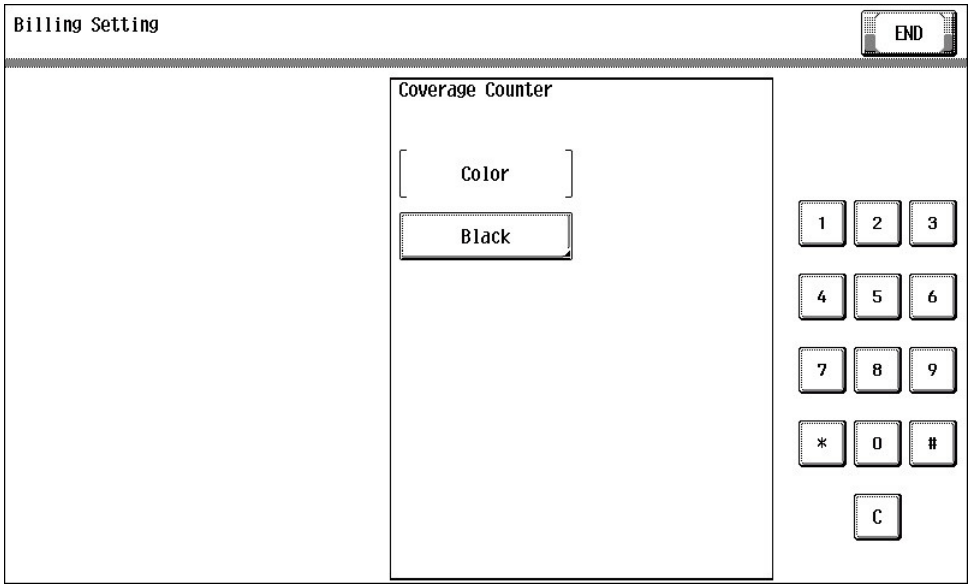
NOTE

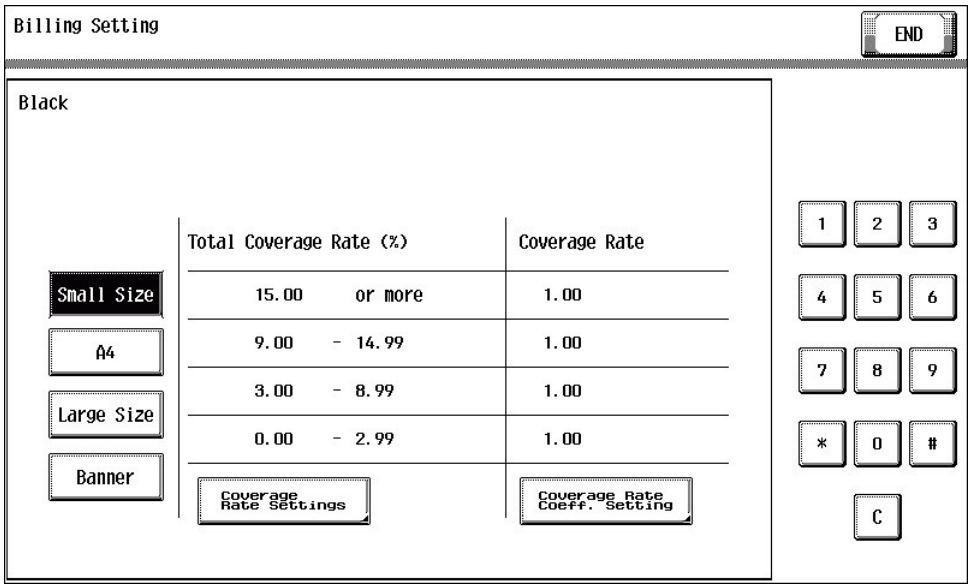
- **When MFP accesses to WebDAV server via proxy server, set the proxy setting in [Administrator] -> [Network] -> [WebDAV Settings] -> [Proxy Setting for Remote Access].**

1.10 Coverage Counter Setting

- It will be displayed when [Service Mode] -> [System 2] -> [Software Switch Setting] shows that switch No.206 is set to [00000001] at Bit assignment/[01] at HEX assignment.
- To set the counting method according to the print paper size, the total coverage rate, and the count-up coefficient.
  NOTE
  - **The coverage rate refers to a ratio of the print area relative to the print paper size.**
- The coverage rate and the coefficient can be set for each of the print mode and paper sizes listed in the following table.

Print mode	Paper size	Description
Black	Small Size	Set the counting method for data printed on paper having a size smaller than A4/Letter.
	A4	Set the counting method for data printed on paper having a size of A4/Letter.
	Large Size	Set the counting method for data printed on paper having a size larger than A4/Letter and equal to or smaller than A3.
	Banner	Set the counting method for data printed on paper having a size larger than A3.

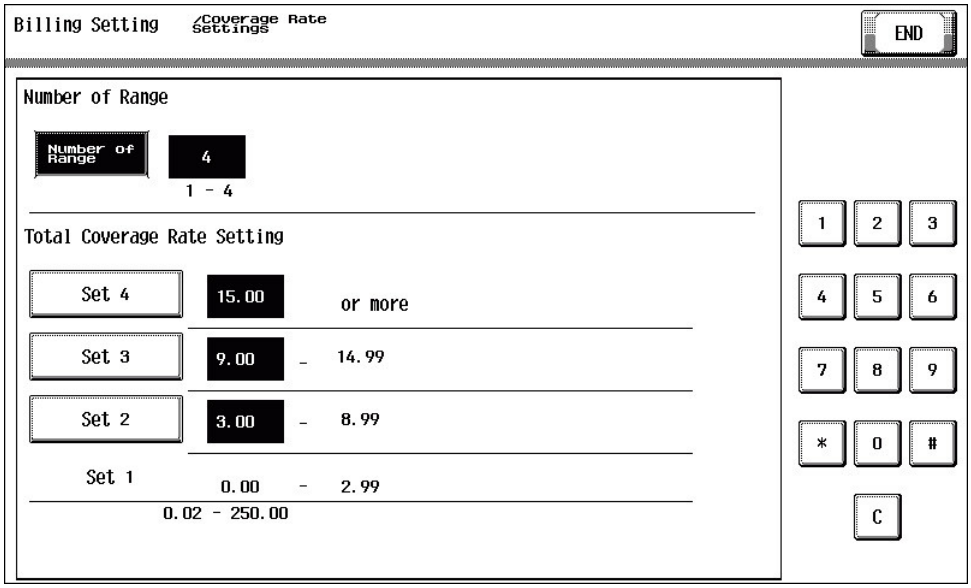




Coverage Rate Settings

- Make settings relating to the total coverage rate.

Setting item	Contents	Setting range	Default setting
Number of Range	Set the number of ranges used for setting the total coverage rate.	1 to 4 ranges	4 ranges
Total Coverage Rate Setting	Set the threshold values of each of the sets of the total coverage rate. The setting values should satisfy the following relation: • 0.02 ≦ setting values of set 2 < setting values of set 3 < setting values of set 4 ≦ 250.00	0.02 to 250.00	Set 4: 15.00 or more Set 3: 9.00 to 14.99 Set 2: 3.00 to 8.99 Set 1: 0.00 to 2.99

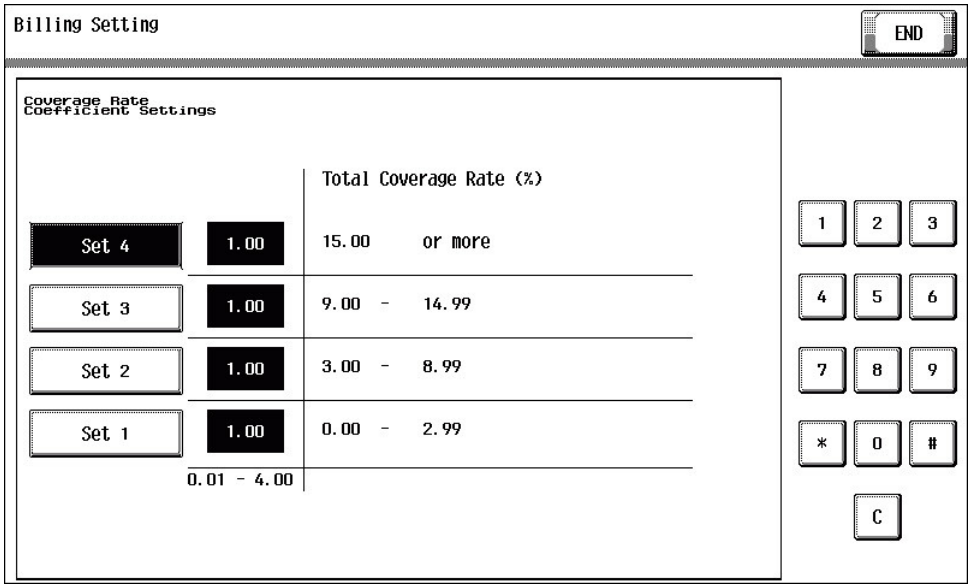


<Procedure>
1. Touch [Black].
2. Select the paper size.
3. Touch the [Coverage Rate Settings].
4. Enter [Number of Range] from the 10-key pad.
5. When [Number of Range] is entered, the corresponding number of sets are displayed.
6. Select a [Set] and enter the threshold values of the coverage to be set from the 10-key pad.
7. After the values are entered, touch [END].

Coverage Rate Coeff. Setting

- Set the coverage rate coefficient relative to the set made in Coverage Rate Settings.

Setting item	Contents	Setting range	Default setting
Coverage Rate Coeff. Setting	Set the coefficient relative to the set total coverage rate set.	0.01 to 4.00	1.00



<Procedure>
1. Select the paper size.
2. Touch [Coverage Rate Coeff. Setting].
3. Touch the [Set] set by [Coverage Rate Settings] and enter the coefficient from the 10-key pad.
4. After the coefficient has been entered, touch [END].

1.11 Print Counter Clear

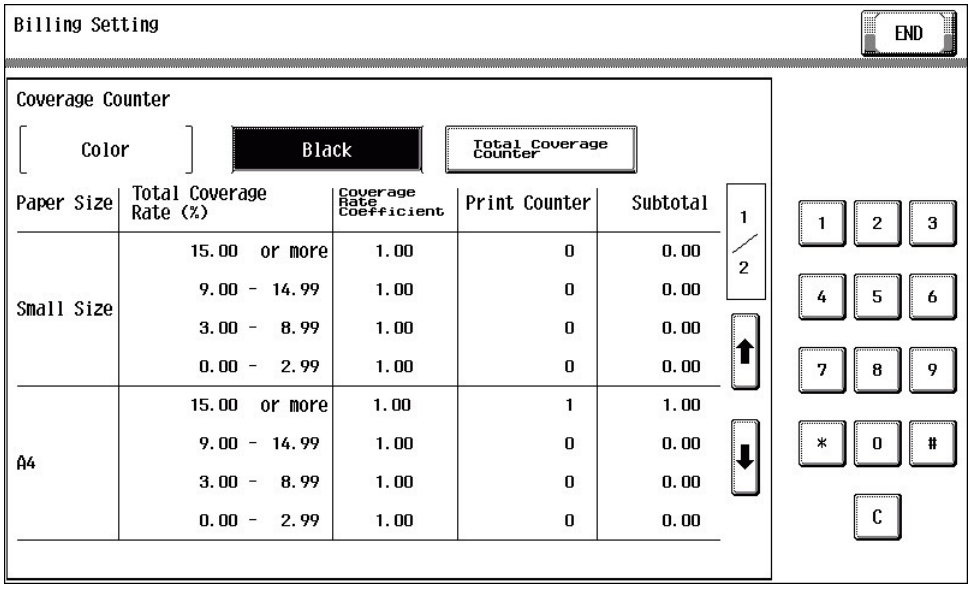
- It will be displayed when [Service Mode] -> [System 2] -> [Software Switch Setting] shows that switch No.206 is set to [00000001] at Bit assignment/[01] at HEX assignment.
- To clear Print Counter and Subtotal values of Coverage Counter Detail.
- Clear Subtotal value in [Meter Count] -> [Coverage Counter].

Setting item	Default setting
Set	
Unset	○

<Procedure>
1. Select [Set].
2. Touch [END].

1.12 Coverage Counter Detail

- It will be displayed when [Service Mode] -> [System 2] -> [Software Switch Setting] shows that switch No.206 is set to [00000001] at Bit assignment/[01] at HEX assignment.
- To display details of the coverage counter value calculated according to Coverage Counter Setting.



Indication	Contents
Black	Displays the count values of monochrome printing.
Total Coverage Counter	Displays the count value of total. Displays the cumulative value of the coverage counter since the installation of the machine.
Total Coverage Rate (%) (*1)	Displays the set of the total coverage rate that serves as a basis for counting.
Coverage Rate Coefficient (*1)	Displays the coverage rate coefficient set for each set that serves as the basis for countering.
Print Counter	Displays the count value of the number of printed pages satisfy the counting base.
Subtotal	Displays the counter value obtained through the following calculation involving the print counter and the coverage rate coefficient: Subtotal = print counter × coverage rate coefficient

- *1: What is displayed complies with the setting made in [Service Mode] -> [Billing Setting] -> [Coverage Counter Setting].

NOTE

- **The total coverage counter has been activated upon the installation of the machine regardless of whether it is displayed on the screen. Thus, the counter default value during screen display setting is not necessarily "0".**
- **The total coverage counter value is the cumulative value since the installation of the machine, while the print counter value is the cumulative value since the last performance of print counter clear. Thus, the sum of the subtotal values does not necessarily coincide with the total coverage counter value.**

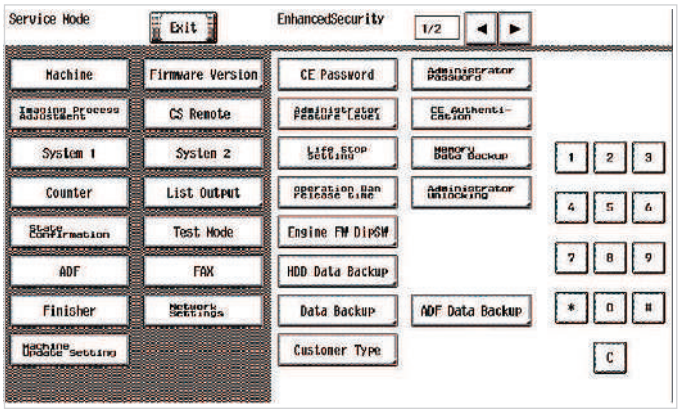
2. ENHANCED SECURITY

2.1 Outline

Starting procedure

1. Call the initial screen of Service Mode.
2. Press the following keys in this order.
   - Stop -> 0 -> Clear
3. Call the Enhanced Security screen.

Enhanced Security



Exiting procedure

1. Touch [Exit].
2. Turn OFF the main power switch. Wait 10 seconds, then turn ON the main power switch again.

2.2 CE Password

- To set and change the CE password.
- The CE password needs to be 8 to 64 one-byte alphameric characters and symbols.
  - Default setting: 9272927292729272

<Procedure>

1. Current Password: Enter the currently using CE password.
2. New Password: Enter the new CE password.
3. Re-input Password: Enter the new CE password again.

NOTE

- **When Password Rules of [Administrator] -> [Security] -> [Security Details] is set to "ON," new passwords cannot contain the same string of characters nor can be previous passwords be used.**
- **A new password is set when starts from the service mode after changing.**
- **NEVER forget the CE password. When forgetting the CE password, call responsible person of KM.**

2.3 Administrator Password

- To set and change the administrator password.
- Use this function when the administrator forget the administrator password because a new password can be set without entering the current administrator password with this.
- The administrator password needs to be 8 to 64 one-byte alphameric characters and symbols.
  - Default setting: 1234567812345678

<Procedure>

1. New Password: Enter the new administrator password.
2. Re-input Password: Enter the new administrator password again.

NOTE

- **When Password Rules of [Administrator] -> [Security] -> [Security Details] is set to "ON," new passwords cannot contain the same string of characters nor can be previous passwords be used.**

2.4 Administrator Feature Level

- To set which modes to be allowed for the administrator to use in Service Mode.
- Use when allowing the administrator to use some modes in Service Mode.

Setting item	Contents	Default setting
Level1	Extend the administrator function Level 1.	
Level2	Extend the administrator function Level 2.	
Prohibit	Prohibit the administrator feature extend.	○

Administrator feature level extension item

Administrator settings function				Level 1	Level 2
System Settings	Expert Adjustment	Printer Adjustment	Erase Leading Edge	-	○
			Vertical Adjustment	-	○

Administrator settings function				Level 1	Level 2
		Scanner Area	Scanner Adjustment: Leading Edge	-	○
			Scanner Adjustment: Centering	-	○
			Horizontal Adjustment	-	○
			Vertical Adjustment	-	○
		ADF Adjustment	Centering	-	○
			Original Stop Positi	-	○
			Centering Auto Adjustment	-	○
			Auto Adj. of Stop Position	-	○
		User Paper Settings		-	○
	Standard Size Setting	Original Glass Original Size Detect		-	○
		Foolscap Size Setting		-	○

2.5 CE Authentication

- To determine whether or not to authenticate CE password as entering Service Mode.

NOTE

- **If [Administrator] -> [Security] -> [Security Details] -> [Password Rules] is "Enable", "OFF" in the setting item is not displayed.**
- **It will not be displayed when [Administrator] -> [Network] -> [Remote Panel Settings] -> [Client Settings] is set to “ON.”**

Setting item	Default setting
ON	○
OFF	

2.6 Life Stop Setting

Life stop

- To select whether or not to stop a print cycle when the applicable units reach its service life.

NOTE

- **The settings of software Dip switch No.227 (bit7) and switch No. 230 (bit3) have priority.**

Setting item	Setting value	Default setting
Drum/DevUnit, transfer belt, and fusing unit	Enable	○ (For others)
	Off	○ (For Japan, North America and Europe)

Life Cycle Display Warning

NOTE

- **The settings of software Dip switch No.227 (bit7) and switch No. 230 (bit3) have priority.**

Setting item	Setting value	Default setting
Drum Unit, Dev Unit, transfer belt, and fusing unit	Enable	○ (For others)
	Off	○ (For Japan, North America and Europe)

2.7 Memory Data Backup

- To backup the data stored in the memory region on board to the flash memory.
- To backup current data in order to prevent data in the memory region on the board from being erased unexpectedly.
- To backup data manually. It usually makes backup every hour automatically.
- Backup data can be restored by following the specified procedure when the trouble (CD3XX) occurred.
- Refer to “TROUBLESHOOTING” for details on restoration procedure.

<Procedure>

1. Touch [Memory Data Backup].
2. Touch [Start] to start making a backup.
3. Check the message [Backup is completed.], and turn main power switch OFF. Wait for ten seconds or more and turn main power switch back ON.

2.8 operation Ban release time

- To set the period of time to be elapsed before the access lock state is released in CE password authentication.

Setting range	Default setting
1 to 60 (minutes)	5 (minutes)

NOTE

- **When Enhanced Security Mode is set to ON in [Administrator] -> [Security] -> [Enhanced Security Mode], the period of time that can be set in this setting is 5 minutes or more.**

Releasing the an access lock

- After the CE password authentication, if the access lock is activated, the lock release timer starts to operate the following procedures.

<Procedure>

1. Main power switch is turned OFF and ON.

2. [Utility] -> [Counter] -> [Print List]
3. Touch [Display Keypad], displaying 10-key pad.
4. The lock release timer starts to operate by input the Stop -> 0 -> 9 -> 3 -> 1 -> 7.
   - To set the period of time that elapses before the machine releases the access lock, which aims to prevent the unintentional release of the access lock.
5. When the timer reaches the time specified in this setting, the access lock is released.

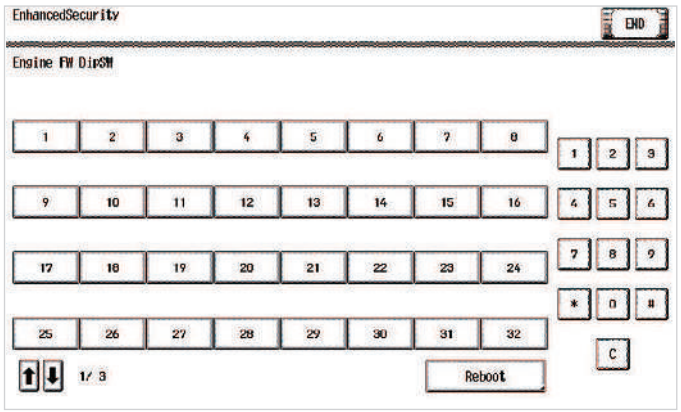
2.9 Administrator unlocking

- To release an access lock that is activated after an administrator password authentication.
- To release the access lock with service authority when an administrator password authentication fails and the access lock is activated.
- When the main power switch is turned OFF and ON or the period of time set in the Release Time Settings elapses, the machine releases the access lock that is activated after the administrator password authentication. In addition to these operations, this setting provides another way to release the access lock.

<Procedure>
1. Touch [Administrator unlocking].
2. Touch [Unlocking] to release an access lock.
3. When [OK] is displayed, touch [END].

2.10 Engine FW DipSW

- To make printer engine settings.



<Procedure>
1. Touch [Engine FW DipSW].
2. Touch the key that corresponds to the switch No. of the function to be set and check the key is highlighted (ON state) in reverse video.
3. Touch [END].

Normal: OFF state



Reverse: ON state



Engine FW DipSW setting list

- The following table shows DIP switches that can be set in this machine.

Switch No.	Function
1	Not used
2	Not used
3	New Release Disable mode
4	Not used
5	Choice of high humidity circumstance
6	Choice of warm-up completion temperature
7	Not used
8	Choice of 2nd image transfer output table
9	Choice of paper size detection at bypass tray
10	Not used
11	Not used
12	Not used
13	Choice of securing fusibility
14	Choice of unit simultaneous replacement promotion
15	Not used
16	Not used
17	Not used

Switch No.	Function
18	Not used
19	Choice of image edge line prevention when using SRA3 size
20	Not used
21	Not used
22	Choice of main scan direction white line correction
23	Not used
24	Choice of continuous temperature control after printing
25	Not used
26	Choice of printing pause time during temperature increase inside the machine
27	Not used
28	Choice of fusing mode for index paper
29	Not used
30	Not used
31	Not used
32	Not used
33	Not used
34	Choice of toner reset mode (K)
35	Choice of improving fusibility strength
36	Choice of increasing stabilization frequency
37	Choice of silent mode
38	
39	Choice of upper exit path mismatch detection jam
40	Not used
41	Not used
42	Not used
43	Not used
44	Choice of idle rotation time after warm up
45	Choice of fusing environment switching
46	Replacement timing Intelligent Control of Fusing unit
47	Replacement timing Intelligent Control of Developing unit
48	Replacement timing Intelligent Control of Transfer Roller Unit
49	Replacement timing Intelligent Control of Transfer Belt Unit
50	Replacement timing Intelligent Control of Drum unit
51	Choice of controlling back marking after image stabilization
52	Choice of heater switching
53	
54	Not used
55	Not used
56	Not used
57	Choice of fusing printing preparation extension
58	Choice of determining fusing replacement time
59	Choice of wait for fusing paper size difference
60	Choice of fan full speed control operation ratio
61	Not used
62	Choice of patch frequency against white lines
63	Choice of patch density against white lines
64	
65	Choice of the idle rotation time after environmental change
66	
67	Choice of life threshold value of drum unit
68	
69	Choice of belt reverse rotation when paper reuse
70	Choice of decreasing loop solving noise during paper feeding from manual bypass tray
73	Choice of CF slipping
79	
81	Choice of transfer failure correction
82	Choice of gradation area correction at Dmax density adjustment

Switch No.	Function
83	Choice of disabling media detection function
84	Not used

2.10.1 Details of Each Function

(1) New Release Disable mode

- To enable a unit that is used temporarily for troubleshooting to be used again as a new unit in another machine, the New Release Disable mode is provided.
- Applicable units are the following units that have the new unit detection feature.
  - Drum unit, developing unit
- When the New Release Disable mode is set, the parameter of the unit before replacement is used without making automatic adjusting control with the TCR sensor and new image stabilization control.

Switch No. 3	Contents	Default
OFF	Disables New Release Disable mode.	○
ON	Enables New Release Disable mode.	

<Procedure>

1. Open the front door.
2. Call the [Service Mode] -> [Enhanced Security] to the screen.
3. Set [Engine FW DipSW] -> [3] to ON.
4. Close the front door.
   By closing the front door, the New Release Disable mode takes effect.

Notes when using the New Release Disable mode

<Before starting the mode>

- Output the list in [Service Mode] -> [List Output] to check the information on the wear-out rate of each unit and keep the Dmax density adjustment value. Replace units that have reached their part replacement time or that are near life with new ones, and perform New Release.
- If the toner is empty, start this mode when the toner empty status is resolved by replacing the toner cartridge with a new one or charging the toner.

<During the New Release Disable mode>

- The New Release Disable mode is subject to the condition that the New Release Disable mode should not be used for a long period, i.e. duration of printing only several tens of sheets.
  - Units used in the New Release Disable mode for a long time cannot be guaranteed as new ones.
- In the New Release Disable mode, the drum unit/K life counter is not reset and it continues to count in a normal manner. If the counter reading becomes close to the value for the replacement time, the replacement time can be reached in the New Release Disable mode.
  - If the drum unit/K counter should reach the value for the replacement time while temporarily using a new drum unit/K in the New Release Disable mode, turn OFF the New Release Disable mode, open and close the front door (or turn the main power switch OFF and ON), and perform New Release in a normal manner. In this case, the previous drum unit/K, which has been temporarily removed, cannot be used again.
- After activating the New Release Disable mode in [Engine FW DipSW], do not turn OFF and ON the main power switch or do not let the machine go into the sleep mode until the work in the New Release mode is completed.
  - In case that the main power switch is turned OFF or the machine goes into the sleep mode, be sure to open the front door and turn the main power switch ON or activate the machine from the sleep mode. Then turn ON the New Release Disable mode and close the front door.)

<After finishing work in New Release Disable mode>

- When continuing to use the new unit used in the New Release Disable mode in the same machine, turn OFF the new Release Disable mode and open and close the front door (or turn OFF and ON the main power switch) to perform New Release.
- To reinstall the previous unit used in the machine, open the front door, turn OFF the New Release Disable mode, replace the new unit with the previous unit, and close the front door (or turn the main power switch OFF and ON).
  In this case, perform Initialize + Image Stabilization, Gradation Adjustment, and input of the previous Dmax density adjustment value in service mode. (If these adjustments are not performed, gradation reproducibility cannot be guaranteed.)
- After temporarily using a new drum unit/K in the New Release Disable mode, before reinstalling the previous drum unit/K, be sure to check the reading of the drum unit/K life counter in [Service Mode] -> [Counter] -> [Life] to learn that New Release is not performed on the new drum unit/K, i.e. the counter value have not decreased.
  - There is no way to determine whether New Release is performed on the new drum unit/K or not from the appearance of the unit. Checking the counter reading is necessary to avoid bringing back the drum unit/K on which New Release is performed, assuming that the drum unit/K remains new.

(2) Choice of high humidity circumstance

- Out of Fusing PPM control for preventing the paper from losing its fusibility, "high humidity circumstance mode" which controls paper curling in high humidity is prohibited.

Switch No. 5	Contents	Default
OFF	• Run "High-humidity Mode" in high-humidity environments. • Longer warm-up time, but no occurrence of curl even under high humidity environment	○
ON	• Unable to run "High-humidity Mode" even in high-humidity environments. • Shortens the warm-up time in high humidity environments, but there is a risk of paper curl occurring.	

(3) Choice of warm-up completion temperature

- To set the fusing temperature at the time of black printing.
- It controls the occurrence of a fusing error at the time of black printing on paper recommended to EU regions.

Switch No. 6	Contents	Default
OFF	Temperature control for Japan	○
ON	Temperature control for regions other than Japan	

(4) Choice of 2nd image transfer output table

- To set the 2nd image transfer output table when printing on plain paper.
- If the 2nd image transfer output is insufficient, “void areas” will occur on a printed image. In that case, set “2nd image transfer output table 2” to finely adjust the transferring output.
- If the 2nd image transfer output is excessive, “white spots” will occur on a printed image. In that case, set “2nd image transfer output table 1” to finely adjust the transferring output.

Switch No. 8	Contents	Default
OFF	2nd image transfer output table 2 (low 2nd image transfer output)	○
ON	2nd image transfer output table 1 (low 2nd image transfer output)	

<Procedure>

1. Set [Engine FW DipSW] -> [8] to ON.
2. Select [Service Mode] -> [Imaging Process Adjustment] -> [Transfer Voltage Fine Adj] -> [2nd Transfer Adj].
3. Make fine adjustment of the 2nd transferring for plain paper and check the printed image.

(5) Choice of paper size detection at bypass tray

- To set the bypass tray automatic paper size detection dedicated to metric or inch sizes depending on the applicable marketing area.
- Set the inch sizes for the US market. Set the metric sizes for any other marketing areas.

Switch No. 9	Contents	Default
OFF	Automatic size detection of Metric or Inch sizes	○
ON	Enable automatic size detection of Metric/Inch mixed originals.	

(6) Choice of securing fusibility

- Sets whether or not to conduct printing wait for ensuring fusibility in low-temperature/low-humidity environments.

Switch No. 13	Contents	Default
OFF	Without printing wait	○
ON	With printing wait	

(7) Choice of unit simultaneous replacement promotion

- To set whether or not to enable "Controlling printing prohibition of life values."

Switch No. 14	Contents	Default
OFF	Enables "Controlling printing prohibition of life values."	○
ON	Disables "Controlling printing prohibition of life values."	

(8) Choice of image edge line prevention when using SRA3 size

- By setting this ON, when printing SRA3 size with a new drum unit it prevents the image edge lines. In addition, it enables image stabilization control when printing SRA3 size.
- The new drum unit means that the number of prints after the drum unit is replaced with a new one is 1,000 or less. Or, it means that the drive time is 25 minutes or less.

Switch No.19	Contents	Default
OFF	Normal	○
ON	• Prevents the image edge lines when printing SRA3 size. • Enables image stabilization control when printing SRA3 size.	

(9) Choice of main scan direction white line correction

- When printing is continued with lower coverage, filming may occur to the transfer belt which may cause the main scan direction white lines.
- By setting this ON, the toner will be supplied to the transfer belt by the toner patch during image stabilization to prevent white lines to occur.
  - The toner consumption increases by using this setting. Choose the setting suitable for the user.

Switch No. 22	Contents	Default
OFF	Does not conduct toner patch for the white lines	○
ON	Conducts toner patch for the while lines	

(10) Choice of continuous temperature control after printing

- To select the fusing unit temperature adjustment control performed when a print job sent from PC is completed.
- When [Administrator] -> [Maintenance] -> [Timer Setting] -> [Power Settings] -> [Enter Power Save Mode] is set to "Immediately", select whether or not to turn OFF the fusing heater immediately after a print job from PC is completed.

Switch No. 24	Contents	Default
OFF	The fusing heater is turned OFF immediately after printing a job sent from PC.	○

Switch No. 24	Contents	Default
ON	The temperature control continues until the next sleep request is sent from the controller.	

(11) Choice of printing pause time during temperature increase inside the machine

- The printing pauses for a specified period of time in order to prevent toner from adhering when the temperature inside increases.

Switch No. 26	Contents	Default
OFF	Productivity has priority	○
ON	Pause for printing becomes longer. Temperature inside comparatively becomes low which may improve the image quality.	

(12) Choice of fusing mode for index paper

- To set fusing temperature when printing on the index paper.
- It controls the occurrence of paper curling when printing on a thin index paper.

Switch No. 28	Contents	Default
OFF	Fusing temperature: High (priority on fusing ability)	○
ON	Fusing temperature: Low (priority on controlling paper curling)	

(13) Choice of toner reset mode

- Choice to clear the remaining toner in toner cartridge as brand new

Toner cartridge K

Switch No. 34	Contents	Default
OFF	-	○
ON	Resets the toner K remaining amount.	

(14) Choice of improving fusibility strength

- Choice to raise fusing temperature to secure fusibility for the image erasing problem with eraser test

Switch No. 35	Contents	Default
OFF	-	○
ON	Raise the fusing temperature.	

(15) Choice of increasing stabilization frequency

- Choice to increase frequency for performing stabilization

Switch No. 36	Contents	Default
OFF	Disable	○
ON	Enable	

(16) Choice of silent mode

- Switches the drive for the polygon motor, fusing, and fan during standby.

Switch No. 37	Switch No. 38	Contents	Default
OFF	OFF	Normal mode	○
ON	OFF	Silent mode level 1 (Do not advance the polygon)	
OFF	ON	Silent mode level 2 (Polygon advance is not performed, fusing drive is stopped during standby, and fan drive is stopped during standby)	

(17) Choice of upper exit path mismatch detection jam

- When ejected paper to the lower exit faultily when the upper exit, it is regarded as a paper jam.

Switch No. 39	Contents	Default
OFF	Disable	○
ON	When ejected paper to the lower exit faultily when the upper exit, it is regarded as a paper jam.	

(18) Choice of idle rotation time after warm up

- Choice to extend the pre-standby time to secure fusibility from the stop standby

Switch No. 44	Contents	Default
OFF	Does not extend the pre-standby time.	○
ON	Extend the pre-standby time.	

(19) Choice of fusing environment switching

- Choice to switch the environment inside the fusing section

Switch No. 45	Contents	Default
OFF	Use the paper temperature without change.	○
ON	Adjust the paper temperature to the low side.	

(20) Replacement timing Intelligent Control of Fusing unit

- To set an optimal timing for part replacement depending on the usage of each user.

Switch No. 46	Contents	Default
OFF	Determine the timing for replacing the fusing unit depending on the fusing unit paper feed count and fusing unit drive mileage. • Give a replacement warning. • To apply a life stop. Carry out setting in [EnhancedSecurity] -> [Life Stop Setting].	○
ON	Calculate the length (FD direction) of paper with same width (CD direction). Determine the timing for replacing the fusing unit depending on the calculated value of the paper length. Besides, if the switch No.58 is set to ON, the timing for replacing the fusing unit will also be determined depending on the fusing drive torque in addition to above control. • Give a replacement warning. • Do not apply a life stop. Setting in [EnhancedSecurity] -> [Life Stop Setting] is invalid.	

(21) Replacement timing Intelligent Control of Developing unit

- To set an optimal timing for part replacement depending on the usage of each user.

Switch No. 47	Contents	Default
OFF	Standard Yield Control	
ON	Intelligent Yield Control	○

(22) Replacement timing Intelligent Control of Transfer Roller Unit

- To set an optimal timing for part replacement depending on the usage of each user.

Switch No. 48	Contents	Default
OFF	Standard Yield Control	
ON	Intelligent Yield Control	○

(23) Replacement timing Intelligent Control of Transfer Belt Unit

- To set an optimal timing for part replacement depending on the usage of each user.

Switch No. 49	Contents	Default
OFF	Standard Yield Control	
ON	Intelligent Yield Control	○

(24) Replacement timing Intelligent Control of Drum unit

- To set an optimal timing for part replacement depending on the usage of each user.

Switch No. 50	Contents	Default
OFF	Standard Yield Control	
ON	Intelligent Yield Control	○

(25) Choice of controlling back marking after image stabilization

- Choice to enable or disable the 2nd transfer roller cleaning control for controlling the occurrence of back marking due to toner adhesion

Switch No. 51	Contents	Default
OFF	Disable Do not perform the cleaning control after image stabilization.	○
ON	Enable Perform the cleaning control after image stabilization.	

(26) Choice of heater switching

- Choice to raise the temperature of the side heater to secure fusibility for sizes near to B4

Switch No. 52	Switch No. 53	Contents	Default
OFF	OFF	Normal control	○
ON	ON		
ON	OFF	+5 degree	
OFF	ON		

(27) Choice of fusing printing preparation extension

- Extend the printing preparation to secure fusibility when printing from the stop standby.

Switch No. 57	Contents	Default
OFF	Not extend printing preparation	○
ON	Extend printing preparation	

(28) Choice of determining fusing replacement time

- Select whether to set the fusing drive torque detection function for determining the fusing unit replacement time.

Switch No. 58	Contents	Default
OFF	Not set the fusing drive torque detection function	○
ON	Set the fusing drive torque detection function	

(29) Choice of wait for fusing paper size difference

- When continuously printing on different-sized paper, switch the priority between the productivity and the fusing strength.

Switch No. 59	Contents	Default
OFF	The productivity is preferred	○
ON	The fusing strength is preferred	

(30) Choice of fan full speed control operation ratio

- Choice to switch fan full speed control operation ratio

Switch No. 60	Contents	Default
OFF	Operation ratio 25 %	○
ON	Operation ratio 0 %	

(31) Choice of patch frequency against white lines

- When printing is continued with lower coverage, more than a certain amount of toner does not come to the cleaning blade, the toner adheres to the photoconductor due to unstable pressure bonding or pressure drop. The white spots, while lines, and colored lines may occur in the image.
- By this setting, the toner will be supplied to the cleaning blade by the toner patch to prevent any image failure.
- Choice to change the patch frequency against white lines
  - The toner consumption increases by using this setting. Choose the setting suitable for the user.

Switch No. 62	Contents	Default
OFF	One patch for every three sheets	○
ON	One patch for every one sheet. However, the first sheet in a job is excluded.	

(32) Choice of patch density against white lines

- Choice to change the Vdc output of the image fog margin against white lines and back marking

Switch No. 63	Switch No. 64	Contents	Default
OFF	OFF	Do not correct.	○
ON	OFF	Increase by 10 V at full speed and full color Decrease the amount of image fog in a state where any back marking occurs.	
OFF	ON	Decrease by 10 V at full speed and full color. Increase the amount of image fog in a state where any white line occurs.	
ON	ON	Decrease by 20 V at full speed and full color. Increase the amount of image fog further more in a state where any white line occurs.	

(33) Choice of the idle rotation time after environmental change

- Choice of condition to add the transfer belt idle rotation time switching after environmental change

Switch No. 65	Switch No. 66	Contents	Default
OFF	OFF	No idle rotation after environmental change	○
ON	OFF	Idle rotates at temperature inside 30 degrees or more when the previous printing ends and 15 degrees or less at the stabilization control.	
OFF	ON	Idle rotates at temperature inside 25 degrees or more when the previous printing ends and 15 degrees or less at the stabilization control.	

(34) Choice of life threshold value of drum unit

- To change the life threshold value of drum unit, set “ON/OFF”.
- Drives when Engine FW DipSW No. 50 is set to ON.

Switch No. 67	Switch No. 68	Contents	Default
OFF	OFF	Life warning at ware-out rate 100%, life stop at 120%	○
ON	OFF	Life warning at ware-out rate 110%, life stop at 130%	

Switch No. 67	Switch No. 68	Contents	Default
OFF	ON	Life warning at ware-out rate 120%, life stop at 140%	
ON	ON	Life warning at ware-out rate 130%, life stop at 150%	

(35) Choice of belt reverse rotation when paper reuse

- Choice to switch whether belt reverse control during a consecutive printing to prevent slipping through the transfer belt blade when paper reuse consecutive printing

Switch No. 69	Contents	Default
OFF	Does not reverse rotate during consecutive printing.	○
ON	Interrupts the JOB and reverse rotates belt when paper reuse consecutive printing.	

(36) Choice of decreasing loop solving noise during paper feeding from manual bypass tray

- Choice to switch the operation timing of the manual bypass tray paper feed roller to decrease loop solving noise during paper feeding from the manual bypass tray

Switch No. 70	Contents	Default
OFF	Stop the manual bypass tray paper feed roller in accordance with the paper length.	○
ON	Stop the manual bypass tray paper feed roller when the leading edge of the paper reaches a position that is 10 mm past the registration roller.	

(37) Choice of CF slipping

- When continuously printing on different-sized paper, switch the priority between the productivity and the fusing strength.

Switch No. 73	Switch No. 79	Contents	Default
OFF	OFF	Normal control	○
ON	OFF	Provide a patch for every 30 sides printing	
OFF	ON	Provide a patch for every 40 sides printing	
ON	ON	Provide a patch for every 20 sides printing	

(38) Choice of transfer failure correction

- Choice to add the offset value to the 2nd transfer output value and the neutralization output value as a measure when any transfer failure (image error due to discharging noise) occurs

Switch No. 81	Contents	Default
OFF	Do not add the offset value.	○
ON	Add the offset value.	

Image when discharging noise occurs



(39) Choice of gradation area correction at Dmax density adjustment

- Dmax density adjustment is performed to correct not only the Dmax but also the gradation area. Choice to disable it to correct the Dmax only. (For gradation area, density is fix at Dmax density ±0. For solid area, density is fix at 255.)

Switch No. 82	Contents	Default
OFF	Correct gradation area.	○
ON	Do not correct gradation area.	

(40) Choice of disabling media detection function

- Choice to enable or disable the media detection function when an intelligent media sensor is installed

Switch No. 83	Contents	Default
OFF	To enable the media detection function.	○
ON	To disable the media detection function.	

2.11 Engine Data Backup

- Not used

2.12 Storage Data Backup

- Backup the settings of the machine and the image data in the box to the HDD connected with a USB.

- Restore the backup data to the HDD connected with a USB.

Setting item	Contents
Generic format Backup	Store the setting data for this machine as an XML data and store the data saved in the box as a TIFF-C image to the HDD. However, a data that is saved at 1200dpi in the box cannot be backed up. Since the free space in the HDD for backup cannot be checked beforehand, after starting the backup, it will be terminated as an error at the time that no space remained in the HDD.
KM Format Backup	Save the settings of the machine as a XML data, and save the image data in the box in internal format (RAW data) to the HDD connected with a USB. A backup starts after making a if the storage is enough.
Restore	Execute restore the backup data in the HDD.

Target data

- Settings an image data in the box to be backed up and restored are as follows.
  - Setting data for the machine (User Settings, Administrator Settings, part of each settings in Service Mode)
  - User authentication, Account track settings information
  - One-touch Registration Address Information
  - Images saved in the box (User box (Public, Personal, Group, and Encrypted PDF box))
  - Information to compose a box (setting data exclusive for box)

Conditions required to backup/restore

- To use a self-power external HDD (a type to supply power from outside)
  NOTE
  - **A bus-power external HDD shall not be used.**
- After connecting an external HDD to the machine via a USB, the data is converted with ext3 format automatically.
- The backup will be executed after the backup data which has already existed in the external HDD is deleted automatically.
- Data of only one model can be saved in the external HDD.
- Cancellation during a backup is allowed. However cancellation during formatting an external HDD is not allowed.
- Operation of backup/restore is not allowed when a trouble or warning occurred.
- Operation of backup/restore is not allowed when a timer job has been reserved.

Procedure of backup/restore

NOTE

- **Set [Administrator] -> [Security] -> [Security Details] -> [Storage Data Backup] to [Allow].**
  If [Restrict] is set, the machine cannot be used.
- **Be sure to turn the main power switch of the machine off and on after performing a backup/restore.**

<Backup procedure>

1. Connect the USB cable of an external HDD to the USB port of the machine. (USB NG will be displayed when the HDD is not recognized correctly.)
2. Call the Service Mode to the screen.
3. Call the Enhanced Security to the screen.
4. Touch [Storage Data Backup].
5. Select [Generic format Backup] or [KM Format Backup].
6. Touch [Enter Password], enter an encryption password using 1 to 32 characters, then touch [END].
7. Touch [Start]. (“Processing” will be displayed.)
   Touch [Cancel] if you want to stop the backup.
8. After completing the backup, [Result OK] will be displayed.
9. Turn OFF and ON the main power switch.

<Restore procedure>

1. Connect the USB cable of an external HDD to the USB port of the machine.
2. Call the Service Mode to the screen.
3. Call the Enhanced Security to the screen.
4. Touch [Storage Data Backup].
5. Select [Restore].
6. Touch [Enter Password], enter a decryption password using 1 to 32 characters, then touch [END].
7. Touch [Start]. (“Processing” will be displayed.)
   Touch [Cancel] if you want to stop the restore.
8. After completing the restore, [Result OK] will be displayed.
9. Turn OFF and ON the main power switch.

2.13 Data Backup

2.13.1 Client Function

- To be used for moving data at the time of machine replacement.
- Back up data saved in the machine to the WebDAV server or an HDD.

(1) Server Backup

Select Backup

- Select the backup method.

Setting item	Contents
Disable	Select not to use the backup.
Server Backup	Select to make backup to the server as backup. Set “Setting when selecting backup to the server”.
Server Backup 2	Select to make backup to the server as backup 2. Set “Setting when selecting backup 2 to the server”.

Setting when selecting backup to the server

<Backup setting>

- Set the backup setting.

NOTE

- **This function cannot be enabled when Transmission protocol, SMB Setting or HTTP Setting, Backup target and Encryption Password have not been set.**

Setting item		Contents	Setting value	Default setting
Function Setting		To set whether to back up data to a server. • When [ON] is selected, configure settings required for backup.	ON	
			Disable	○
Transmission protocol		To select a Transmission protocol.	SMB	
			HTTP	○
SMB Setting	Host Name	To be set when “SMB” is selected for Transmission protocol.	Alphanumeric characters and symbols up to 253 characters	-
	File Path		255 characters maximum	
	User Name		64 characters maximum	
	Password		64 characters maximum	
HTTP Setting	URL	To be set when “HTTP” is selected for Transmission protocol.	Alphanumeric characters and symbols up to 253 characters	-
	User Name		64 characters maximum	
	Password		64 characters maximum	
	Proxy		ON/Disable	
Backup target		To select a target to back up. Items of (*) are displayed only when selected [Enable] in [Service Mode] -> [System 2] -> [Maintenance Mode], and [Allow] in [Administrator] -> [Security] -> [Security details] -> [Maintenance Mode Access].	Remote Access Setting	-
			User Settings	
			Service setting	
			Address Book (*)	
			Authentication Data (*)	
			Network Settings (*)	
			Accessibility (*)	
			Administrator Setting (*)	
			Cloud connection (*)	
			Display Custom Settings (*)	
			External Cert (*)	
Encryption Password		Enter the encryption password.	1 to 32 characters	-

<Auto backup>

- Set the auto backup setting.

NOTE

- **It is displayed when Backup Settings is enabled.**

Setting item		Contents	Setting value	Default setting
Auto backup		To set whether to execute auto backup. • When “Yes” is selected, configure the following settings.	Set	
			Unset	○
Backup period	Interval of day(s)	Select the backup as Interval of day(s).	1 to 30 days	-
	Weekly frequency	Select the backup as Weekly frequency.	Sun, Mon, Tue, Wed, Thu, Fri, Sat	
Backup time		To setting a time to back up.	Hour: 00 - 23 Minute: 00 - 59	-

<Immediate backup>

- To be used for executing backup immediately.
- If “OK” appears when pressing “Start”, the backup is completed successfully.
- If “NG” appears, an error code will be displayed. Contact the KM representative as necessary.
  - N******: Error related to network.
  - S******: Error other than that related to network.

<Backup result>

- To make a confirmation of the date and time when the final backup is completed successfully.
- Up to 100 backup logs can be displayed in the order from the latest backup.

Setting when selecting backup to the server 2

<Format>

- To select a format to backup.

Setting item	Contents
Generic format	Select to backup of box documents by generic format.
KM format	Select to backup of box documents by KM format.

NOTE
- **Select the format and touch [Fix].**

<Backup settings>
- Set the backup setting.

NOTE
- **This function cannot be enabled when WebDAV Settings, Encryption Password or Data hold period have not been set.**

Setting item		Contents	Setting value	Default setting
Function Setting	Function Setting	To set whether to back up data to a server. • When [ON] is selected, configure settings required for backup.	ON	
			Disable	○
	User Box Document	To set whether to target box documents.	Target	
			Not in target	○
WebDAV Settings	URL	Set the WebDAV Settings.	Alphanumeric characters and symbols up to 253 characters	-
	User Name		64 characters maximum	
	Password		64 characters maximum	
	Proxy		ON/Disable	
Encryption Password		Enter the encryption password.	1 to 32 characters	-
Data Hold Period		To select data hold period.	1 to 180 days	60 days

<Auto backup>
- Set the auto backup setting.

NOTE
- **It is displayed when Backup Settings is enabled.**

Setting item		Contents	Setting value	Default setting
Enable Settings		To set whether to execute auto backup. • When “Yes” is selected, configure the following settings.	ON	
			Disable	○
Full Backup	Interval of day(s)	Select the backup as Interval of day(s).	1 to 30 days	-
	Weekly frequency	Select the backup as Weekly frequency.	Sun, Mon, Tue, Wed, Thu, Fri, Sat	
	Backup time	To setting a time to back up.	Hour: 00 - 23 Minute: 00 - 59	
Diff. Backup	Disable	Select not to backup Diff. backup.	-	-
	Time Setting	Select the backup period by time setting.	1 to 48 hours	
	Time Setting	Select the backup period by time setting.	Hour: 00 - 23 Minute: 00 - 59	

<Backup reservation>
- To select the backup reservation.

Setting item	Contents
Full Backup	Select to make backup Full backup.
Diff. Backup	Select to make backup Diff. backup.

NOTE
To select the backup reservation and touch [Fix].

<Backup history>
- To make a confirmation of the date and time when the final backup is completed successfully.
- Up to 100 backup logs can be displayed in the order from the latest backup.

(2) Restore from Server

Restore Mode Select
- Select the restore method.

Setting item	Contents
Restore from Server	Select to make restore from the server. Set “Setting when selecting restore from the server”.
Restore from Server 2	Select to make restore from the server as restore 2. Set “Setting when selecting restore from the server 2”.

Setting when selecting restore from the server
<Restore setting>
- To specify a location from where restore data is to be downloaded.

- Select a server and press “Start” to start restoring.

Setting item	Contents	Default setting
Acquire from backup	Execute restore from a location other than the server specified in Backup Settings.	○
Edit Restore path	Execute restore other than from a location other than the server specified in Backup Settings. • When Edit Restore path is selected, enter WebDAV setting and Encryption Password.	

<Restore result>
- To display the final date of restore.

Setting when selecting restore from the server 2

<Restore setting>
- To specify a location from where restore data is to be downloaded.
- Select machine, restore data and restore target from [Restore Data Select] and press “Start” to start restoring.

Setting item	Contents	Default setting
Acquire from Backup	Execute restore from a location other than the server specified in Backup Settings.	○
Edit Restore path	Execute restore other than from a location other than the server specified in Backup Settings. • When Edit Restore path is selected, enter Download Protocol and SMB setting, or HTTP Setting and Encryption Password.	

<Restore history>
- Restore history is displayed.
- Insert USB memory, touch the start key and save the restore result details in the USB memory.

2.13.2 Server Function

- Use MFP as backup server (WebDAV server).

(1) Backup Server Setting

- Set the backup server settings.

Setting item		Contents	Setting value	Default setting
Function Setting		To set whether to use MFP as backup server (WebDAV server). • When [ON] is selected, configure [Server settings].	ON	
			Disable	○
Server Settings	User Name	Set the User name.	64 characters maximum	-
	Password	Set the password.	64 characters maximum	-

2.14 ADF Data Backup

- To back up or restore settings configured for ADF.
- Used to save or restore settings when the DF control board is replaced.
- The backup data is stored in the storage board.

ADF Data Save Mode (backup)

<Procedure>
1. Select [ADF Data Save Mode], and touch [Start].
2. Check result “OK” is displayed.

ADF Data Reflect Mode (restore)

NOTE

- **This function is available only when the data backed up in [ADF Data Save Mode] is stored.**

<Procedure>
1. Select [ADF Data Reflect Mode], and touch [Start].
2. Check result “OK” is displayed.
3. Turn OFF the main power switch and turn it ON again more than 10 seconds after.

2.15 Customer Type

- To make each settings for customer type.

Setting item	Contents	Setting value	Default setting
Function Setting	To set whether to configure setting of customer type. • When [Yes] is selected, configure setting of the [Business Type] and [Employee Number].	Yes	
		No	○
Business Type	Select the Business type.	Manufacturing	-
		Financial/Securities/Insurance	
		Business Distr/Services	
		IT Related Industry	
		Government Office	
		Other	
Employee Number	Select the employee number	10 or less	-

Setting item	Contents	Setting value	Default setting
		11 or more to 100 or less	
		101 or more to 500 or less	
		501 or more to 1000 or less	
		1001 or more to 5000 or less	
		5001 or more	

2.16 TPM Setting

- This is displayed only when the optional i-Option LK-115 is enabled.

Initialize

- To initialize the memory area installed on the TPM chip.

NOTE

- **Be sure to perform it if the i-Option LK-115 is enabled.**

<Procedure>

1. Touch [Initialization].
2. Press the Start key.

Status report

- To notify an error which is detected by the TPM chip self diagnosis, and output the diagnosis result, or output a report file to a USB memory.
- The TPM chip self diagnosis is conducted when the machine starts to run.

<List Output Procedure>

1. Touch [List Output].
2. Press the Start key.
3. The status report is output.

<USB save Procedure>

1. Connect a USB memory to the USB port.
2. Touch [USB save].
3. Press the Start key.
4. The status report file is saved to the USB memory.

2.17 FWCert. Settings

- If [Administrator] -> [Security] -> [Firmware Updat.Verification Set.] is enabled, perform the firmware signature.
- To be used when installing a digital signature to the machine for signature verification.

<Procedure>

1. Obtain a digital signature.
2. Store the obtained signature in a USB memory.
3. Connect the USB memory to the USB port.
4. Touch the [Start] key.
5. Check the result, and turn the main power switch OFF and ON.

3. DEBUG SETTINGS

3.1 Outline

- To configure the settings on log information acquisition performed to analyze the MFP controller's internal operation.

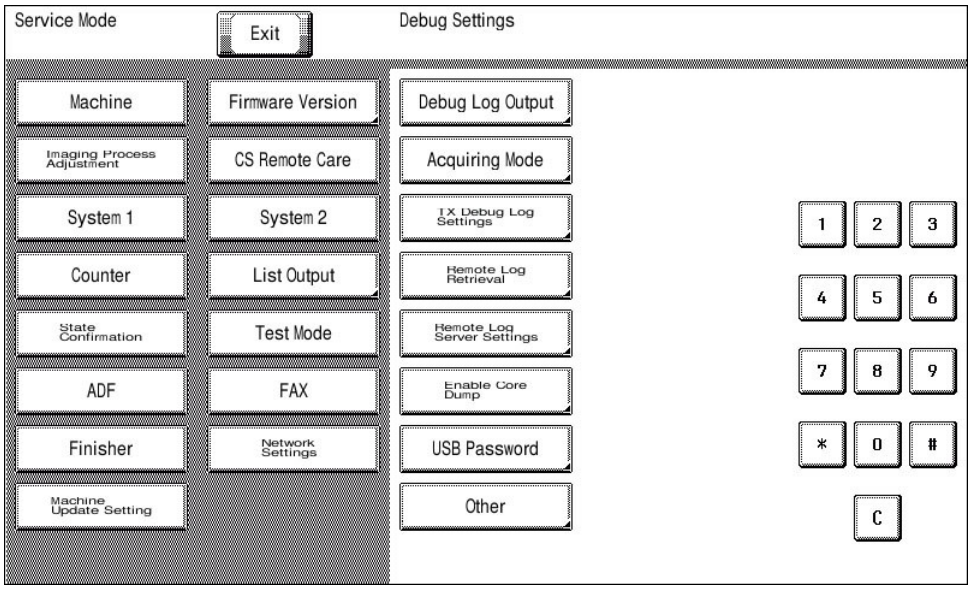
NOTE

- **Before the procedure, set the switch No. 155 to [00000001] at Bit assignment/[01] at HEX assignment in [Service Mode] -> [System 2] -> [Software Switch Setting].**

Starting procedure

1. Call the initial screen of Service Mode.
2. Press the following keys in this order.
   - Stop -> 6 -> 1 -> 8
3. Call the Debug Setting screen.

Example of the Debug Setting screen



Exiting procedure

1. Touch [Exit] on the Service Mode screen.
2. Turn OFF the main power switch. Wait 10 seconds, then turn ON the main power switch again.

3.2 Debug Log Output

- To select debug log data to be output and save it in a USB memory.
- Logs obtained under normal operation and logs obtained upon occurrence of trouble are separated and stored in different areas. Up to 20 logs can be stored.
  - Logs obtained under normal operation: 10 logs
  - Logs obtained upon occurrence of trouble: 10 logs
- When the number of saved logs reaches the upper limit, files are overwritten starting from the oldest file.

NOTE

- **If a USB memory is not connected to the USB port of MFP or [Administrator] -> [Security] -> [Security Details] -> [Export Debug Log] is set to [Restrict], output is unavailable.**

Setting item	Contents
All	Outputs available all logs.
Select File	Specifies a desired file and outputs it. Capable of narrowing file types from [Normal], [Trouble], or [Print Data].
Select Time	Specifies a desired period and outputs corresponding data.
Shared Memory -> HDD	Manually stores debug information written in the memory into the body storage. After selecting [Save], saving is started by pressing the Start key.
HDD -> USB Memory	Outputs debug information stored in the body storage into a USB flash drive. After selecting [Output], saving is started by pressing the Start key.

3.3 Acquiring Mode

- To select mode used to acquire debug logs.
- If the cause of a problem cannot be identified by the debug logs acquired in basic mode, obtain more detailed debug logs in Enhance mode and analyze them.

Setting item	Contents	Default setting
Basic	Normal mode Stores debug information saved in the memory into the body storage.	○
Enhance	Mode that enables you to obtain more detailed debug information than Basic mode. When a large amount of detailed information must be output, the CPU or other devices is heavily loaded and the performance of MFP is affected.	

Enhance mode

- When "Enhance" is selected, configure the following items.

Setting item	Contents	Setting value
Network Packet	If network packet information is necessary, select "ON."	OFF/ON
Acquisition function	Select the functions to be covered when obtaining debug logs. This item will not be displayed when [Network Packet] is set to ”ON.”	Select All, Copy, Printer, User Box, Net/ Scan, Web Connection, FAX, Net Fax, and Authentication
Network Packet Capture	If [Network Packet] is set to "ON," configure [Capture Filter Settings] and [Capture Settings]. This item will not be displayed when [Network Packet] is set to "OFF."	-
By Job	Set the number of jobs handled as a unit (the number of jobs by which debug information is acquired).	1 - 100
Individual Command	Register and execute individual debug commands.	-
Command Set	Install a command set and execute it.	-

Timing of Saving Debug Information in Each Mode

- Debug information is stored at the timings described below.

Modes	Saving timing	Save Destination
Basic mode	When trouble occurs When there is no job During transition to energy save mode (sleep mode or low power mode) When authentication fails When [Debug Log Output] -> [Shared Memory -> HDD] is performed manually	Main body storage
Enhance mode	Save as needed.	USB memory or Main body storage

3.4 TX Debug Log Settings

- To configure settings used to send debug information via the network.
- To send the information via the network, SMB, FTP, or WebDAV transmission is selectable.
- This item will be displayed only when [Acquiring Mode] is set to “Basic.”

Select TX Method

- To select a method used to send via the network.

Setting item	Contents	Default setting
OFF	Select OFF as transmission method of debug information.	○
SMB	Select SMB as transmission method of debug information.	
FTP	Select FTP as transmission method of debug information.	
WebDAV	Select WebDAV transmission as transmission method of debug information.	

SMB Setting

- To configure settings used in SMB transmission.

Setting item	Contents	Setting value
Host Name	Set the host name for the SMB server.	Alphanumeric characters and symbols up to 253 characters
File Path	Set the file path used in the SMB server communication.	255 characters maximum
User Name	Set the user name used to access the SMB server.	64 characters maximum
Password	Set the password used to access the SMB server.	64 characters maximum

FTP Settings

- To configure settings used in FTP transmission.

Setting item	Contents	Setting value	Default setting
Host Name	Set the host name of the FTP server.	Alphanumeric characters and symbols up to 253 characters	-
File Path	Set the file path used in the FTP server communication.	127 characters maximum	-
User Name	Set the user name used to access the FTP server.	64 characters maximum	-
Password	Set the password used to access the FTP server.	64 characters maximum	-
Port Number	Set the port number that is used to access the FTP server.	1 - 65535	21
PASV	Set PASV mode to ON or OFF	ON	○
		OFF	
Proxy	Set whether or not to connect to a proxy server.	ON	
		OFF	○

WebDAV Setting

- To configure settings used in WebDAV transmission.

Setting item	Contents	Setting value	Default setting
Host Name	Set the host name of the WebDAV server.	Alphanumeric characters and symbols up to 253 characters	-
File Path	Set the file path used in the WebDAV server communication.	142 characters maximum	-
User Name	Set the user name used to access the WebDAV server.	64 characters maximum	-
Password	Set the password that is used to access the WebDAV server.	64 characters maximum	-
Port Number	Set the port number that is used to access the WebDAV server.	1 - 65535	80
Proxy	Set whether or not to connect to a proxy server.	ON	
		OFF	○
SSL Settings	Select to use SSL communication.	ON	
		OFF	○

3.5 Remote Log Retrieval

- Use the WebDAV server to retrieve remote access logs.
- Downloads the command set from the server configured from [Remote Log Server Settings] -> [Command Set Acquisition Pt.] at the timing configured from [Time Setting] and [polling].
- If the command set successfully downloads, logs and settings data is retrieved in accordance with the command set, and the log files and settings data files are saved on the server configured from [Remote Log Server Settings] -> [Log Save Destination].

Setting value	Default setting
ON	
OFF	○

Time Setting

- Downloads the command set at the specified time and retrieves/saves the logs and settings data.
- This item will be displayed only when [ON] is set to Remote Log settings.

Setting value	Default setting
ON	
OFF	○

- *: When [Yes] selected, configure the time settings.

Polling

- Downloads the command set at each specified time and retrieves/saves the logs and settings data.
- This item will be displayed only when [ON] is set to Remote Log settings.

Setting value	Default setting
ON (*)	
OFF	○

- *: When [ON] selected, configure the polling interval settings.

Retrieve Log Information

- Immediately downloads the command set and retrieves/saves the logs and settings data.

NOTE

- **This is displayed only when [Administrator] -> [Security] -> [Security Details] -> [Export Debug Log] is set to "Allow."**

3.6 Remote Log Server Settings

Command Set Acquisition Pt.

- Configures the server from which command sets as used for [Remote Log Retrieval] are retrieved.
- Touch [Copy Setting] after settings parameters are selected to copy the settings to the destination as configured from [Log Save Destination].

Setting item	Contents	Setting value	Default setting
Host Name	Set the host name of the WebDAV server.	Alphanumeric characters and symbols up to 253 characters	-
File Path	Set the file path used in the WebDAV server communication.	142 characters maximum	-
User Name	Set the user name used to access the WebDAV server.	64 characters maximum	-
Password	Set the password that is used to access the WebDAV server.	64 characters maximum	-
Port Number	Set the port number that is used to access the WebDAV server.	1 - 65535	80
Proxy	Set whether or not to connect to a proxy server.	ON	
		OFF	○
SSL Settings	Select to use SSL communication.	ON	
		OFF	○

Log Save Destination

- Configures the server for storing files used for [Remote Log Retrieval].
- Touch [Copy Setting] after settings parameters are selected to copy the settings to the destination as configured from [Command Set Acquisition Pt.].

Setting item	Contents	Setting value	Default setting
Host Name	Set the host name of the WebDAV server.	Alphanumeric characters and symbols up to 253 characters	-
File Path	Set the file path used in the WebDAV server communication.	142 characters maximum	-
User Name	Set the user name used to access the WebDAV server.	64 characters maximum	-
Password	Set the password that is used to access the WebDAV server.	64 characters maximum	-
Port Number	Set the port number that is used to access the WebDAV server.	1 - 65535	80
Proxy	Set whether or not to connect to a proxy server.	ON	
		OFF	○
SSL Settings	Select to use SSL communication.	ON	
		OFF	○

3.7 Enable Core Dump

To set whether to acquire a log of Core Dump.

Setting item		Default setting
Enable	USB memory	
	Remote Log Server	
Disable		○

NOTE

- **When [Enable] is selected, select a saving location and press [Fix].**
- **When [Remote Log Server] is selected, be sure to complete setting of [Log Save Destination] in [Remote Log Server Settings].**

3.8 USB Password

- To set a password used to store debug information into a USB flash drive.
  - Default setting: 01234567890123456789
- CE informs the KM contact person of this password and the debug information data separately.

NOTE

- **NEVER forget the USB password.**

<Procedure>

1. Current Password: Enter the USB password currently in use.
2. New Password: Enter a new USB password.
3. Re-input Password: Re-enter the new USB password.

3.9 Other

3.9.1 Screen Capture

- The screen displayed on the control panel can be captured and saved in a USB memory as a file.

NOTE

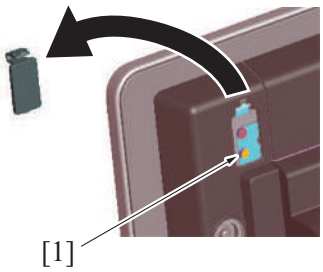
- **Use a USB memory having no security functions.**
- **This setting is unavailable when [Administrator] -> [Security] -> [Security Details] -> [Export Debug Log] is set to "Restrict."**

Preparations

1. Touch [Other].
2. Touch [Screen Capture] and then [END].
3. Insert the USB memory.

Capturing individually

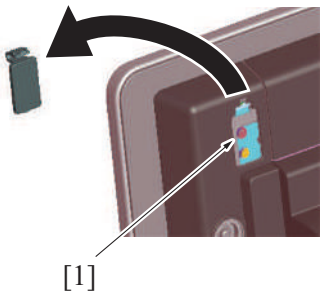
1. Call the screen to be captured to the control panel.
2. Press the [Rear Reset] key at the back of the control panel.



3. A "Capture" folder is automatically created in the USB memory and a file in the PNG format is saved in the folder.

Capturing continuously

1. Call the screen to be captured to the control panel.



2. Press the [Rear Stop] key at the back of the control panel.
3. Start the screen operations.
4. When the operations are completed, press the [Rear Stop] key again.
5. A "Capture" folder is automatically created in the USB memory and a file in the PNG format is saved in the folder.

3.9.2 Panel Operation Playback

- A series of operations is stored in memory and automatically played back on the control panel.

NOTE

- **To perform the playback, be sure to go back to the first screen with which the capturing was started. A playback operation starting with any screen not stored in memory results in faulty playback.**

Preparations

1. Touch [Other].
2. Touch [Panel Operation Playback] and then [END].

Procedure

1. Call the auto playback starting screen to the control panel.
2. Press the [Rear Stop] key at the back of the control panel.
3. Start the screen operations to store a series of screens.
4. When the operations are completed, press the [Rear Stop] key again.
5. Go back to the first screen and press the [Rear Reset] key at the back of the control panel.

3.10 Operation of the debug log function

3.10.1 Advance preparation

NOTE

- **CE should get permission from CUSTOMER before retrieving the program sequence logs from the customer's MFP.**

- Save a key file into a USB memory.
  1. Set the USB Password on the Key generation utility.
  2. Generate the Key file by typing in the Serial number (capital letter) of the target MFP.
  3. Copy the created "Debug Log" Folder into the root directory of the USB memory.

  NOTE
  - **A Key generate utility is required for creation of a key file.**
  - **For how to obtain or how to use the Key generate utility, please conduct the KM support department.**
- Make sure that [Administrator] -> [Security Security] -> [Enhanced Security Mode] is set to OFF.

3.10.2 Basic mode

Intended purpose

- To retrieve the program sequence logs from the MFP; for analyzing field problems caused by MFP controller program malfunction which could be difficult to reproduce in KM.

NOTE

- **Up to a total of 20 log files can be saved, including ten during normal operations and another ten when errors occur.**
- **When the number of log files saved exceeds the upper limit, the log files are overwritten in chronological order.**
- **Each log file is concerned with a single job.**
- **Priority is given to job processing. A log file may not therefore be saved if jobs are performed continuously or if power is turned OFF immediately after processing of a job has been completed.**

Settings for acquiring logs

1. Get permission from the CUSTOMER to retrieve the program sequence logs from the MFP at the customer's site.

   NOTE
   - **Customer specific information such as images can not be acquired. Logs include the MFP control program sequences only.**
2. Set the switch No.155 to [00000001] at Bit assignment/[01] at HEX assignment in [Service Mode] -> [System 2] -> [Software Switch Setting].
3. Call the Debug Settings in Service Mode.
4. Select [Basic] in [Debug Settings] -> [Acquiring Mode].
5. Ask the administrator of the MFP to set a debug log encryption pass phrase in [Menu] -> [Storage Management] -> [Debug Log Encryption Settings]. (Default: 01234567890123456789)

   NOTE
   - **This setting is used to encrypt debug logs to be stored in the body storage.**
   - **Be sure to set the encryption password. Failure to set the encryption password may hamper correct analysis of the log.**
6. Try to reproduce the problem/malfunction on MFP.
7. The problem/malfunction is reproduced.
8. Ask the administrator of the MFP to set [Administrator] -> [Security] -> [Security Details] -> [Export Debug Log] to [Allow].

9. Call the Debug Settings in Service Mode.
10. Set the USB password in [Debug Settings] -> [USB Password].
    NOTE
    - **The USB password set here must be same as the password set in the USB memory in advance preparation procedure.**
11. Call [Debug Settings] -> [Debug Log Output] to the screen.
12. Connect the USB memory prepared in advance preparation to the USB port located on the right-side of the MFP control panel.
13. Touch [Select File]. Select the intended file and touch [Output] in [HDD -> USB Memory].
14. Check that the Start key lights up in blue, and press the Start key.
    NOTE
    - **If the Start key lights up orange, the USB password and/or MFP serial number on for the MFP do not match the key file.**
15. [OK] will be displayed.
16. Touch [OK], and exit the “Debug Settings”.
17. Return the switch No. 155 to [00000000] at Bit assignment/[00] at HEX assignment in [Service Mode] -> [System 2] -> [Software Switch Setting].
18. Exit the Service Mode.
19. Remove the USB memory from the MFP and check that the USB memory contains the file of which name is "LOGSYS_xxxxxxxxxxx.log".
20. Send KM your request of analyzing the problem with the log file.
    NOTE
    - **Send the USB password and log file(s) to the recipient of your request SEPARATELY.**

3.10.3 Enhance mode

Intended purpose

- To retrieve the program sequence logs from the MFP; for analyzing field problems caused by MFP controller program malfunction which could be difficult to reproduce in KM.

Settings for acquiring logs

<When selecting USB memory as a target device>

1. Get permission from the CUSTOMER to retrieve the program sequence logs from the MFP at the customer's site.
   NOTE
   - **They do not include the copy/scan/print/fax image data unless selecting printer. Logs include the MFP control program sequences only.**
   - **The top priority of the MFP is to save the logs completely before starting the next job process; so the CUSTOMER will see a pause between jobs.**
2. Set the switch number "155" to "01" in HEX Assignment in [Service Mode] -> [System 2] -> [Software Switch Setting].
3. Call the Debug Settings in Service Mode.
4. Select [Enhance] in [Debug Settings] -> [Acquiring Mode].
5. Select the target logs.
   NOTE
   - **DO NOT TOUCH the command settings [Individual Command] and [Command Set] without KM instructions.**
6. Set the USB password in [Debug Settings] -> [USB Password].
   NOTE
   - **The USB password set here must be same as the password set in the USB memory in advance preparation procedure.**
7. Exit the Service Mode.
8. Ask the administrator of the MFP to set [Administrator] -> [Security] -> [Security Details] -> [Export Debug Log] to [Allow].
9. Connect the USB memory into the USB port on the right-rear side of the MFP.
10. Try to reproduce the problem/malfunction on MFP.
    Cautions when saving log files each time the problem/malfunction is reproduced
    - **Saved Logs will not be overwritten. USB memory should have enough capacity to save the all logs.**
    - **Debug log function will stop if USB memory is FULL.**
    - **While saving the log data, a specific ICON will appear on the control panel. DO NOT REMOVE the USB memory when the ICON is displayed.**
11. The problem/malfunction is reproduced.
12. Return the switch number "155" in HEX Assignment to "00" in [Service Mode] -> [System 2] -> [Software Switch Setting].
13. Exit the Service Mode.
14. Remove the USB memory from the MFP and check that the USB memory contains the file of which name is "LOGSYS_xxxxxxxxxxx.log".
15. Send KM your request of analyzing the problem with the log file.
    NOTE
    - **Send the USB password and log file(s) to the recipient of your request SEPARATELY.**

<Once saving in the MFP storage and exporting into a USB memory>

1. Get permission from the CUSTOMER to retrieve the program sequence logs from the MFP at the customer's site.
   NOTE
   - **They do not include the copy/scan/print/fax image data unless selecting printer. Logs include the MFP control program sequences only.**
   - **The top priority of the MFP is to save the logs completely before starting the next job process; so the CUSTOMER will see a pause between jobs. so the CUSTOMER will see a pause between jobs.**
2. Set the switch number "155" to "01" in HEX Assignment in [Service Mode] -> [System 2] -> [Software Switch Setting].
3. Call the Debug Settings in Service Mode.
4. Select [Enhance] in [Debug Settings] -> [Acquiring Mode].
5. Select the target logs.
   NOTE
   - **DO NOT TOUCH the command settings [Individual Command] and [Command Set] without KM instructions.**
6. Set the USB password in [Debug Settings] -> [USB Password].
   NOTE
   - **The USB password set here must be same as the password set in the USB memory in advance preparation procedure.**
7. Exit the Service Mode.
8. Ask the administrator of the MFP to set a debug log encryption pass phrase in [Menu] -> [Storage Management] -> [Debug Log Encryption Settings]. (Default: 01234567890123456789)

NOTE
- **This setting is used to encrypt debug logs to be stored in the body storage.**
- **Be sure to set the encryption password. Failure to set the encryption password may hamper correct analysis of the log.**

9. Try to reproduce the problem/malfunction on MFP.
10. The problem/malfunction is reproduced.
11. Ask the administrator of the MFP to set [Administrator] -> [Security] -> [Security Details] -> [Export Debug Log] to [Allow].
12. Call [Debug Settings] -> [Debug Log Output] to the screen.
13. Connect the USB memory prepared in advance preparation to the USB port located on the right-side of the MFP control panel.
14. Touch [Select File]. Select the intended file and touch [Output] in [HDD -> USB Memory].
15. Check that the Start key lights up in blue, and press the Start key.

NOTE
- **If the Start key lights up orange, the USB password and/or MFP serial number on for the MFP do not match the key file.**

16. [OK] will be displayed.
17. Touch [OK], and exit the Debug Settings.
18. Return the switch number "155" in HEX Assignment to "00" in [Service Mode] -> [System 2] -> [Software Switch Setting].
19. Exit the Service Mode.
20. Remove the USB memory from the MFP and check that the USB memory contains the file of which name is "LOGSYS_xxxxxxxxxxx.log".
21. Send KM your request of analyzing the problem with the log file.

NOTE
- **Send the USB password and log file(s) to the recipient of your request SEPARATELY.**

K FIRMWARE

1. Overview

Rewriting of Firmware

- Methods for rewriting the firmware are shown below.

NOTE

- **The settings in the "Utility" mode and the "Service Mode" will not be changed, when the firmware is rewritten.**

<How to use a USB memory>

- Save the firmware data to a USB memory. Connect the USB to the main body directly and update the firmware.

<How to use an Internet ISW>

- “Internet ISW” is a system, which obtains firmware from the program server via the Internet to update the firmware.
- It is executed when a firmware update instruction is issued or at a predetermined time.

<How to use an Auto Update setting>

- "Auto Update" is the function, which makes the main body access the program server periodically through the network to obtain a new firmware data, then rewrites it automatically.
- It is also possible to share the update data obtained from the network with other MFP, and operate the MFP as a program server for “the Auto Update function.” For details, see “ I.19.2.2 Relay server setting.”

Other data

- Activate all data such as the voice data, and the loadable device driver as required in accordance with the rewriting firmware or user's environment.

Data	How to install
All data	[Service Mode] -> [System 2] -> [Install Data]
Loadable device driver	[Service Mode] -> [System 2] -> [Driver Install]

Confirming the firmware version

- After conducting firmware rewriting, check the firmware version No. and confirm that the firmware has been normally updated.

<Procedure>

1. Select [Service Mode] -> [Firmware Version].
2. To check the firmware version.

2. USB memory

2.1 Preparation

System preparation

- PC with USB ports
- USB memory
  - USB flash memory compatible with the USB (1.1/2.0/3.0) interface. The speed is limited to USB2.0 specifications even if using a device that supports USB3.0.
  - The USB memory is formatted in FAT32 format.
  - No security functions such as encryption and password lock have been added (or the USB memory allows its security functions to be turned OFF).
  - A USB memory that is recognized by the computer as two or more drives cannot be used.

NOTE

- **Possible to be non-operational products.**

USB memory used to update firmware

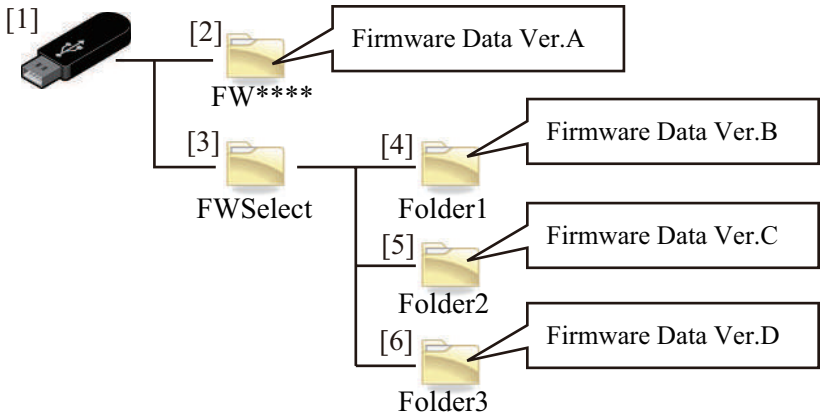
1. Uncompress the firmware file.
2. Connect the USB memory to the computer.
3. Copy the extracted update data folder into the root directory of the USB memory.

Product name	Rewriting data folder name
bizhub 750i	FW0028

NOTE

- **More than one firmware data with a single model can be stored in the USB memory.**
- **In this case, copy the firmware data to the USB memory according to the following procedures.**
  1. Make the folder named "FWSelect" (case-sensitive) to the root directory of the USB memory.
  2. Make a folder with any folder name (one byte alphameric characters, maximum 40 characters) under "FWSelect" folder, and store the firmware data to the folder.

Directory configuration of USB memory



[1]	USB memory	[2]	Rewriting data folder (Required) *1
[3]	Storage folder for a plurality of data (Folder name: FWSelect (Fixed)) *2	[4]	Storage folder for firmware data B (Folder name: Arbitrary) *2
[5]	Storage folder for firmware data C (Folder name: Arbitrary) *2	[6]	Storage folder for firmware data D (Folder name: Arbitrary) *2

- *1: Required to start the firmware update screen.
- *2: Required only when a plurality of data is stored.

2.2 Rewriting of Firmware

Starting the update screen

NOTE

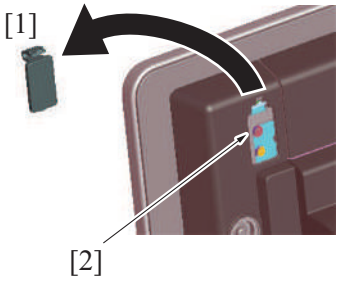
- **When [Administrator] -> [Security] -> [USB port connection permission] -> [USB flash drive] -> [Firmware Update Parameters] is set to "Restrict", firmware update cannot be executed by using a USB memory.**
  - **When the main power switch is turned on, a message "It is limited by the administrator." will appear.**
- **When [Administrator] -> [Security] -> [Firmware Update (USB) Permission Setting] is set to "Password Priority", it requires to input a password after confirming with the administrator.**
- **USB memory must be connected with the main power switch off.**

<Procedure>

1. Turn OFF the main power switch.

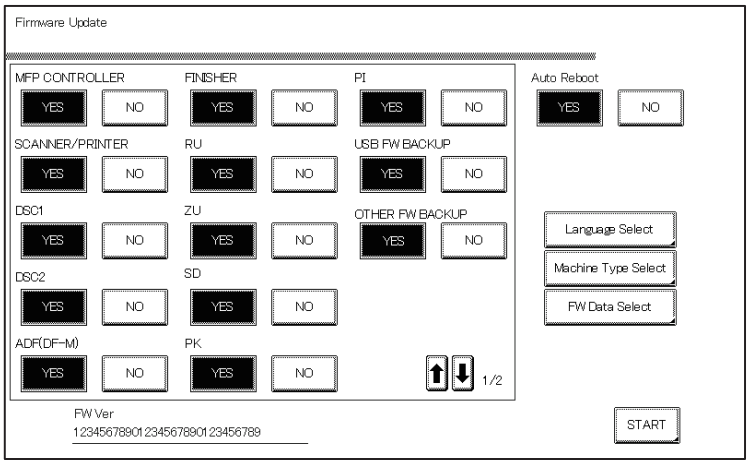


2. Connect the USB memory containing the firmware into the USB port on the right side of the control panel.



3. Remove the cover [1] at the back of the control panel.
4. Turn the main power switch ON while pressing the [Rear Stop] key [2].

5. Firmware Update selection screen is displayed.



NOTE

- **Unless one of the keys on the control panel is pressed, firmware is automatically updated after 30 seconds when the main power switch is turned on.**
- **Selectable items displayed change depending on equipped options, etc.**

Selecting the firmware data

- When multiple set of firmware data is stored in the USB memory, a set of data can be selected.
- The firmware data in the update data folder "FW0028" copied to the root directory of the USB memory is selected as the default data.

<Procedure>

1. Touch [FW Data Select] on the firmware update selection screen.
2. After the data in the USB memory is checked, a list of the available firmware data is displayed.
   - The default data is indicated by an asterisk (*).
3. Select the firmware, and touch [OK].

Language Selection

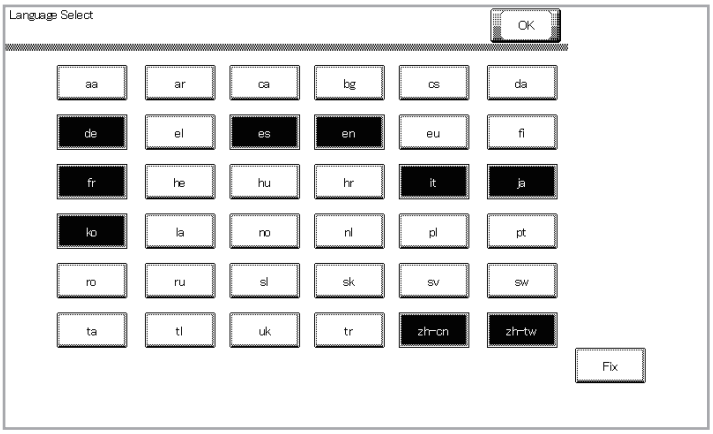
- Select the language data displayed on the Language Selection screen of Utility.
- Select languages as required according to, for example, the use environment of the user.

NOTE

- **Up to 9 languages are selectable. However, Japanese and English are essential options.**

<Procedure>

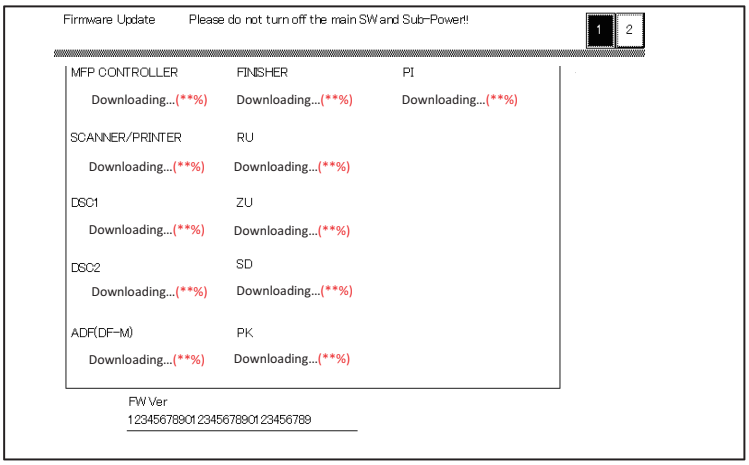
1. Touch [Language Select] on the firmware update selection screen.
2. On the Language Select screen, select a language to be displayed on the LCD area of the control panel, then touch [Fix].



3. Touch [OK].

Updating the firmware

1. Select the target firmware data to be updated in the Firmware Update selection screen. If multiple pages is displayed in the selection screen, check all of the pages.
2. Press the [START]. (At this time, the Power key LED starts blinking red.)
   NOTE
   - **The progress ratio of each board is displayed in writing the program.**



3. Check that the control panel shows the message indicating that the data has been rewritten correctly ([Downloading Completed]). (The Power key LED lights blue.)
   NOTE
   - **Check all pages, and make sure that no item is under firmware updating (Downloading...).**
4. Turn OFF the main power switch.
5. Remove the USB memory.
6. Turn ON the main power switch.
7. Check the firmware version in Service Mode.

2.3 Action when data transfer fails

- If "NG" appears on the control panel, indicating that rewriting has been unsuccessful (in which case the Power key LED lights up red), take the following steps.

1. Perform the data rewriting procedure again.
2. If the procedure is abnormally terminated, change the USB memory for a new one and try another rewriting sequence.
3. If the procedure is still abnormally terminated, change the board that has caused “NG” and carry out data rewriting procedure.

F/W to be updated	Appropriate board	Remark
MFP CONTROLLER	Storage board (STRGB)	-
SCANNER/PRINTER	CPU board (CPUB)	-
DSC1	DSC board/1 (DSCB/1)	Only when SC-509 is mounted
DSC2	-	-
ADF (DF-M)	DF control board (DFCB)	-
FINISHER	FS control board (FSCB)	Only when FS-539/539SD, or FS-540/FS-540SD is mounted
RU	-	-
ZU	ZU drive board (PIDB)	Only when ZU-609 is mounted
SD	-	Only when FS-539SD or FS-540SD is mounted
PK	Punch control board (PKCB)	Only when PK-526 is mounted
PI	PI drive board (PIDB)	Only when PI-507 is mounted

F/W to be updated	Appropriate board	Remark
FAX BOARD CONTROLLER1	Fax board/1 (FAX/1)	Only when FK-514 is mounted
FAX BOARD CONTROLLER2	Fax board/2 (FAX/2)	Only when FK-514 is mounted
FAX BOARD CONTROLLER3	Fax board/3 (FAX/3)	Only when FK-515 is mounted
FAX BOARD CONTROLLER4	Fax board/4 (FAX/4)	Only when FK-515 is mounted

3. Internet ISW

3.1 Service environment

- To use the “Internet ISW”, the MFP must be connected to such a network environment that the firmware can be downloaded on the Internet using the ftp or http protocol.
- The “Internet ISW” will not operate under the following conditions.
  - Main power switch is set to OFF.
  - Sub power auto power off mode is enabled.
  - [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON”.
  - Machine is operating, or there are jobs present (including appointed jobs).
  - Machine is in idle with suspended job.
  - Paper jam has occurred.
  - Image file is in the memory.
  - Model or the circuit board of the program does not match.

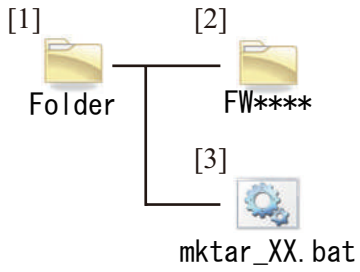
3.2 Preparation

3.2.1 Making the firmware data

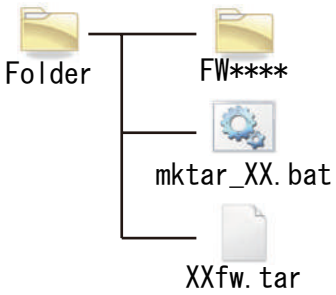
- It is necessary to convert the firmware data and save it in the target directory of the Internet ISW server for upgrading the firmware via Internet ISW.

<Procedure>

1. Uncompress the firmware file.
2. Drag and Drop the firmware folder “FW****” [2] which is in the uncompressed folder [1] into the batch file "mktar_A7PU.bat" [3] which is in the same folder.
   NOTE
   - **For the folder name of the folder [2] and the file name of the file [3], refer to “Table: Folder name, File name.”**



3. Windows command prompt runs and file generation starts.
4. The command prompt closes automatically when the processing completes.
5. "XXfw.tar" file is created in the same directory.
   NOTE
   - **For file name, refer to “Table: Folder name, File name.”**



6. Copy the "XXfw.tar" file to the predetermined directory of the Internet ISW program server.

Table: Folder name, File name

Product name	Firmware data folder name	File name (.bat)	File name (.tar)
bizhub 750i	FW0028	mktar_ACV7.bat	ACV7fw.tar

3.2.2 Internet ISW Set

- Enable Internet ISW function in [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Internet ISW Set].
- In [Service Mode] -> [Machine Update Setting] -> [Internet ISW], configure the settings related to Internet ISW functions, including the protocol to use and access settings to the program server.
- For detailed settings, refer to “ I.19.1 Internet ISW.”

3.3 Rewriting of Firmware

NOTE

- **When performing the Internet ISW, ask the administrator for permission beforehand.**
- **DO NOT turn OFF the main power switch while downloading.**

Update instruction

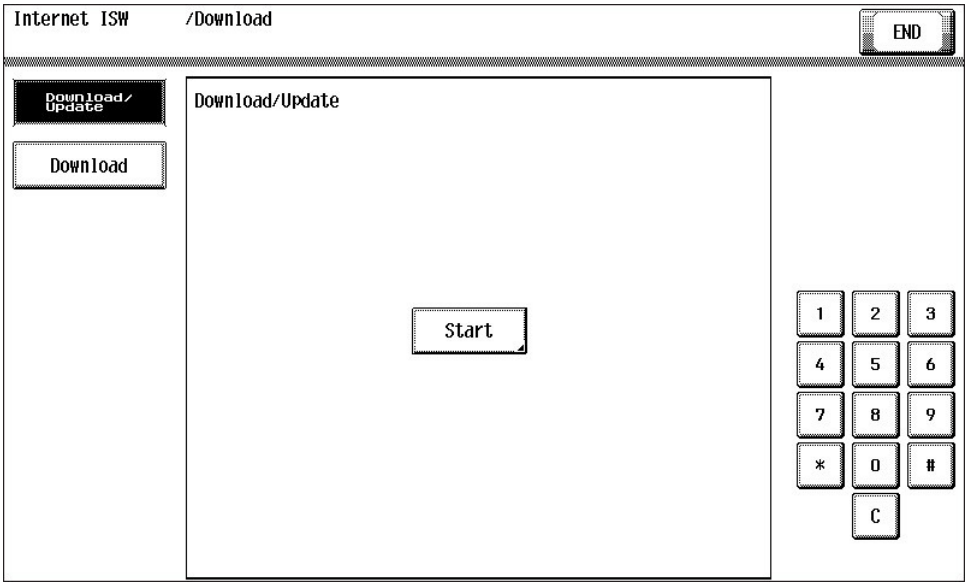
- The firmware update instruction by Internet ISW can be issued from the control panel, CS Remote Care, and Web Connection.

NOTE

- **When IP address of MFP is assigned by DHCP, the firmware rewriting will be failed by using [Download/Update] button. Use [Download] button in such case.**
- **The Static IP address of MFP is necessary to execute the firmware rewriting by CS Remote Care or Web Connection remotely.**
- **Updates cannot be performed via the [Download/Update] button when connected over Wi-Fi. Use [Download] button in such case.**

<Control panel>

1. Touch [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Download].
2. To download and update firmware data, select [Download/Update]. To only download firmware data and update it later, select [Download].
3. Touch [Start].



4. MFP accesses the program server and starts downloading the firmware data.
5. To download and update firmware data, select the types of firmware data to be written and replaced with a newer version in the Firmware Update screen and press [START].

   NOTE

   - **Unless one of the keys on the control panel is pressed, firmware is updated after 30 seconds when the unit has restarted.**
   - **The display item varies by the configuration of optional parts installed on this machine.**
   - **If multiple pages is displayed in the selection screen, check all of the pages.**

<CS Remote Care>

- Issue an update instruction from CS Remote Care center.
- For details, refer to the CS Remote Care Center manual.

NOTE

- **For detailed error information relating to CS Remote Care, refer to " I.8.1 Remote Care."**

<Web Connection>

1. Access the Web Connection of the MFP.
2. In the administrator mode, use [Internet ISW Set] -> [Firmware Update Parameters] to issue the update instruction.

During updating

1. After pressing [Start], the MFP main body connects to the program server and starts the download.
2. The message to indicate the status will be displayed on the screen while connecting or transferring data.

Completing update

<Firmware updated normally>

1. When the Firmware is normally updated, restart the MFP in auto or manual mode to display the outcome, and touch [OK] to return to the main screen.

<Failing to update the firmware due to the network trouble>

1. When updating failed to complete due to the trouble on connecting to the network, an error code and the message will be displayed.
2. Restart the MFP main body in auto or manual mode, and touch [OK]. It can be used with the firmware version before conducting updating.
3. Check the settings for the network by Internet ISW error codes, and try updating again.

<Failure to update firmware after starting the update process>

1. Once firmware updating has started, the ROM in the MFP will be deleted. When it failed right after updating has started, restart the MFP, and shift to the standby screen to retry downloading.
2. When updating on the control panel, touch [settings] on the standby screen, and check the Network settings again. Touch [Download], and restart the Internet ISW.

NOTE

- **Return to the standby screen without fail after turning the main power switch OFF/ON if the firmware is not updated.**
- **Firmware can be updated with the USB memory.**

4. Auto Update setting

4.1 Service environment

- To use the “Auto Update setting”, the MFP must be connected to such a network environment that the firmware data can be downloaded on the network using the SMB or http protocol.
- The Auto Update function will not operate when the MFP is under the following conditions.
  - Main power switch is set to OFF.
  - Sub power OFF mode (power key is orange) or ErP auto power OFF mode (power key flashes orange) enabled
  - [Administrator] -> [Security] -> [Enhanced Security Mode] is set to “ON”.
  - MFP is operating, or there are jobs present (including appointed jobs).
  - MFP is in idle with suspended job.
  - Trouble has occurred.
  - Image file is in the memory.
  - Model or the circuit board of the program does not match.

4.2 Preparation

- For using this Auto Update setting effectively, before executing the following procedures contact with the administrator to obtain an agreement.
- Convert the obtained firmware data to an appropriate format. Refer to “ K.3.2.1 Making the firmware data.”
- Create the program update information file (C_UpdateList.ini).
- Upload the firmware data and program update information file to the program server.
- Configure the settings related to the automatic update function in [Service Mode] -> [Machine Update Setting] -> [Machine Auto Update setting] -> [Auto Update setting].
- For details, see “ I.19.2.1 Auto Update setting.”

4.3 Rewriting of Firmware

Download

- The program server is accessed at the configured polling interval to check the program update information file.
- Compare the program update information file in the program server with that in the MFP, and starts downloading the firmware data with a changed Version number.

Auto Update of firmware

- If the MFP power is set to ON at the scheduled update time, rewriting is executed automatically. If the power is set to OFF, no rewriting will be executed.

5. How to install the i-Option data

5.1 Available function for i-Option

i-Option	Functions	Data location	How to install data when formatting the MFP storage
LK-104	Voice guidance	In the Standard firmware	[Service Mode] -> [System 2] -> [Install Data]
LK-105	Searchable PDF	In the Standard firmware	
LK-106	Barcode font	In the Standard firmware	n/a
LK-107	Unicode font	In the Standard firmware	LK-107/LK-108 font data installation procedure
LK-108	OCR font	In the Standard firmware	
LK-110	High functional Image Processing	In the Standard firmware	[Service Mode] -> [System 2] -> [Install Data]
LK-111	Enhancing external linkage (supported by ThinPrint)	In the Standard firmware	n/a
LK-114	Ubiquitous Printing	In the Standard firmware	
LK-115	TPM (Trusted Platform Module)	In the Standard firmware	
LK-116	Virus Scan	In the Standard firmware	
LK-117	IP fax (SIP)	In the Standard firmware	[Service Mode] -> [System 2] -> [Install Data]

5.2 LK-107/LK-108 font data installation procedure

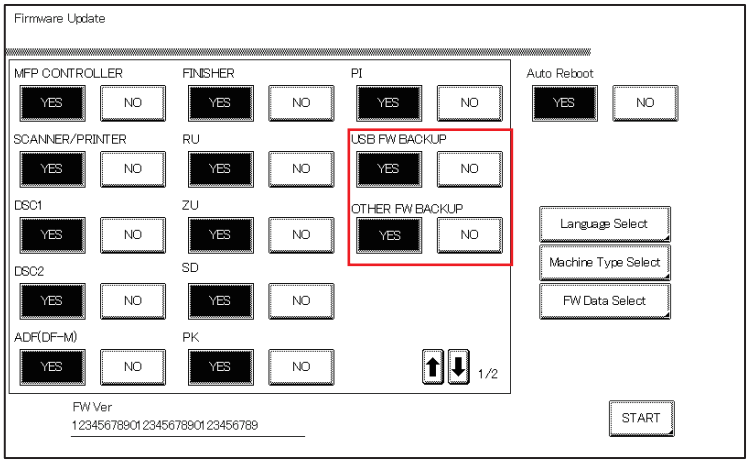
1. Prepare an USB memory.
2. Copy the font data to the root directory of the USB memory.
   - OCR font: download_OCRA-0.pdf
   - Unicode font: download_Andale_J-0.pdf, download_Andale_K-0.pdf, download_Andale_S-0.pdf, download_Andale_T-0.pdf
3. Turn ON the main power switch, and connect the USB memory to the USB port on the side of the control panel.
4. The message “Print a document from External Memory” will be displayed on the control panel, and select it.
5. The font data in the USB memory will be displayed, and select these data to print out.
6. The message “Document Printing Failed” will be displayed, and touch [OK].
7. Print out a PCL font list, and confirm that the font data are registered as following names.
   - LK-107: Andale Mono WT J, Andale Mono WT K, Andale Mono WT S, Andale Mono WT T
   - LK-108: OCR-A

6. Creating back up files when updating firmware

- By enabling backup, the old firmware data is backed up to the storage of the main body when the firmware is updated.
- If backup data exists in the storage of the main body, the old backup data is deleted and new firmware data is backed up.
- This enables you to restore the backed up firmware (rollback) if an error occurs when updating the firmware.
- To roll back the firmware, select [Service Mode] -> [Machine Update Settings] -> [Firmware Rollback].

<Procedure>

1. The firmware update selection screen is displayed when updating the firmware.
2. Touch [FW Backup] on the firmware update selection screen.



3. Select [USB FW BACKUP] and [OTHER FW BACKUP] in the firmware backup screen.
   - [USB FW BACKUP]: Select to execute backup when updating the firmware on the USB flash memory.
   - [OTHER FW BACKUP]: Select to execute backup when updating the firmware by non-USB Internet ISW or automatic update feature.
4. Touch [OK].
5. Update the firmware.

   NOTE
   - **The update process takes a few more minutes when creating a backup than when not creating a backup.**

L TROUBLESHOOTING

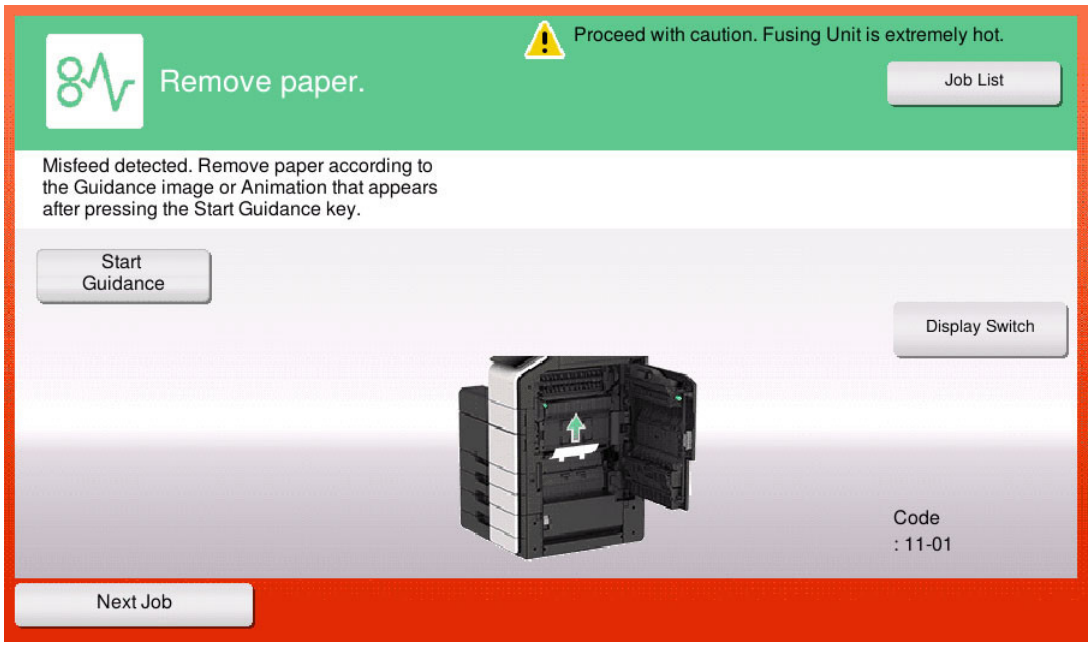
1. JAM CODE

1.1 JAM display

Display procedure

- When the paper jam occurred, the message, the jam clear procedure, the position jam occurred (number lights up), position of the remaining paper (number lights up), and the JAM code are displayed.
- Touch [Display Switch] to switch the screen showing the jam clear procedure or the jam occurring position.

Screen showing jam clear procedure



Screen showing the jam occurring position



NOTE

- **JAM code is displayed on the jam warning screen only when [Service Mode] -> [System 2] -> [JAM Code Display Setting] is set to "Display."**
- **To change the initial display when jam occurred to the screen showing the jam occurring position, set [Paper jam release procedure display settings] on the [Utility] -> [Utility] -> [Customize] -> [Active screen setting] to "OFF." When [Paper jam release procedure display settings] is set to "OFF," the "screen showing jam clear procedure" cannot be displayed.**
- **When a tray life-up failure (trouble code) occurred, for the trouble that can be cleared by removing the tray, the following screen is displayed showing users how to remove jammed paper and how to load paper properly. Therefore, for remaining paper jam, the screen will disappear.**



- **A trouble code (C-02XX) will be displayed if the tray lift-up failure cannot be cleared even when action has been taken by following the Guidance.**

Resetting procedures

1. Open the corresponding door, clear the sheet of paper misfeed, and close the door.
2. Touch “OK” displayed on the touch panel.

1.2 Initial check items

- When a paper misfeed occurs, first perform the following initial check items.

Check item	Action
Does paper meet product specifications?	Replace paper.
Is the paper curled, wavy, or damp?	Replace paper. Instruct user on proper paper storage.
Is a foreign object present along the paper path, or is the paper path deformed or worn?	Clean the paper path or replace the part on the paper path if necessary.
Are rolls or rollers dirty, deformed, or worn?	Clean the defective roll or roller. Replace the defective roll or roller.
Are the paper size and the detected paper size by the edge guide are matching?	Adjust the edge guide to match the paper size.
Are the actuators operating correctly?	Correct the defective actuator. Replace the defective actuator.

1.3 List of the JAM code

JAM code	JAM type
10-01	Misfeed at manual bypass paper feed section
10-02	
10-04	
10-40	
11-01	Misfeed at tray 1 paper feed section
11-02	
11-04	
11-05	
11-40	
12-01	Misfeed at tray 2 paper feed section
12-05	
12-40	
13-05	Misfeed at tray 3 paper feed section
13-40	
14-05	Misfeed at tray 4 paper feed section
14-40	
15-01	Misfeed at external LCT paper feed section
15-40	
17-30	Tray 3/4 horizontal transport section
17-31	
17-40	Tray 3/4 intermediate transport roller section
17-41	
20-01	Misfeed at vertical transport section
20-02	
20-04	
30-03	Misfeed at 2nd transfer section
32-01	Misfeed at fusing/paper exit section
32-05	
32-06	
32-30	
66-02	Misfeed at DF paper feed section
66-03	Misfeed at DF transport section
66-13	
66-23	
66-33	
66-04	Misfeed at DF paper exit section
66-14	
66-05	Misfeed at DF image reading section
66-06	
66-07	Misfeed at DF paper feed/transport/image reading/turnover/paper exit section
66-08	Double feed detection jam
66-54	DF controller jam
72-11	Misfeed at FS transport section
72-14	
72-15	
72-16	
72-17	
72-18	
72-19	
72-21	
72-22	
72-23	
72-25	Misfeed at SD paper exit section
72-26	
72-31	Misfeed at JS exit section

JAM code	JAM type
72-34	
72-35	Misfeed at PI section
72-40	Misfeed at ZU section
72-41	
72-43	Misfeed at PK section
72-49	Misfeed at PI section
72-50	
72-51	
72-75	Misfeed at FS paper exit section
72-76	
72-77	
72-81	Misfeed at FS staple section
72-84	Misfeed at SD staple section
72-85	Misfeed at SD transport section
72-86	
72-87	
75-42	Misfeed at RU section
75-43	
92-01	Misfeed at duplex pre-registration section
92-02	
92-04	
92-40	
93-10	Misfeed at duplex transport section
99-01	Controller JAM (paper size error (paper length))
99-02	Controller JAM (controller forced stop command)
99-03	Controller JAM (image processing)
99-04	Controller JAM (a job reservation in the main body is not released)
99-05	Controller JAM (main body not starting a job)
99-06	Controller JAM (print control on the main body is not completed)
99-07	Controller JAM (main body not completing a job)
99-08	Controller JAM (finisher not starting a job)
99-09	Controller JAM (finisher not completing a job)
99-10	Controller JAM (paper size error (paper width))
99-11	Controller JAM (main motor failure to turn)
99-12	Controller JAM (laser malfunction)
99-14	Controller JAM (image stabilization timeout)
99-15	Controller JAM (heating roller temperature sensor abnormally high temperature detection)

1.4 JAM that do not display the JAM code

JAM type	JAM detection timing	Ref. page
Misfeed at tray 1 paper feed section	Paper jam of a sheet of paper left at the tray 1 paper feed section results, if the tray 1 paper feed sensor (PS23) is turned ON when operation stops due to the tray 1 FD size error.	L.1.5.2 11-01, 11-02, 11-04, 11-05, 11-40
Misfeed at tray 2 paper feed section	Paper jam of a sheet of paper left at the tray 2 paper feed section results, if the tray 2 vertical transport sensor (PS19) is turned ON when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	L.1.5.3 12-01, 12-05, 12-40
	Paper jam of a sheet of paper left at the tray 2 paper feed section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	
Misfeed at tray 3 paper feed section	Paper jam of a sheet of paper left at the tray 3 paper feed section results, if the tray 3 paper feed sensor (PS152) is turned ON when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	L.1.5.4 13-05, 13-40
	Paper jam of a sheet of paper left at the tray 3 paper feed section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	

JAM type	JAM detection timing	Ref. page
Misfeed at tray 4 paper feed section	Paper jam of a sheet of paper left at the tray 4 paper feed section results, if the tray 4 paper feed sensor (PS162) is turned ON when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	L.1.5.5 14-05, 14-40
	Paper jam of a sheet of paper left at the tray 4 paper feed section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	
Misfeed at external LCT paper feed section	Paper jam of a sheet of paper left at the external LCT paper feed section results, if the LU paper feed sensor (PS3) is turned ON when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	L.1.5.6 15-01, 15-40
	Paper jam of a sheet of paper left at the external LCT paper feed section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	
Tray 3/4 horizontal transport section	Paper jam of a sheet of paper left at the tray 3/4 horizontal transport section results, if the horizontal transport sensor (PS158) is turned ON when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	L.1.5.8 17-30, 17-31
	Paper jam of a sheet of paper left at the tray 3/4 horizontal transport section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	
Tray 3/4 intermediate transport roller section	Paper jam of a sheet of paper left at the tray 3/4 intermediate transport roller section results, if the tray vertical transport sensor (PS153) is turned ON when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	L.1.5.9 17-40, 17-41
	Paper jam of a sheet of paper left at the tray 3/4 intermediate transport roller section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	
Misfeed at 2nd transfer section	Paper jam of a sheet of paper left at the 2nd transfer section results, if the registration sensor/1 (PS1) is turned ON (unblocked) when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	L.1.7.1 30-03
	Paper jam of a sheet of paper left at the 2nd transfer section results, if the registration sensor/2 (PS72) is turned ON when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	
	Paper jam of a sheet of paper left at the 2nd transfer section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	
Misfeed at fusing/paper exit section	Paper jam of a sheet of paper left at the paper exit section results, if the paper exit sensor (PS3) is turned ON (unblocked) when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	L.1.7.2 32-01, 32-05, 32-06, 32-30
	Paper jam of a sheet of paper left at the paper exit section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	
Misfeed at DF paper feed section	Paper jam of a sheet of paper left at the DF paper feed section results, if the after separate sensor (PS4) is turned ON when the main power switch is turned ON, a DF left cover is opened and closed, or a misfeed or malfunction is reset.	L.1.8.1 66-02
Misfeed at DF transport section	Paper jam of a sheet of paper left at the DF transfer section results, if the document registration sensor (PS5) is turned ON when the main power switch is turned ON, a DF left cover is opened and closed, or a misfeed or malfunction is reset.	L.1.8.2 66-03, 66-13, 66-23, 66-33
Misfeed at DF paper exit section	Paper jam of a sheet of paper left at the DF paper exit section results, if the document exit sensor (PS7) is turned ON (unblocked) when the main power switch is turned ON, a DF left cover is opened and closed, or a misfeed or malfunction is reset.	L.1.8.3 66-04, 66-14
Misfeed at DF image reading section	Paper jam of a sheet of paper left at the DF image reading section results, if the document reading sensor (PS6) is turned ON when the main power switch is turned ON, a DF left cover is opened and closed, or a misfeed or malfunction is reset.	L.1.8.4 66-05, 66-06
Misfeed at duplex pre-registration section	Paper jam of a sheet of paper left at the duplex pre-registration section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	L.1.10.1 92-01, 92-02, 92-04, 92-40

JAM type	JAM detection timing	Ref. page
Misfeed at duplex transport section	Paper jam of a sheet of paper left at the duplex transport section results, if the ADU paper passage sensor/1 (PS40) is turned ON (unblocked) or the ADU paper passage sensor/2 (PS41) is turned ON (blocked) when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	L.1.10.2 93-10
	Paper jam of a sheet of paper left at the duplex transport section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.	

1.5 1#-##

1.5.1 10-01, 10-02, 10-04, 10-40

Contents

JAM type	Misfeed at manual bypass paper feed section	
JAM code	10-01, 10-02, 10-04, 10-40	
JAM detection timing	10-01	The leading edge of the paper is not turned ON (unblocked) the registration sensor/1 (PS1) even after the lapse of a given period of time after the manual bypass tray starts to feed paper.
	10-02	For paper fed from the manual bypass tray, loop forming has not been complete before a sheet enters the registration roller because the rise timing of load to perform registration is earlier than the rise timing of load to form a loop.
	10-04	The leading edge of the paper is not turned ON the registration sensor/2 (PS72) even after the lapse of a given period of time after the manual bypass tray starts to feed paper.
	10-40	For paper fed from the manual bypass tray, the image write start signal permit continues to be disabled for a predetermined period of time after the timing of the image write start signal output.
Misfeed processing location	Right door	
Relevant parts	• Paper feed motor (M22) • Registration motor (M24) • Bypass tray paper feed clutch (CL7) • Bypass tray lift-up solenoid (SD1) • Bypass tray pick-up roller solenoid (SD6) • Registration sensor/1 (PS1) • Registration sensor/2 (PS72) • Base board (BASEB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS1 I/O check, sensor check	BASEB CN15E-9 (ON)	4-C
3	PS72 I/O check, sensor check	BASEB CN15E-19 (ON)	5-C
4	CL7 load check • Check code: 20 • Multi code: 3	BASEB CN26EA-12 (ON)	10-K
5	SD1 load check • Check code: 23 • Multi code: 3	BASEB CN26EA-9 (ON)	10-K
6	SD6 load check • Check code: 23 • Multi code: 3	BASEB CN26EA-7 (ON)	10-K
7	M22 load check • Check code: 28 • Multi code: 31, 34, 35	BASEB CN31E-1 to 4	23-K
8	M24 load check • Check code: 26 • Multi code: 1, 4, 5	BASEB CN31E-9 to 12	24-K
9	Replace BASEB.	-	-

1.5.2 11-01, 11-02, 11-04, 11-05, 11-40

Contents

JAM type	Misfeed at tray 1 paper feed section	
JAM code	11-01, 11-02, 11-04, 11-05, 11-40	
JAM detection timing	11-01	After the tray 1 starts to feed paper, the registration sensor/1 (PS1) is not turned ON (unblocked) even after the lapse of a given period of time after the leading edge of the paper has turned ON the tray 1 paper feed sensor (PS23).

	11-02	For paper fed from the tray 1, loop forming has not been complete before a sheet enters the registration roller because the rise timing of load to perform registration is earlier than the rise timing of load to form a loop.
	11-04	The leading edge of the paper is not turned ON (unblocked) the registration sensor/2 (PS72) even after the lapse of a given period of time after the tray 1 starts to feed paper.
	11-05	The leading edge of the paper is not turned ON the tray 1 paper feed sensor (PS23) even after the lapse of a given period of time after the tray 1 starts to feed paper.
	11-40	For paper fed from the tray 1, the image write start signal permit continues to be disabled for a predetermined period of time after the timing of the image write start signal output.
	-	Paper jam of a sheet of paper left at the tray 1 paper feed section results, if the tray 1 paper feed sensor (PS23) is turned ON when operation stops due to the tray 1 FD size error.
Misfeed processing location	• Right door • Tray 1	
Relevant parts	• Paper feed motor (M22) • Registration motor (M24) • Registration sensor/1 (PS1) • Tray 1 paper feed sensor (PS23) • Registration sensor/2 (PS72) • Base board (BASEB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS1 I/O check, sensor check	BASEB CN15E-9 (ON)	4-C
3	PS72 I/O check, sensor check	BASEB CN15E-19 (ON)	5-C
4	PS23 I/O check, sensor check	BASEB CN23E-2 (ON)	15-K
5	M22 load check • Check code: 28 • Multi code: 31, 34, 35	BASEB CN31E-1 to 4	23-K
6	M24 load check • Check code: 26 • Multi code: 1, 4, 5	BASEB CN31E-9 to 12	24-K
7	Replace BASEB.	-	-

1.5.3 12-01, 12-05, 12-40

Contents

JAM type	Misfeed at tray 2 paper feed section	
JAM code	12-01, 12-05, 12-40	
JAM detection timing	12-01	After the tray 2 starts to feed paper, the tray 2 vertical transport sensor (PS19) is not turned ON even after the lapse of a given period of time after the leading edge of the paper has turned ON the tray 2 paper feed sensor (PS20).
	12-05	The leading edge of the paper is not turned ON the tray 2 paper feed sensor (PS20) even after the lapse of a given period of time after the tray 2 starts to feed paper.
	12-40	For paper fed from the tray 2, the image write start signal permit continues to be disabled for a predetermined period of time after the timing of the image write start signal output.
	-	Paper jam of a sheet of paper left at the tray 2 paper feed section results, if the tray 2 vertical transport sensor (PS19) is turned ON when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
	-	Paper jam of a sheet of paper left at the tray 2 paper feed section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
Misfeed processing location	• Right door • Tray 2	
Relevant parts	• Paper feed motor (M22) • Tray 2 vertical transport motor (M23) • Tray 2 paper feed clutch (CL1) • Tray 2 vertical transport sensor (PS19) • Tray 2 paper feed sensor (PS20) • Base board (BASEB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS19 I/O check, sensor check	BASEB CN23E-8 (ON)	15-K
3	PS20 I/O check, sensor check	BASEB CN23E-5 (ON)	15-K
4	CL1 load check • Check code: 20	BASEB CN23E-16 (ON)	16-K

Step	Action	Control signal	Location of electrical component
	• Multi code: 2		
5	M22 load check • Check code: 28 • Multi code: 31, 34, 35	BASEB CN31E-1 to 4	23-K
6	M23 load check • Check code: 28 • Multi code: 36, 39, 40	BASEB CN31E-5 to 8	23-K
7	Replace BASEB.	-	-

1.5.4 13-05, 13-40

Contents

JAM type	Misfeed at tray 3 paper feed section	
JAM code	13-05, 13-40	
JAM detection timing	13-05	The leading edge of the paper is not turned ON the tray 3 paper feed sensor (PS152) even after the lapse of a given period of time after the tray 3 starts to feed paper.
	13-40	For paper fed from the tray 3, the image write start signal permit continues to be disabled for a predetermined period of time after the timing of the image write start signal output.
	-	Paper jam of a sheet of paper left at the tray 3 paper feed section results, if the tray 3 paper feed sensor (PS152) is turned ON when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
Misfeed processing location	Tray 3/4 horizontal transport unit	
Relevant parts	• Transport motor (M152) • Tray 3 paper feed clutch (CL151) • Tray 3 paper feed sensor (PS152) • PC control board (PCCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS152 I/O check, sensor check	PCCB CN7-2 (ON)	PC-417 5-C
3	CL151 operation check	PCCB CN19-1 (ON)	PC-417 6-C
4	M152 load check • Check code: 28 • Multi code: 51, 52, 53, 54, 55	PCCB CN5-1 to 8	PC-417 7-K
5	Replace PCCB.	-	-

1.5.5 14-05, 14-40

Contents

JAM type	Misfeed at tray 4 paper feed section	
JAM code	14-05, 14-40	
JAM detection timing	14-05	The leading edge of the paper is not turned ON the tray 4 paper feed sensor (PS162) even after the lapse of a given period of time after the tray 4 starts to feed paper.
	14-40	For paper fed from the tray 4, the image write start signal permit continues to be disabled for a predetermined period of time after the timing of the image write start signal output.
	-	Paper jam of a sheet of paper left at the tray 4 paper feed section results, if the tray 4 paper feed sensor (PS162) is turned ON when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
Misfeed processing location	Right door	
Relevant parts	• Transport motor (M152) • Tray 4 paper feed clutch (CL161) • Tray 4 paper feed sensor (PS162) • PC control board (PCCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS162 I/O check, sensor check	PCCB CN4-11 (ON)	PC-417 3-C
3	CL161 operation check	PCCB CN19-3 (ON)	PC-417 6-C
4	M152 load check • Check code: 28 • Multi code: 51, 52, 53, 54, 55	PCCB CN5-1 to 8	PC-417 7-K
5	Replace PCCB.	-	-

1.5.6 15-01, 15-40

Contents

JAM type	Misfeed at external LCT paper feed section (When LU-205 or LU-303 is installed)	
JAM code	15-01, 15-40	
JAM detection timing	15-01	The leading edge of the paper is not turned ON the LU paper feed sensor (PS3) even after the lapse of a given period of time after the external LCT starts to feed paper.
	15-40	For paper fed from the external LCT, the image write start signal permit continues to be disabled for a predetermined period of time after the timing of the image write start signal output.
	-	Paper jam of a sheet of paper left at the external LCT paper feed section results, if the LU paper feed sensor (PS3) is turned ON when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
	-	Paper jam of a sheet of paper left at the external LCT paper feed section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
Misfeed processing location	Right door	
Relevant parts	• LU paper feed motor (M2) • LU paper feed sensor (PS3) • LU drive board (LUDB) • Base board (BASEB) • PC control board (PCCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Make the pick-up roller load adjustment of the LCT.	-	-
3	PS3 I/O check, sensor check	LUDB CN5-8 (ON)	LU-205 / LU-303 4-G
4	M2 load check • Check code: 28 • Multi code: 41, 44, 45	LUDB CN4-5 to 8	LU-205 / LU-303 3-G
5	Replace LUDB. (LU-205 / LU-303)	-	-
6	Replace BASEB.	-	-
7	PCCB F10 or F12 conduction check.	-	-
8	Replace PCCB.	-	-

1.5.7 17-20

Contents

JAM type	Misfeed at external LCT transport section (When LU-205 or LU-303 is installed)	
JAM code	17-20	
JAM detection timing	17-20	The tray 2 vertical transport sensor (PS19) is not turned ON even after the lapse of a given period of time after the paper has turned ON the paper feed sensor (PS3).
	-	Paper jam of a sheet of paper left at the external LCT transport section results, if the LU paper feed sensor (PS3) is turned ON when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
Misfeed processing location	Right bottom door	
Relevant parts	• LU transport motor (M3) • Tray 2 vertical transport motor (M23) • LU paper feed sensor (PS3) • Tray 2 vertical transport sensor (PS19) • LU drive board (LUDB) • Base board (BASEB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS3 I/O check, sensor check	LUDB CN5-8 (ON)	LU-205 / LU-303 4-G
3	PS19 I/O check, sensor check	BASEB CN23E-8 (ON)	16-K
4	M3 load check • Check code: 28 • Multi code: 46, 49, 50	LUDB CN4-1 to 4	LU-205 / LU-303 3-G
5	M23 load check • Check code: 28 • Multi code: 36, 39, 40	BASEB CN31E-5 to 8	23-K
6	Replace LUDB. (LU-205 / LU-303)	-	-

Step	Action	Control signal	Location of electrical component
7	Replace BASEB.	-	-

1.5.8 17-30, 17-31

Contents

JAM type	Tray 3/4 horizontal transport section	
JAM code	17-30, 17-31	
JAM detection timing	17-30	The horizontal transport sensor (PS158) is not turned ON even after the lapse of a given period of time after the leading edge of the paper has turned ON the tray 3 paper feed sensor (PS152).
	17-31	The vertical transport sensor (PS153) is not turned ON even after the lapse of a given period of time after the leading edge of the paper has turned ON the horizontal transport sensor (PS158).
	-	Paper jam of a sheet of paper left at the tray 3/4 horizontal transport section results, if the horizontal transport sensor (PS158) is turned ON when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
	-	Paper jam of a sheet of paper left at the tray 3/4 horizontal transport section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
Misfeed processing location	Tray 3/4 horizontal transport unit	
Relevant parts	• Intermediate motor (M151) • Transport motor (M152) • Tray 3 transport clutch (CL152) • Horizontal transport clutch (CL153) • Tray 3 paper feed sensor (PS152) • Vertical transport sensor (PS153) • Horizontal transport sensor (PS158) • PC control board (PCCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS152 I/O check, sensor check	PCCB CN7-2 (ON)	PC-417 5-C
3	PS158 I/O check, sensor check	PCCB CN7-5 (ON)	PC-417 5-C
4	PS153 I/O check, sensor check	PCCB CN4-14 (ON)	PC-417 2-C
5	CL152 operation check	PCCB CN19-6 (ON)	PC-417 6-C
6	CL153 operation check	PCCB CN19-8 (ON)	PC-417 5-C
7	M151 load check • Check code: 28 • Multi code: 56, 57, 58, 59	PCCB CN20-1 to 3	PC-417 7-K
8	M152 load check • Check code: 28 • Multi code: 51, 52, 53, 54	PCCB CN5-1 to 8	PC-417 7-K
9	PCCB F4 conduction check	-	-
10	Replace PCCB.	-	-

1.5.9 17-40, 17-41

Contents

JAM type	Tray 3/4 intermediate transport roller section	
JAM code	17-40, 17-41	
JAM detection timing	17-40	The vertical transport sensor (PS153) is not turned ON even after the lapse of a given period of time after the leading edge of the paper has turned ON the tray 4 paper feed sensor (PS162).
	17-41	The tray 2 vertical transport sensor (PS19) is not turned ON even after the lapse of a given period of time after the leading edge of the paper has turned ON the vertical transport sensor (PS153).
	-	Paper jam of a sheet of paper left at the tray 3/4 intermediate transport roller section results, if the tray vertical transport sensor (PS153) is turned ON when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
	-	Paper jam of a sheet of paper left at the tray 3/4 intermediate transport roller section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
Misfeed processing location	• Right door • Tray 3/4 horizontal transport unit	
Relevant parts	• Intermediate motor (M151) • Transport motor (M152) • Tray 2 vertical transport motor (M23) • Tray 4 paper feed clutch (CL161)	

	• Vertical transport sensor (PS153) • Tray 4 paper feed sensor (PS162) • Tray 2 vertical transport sensor (PS19) • PC control board (PCCB) • Base board (BASEB)

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS153 I/O check, sensor check	PCCB CN4-14 (ON)	PC-417 2-C
3	PS162 I/O check, sensor check	PCCB CN4-11 (ON)	PC-417 3-C
4	PS19 I/O check, sensor check	BASEB CN23E-8 (ON)	15-K
5	CL161 operation check	PCCB CN19-3 (ON)	PC-417 6-C
6	M151 load check • Check code: 28 • Multi code: 56, 57, 58, 59, 60	PCCB CN20-1 to 3	PC-417 7-K
7	M152 load check • Check code: 28 • Multi code: 51, 52, 53, 54, 55	PCCB CN5-1 to 8	PC-417 7-K
8	M23 load check • Check code: 28 • Multi code: 36, 39, 45	BASEB CN31E-5 to 8	23-K
9	PCCB F4 conduction check	-	-
10	Replace PCCB.	-	-
11	Replace BASEB.	-	-

1.6 2#-##

1.6.1 20-01, 20-02, 20-04

Contents

JAM type	Misfeed at vertical transport section	
JAM code	20-01, 20-02, 20-04	
JAM detection timing	20-01	The registration sensor/1 (PS1) is not turned ON (unblocked) even after the lapse of a given period of time after the leading edge of the paper has turned ON the tray 2 vertical transport sensor (PS19).
	20-02	For paper fed from the tray 2, 3 or 4, loop forming has not been complete before a sheet enters the registration roller because the rise timing of load to perform registration is earlier than the rise timing of load to form a loop.
	20-04	The registration sensor/2 (PS72) is not turned ON even after the lapse of a given period of time after the leading edge of the paper has turned ON the tray 2 vertical transport sensor (PS19).
Misfeed processing location	Right door	
Relevant parts	• Tray 2 vertical transport motor (M23) • Registration motor (M24) • Registration sensor/1 (PS1) • Tray 2 vertical transport sensor (PS19) • Registration sensor/2 (PS72) • Base board (BASEB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS1 I/O check, sensor check	BASEB CN15E-9 (ON)	4-C
3	PS72 I/O check, sensor check	BASEB CN15E-19 (ON)	5-C
4	PS19 I/O check, sensor check	BASEB CN23E-8 (ON)	15-K
5	M23 load check • Check code: 28 • Multi code: 36, 39, 45	BASEB CN31E-5 to 8	23-K
6	M24 load check • Check code: 26 • Multi code: 1, 4, 5	BASEB CN31E-9 to 12	24-K
7	Replace BASEB.	-	-

1.7 3#-##

1.7.1 30-03

Contents

JAM type	Misfeed at 2nd transfer section	
JAM code	30-03	
JAM detection timing	30-03	The fusing loop sensor (PS2) is not turned ON (unblocked) even after the lapse of a given period of time after the leading edge of the paper has turned ON (unblocked) the registration sensor/1 (PS1).
	-	Paper jam of a sheet of paper left at the 2nd transfer section results, if the registration sensor/1 (PS1) is turned ON (unblocked) when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
	-	Paper jam of a sheet of paper left at the 2nd transfer section results, if the registration sensor/2 (PS72) is turned ON when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
	-	Paper jam of a sheet of paper left at the 2nd transfer section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
Misfeed processing location	Right door	
Relevant parts	• Transport motor (M1) • Registration motor (M24) • Registration sensor/1 (PS1) • Fusing loop sensor (PS2) • Registration sensor/2 (PS72) • Expansion control board (EXCB) • Base board (BASEB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS1 I/O check, sensor check	BASEB CN15E-9 (ON)	4-C
3	PS72 I/O check, sensor check	BASEB CN15E-19 (ON)	5-C
4	PS2 I/O check, sensor check	EXCB CN13EX-6 (ON)	15-X
5	M1 load check • Check code: 40 • Multi code: 1, 4, 5	BASEB CN19E-1 to 5	1-C
6	M24 load check • Check code: 26 • Multi code: 1, 4, 5	BASEB CN31E-9 to 12	24-K
7	Replace EXCB.	-	-
8	Replace BASEB.	-	-

1.7.2 32-01, 32-05, 32-06, 32-30

Contents

JAM type	Misfeed at fusing/paper exit section	
JAM code	32-01, 32-05, 32-06, 32-30	
JAM detection timing	32-01	The leading edge of the paper is not turned ON (unblocked) the ADU paper passage sensor/1 (PS40) even after the lapse of a given period of time after the reverse sequence is started.
	32-05	The paper exit sensor (PS3) is not turned OFF (blocked) even after the lapse of a given period of time after the leading edge of the paper has turned ON (unblocked) PS3.
	32-06	The paper exit sensor (PS3) is not turned ON (unblocked) even after the lapse of a given period of time after the leading edge of the paper has turned ON (unblocked) the fusing loop sensor (PS2).
	32-30	A trouble of the heating roller assy's failure to turn has been detected during a print cycle.
	-	Paper jam of a sheet of paper left at the paper exit section results, if the paper exit sensor (PS3) is turned ON (unblocked) when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
	-	Paper jam of a sheet of paper left at the paper exit section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
Misfeed processing location	Right door	
Relevant parts	• Fusing motor (M3) • Paper exit/reverse motor (M4) • ADU transport motor/1 (M5) • Exit path switch solenoid (SD3) • Fusing loop sensor (PS2)	

	• Paper exit sensor (PS3) • ADU paper passage sensor/1 (PS40) • Expansion control board (EXCB) • Base board (BASEB)

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS2 I/O check, sensor check	EXCB CN13EX-6 (ON)	15-X
3	PS3 I/O check, sensor check	BASEB CN22E-3 (ON)	11-C
4	PS40 I/O check, sensor check	BASEB CN22E-6 (ON)	11-C
5	SD3 load check • Check code: 83 • Multi code: 0	BASEB CN13E-7 (ON)	14-C
6	M3 load check • Check code: 45 • Multi code: 1, 4, 6	BASEB CN19E-6 to 10	1-C
7	M4 load check • Check code: 84 • Multi code: 1, 4, 6, 9, 10	BASEB CN18E-3 to 6	6-C
8	M5 load check • Check code: 85 • Multi code: 1, 4, 5	BASEB CN18E-7 to 10	6-C
9	Replace EXCB.	-	-
10	Replace BASEB.	-	-

1.8 6#-##

1.8.1 66-02

Contents

JAM type	Misfeed at DF paper feed section	
JAM code	66-02	
JAM detection timing	66-02	The after separate sensor (PS4) is not turned ON even after the lapse of a given period of time after the document feed motor (M1) has energized.
	-	Paper jam of a sheet of paper left at the DF paper feed section results, if the after separate sensor (PS4) is turned ON when the main power switch is turned ON, a DF left cover is opened and closed, or a misfeed or malfunction is reset.
Misfeed processing location	Left cover	
Relevant parts	• Document feed motor (M1) • Document feed clutch (CL1) • After separate sensor (PS4) • DF control board (DFCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Make the adjusting the pressure of the separation roller.	-	-
3	PS4 I/O check, sensor check	DFCB CN5A-8 (ON)	DF 8-J
4	CL1 load check • Check code: 60 • Multi code: 145	DFCB CN19-5 (ON)	DF 5-C
5	M1 load check • Check code: 60 • Multi code: 1, 2	DFCB CN3-1 to 4	DF 12-C
6	DFCB ICP2 or ICP10 conduction check.	-	-
7	Replace DFCB.	-	-

1.8.2 66-03, 66-13, 66-23, 66-33

Contents

JAM type	Misfeed at DF transport section	
JAM code	66-03, 66-13, 66-23, 66-33	
JAM detection timing	66-03	The after separate sensor (PS4) is not turned OFF even after the lapse of a given period of time after PS4 has turned ON.

	66-13	The document registration sensor (PS5) is not turned ON even after the lapse of a given period of time after the after separate sensor (PS4) has turned ON.
	66-23	The document registration sensor (PS5) is not turned OFF even after the lapse of a given period of time after PS5 has turned ON.
	66-33	The document reading sensor (PS6) is not turned ON after a lapse of a given time after the document registration sensor (PS5) is turned ON.
	-	Paper jam of a sheet of paper left at the DF transfer section results, if the document registration sensor (PS5) is turned ON when the main power switch is turned ON, a DF left cover is opened and closed, or a misfeed or malfunction is reset.
Misfeed processing location	Left cover	
Relevant parts	• Document feed motor (M1) • Document registration motor (M2) • Document reading motor (M3) • Document feed clutch (CL1) • After separate sensor (PS4) • Document registration sensor (PS5) • Document reading sensor (PS6) • DF control board (DFCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS4 I/O check, sensor check	DFCB CN5A-8 (ON)	DF 8-J
3	PS5 I/O check, sensor check	DFCB CN5B-8 (ON)	DF 9-J
4	PS6 I/O check, sensor check	DFCB CN11-2 (ON)	DF 2-C
5	CL1 load check • Check code: 60 • Multi code: 145	DFCB CN19-5 (ON)	DF 5-C
6	M1 load check • Check code: 60 • Multi code: 1, 2	DFCB CN3-1 to 4	DF 12-C
7	M2 load check • Check code: 60 • Multi code: 17, 18, 19	DFCB CN3-5 to 10	DF 12-C
8	M3 load check • Check code: 60 • Multi code: 33, 34, 35	DFCB CN2-1 to 6	DF 13-C
9	DFCB ICP3 or ICP11 conduction check.	-	-
10	Replace DFCB.	-	-

1.8.3 66-04, 66-14

Contents

JAM type	Misfeed at DF paper exit section	
JAM code	66-04, 66-14	
JAM detection timing	66-04	The document exit sensor (PS7) is not turned ON (unblocked) even after the lapse of a given period of time after the document reading sensor (PS6) has turned ON.
	66-14	The document exit sensor (PS7) is not turned OFF (blocked) even after the lapse of a given period of time after the document reading sensor (PS6) has turned OFF.
	-	Paper jam of a sheet of paper left at the DF paper exit section results, if the document exit sensor (PS7) is turned ON (unblocked) when the main power switch is turned ON, a DF left cover is opened and closed, or a misfeed or malfunction is reset.
Misfeed processing location	• Left cover • Opening and closing guide	
Relevant parts	• Document reading motor (M3) • Document exit motor (M4) • Document reading sensor (PS6) • Document exit sensor (PS7) • DF control board (DFCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS6 I/O check, sensor check	DFCB CN11-2 (ON)	DF 2-C
3	PS7 I/O check, sensor check	DFCB CN13-3 (ON)	DF 7-C
4	M3 load check • Check code: 60	DFCB CN2-1 to 6	DF 13-C

Step	Action	Control signal	Location of electrical component
	• Multi code: 33, 34, 35		
5	M4 load check • Check code: 60 • Multi code: 49, 50, 51, 52	DFCB CN15-1 to 4	DF 11-C
6	Replace DFCB.	-	-

1.8.4 66-05, 66-06

Contents

JAM type	Misfeed at DF image reading section	
JAM code	66-05, 66-06	
JAM detection timing	66-05	The document reading sensor (PS6) is not turned OFF after a lapse of a given time after the document registration sensor (PS5) is turned OFF.
	66-06	The document reading sensor (PS6) is turned ON earlier than a given time after PS6 is turned OFF during original transportation.
	-	Paper jam of a sheet of paper left at the DF image reading section results, if the document reading sensor (PS6) is turned ON when the main power switch is turned ON, a DF left cover is opened and closed, or a misfeed or malfunction is reset.
Misfeed processing location	Left cover	
Relevant parts	• Document reading motor (M3) • Document registration sensor (PS5) • Document reading sensor (PS6) • DF control board (DFCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Make the adjustment of original stop position.	-	-
3	PS5 I/O check, sensor check	DFCB CN5B-8 (ON)	DF 9-J
4	PS6 I/O check, sensor check	DFCB CN11-2 (ON)	DF 2-C
5	M3 load check • Check code: 60 • Multi code: 33, 34, 35	DFCB CN2-1 to 6	DF 13-C
6	DFCB ICP1 conduction check	-	-
7	Replace DFCB.	-	-

1.8.5 66-07

Contents

JAM type	Misfeed at DF paper feed/transport/image reading/turnover/paper exit section	
JAM code	66-07	
JAM detection timing	66-07	Due to a remaining sheet of paper that has not been detected by sensors, before the start of a job, a sensor detects the sheet at an unexpected timing.
Misfeed processing location	Left cover	
Relevant parts	• Document registration sensor (PS5) • Document reading sensor (PS6) • Document exit sensor (PS7) • DF control board (DFCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Make the adjustment of original stop position.	-	-
3	Make the adjusting the pressure of the separation roller.	-	-
4	PS5 I/O check, sensor check	DFCB CN5B-8 (ON)	DF 9-J
5	PS6 I/O check, sensor check	DFCB CN11-2 (ON)	DF 2-C
6	PS7 I/O check, sensor check	DFCB CN13-3 (ON)	DF 7-C
7	Replace DFCB.	-	-

1.8.6 66-08

Contents

JAM type	Double feed detection jam

JAM code	66-08	
JAM detection timing	66-08	The double feed of document is detected within a given period of time after the leading edge of the paper has turned ON the document registration sensor (PS5).
Misfeed processing location	Left cover	
Relevant parts	• Multi feed detection board/TX (MFDB/TX) • Multi feed detection board/RX (MFDB/RX) • DF control board (DFCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Replace MFDB/TX.	-	-
3	Replace MFDB/RX.	-	-
4	Replace DFCB.	-	-

1.8.7 66-54

Contents

JAM type	DF controller jam	
JAM code	66-54	
JAM detection timing	66-54	The lift up DF lift-up lower limit sensor (PS3) is not turned ON after a lapse of a given time after the last sheet of original is fed out.
Misfeed processing location	Left cover	
Relevant parts	• Document feed motor (M1) • Document registration motor (M2) • Document reading motor (M3) • Document exit motor (M4) • After separate sensor (PS4) • Document registration sensor (PS5) • Document reading sensor (PS6) • Document exit sensor (PS7) • DF control board (DFCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS4 I/O check, sensor check	DFCB CN5A-8 (ON)	DF 8-J
3	PS5 I/O check, sensor check	DFCB CN5B-8 (ON)	DF 9-J
4	PS6 I/O check, sensor check	DFCB CN11-2 (ON)	DF 2-C
5	PS7 I/O check, sensor check	DFCB CN13-3 (ON)	DF 7-C
6	M1 load check • Check code: 60 • Multi code: 1, 2	DFCB CN3-1 to 4	DF 12-C
7	M2 load check • Check code: 60 • Multi code: 17, 18, 19	DFCB CN3-5 to 10	DF 12-C
8	M3 load check • Check code: 60 • Multi code: 33, 34, 35	DFCB CN2-1 to 6	DF 13-C
9	M4 load check • Check code: 60 • Multi code: 49, 50, 51, 52	DFCB CN15-1 to 4	DF 11-C
10	Replace DFCB.	-	-

1.9 7#-##

1.9.1 72-11

Contents

JAM type	Misfeed at FS transport section (When FS-540 or FS-540SD is installed)	
JAM code	72-11	
JAM detection timing	72-11	The FNS middle sensor (PS36) is not turned ON even after the set period of time has elapsed after the FNS entrance sensor (PS34) is turned ON by the paper.
Misfeed processing location	Front door	

Relevant parts	• FNS entry transport motor (M20) • ZU discharge motor (M21) • FNS entrance sensor (PS34) • FNS middle sensor (PS36) • FS control board (FSCB)

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS34 I/O check, sensor check	FSCB J8<A>-5 (ON)	FS-540/FS-540SD 7-D
3	PS36 I/O check, sensor check	FSCB J12<A>-10 (ON)	FS-540/FS-540SD 14 to 15-D
4	M20 operation check	FSCB J8<A>-8 to 11	FS-540/FS-540SD 7-D
5	M21 operation check	FSCB J8<A>-12 to 15	FS-540/FS-540SD 7-D
6	Replace FSCB.	-	-

1.9.2 72-14

(1) When FS-539 or FS-539SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-539 or FS-539SD is installed)	
JAM code	72-14	
JAM detection timing	72-14	The saddle exit sensor (PS5) is not turned ON even after the lapse of a given period of time after the leading edge of the paper has turned ON the main tray exit sensor (PS16).
Misfeed processing location	Front door	
Relevant parts	• FNS discharge motor (M3) • Saddle exit sensor (PS5) • Main tray exit sensor (PS16) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS5 I/O check, sensor check	FSCB J5-2 (ON)	FS-539/FS-539SD 16-K
3	PS16 I/O check, sensor check	FSCB J9<B>-5 (ON)	FS-539/FS-539SD 11-C
4	M3 operation check	FSCB J9<A>-5 to 8	FS-539/FS-539SD 12-C
5	Replace FSCB.	-	-

(2) When FS-540 or FS-540SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-540 or FS-540SD is installed)	
JAM code	72-14	
JAM detection timing	72-14	The SD discharge sensor (PS35) is not turned ON even after the set period of time has elapsed after the main tray exit sensor (PS37) is turned ON by the paper.
Misfeed processing location	Front door	
Relevant parts	• FNS discharge motor (M17) • SD discharge sensor (PS35) • Main tray exit sensor (PS37) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS35 I/O check, sensor check	FSCB J14<B>-2 (ON)	FS-540/FS-540SD 17-K to L
3	PS37 I/O check, sensor check	FSCB J12<B>-10 (ON)	FS-540/FS-540SD 16-D
4	M17 operation check	FSCB J14<A>-1 to 4	FS-540/FS-540SD 18-K to L
5	Replace FSCB.	-	-

1.9.3 72-15

(1) When FS-539 or FS-539SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-539 or FS-539SD is installed)

JAM code	72-15	
JAM detection timing	72-15	The saddle exit sensor (PS5) is not turned OFF after the lapse of a given period of time after the leading edge of the paper has turned ON PS5.
Misfeed processing location	Front door	
Relevant parts	• SD transport motor (M101) • Saddle exit sensor (PS5) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS5 I/O check, sensor check	FSCB J5-2 (ON)	FS-539/FS-539SD 16-K
3	M101 operation check	SDCB J5-8 to 11	FS-539/FS-539SD 3-L
4	Replace FSCB.	-	-

(2) When FS-540 or FS-540SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-540 or FS-540SD is installed)	
JAM code	72-15	
JAM detection timing	72-15	The SD discharge sensor (PS35) is not turned OFF even after the lapse of a given period of time after the leading edge of the paper has turned ON PS35.
Misfeed processing location	Front door	
Relevant parts	• SD discharge motor (M16) • SD discharge sensor (PS35) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS35 I/O check, sensor check	FSCB J14<B>-2 (ON)	FS-540/FS-540SD 17-K to L
3	M16 operation check	FSCB J8<B>-1 to 4	FS-540/FS-540SD 8-D
4	Replace FSCB.	-	-

1.9.4 72-16

(1) When FS-539 or FS-539SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-539 or FS-539SD is installed)	
JAM code	72-16	
JAM detection timing	72-16	The FNS entrance sensor (PS4) is not turned ON even after the lapse of a given period of time after the leading edge of the paper has turned ON (blocked) the RU entrance sensor (PS2).
Misfeed processing location	Horizontal transport unit cover	
Relevant parts	• RU transport motor (M1) • RU entrance sensor (PS2) • FNS entrance sensor (PS4) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS2 I/O check, sensor check	FSCB J6-7 (ON)	FS-539/FS-539SD 12-K
3	PS4 I/O check, sensor check	FSCB J4<B>-9 (ON)	FS-539/FS-539SD 15-C
4	M1 operation check	FSCB J6-1 to 4	FS-539/FS-539SD 11-K
5	Replace FSCB.	-	-

(2) When FS-540 or FS-540SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-540 or FS-540SD is installed)
JAM code	72-16

JAM detection timing	72-16	The FNS entrance sensor (PS34) is not turned ON even after the lapse of a given period of time after the leading edge of the paper has turned ON (blocked) the RU entrance sensor (PS2).
Misfeed processing location	Horizontal transport unit cover	
Relevant parts	• RU transport motor (M1) • RU entrance sensor (PS2) • FNS entrance sensor (PS34) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS2 I/O check, sensor check	FSCB J8<B>-12 (ON)	FS-540/FS-540SD 8-D
3	PS34 I/O check, sensor check	FSCB J8<A>-5 (ON)	FS-540/FS-540SD 7-D
4	M1 operation check	FSCB J8<A>-6 to 9	FS-540/FS-540SD 8-D
5	Replace FSCB.	-	-

1.9.5 72-17

(1) When FS-539 or FS-539SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-539 or FS-539SD is installed)	
JAM code	72-17	
JAM detection timing	72-17	The FNS entrance sensor (PS4) is not turned OFF even after the lapse of a given period of time after the leading edge of the paper has turned ON PS4.
Misfeed processing location	Front door	
Relevant parts	• FNS entry transport motor (M2) • FNS entrance sensor (PS4) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS4 I/O check, sensor check	FSCB J4<B>-9 (ON)	FS-539/FS-539SD 15-C
3	M2 operation check	FSCB J9<A>-1 to 4	FS-539/FS-539SD 12-C
4	Replace FSCB.	-	-

(2) When FS-540 or FS-540SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-540 or FS-540SD is installed)	
JAM code	72-17	
JAM detection timing	72-17	The FNS entrance sensor (PS34) is not turned OFF even after the lapse of a given period of time after the leading edge of the paper has turned ON PS34.
Misfeed processing location	Front door	
Relevant parts	• FNS entry transport motor (M20) • FNS entrance sensor (PS34) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS34 I/O check, sensor check	FSCB J8<A>-5 (ON)	FS-540/FS-540SD 7-D
3	M20 operation check	FSCB J8-8 to 11	FS-540/FS-540SD 7-D
4	Replace FSCB.	-	-

1.9.6 72-18

(1) When FS-539 or FS-539SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-539 or FS-539SD is installed)
JAM code	72-18

JAM detection timing	72-18	• The main tray exit sensor (PS16) is not turned ON even after the lapse of a given period of time after the leading edge of the paper has turned ON the FNS entrance sensor (PS4). • While the buffer is controlled, the main tray exit sensor (PS16) is not tuned ON even after the lapse of a given period of time after the reverse rotation drive is started.
Misfeed processing location	Front door	
Relevant parts	• FNS entry transport motor (M2) • FNS entrance sensor (PS4) • Main tray exit sensor (PS16) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS4 I/O check, sensor check	FSCB J4<B>-9 (ON)	FS-539/FS-539SD 15-C
3	PS16 I/O check, sensor check	FSCB J9<B>-5 (ON)	FS-539/FS-539SD 11-C
4	M2 operation check	FSCB J9<A>-1 to 4	FS-539/FS-539SD 12-C
5	Replace FSCB.	-	-

(2) When FS-540 or FS-540SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-540 or FS-540SD is installed)	
JAM code	72-18	
JAM detection timing	72-18	• The main tray exit sensor (PS37) is not turned ON even after the set period of time has elapsed after the FNS middle sensor (PS36) is turned ON by the paper. • While the buffer is controlled, the main tray exit sensor (PS37) is not tuned ON even after the lapse of a given period of time after the reverse rotation drive is started.
Misfeed processing location	Front door	
Relevant parts	• Route change gate motor (M4) • FNS middle sensor (PS36) • Main tray exit sensor (PS37) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS36 I/O check, sensor check	FSCB J12<A>-10 (ON)	FS-540/FS-540SD 14 to 15-D
3	PS37 I/O check, sensor check	FSCB J12<B>-10 (ON)	FS-540/FS-540SD 16-D
4	M4 operation check	FSCB J12<B>-4 to 5	FS-540/FS-540SD 16-D
5	Replace FSCB.	-	-

1.9.7 72-19

(1) When FS-539 or FS-539SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-539 or FS-539SD is installed)	
JAM code	72-19	
JAM detection timing	72-19	The main tray exit sensor (PS16) is not turned OFF even after the lapse of a given period of time after the leading edge of the paper has turned ON PS16.
Misfeed processing location	Front door	
Relevant parts	• FNS discharge motor (M3) • Main tray exit sensor (PS16) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS16 I/O check, sensor check	FSCB J9<B>-5 (ON)	FS-539/FS-539SD 11-C
3	M3 operation check	FSCB J9<A>-5 to 8	FS-539/FS-539SD 12-C
4	Replace FSCB.	-	-

(2) When FS-540 or FS-540SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-540 or FS-540SD is installed)	
JAM code	72-19	
JAM detection timing	72-19	The main tray exit sensor (PS37) is not turned OFF even after the set period of time has elapsed after the FNS middle sensor (PS36) is turned OFF by the paper.
Misfeed processing location	Front door	
Relevant parts	• FNS discharge motor (M17) • Main tray exit sensor (PS37) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS37 I/O check, sensor check	FSCB J12<B>-10 (ON)	FS-540/FS-540SD 16-D
3	M17 operation check	FSCB J12<A>-1 to 4	FS-540/FS-540SD 14-D
4	Replace FSCB.	-	-

1.9.8 72-21

(1) When FS-539 or FS-539SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-539 or FS-539SD is installed)	
JAM code	72-21	
JAM detection timing	72-21	The alignment tray paper detection sensor (PS31) is not turn OFF even after the set period of time has elapsed after the start of exiting paper.
Misfeed processing location	Front door	
Relevant parts	• Pre-eject drive motor (M9) • Alignment tray paper detection sensor (PS31) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS31 I/O check, sensor check	FSCB J12-11 (ON)	FS-539/FS-539SD 7-C
3	M9 operation check	FSCB J13-3 to 4	FS-539/FS-539SD 17-C
4	Replace FSCB.	-	-

(2) When FS-540 or FS-540SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-540 or FS-540SD is installed)	
JAM code	72-21	
JAM detection timing	72-21	The alignment tray paper detection sensor (PS32) is not turn OFF even after the set period of time has elapsed after the start of exiting paper.
Misfeed processing location	Front door	
Relevant parts	• Pre-eject drive motor (M2) • Alignment tray paper detection sensor (PS32) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS32 I/O check, sensor check	FSCB J21-12 (ON)	FS-540/FS-540SD 4-D
3	M2 operation check	FSCB J22<A>-3 to 4	FS-540/FS-540SD 1-D
4	Replace FSCB.	-	-

1.9.9 72-22

(1) When FS-539 or FS-539SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-539 or FS-539SD is installed)

JAM code	72-22	
JAM detection timing	72-22	The sub tray exit sensor (PS8) is not turned ON (blocked) even after the lapse of a given period of time after the paper reaches the paper transport acceleration point.
Misfeed processing location	Front door	
Relevant parts	• FNS entry transport motor (M2) • Sub tray exit sensor (PS8) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS8 I/O check, sensor check	FSCB J9<B>-9 (ON)	FS-539/FS-539SD 11-C
3	M2 operation check	FSCB J9<A>-1 to 4	FS-539/FS-539SD 12-C
4	Replace FSCB.	-	-

(2) When FS-540 or FS-540SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-540 or FS-540SD is installed)	
JAM code	72-22	
JAM detection timing	72-22	The sub tray exit sensor (PS24) is not turned ON (blocked) even after the lapse of a given period of time after the paper reaches the paper transport acceleration point.
Misfeed processing location	Front door	
Relevant parts	• Sub tray discharge motor (M18) • Sub tray exit sensor (PS24) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS24 I/O check, sensor check	FSCB J14<A>-14 (ON)	FS-540/FS-540SD 17-K to L
3	M18 operation check	FSCB J12<A>-5 to 8	FS-540/FS-540SD 14-D
4	Replace FSCB.	-	-

1.9.10 72-23

(1) When FS-539 or FS-539SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-539 or FS-539SD is installed)	
JAM code	72-23	
JAM detection timing	72-23	The sub tray exit sensor (PS8) is not turned OFF (unblocked) even after the lapse of a given period of time after the leading edge of the paper has turned ON (blocked) PS8.
Misfeed processing location	Front door	
Relevant parts	• FNS discharge motor (M3) • Sub tray exit sensor (PS8) • FNS entrance sensor (PS4) • Main tray exit sensor (PS16) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Clean the sensor of paper path.	-	-
3	PS8 I/O check, sensor check	FSCB J9<B>-9 (ON)	FS-539/FS-539SD 11-C
4	M3 operation check	FSCB J9<A>-5 to 8	FS-539/FS-539SD 12-C
5	Replace FSCB.	-	-

(2) When FS-540 or FS-540SD is installed

Contents

JAM type	Misfeed at FS transport section (When FS-540 or FS-540SD is installed)
JAM code	72-23

JAM detection timing	72-23	The sub tray exit sensor (PS24) is not turned OFF (unblocked) even after the lapse of a given period of time after the leading edge of the paper has turned ON (blocked) PS24.
Misfeed processing location	Front door	
Relevant parts	• Sub tray discharge motor (M18) • Sub tray exit sensor (PS24) • FNS entrance sensor (PS34) • FNS middle sensor (PS36) • Main tray exit sensor (PS37) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Clean the sensor of paper path.	-	-
3	PS24 I/O check, sensor check	FSCB J14<A>-14 (ON)	FS-540/FS-540SD 17-K to L
4	M18 operation check	FSCB J12<A>-5 to 8	FS-540/FS-540SD 14-D
5	Replace FSCB.	-	-

1.9.11 72-25, 72-26

(1) When FS-539SD is installed

Contents

JAM type	Misfeed at SD paper exit section (When FS-539SD is installed)	
JAM code	72-25, 72-26	
JAM detection timing	72-25	The fold exit sensor (PS112) is not turned ON by the paper even after the lapse of a given period of time after the half-fold exit operation started.
	72-26	The fold exit sensor (PS112) is not turned OFF even after the lapse of a given period of time after the leading edge of the paper has turned ON PS112.
Misfeed processing location	• Front door • Stacker unit	
Relevant parts	• Center fold roller motor (M105) • Fold exit sensor (PS112) • SD control board (SDCB) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS112 I/O check, sensor check	SDCB J9-2 (ON)	FS-539/FS-539SD 5-P
3	M105 operation check	SDCB J11-1 to 10	FS-539/FS-539SD 3-L
4	Replace SDCB.	-	-
5	Replace FSCB.	-	-

(2) When FS-540SD is installed

Contents

JAM type	Misfeed at SD paper exit section (When FS-540SD is installed)	
JAM code	72-25, 72-26	
JAM detection timing	72-25	The fold exit sensor (PS112) is not turned ON by the paper even after the lapse of a given period of time after the half-fold exit operation started.
	72-26	The fold exit sensor (PS112) is not turned OFF even after the lapse of a given period of time after the leading edge of the paper has turned ON PS112.
Misfeed processing location	• Front door • Stacker unit	
Relevant parts	• Center fold roller motor (M105) • Fold exit sensor (PS112) • SD control board (SDCB) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS112 I/O check, sensor check	SDCB J9-2 (ON)	FS-540/FS-540SD 5-P
3	M105 operation check	SDCB J11-1 to 10	FS-540/FS-540SD 2-K
4	Replace SDCB.	-	-

Step	Action	Control signal	Location of electrical component
5	Replace FSCB.	-	-

1.9.12 72-31, 72-34

Contents

JAM type	Misfeed at JS exit section (When FS-540+JS-602 or FS-540SD+JS-602 is installed)	
JAM code	72-31, 72-34	
JAM detection timing	72-31	The job tray paper exit sensor (PS402) is not turned ON (blocked) even after the set period of time has elapsed after the FNS middle sensor (PS36) is turned OFF by the paper.
	72-34	The job tray paper exit sensor (PS402) is not turned OFF (unblocked) even after the lapse of a given period of time after the leading edge of the paper has turned ON (blocked) PS402.
Misfeed processing location	Separator cover	
Relevant parts	• Sub tray discharge motor (M18) • Job tray paper exit sensor (PS402) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS402 I/O check, sensor check	FSCB J10-6 (ON)	FS-540/FS-540SD 9-M
3	M18 operation check	FSCB J12<A>-5 to 8	FS-540/FS-540SD 14-D
4	Replace FSCB.	-	-

1.9.13 72-35

Contents

JAM type	Misfeed at PI section (When FS-540+PI-507 or FS-540SD+PI-507 is installed)	
JAM code	72-35	
JAM detection timing	72-35	The paper entrance sensor/Lw (PS206) is not turned OFF (unblocked) even after the lapse of a given period of time after the leading edge of the paper has turned ON (blocked) PS206.
Misfeed processing location	Upper door	
Relevant parts	• Paper conveyance motor (M203) • Registration clutch (CL203) • Paper entrance sensor/Lw (PS206) • PI drive board (PIDB) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS206 I/O check, sensor check	PIDB CN53<A>-5 (ON)	PI-507 10-C
3	CL203 operation check	PIDB CN57-1 (ON)	PI-507 5 to 6-C
4	M203 operation check	PIDB CN57-1 to 11	PI-507 5-C
5	PIDB ICP4 conduction check	-	-
6	Replace PIDB.	-	-
7	Replace FSCB.	-	-

1.9.14 72-40, 72-41

Contents

JAM type	Misfeed at ZU section (When FS-540+ZU-609 or FS-540SD+ZU-609 is installed)	
JAM code	72-40, 72-41	
JAM detection timing	72-40	When the first fold is started in Z-fold mode, the FNS middle sensor (PS36) is not turned OFF even after the lapse of a given period of time after the leading edge of the paper has turned ON PS36.
	71-41	When the second fold is started in Z-fold mode, the FNS middle sensor (PS36) is not switched from ON to OFF by the paper after the set period of time has elapsed.
Misfeed processing location	Front door	
Relevant parts	• ZU transport motor (M500) • Folding guide motor (M501) • FNS discharge motor (M17) • FNS middle sensor (PS36) • ZU drive board (ZUDB)	

	• FS control board (FSCB)

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS36 I/O check, sensor check	FSCB J12<A>-10 (ON)	FS-540/FS-540SD 14 to 15-D
3	M500 operation check	ZUDB CN6-1 to 6	ZU-609 1 to 2-B
4	M501 operation check	ZUDB CN6-9 to 12	ZU-609 2-B
5	M17 operation check	FSCB J12<B>-1 to 4	FS-540/FS-540SD 14-D
6	ZUDB ICP1 or ICP2 conduction check	-	-
7	Replace ZUDB.	-	-
8	Replace FSCB.	-	-

1.9.15 72-43

(1) When FS-539+PK-524 or FS-539SD+PK-524 is installed

Contents

JAM type	Misfeed at PK section (When FS-539+PK-524 or FS-539SD+PK-524 is installed)	
JAM code	72-43	
JAM detection timing	72-43	The punch position sensor (PS2) is not turned ON (unblocked) after a lapse of a given time after the punch drive motor (M1) starts rotating.
Misfeed processing location	Front door	
Relevant parts	• Punch drive motor (M1) • Punch position sensor (PS2) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS2 I/O check, sensor check	FSCB J7-2 (ON)	FS-539/FS-539SD (PK-524) 13-K
3	M1 operation check	FSCB J7-7 to 8	FS-539/FS-539SD (PK-524) 13-K
4	Replace FSCB.	-	-

(2) When FS-540+PK-526 or FS-540SD+PK-526 is installed

Contents

JAM type	Misfeed at PK section (When FS-540+PK-526 or FS-540SD+PK-526 is installed)	
JAM code	72-43	
JAM detection timing	72-43	The punch home sensor (PS301) is not turned ON (unblocked) after a lapse of a given time after the punch drive motor (M301) starts rotating.
	-	Paper jam of a sheet of paper left at the PK section results, when the main power switch is turned ON, and the paper is detected by the paper size detect board (PSDTB).
Misfeed processing location	Front door	
Relevant parts	72-43	• Punch drive motor (M301) • Punch home sensor (PS301) • Punch control board (PKCB) • FS control board (FSCB)
	Residual paper jam	• Paper size detect board (PSDTB) • FS control board (FSCB)

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS301 I/O check, sensor check	PKCB CN36-5 (ON)	PK-526 3-C
3	M301 operation check	PKCB CN35-1 to 3	PK-526 2-C
4	Replace PKCB.	-	-
5	Replace FSCB.	-	-

Residual paper jam

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-

Step	Action	Control signal	Location of electrical component
2	Adjust the sensitivity (light intensity) by selecting [Service Mode] -> [Finisher] -> [FS-FN adjustment] -> [Punch F. Sensor Intensity Adj.]. After adjustment, open and then close the front door, and check if the residual paper jam indication disappears. To turn off the main power switch, wait for more than 10 seconds until the residual paper jam indication disappears	-	-
3	Replace PKCB.	-	-
4	Replace FSCB.	-	-

1.9.16 72-49

Contents

JAM type	Misfeed at PI section (When FS-540+PI-507 or FS-540SD+PI-507 is installed)	
JAM code	72-49	
JAM detection timing	72-49	The paper entrance sensor/Up (PS201) is not turned OFF (unblocked) even after the lapse of a given period of time after the leading edge of the paper has turned ON (blocked) PS201.
Misfeed processing location	Upper door	
Relevant parts	• Paper conveyance motor (M203) • Registration clutch (CL203) • Paper entrance sensor/Up (PS201) • PI drive board (PIDB) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS201 I/O check, sensor check	PIDB CN53<A>-2 (ON)	PI-507 10-C
3	CL203 operation check	PIDB CN57-1 (ON)	PI-507 5 to 6-C
4	M203 operation check	PIDB CN57-1 to 11	PI-507 5-C
5	PIDB ICP4 conduction check	-	-
6	Replace PIDB.	-	-
7	Replace FSCB.	-	-

1.9.17 72-50

Contents

JAM type	Misfeed at PI section (When FS-540+PI-507 or FS-540SD+PI-507 is installed)	
JAM code	72-50	
JAM detection timing	72-50	The PI discharge sensor (PS33) is not turned ON even after the set period of time has elapsed after the paper entrance sensor/Up (PS201) turns ON (blocked) by a paper.
Misfeed processing location	Upper door	
Relevant parts	• FNS entry transport motor (M20) • Paper entrance sensor/Up (PS201) • PI discharge sensor (PS33) • PI drive board (PIDB) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS201 I/O check, sensor check	PIDB CN53<A>-2 (ON)	PI-507 10-C
3	PS33 I/O check, sensor check	FSCB J8<A>-3 (ON)	FS-540/FS-540SD 6-D
4	M20 operation check	FSCB J8<A>-8 to 11	FS-540/FS-540SD 7-D
5	PIDB ICP4 conduction check	-	-
6	Replace PIDB.	-	-
7	Replace FSCB.	-	-

1.9.18 72-51

Contents

JAM type	Misfeed at PI section (When FS-540+PI-507 or FS-540SD+PI-507 is installed)
JAM code	72-51

JAM detection timing	72-51	The PI discharge sensor (PS33) is not turned ON even after the set period of time has elapsed after the paper entrance sensor/Lw (PS206) turns ON (blocked) by a paper.
Misfeed processing location	Upper door	
Relevant parts	• FNS entry transport motor (M20) • Paper entrance sensor/Lw (PS206) • PI discharge sensor (PS33) • PI drive board (PIDB) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS206 I/O check, sensor check	PIDB CN53<A>-5 (ON)	PI-507 10-C
3	PS33 I/O check, sensor check	FSCB J8<A>-3 (ON)	FS-540/FS-540SD 6-D
4	M20 operation check	FSCB J8<A>-8 to 11	FS-540/FS-540SD 7-D
5	PIDB ICP4 conduction check	-	-
6	Replace PIDB.	-	-
7	Replace FSCB.	-	-

1.9.19 72-75

(1) When FS-539 or FS-539SD is installed

Contents

JAM type	Misfeed at FS paper exit section (When FS-539 or FS-539SD is installed)	
JAM code	72-75	
JAM detection timing	72-75	The upper paddle home sensor (PS14) is not turned ON (unblocked) even after the set period of time has elapsed after the FNS paddle motor (M5) is energized at the time other than the initial operation.
Misfeed processing location	Main tray	
Relevant parts	• FNS paddle motor (M5) • Upper paddle home sensor (PS14) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS14 I/O check, sensor check	FSCB J4<B>-7 (ON)	FS-539/FS-539SD 15-C
3	M5 operation check	FSCB J4<A>-12 to 15	FS-539/FS-539SD 14-C
4	Replace FSCB.	-	-

(2) When FS-540 or FS-540SD is installed

Contents

JAM type	Misfeed at FS paper exit section (When FS-540 or FS-540SD is installed)	
JAM code	72-75	
JAM detection timing	72-75	The upper paddle home sensor (PS25) is not turned ON (unblocked) even after the set period of time has elapsed after the FNS paddle motor (M9) is energized at the time other than the initial operation.
Misfeed processing location	Main tray	
Relevant parts	• FNS paddle motor (M9) • Upper paddle home sensor (PS25) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS25 I/O check, sensor check	FSCB J4<B>-13 (ON)	FS-540/FS-540SD 16-K to L
3	M9 operation check	FSCB J4<B>-7 to 10	FS-540/FS-540SD 17-K to L
4	Replace FSCB.	-	-

1.9.20 72-76

(1) When FS-539 or FS-539SD is installed

Contents

JAM type	Misfeed at FS paper exit section (When FS-539 or FS-539SD is installed)	
JAM code	72-76	
JAM detection timing	72-76	The gripper home sensor (PS18) or gripper position sensor (PS19) is not turned ON (blocked) or OFF (unblocked) even after the set period of time has elapsed after the bundle eject motor (M10) is energized at the time other than the initial operation.
Misfeed processing location	Main tray	
Relevant parts	• Bundle eject motor (M10) • Gripper home sensor (PS18) • Gripper position sensor (PS19) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS18 I/O check, sensor check	FSCB J13-13 (ON)	FS-539/FS-539SD 16-C
3	PS19 I/O check, sensor check	FSCB J12-3 (ON)	FS-539/FS-539SD 8-C
4	M10 operation check	FSCB J13-1 to 2	FS-539/FS-539SD 17-C
5	Replace FSCB.	-	-

(2) When FS-540 or FS-540SD is installed

Contents

JAM type	Misfeed at FS paper exit section (When FS-540 or FS-540SD is installed)	
JAM code	72-76	
JAM detection timing	72-76	The gripper home sensor (PS3) is not turned ON (blocked) or OFF (unblocked) even after the set period of time has elapsed after the bundle eject motor (M1) is energized at the time other than the initial operation.
Misfeed processing location	Main tray	
Relevant parts	• Bundle eject motor (M1) • Gripper home sensor (PS3) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS3 I/O check, sensor check	FSCB J22<A>-13 (ON)	FS-540/FS-540SD 2-D
3	M1 operation check	FSCB J22<A>-1 to 2	FS-540/FS-540SD 1-D
4	Replace FSCB.	-	-

1.9.21 72-77

(1) When FS-539 or FS-539SD is installed

Contents

JAM type	Misfeed at FS paper exit section (When FS-539 or FS-539SD is installed)	
JAM code	72-77	
JAM detection timing	72-77	The alignment home sensor (PS12/PS13) is not turned OFF (unblocked) even after the set period of time has elapsed after the alignment motor (M7/M8) is energized at the time other than the initial operation.
Misfeed processing location	Main tray	
Relevant parts	• Alignment motor/Fr (M7) • Alignment motor/Rr (M8) • Alignment plate home sensor/Fr (PS12) • Alignment plate home sensor/Rr (PS13) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS12 I/O check, sensor check	FSCB J4<B>-4 (ON)	FS-539/FS-539SD 14-C

Step	Action	Control signal	Location of electrical component
3	PS13 I/O check, sensor check	FSCB J9<B>-12 (ON)	FS-539/FS-539SD 10-C
4	M7 operation check	FSCB J4<A>-5 to 8	FS-539/FS-539SD 13 to 14-C
5	M8 operation check	FSCB J12-13 to 16	FS-539/FS-539SD 7-C
6	Replace FSCB.	-	-

(2) When FS-540 or FS-540SD is installed

Contents

JAM type	Misfeed at FS paper exit section (When FS-540 or FS-540SD is installed)	
JAM code	72-77	
JAM detection timing	72-77	The alignment home sensor (PS6/PS9) is not turned OFF (unblocked) even after the set period of time has elapsed after the alignment motor (M13/M14) is energized at the time other than the initial operation.
Misfeed processing location	Main tray	
Relevant parts	• Alignment motor/Rr (M13) • Alignment motor/Fr (M14) • Alignment plate home sensor/Rr (PS6) • Alignment plate home sensor/Fr (PS9) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS6 I/O check, sensor check	FSCB J21-10 (ON)	FS-540/FS-540SD 4-D
3	PS9 I/O check, sensor check	FSCB J18-10 (ON)	FS-540/FS-540SD 6-D
4	M13 operation check	FSCB J21-1 to 4	FS-540/FS-540SD 4-D
5	M14 operation check	FSCB J18-1 to 4	FS-540/FS-540SD 5-D
6	Replace FSCB.	-	-

1.9.22 72-81

(1) When FS-539 or FS-539SD is installed

Contents

JAM type	Misfeed at FS staple section (When FS-539 or FS-539SD is installed)	
JAM code	72-81	
JAM detection timing	72-81	The stapler home sensor does not turn ON even after the lapse of a given period of time after the stapler motor is energized.
Misfeed processing location	Front door	
Relevant parts	• Stapler unit • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Replace the stapler unit.	-	-
3	Replace FSCB.	-	-

(2) When FS-540 or FS-540SD is installed

Contents

JAM type	Misfeed at FS staple section (When FS-540 or FS-540SD is installed)	
JAM code	72-81	
JAM detection timing	72-81	The stapler home sensor does not turn ON even after the lapse of a given period of time after the stapler motor is energized.
Misfeed processing location	Front door	
Relevant parts	• Stapler unit • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-

Step	Action	Control signal	Location of electrical component
2	Replace the stapler unit.	-	-
3	Replace FSCB.	-	-

1.9.23 72-84

(1) When FS-539SD is installed

Contents

JAM type	Misfeed at SD staple section (When FS-539SD is installed)	
JAM code	72-84	
JAM detection timing	72-84	The stapler home position sensor/Rr does not turn ON even after the lapse of a given period of time after the staple operation started.
Misfeed processing location	• Front door • Stacker unit	
Relevant parts	• Stapler unit • SD control board (SDCB) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Replace the stapler unit.	-	-
3	Replace SDCB.	-	-
4	Replace FSCB.	-	-

(2) When FS-540SD is installed

Contents

JAM type	Misfeed at SD staple section (When FS-540SD is installed)	
JAM code	72-84	
JAM detection timing	72-84	The stapler home position sensor/Rr does not turn ON even after the lapse of a given period of time after the staple operation started.
Misfeed processing location	• Front door • Stacker unit	
Relevant parts	• Stapler unit • SD control board (SDCB) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Replace the stapler unit.	-	-
3	Replace SDCB.	-	-
4	Replace FSCB.	-	-

1.9.24 72-85

(1) When FS-539SD is installed

Contents

JAM type	Misfeed at SD transport section (When FS-539SD is installed)	
JAM code	72-85	
JAM detection timing	72-85	The SD entrance sensor (PS101) is not turned ON (blocked) even after the lapse of a given period of time after the leading edge of the paper has turned ON the saddle exit sensor (PS5).
Misfeed processing location	• Front door • Stacker unit	
Relevant parts	• SD entrance sensor (PS101) • Saddle exit sensor (PS5) • SD control board (SDCB) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS5 I/O check, sensor check	FSCB J5-2 (ON)	FS-539/FS-539SD 16-K
3	PS101 I/O check, sensor check	SDCB J4-3 (ON)	FS-539/FS-539SD 5-L

Step	Action	Control signal	Location of electrical component
4	Replace SDCB.	-	-
5	Replace FSCB.	-	-

(2) When FS-540SD is installed

Contents

JAM type	Misfeed at SD transport section (When FS-540SD is installed)	
JAM code	72-85	
JAM detection timing	72-85	The SD entrance sensor (PS101) is not turned ON (blocked) even after the set period of time has elapsed after the SD discharge sensor (PS35) is turned ON by the paper.
Misfeed processing location	• Front door • Stacker unit	
Relevant parts	• SD discharge motor (M16) • SD entrance sensor (PS101) • SD discharge sensor (PS35) • SD control board (SDCB) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS35 I/O check, sensor check	FSCB J14<B>-2 (ON)	FS-540/FS-540SD 17-K to L
3	PS101 I/O check, sensor check	SDCB J4-3 (ON)	FS-540/FS-540SD 4-K
4	M16 operation check	FSCB J8<B>-1 to 4	FS-540/FS-540SD 8-D
5	Replace SDCB.	-	-
6	Replace FSCB.	-	-

1.9.25 72-86

(1) When FS-539SD is installed

Contents

JAM type	Misfeed at SD transport section (When FS-539SD is installed)	
JAM code	72-86	
JAM detection timing	72-86	The SD entrance sensor (PS101) is not turned OFF (unblocked) even after the lapse of a given period of time after the leading edge of the paper has turned ON (blocked) PS101.
Misfeed processing location	Front door	
Relevant parts	• SD transport motor (M101) • SD entrance sensor (PS101) • SD control board (SDCB) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS101 I/O check, sensor check	SDCB J4-3 (ON)	FS-539/FS-539SD 5-L
3	M101 operation check	SDBC J5-8 to 11	FS-539/FS-539SD 3-L
4	Replace SDCB.	-	-
5	Replace FSCB.	-	-

(2) When FS-540SD is installed

Contents

JAM type	Misfeed at SD transport section (When FS-540SD is installed)	
JAM code	72-86	
JAM detection timing	72-86	The SD entrance sensor (PS101) is not turned OFF (unblocked) even after the lapse of a given period of time after the leading edge of the paper has turned ON (blocked) PS101.
Misfeed processing location	Front door	
Relevant parts	• SD transport motor (M101) • SD entrance sensor (PS101) • SD control board (SDCB) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS101 I/O check, sensor check	SDCB J4-3 (ON)	FS-540/FS-540SD 4-K
3	M101 operation check	SDBC J5-8 to 11	FS-540/FS-540SD 3-K
4	Replace SDCB.	-	-
5	Replace FSCB.	-	-

1.9.26 72-87

(1) When FS-539SD is installed

Contents

JAM type	Misfeed at SD transport section (When FS-539SD is installed)	
JAM code	72-87	
JAM detection timing	72-87	The center staple/fold stacker paper detect sensor (PS103) is not turned ON even after the lapse of a given period of time after the leading edge of the paper has turned ON the SD entrance sensor (PS101).
Misfeed processing location	• Front door • Stacker unit	
Relevant parts	• SD transport motor (M101) • SD entrance sensor (PS101) • Center staple/fold stacker paper detect sensor (PS103) • SD control board (SDCB) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS101 I/O check, sensor check	SDCB J4-3 (ON)	FS-539/FS-539SD 5-L
3	PS103 I/O check, sensor check	SDCB J7-12 (ON)	FS-539/FS-539SD 5-P
4	M101 operation check	SDBC J5-8 to 11	FS-539/FS-539SD 3-L
5	Replace SDCB.	-	-
6	Replace FSCB.	-	-

(2) When FS-540SD is installed

Contents

JAM type	Misfeed at SD transport section (When FS-540SD is installed)	
JAM code	72-87	
JAM detection timing	72-87	The center staple/fold stacker paper detect sensor (PS103) is not turned ON even after the lapse of a given period of time after the leading edge of the paper has turned ON the SD entrance sensor (PS101).
Misfeed processing location	• Front door • Stacker unit	
Relevant parts	• SD transport motor (M101) • SD entrance sensor (PS101) • Center staple/fold stacker paper detect sensor (PS103) • SD control board (SDCB) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS101 I/O check, sensor check	SDCB J4-3 (ON)	FS-540/FS-540SD 4-K
3	PS103 I/O check, sensor check	SDCB J7-12 (ON)	FS-540/FS-540SD 5-P
4	M101 operation check	SDBC J5-8 to 11	FS-540/FS-540SD 3-K
5	Replace SDCB.	-	-
6	Replace FSCB.	-	-

1.9.27 75-42

(1) When FS-539 or FS-539SD is installed

Contents

JAM type	Misfeed at RU section (When FS-539 or FS-539SD is installed)
JAM code	75-42

JAM detection timing	75-42	The RU entrance sensor (PS2) is not turned ON (blocked) even after the lapse of a given period of time after the leading edge of the paper has turned OFF (unblocked) the main body's paper exit sensor (PS3).
Misfeed processing location	Horizontal transport cover	
Relevant parts	• RU transport motor (M1) • Paper exit sensor (PS3) • RU entrance sensor (PS2) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS3 I/O check, sensor check	BASEB CN22E-3 (ON)	11-C
3	PS2 I/O check, sensor check	FSCB J6-7 (ON)	FS-539/FS-539SD 12-K
4	M1 operation check	FSCB J6-1 to 4	FS-539/FS-539SD 11-K
5	FSCB F2 conduction check	-	-
6	Replace FSCB.	-	-

(2) When FS-540 or FS-540SD is installed

Contents

JAM type	Misfeed at RU section (When FS-540 or FS-540SD is installed)	
JAM code	75-42	
JAM detection timing	75-42	The RU entrance sensor (PS2) is not turned ON (blocked) even after the lapse of a given period of time after the leading edge of the paper has turned OFF (unblocked) the main body's paper exit sensor (PS3).
Misfeed processing location	Horizontal transport cover	
Relevant parts	• RU transport motor (M1) • Paper exit sensor (PS3) • RU entrance sensor (PS2) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS3 I/O check, sensor check	BASEB CN22E-3 (ON)	11-C
3	PS2 I/O check, sensor check	FSCB J8<B>-12 (ON)	FS-540/FS-540SD 8-D
4	M1 operation check	FSCB J8<B>-6 to 9	FS-540/FS-540SD 8-D
5	FSCB F1 conduction check	-	-
6	Replace FSCB.	-	-

1.9.28 75-43

(1) When FS-539 or FS-539SD is installed

Contents

JAM type	Misfeed at RU section (When FS-539 or FS-539SD is installed)	
JAM code	75-43	
JAM detection timing	75-43	The RU entrance sensor (PS2) is not turned OFF (unlocked) even after the lapse of a given period of time after PS2 is turned ON (blocked).
Misfeed processing location	Horizontal transport cover	
Relevant parts	• RU transport motor (M1) • RU entrance sensor (PS2) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS2 I/O check, sensor check	FSCB J6-7 (ON)	FS-539/FS-539SD 12-K
3	M1 operation check	FSCB J6-1 to 4	FS-539/FS-539SD 11-K
4	FSCB F2 conduction check	-	-
5	Replace FSCB.	-	-

(2) When FS-540 or FS-540SD is installed

Contents

JAM type	Misfeed at RU section (When FS-540 or FS-540SD is installed)	
JAM code	75-43	
JAM detection timing	75-43	The RU entrance sensor (PS2) is not turned OFF (unlocked) even after the lapse of a given period of time after PS2 is turned ON (blocked).
Misfeed processing location	Horizontal transport cover	
Relevant parts	• RU transport motor (M1) • RU entrance sensor (PS2) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS2 I/O check, sensor check	FSCB J8<B>-12 (ON)	FS-540/FS-540SD 8-D
3	M1 operation check	FSCB J8<B>-6 to 9	FS-540/FS-540SD 8-D
4	FSCB F1 conduction check	-	-
5	Replace FSCB.	-	-

1.10 9#-##

1.10.1 92-01, 92-02, 92-04, 92-40

Contents

JAM type	Misfeed at duplex pre-registration section	
JAM code	92-01, 92-02, 92-04, 92-40	
JAM detection timing	92-01	The leading edge of the paper is not turned ON (unblocked) the registration sensor/1 (PS1) even after the lapse of a given period of time after a duplex paper feed sequence has been started.
	92-02	For the second-side feed of paper in the duplex mode, loop forming has not been complete before the second side of a sheet enters the registration roller because the rise timing of load to perform registration is earlier than the rise timing of load to form a loop.
	92-04	The registration sensor/2 (PS72) is not turned ON even after the lapse of a given period of time after a duplex paper feed sequence has been started.
	92-40	For the second-side feed of paper in the duplex mode, the image write start signal permit continues to be disabled for a predetermined period of time after the timing of the image write start signal output.
	-	Paper jam of a sheet of paper left at the duplex pre-registration section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
Misfeed processing location	Right door	
Relevant parts	• ADU transport motor/2 (M26) • Registration sensor/1 (PS1) • Registration sensor/2 (PS72) • Base board (BASEB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS1 I/O check, sensor check	BASEB CN15E-9 (ON)	4-C
3	PS72 I/O check, sensor check	BASEB CN15E-19 (ON)	5-C
4	M26 load check • Check code: 85 • Multi code: 6, 9, 10	BASEB CN18E-11 to 14	6-C
5	Replace BASEB.	-	-

1.10.2 93-10

Contents

JAM type	Misfeed at duplex transport section	
JAM code	93-10	
JAM detection timing	93-10	The ADU paper passage sensor/2 (PS41) is not turned ON (blocked) even after the lapse of a given period of time after the leading edge of the paper has turned ON (unblocked) the ADU paper passage sensor/1 (PS40).

	-	Paper jam of a sheet of paper left at the duplex transport section results, if the ADU paper passage sensor/1 (PS40) is turned ON (unblocked) or the ADU paper passage sensor/2 (PS41) is turned ON (blocked) when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
	-	Paper jam of a sheet of paper left at the duplex transport section results, if a sheet of paper is determined to exist at a position detected when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
Misfeed processing location	Right door	
Relevant parts	• ADU transport motor/1 (M5) • ADU transport motor/2 (M26) • ADU paper passage sensor/1 (PS40) • ADU paper passage sensor/2 (PS41) • Expansion control board (EXCB) • Base board (BASEB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS40 I/O check, sensor check	BASEB CN22E-6 (ON)	11-C
3	PS41 I/O check, sensor check	EXCB CN13EX-9 (ON)	16-X
4	M5 load check • Check code: 85 • Multi code: 1, 4, 5	BASEB CN18E-7 to 10	6-C
5	M26 load check • Check code: 85 • Multi code: 6, 9, 10	BASEB CN18E-11 to 14	6-C
6	Replace EXCB.	-	-
7	Replace BASEB.	-	-

1.10.3 99-01

Contents

JAM type	Controller JAM (paper size error (paper length))	
JAM code	99-01	
JAM detection timing	99-01	• As a result of a paper size error (paper length), the controller transmits a forced stop command to the printer engine and the printer engine is internally processing the size error. • As a result of a paper size error (paper length), the controller transmits a forced stop command to the printer engine; but the paper causing the size error cannot be fed out.
Misfeed processing location	-	
Relevant parts	-	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Open and close the lower front door of the main body.	-	-

1.10.4 99-02

Contents

JAM type	Controller JAM (controller forced stop command)	
JAM code	99-02	
JAM detection timing	99-02	The controller transmits a forced stop command under a condition other than a paper size error during a print cycle.
Misfeed processing location	-	
Relevant parts	-	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Open and close the lower front door of the main body.	-	-

1.10.5 99-03

Contents

JAM type	Controller JAM (image processing)	
JAM code	99-03	
JAM detection timing	99-03	Image stabilization not completing a job.
Misfeed processing location	-	
Relevant parts	-	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Open and close the lower front door of the main body.	-	-

1.10.6 99-04

Contents

JAM type	Controller JAM (a job reservation in the main body is not released)	
JAM code	99-04	
JAM detection timing	99-04	A job reservation is not released after a lapse of a given time after that a print start command has been received.
Misfeed processing location	-	
Relevant parts	-	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Open and close the lower front door of the main body.	-	-

1.10.7 99-05

Contents

JAM type	Controller JAM (main body not starting a job)	
JAM code	99-05	
JAM detection timing	99-05	A waiting status is not released even with a print start command received.
Misfeed processing location	-	
Relevant parts	-	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Open and close the lower front door of the main body.	-	-

1.10.8 99-06

Contents

JAM type	Controller JAM (print control on the main body is not completed)	
JAM code	99-06	
JAM detection timing	99-06	Print control is not completed even after a job has been completed.
Misfeed processing location	-	
Relevant parts	-	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Open and close the lower front door of the main body.	-	-

1.10.9 99-07

Contents

JAM type	Controller JAM (main body not completing a job)

JAM code	99-07	
JAM detection timing	99-07	The engine does not stop after a lapse of a given time after that a print has finished.
Misfeed processing location	-	
Relevant parts	-	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Open and close the lower front door of the main body.	-	-

1.10.10 99-08

Contents

JAM type	Controller JAM (finisher not starting a job)	
JAM code	99-08	
JAM detection timing	99-08	The finisher does not accept a print start command.
Misfeed processing location	-	
Relevant parts	-	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Open and close the lower front door of the main body. Or, open and close the front door of the finisher.	-	-

1.10.11 99-09

Contents

JAM type	Controller JAM (finisher not completing a job)	
JAM code	99-09	
JAM detection timing	99-09	• A paper exit or paper finishing process inside the finisher is not completed. • The finisher does not start during a reset procedure from the jam.
Misfeed processing location	-	
Relevant parts	-	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Open and close the lower front door of the main body. Or, open and close the front door of the finisher.	-	-

1.10.12 99-10

Contents

JAM type	Controller JAM (paper size error (paper width))	
JAM code	99-10	
JAM detection timing	99-10	• As a result of a paper size error (paper width), the controller transmits a forced stop command to the printer engine and the printer engine is internally processing the size error. • As a result of a paper size error (paper width), the controller transmits a forced stop command to the printer engine; but the paper causing the size error cannot be fed out.
Misfeed processing location	-	
Relevant parts	-	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Open and close the lower front door of the main body.	-	-

1.10.13 99-11

Contents

JAM type	Controller JAM (main motor failure to turn)

JAM code	99-11	
JAM detection timing	99-11	A trouble of the main motor's failure to turn has been detected during a print cycle.
Misfeed processing location	-	
Relevant parts	-	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Open and close the lower front door of the main body.	-	-

1.10.14 99-12

Contents

JAM type	Controller JAM (laser malfunction)	
JAM code	99-12	
JAM detection timing	99-12	A laser malfunction has been detected during a print cycle.
Misfeed processing location	-	
Relevant parts	-	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Open and close the lower front door of the main body.	-	-

1.10.15 99-14

Contents

JAM type	Controller JAM (image stabilization timeout)	
JAM code	99-14	
JAM detection timing	99-14	After the image stabilization start command has been received, the response from the controller is lost for more than 1 minute.
Misfeed processing location	-	
Relevant parts	-	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Open and close the lower front door of the main body.	-	-

1.10.16 99-15

Contents

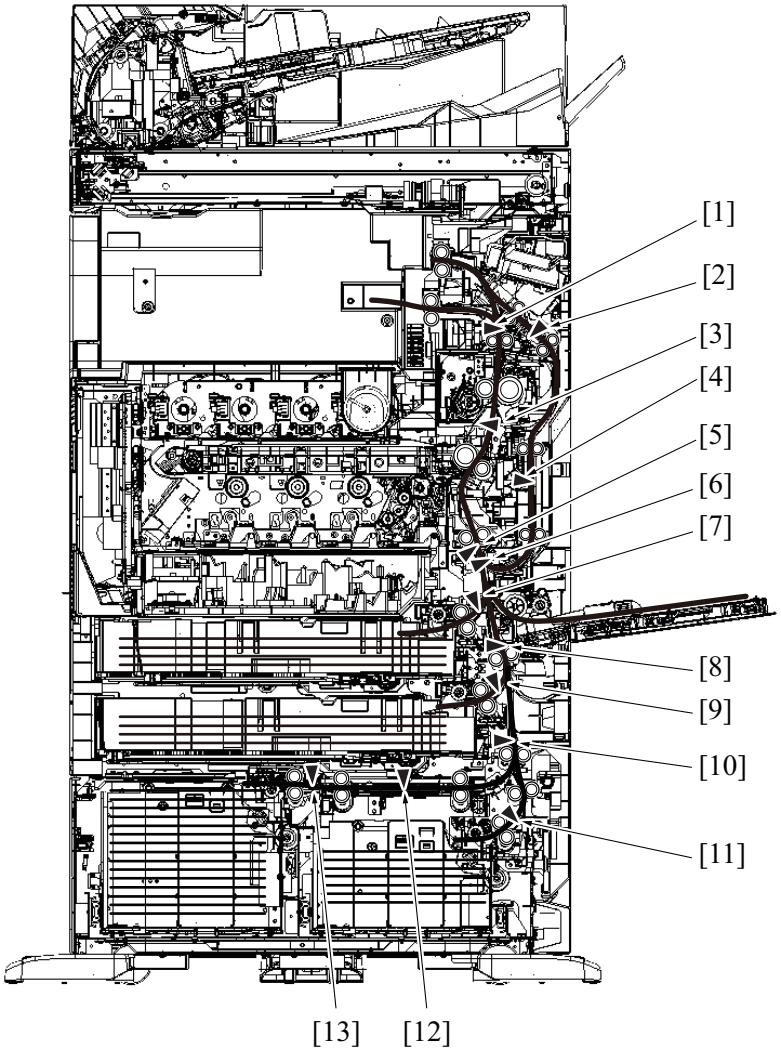
JAM type	Controller JAM (heating roller temperature sensor abnormally high temperature detection)	
JAM code	99-15	
JAM detection timing	99-15	Detected temperature of the heating roller temperature sensor (TEMS) goes beyond a given temperature for a given period of time consecutively.
Misfeed processing location	-	
Relevant parts	-	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	Open and close the lower front door of the main body.	-	-

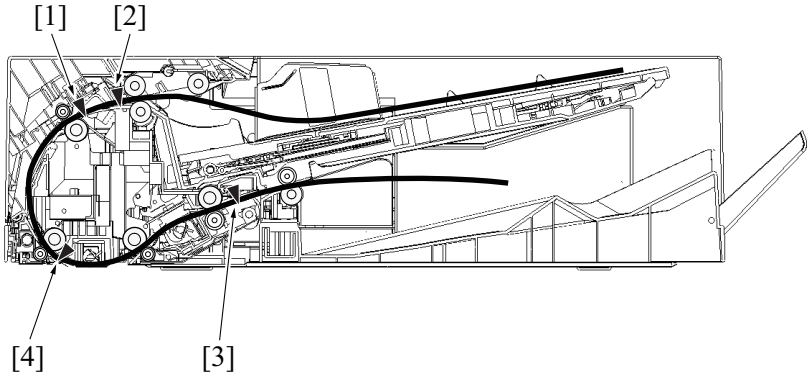
1.11 Sensor layout

1.11.1 bizhub 750i



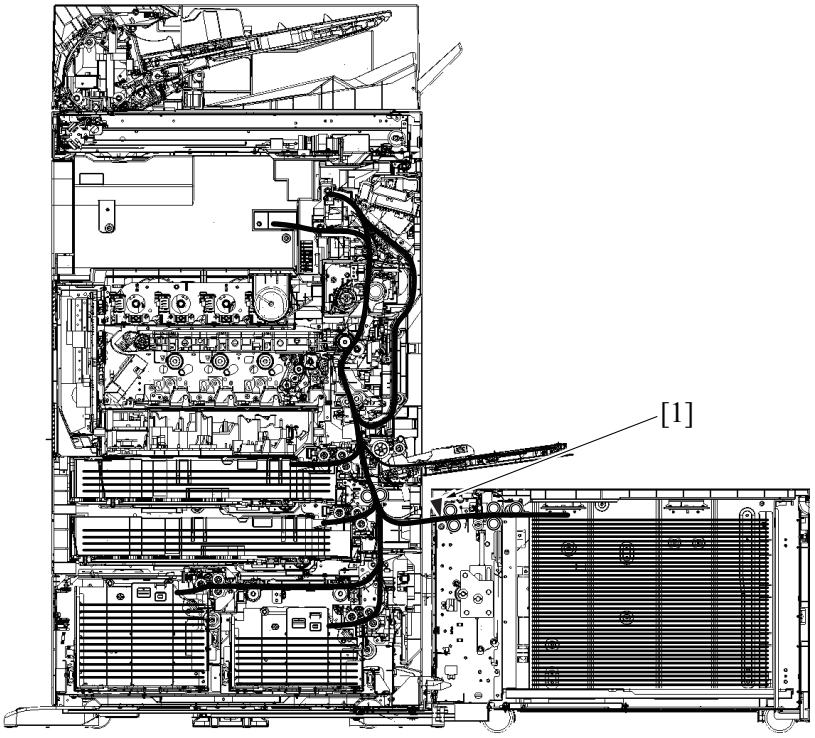
[1]	Paper exit sensor (PS3)	[2]	ADU paper passage sensor/1 (PS40)
[3]	Fusing loop sensor (PS2)	[4]	ADU paper passage sensor/2 (PS41)
[5]	Registration sensor/1 (PS1)	[6]	Registration sensor/2 (PS72)
[7]	Tray 1 paper feed sensor (PS23)	[8]	Tray 2 vertical transport sensor (PS19)
[9]	Tray 2 paper feed sensor (PS20)	[10]	Vertical transport sensor (PS153)
[11]	Tray 4 paper feed sensor (PS162)	[12]	Horizontal transport sensor (PS158)
[13]	Tray 3 paper feed sensor (PS152)	-	-

1.11.2 DF-713



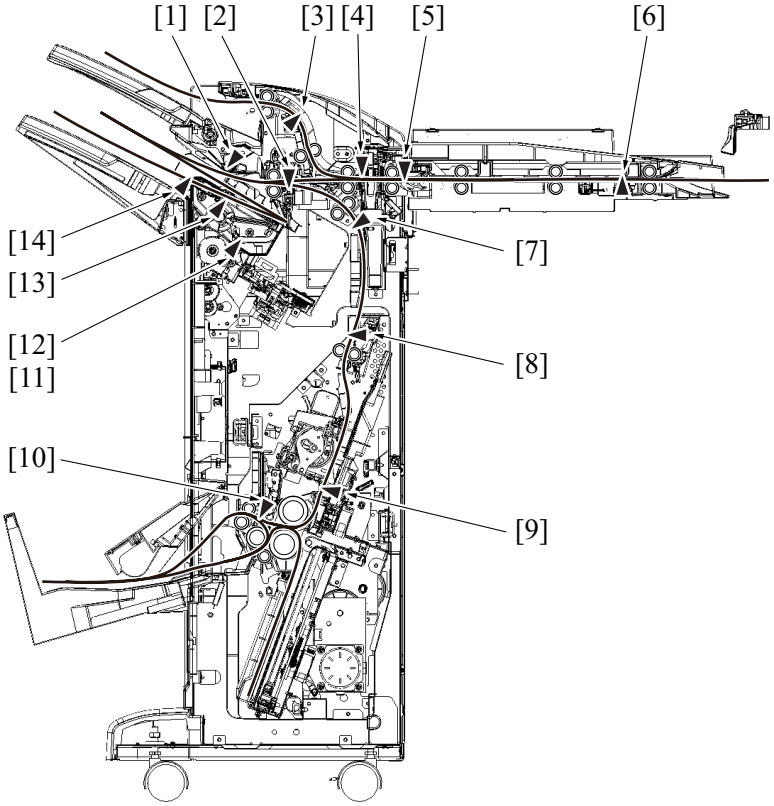
[1]	Document registration sensor (PS5)	[2]	After separate sensor (PS4)
[3]	Document exit sensor (PS7)	[4]	Document reading sensor (PS6)

1.11.3 LU-205/LU-303



[1]	LU paper feed sensor (PS3)	-	-

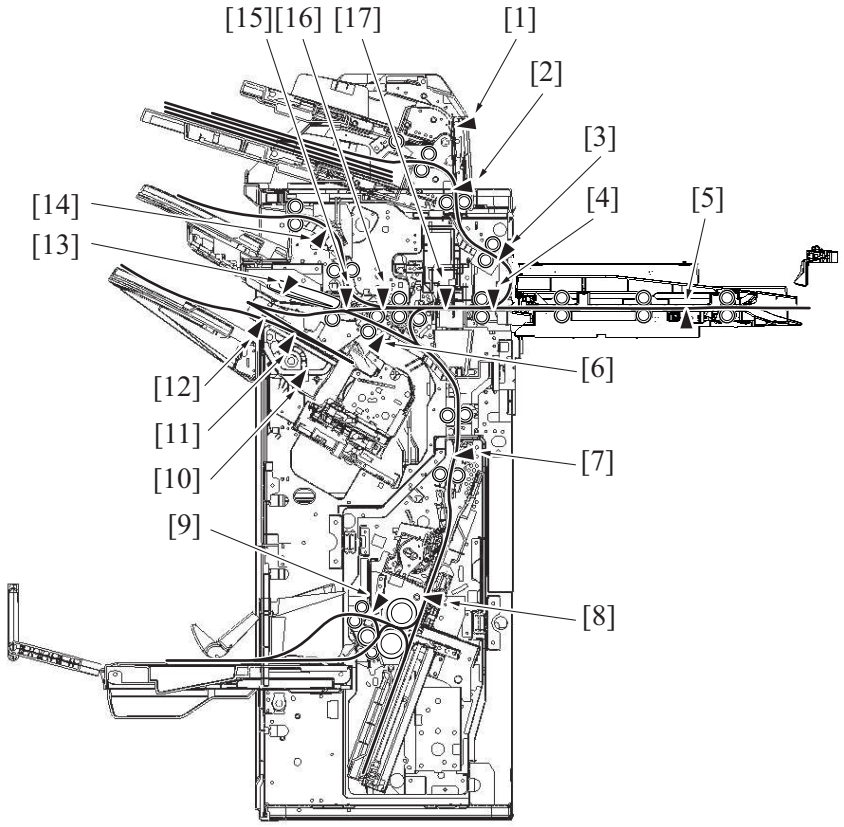
1.11.4 FS-539/FS-539SD/PK-524/RU-519



[1]	Upper paddle home sensor (PS14)	[2]	Main tray exit sensor (PS16)
[3]	Sub tray exit sensor (PS8)	[4]	Punch position sensor (PS2): PK-524
[5]	FNS entrance sensor (PS4)	[6]	RU entrance sensor (PS2): RU-519
[7]	Saddle exit sensor (PS5)	[8]	SD entrance sensor (PS101): SD

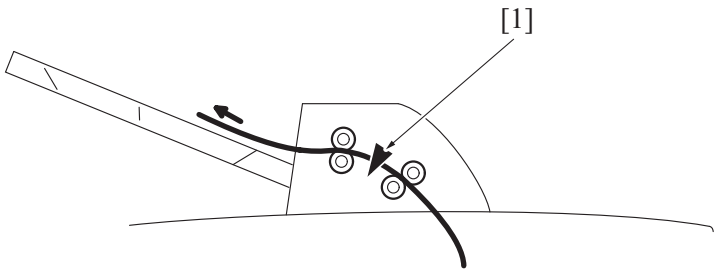
[9]	Center staple/fold stacker paper detect sensor (PS103): SD	[10]	Fold exit sensor (PS112): SD
[11]	Gripper home sensor (PS18)	[12]	Gripper position sensor (PS19)
[13]	Alignment tray paper detection sensor (PS31)	[14]	Alignment plate home sensor/Fr (PS12) Alignment plate home sensor/Rr (PS13)

1.11.5 FS-540/FS-540SD/PK-526/PI-507/ZU-609/RU-519



[1]	Paper entrance sensor/Up (PS201): PI-507	[2]	Paper entrance sensor/Lw (PS206): PI-507
[3]	PI discharge sensor (PS33)	[4]	FNS entrance sensor (PS34)
[5]	RU entrance sensor (PS2): RU-519	[6]	SD discharge sensor (PS35)
[7]	SD entrance sensor (PS101): SD	[8]	Center staple/fold stacker paper detect sensor (PS103): SD
[9]	Fold exit sensor (PS112): SD	[10]	Gripper home sensor (PS3)
[11]	Alignment tray paper detection sensor (PS32)	[12]	Alignment plate home sensor/Rr (PS6) Alignment plate home sensor/Fr (PS9)
[13]	Upper paddle home sensor (PS25)	[14]	Sub tray exit sensor (PS24)
[15]	Main tray exit sensor (PS37)	[16]	FNS middle sensor (PS36)
[17]	Punch home sensor (PS301): PK-526	-	-

1.11.6 JS-602

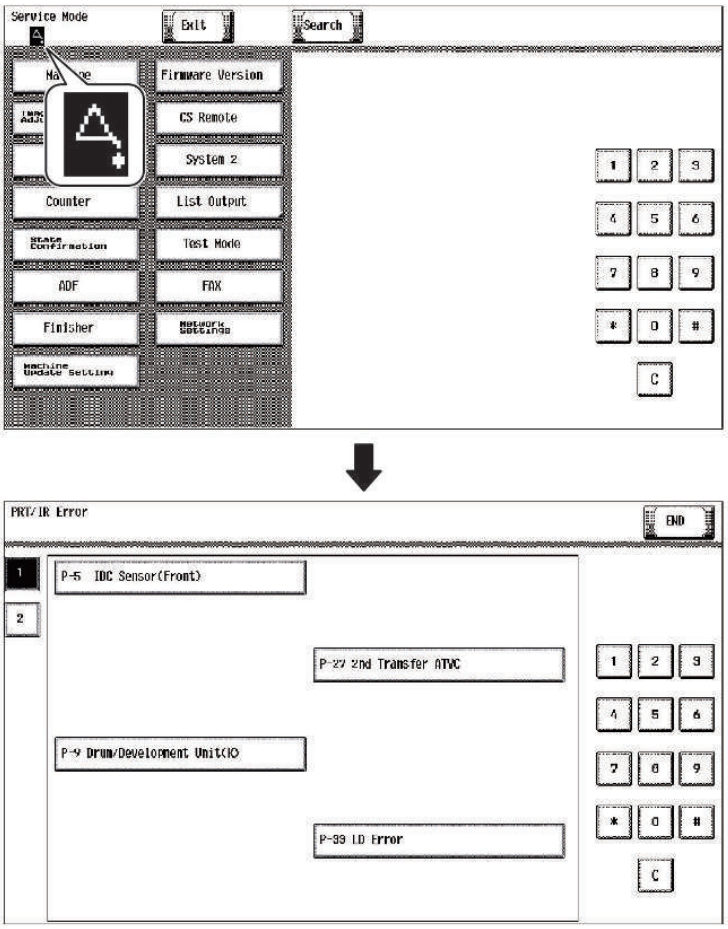


[1]	Job tray paper exit sensor (PS402)	-	-

2. MALFUNCTION CODE

2.1 Display procedure

- The machine's CPU performs a self-diagnostics function that, on detecting a malfunction, gives the corresponding malfunction code and maintenance call mark on the control panel.
- Touching the maintenance call mark will display the corresponding malfunction code on the state confirm screen.



2.2 List of the malfunction code

- If an image stabilization or scanner fault occurs, the corresponding malfunction code appears.

Malfunction code	Contents
S-1	CCD gain adjustment failure
S-2	CIS gain adjustment failure
D-1	Split line detect (front side)
D-3	Split line detect (back side)
P-5	IDC sensor/Fr failure
P-28	IDC sensor/Rr failure
P-9	Drum/Development unit (K) failure
P-27	Secondary transfer ATVC failure
P-33	LD malfunction
P-34	Atmospheric pressure sensor failure
P-35	Media sensor failure
P-36	Media sensor failure 2
P-37	PH optical system dirt
P-38	Feeding paper size sensor failure
P-39	Tacking fan failure
P-40	Fusing motor torque failure
P-41	Machine inside temperature sensor failure
P-42	PH temperature sensor failure
P-43	Paper temperature sensor failure

2.3 S-1

Contents

Malfunction type	CCD gain adjustment failure
Malfunction code	S-1
Malfunction detection timing	It is detected that the CCD clamp gain adjustment value is faulty.
Relevant parts	• LED exposure unit • CCD unit • Scanner drive board (SCDB) • Base board (BASEB)

Procedure

1. Correct the connector connection between CCDB CN2-BASEB CN6 if faulty.
2. Check for possible extraneous light and correct as necessary.
3. Clean the lens, mirrors, CCD surface, and shading sheet if dirty.
4. Correct reflective mirror of the scanner if faulty, or change scanner mirror.
5. Replace the CCD unit.
6. Replace SCDB.
7. Replace BASEB.

2.4 S-2

Contents

Malfunction type	CIS gain adjustment failure
Malfunction code	S-2
Malfunction detection timing	It is detected that the CIS clamp gain adjustment value is faulty.
Relevant parts	• CIS module (CIS) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Correct the connector connection between CIS CN2-BASEB CN5 if faulty.
2. Check CPUB for proper installation and correct as necessary.
3. Check for possible extraneous light and correct as necessary.
4. Wipe clean the back side scanning glass surface and shading sheet.
5. Replace CIS.
6. Replace CPUB.
7. Replace BASEB.

2.5 D-1

Contents

Malfunction type	Split line detect (front side)
Malfunction code	D-1
Malfunction detection timing	• While recovering from the power save mode or when the main power switch and power key are ON, it detects whether or not stain exist at the document reading glass when the DF is closed. This warning will be displayed if the original is set to DF when stain exist. • The thin line detection level and the warning display can be changed by [Service Mode] -> [System 2] -> [Split Line Detect. Setting] -> [Front Side].
Relevant parts	• Document reading glass cleaning motor (M8) • Document reading glass cleaning sensor (PS18) • DF control board (DFCB)

Procedure

1. Wipe clean the document reading glass surface.
2. Check the front side glass cleaning roller unit for proper installation and correct if necessary.
   Clean the front side glass cleaning roller unit if dirty.
3. Select [Service Mode] -> [System 2] -> [Split Line Detect. Setting] -> [Front Side], and change the setting.
4. Check DFCB connector for proper connection and correct as necessary.
5. M8 operation check
6. Replace the front side glass cleaning roller unit.
7. Replace DFCB.

2.6 D-3

Contents

Malfunction type	Split line detect (back side)
Malfunction code	D-3
Malfunction detection timing	• While recovering from the power save mode or when the main power switch and power key are ON, it detects whether or not stain exist at the back side original scanning section (CIS) when the DF is closed. This warning will be displayed if the original is set to DF when stain exist.

	• The thin line detection level and the warning display can be changed by [Service Mode] -> [System 2] -> [Split Line Detect. Setting] -> [Back Side].
Relevant parts	• CIS module (CIS) • CIS power supply (CISPU) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Wipe clean the CIS glass surface.
2. Check the back side glass cleaning roller unit for proper installation and correct if necessary. Clean the back side glass cleaning roller unit if dirty.
3. If there is a problem in the CIS module connection, correct the faulty connection.
4. Replace CIS.
5. Replace CISPU.
6. Replace CPUB.
7. Replace BASEB.

2.7 P-5, P-28

Contents

Malfunction type	IDC sensor/Fr failure, IDC sensor/Rr failure
Malfunction code	P-5, P-28
Malfunction detection timing	• During IDC sensor light intensity correction, output voltage detected for all eight sample patterns are 3.35 V or more. • During IDC sensor light intensity correction, sensor output voltage for light intensity selected after the correction is under 0.7 V. • During IDC base surface detective control, sensor output voltage detected is under 0.7 V or over 3.35V. • During image stabilization (gamma correction control), detected output value for IDC sensor did not go below threshold (half the value of what is detected by IDC sensor on the belt surface) for three consecutive times (position of the pattern end is not detected). • During image stabilization (gamma correction control), sensor's output value for hyper 0 gradation after the primary approximation is half the detection level on the belt surface or under.
Relevant parts	• IDC sensor/Fr (IDCS/Fr) • IDC sensor/Rr (IDCS/Rr) • High voltage unit (HV) • Transfer belt unit • Base board (BASEB)

Procedure

1. Wipe clean the surface of the transfer belt with a soft cloth, if it is dirty.
2. Replace the transfer belt unit if the transfer belt is damaged.
3. Reinstall or reconnect IDCS/Fr, connectors connecting between IDCS/Fr-relay CN77-BASEB CN15E, if any of the foregoing parts is installed or connected improperly.
4. Reinstall or reconnect IDCS/Rr, connectors connecting between IDCS/Rr-relay CN77-BASEB CN15E, if any of the foregoing parts is installed or connected improperly.
5. Clean IDCS/Fr or IDCS/Rr if it is dirty.
6. Check the connector between HV CN1-BASEB CN26E, HV CN2-BASEB CN21E for proper connection.
7. Open/close the lower front door, run an image stabilization sequence, and select [State Confirmation] -> [Level History 1] to check the IDC value.
   IDC1: IDCS/Fr
   IDC2: IDCS/Rr
   If the value is 1.0 V or less, replace IDCS/Fr or IDCS/Rr.
8. Replace BASEB.

2.8 P-9

Contents

Malfunction type	Drum/Development unit (K) failure
Malfunction code	P-9
Malfunction detection timing	• All density readings taken from the density pattern produced on the transfer belt are equal or under the predetermined value during max. density adjustment (Vg/Vdc adjustment). • All density readings taken from the density pattern produced on the transfer belt are equal or more the predetermined value during max. density adjustment (Vg/Vdc adjustment).
Relevant parts	• Drum unit/K • Developing unit/K • IDC sensor/Fr (IDCS/Fr) • IDC sensor/Rr (IDCS/Rr) • Base board (BASEB) • High voltage unit (HV) • Transfer belt unit

Procedure

1. Check the setting value in [Max Image Density Adj] of [Service Mode] -> [Imaging Process Adjustment] and, if it is negative, readjust.
2. Check the drive transmission portion of the drum/developing unit and correct as necessary.
3. Clean the IDC sensor/Fr (IDCS/Fr) or IDC sensor/Rr (IDCS/Rr) window if dirty.

4. Clean the contact of the drum/developing unit connector if dirty.
5. Check the connector between HV CN1-BASEB CN26E, HV CN2-BASEB CN21E for proper connection.
6. Replace the drum unit.
7. Replace the developing unit.
8. Replace the transfer belt unit.
9. Replace HV.
10. Replace BASEB.

2.9 P-27

Contents

Malfunction type	Secondary transfer ATVC failure
Malfunction code	P-27
Malfunction detection timing	An abnormal average value is detected during an adjustment of the second transfer ATVC value.
Relevant parts	• High voltage unit (HV) • Base board (BASEB) • Image transfer entrance guide • 2nd transfer assy • Transfer belt unit

Procedure

1. Check the contact between the roller opposed to the 2nd transfer roller in the transfer belt unit and the grounding terminal. Clean the joint or correct if necessary.
2. Check the image transfer entrance guide for proper installation and correct if necessary.
3. Check that the spring does not come off during the pressure operation of the 2nd transfer roller and correct if necessary.
4. Check the contact at the joint of the 2nd transfer assy and HV. Clean the joint or correct if necessary.
5. Replace the transfer belt unit.
6. Replace HV.
7. Replace BASEB.

2.10 P-33

Contents

Malfunction type	LD malfunction
Malfunction code	P-33
Malfunction detection timing	The DETOUT signal of the LD drive detected malfunction consecutively for the predetermined frequency.
Relevant parts	• Laser diode/K (LD/K) • Laser drive board (LDDB) • PH unit • Expansion control board (EXCB) • Base board (BASEB)

Procedure

1. Replace the PH unit.
2. Replace EXCB.
3. Replace BASEB.

2.11 P-34

Contents

Malfunction type	Atmospheric pressure sensor failure
Malfunction code	P-34
Malfunction detection timing	An error of the atmospheric pressure sensor (ATMPRS) is detected.
Relevant parts	• Atmospheric pressure sensor (ATMPRS) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between ATMPRS-BASEB CN27E for proper connection and correct as necessary.
2. Clean the cover on ATMPRS, if it is dirty.
3. Replace CPUB.
4. Replace BASEB.

2.12 P-35

Contents

Malfunction type	Media sensor failure
Malfunction code	P-35
Malfunction detection timing	• The PWM of each LED is out of the predetermined value during performing the calibration of the optical sensor.

	Perform the calibration when the right door is opened and closed, when recovering from the Sleep/ErP Auto Power Off mode, when the main power switch is turned ON, and when a certain amount of sensor ambient temperature changes. • When the obtained voltage value is determined to be an abnormal value during detection before feeding paper.
Relevant parts	• Paper basis weight detection board/TX (PBWDB/TX) • Paper basis weight detection board/RX (PBWDB/RX) • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Open the right door and check if there is any foreign matter between PBWDB/TX and PBWDB/RX.
2. Check if the mylar and reflector part between PBWDB/TX and PBWDB/RX are damaged or peeled off, or clogging by paper dust.
   Clean up it as necessary.
   Replace if damaged.
3. Check the connector between PBWDB/TX CN1ML-relay CN606-relay CN608-relay CN607-relay CN254-relay CN253-PBWDB/RX CN3MD for proper connection and correct as necessary.
4. Check the connector between PBWDB/RX CN2MD-relay CN253-relay CN254-EXCB CN6EX for proper connection and correct as necessary.
5. Check the connector between PBWDB/RX CN1MD-relay CN255-relay CN256-BASEB CN36E for proper connection and correct as necessary.
6. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
7. Check CPUB for proper installation and correct as necessary.
8. Replace EXCB.
9. Replace CPUB.
10. Replace BASEB.

2.13 P-36

Contents

Malfunction type	Media sensor failure 2
Malfunction code	P-36
Malfunction detection timing	• When starting the machine, or the lower front door or the right door is opened and closed, ultrasonic waves sensor error is detected. • Measure the received voltages when CLK is output and when CLK is not output, and the values are determined to be faulty.
Relevant parts	• Envelope detection board/TX (ENVDB/TX) • Envelope detection board/RX (ENVDB/RX) • Envelope detection relay board (ENVDRB) • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Open the right door and check if there is any foreign matter such as paper.
2. Check the connector between ENVDB/RX CN491-relay CN602-relay CN9-EXCB CN13EX for proper connection and correct as necessary.
3. Check the connector between ENVDB/TX CN490-ENVDRB CN1 for proper connection and correct as necessary.
4. Check the connector between ENVDRB CN2-relay CN253-relay CN254-EXCB CN6EX for proper connection and correct as necessary.
5. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
6. Check CPUB for proper installation and correct as necessary.
7. Replace EXCB.
8. Replace CPUB.
9. Replace BASEB.

2.14 P-37

Contents

Malfunction type	PH optical system dirt
Malfunction code	P-37
Malfunction detection timing	SOS signal is not detected even once while the PH contamination detection control is being performed.
Relevant parts	• PH unit • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between the PH unit-relay CN307-BASEB CN17E for proper connection and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Replace the PH unit.
4. Replace CPUB.
5. Replace BASEB.

2.15 P-38

Contents

Malfunction type	Feeding paper size sensor failure
Malfunction code	P-38
Malfunction detection timing	At the sensor check when starting the machine or starting the print, feeding paper size sensor/1 (PS50) or feeding paper size sensor/2 (PS51) is ON.
Relevant parts	• Feeding paper size sensor/1 (PS50) • Feeding paper size sensor/2 (PS51) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Select [Service Mode] -> [State Confirmation] -> [Sensor Check] and check the sensor operation.
2. Check the connector between PS50-relay CN171-BASEB CN40E for proper connection and correct as necessary.
3. Check the connector between PS51-relay CN171-BASEB CN40E for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. Replace CPUB.
6. Replace BASEB.

2.16 P-39

Contents

Malfunction type	Tacking fan failure
Malfunction code	P-39
Malfunction detection timing	The fan lock signal is detected continuously for a predetermined period of time while the fan is turning.
Relevant parts	• Tacking fan/Fr (FM23) • Tacking fan/Rr (FM24) • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM23-relay CN711-relay CN710-EXCB CN15EX, FM24-relay CN404-relay CN403-relay CN401-EXCB CN8EX for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. FM23 conduction check.
   - Control signal: EXCB CN15EX-4 (REM), EXCB CN15EX-6 (LOCK)
   - Location of electrical component: 26-X
4. FM24 conduction check.
   - Control signal: EXCB CN8EX-11 (REM), EXCB CN8EX-13 (LOCK)
   - Location of electrical component: 21-X
5. Replace the defective fan. (FM23 / FM24)
6. Replace EXCB.

2.17 P-40

Contents

Malfunction type	Fusing motor torque failure
Malfunction code	P-40
Malfunction detection timing	When the printing ends, the fusing motor torque exceeds the predetermined value.
Relevant parts	• Fusing motor (M3) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between M3-BASEB CN19E for proper connection and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Replace M3.
4. Replace CPUB.
5. Replace BASEB.

2.18 P-41

Contents

Malfunction type	Machine inside temperature sensor failure
Malfunction code	P-41
Malfunction detection timing	• After turning ON, when the detected temperature of the paper feed thermistor (TH4) is 10°C and above, the detected temperature of the temperature/humidity sensor (TEM/HUMS) is 0°C. • Turning OFF or entry in sleep mode resets the warning.
Relevant parts	• Temperature/humidity sensor (TEM/HUMS) • CPU board (CPUB)

	• Base board (BASEB)

Procedure

1. Check the connector between TEM/HUMS-BASEB CN15E for proper connection and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Replace the temperature/humidity sensor (TEM/HUMS).
4. Replace CPUB.
5. Replace BASEB.

2.19 P-42

Contents

Malfunction type	PH temperature sensor failure
Malfunction code	P-42
Malfunction detection timing	• After turning ON, when the detected temperature of the paper feed thermistor (TH4) is 10°C and above, the detected temperature of the PH temperature sensor is 0°C. • Turning OFF or entry in sleep mode resets the warning.
Relevant parts	• PH unit • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between the PH unit-relay CN308-BASEB CN17E for proper connection and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Replace the PH unit.
4. Replace CPUB.
5. Replace BASEB.

2.20 P-43

Contents

Malfunction type	Paper temperature sensor failure
Malfunction code	P-43
Malfunction detection timing	• After turning ON, when the detected temperature of the temperature/humidity sensor (TEM/HUMS) is 10°C and above, the detected temperature of the paper feed thermistor (TH4) is 0°C. • Turning OFF or entry in sleep mode resets the warning.
Relevant parts	• Paper feed thermistor (TH4) • CPU board (CPUB) • Base board (BASEB)

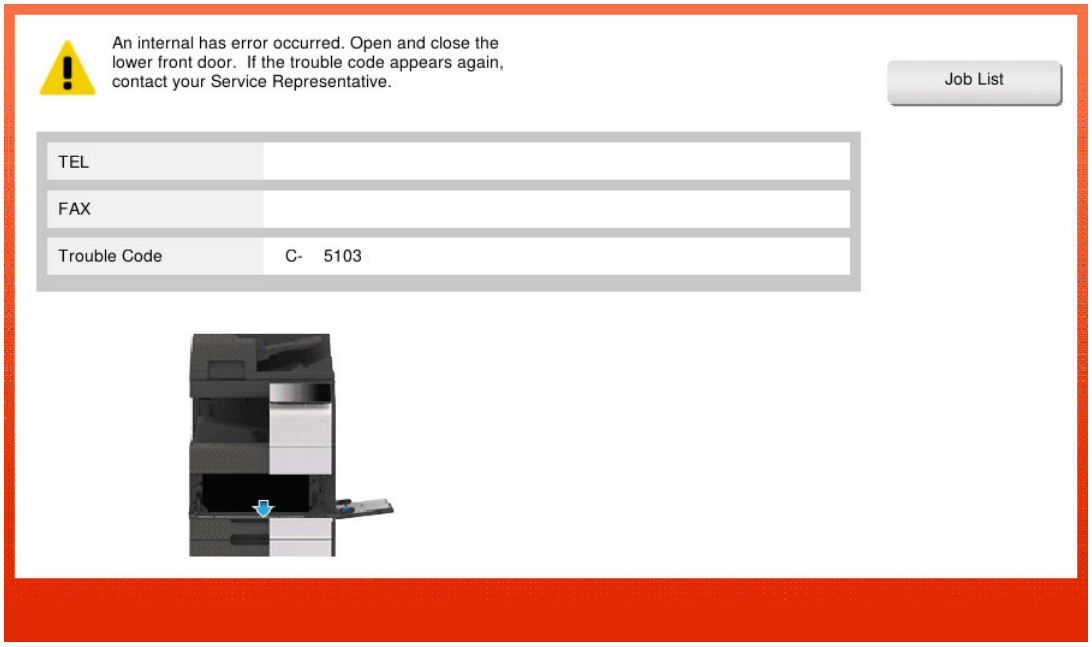
Procedure

1. Check the connector between TH4-relay CN29-BASEB CN27EA for proper connection and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Replace the paper feed thermistor (TH4).
4. Replace CPUB.
5. Replace BASEB.

3. TROUBLE CODE

3.1 Overview of trouble code

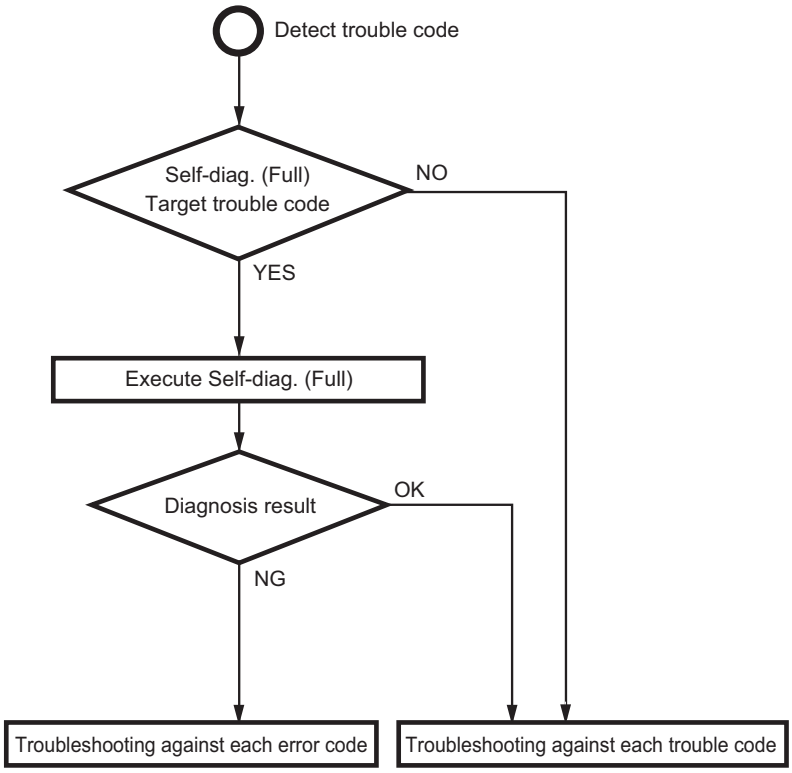
- The machine's CPU performs a self-diagnostics function that, on detecting a malfunction, gives the corresponding trouble code on the control panel.



3.2 Overview of troubleshooting procedure

- When a trouble code is displayed, confirm that if the displayed code is the target of the "Self-diag. (Full)". (Check the "Self-diag. (Full)" field on the List of the trouble code)
- If it is the target of the self-diagnosis, execute the "Self-diag. (Full)".
  If [NG] is displayed as the result of the "Self-diag. (Full)", perform the troubleshooting against each item of "Error code".
- If it is not the target of the self-diagnosis, perform the troubleshooting against each item of "Trouble code".
  NOTE
  - **Only in the case that trouble cannot be resolved even after the troubleshooting against each item of "Error code" from the "Self-diag. (Full)", perform the troubleshooting against each item of "Trouble code".**
- After the troubleshooting against each item of "Trouble code", execute the "Self-diag. (Full)" again, and make sure that all troubles on each device have been resolved.

Troubleshooting flow



3.2.1 Troubleshooting procedure

1. Display the trouble code.
2. Execute Self-diag. (Full), and perform the troubleshooting against each [Error code].
3. After the troubleshooting against each error code, if the trouble code is displayed again, perform the troubleshooting against each trouble code.
   NOTE
   - **Perform the troubleshooting in the sequence from step 1 of "Corrective action procedure" against each item while checking that if each trouble has been resolved. Do not perform the troubleshooting against all procedures at once.**
   - **At "Troubleshooting against each error code" and "Troubleshooting against each trouble code", if the parts to be replaced are the same (ex. base board), do not replace the same parts twice. (Because the trouble can hardly be resolved even after replacing the same parts twice)**
4. Perform the troubleshooting against each trouble code, and make sure that the trouble has be resolved.
5. After the troubleshooting against each trouble code, execute the "Self-diag. (Full)" again, and make sure that all troubles on each device have been resolved.

3.3 Trouble resetting procedure

- Different malfunction resetting procedures apply depending on the rank of the trouble code.

* List of malfunction resetting procedures

Trouble code rank	Resetting procedures
Rank A	Trouble reset key: Refer to the Trouble resetting procedure by Trouble Reset key.
Rank B	• Opening/closing the front door or lower front door • Trouble reset key: • When the [Internal Error. Auto Cancel] for rank B is set to “Yes”, after the set period of time, trouble is automatically cleared.
Rank C	• Turning main power switch OFF/ON • When the [Internal Error. Auto Cancel] for rank C is set to “Yes”, after the set period of time, trouble is restarted and cleared.

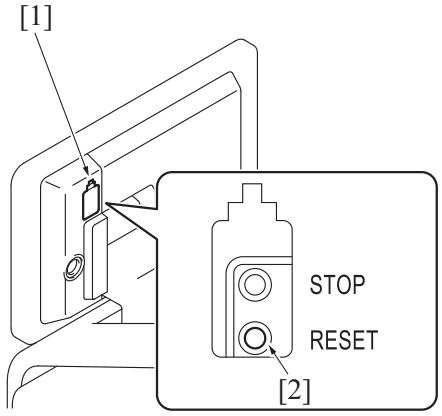
3.3.1 Trouble resetting procedure by Trouble Reset key

Use

- If the all troubles occur and the status would not be cleared by turning main power switch OFF and ON again, or opening and closing the front door or lower front door, clear the status of the machine.
- To be used when the status would not be cleared by turning main power switch OFF and ON again, or opening and closing the front door or lower front door in case of a trouble.

Procedure

1. Turn OFF the main power switch.
2. Remove the key cover [1] on the rear side of the control panel, and turn main power switch ON while pressing the Reset key [2].



3. Touch [Trouble Reset].
4. Check to make sure that [OK] is displayed and it has been reset.
5. After turning off the main power switch, turn it on again more than 10 seconds after and check if the machine starts correctly.
6. When the machine fails to start even after perform step 1 through 5, turn OFF the main power switch and unplug the power cord.
7. Insert the power cord after 15 sec. or more, turn ON the main power switch and check if the machine starts correctly.

3.3.2 Trouble resetting procedure by the auto cancel function

Use

- When rank B or C trouble occurs, main body automatically clears trouble and makes the main body ready for use.
  When the trouble auto cancel function is enabled, upon the occurrence of trouble to be automatically cleared, the trouble detection message is displayed on the screen and the trouble is automatically cleared. If the trouble remains after performing the auto cancel operation 3 times, the normal trouble code display screen appears.

Procedure

1. Select [Yes] for the trouble rank to which the trouble auto cancel operation is applied in [Service Mode] -> [System 2] -> [▶] -> [Internal Error. Auto Cancel]. (The default setting for rank B and rank C are set to [Yes].)
2. Touch [OK], and turning main power switch OFF and ON again.

3.3.3 Trouble resetting procedure by remote operation

Use

- Trouble can be cleared by remote operation using the applications or CS Remote Care system.
- The combinations of the applications to be used and the ranks of trouble to be cleared are shown below.

Trouble code rank / Application	Rank A	Rank B	Rank C
Web Connection	Cannot be cleared	Can be cleared	Can be cleared
OpenAPI (Enterprise Suite)	Cannot be cleared	Can be cleared	Can be cleared
CS Remote Care (Excluding communications by fax modem)	Can be cleared	Can be cleared	Can be cleared

Procedure

< Web Connection >

1. Access the Web Connection of the MFP where trouble occurs.
2. The screen for logging into Administrator Mode appears.
3. Check the following message appears; “An error has occurred. Do you want to clear the error?” Click [Trouble Reset].
4. Click [Trouble Reset] again in the confirmation screen.
5. Check that the MFP starts normally.

< OpenAPI (Enterprise Suite) >

1. Access Enterprise Suite.
2. Select [Device List] -> [Device Management] -> [Device List] -> [Device List] -> [Device].
3. For rank B trouble, click [Trouble Reset]. For rank C trouble, click [Reset].
4. For rank B trouble, click the [Execute] button.
   For rank C trouble, click the [Execute] button in [Device Reset].
5. Check that the MFP starts normally.

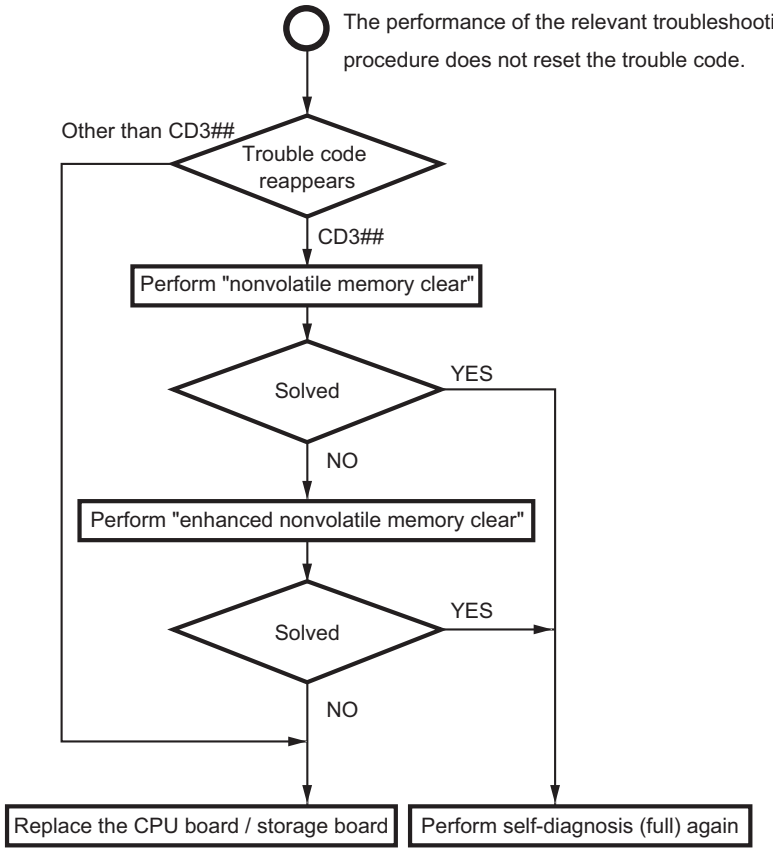
< CS Remote Care >

- Refer to the CS Remote Care Center manual.

3.4 Nonvolatile memory clear function

- When performance of the troubleshooting procedure according to the trouble code for "C-D3##" does not solve the problem and there is no way left but to replace the CPU board or storage board, the nonvolatile data on the CPU board and the storage board is cleared.
- Two types are available from the "nonvolatile memory clear function": "nonvolatile memory clear" and "enhanced nonvolatile memory clear."

First, perform "nonvolatile memory clear." If the problem persists, then, perform "enhanced nonvolatile memory clear."



NOTE

- **Perform "nonvolatile memory clear / enhanced nonvolatile memory clear" only for the trouble code of "C-D3##".**

3.4.1 Data to be cleared by the nonvolatile memory clear function

Device to be cleared	Memory space	Nonvolatile memory clear	Enhanced nonvolatile memory clear	Remark
CPU board (on-board SPI-Flash memory)	Firmware space	Not cleared	Not cleared	
	Boot firmware space	Not cleared	Not cleared	
	Important data B*1 (main)	Cleared	Cleared	
	Important data A*2 (sub)	Not cleared	Not cleared	
	Flash memory control space	Cleared	Cleared	
Storage board	Firmware space	Not cleared	Cleared	
	Application space	Not cleared	Cleared	
	Important data A*2 (main)	Cleared	Cleared	Counter data not cleared.
	Important data B*1 (sub)	Not cleared	Not cleared	

- *1: DIP SW information, TPM setting data, etc.
- *2: Counter data, machine setting values, optical setting values, printer adjustment values, etc.

3.4.2 Start and execution procedure

NVRAM Clear

1. Call the Service Mode to the screen.
2. Touch [State Confirmation] -> [Self-diag.(Full)] to display the “Self Full Check” screen.
3. Press the following keys in this order.
   - Stop -> 2 -> 9 -> 8 -> 2
4. Touch [NVRAM Clear].
5. Touch [Clear the memory.] or [Start].
   This clears the nonvolatile memory information and the machine is automatically is restarted.
   NOTE
   - **The warning screen appears after the restarting. Perform a data recovery procedure according to the predetermined procedure.**
   - **If the performance of "nonvolatile memory clear" does not solve the problem, perform "enhanced nonvolatile memory clear.”**

Enhanced NVRAM Clear

1. Call the Service Mode to the screen.
2. Touch [State Confirmation] -> [Self-diag.(Full)] to display the “Self Full Check” screen.

3. Press the following keys in this order.
   - Stop -> 2 -> 9 -> 8 -> 2
4. Touch [Enhanced NVRAM Clear].
5. Touch [Clear the memory.] or [Start].
6. When “OK” is displayed, turn OFF the main power switch of the main body.
7. Insert the USB memory that contains the latest firmware data and, while holding down the Rear stop key, turn ON the main power switch. After "enhanced nonvolatile memory clear" has been performed, "Machine/Type" needs to be input and, after "Machine/Type" has been input, the firmware needs to be reinstalled.
8. When the firmware has been installed, turn OFF the main power switch.
9. Remove the USB memory and turn ON the main power switch. Make sure that the machine is started.
10. If the performance of "nonvolatile memory clear" and "enhanced nonvolatile memory clear" does not solve the problem, replace the storage board.
11. If the problem persists even after the replacement of the storage board, replace the CPU board.

3.5 Trouble isolation function

- The trouble isolation function enables you to control MFP temporarily isolating faulty units, options, and functions where the trouble isolation function can be applied when trouble occurs. This allows you to continue using the other units or functions that are not affected and reduce down time that continues until CE resolves the problem.
- This function can be selected for the following units and options.
  - Tray 1
  - Tray 2
  - Tray 3
  - Tray 4
  - LCT
  - Manual
  - Center Stapling/Half-Fold/Tri-Fold
  - Post inserter
  - Z fold
  - Punch
  - Staple
  - Scanner
  - ADF
  - Expansion Fun. (Storage)
- If a problem occurs with the units where the trouble isolation function can be applied, the control panel displays a trouble code and a key with which you decide whether to continue using the MFP. When you press down the key, the control panel displays the units that will be isolated as well as the next confirmation key with which you decide to continue.
- When you press down the confirmation key, the message on the control panel asks you to turn OFF and ON the main power switch. After turning OFF and ON the main power switch, the MFP starts operating, isolating the faulty units or functions.
  The message on the control panel also tells that the MFP is working, isolating the faulty units.
- To temporarily isolate faulty units and continue using the MFP with the trouble isolation function, be sure to make the above mentioned control panel operation. The faulty units cannot be automatically isolated.

NOTE

- **The malfunction detection mechanism is not applied to units and options that are being isolated.**

3.6 List of the trouble code

Trouble Code	Contents	Rank	Self-diag. (Full)
C0002	Paper feed communication error	C	-
C0104	Tray 3/4 feeder transportation motor failure to turn	B	-
C0105	Tray 3/4 feeder transportation motor turning at abnormal timing	B	-
C0107	Intermediate motor turning at abnormal timing	B	-
C0202	Tray 1 feeder up/down abnormality	B	-
C0204	Tray 2 feeder up/down abnormality	B	-
C0206	Tray 3 feeder up/down abnormality	B	-
C0208	Tray 4 feeder up/down abnormality	B	-
C0211	Manual feed up/down abnormality	B	-
C0216	External LCT up/down abnormality (When LU-205 or LU-303 is installed)	B	-
C1003	PK communication error (Finisher detection) (When FS-540+PK-526 or FS-540SD+PK-526 is installed)	C	-
C1004	Finisher communication error (Engine detection) (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)	C	-
C1007	PI communication error (Finisher detection) (When FS-540+PI-507 or FS-540SD+PI-507 is installed)	C	-
C1013	PK communication error (PK detection) (When FS-540+PK-526 or FS-540SD+PK-526 is installed)	C	-
C1014	Finisher communication error (Finisher detection) (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)	C	-
C1017	PI communication error (PI detection) (When FS-540+PI-507 or FS-540SD+PI-507 is installed)	C	-
C1081	SD communication error (Finisher detection) (When FS-539SD or FS-540SD is installed)	C	-
C1082	SD communication error (SD detection) (When FS-539SD or FS-540SD is installed)	C	-
C1102	Main tray up/down motor drive malfunction (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)	B	-
C1103	Alignment motor/Fr drive malfunction (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)	B	-
C1104	Stacker plate drive motor malfunction (When FS-540 or FS-540SD is installed)	B	-
C1105	Bundle eject motor drive malfunction (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)	B	-
C1106	Stapler movement motor drive malfunction (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)	B	-
C1109	Stapler motor drive malfunction (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)	B	-
C1112	Stapler motor malfunction (When FS-539SD or FS-540SD is installed	B	-
C1113	Stopper drive motor malfunction (When FS-539SD or FS-540SD is installed)	B	-
C1114	Alignment motor drive malfunction (When FS-539SD or FS-540SD is installed)	B	-
C1115	Center fold knife motor malfunction (When FS-539SD or FS-540SD is installed)	B	-
C1124	Tray lift motor/Lw drive malfunction (When FS-540+PI-507 or FS-540SD +PI-507 is installed)	B	-
C1125	Tray lift motor/Up drive malfunction (When FS-540+PI-507 or FS-540SD +PI-507 is installed)	B	-
C1127	Punch oscillating motor malfunction (When FS-540+PK-526 or FS-540SD +PK-526 is installed)	B	-
C1130	ZU transport motor drive malfunction (When FS-540+ZU-609 or FS-540SD+ZU-609 is installed)	B	-
C1131	Folding guide motor drive malfunction (When FS-540+ZU-609 or FS-540SD+ZU-609 is installed)	B	-
C1132	Punch drive motor drive malfunction (When FS-539+PK-524, FS-539SD +PK-524, FS-540+PK-526, or FS-540SD+PK-526 is installed)	B	-
C1133	Pressure motor drive malfunction (When FS-540+ZU-609 or FS-540SD +ZU-609 is installed)	B	-
C1140	Alignment motor/Rr drive malfunction (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)	B	-

Trouble Code	Contents	Rank	Self-diag. (Full)
C1141	FNS paddle motor drive malfunction (When FS-539, FS-539SD, FS-540, FS-540SD is installed)	B	-
C1142	Paddle up/down motor drive malfunction (When FS-540 or FS-540SD is installed)	B	-
C1143	Arm drive motor drive malfunction (When FS-540 or FS-540SD is installed)	B	-
C1144	Pre-eject drive motor drive malfunction (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)	B	-
C1145	Trailing edge stopper motor drive malfunction (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)	B	-
C1146	Trail edge stopper motor/Rr drive malfunction (When FS-540 or FS-540SD is installed)	B	-
C1152	Paper transport belt motor malfunction (When FS-540SD is installed)	B	-
C1156	SD paddle motor malfunction (When FS-539SD or FS-540SD is installed)	B	-
C1184	Paper delivery control motor drive malfunction (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)	B	-
C1195	Paper discharge control motor malfunction (When FS-539SD or FS-540SD is installed)	B	-
C1196	Center fold guide motor malfunction (When FS-539SD or FS-540SD is installed)	B	-
C1197	Tri-folding guide motor malfunction (When FS-539SD or FS-540SD is installed)	B	-
C11A2	Receiving roller retraction motor drive malfunction (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)	B	-
C11C5	Paper size detect board malfunction (When FS-540+PK-526 or FS-540SD +PK-526 is installed)	B	-
C11E1	Paper exit switching drive malfunction (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)	B	-
C11E2	Paper exit switching (JS) drive malfunction (When FS-540 or FS-540SD is installed)	B	-
C1403	PK flash ROM error (When FS-540+PK-526 or FS-540SD+PK-526 is installed)	C	-
C1404	PI flash ROM error (When FS-540+PI-507 or FS-540SD+PI-507 is installed)	C	-
C2204	Waste toner transport motor failure to turn	B	-
C2350	Toner suction fan failure to turn	B	-
C2355	Transfer belt cleaner cooling fan failure to turn	B	-
C2357	DV cooling fan failure to turn	B	-
C2414	Developing unit/K new article release	B	-
C2557	Abnormally low toner density detected black TCR sensor	B	-
C2558	Abnormally high toner density detected black TCR sensor	B	-
C255C	Black TCR sensor adjustment failure	B	-
C2564	Black TCR sensor failure	B	-
C2650	Main backup media access error	C	-
C2A14	Drum unit/K new release failure	B	-
C2A24	Toner cartridge/K new release failure	C	-
C3103	Pressure roller release failure	B	-
C3104	Fusing shutter failure	B	-
C3201	Fusing motor failure to turn	B	-
C3202	Fusing motor turning at abnormal timing	B	-
C3203	Fusing motor torque failure	C	-
C3302	Paper cooling fan failure to turn	B	-
C3306	Fusing edge cooling fan/Fr failure to turn	B	-
C3307	Fusing edge cooling fan/Rr failure to turn	B	-
C3425	Fusing warm-up trouble	A	-
C3722	Fusing abnormally high temperature detection (Edge of the heating roller)	A	-
C3725	Fusing abnormally high temperature detection (Main of the heating roller)	A	-
C3726	Fusing abnormally high temperature detection (Center of the heating roller)	A	-
C3737	Fusing abnormally high temperature detection hard protector (Center of the heating roller)	A	-

Trouble Code	Contents	Rank	Self-diag. (Full)
C3825	Fusing abnormally low temperature detection (Main of the heating roller)	A	-
C3826	Fusing abnormally low temperature detection (Center of the heating roller)	A	-
C3922	Fusing sensor wire breaks detection (Edge of the heating roller)	A	-
C3925	Fusing sensor wire breaks detection (Main of the heating roller)	A	-
C3926	Fusing sensor wire breaks detection (Center of the heating roller)	A	-
C392B	Fusing sensor wire breaks detection (difference of temperature)	A	-
C40A2	Mechanical controller PF communication data error	C	-
C40A3	Mechanical controller PF transmission timeout	C	-
C40A4	Mechanical controller PF communication pulse error	C	-
C40A5	QSPI communication clock switching error	C	-
C40A6	Mechanical controller ASIC communication error	C	-
C40C3	CTL PF transmission timeout 1	C	-
C40C5	CTL PF transmission timeout 2	C	-
C4101	Polygon motor rotation trouble	B	-
C4501	Laser malfunction	B	-
C5102	Transport motor failure to turn	B	-
C5103	Transport motor turning at abnormal timing	B	-
C5351	PH/power supply cooling fan failure to turn	B	-
C5355	Toner cartridge cooling fan failure to turn	B	-
C5356	Machine internal cooling fan failure to turn	B	-
C5358	HaCS power supply cooling fan failure to turn	B	-
C5360	Clean unit fan failure to turn (When CU-102 is installed)	B	-
C5361	UFP scavenging fan/Fr failure to turn	B	-
C5362	UFP scavenging fan/Rr failure to turn	B	-
C5370	Rear side cooling fan failure to turn	C	Target
C5372	MFP control board CPU temperature failure	C	Target
C5601	Engine control malfunction	C	-
C5603	Expansion control board communication error	C	-
C5605	Engine communication data error	C	-
C5606	Engine transmission timeout	C	-
C5610	PH LD drive communication error	C	-
C5620	Mechanical controller WDT error	C	-
C6001	DF related configuration error 1	C	Target
C6002	DF related configuration error 2	C	-
C6102	Drive system home sensor malfunction	B	Target
C6103	Slider over running	B	Target
C6104	Back side cleaning home sensor abnormality (initial)	B	Target
C6105	Back side cleaning home sensor abnormality (normal)	B	Target
C6704	Image input time out	C	Target
C6751	CCD clamp/gain adjustment failure	B	Target
C6752	ASIC clock input error (front side)	C	Target
C6753	ASIC clock input error (back side)	C	Target
C6754	CIS clamp adjustment failure	B	Target
C6755	CIS gain adjustment failure	B	Target
C6756	CCD power-supply voltage malfunction	C	Target
C6901	DSC board mount failure 1 (When SC-509 is installed)	C	Target
C6902	DSC board bus check NG1-1 (When SC-509 is installed)	C	Target
C6903	DSC board bus check NG1-2 (When SC-509 is installed)	C	Target
C6911	DSC board mount failure 2 (When SC-509 is installed)	C	Target
C6912	DSC board bus check NG2-1 (When SC-509 is installed)	C	Target
C6913	DSC board bus check NG2-2 (When SC-509 is installed)	C	Target
C6F01	Scanner sequence trouble 1	C	Target
C6F02	Scanner sequence trouble 2	C	Target
C6F03	Scanner sequence trouble 3	C	Target
C6F04	Scanner sequence trouble 4	C	Target
C6F05	Scanner sequence trouble 5	C	Target
C6F06	Scanner sequence trouble 6	C	Target

Trouble Code	Contents	Rank	Self-diag. (Full)
C6F07	Scanner sequence trouble 7	C	Target
C6F08	Scanner sequence trouble 8	C	Target
C6F09	Scanner sequence trouble 9	C	Target
C6F0A	Scanner sequence trouble 10	C	Target
C6FDC	Scanner sequence trouble DC	B	Target
C6FDD	Scanner sequence trouble DD	B	Target
C7106	Paper exit/reverse motor failure	C	-
C7107	ADU transport motor/1 failure	C	-
C7111	Tray 1 lift-up motor failure	C	-
C7112	Tray 2 lift-up motor failure	C	-
C7132	Toner cartridge motor/K failure	C	-
C7137	Toner supply motor/K failure	C	-
C7139	Waste toner transport motor failure	C	-
C7141	Fusing pressure motor failure	C	-
C7160	Fusing shutter motor failure	B	-
C7162	Tray 2 vertical transport motor failure	B	-
C7163	Registration motor failure	B	-
C7164	ADU transport motor/2 failure	B	-
C7202	Tray 2 paper feed clutch failure	C	-
C7206	Bypass tray paper feed clutch failure	C	-
C7241	Bypass tray lift-up solenoid failure	C	-
C7242	Bypass pick-up roller solenoid failure	C	-
C7243	Exit path switch solenoid failure	C	-
C7251	Developing solenoid failure	C	-
C7301	PH/power supply cooling fan failure	C	-
C7302	Transfer belt cleaner cooling fan failure	C	-
C7304	Toner cartridge cooling fan failure	C	-
C7305	Paper cooling fan failure	C	-
C7310	DV cooling fan failure	B	-
C7311	Fusing edge cooling fan/Rr failure	B	-
C7312	Toner suction fan failure	B	-
C7313	UFP scavenging fan/Fr failure	B	-
C7314	UFP scavenging fan/Rr failure	B	-
C7315	Fusing edge cooling fan/Fr failure	B	-
C7317	Tacking fan/Fr failure	C	-
C7318	Machine internal cooling fan failure	C	-
C7319	Tacking fan/Rr failure	C	-
C7401	Erase LED/K failure	C	-
C7501	Tray 2 upper limit sensor failure	C	-
C7502	Tray 1 upper limit sensor failure	C	-
C7601	Power line A1 error	C	-
C7604	Power line A4 error	C	-
C7605	Power line A5 error	C	-
C7606	Power line A6 error	C	-
C7607	Power line A7 error	C	-
C760A	Power line A10 error	C	-
C760B	Power line A11 error	C	-
C760C	Power line A12 error	C	-
C760D	Power line A13 error	C	-
C760E	Power line A14 error	C	-
C760F	Power line A15 error	C	-
C7610	Power line A16 error	C	-
C7622	Power line B2 error	C	-
C7624	Power line B4 error	C	-
C7631	Supply power line 1 error	C	-
C7633	Supply power line 3 error	C	-
C8103	Lift up mechanism trouble (Upward movement)	B	-

Trouble Code	Contents	Rank	Self-diag. (Full)
C8106	Lift up mechanism failure (Downward movement)	B	-
C8107	Glass cleaning mechanism trouble	B	-
C8302	DF cooling fan failure	B	-
C8401	Flash ROM error	C	-
C8402	Multi feed detection board failure	C	-
C9401	Exposure LED lighting failure	B	Target
C9402	Exposure LED lighting abnormally	B	Target
C9403	CIS LED lighting failure	B	Target
C9404	CIS LED lighting abnormally	B	Target
C9701	Front side reading device cable break detection	A	Target
C9702	Back side reading device cable break detection	A	Target
CA051	Standard controller configuration failure	C	-
CA052	Controller hardware error	C	-
CA053	Controller start failure	C	-
CB001	Fax board error 1 (fax ROM checksum error)	C	Target
CB002	Fax board error 2 (DPRAM check error)	C	Target
CB004	Fax board DipSw setting error	C	Target
CB005	No fax board is installed. Mistake in installation. Defective HW.	C	Target
CB006	USB connection is interrupted	C	Target
CB051	Fax board mount failure line 1	C	Target
CB052	Fax board mount failure line 2	C	Target
CB110	Program control error (instance acquisition error)	C	Target
CB111	Configuration space initialization NG	C	Target
CB112	Semaphore control error	C	Target
CB113	I/F error among tasks	C	Target
CB114	Message queue generation error	C	Target
CB115	I/F error with fax (I/F error between main body and fax)	C	Target
CB116	Communication error between controller and fax board	C	Target
CB117	ACK waiting timeout error	C	Target
CB118	Receiving undefined frame	C	Target
CB119	DMA transfer error	C	Target
CB120	Soft error	C	Target
CB122	Modem-DAA initialize error	C	Target
CB123	Modem-DAA power save recovery error	C	Target
CB125	ISW failure of SubCPU	C	Target
CB126	Timeout of suspension process (Codec control)	C	Target
CB127	Timeout of suspension process (communication control)	C	Target
CB128	Timeout of suspension process (line control)	C	Target
CB130	I/F error with main body (fax soft error)	C	Target
CB131	I/F error with main body (reception frame error)	C	Target
CB132	I/F error with main body (reception frame header error)	C	Target
CB133	I/F error with main body (232C I/F sequence error)	C	Target
CB134	I/F error with main body (sequence error)	C	Target
CB135	I/F error with main body	C	Target
CB136	ACK waiting timeout	C	Target
CB137	I/F error with main body (RESET reception from main body)	C	Target
CB140	MSG I/F error with JC	C	Target
CB141	Fax soft error (received unexpected command)	C	Target
CB142	Fax soft error (received undefined command)	C	Target
CB143	Fax soft error (command frame length error)	C	Target
CB144	Fax soft error (parameter length error)	C	Target
CB145	Fax soft error (received undefined parameter)	C	Target
CB146	Fax soft error (command/response sequence error)	C	Target
CB150	Program control error (instance acquisition error)	C	Target
CB151	Job start error	C	Target
CB152	Doc access error	C	Target
CB153	Program control error (logic error)	C	Target

Trouble Code	Contents	Rank	Self-diag. (Full)
CB154	Program control error (table control error)	C	Target
CB160	Program control error (instance acquisition error)	C	Target
CB161	Timeout error	C	Target
CB162	Program control error (interface error)	C	Target
CB163	Program control error (sequence error)	C	Target
CB164	Semaphore acquisition/release error	C	Target
CB165	Program control error (table control error)	C	Target
CB166	Reception resource check error	C	Target
CB167	Sending image access error (image acquisition error)	C	Target
CB168	Receiving image access error (image storage error)	C	Target
CB169	Sending image access error (image deletion error)	C	Target
CB170	Program control error (table control error)	C	Target
CB171	Program control error (instance acquisition error)	C	Target
CB172	Timeout error	C	Target
CB173	Program control error (interface error)	C	Target
CB174	Semaphore acquisition/release error	C	Target
CB175	Observer registration error	C	Target
CB176	Unable to secure domain for header (TTI) image generation	C	Target
CB177	Header (TTI) image generation error	C	Target
CB178	Receiving job generation error	C	Target
CB179	Sequence control error (line command error/mismatched status, mismatched event)	C	Target
CB185	Receiving data size logic error (Receiving data are not multiples of dotline)	C	Target
CB186	Unable to secure domain for receiving image	C	Target
CB187	Receiving image conversion error	C	Target
CB188	Program control error (table control error)	C	Target
CB190	USB sending error	C	Target
CB191	USB sending error	C	Target
CB192	Error retry 5 sec. T.O (No response or other errors)	C	Target
CB193	No response due to detach of USB	C	Target
CB194	Error retry 3 sec. T.O (main body status error)	C	Target
CB195	Attach not detected for 1 min. after recovery from sleep when receiving	C	Target
CB196	Detach not detected for 1 min. after shift from sleep	C	Target
CB197	USB I/F error during formatting when main power switch ON	C	Target
CB198	Attach not detected for 1 min. after recovery from sleep at the time other than receiving	C	Target
CC002	Vendor internal error	C	Target
CC151	ROM contents error upon startup (MSC)	C	Target
CC152	ROM contents error upon startup (IR)	C	Target
CC155	Finisher ROM error (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)	C	-
CC156	DF ROM error	C	Target
CC159	ROM contents error upon startup (DSC1)	C	Target
CC15A	ROM contents error upon startup (DSC2)	C	Target
CC15B	Flash ROM error (saddle) (When FS-539SD or FS-540SD is installed)	C	-
CC15C	Engine Flash ROM writing error	C	-
CC163	ROM contents error (PRT)	C	-
CC164	ROM contents error (MSC)	C	Target
CC170	Dynamic link error during starting (AP0)	C	Target
CC171	Dynamic link error during starting (AP1)	C	Target
CC172	Dynamic link error during starting (AP2)	C	Target
CC173	Dynamic link error during starting (AP3)	C	Target
CC174	Dynamic link error during starting (AP4)	C	Target
CC180	Dynamic link error during starting (LDR)	C	Target
CC181	Dynamic link error during starting (IBR)	C	Target
CC182	Dynamic link error during starting (IID)	C	Target
CC183	Dynamic link error during starting (IPF)	C	Target

Trouble Code	Contents	Rank	Self-diag. (Full)
CC184	Dynamic link error during starting (IMY)	C	Target
CC185	Dynamic link error during starting (SPF)	C	Target
CC186	Dynamic link error during starting (OAP)	C	Target
CC190	Outline font load error	C	Target
CC191	Setting parameter load error (LDR)	C	Target
CC211	Authentication device general error	C	Target
CC212	User validation error	C	Target
CC213	User registration error/Card information setting error	C	Target
CC214	User information deletion error	C	Target
CC216	Acquisition failure of the number of trials/Initialize error of number of authentication	C	Target
CC301	Authentication customize data error	B	Target
CC302	Authentication customize data version mismatch error	B	Target
CCC00	Public user account track information error	B	-
CD002	JOB RAM save error	C	Target
CD004	Storage access error (connection failure)	C	Target
CD00F	Storage data transfer error	C	Target
CD010	Storage unformat	C	Target
CD011	Storage out of specifications mounted	C	Target
CD012	Mount error due to storage being unformatted	C	Target
CD020	Storage verify error	C	Target
CD030	Storage management information reading error	C	Target
CD041	Storage command execution error	C	Target
CD042		C	Target
CD043		C	Target
CD044		C	Target
CD045		C	Target
CD046		C	Target
CD047	Storage SCSI library error	C	Target
CD048		C	Target
CD049		C	Target
CD04A		C	Target
CD04B		C	Target
CD050	Storage recovery timeout	C	Target
CD072	Second-hand storage or second-hand CPU board installed	C	Target
CD073	Storage type mismatch	C	Target
CD110	Wireless LAN destination initialization error	C	Target
CD201	File memory mounting error	C	Target
CD202	Memory capacity discrepancy	C	Target
CD203	Memory capacity discrepancy 2	C	Target
CD211	PCI-SDRAM DMA operation failure	C	Target
CD212	Compression/extraction timeout detection	C	Target
CD241	Encryption ASIC setting error	C	Target
CD242	Encryption ASIC mounting error	C	Target
CD261	USB hub board failure	C	Target
CD262	Extension network adapter installation error	C	Target
CD2D1	VLAN setting configuration error	B	-
CD3##	Nonvolatile data error	C	Target
CD313	TPM key data error	C	Target
CD38E	Nonvolatile data save error (SPI-Flash)	C	Target
CD390	Nonvolatile data checksum error	C	Target
CD391	Nonvolatile data save error (Storage)	-	Target
CD392	Nonvolatile data save error (EEPROM)	C	Target
CD3B1	DB server startup failure	C	Target
CD3B3	DB access failure	C	Target
CD3B4	No DB definition file	C	Target
CD3B5	DB definition file error	C	Target

Trouble Code	Contents	Rank	Self-diag. (Full)
CD3C0	New board detection	C	Target
CD401	NACK command incorrect	C	Target
CD402	ACK command incorrect	C	Target
CD403	Check sum error	C	Target
CD404	Receiving packet incorrect	C	Target
CD405	Receiving packet analysis error	C	Target
CD406	ACK receiving timeout	C	Target
CD407	Retransmission timeout	C	Target
CD411	Touch panel board error	C	Target
CD412	Touch panel type mismatch	C	Target
CD413	Electrostatic touch panel operation mode error	C	Target
CD601	Trouble related to security	-	-
CD602			
CD603			
CD701	Mechanical controller flash ROM writing error	C	-
CD702	Mechanical controller flash ROM device error	C	-
CD703	FW download communication fault	C	-
CD704	Finisher Flash ROM device error (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)	C	-
CDC##	Trouble related to security	-	-
CDF50	ASIC image version failure	C	Target
CDF51	ASIC image version failure (back side)	C	Target
CDF70	ASIC image access failure	C	Target
CDF71	ASIC image access failure (back side)	C	Target
CDFA0	ASIC image error	C	Target
CDFA1	ASIC image error (back side)	C	Target
CE001	Abnormal message queue	C	Target
CE002	Message and method parameter failure	C	Target
CE003	Task error	C	Target
CE004	Event error	C	Target
CE005	Memory access error	C	Target
CE006	Header access error	C	Target
CE007	DIMM initialize error	C	Target
CE009	Memory resource shortage error	C	Target
CE012	Failed to receive the entropy from Haveged	C	Target
CE013	Virus scan engine startup failure (8 GB storage)	C	Target
CE014	Virus scan engine startup failure (storage error)	C	Target
CE015	Secret information issue error	C	Target
CE101	Browser finish detected	C	Target
CE201	Transmission operation log storage fault	C	Target
CE202	PDL interpreter error	C	Target
CE203	Unrecoverable error	C	Target
CE204	SIP / T.38 library loading failure	C	Target
CE301	Referring incorrect memory	C	Target
CE302	Incorrect command	C	Target
CE303	Finished due to error inside Qt library	C	Target
CE304	Finished due to error outside Qt library	C	Target
CE305	Program forced to stop	C	Target
CE401	Shared memory connection timeout	C	Target
CED01	The authentication application information does not exist in the storage in the enhanced server authentication state.	C	Target
CEEE1	CPU board (MSC) malfunction	C	Target
CEEE2	Scanner section malfunction	A	Target
CEEE3	Base board (ENG) malfunction	A	Target
CF###	Trouble code (CF###) is referred to as abort code. For details of abort code, refer to “ABORT CODE”.	C	-

3.7 C0###

3.7.1 C0002

Contents

Trouble type	C0002: Paper feed communication error
Rank	C
Trouble detection condition	When the base board (BASEB) is receiving data, a communication error is detected.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB) • PC control board (PCCB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct or replace the connector connection between the main body and the paper feed cabinet if faulty.
3. Check CPUB for proper installation and correct as necessary.
4. Rewrite the firmware.
5. PCCB F11 conduction check
6. Replace PCCB.
7. Replace CPUB.
8. Replace BASEB.

3.7.2 C0104, C0105

Contents

Trouble type	• C0104: Tray 3/4 feeder transportation motor failure to turn • C0105: Tray 3/4 feeder transportation motor turning at abnormal timing
Rank	B
Trouble detection condition	• C0104: The control circuit detects motor failure to turn while the motor is turning. • C0105: The control circuit detects motor turning while the motor remains stationary.
Trouble isolation	Tray 3/4
Relevant electrical parts	• Transport motor (M152) • PC control board (PCCB)

Procedure

1. Check the connector between M152-PCCB CN5 for proper connection and correct as necessary.
2. Check the connector of M152 for proper drive coupling and correct as necessary.
3. M152 load check
   - Check code: 28
   - Multi code: 51, 52, 53, 54, 55
   - Control signal: PCCB CN5-1 to 8
   - Location of electrical component: 7-K
4. Replace M152.
5. PCCB F300 conduction check
6. Replace PCCB.

3.7.3 C0107

Contents

Trouble type	C0107: Intermediate motor turning at abnormal timing
Rank	B
Trouble detection condition	• The control circuit detects motor failure to turn while the motor is turning. • The control circuit detects motor turning while the motor remains stationary.
Trouble isolation	-
Relevant electrical parts	• Intermediate motor (M151) • PC control board (PCCB)

Procedure

1. Check the connector between M151-relay CN73-PCCB CN20 for proper connection and correct as necessary.
2. Check the connector of M151 for proper drive coupling and correct as necessary.
3. M151 load check
   - Check code: 28
   - Multi code: 56, 57, 58, 59, 60
   - Control signal: PCCB CN20-1 to 3
   - Location of electrical component: Cabinet (Tray 3/4) 7-K
4. Replace M151.
5. Replace PCCB.

3.7.4 C0202

Contents

Trouble type	C0202: Tray 1 feeder up/down abnormality
Rank	B
Trouble detection condition	The tray 1 upper limit sensor (PS25) is not turned ON (blocked) even after the set period of time has elapsed after the paper lift-up operation for the drawer began.
Trouble isolation	Tray 1
Relevant electrical parts	• Tray 1 lift-up motor (M12) • Tray 1 upper limit sensor (PS25) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Remove the tray and check to see if a piece of paper is not left inside the machine.
2. Check the connector between M12-relay CN180-BASEB CN25E for proper connection and correct as necessary.
3. Check the connector of M12 for proper drive coupling and correct as necessary.
4. Check the connector between PS25-relay CN30-BASEB CN26E for proper connection and correct as necessary.
5. Check CPUB for proper installation and correct as necessary.
6. PS25 I/O check, sensor check
   - Control signal: BASEB CN26EA-15 (ON)
   - Location of electrical component: 11-K
7. M12 load check
   - Check code: 23
   - Multi code: 4
   - Control signal: BASEB CN25E-1 (REM)
   - Location of electrical component: 17-K
8. Replace M12.
9. Replace CPUB.
10. Replace BASEB.

3.7.5 C0204

Contents

Trouble type	C0204: Tray 2 feeder up/down abnormality
Rank	B
Trouble detection condition	The tray 2 upper limit sensor (PS22) is not turned ON (blocked) even after the set period of time has elapsed after the paper lift-up operation for the drawer began.
Trouble isolation	Tray 2
Relevant electrical parts	• Tray 2 lift-up motor (M13) • Tray 2 upper limit sensor (PS22) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Remove the tray and check to see if a piece of paper is not left inside the machine.
2. Check the connector between M13-relay CN181-BASEB CN25E for proper connection and correct as necessary.
3. Check the connector of M13 for proper drive coupling and correct as necessary.
4. Check the connector between PS22-relay CN40-BASEB CN23E for proper connection and correct as necessary.
5. Check CPUB for proper installation and correct as necessary.
6. PS22 I/O check, sensor check
   - Control signal: BASEB CN23E-12 (ON)
   - Location of electrical component: 16-K
7. M13 load check
   - Check code: 23
   - Multi code: 5
   - Control signal: BASEB CN25E-10 (REM)
   - Location of electrical component: 18-K
8. Replace M13.
9. Replace CPUB.
10. Replace BASEB.

3.7.6 C0206

Contents

Trouble type	C0206: Tray 3 feeder up/down abnormality
Rank	B
Trouble detection condition	The tray 3 upper limit sensor (PS156) is not turned ON (blocked) even after the set period of time has elapsed after the paper lift-up operation for the drawer began.
Trouble isolation	Tray 3
Relevant electrical parts	• Tray 3 lift-up motor (M143) • Tray 3 upper limit sensor (PS156) • PC control board (PCCB)

	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Remove the tray and check to see if a piece of paper is not left inside the machine.
2. Check the connector between M143-PCCB CN6 for proper connection and correct as necessary.
3. Check the connector of M143 for proper drive coupling and correct as necessary.
4. Check the connector between PS156-relay CN25-PCCB CN7 for proper connection and correct as necessary.
5. Check CPUB for proper installation and correct as necessary.
6. PS156 I/O check, sensor check
   - Control signal: PCCB CN7-9 (ON)
   - Location of electrical component: PC-417 4-C
7. M143 load check
   - Check code: 23
   - Multi code: 6
   - Control signal: PCCB CN6-4 to 5
   - Location of electrical component: PC-417 5-K
8. Replace M143.
9. PCCB PS300 conduction check
10. Replace PCCB.
11. Replace CPUB.
12. Replace BASEB.

3.7.7 C0208

Contents

Trouble type	C0208: Tray 4 feeder up/down abnormality
Rank	B
Trouble detection condition	The tray 4 upper limit sensor (PS166) is not turned ON (blocked) even after the set period of time has elapsed after the paper lift-up operation for the drawer began.
Trouble isolation	Tray 4
Relevant electrical parts	• Tray 4 lift-up motor (M144) • Tray 4 upper limit sensor (PS166) • PC control board (PCCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Remove the tray and check to see if a piece of paper is not left inside the machine.
2. Check the connector between M144-PCCB CN6 for proper connection and correct as necessary.
3. Check the connector of M144 for proper drive coupling and correct as necessary.
4. Check the connector between PS166-relay CN47-PCCB CN4 for proper connection and correct as necessary.
5. Check CPUB for proper installation and correct as necessary.
6. PS166 I/O check, sensor check
   - Control signal: PCCB CN4-3 (ON)
   - Location of electrical component: PC-417 4-C
7. M144 load check
   - Check code: 23
   - Multi code: 7
   - Control signal: PCCB CN6-9 to 10
   - Location of electrical component: PC-417 5-K
8. Replace M144.
9. PCCB PS301 conduction check
10. Replace PCCB.
11. Replace CPUB.
12. Replace BASEB.

3.7.8 C0211

Contents

Trouble type	C0211: Manual feed up/down abnormality
Rank	B
Trouble detection condition	• The bypass lift-up position sensor (PS26) is not turned OFF (unblock) even after the paper feed motor (M22) rotates for a given period of time after the position is switched from stand by position at lift-up plate to the feed position. • The bypass lift-up position sensor (PS26) is not turned ON (blocked) even after the paper feed motor (M22) rotates for a given period of time after the position is switched from feed position at lift-up plate to the stand by position.
Trouble isolation	Manual
Relevant electrical parts	• Paper feed motor (M22) • Bypass tray lift-up solenoid (SD1) • Bypass tray lift-up position sensor (PS26) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between M22-BASEB CN31E for proper connection and correct as necessary.
2. Check the connector of M22 for proper drive coupling and correct as necessary.
3. Check the connector between PS26-relay CN13-BASEB CN26E for proper connection and correct as necessary.
4. Check the connector between SD1-relay CN21-relay CN13-BASEB CN26E for proper connection and correct as necessary.
5. Check CPUB for proper installation and correct as necessary.
6. PS26 I/O check, sensor check
   - Control signal: BASEB CN26EA-6 (ON)
   - Location of electrical component: 9-K
7. SD1 load check
   - Check code: 23
   - Multi code: 3
   - Control signal: BASEB CN26EA-9 (ON)
   - Location of electrical component: 10-K
8. M22 load check
   - Check code: 28
   - Multi code: 31, 34, 35
   - Control signal: BASEB CN31E-1 to 4
   - Location of electrical component: 23-K
9. Replace M22.
10. Replace CPUB.
11. Replace BASEB.

3.7.9 C0216

Contents

Trouble type	C0216: External LCT up/down abnormality (When LU-205 or LU-303 is installed)
Rank	B
Trouble detection condition	The LU upper limit sensor (PS2) is not turned ON (blocked) even after the set period of time has elapsed after the paper lift-up operation for the drawer began.
Trouble isolation	LCT
Relevant electrical parts	• LU upper limit sensor (PS2) • LU lift-up motor (M1) • LU drive board (LUDB)

Procedure

1. Check the connector between M1-LUDB CN3 for proper connection and correct as necessary.
2. Check the connector of M1 for proper drive coupling and correct as necessary.
3. Check the connector between PS2-relay CN406-LUDB CN5 for proper connection and correct as necessary.
4. PS2 I/O check, sensor check
   - Control signal: LUDB CN5-3 (ON)
   - Location of electrical component: LU-205/LU-303 4-G
5. M1 load check
   - Check code: 23
   - Multi code: 8
   - Control signal: LUDB CN3-4 (ON)
   - Location of electrical component: LU-205/LU-303 3-G
6. Replace M1. (LU-205 / LU-303)
7. Replace LUDB. (LU-205 / LU-303)

3.8 C1###

3.8.1 C1003, C1013

Contents

Trouble type	• C1003: PK communication error (Finisher detection) (When FS-540+PK-526 or FS-540SD+PK-526 is installed) • C1013: PK communication error (PK detection) (When FS-540+PK-526 or FS-540SD+PK-526 is installed)
Rank	C
Trouble detection condition	When a communication error is detected between the FS control board (FSCB) and the punch control board (PKCB).
Trouble isolation	-
Relevant electrical parts	• Punch control board (PKCB) • FS control board (FSCB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Rewrite the firmware.
3. Replace PKCB.
4. Replace FSCB.

3.8.2 C1004, C1014

(1) When FS-539 or FS-539SD is installed

Contents

Trouble type	• C1004: Finisher communication error (Engine detection) (When FS-539 or FS-539SD is installed) • C1014: Finisher communication error (Finisher detection) (When FS-539 or FS-539SD is installed)
Rank	C
Trouble detection condition	When a communication error is detected between the base board (BASEB) and the FS control board (FSCB).
Trouble isolation	-
Relevant electrical parts	• FS control board (FSCB) • Base board (BASEB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Rewrite the firmware.
3. Replace FSCB.
4. Replace BASEB.

(2) When FS-540 or FS-540SD is installed

Contents

Trouble type	• C1004: Finisher communication error (Engine detection) (When FS-540 or FS-540SD is installed) • C1014: Finisher communication error (Finisher detection) (When FS-540 or FS-540SD is installed)
Rank	C
Trouble detection condition	When a communication error is detected between the base board (BASEB) and the FS control board (FSCB).
Trouble isolation	-
Relevant electrical parts	• FS control board (FSCB) • Base board (BASEB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Rewrite the firmware.
3. Replace FSCB.
4. Replace BASEB.

3.8.3 C1007, C1017

Contents

Trouble type	• C1007: PI communication error (Finisher detection) (When FS-540+PI-507 or FS-540SD+PI-507 is installed) • C1017: PI communication error (PI detection) (When FS-540+PI-507 or FS-540SD+PI-507 is installed)
Rank	C
Trouble detection condition	When a communication error is detected between the FS control board (FSCB) and the PI drive board (PIDB).
Trouble isolation	-
Relevant electrical parts	• PI drive board (PIDB) • FS control board (FSCB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Rewrite the firmware.
3. Replace PIDB.
4. Replace FSCB.

3.8.4 C1081, C1082

(1) When FS-539SD is installed

Contents

Trouble type	• C1081: SD communication error (Finisher detection) (When FS-539SD is installed) • C1082: SD communication error (SD detection) (When FS-539SD is installed)
Rank	C
Trouble detection condition	When a communication error is detected between the FS control board (FSCB) and the SD control board (SDCB).
Trouble isolation	Center Stapling/Half-Fold/Tri-Fold (C1081 only)
Relevant electrical parts	• SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.

2. Rewrite the firmware.
3. Replace SDCB.
4. Replace FSCB.

(2) When FS-540SD is installed

Contents

Trouble type	• C1081: SD communication error (Finisher detection) (When FS-540SD is installed) • C1082: SD communication error (SD detection) (When FS-540SD is installed)
Rank	C
Trouble detection condition	When a communication error is detected between the FS control board (FSCB) and the SD control board (SDCB).
Trouble isolation	Center Stapling/Half-Fold/Tri-Fold (C1081 only)
Relevant electrical parts	• SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Rewrite the firmware.
3. Replace SDCB.
4. Replace FSCB.

3.8.5 C1102

(1) When FS-539 or FS-539SD is installed

Contents

Trouble type	C1102: Main tray up/down motor drive malfunction (When FS-539 or FS-539SD is installed)
Rank	B
Trouble detection condition	• While the exit tray is being lifted, the main tray upper position sensor (PS26/PS27) or main tray empty sensor (PS39) is not turned ON (blocked) after the set period of time has elapsed after the main tray up/down motor (M11) is energized. • While the exit tray is being lowered, the main tray full sensor (PS29) is not turned ON (blocked) after the set period of time has elapsed after the main tray up/down motor (M11) is energized.
Trouble isolation	-
Relevant electrical parts	• Main tray up/down motor (M11) • Main tray upper position sensor/Rr (PS26) • Main tray upper position sensor/Fr (PS27) • Main tray full sensor (PS29) • Main tray empty sensor (PS39) • FS control board (FSCB)

Procedure

1. Check the connector between M11-FSCB J9 for proper connection and correct as necessary.
2. Check the connector of M11 for proper drive coupling and correct as necessary.
3. Check the connector between PS26-relay CN1-FSCB J14 for proper connection and correct as necessary.
4. Check the connector between PS27-relay CN1-FSCB J14 for proper connection and correct as necessary.
5. Check the connector between PS29-relay CN2-FSCB J14 for proper connection and correct as necessary.
6. Check the connector between PS39-relay CN1-FSCB J14 for proper connection and correct as necessary.
7. PS26 I/O check, sensor check
   - Control signal: FSCB J14<A>-5 (ON)
   - Location of electrical component: FS-539/FS-539SD 2-C
8. PS27 I/O check, sensor check
   - Control signal: FSCB J14<A>-15 (ON)
   - Location of electrical component: FS-539/FS-539SD 2-C
9. PS29 I/O check, sensor check
   - Control signal: FSCB J14<B>-11 (ON)
   - Location of electrical component: FS-539/FS-539SD 3-C
10. PS39 I/O check, sensor check
    - Control signal: FSCB J14<B>-8 (ON)
    - Location of electrical component: FS-539/FS-539SD 3-C
11. M11 operation check
    - Control signal: FSCB J9<A>-9 to 14
    - Location of electrical component: FS-539/FS-539SD 12-C
12. Replace M11.
13. FSCB F3 or F9 conduction check.
14. Replace FSCB.

(2) When FS-540 or FS-540SD is installed

Contents

Trouble type	C1102: Main tray up/down motor drive malfunction (When FS-540 or FS-540SD is installed)
Rank	B

Trouble detection condition	• While the exit tray is being lifted, the main tray lift up detection sensor (PS16/PS17) or main tray empty sensor (PS13) is not turned ON (blocked) after the set period of time has elapsed after the main tray up/down motor (M6) is energized. • While the exit tray is being lowered, the main tray full sensor (PS12) is not turned ON (blocked) after the set period of time has elapsed after the main tray up/down motor (M6) is energized.
Trouble isolation	-
Relevant electrical parts	• Main tray up/down motor (M6) • Main tray lift up detection sensor/Fr (PS16) • Main tray lift up detection sensor/Rr (PS17) • Main tray full sensor (PS12) • Main tray empty sensor (PS13) • FS control board (FSCB)

Procedure

1. Check the connector between M6-FSCB J23 for proper connection and correct as necessary.
2. Check the connector of M6 for proper drive coupling and correct as necessary.
3. Check the connector between PS16-relay CN10B-FSCB J20 for proper connection and correct as necessary.
4. Check the connector between PS17-relay CN10B-FSCB J20 for proper connection and correct as necessary.
5. Check the connector between PS12-relay CN9-FSCB J19 for proper connection and correct as necessary.
6. Check the connector between PS13-relay CN10A-FSCB J20 for proper connection and correct as necessary.
7. PS16 I/O check, sensor check
   - Control signal: FSCB J20<B>-4 (ON)
   - Location of electrical component: FS-540/FS-540SD 11-D
8. PS17 I/O check, sensor check
   - Control signal: FSCB J20<B>-7 (ON)
   - Location of electrical component: FS-540/FS-540SD 11-D
9. PS12 I/O check, sensor check
   - Control signal: FSCB J19-7 (ON)
   - Location of electrical component: FS-540/FS-540SD 9-D
10. PS13 I/O check, sensor check
    - FSCB J20<A>-6 (ON)
    - Location of electrical component: FS-540/FS-540SD 10-D
11. M6 operation check
    - Control signal: FSCB J23-1 to 11
    - Location of electrical component: FS-540/FS-540SD 12-D
12. Replace M6.
13. FSCB F5, F8, F12 conduction check
14. Replace FSCB.

3.8.6 C1103

(1) When FS-539 or FS-539SD is installed

Contents

Trouble type	C1103: Alignment motor/Fr drive malfunction (When FS-539 or FS-539SD is installed)
Rank	B
Trouble detection condition	• The alignment plate home sensor/Fr (PS12) is not turned OFF (unblocked) after the set period of time has elapsed after the plate drive starts from the home position. • The alignment plate home sensor/Fr (PS12) is not turned ON (blocked) after the set period of time has elapsed after the alignment motor/Fr (M7) is energized when the plate returned to the home position. • The alignment plate/Fr does not reach the specified position within the set period of time.
Trouble isolation	-
Relevant electrical parts	• Alignment motor/Fr (M7) • Alignment plate home sensor/Fr (PS12) • FS control board (FSCB)

Procedure

1. Check the connector between M7-relay CN13-FSCB J4 for proper connection and correct as necessary.
2. Check the connector of M7 for proper drive coupling and correct as necessary.
3. Check the connector between PS12-FSCB J4 for proper connection and correct as necessary.
4. PS12 I/O check, sensor check
   - Control signal: FSCB J4<B>-4 (ON)
   - Location of electrical component: FS-539/FS-539SD 14-C
5. M7 operation check
   - Control signal: FSCB J4<A>-5 to 8
   - Location of electrical component: FS-539/FS-539SD 13 to 14-C
6. Replace M7.
7. Replace FSCB.

(2) When FS-540 or FS-540SD is installed

Contents

Trouble type	C1103: Alignment motor/Fr drive malfunction (When FS-540 or FS-540SD is installed)
Rank	B

Trouble detection condition	• The alignment plate home sensor/Fr (PS9) is not turned OFF (unblocked) after the set period of time has elapsed after the plate drive starts from the home position. • The alignment plate home sensor/Fr (PS9) is not turned ON (blocked) after the set period of time has elapsed after the alignment motor/Fr (M14) is energized when the plate returned to the home position. • The alignment plate/Fr does not reach the specified position within the set period of time.
Trouble isolation	-
Relevant electrical parts	• Alignment motor/Fr (M14) • Alignment plate home sensor/Fr (PS9) • FS control board (FSCB)

Procedure

1. Check the connector between M14-relay CN5-FSCB J18 for proper connection and correct as necessary.
2. Check the connector of M14 for proper drive coupling and correct as necessary.
3. Check the connector between PS9-relay CN5-FSCB J18 for proper connection and correct as necessary.
4. PS9 I/O check, sensor check
   - Control signal: FSCB J18-10 (ON)
   - Location of electrical component: FS-540/FS-540SD 6-D
5. M14 operation check
   - Control signal: FSCB J18-1 to 4
   - Location of electrical component: FS-540/FS-540SD 5-D
6. Replace M14.
7. Replace FSCB.

3.8.7 C1104

Contents

Trouble type	C1104: Stacker plate drive motor malfunction (When FS-540 or FS-540SD is installed)
Rank	B
Trouble detection condition	• The stacker plate home sensor (PS30) is not turned OFF (unblocked) after the set period of time has elapsed after the plate drive starts from the home position. Or, the stacker plate position sensor (PS29) is not turned ON (blocked) even after the set period of time has elapsed. • The stacker plate home sensor (PS30) is not turned ON (blocked) after the set period of time has elapsed after the stacker plate drive motor (M3) is energized when the plate returned to the home position.
Trouble isolation	-
Relevant electrical parts	• Stacker plate drive motor (M3) • Stacker plate position sensor (PS29) • Stacker plate home sensor (PS30) • FS control board (FSCB)

Procedure

1. Check the connector between M3-relay CN1B-FSCB J22 for proper connection and correct as necessary.
2. Check the connector of M3 for proper drive coupling and correct as necessary.
3. Check the connector between PS29-relay CN2-relay CN1B-FSCB J22 for proper connection and correct as necessary.
4. Check the connector between PS30-relay CN2-relay CN1B-FSCB J22 for proper connection and correct as necessary.
5. PS29 I/O check, sensor check
   - Control signal: FSCB J22<B>-7 (ON)
   - Location of electrical component: FS-540/FS-540SD 3-D
6. PS30 I/O check, sensor check
   - Control signal: FSCB J22<B>-10 (ON)
   - Location of electrical component: FS-540/FS-540SD 3-D
7. M3 operation check
   - Control signal: FSCB J22<B>-1 to 2
   - Location of electrical component: FS-540/FS-540SD 2-D
8. Replace M3.
9. Replace FSCB.

3.8.8 C1105

(1) When FS-539 or FS-539SD is installed

Contents

Trouble type	C1105: Bundle eject motor drive malfunction (When FS-539 or FS-539SD is installed)
Rank	B
Trouble detection condition	The gripper home sensor (PS18) is not turned OFF (blocked) or ON (unblocked) even after the set period of time has elapsed after the bundle eject motor (M10) is energized.
Trouble isolation	-
Relevant electrical parts	• Bundle eject motor (M10) • Gripper home sensor (PS18) • FS control board (FSCB)

Procedure

1. Check the connector between M10-relay CN7A-FSCB J13 for proper connection and correct as necessary.
2. Check the connector of M10 for proper drive coupling and correct as necessary.
3. Check the connector between PS18-relay CN7A-FSCB J13 for proper connection and correct as necessary.

4. PS18 I/O check, sensor check
   - Control signal: FSCB J13-13 (ON)
   - Location of electrical component: FS-539/FS-539SD 16-C
5. M10 operation check
   - Control signal: FSCB J13-1 to 2
   - Location of electrical component: FS-539/FS-539SD 17-C
6. Replace M10.
7. FSCB F8 conduction check
8. Replace FSCB.

(2) When FS-540 or FS-540SD is installed

Contents

Trouble type	C1105: Bundle eject motor drive malfunction (When FS-540 or FS-540SD is installed)
Rank	B
Trouble detection condition	The gripper home sensor (PS3) is not turned OFF (blocked) or ON (unblocked) even after the set period of time has elapsed after the bundle eject motor (M1) is energized.
Trouble isolation	-
Relevant electrical parts	• Bundle eject motor (M1) • Gripper home sensor (PS3) • FS control board (FSCB)

Procedure

1. Check the connector between M1-relay CN1A-FSCB J22 for proper connection and correct as necessary.
2. Check the connector of M1 for proper drive coupling and correct as necessary.
3. Check the connector between PS3-relay CN1A-FSCB J22 for proper connection and correct as necessary.
4. PS3 I/O check, sensor check
   - Control signal: FSCB J22<A>-13 (ON)
   - Location of electrical component: FS-540/FS-540SD 2-D
5. M1 operation check
   - Control signal: FSCB J22<A>-1 to 2
   - Location of electrical component: FS-540/FS-540SD 1-D
6. Replace M1.
7. Replace FSCB.

3.8.9 C1106

(1) When FS-539 or FS-539SD is installed

Contents

Trouble type	C1106: Stapler movement motor drive malfunction (When FS-539 or FS-539SD is installed)
Rank	B
Trouble detection condition	• The stapler home sensor (PS35) is not turned OFF (unblocked) after the set period of time has elapsed after the stapler drive starts from the home position. • The stapler home sensor (PS35) is not turned ON (blocked) after the set period of time has elapsed after the stapler movement motor (M13) is energized when the stapler returned to the home position. • The stapler does not reach the specified position within the set period of time.
Trouble isolation	Staple
Relevant electrical parts	• Stapler movement motor (M13) • Stapler home sensor (PS35) • FS control board (FSCB)

Procedure

1. Check the connector between M13-relay CN3-FSCB J11 for proper connection and correct as necessary.
2. Check the connector of M13 for proper drive coupling and correct as necessary.
3. Check the connector between PS35-relay CN18-FSCB J21 for proper connection and correct as necessary.
4. PS35 I/O check, sensor check
   - Control signal: FSCB J21-6 (ON)
   - Location of electrical component: FS-539/FS-539SD 6-C
5. M13 operation check
   - Control signal: FSCB J11<A>-1 to 4
   - Location of electrical component: FS-539/FS-539SD 4-C
6. Replace M13.
7. FSCB F8 or F10 conduction check
8. Replace FSCB.

(2) When FS-540 or FS-540SD is installed

Contents

Trouble type	C1106: Stapler movement motor drive malfunction (When FS-540 or FS-540SD is installed)
Rank	B
Trouble detection condition	• The corner staple position sensor/Fr (PS53) is not turned OFF (unblocked) after the set period of time has elapsed after the stapler drive starts from the home position.

	• The corner staple position sensor/Fr (PS53) is not turned ON (blocked) after the set period of time has elapsed after the stapler movement motor (M19) is energized when the stapler returned to the home position. • The stapler does not reach the specified position within the set period of time.
Trouble isolation	Staple
Relevant electrical parts	• Stapler movement motor (M19) • Corner staple position sensor/Fr (PS53) • FS control board (FSCB)

Procedure

1. Check the connector between M19-FSCB J17 for proper connection and correct as necessary.
2. Check the connector of M19 for proper drive coupling and correct as necessary.
3. Check the connector between PS53-FSCB J16 for proper connection and correct as necessary.
4. PS53 I/O check, sensor check
   - Control signal: FSCB J16<B>-3 (ON)
   - Location of electrical component: FS-540/FS-540SD 15-K to L
5. M19 operation check
   - Control signal: FSCB J17-8 to 11
   - Location of electrical component: FS-540/FS-540SD 13 to 14-D
6. Replace M19.
7. FSCB F10 or F13 conduction check.
8. Replace FSCB.

3.8.10 C1109

(1) When FS-539 or FS-539SD is installed

Contents

Trouble type	C1109: Stapler motor drive malfunction (When FS-539 or FS-539SD is installed)
Rank	B
Trouble detection condition	• The stapler sensor is not turned OFF or ON even after the set period of time has elapsed after the stapler motor is energized. • The stapler center position sensor (PS24) is turned ON (blocked), when the stapler motor is running.
Trouble isolation	Staple
Relevant electrical parts	• Stapler unit • Stapler center position sensor (PS24) • FS control board (FSCB)

Procedure

1. Check the connector between the stapler unit-relay CN6-FSCB J11 for proper connection and correct as necessary.
2. Check the connector of the stapler unit for proper drive coupling and correct as necessary.
3. Check the connector between PS24-relay CN3-FSCB J11 for proper connection and correct as necessary.
4. PS24 I/O check, sensor check
   - Control signal: FSCB J11<B>-6 (ON)
   - Location of electrical component: FS-539/FS-539SD 5-C
5. Replace the stapler unit.
6. Replace FSCB.

(2) When FS-540 or FS-540SD is installed

Contents

Trouble type	C1109: Stapler motor drive malfunction (When FS-540 or FS-540SD is installed)
Rank	B
Trouble detection condition	• The stapler sensor is not turned OFF or ON even after the set period of time has elapsed after the stapler motor (M5) is energized. • The stapler center position sensor (PS20) is turned ON (blocked), when the stapler motor (M5) is running.
Trouble isolation	Staple
Relevant electrical parts	• Stapler unit • Stapler center position sensor (PS20) • FS control board (FSCB)

Procedure

1. Check the connector between the stapler unit-FSCB J17 for proper connection and correct as necessary.
2. Check the connector of the stapler unit for proper drive coupling and correct as necessary.
3. Check the connector between PS20-FSCB J16 for proper connection and correct as necessary.
4. PS20 I/O check, sensor check
   - Control signal: FSCB J16<A>-3
   - Location of electrical component: FS-540/FS-540SD 14-K to L
5. Replace the stapler unit.
6. Replace FSCB.

3.8.11 C1112

(1) When FS-539SD is installed

Contents

Trouble type	C1112: Stapler motor malfunction (When FS-539SD is installed)
Rank	B
Trouble detection condition	• The stapler home sensor is not turned ON even after the set period of time has elapsed while the stapler motor is energized. • The stapler home sensor is not turned OFF even after the set period of time has elapsed after the stapler home sensor is turned ON.
Trouble isolation	• Staple • Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• Stapler unit • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between the stapler unit-SDCB J4 for proper connection and correct as necessary.
2. Check the connector of the stapler unit for proper drive coupling and correct as necessary.
3. Replace the stapler unit.
4. Replace SDCB.
5. Replace FSCB.

(2) When FS-540SD is installed

Contents

Trouble type	C1112: Stapler motor malfunction (When FS-540SD is installed)
Rank	B
Trouble detection condition	• The stapler home sensor is not turned ON even after the set period of time has elapsed while the stapler motor is energized. • The stapler home sensor is not turned OFF even after the set period of time has elapsed after the stapler home sensor is turned ON.
Trouble isolation	• Staple • Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• Stapler unit • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between the stapler unit-SDCB J4 for proper connection and correct as necessary.
2. Check the connector of the stapler unit for proper drive coupling and correct as necessary.
3. Replace the stapler unit.
4. Replace SDCB.
5. FSCB F7 conduction check
6. Replace FSCB.

3.8.12 C1113

(1) When FS-539SD is installed

Contents

Trouble type	C1113: Stopper drive motor malfunction (When FS-539SD is installed)
Rank	B
Trouble detection condition	The stopper home sensor (PS106) is not turned OFF (unblocked) or ON (blocked) even after the set period of time has elapsed after the stopper drive motor (M104) is energized.
Trouble isolation	• Staple • Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• Stopper drive motor (M104) • Stopper home sensor (PS106) • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between M104-SDCB J10 for proper connection and correct as necessary.
2. Check the connector of M104 for proper drive coupling and correct as necessary.
3. Check the connector between PS106-SDCB J10 for proper connection and correct as necessary.
4. PS106 I/O check, sensor check
   - Control signal: SDCB J10-5 (ON)
   - Location of electrical component: FS-539/FS-539SD 2-P
5. M104 operation check
   - Control signal: SDCB J10-6 to 9
   - Location of electrical component: FS-539/FS-539SD 2-P
6. Replace M104.

7. Replace SDCB.
8. Replace FSCB.

(2) When FS-540SD is installed

Contents

Trouble type	C1113: Stopper drive motor malfunction (When FS-540SD is installed)
Rank	B
Trouble detection condition	The stopper home sensor (PS106) is not turned OFF (unblocked) or ON (blocked) even after the set period of time has elapsed after the stopper drive motor (M104) is energized.
Trouble isolation	• Staple • Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• Stopper drive motor (M104) • Stopper home sensor (PS106) • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between M104-SDCB J10 for proper connection and correct as necessary.
2. Check the connector of M104 for proper drive coupling and correct as necessary.
3. Check the connector between PS106-SDCB J10 for proper connection and correct as necessary.
4. PS106 I/O check, sensor check
   - Control signal: SDCB J10-5 (ON)
   - Location of electrical component: FS-540/FS-540SD 2-P
5. M104 operation check
   - Control signal: SDCB J10-6 to 9
   - Location of electrical component: FS-540/FS-540SD 2-P
6. Replace M104.
7. Replace SDCB.
8. Replace FSCB.

3.8.13 C1114

(1) When FS-539SD is installed

Contents

Trouble type	C1114: Alignment motor drive malfunction (When FS-539SD is installed)
Rank	B
Trouble detection condition	The alignment home sensor (PS104) is not turned OFF (unblocked) or ON (blocked) even after the set period of time has elapsed after the alignment motor (M103) is energized.
Trouble isolation	Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• Alignment motor (M103) • Alignment home sensor (PS104) • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between M103-relay CN26-SDCB J7 for proper connection and correct as necessary.
2. Check the connector of M103 for proper drive coupling and correct as necessary.
3. Check the connector between PS104-relay CN26-SDCB J7 for proper connection and correct as necessary.
4. PS104 I/O check, sensor check
   - Control signal: SDCB J7-6 (ON)
   - Location of electrical component: FS-539/FS-539SD 6-P
5. M103 operation check
   - Control signal: SDCB J7-7 to 10
   - Location of electrical component: FS-539/FS-539SD 6-P
6. Replace M103.
7. Replace SDCB.
8. Replace FSCB.

(2) When FS-540SD is installed

Contents

Trouble type	C1114: Alignment motor drive malfunction (When FS-540SD is installed)
Rank	B
Trouble detection condition	The alignment home sensor (PS104) is not turned OFF (unblocked) or ON (blocked) even after the set period of time has elapsed after the alignment motor (M103) is energized.
Trouble isolation	Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• Alignment motor (M103) • Alignment home sensor (PS104) • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between M103-relay CN29-SDCB J7 for proper connection and correct as necessary.
2. Check the connector of M103 for proper drive coupling and correct as necessary.
3. Check the connector between PS104-relay CN29-SDCB J7 for proper connection and correct as necessary.
4. PS104 I/O check, sensor check
   - Control signal: SDCB J7-6 (ON)
   - Location of electrical component: FS-540/FS-540SD 6-P
5. M103 operation check
   - Control signal: SDCB J7-7 to 10
   - Location of electrical component: FS-540/FS-540SD 5-P
6. Replace M103.
7. Replace SDCB.
8. Replace FSCB.

3.8.14 C1115

(1) When FS-539SD is installed

Contents

Trouble type	C1115: Center fold knife motor malfunction (When FS-539SD is installed)
Rank	B
Trouble detection condition	The center fold knife home sensor (PS108) is not turned OFF (unblocked) or ON (blocked) even after the set period of time has elapsed after the center fold knife motor (M109) is energized.
Trouble isolation	Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• Center fold knife motor (M109) • Center fold knife home sensor (PS108) • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between M109-SDCB J11 for proper connection and correct as necessary.
2. Check the connector of M109 for proper drive coupling and correct as necessary.
3. Check the connector between PS108-relay CN26-SDCB J7 for proper connection and correct as necessary.
4. PS108 I/O check, sensor check
   - Control signal: SDCB J7-3 (ON)
   - Location of electrical component: FS-539/FS-539SD 6 to 7-P
5. M109 operation check
   - Control signal: SDCB J11-11 to 20
   - Location of electrical component: FS-539/FS-539SD 2-L
6. Replace M109.
7. Replace SDCB.
8. Replace FSCB.

(2) When FS-540SD is installed

Contents

Trouble type	C1115: Center fold knife motor malfunction (When FS-540SD is installed)
Rank	B
Trouble detection condition	The center fold knife home sensor (PS108) is not turned OFF (unblocked) or ON (blocked) even after the set period of time has elapsed after the center fold knife motor (M109) is energized.
Trouble isolation	Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• Center fold knife motor (M109) • Center fold knife home sensor (PS108) • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between M109-SDCB J11 for proper connection and correct as necessary.
2. Check the connector of M109 for proper drive coupling and correct as necessary.
3. Check the connector between PS108-relay CN29-SDCB J7 for proper connection and correct as necessary.
4. PS108 I/O check, sensor check
   - Control signal: SDCB J7-3 (ON)
   - Location of electrical component: FS-540/FS-540SD 6-P
5. M109 operation check
   - Control signal: SDCB J11-11 to 20
   - Location of electrical component: FS-540/FS-540SD 2-K
6. Replace M109.
7. Replace SDCB.
8. Replace FSCB.

3.8.15 C1124

Contents

Trouble type	C1124: Tray lift motor/Lw drive malfunction (When FS-540+PI-507 or FS-540SD+PI-507 is installed)

Rank	B
Trouble detection condition	The tray upper limit sensor/Lw (PS209) or tray lower limit sensor/Lw (PS210) is not turned ON (blocked) after the set period of time has elapsed after the tray lift motor/Lw (M202) is energized.
Trouble isolation	Post inserter
Relevant electrical parts	• Tray lift motor/Lw (M202) • Tray upper limit sensor/Lw (PS209) • Tray lower limit sensor/Lw (PS210) • PI drive board (PIDB) • FS control board (FSCB)

Procedure

1. Check the connector between M202-relay CN206-PIDB CN56 for proper connection and correct as necessary.
2. Check the connector of M202 for proper drive coupling and correct as necessary.
3. Check the connector between PS209-relay CN237-PIDB CN53 for proper connection and correct as necessary.
4. Check the connector between PS210-relay CN236-PIDB CN53 for proper connection and correct as necessary.
5. PS209 I/O check, sensor check
   - Control signal: PIDB CN53<A>-8 (ON)
   - Location of electrical component: PI-507 10-C
6. PS210 I/O check, sensor check
   - Control signal: PIDB CN53<A>-11 (ON)
   - Location of electrical component: PI-507 11-C
7. M202 operation check
   - Control signal: PIDB CN56-5 to 6
   - Location of electrical component: PI-507 9-C
8. Replace M202.
9. Replace PIDB.
10. Replace FSCB.

3.8.16 C1125

Contents

Trouble type	C1125: Tray lift motor/Up drive malfunction (When FS-540+PI-507 or FS-540SD+PI-507 is installed)
Rank	B
Trouble detection condition	The tray upper limit sensor/Up (PS204) or tray lower limit sensor/Up (PS205) is not turned ON (blocked) after the set period of time has elapsed after the tray lift motor/Up (M201) is energized.
Trouble isolation	Post inserter
Relevant electrical parts	• Tray lift motor/Up (M201) • Tray upper limit sensor/Up (PS204) • Tray lower limit sensor/Up (PS205) • PI drive board (PIDB) • FS control board (FSCB)

Procedure

1. Check the connector between M201-relay CN203-PIDB CN54 for proper connection and correct as necessary.
2. Check the connector of M201 for proper drive coupling and correct as necessary.
3. Check the connector between PS204-relay CN235-PIDB CN55 for proper connection and correct as necessary.
4. Check the connector between PS205-relay CN235-PIDB CN55 for proper connection and correct as necessary.
5. PS204 I/O check, sensor check
   - Control signal: PIDB CN55-8 (ON)
   - Location of electrical component: PI-507 8-C
6. PS205 I/O check, sensor check
   - Control signal: PIDB CN55-7 (ON)
   - Location of electrical component: PI-507 8-C
7. M201 operation check
   - Control signal: PIDB CN54-7 to 8
   - Location of electrical component: PI-507 6 to 7-C
8. Replace M201.
9. Replace PIDB.
10. Replace FSCB.

3.8.17 C1127

Contents

Trouble type	C1127: Punch oscillating motor malfunction (When FS-540+PK-526 or FS-540SD+PK-526 is installed)
Rank	B
Trouble detection condition	The punch oscillating home sensor (PS303) is not turned ON (blocked) or OFF (unblocked) even after the set period of time has elapsed while the punch oscillating motor (M302) is energized.
Trouble isolation	Punch
Relevant electrical parts	• Punch oscillating motor (M302) • Punch oscillating home sensor (PS303) • Punch control board (PKCB) • FS control board (FSCB)

Procedure

1. Check the connector between M302-PKCB CN34 for proper connection and correct as necessary.
2. Check the connector of M302 for proper drive coupling and correct as necessary.
3. Check the connector between PS303-relay CN342-PKCB CN37 for proper connection and correct as necessary.
4. PS303 I/O check, sensor check
   - Control signal: PKCB CN37-2 (ON)
   - Location of electrical component: PK-526 5-C
5. M302 operation check
   - Control signal: PKCB CN34-1 to 6
   - Location of electrical component: PK-526 5-C
6. Replace M302.
7. PKCB ICP2 conduction check
8. Replace PKCB.
9. Replace FSCB.

3.8.18 C1130

Contents

Trouble type	C1130: ZU transport motor drive malfunction (When FS-540+ZU-609 or FS-540SD+ZU-609 is installed)
Rank	B
Trouble detection condition	• The guide home sensor (PS500) is not turned OFF (unblocked) after the set period of time has elapsed after the folding guide drive starts from the home position. • The guide home sensor (PS500) is not turned ON (blocked) after the set period of time has elapsed after the ZU transport motor (M500) is energized when the folding guide returned to the home position. • The folding guide does not reach the specified position within the set period of time.
Trouble isolation	Z fold
Relevant electrical parts	• ZU transport motor (M500) • Guide home sensor (PS500) • ZU drive board (ZUDB)

Procedure

1. Check the connector between M500-ZUDB CN6 for proper connection and correct as necessary.
2. Check the connector of M500 for proper drive coupling and correct as necessary.
3. Check the connector between PS500-ZUDB CN5 for proper connection and correct as necessary.
4. PS500 I/O check, sensor check
   - Control signal: ZUDB CN5-3 (ON)
   - Location of electrical component: ZU-609 3-B
5. M500 operation check
   - Control signal: ZUDB CN6-1 to 6
   - Location of electrical component: ZU-609 1 to 2-B
6. Replace M500.
7. Replace ZUDB.

3.8.19 C1131

Contents

Trouble type	C1131: Folding guide motor drive malfunction (When FS-540+ZU-609 or FS-540SD+ZU-609 is installed)
Rank	B
Trouble detection condition	• The chopper home sensor (PS501) is not turned OFF (unblocked) after the set period of time has elapsed after the folding claw drive starts from the home position. • The chopper home sensor (PS501) is not turned ON (blocked) after the set period of time has elapsed after the folding guide motor (M501) is energized when the folding claw returned to the home position. • The folding claw does not reach the specified position within the set period of time.
Trouble isolation	Z fold
Relevant electrical parts	• Folding guide motor (M501) • Chopper home sensor (PS501) • ZU drive board (ZUDB)

Procedure

1. Check the connector between M501-ZUDB CN6 for proper connection and correct as necessary.
2. Check the connector of M501 for proper drive coupling and correct as necessary.
3. Check the connector between PS501-ZUDB CN5 for proper connection and correct as necessary.
4. PS501 I/O check, sensor check
   - Control signal: ZUDB CN5-9 (ON)
   - Location of electrical component: ZU-609 4-B
5. M501 operation check
   - Control signal: ZUDB CN6-9 to 12
   - Location of electrical component: ZU-609 2-B
6. Replace M501.
7. Replace ZUDB.

3.8.20 C1132

(1) When FS-539+PK-524 or FS-539SD+PK-524 is installed

Contents

Trouble type	C1132: Punch drive motor drive malfunction (When FS-539+PK-524 or FS-539SD+PK-524 is installed)
Rank	B
Trouble detection condition	The punch home sensor (PS1) is not turned ON (unblocked) or OFF (blocked) even after the set period of time has elapsed while the punch drive motor (M1) is energized.
Trouble isolation	-
Relevant electrical parts	• Punch drive motor (M1) • Punch home sensor (PS1) • FS control board (FSCB)

Procedure

1. Check the connector between M1-FSCB J7 for proper connection and correct as necessary.
2. Check the connector of M1 for proper drive coupling and correct as necessary.
3. Check the connector between PS1-FSCB J7 for proper connection and correct as necessary.
4. PS1 I/O check, sensor check
   - Control signal: FSCB J7-5 (ON)
   - Location of electrical component: FS-539/FS-539SD 13-K
5. M1 operation check
   - Control signal: FSCB J7-7 to 8
   - Location of electrical component: FS-539/FS-539SD 13-K
6. Replace M1.
7. Replace FSCB.

(2) When FS-540+PK-526 or FS-540SD+PK-526 is installed

Contents

Trouble type	C1132: Punch drive motor drive malfunction (When FS-540+PK-526 or FS-540SD+PK-526 is installed)
Rank	B
Trouble detection condition	• During home position search operation, the punch home sensor (PS301) is not turned ON (unblocked) or OFF (blocked) even after the set period of time has elapsed while the punch drive motor (M301) is energized. • During punch drive operation, the punch drive motor does not stop running even after the set period of time has elapsed while the punch drive motor (M301) is energized.
Trouble isolation	-
Relevant electrical parts	• Punch drive motor (M301) • Punch home sensor (PS301) • Punch motor sensor (PS306) • Punch control board (PKCB) • FS control board (FSCB)

Procedure

1. Check the connector between M301-relay CN351-PKCB CN35 for proper connection and correct as necessary.
2. Check the connector of M301 for proper drive coupling and correct as necessary.
3. Check the connector between PS301-PKCB CN36 for proper connection and correct as necessary.
4. PS301 I/O check, sensor check
   - Control signal: PKCB CN36-5 (ON)
   - Location of electrical component: PK-526 3-C
5. Check the connector between PS306-PKCB CN36 for proper connection and correct as necessary.
6. PS306 I/O check, sensor check
   - Control signal: PKCB CN36-8 (ON)
   - Location of electrical component: PK-526 3-C
7. M301 operation check
   - Control signal: PKCB CN35-1 to 3
   - Location of electrical component: PK-526 2-C
8. Replace M301.
9. Replace PKCB.
10. Replace FSCB.

3.8.21 C1133

Contents

Trouble type	C1133: Pressure motor drive malfunction (When FS-540+ZU-609 or FS-540SD+ZU-609 is installed)
Rank	B
Trouble detection condition	The press home sensor (PS502) is not turned ON (unblocked), even after the set period of time has elapsed after the pressure motor (M502) starts searching its home position. Or, is not turned OFF (blocked) after it is turned ON (unblocked).
Trouble isolation	Z fold
Relevant electrical parts	• Pressure motor (M502) • Press home sensor (PS502)

	• ZU drive board (ZUDB)

Procedure

1. Check the connector between M502-ZUDB CN6 for proper connection and correct as necessary.
2. Check the connector of M502 for proper drive coupling and correct as necessary.
3. Check the connector between PS502-ZUDB CN5 for proper connection and correct as necessary.
4. PS502 I/O check, sensor check
   - Control signal: ZUDB CN5-6 (ON)
   - Location of electrical component: ZU-609 4-B
5. M502 operation check
   - Control signal: ZUDB CN6-7 (DRV)
   - Location of electrical component: ZU-609 2-B
6. Replace M502.
7. ZUDB ICP3 conduction check
8. Replace ZUDB.

3.8.22 C1140

(1) When FS-539 or FS-539SD is installed

Contents

Trouble type	C1140: Alignment motor/Rr drive malfunction (When FS-539 or FS-539SD is installed)
Rank	B
Trouble detection condition	• The alignment plate home sensor/Rr (PS13) is not turned OFF (unblocked) after the set period of time has elapsed after the plate drive starts from the home position. • The alignment plate home sensor/Rr (PS13) is not turned ON (blocked) after the set period of time has elapsed while the alignment motor/Rr (M8) is energized when the plate returned to the home position. • The plate does not reach the specified position within the set period of time.
Trouble isolation	-
Relevant electrical parts	• Alignment motor/Rr (M8) • Alignment plate home sensor/Rr (PS13) • FS control board (FSCB)

Procedure

1. Check the connector between M8-relay CN19-FSCB J12 for proper connection and correct as necessary.
2. Check the connector of M8 for proper drive coupling and correct as necessary.
3. Check the connector between PS13-FSCB J9 for proper connection and correct as necessary.
4. PS13 I/O check, sensor check
   - Control signal: FSCB J9<B>-12 (ON)
   - Location of electrical component: FS-539/FS-539SD 10-C
5. M8 operation check
   - Control signal: FSCB J12-13 to 16
   - Location of electrical component: FS-539/FS-539SD 7-C
6. Replace M8.
7. Replace FSCB.

(2) When FS-540 or FS-540SD is installed

Contents

Trouble type	C1140: Alignment motor/Rr drive malfunction (When FS-540 or FS-540SD is installed)
Rank	B
Trouble detection condition	• The alignment plate home sensor/Rr (PS6) is not turned OFF (unblocked) after the set period of time has elapsed after the plate drive starts from the home position. • The alignment plate home sensor/Rr (PS6) is not turned ON (blocked) after the set period of time has elapsed while the alignment motor/Rr (M13) is energized when the plate returned to the home position. • The plate does not reach the specified position within the set period of time.
Trouble isolation	-
Relevant electrical parts	• Alignment motor/Rr (M13) • Alignment plate home sensor/Rr (PS6) • FS control board (FSCB)

Procedure

1. Check the connector between M13-relay CN3-FSCB J21 for proper connection and correct as necessary.
2. Check the connector of M13 for proper drive coupling and correct as necessary.
3. Check the connector between PS6-relay CN4-relay CN3-FSCB J21 for proper connection and correct as necessary.
4. PS6 I/O check, sensor check
   - Control signal: FSCB J21-10 (ON)
   - Location of electrical component: FS-540/FS-540SD 4-D
5. M13 operation check
   - Control signal: FSCB J21-1 to 4
   - Location of electrical component: FS-540/FS-540SD 4-D
6. Replace M13.
7. Replace FSCB.

3.8.23 C1141

(1) When FS-539 or FS-539SD is installed

Contents

Trouble type	C1141: FNS paddle motor drive malfunction (When FS-539 or FS-539SD is installed)
Rank	B
Trouble detection condition	The upper paddle home sensor (PS14) is not turned OFF (blocked) or ON (unblocked) even after the set period of time has elapsed while the FNS paddle motor (M5) is energized.
Trouble isolation	Staple
Relevant electrical parts	• FNS paddle motor (M5) • Upper paddle home sensor (PS14) • FS control board (FSCB)

Procedure

1. Check the connector between M5-FSCB J4 for proper connection and correct as necessary.
2. Check the connector of M5 for proper drive coupling and correct as necessary.
3. Check the connector between PS14-FSCB J4 for proper connection and correct as necessary.
4. PS14 I/O check, sensor check
   - Control signal: FSCB J4<B>-7 (ON)
   - Location of electrical component: FS-539/FS-539SD 15-C
5. M5 operation check
   - Control signal: FSCB J4<A>-12 to 15
   - Location of electrical component: FS-539/FS-539SD 14-C
6. Replace M5.
7. Replace FSCB.

(2) When FS-540 or FS-540SD is installed

Contents

Trouble type	C1141: FNS paddle motor drive malfunction (When FS-540 or FS-540SD is installed)
Rank	B
Trouble detection condition	The upper paddle home sensor (PS25) is not turned OFF (blocked) or ON (unblocked) even after the set period of time has elapsed while the FNS paddle motor (M9) is energized.
Trouble isolation	Staple
Relevant electrical parts	• FNS paddle motor (M9) • Upper paddle home sensor (PS25) • FS control board (FSCB)

Procedure

1. Check the connector between M9-relay CN13B-FSCB J14 for proper connection and correct as necessary.
2. Check the connector of M9 for proper drive coupling and correct as necessary.
3. Check the connector between PS25-relay CN13B-FSCB J14 for proper connection and correct as necessary.
4. PS25 I/O check, sensor check
   - Control signal: FSCB J14<B>-13 (ON)
   - Location of electrical component: FS-540/FS-540SD 16-K to L
5. M9 operation check
   - Control signal: FSCB J14<B>-7 to 10
   - Location of electrical component: FS-540/FS-540SD 17-K to L
6. Replace M9.
7. Replace FSCB.

3.8.24 C1142

Contents

Trouble type	C1142: Paddle up/down motor drive malfunction (When FS-540 or FS-540SD is installed)
Rank	B
Trouble detection condition	The paddle up/down home sensor (PS27) is not turned OFF (blocked) or ON (unblocked) even after the set period of time has elapsed while the paddle up/down motor (M7) is energized.
Trouble isolation	Staple
Relevant electrical parts	• Paddle up/down motor (M7) • Paddle up/down home sensor (PS27) • FS control board (FSCB)

Procedure

1. Check the connector between M7-relay CN13A-FSCB J14 for proper connection and correct as necessary.
2. Check the connector of M7 for proper drive coupling and correct as necessary.
3. Check the connector between PS27-relay CN13A-FSCB J14 for proper connection and correct as necessary.
4. PS27 I/O check, sensor check
   - Control signal: FSCB J14<A>-7 (ON)
   - Location of electrical component: FS-540/FS-540SD 18-K to L
5. M7 operation check
   - Control signal: FSCB J14<A>-1 to 4
   - Location of electrical component: FS-540/FS-540SD 18-K to L

6. Replace M7.
7. Replace FSCB.

3.8.25 C1143

Contents

Trouble type	C1143: Arm drive motor drive malfunction (When FS-540 or FS-540SD is installed)
Rank	B
Trouble detection condition	The arm home sensor (PS26) is not turned ON (unblocked) or OFF (blocked) even after the set period of time has elapsed while the arm drive motor (M8) is energized.
Trouble isolation	-
Relevant electrical parts	• Arm drive motor (M8) • Arm home sensor (PS26) • FS control board (FSCB)

Procedure

1. Check the connector between M8-relay CN13A-FSCB J14 for proper connection and correct as necessary.
2. Check the connector of M8 for proper drive coupling and correct as necessary.
3. Check the connector between PS26-relay CN13B-FSCB J14 for proper connection and correct as necessary.
4. PS26 I/O check, sensor check
   - Control signal: FSCB J14<B>-6 (ON)
   - Location of electrical component: FS-540/FS-540SD 17-K to L
5. M8 operation check
   - Control signal: FSCB J14<A>-8 to 11
   - Location of electrical component: FS-540/FS-540SD 18-K to L
6. Replace M8.
7. Replace FSCB.

3.8.26 C1144

(1) When FS-539 or FS-539SD is installed

Contents

Trouble type	C1144: Pre-eject drive motor drive malfunction (When FS-539 or FS-539SD is installed)
Rank	B
Trouble detection condition	• The pre-eject home sensor (PS21) is not turned OFF (unblocked) after the set period of time has elapsed after the trailing edge stopper drive starts from the home position. Or, the trailing edge stopper does not reach the specified position within the set period of time. • The pre-eject home sensor (PS21) is not turned ON (blocked) after the set period of time has elapsed after the pre-eject drive motor (M9) is energized when the trailing edge stopper returned to the home position.
Trouble isolation	-
Relevant electrical parts	• Pre-eject drive motor (M9) • Pre-eject home sensor (PS21) • FS control board (FSCB)

Procedure

1. Check the connector between M9-relay CN7A-FSCB J13 for proper connection and correct as necessary.
2. Check the connector of M9 for proper drive coupling and correct as necessary.
3. Check the connector between PS21-relay CN8-relay CN7B-FSCB J12 for proper connection and correct as necessary.
4. PS21 I/O check, sensor check
   - Control signal: FSCB J12-6 (ON)
   - Location of electrical component: FS-539/FS-539SD 8-C
5. M9 operation check
   - Control signal: FSCB J13-3 to 4
   - Location of electrical component: FS-539/FS-539SD 17-C
6. Replace M9.
7. FSCB F8 conduction check
8. Replace FSCB.

(2) When FS-540 or FS-540SD is installed

Contents

Trouble type	C1144: Pre-eject drive motor drive malfunction (When FS-540 or FS-540SD is installed)
Rank	B
Trouble detection condition	• The trailing edge stopper home sensor (PS31) is not turned OFF after the set period of time has elapsed after the trailing edge stopper drive starts from the home position. Or, the trailing edge stopper does not reach the specified position within the set period of time. • The trailing edge stopper home sensor (PS31) is not turned ON after the set period of time has elapsed after the pre-eject drive motor (M2) is energized when the trailing edge stopper returned to the home position.
Trouble isolation	-
Relevant electrical parts	• Pre-eject drive motor (M2) • Trailing edge stopper home sensor (PS31)

	• FS control board (FSCB)

Procedure

1. Check the connector between M2-relay CN1A-FSCB J22 for proper connection and correct as necessary.
2. Check the connector of M2 for proper drive coupling and correct as necessary.
3. Check the connector between PS31-relay CN2-relay CN1B-FSCB J22 for proper connection and correct as necessary.
4. PS31 I/O check, sensor check
   - Control signal: FSCB J22<B>-13 (ON)
   - Location of electrical component: FS-540/FS-540SD 3-D
5. M2 operation check
   - Control signal: FSCB J22<A>-3 to 4
   - Location of electrical component: FS-540/FS-540SD 1-D
6. Replace M2.
7. Replace FSCB.

3.8.27 C1145

(1) When FS-539 or FS-539SD is installed

Contents

Trouble type	C1145: Trailing edge stopper motor drive malfunction (When FS-539 or FS-539SD is installed)
Rank	B
Trouble detection condition	• The trailing edge stopper home sensor (PS20) is not turned OFF (unblocked) after the set period of time has elapsed after the trailing edge stopper drive starts from the home position. • The trailing edge stopper home sensor (PS20) is not turned ON (blocked) after the laps of give time after the trailing edge stopper motor (M6) is energized when trailing edge stopper returned to the home position.
Trouble isolation	Staple
Relevant electrical parts	• Trailing edge stopper motor (M6) • Trailing edge stopper home sensor (PS20) • FS control board (FSCB)

Procedure

1. Check the connector between M6-FSCB J5 for proper connection and correct as necessary.
2. Check the connector of M6 for proper drive coupling and correct as necessary.
3. Check the connector between PS20-relay CN13-FSCB J4 for proper connection and correct as necessary.
4. PS20 I/O check, sensor check
   - Control signal: FSCB J4<A>-11 (ON)
   - Location of electrical component: FS-539/FS-539SD 14-C
5. M6 operation check
   - Control signal: FSCB J5-13 to 16
   - Location of electrical component: FS-539/FS-539SD 15-K
6. Replace M6.
7. Replace FSCB.

(2) When FS-540 or FS-540SD is installed

Contents

Trouble type	C1145: Trailing edge stopper motor/Fr drive malfunction (When FS-540 or FS-540SD is installed)
Rank	B
Trouble detection condition	• The trailing edge stopper sensor/Fr (PS10) is not turned OFF (unblocked) after the set period of time has elapsed after the trailing edge stopper drive starts from the home position. • The trailing edge stopper sensor/Fr (PS10) is not turned ON (blocked) after the set period of time has elapsed after the trailing edge stopper motor/Fr (M12) is energized when the trailing edge stopper returned to the home position.
Trouble isolation	Staple
Relevant electrical parts	• Trailing edge stopper motor/Fr (M12) • Trailing edge stopper sensor/Fr (PS10) • FS control board (FSCB)

Procedure

1. Check the connector between M12-relay CN5-FSCB J18 for proper connection and correct as necessary.
2. Check the connector of M12 for proper drive coupling and correct as necessary.
3. Check the connector between PS10-relay CN5-FSCB J18 for proper connection and correct as necessary.
4. PS10 I/O check, sensor check
   - Control signal: FSCB J18-13 (ON)
   - Location of electrical component: FS-540/FS-540SD 6-D
5. M12 operation check
   - Control signal: FSCB J18-14 to 17
   - Location of electrical component: FS-540/FS-540SD 6-D
6. Replace M12.
7. Replace FSCB.

3.8.28 C1146

Contents

Trouble type	C1146: Trailing edge stopper motor/Rr drive malfunction (When FS-540 or FS-540SD is installed)
Rank	B
Trouble detection condition	• The trailing edge stopper sensor/Rr (PS7) is not turned OFF (unblocked) after the set period of time has elapsed after the trailing edge stopper drive starts from the home position. • The trailing edge stopper sensor/Rr (PS7) is not turned ON (blocked) after the set period of time has elapsed after the trailing edge stopper motor/Rr (M11) is energized when the trailing edge stopper returned to the home position.
Trouble isolation	-
Relevant electrical parts	• Trailing edge stopper motor/Rr (M11) • Trailing edge stopper sensor/Rr (PS7) • FS control board (FSCB)

Procedure

1. Check the connector between M11-relay CN4-relay CN3-FSCB J21 for proper connection and correct as necessary.
2. Check the connector of M11 for proper drive coupling and correct as necessary.
3. Check the connector between PS7-relay CN4-relay CN3-FSCB J21 for proper connection and correct as necessary.
4. PS7 I/O check, sensor check
   - Control signal: FSCB J21-16 (ON)
   - Location of electrical component: FS-540/FS-540SD 5-D
5. M11 operation check
   - Control signal: FSCB J21-17 to 20
   - Location of electrical component: FS-540/FS-540SD 5-D
6. Replace M11.
7. Replace FSCB.

3.8.29 C1152

Contents

Trouble type	C1152: Paper transport belt motor malfunction (When FS-540SD is installed)
Rank	B
Trouble detection condition	Even after a predetermined period of time has elapsed since the paper transport belt motor (M134) starts operation, the lock signal is not set to L (turning).
Trouble isolation	Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• Paper transport belt motor (M134) • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between M134-relay CN21-FSCB J24 for proper connection and correct as necessary.
2. Check the connector of M134 for proper drive coupling and correct as necessary.
3. M134 operation check
   - Control signal: FSCB J24-1 to 11
   - Location of electrical component: FS-540/FS-540SD 7-M
4. Replace M134.
5. Replace SDCB.
6. FSCB F4 or F8 conduction check
7. Replace FSCB.

3.8.30 C1156

(1) When FS-539SD is installed

Contents

Trouble type	C1156: SD paddle motor malfunction (When FS-539SD is installed)
Rank	B
Trouble detection condition	The paddle home sensor (PS105) is not turned OFF (blocked) or ON (unblocked) even after the set period of time has elapsed while the SD paddle motor (M107) is energized.
Trouble isolation	Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• SD paddle motor (M107) • Paddle home sensor (PS105) • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between M107-SDCB J8 for proper connection and correct as necessary.
2. Check the connector of M107 for proper drive coupling and correct as necessary.
3. Check the connector between PS105-SDCB J8 for proper connection and correct as necessary.
4. PS105 I/O check, sensor check
   - Control signal: SDCB J8-3 (ON)
   - Location of electrical component: FS-539/FS-539SD 4-P
5. M107 operation check

- Control signal: SDCB J8-4 to 7
- Location of electrical component: FS-539/FS-539SD 4-P

6. Replace M107.
7. Replace SDCB.
8. Replace FSCB.

(2) When FS-540SD is installed

Contents

Trouble type	C1156: SD paddle motor malfunction (When FS-540SD is installed)
Rank	B
Trouble detection condition	The paddle home sensor (PS105) is not turned OFF (blocked) or ON (unblocked) even after the set period of time has elapsed while the SD paddle motor (M107) is energized.
Trouble isolation	Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• SD paddle motor (M107) • Paddle home sensor (PS105) • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between M107-SDCB J8 for proper connection and correct as necessary.
2. Check the connector of M107 for proper drive coupling and correct as necessary.
3. Check the connector between PS105-SDCB J8 for proper connection and correct as necessary.
4. PS105 I/O check, sensor check
   - Control signal: SDCB J8-3 (ON)
   - Location of electrical component: FS-540/FS-540SD 4-P
5. M107 operation check
   - Control signal: SDCB J8-4 to 7
   - Location of electrical component: FS-540/FS-540SD 3-P
6. Replace M107.
7. Replace SDCB.
8. Replace FSCB.

3.8.31 C1184

(1) When FS-539 or FS-539SD is installed

Contents

Trouble type	C1184: Paper delivery control motor drive malfunction (When FS-539 or FS-539SD is installed)
Rank	B
Trouble detection condition	• The paper delivery control home sensor (PS28) is not turned OFF (blocked) after the set period of time has elapsed after the paper detection lever drive starts from the home position. • The paper delivery control home sensor (PS28) is not turned ON (unblocked) after the set period of time has elapsed after the paper delivery control motor (M12) is energized when the paper detection lever returned to the home position.
Trouble isolation	-
Relevant electrical parts	• Paper delivery control motor (M12) • Paper delivery control home sensor (PS28) • FS control board (FSCB)

Procedure

1. Check the connector between M12-FSCB J14 for proper connection and correct as necessary.
2. Check the connector of M12 for proper drive coupling and correct as necessary.
3. Check the connector between PS28-relay CN1-FSCB J14 for proper connection and correct as necessary.
4. PS28 I/O check, sensor check
   - Control signal: FSCB J14<A>-12 (ON)
   - Location of electrical component: FS-539/FS-539SD 2-C
5. M12 operation check
   - Control signal: FSCB J14<A>-9 to 12
   - Location of electrical component: FS-539/FS-539SD 1-C
6. Replace M12.
7. Replace FSCB.

(2) When FS-540 or FS-540SD is installed

Contents

Trouble type	C1184: Paper delivery control motor drive malfunction (When FS-540 or FS-540SD is installed)
Rank	B
Trouble detection condition	• The paper delivery control home sensor (PS11) is not turned OFF (blocked) after the set period of time has elapsed after the paper detection lever drive starts from the home position. • The paper delivery control home sensor (PS11) is not turned ON (unblocked) after the set period of time has elapsed after the paper delivery control motor (M15) is energized when the paper detection lever returned to the home position.
Trouble isolation	-

Relevant electrical parts	• Paper delivery control motor (M15) • Paper delivery control home sensor (PS11) • FS control board (FSCB)

Procedure

1. Check the connector between M15-FSCB J19 for proper connection and correct as necessary.
2. Check the connector of M15 for proper drive coupling and correct as necessary.
3. Check the connector between PS11-relay CN10A-FSCB J20 for proper connection and correct as necessary.
4. PS11 I/O check, sensor check
   - Control signal: FSCB J20<A>-3 (ON)
   - Location of electrical component: FS-540/FS-540SD 10-D
5. M15 operation check
   - Control signal: FSCB J19-1 to 4
   - Location of electrical component: FS-540/FS-540SD 9-D
6. Replace M15.
7. Replace FSCB.

3.8.32 C1195

(1) When FS-539SD is installed

Contents

Trouble type	C1195: Paper discharge control motor malfunction (When FS-539SD is installed)
Rank	B
Trouble detection condition	The curl cover detection sensor (PS102) is not turned OFF (unblocked) or ON (blocked) even after the set period of time has elapsed after the paper discharge control motor (M102) is energized.
Trouble isolation	Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• Paper discharge control motor (M102) • Curl cover detection sensor (PS102) • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between M102-relay CN22-relay CN21-SDCB J5 for proper connection and correct as necessary.
2. Check the connector of M102 for proper drive coupling and correct as necessary.
3. Check the connector between PS102-relay CN22-relay CN21-SDCB J5 for proper connection and correct as necessary.
4. PS102 I/O check, sensor check
   - Control signal: SDCB J5-3 (ON)
   - Location of electrical component: FS-539/FS-539SD 4-L
5. M102 operation check
   - Control signal: SDCB J5-4 to 7
   - Location of electrical component: FS-539/FS-539SD 4-L
6. Replace M102.
7. Replace SDCB.
8. Replace FSCB.

(2) When FS-540SD is installed

Contents

Trouble type	C1195: Paper discharge control motor malfunction (When FS-540SD is installed)
Rank	B
Trouble detection condition	The curl cover detection sensor (PS102) is not turned OFF (unblocked) or ON (blocked) even after the set period of time has elapsed after the paper discharge control motor (M102) is energized.
Trouble isolation	Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• Paper discharge control motor (M102) • Curl cover detection sensor (PS102) • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between M102-relay CN25-relay CN26-SDCB J5 for proper connection and correct as necessary.
2. Check the connector of M102 for proper drive coupling and correct as necessary.
3. Check the connector between PS102-relay CN25-relay CN26-SDCB J5 for proper connection and correct as necessary.
4. PS102 I/O check, sensor check
   - Control signal: SDCB J5-3 (ON)
   - Location of electrical component: FS-540/FS-540SD 3-K
5. M102 operation check
   - Control signal: SDCB J5-4 to 7
   - Location of electrical component: FS-540/FS-540SD 3-K
6. Replace M102.
7. Replace SDCB.
8. Replace FSCB.

3.8.33 C1196

(1) When FS-539SD is installed

Contents

Trouble type	C1196: Center fold guide motor malfunction (When FS-539SD is installed)
Rank	B
Trouble detection condition	The guide home sensor (PS107) is not turned OFF (unblocked) or ON (blocked) even after the set period of time has elapsed after the center fold guide motor (M106) is energized.
Trouble isolation	Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• Center fold guide motor (M106) • Guide home sensor (PS107) • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between M106-SDCB J9 for proper connection and correct as necessary.
2. Check the connector of M106 for proper drive coupling and correct as necessary.
3. Check the connector between PS107-SDCB J9 for proper connection and correct as necessary.
4. PS107 I/O check, sensor check
   - Control signal: SDCB J9-6 (ON)
   - Location of electrical component: FS-539/FS-539SD 5-P
5. M106 operation check
   - Control signal: SDCB J9-7 to 10
   - Location of electrical component: FS-539/FS-539SD 4-P
6. Replace M106.
7. Replace SDCB.
8. Replace FSCB.

(2) When FS-540SD is installed

Contents

Trouble type	C1196: Center fold guide motor malfunction (When FS-540SD is installed)
Rank	B
Trouble detection condition	The guide home sensor (PS107) is not turned OFF (unblocked) or ON (blocked) even after the set period of time has elapsed after the center fold guide motor (M106) is energized.
Trouble isolation	Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• Center fold guide motor (M106) • Guide home sensor (PS107) • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between M106-SDCB J9 for proper connection and correct as necessary.
2. Check the connector of M106 for proper drive coupling and correct as necessary.
3. Check the connector between PS107-SDCB J9 for proper connection and correct as necessary.
4. PS107 I/O check, sensor check
   - Control signal: SDCB J9-6 (ON)
   - Location of electrical component: FS-540/FS-540SD 4-P
5. M106 operation check
   - Control signal: SDCB J9-7 to 10
   - Location of electrical component: FS-540/FS-540SD 4-P
6. Replace M106.
7. Replace SDCB.
8. Replace FSCB.

3.8.34 C1197

(1) When FS-539SD is installed

Contents

Trouble type	C1197: Tri-folding guide motor malfunction (When FS-539SD is installed)
Rank	B
Trouble detection condition	The tri-folding gate home sensor (PS111) is not turned OFF (blocked) or ON (unblocked) even after the set period of time has elapsed while the tri-folding guide motor (M108) is energized.
Trouble isolation	Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• Tri-folding guide motor (M108) • Tri-folding gate home sensor (PS111) • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between M108-SDCB J8 for proper connection and correct as necessary.
2. Check the connector of M108 for proper drive coupling and correct as necessary.

3. Check the connector between PS111-SDCB J8 for proper connection and correct as necessary.
4. PS111 I/O check, sensor check
   - Control signal: SDCB J8-10 (ON)
   - Location of electrical component: FS-539/FS-539SD 3-P
5. M108 operation check
   - Control signal: SDCB J8-11 to 14
   - Location of electrical component: FS-539/FS-539SD 3-P
6. Replace M108.
7. Replace SDCB.
8. Replace FSCB.

(2) When FS-540SD is installed

Contents

Trouble type	C1197: Tri-folding guide motor malfunction (When FS-540SD is installed)
Rank	B
Trouble detection condition	The tri-folding gate home sensor (PS111) is not turned OFF (blocked) or ON (unblocked) even after the set period of time has elapsed while the tri-folding guide motor (M108) is energized.
Trouble isolation	Center Stapling/Half-Fold/Tri-Fold
Relevant electrical parts	• Tri-folding guide motor (M108) • Tri-folding gate home sensor (PS111) • SD control board (SDCB) • FS control board (FSCB)

Procedure

1. Check the connector between M108-SDCB J8 for proper connection and correct as necessary.
2. Check the connector of M108 for proper drive coupling and correct as necessary.
3. Check the connector between PS111-SDCB J8 for proper connection and correct as necessary.
4. PS111 I/O check, sensor check
   - Control signal: SDCB J8-10 (ON)
   - Location of electrical component: FS-540/FS-540SD 3-P
5. M108 operation check
   - Control signal: SDCB J8-11 to 14
   - Location of electrical component: FS-540/FS-540SD 3-P
6. Replace M108.
7. Replace SDCB.
8. Replace FSCB.

3.8.35 C11A2

(1) When FS-539 or FS-539SD is installed

Contents

Trouble type	C11A2: Receiving roller retraction motor drive malfunction (When FS-539 or FS-539SD is installed)
Rank	B
Trouble detection condition	The receiving roller retraction sensor (PS11) is not turned OFF (blocked) or ON (unblocked) even after the set period of time has elapsed after the receiving roller retraction motor (M4) is energized.
Trouble isolation	-
Relevant electrical parts	• Receiving roller retraction motor (M4) • Receiving roller retraction sensor (PS11) • FS control board (FSCB)

Procedure

1. Check the connector between M4-FSCB J4 for proper connection and correct as necessary.
2. Check the connector of M4 for proper drive coupling and correct as necessary.
3. Check the connector between PS11-FSCB J5 for proper connection and correct as necessary.
4. PS11 I/O check, sensor check
   - Control signal: FSCB J5-6 (ON)
   - Location of electrical component: FS-539/FS-539SD 16-K
5. M4 operation check
   - Control signal: FSCB J4<A>-1 to 4
   - Location of electrical component: FS-539/FS-539SD 13-C
6. Replace M4.
7. Replace FSCB.

(2) When FS-540 or FS-540SD is installed

Contents

Trouble type	C11A2: Receiving roller retraction motor drive malfunction (When FS-540 or FS-540SD is installed)
Rank	B
Trouble detection condition	The receiving roller retraction sensor (PS22) is not turned OFF (blocked) or ON (unblocked) even after the set period of time has elapsed after the receiving roller retraction motor (M10) is energized.
Trouble isolation	-

Relevant electrical parts	• Receiving roller retraction motor (M10) • Receiving roller retraction sensor (PS22) • FS control board (FSCB)

Procedure

1. Check the connector between M10-FSCB J12 for proper connection and correct as necessary.
2. Check the connector of M10 for proper drive coupling and correct as necessary.
3. Check the connector between PS22-FSCB J12 for proper connection and correct as necessary.
4. PS22 I/O check, sensor check
   - Control signal: FSCB J12<B>-3 (ON)
   - Location of electrical component: FS-540/FS-540SD 15-D
5. M10 operation check
   - Control signal: FSCB J12<A>-15 to 16
   - Location of electrical component: FS-540/FS-540SD 15-D
6. Replace M10.
7. Replace FSCB.

3.8.36 C11C5

Contents

Trouble type	C11C5: Paper size detect board malfunction (When FS-540+PK-526 or FS-540SD+PK-526 is installed)
Rank	B
Trouble detection condition	The size of a transported paper is not detected, causing no punch operation.
Trouble isolation	-
Relevant electrical parts	Paper size detect board (PSDTB)

Procedure

1. Check the sensor part of PSDTB, to clean if it is dirty.
2. Check the connector between PSDTB-PKCB CN38 for proper connection and correct as necessary.
3. Replace PSDTB.

3.8.37 C11E1

(1) When FS-539 or FS-539SD is installed

Contents

Trouble type	C11E1: Paper exit switching drive malfunction (When FS-539 or FS-539SD is installed)
Rank	B
Trouble detection condition	The exchange folded paper output sensor (PS30) is not turned OFF (unblocked) or ON (blocked) even after the set period of time has elapsed after the FNS entry transport motor (M2) is turned ON.
Trouble isolation	-
Relevant electrical parts	• FNS entry transport motor (M2) • Exchange folded paper output sensor (PS30) • FS control board (FSCB)

Procedure

1. Check the connector between M2-FSCB J9 for proper connection and correct as necessary.
2. Check the connector of M2 for proper drive coupling and correct as necessary.
3. Check the connector between PS30-FSCB J5 for proper connection and correct as necessary.
4. PS30 I/O check, sensor check
   - Control signal: FSCB J5-9 (ON)
   - Location of electrical component: FS-539/FS-539SD 15-K
5. M2 operation check
   - Control signal: FSCB J9<A>-1 to 4
   - Location of electrical component: FS-539/FS-539SD 12-C
6. Replace M2.
7. Replace FSCB.

(2) When FS-540 or FS-540SD is installed

Contents

Trouble type	C11E1: Paper exit switching drive malfunction (When FS-540 or FS-540SD is installed)
Rank	B
Trouble detection condition	The route change gate home sensor (PS21) is not turned OFF (unblocked) or ON (blocked) even after the set period of time has elapsed after the route change gate motor (M4) is energized.
Trouble isolation	-
Relevant electrical parts	• Route change gate motor (M4) • Route change gate home sensor (PS21) • FS control board (FSCB)

Procedure

1. Check the connector between M4-FSCB J12 for proper connection and correct as necessary.
2. Check the connector of M4 for proper drive coupling and correct as necessary.

3. Check the connector between PS21-FSCB J12 for proper connection and correct as necessary.
4. PS21 I/O check, sensor check
   - Control signal: FSCB J12<B>-8 (ON)
   - Location of electrical component: FS-540/FS-540SD 16-A
5. M4 operation check
   - Control signal: FSCB J21<B>-4 to 5
   - Location of electrical component: FS-540/FS-540SD 16-D
6. Replace M4.
7. Replace FSCB.

3.8.38 C11E2

Contents

Trouble type	C11E2: Paper exit switching (JS) drive malfunction (When FS-540 or FS-540SD is installed)
Rank	B
Trouble detection condition	The sub tray/JS route change gate home sensor (PS23) is not turned OFF (unblocked) or ON (blocked) even after the set period of time has elapsed after the sub tray discharge motor (M18) is energized.
Trouble isolation	-
Relevant electrical parts	• Sub tray discharge motor (M18) • Sub tray/JS route change gate home sensor (PS23) • FS control board (FSCB)

Procedure

1. Check the connector between M18-FSCB J12 for proper connection and correct as necessary.
2. Check the connector of M18 for proper drive coupling and correct as necessary.
3. Check the connector between PS23-FSCB J12 for proper connection and correct as necessary.
4. PS23 I/O check, sensor check
   - Control signal: FSCB J12<A>-14 (ON)
   - Location of electrical component: FS-540/FS-540SD 15-D
5. M18 operation check
   - Control signal: FSCB J12<A>-5 to 8
   - Location of electrical component: FS-540/FS-540SD 15-D
6. Replace M18.
7. Replace FSCB.

3.8.39 C1403

Contents

Trouble type	C1403: PK flash ROM error (When FS-540+PK-526 or FS-540SD+PK-526 is installed)
Rank	C
Trouble detection condition	Data of flash ROM of the PK is determined to be faulty when the main power switch is turned ON.
Trouble isolation	-
Relevant electrical parts	Punch control board (PKCB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Rewrite the firmware.
3. Replace PKCB.

3.8.40 C1404

Contents

Trouble type	C1404: PI flash ROM error (When FS-540+PI-507 or FS-540SD+PI-507 is installed)
Rank	C
Trouble detection condition	Data of flash ROM of the PI is determined to be faulty when the main power switch is turned ON.
Trouble isolation	-
Relevant electrical parts	PI drive board (PIDB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Rewrite the firmware.
3. Replace PIDB.

3.9 C2###

3.9.1 C2204

Contents

Trouble type	C2204: Waste toner transport motor failure to turn
Rank	B

Trouble detection condition	The turning detection sensor detects failure to turn for a predetermined number of times while the motor is turning.
Trouble isolation	-
Relevant electrical parts	• Waste toner transport motor (M20) • Waste toner box drive detection sensor (PS100) • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Clean the PS100 if it has toner or paper dust, etc.
2. Replacing the waste toner box.
3. Check the connector between M20-relay CN92-EXCB CN10EX for proper connection and correct as necessary.
4. Check the connector of M20 for proper drive coupling and correct as necessary.
5. Check the connector between PS100-EXCB CN8EX for proper connection and correct as necessary.
6. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
7. Check CPUB for proper installation and correct as necessary.
8. PS100 I/O check, sensor check
   - Control signal: EXCB CN8EX-6 (ON)
   - Location of electrical component: 20-X
9. M20 load check
   - Check code: 44
   - Multi code: 1
   - Control signal: EXCB CN10EX-12 to 15
   - Location of electrical component: 22-P
10. Replace M20.
11. Replace EXCB.
12. Replace CPUB.
13. Replace BASEB.

3.9.2 C2350

Contents

Trouble type	C2350: Toner suction fan failure to turn
Rank	B
Trouble detection condition	The fan lock signal remains Low for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• Toner suction fan (FM11) • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM11-relay CN62-relay CN63-EXCB CN15EX for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. FM11 load check
   - Check code: 42
   - Multi code: 8
   - Control signal: EXCB CN15EX-1 (REM), EXCB CN15EX-3 (LOCK)
   - Location of electrical component: 25-X
6. Replace FM11.
7. Replace EXCB.
8. Replace CPUB.
9. Replace BASEB.

3.9.3 C2355

Contents

Trouble type	C2355: Transfer belt cleaner cooling fan failure to turn
Rank	B
Trouble detection condition	The fan lock signal remains Low for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• Transfer belt cleaner cooling fan (FM2) • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM2-relay CN115-EXCB CN10EX for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. FM2 load check

- Check code: 42
- Multi code: 13, 14
- Control signal: EXCB CN10EX-9 (REM), EXCB CN10EX-11 (LOCK)
- Location of electrical component: 22-P

6. Replace FM2.
7. Replace EXCB.
8. Replace CPUB.
9. Replace BASEB.

3.9.4 C2357

Contents

Trouble type	C2357: DV cooling fan failure to turn
Rank	B
Trouble detection condition	The fan lock signal remains Low for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• DV cooling fan (FM19) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM19-relay CN804-BASEB CN37E for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. FM19 load check
   - Check code: 42
   - Multi code: 15, 16
   - Control signal: BASEB CN37E-1 (REM), BASEB CN37E-3 (LOCK)
   - Location of electrical component: 24-K
5. Replace FM19.
6. Replace CPUB.
7. Replace BASEB.

3.9.5 C2414

Contents

Trouble type	C2414: Developing unit/K new article release
Rank	B
Trouble detection condition	The status with the new unit is not cleared after the new developing unit is set.
Trouble isolation	-
Relevant electrical parts	• Developing unit/K • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Reinstall the developing unit.
2. Check the connector between the developing unit/K-relay CN252-relay CN25-EXCB CN4EX for proper connection and correct as necessary.
3. Check the connector between EXCB CN1EX-BASEB CN11E for proper connection and correct as necessary.
4. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
5. Check CPUB for proper installation and correct as necessary.
6. Replace the corresponding developing unit.
7. Replace EXCB.
8. Replace CPUB.
9. Replace BASEB.

3.9.6 C2557

Contents

Trouble type	C2557: Abnormally low toner density detected black TCR sensor
Rank	B
Trouble detection condition	When sampling data is determined in TC ratio calculation control, TCR sensor output is higher than a predetermined value for a predetermined number of times in a row even though there is toner in the sub hopper.
Trouble isolation	-
Relevant electrical parts	• Developing unit/K • Toner cartridge/K • PH unit • Toner empty sensor/K (PS31) • Toner cartridge motor/K (M25) • Toner supply motor/K (M6) • Expansion control board (EXCB) • CPU board (CPUB)

	• Base board (BASEB)

Procedure

1. Perform image troubleshooting procedure if image density is low.
2. Reinstall the developing unit/K.
3. Reinstall the toner cartridge/K.
4. Check the connector between the developing unit/K-relay CN252-relay CN25-EXCB CN4EX for proper connection and correct as necessary.
5. Check the connector between EXCB CN1EX-BASEB CN11E for proper connection and correct as necessary.
6. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
7. Check CPUB for proper installation and correct as necessary.
8. M25 operation check
   - Control signal: EXCB CN11EX-1 to 4
   - Location of electrical component: 15-P
9. M6 operation check
   - Control signal: EXCB CN10EX-16 to 19
   - Location of electrical component: 23-P
10. If the toner empty sensor and its surroundings inside the sub hopper are dirtied with toner, clean them.
11. Replace the developing unit/K.
12. Replace EXCB.
13. Replace CPUB.
14. Replace BASEB.

3.9.7 C2558

Contents

Trouble type	C2558: Abnormally high toner density detected black TCR sensor
Rank	B
Trouble detection condition	The TC ratio of the toner determined by the toner replenishment control is detected to be the predetermined value or over for consecutive times.
Trouble isolation	-
Relevant electrical parts	• Developing unit/K • Toner cartridge/K • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Reinstall the developing unit.
2. Reinstall the toner cartridge.
3. Check the connector between the developing unit/K-relay CN252-relay CN25-EXCB CN4EX for proper connection and correct as necessary.
4. Check the connector between EXCB CN1EX-BASEB CN11E for proper connection and correct as necessary.
5. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
6. Check CPUB for proper installation and correct as necessary.
7. Replace the corresponding developing unit.
8. Replace EXCB.
9. Replace CPUB.
10. Replace BASEB.

3.9.8 C255C

Contents

Trouble type	C255C: Black TCR sensor adjustment failure
Rank	B
Trouble detection condition	TCR sensor automatic adjustment does not function properly, failing to adjust to an appropriate value.
Trouble isolation	-
Relevant electrical parts	• Developing unit/K • Toner cartridge motor/K (M25) • Toner supply motor/K (M6) • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Reinstall the developing unit/K.
2. Check the connector between the developing unit/K-relay CN252-relay CN25-EXCB CN4EX for proper connection and correct as necessary.
3. Check the connector between EXCB CN1EX-BASEB CN11E for proper connection and correct as necessary.
4. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
5. Check CPUB for proper installation and correct as necessary.
6. M25 operation check
   - Control signal: EXCB CN11EX-1 to 4
   - Location of electrical component: 15-P

7. M6 operation check
   - Control signal: EXCB CN10EX-16 to 19
   - Location of electrical component: 23-P
8. Replace the developing unit/K.
9. Replace EXCB.
10. Replace CPUB.
11. Replace BASEB.

3.9.9 C2564

Contents

Trouble type	C2564: Black TCR sensor failure
Rank	B
Trouble detection condition	• Alarm signals for TCR sensor is detected more than the predetermined number of times. • This detection is used for detecting disconnection of TCR sensor connector.
Trouble isolation	-
Relevant electrical parts	• Developing unit/K • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Reinstall the developing unit.
2. Check the connector between the developing unit/K-relay CN252-relay CN25-EXCB CN4EX for proper connection and correct as necessary.
3. Check the connector between EXCB CN1EX-BASEB CN11E for proper connection and correct as necessary.
4. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
5. Check CPUB for proper installation and correct as necessary.
6. Replace the corresponding developing unit.
7. Replace EXCB.
8. Replace CPUB.
9. Replace BASEB.

3.9.10 C2650

Contents

Trouble type	C2650: Main backup media access error
Rank	C
Trouble detection condition	• The re-written data, which has been read out, checked and founded as error, is read out again and found as error. • The error was found when reading out the counter value. • The main body detects that the back up board is not mounted.
Trouble isolation	-
Relevant electrical parts	• Backup board (ERB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between ERB CN1-BASEB CN27E for proper connection and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Replace CPUB.
4. Replace BASEB.
5. Replace ERB.
   1. Replace the current ERB with a new one.
   2. Replace the following components with new ones.
   When the transfer belt unit and the fusing unit have been replaced with new ones, perform [Service Mode] -> [Counter] -> [Life] -> [New Release]. When the transfer roller has been replaced with a new one, perform the counter reset in [Service Mode] -> [Counter] -> [Life].
      - Developing unit
      - Drum unit
      - Toner cartridge
      - Transfer belt unit
      - Fusing unit
      - Transfer roller
      - Feed roller, pick-up roller, separation roller (including options)

   3. Turn ON the main power switch and check to see that warm-up is started.
   Make sure that trouble codes other than C2650 or improper IU/TC placement is not detected.
   4. Make the specified readjustments.
6. If the above actions do not solve the problem, contact KM.

3.9.11 C2A14

Contents

Trouble type	C2A14: Drum unit/K new release failure

Rank	B
Trouble detection condition	The status with the new unit is not cleared after the new drum unit is set.
Trouble isolation	-
Relevant electrical parts	• Drum unit/K • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Clean the connection between the drum unit and the main body if dirty.
2. Reinstall the drum unit.
3. Check the connector between the drum unit/K-relay CN48-relay CN149-EXCB CN4EX for proper connection and correct as necessary.
4. Check the connector between EXCB CN1EX-BASEB CN11E for proper connection and correct as necessary.
5. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
6. Check CPUB for proper installation and correct as necessary.
7. Replace the corresponding drum unit.
8. Replace EXCB.
9. Replace CPUB.
10. Replace BASEB.

3.9.12 C2A24

Contents

Trouble type	C2A24: Toner cartridge/K new release failure
Rank	C
Trouble detection condition	The status with the new unit is not cleared after the new toner cartridge is set.
Trouble isolation	-
Relevant electrical parts	• Toner cartridge/K • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Clean the connection between the toner cartridge and the main body if dirty.
2. Check the connector between the toner cartridge/K-relay CN83-relay CN79-EXCB CN5EX for proper connection and correct as necessary.
3. Check the connector between EXCB CN1EX-BASEB CN11E for proper connection and correct as necessary.
4. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
5. Check CPUB for proper installation and correct as necessary.
6. Reinstall the toner cartridge.
7. Check the harness for proper connection and correct as necessary.
8. Replace the corresponding toner cartridge.
9. Replace EXCB.
10. Replace CPUB.
11. Replace BASEB.

3.10 C3###

3.10.1 C3103

Contents

Trouble type	C3103: Pressure roller release failure
Rank	B
Trouble detection condition	The fusing pressure home sensor (PS38) is not turned OFF (unblocked) even after the lapse of a predetermined period of time after the fusing pressure motor (M11) has started rotating during retraction of the pressure roller.
Trouble isolation	-
Relevant electrical parts	• Fusing unit • Fusing pressure motor (M11) • Fusing pressure home sensor (PS38) • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between M11-relay CN112-EXCB CN14EX for proper connection and correct as necessary.
2. Check the connector between the fusing unit-relay CN95, CN96-BASEB CN4E for proper connection and correct as necessary.
3. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. PS38 I/O check, sensor check
   - Control signal: BASEB CN4E-3 (ON)
   - Location of electrical component: 7-C
6. M11 load check
   - Check code: 45
   - Multi code: 7, 8, 9
   - Control signal: EXCB CN14EX-11 to 14

- Location of electrical component: 18-P

7. Replace M11.
8. Replace the fusing unit.
9. Replace EXCB.
10. Replace CPUB.
11. Replace BASEB.

3.10.2 C3104

Contents

Trouble type	C3104: Fusing shutter failure
Rank	B
Trouble detection condition	• The fusing shutter home sensor (PS47) is not turned OFF (unblocked) even after the lapse of a predetermined period of time after the fusing shutter motor (M15) is activated when the shutter is completely opened. • The fusing shutter home sensor (PS47) is not turned ON (blocked) even after the lapse of a predetermined period of time after the fusing shutter motor (M15) is activated when the shutter is completely closed.
Trouble isolation	-
Relevant electrical parts	• Fusing shutter motor (M15) • Fusing shutter home sensor (PS47) • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between M15-relay CN164-EXCB CN14EX for proper connection and correct as necessary.
2. Check the connector of M15 for proper drive coupling and correct as necessary.
3. Check the connector between PS47-relay CN9-EXCB CN13EX for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. PS47 I/O check, sensor check
   - Control signal: EXCB CN13EX-12 (ON)
   - Location of electrical component: 16-X
6. M15 load check
   - Check code: 45
   - Multi code: 10, 11
   - Control signal: EXCB CN14EX-15 to 18
   - Location of electrical component: 18-P
7. Replace M15.
8. Replace EXCB.
9. Replace CPUB.
10. Replace BASEB.

3.10.3 C3201, C3202

Contents

Trouble type	• C3201: Fusing motor failure to turn • C3202: Fusing motor turning at abnormal timing
Rank	B
Trouble detection condition	• C3201: The control circuit detects motor failure to turn while the motor is turning. • C3202: The control circuit detects motor turning while the motor remains stationary.
Trouble isolation	-
Relevant electrical parts	• Fusing unit • Fusing motor (M3) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the fusing unit for correct installation (whether it is secured in position).
2. Check the open/close operation of the right door.
3. Check the connector between M3-BASEB CN19E for proper connection and correct as necessary.
4. Check the M3 for possible overload and correct as necessary.
5. Check CPUB for proper installation and correct as necessary.
6. M3 load check
   - Check code: 45
   - Multi code: 1, 4, 5, 6
   - Control signal: BASEB CN19E-6 to 10
   - Location of electrical component: 1-C
7. Replace M3.
8. Replace the fusing unit.
9. Replace CPUB.
10. Replace BASEB.

3.10.4 C3203

Contents

Trouble type	C3203: Fusing motor torque failure
Rank	C
Trouble detection condition	When the printing ends, the fusing motor torque exceeds the predetermined value.
Trouble isolation	-
Relevant electrical parts	• Fusing motor (M3) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between M3-BASEB CN19E for proper connection and correct as necessary.
2. Check the connector of M3 for proper drive coupling and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. M3 load check
   - Check code: 45
   - Multi code: 1, 4, 5, 6
   - Control signal: BASEB CN19E-6 to 10
   - Location of electrical component: 1-C
5. Replace M3.
6. Replace CPUB.
7. Replace BASEB.

3.10.5 C3302

Contents

Trouble type	C3302: Paper cooling fan failure to turn
Rank	B
Trouble detection condition	The fan lock signal remains Low for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• Paper cooling fan (FM8) • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM8-relay CN27-relay CN28-EXCB CN14EX for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. FM8 load check
   - Check code: 42
   - Multi code: 9, 10
   - Control signal: EXCB CN14EX-1 (REM), EXCB CN14EX-3 (LOCK)
   - Location of electrical component: 17-P
6. Replace FM8.
7. Replace EXCB.
8. Replace CPUB.
9. Replace BASEB.

3.10.6 C3306

Contents

Trouble type	C3306: Fusing edge cooling fan/Fr failure to turn
Rank	B
Trouble detection condition	The fan lock signal remains Low for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• Fusing edge cooling fan/Fr (FM21) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM21-relay CN162-relay CN161-BASEB CN22E for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. FM21 load check
   - Check code: 42
   - Multi code: 19, 20
   - Control signal: BASEB CN22E-13 (REM), BASEB CN22E-15 (LOCK)
   - Location of electrical component: 12-C
5. Replace FM21.
6. Replace CPUB.

7. Replace BASEB.

3.10.7 C3307

Contents

Trouble type	C3307: Fusing edge cooling fan/Rr failure to turn
Rank	B
Trouble detection condition	The fan lock signal remains Low for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• Fusing edge cooling fan/Rr (FM22) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM22-relay CN163-relay CN161-BASEB CN22E for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. FM22 load check
   - Check code: 42
   - Multi code: 19, 20
   - Control signal: BASEB CN22E-16 (REM), BASEB CN22E-18 (LOCK)
   - Location of electrical component: 13-C
5. Replace FM22.
6. Replace CPUB.
7. Replace BASEB.

3.10.8 C3425

Contents

Trouble type	C3425: Fusing warm-up trouble
Rank	A
Trouble detection condition	• Detected temperature of the heating roller temperature sensor (TEMS) does not go up a given range of temperature even after a lapse of given period of time at warm up. • The temperature detected by the heating roller temperature sensor (TEMS) does not shift from the pre-standby state even after the lapse of a predetermined period of time after the completion of warm-up.
Trouble isolation	-
Relevant electrical parts	• Fusing unit • Heating roller temperature sensor (TEMS) • DC power supply (DCPU) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the fusing unit for correct installation (whether it is secured in position).
2. Check the open/close operation of the right door.
3. Check the connector between the fusing unit-relay CN95, CN96-BASEB CN4E for proper connection and correct as necessary.
4. Check the connector between BASEB CN2E-DCPU CN7 for proper connection and correct as necessary.
5. Check CPUB for proper installation and correct as necessary.
6. Replace the fusing unit.
7. Replace CPUB.
8. Replace BASEB.
9. Replace DCPU.

3.10.9 C3722, C3725, C3726

Contents

Trouble type	• C3722: Fusing abnormally high temperature detection (Edge of the heating roller) • C3725: Fusing abnormally high temperature detection (Main of the heating roller) • C3726: Fusing abnormally high temperature detection (Center of the heating roller)
Rank	A
Trouble detection condition	• C3722: Detected temperature of the heating roller thermistor/Edg (TH1) goes beyond a given temperature for a given period of time consecutively. • C3725: Detected temperature of the heating roller temperature sensor (TEMS) goes beyond a given temperature for a given period of time consecutively. • At the first time the high temperature abnormally is detected after the main power switch is turned on, Controller JAM 99-15 (heating roller temperature sensor abnormally high temperature detection) will be displayed. From the 2nd time that the high temperature abnormally is detected, the trouble code C3725 will be displayed. • C3726: Detected temperature of the heating roller thermistor/Ctr (TH2) goes beyond a given temperature for a given period of time consecutively.
Trouble isolation	-
Relevant electrical parts	• Fusing unit • C3722: Heating roller thermistor/Edg (TH1)

	• C3725: Heating roller temperature sensor (TEMS) • C3726: Heating roller thermistor/Ctr (TH2) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the fusing unit for correct installation (whether it is secured in position).
2. Check the open/close operation of the right door.
3. Check the connector between the fusing unit-relay CN95-BASEB CN4E for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. Replace the fusing unit.
6. Replace CPUB.
7. Replace BASEB.

3.10.10 C3737

Contents

Trouble type	C3737: Fusing abnormally high temperature detection hard protector (Center of the heating roller)
Rank	A
Trouble detection condition	C3737: An abnormally high temperature is detected on the hard protector circuit (center of the heating roller).
Trouble isolation	-
Relevant electrical parts	• Fusing unit • C3737: Heating roller temperature sensor (TEMS) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the fusing unit for correct installation (whether it is secured in position).
2. Check the open/close operation of the right door.
3. Check the connector between the fusing unit-relay CN95-BASEB CN4E for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. Replace the fusing unit.
6. Replace CPUB.
7. Replace BASEB.

3.10.11 C3825, C3826

Contents

Trouble type	• C3825: Fusing abnormally low temperature detection (Main of the heating roller) • C3826: Fusing abnormally low temperature detection (Center of the heating roller)
Rank	A
Trouble detection condition	• C3825: The heating roller temperature sensor (TEMS) continues to detect a temperature lower than a predetermined one for a predetermined period of time. • C3826: The heating roller thermistor/Ctr (TH2) continues to detect a temperature lower than a predetermined one for a predetermined period of time.
Trouble isolation	-
Relevant electrical parts	• Fusing unit • C3825: Heating roller temperature sensor (TEMS) • C3826: Heating roller thermistor/Ctr (TH2) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the fusing unit for correct installation (whether it is secured in position).
2. Check the open/close operation of the right door.
3. Check the connector between the fusing unit-relay CN95-BASEB CN4E for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. Replace the fusing unit.
6. Replace CPUB.
7. Replace BASEB.

3.10.12 C3922, C3925, C3926

Contents

Trouble type	• C3922: Fusing sensor wire breaks detection (Edge of the heating roller) • C3925: Fusing sensor wire breaks detection (Main of the heating roller) • C3926: Fusing sensor wire breaks detection (Center of the heating roller)
Rank	A
Trouble detection condition	• C3922: The maximum value and minimum value of detected temperature of the heating roller thermistor/Edg (TH1) is compared after a lapse of given time from starting of warm up and the gap between the value of maximum and minimum is below a given temperature.

	• C3925: The maximum value and minimum value of detected temperature of the heating roller temperature sensor (TEMS) is compared after a lapse of given time from starting of warm up and the gap between the value of maximum and minimum is below a given temperature. • C3926: The maximum value and minimum value of detected temperature of the heating roller thermistor/Ctr (TH2) is compared after a lapse of given time from starting of warm up and the gap between the value of maximum and minimum is below a given temperature.
Trouble isolation	-
Relevant electrical parts	• Fusing unit • C3922: Heating roller thermistor/Edg (TH1) • C3925: Heating roller temperature sensor (TEMS) • C3926: Heating roller thermistor/Ctr (TH2) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the fusing unit for correct installation (whether it is secured in position).
2. Check the open/close operation of the right door.
3. Check the connector between the fusing unit-relay CN95-BASEB CN4E for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. Replace the fusing unit.
6. Replace CPUB.
7. Replace BASEB.

3.10.13 C392B

Contents

Trouble type	C392B: Fusing sensor wire breaks detection (difference of temperature)
Rank	A
Trouble detection condition	The difference between the temperature corrected by the heating roller thermistor/Edg (TH1) and the temperature detected by the heating roller thermistor/Ctr (TH2) exceeds a predetermined value.
Trouble isolation	-
Relevant electrical parts	• Fusing unit • Heating roller thermistor/Edg (TH1) • Heating roller thermistor/Ctr (TH2) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the fusing unit for correct installation (whether it is secured in position).
2. Check the open/close operation of the right door.
3. Check the connector between the fusing unit-relay CN95-BASEB CN4E for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. Replace the fusing unit.
6. Replace CPUB.
7. Replace BASEB.

3.11 C4###

3.11.1 C40A2, C40A3, C40A4, C40A5, C40A6, C40C3, C40C5

Contents

Trouble type	• C40A2: Mechanical controller PF communication data error • C40A3: Mechanical controller PF transmission timeout • C40A4: Mechanical controller PF communication pulse error • C40A5: QSPI communication clock switching error • C40A6: Mechanical controller ASIC communication error • C40C3: CTL PF transmission timeout 1 • C40C5: CTL PF transmission timeout 2
Rank	C
Trouble detection condition	A CPU communication error is detected.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Check CPUB for proper installation and correct as necessary.
3. Rewrite the firmware.
4. Replace CPUB.
5. BASEB F8E conduction check
6. Replace BASEB.

3.11.2 C4101

Contents

Trouble type	C4101: Polygon motor rotation trouble
Rank	B
Trouble detection condition	• The polygon motor fails to turn stably even after the lapse of a given period of time after activating and changing rotation speed the polygon motor. • Motor lock signal detects HIGH for a given period time consecutively during the polygon motor is rotating.
Trouble isolation	-
Relevant electrical parts	• PH unit • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between the PH unit-relay CN306-EXCB CN10EX for proper connection and correct as necessary.
2. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. Replace the PH unit.
5. Replace EXCB.
6. Replace CPUB.
7. Replace BASEB.

3.11.3 C4501

Contents

Trouble type	C4501: Laser malfunction
Rank	B
Trouble detection condition	• SOS signal is not detected even after the lapse of a given period of time after starting the laser output. • SOS signal is not detected for a given period of time during printing or IDC sensor adjustment.
Trouble isolation	-
Relevant electrical parts	• PH unit • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between the PH unit-relay CN307-BASEB CN17E for proper connection and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Replace the PH unit.
4. Replace CPUB.
5. Replace BASEB.

3.12 C5###

3.12.1 C5102, C5103

Contents

Trouble type	• C5102: Transport motor failure to turn • C5103: Transport motor turning at abnormal timing
Rank	B
Trouble detection condition	• C5102: The control circuit detects motor failure to turn while the motor is turning. • C5103: The control circuit detects motor turning while the motor remains stationary.
Trouble isolation	-
Relevant electrical parts	• Transport motor (M1) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between M1-BASEB CN19E for proper connection and correct as necessary.
2. Check the loading status of the main drive, and correct the error as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. M1 load check
   - Check code: 40
   - Multi code: 1, 4, 5
   - Control signal: BASEB CN19E-1 to 5
   - Location of electrical component: 1-C
5. Replace M1.
6. Replace CPUB.
7. Replace BASEB.

3.12.2 C5351

Contents

Trouble type	C5351: PH/power supply cooling fan failure to turn
Rank	B
Trouble detection condition	The fan lock signal remains Low for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• PH/power supply cooling fan (FM1) • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM1-relay CN26-EXCB CN10EX for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. FM1 load check
   - Check code: 42
   - Multi code: 1
   - Control signal: EXCB CN10EX-6 (REM), EXCB CN10EX-8 (LOCK)
   - Location of electrical component: 22-P
6. Replace FM1.
7. Replace EXCB.
8. Replace CPUB.
9. Replace BASEB.

3.12.3 C5355

Contents

Trouble type	C5355: Toner cartridge cooling fan failure to turn
Rank	B
Trouble detection condition	The fan lock signal remains Low for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• Toner cartridge cooling fan (FM4) • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM4-relay CN78-EXCB CN14EX for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. FM4 load check
   - Check code: 42
   - Multi code: 2, 3
   - Control signal: EXCB CN14EX-4 (REM), EXCB CN14EX-6 (LOCK)
   - Location of electrical component: 17-P
6. Replace FM4.
7. Replace EXCB.
8. Replace CPUB.
9. Replace BASEB.

3.12.4 C5356

Contents

Trouble type	C5356: Machine internal cooling fan failure to turn
Rank	B
Trouble detection condition	The fan lock signal remains Low for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• Machine internal cooling fan (FM25) • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM25-relay CN402-BASEB CN1400E for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. FM25 load check
   - Check code: 42

- Multi code: 25, 26
- Control signal: BASEB CN1400E-1 (REM), BASEB CN1400E-3 (LOCK)
- Location of electrical component: 22-K

6. Replace FM25.
7. Replace EXCB.
8. Replace CPUB.
9. Replace BASEB.

3.12.5 C5358

Contents

Trouble type	C5358: HaCS power supply cooling fan failure to turn
Rank	B
Trouble detection condition	The fan lock signal remains Low for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• HaCS power supply cooling fan (FM5) • Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM5-EXCB CN9EX for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. FM5 load check
   - Check code: 42
   - Multi code: 17, 18
   - Control signal: EXCB CN9EX-1 (REM), EXCB CN9EX-3 (LOCK)
   - Location of electrical component: 27-X
6. Replace FM5.
7. Replace EXCB.
8. Replace CPUB.
9. Replace BASEB.

3.12.6 C5360

Contents

Trouble type	C5360: Clean unit fan failure to turn (When CU-102 is installed)
Rank	B
Trouble detection condition	The fan lock signal remains Low for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• Exhaust fan/1 (FM14) • Exhaust fan/2 (FM15) • Clean unit drive board (CUDB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between CUDB CN1-relay CN28D-BASEB CN28E for proper connection and correct as necessary.
2. Check the connector between FM14-relay CN182-CUDB CN3, FM15-relay CN165-CUDB CN2 for proper connection and correct as necessary.
3. Check the fan for possible overload and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. FM14 load check
   - Check code: 42
   - Multi code: 9, 10
   - Control signal: CUDB CN3
   - Location of electrical component: 27-L
6. FM15 load check
   - Check code: 42
   - Multi code: 9, 10
   - Control signal: CUDB CN2
   - Location of electrical component: 28-L
7. Replace the defective fan. (FM14 / FM15)
8. Replace CUDB.
9. Replace CPUB.
10. Replace BASEB.

3.12.7 C5361

Contents

Trouble type	C5361: UFP scavenging fan/Fr failure to turn
Rank	B

Trouble detection condition	The fan lock signal remains Low for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• UFP scavenging fan/Fr (FM17) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM17-relay CN801-relay CN5-BASEB CN22E for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. FM17 load check
   - Check code: 42
   - Multi code: 12
   - Control signal: BASEB CN22E-7 (REM), BASEB CN22E-9 (LOCK)
   - Location of electrical component: 12-C
5. Replace FM17.
6. Replace CPUB.
7. Replace BASEB.

3.12.8 C5362

Contents

Trouble type	C5362: UFP scavenging fan/Rr failure to turn
Rank	B
Trouble detection condition	The fan lock signal remains Low for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• UFP scavenging fan/Rr (FM18) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM18-relay CN802-relay CN5-BASEB CN22E for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. FM18 load check
   - Check code: 42
   - Multi code: 12
   - Control signal: BASEB CN22E-10 (REM), BASEB CN22E-12 (LOCK)
   - Location of electrical component: 12-C
5. Replace FM18.
6. Replace CPUB.
7. Replace BASEB.

3.12.9 C5370

Contents

Trouble type	C5370: Rear side cooling fan failure to turn
Rank	C
Trouble detection condition	The fan lock signal remains Low for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• Rear side cooling fan (FM3) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM3-relay CN193-BASEB CN17 for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. FM3 operation check
   - Control signal: BASEB CN17-3 (LOCK), BASEB CN17-4 (PWM)
   - Location of electrical component: 24-D to E
5. Replace FM3.
6. Replace CPUB.
7. Replace BASEB.

3.12.10 C5372

Contents

Trouble type	C5372: MFP control board CPU temperature failure
Rank	C
Trouble detection condition	Temperature failure of CPU on the CPU board was detected.
Trouble isolation	-

Relevant electrical parts	CPU board (CPUB)

Procedure

1. Reboot the machine.
2. Check for clogging in the ventilation path between the CPUB and the PH/power supply cooling fan, and correct as necessary.
3. Replace CPUB.

3.12.11 C5601

Contents

Trouble type	C5601: Engine control malfunction
Rank	C
Trouble detection condition	Engine control malfunction is detected with port monitor control.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connectors on BASEB for proper connection and correct as necessary.
2. Rewrite the firmware.
3. Replace CPUB.
4. Replace BASEB.

3.12.12 C5603

Contents

Trouble type	C5603: Expansion control board communication error
Rank	C
Trouble detection condition	Communication error is detected in expansion control board.
Trouble isolation	-
Relevant electrical parts	• Expansion control board (EXCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Reboot the machine.
2. Check the connector between EXCB CN1EX-BASEB CN11E for proper connection and correct as necessary.
3. Check the connector between EXCB CN2EX-BASEB CN12E for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. Replace EXCB.
6. Replace CPUB.
7. Replace BASEB.

3.12.13 C5605, C5606

Contents

Trouble type	• C5605: Engine communication data error • C5606: Engine transmission timeout
Rank	C
Trouble detection condition	A communication error is detected between CPUs.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Check CPUB for proper installation and correct as necessary.
3. Rewrite the firmware.
4. Replace CPUB.
5. Replace BASEB.

3.12.14 C5610

Contents

Trouble type	C5610: PH LD drive communication error
Rank	C
Trouble detection condition	LD drive write data and read data disagree with each other a predetermined number of consecutive times.
Trouble isolation	-
Relevant electrical parts	• PH unit • CPU board (CPUB)

	• Base board (BASEB)

Procedure

1. Reboot the machine.
2. Check the connector between BASEB CN17E-relay CN307-PH unit for proper connection and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. Replace the PH unit.
5. Replace CPUB.
6. Replace BASEB.

3.12.15 C5620

Contents

Trouble type	C5620: Mechanical controller WDT error
Rank	C
Trouble detection condition	Communication error is detected in mechanical controller ASIC.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Check CPUB for proper installation and correct as necessary.
3. Rewrite the firmware.
4. Replace CPUB.
5. Replace BASEB.

3.13 C6###

3.13.1 C6001

Contents

Trouble type	C6001: DF related configuration error 1
Rank	C
Trouble detection condition	Inconsistency in the configuration with the installed DF is detected on the main body.
Trouble isolation	-
Relevant electrical parts	• DF control board (DFCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the type of the installed DF and replace it if it is a wrong one.
2. Check the connector between DFCB CN12-relay CN3DF-BASEB CN9E for proper connection and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. Replace DFCB.
5. Replace CPUB.
6. Replace BASEB.

3.13.2 C6002

Contents

Trouble type	C6002: DF related configuration error 2
Rank	C
Trouble detection condition	Inconsistency in the configuration with the installed DF is detected on the main body.
Trouble isolation	-
Relevant electrical parts	• DF control board (DFCB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the type of the installed DF and replace it if it is a wrong one.
2. Correct the harness connection between DFCB CN12-relay CN3DF-BASEB CN9E if faulty.
3. Check CPUB for proper installation and correct as necessary.

3.13.3 C6102, C6103

Contents

Trouble type	• C6102: Drive system home sensor malfunction • C6103: Slider over running
Rank	B
Trouble detection condition	C6102:

	• The scanner home sensor (PS201) is unable to detect the scanner located at its home position. • The scanner home sensor (PS201) is unable to detect a scanner even when the scanner motor (M201) has been driven to move the scanner over the maximum travelling distance. • The scanner home sensor (PS201) detects the scanner when the scanner has moved the maximum travelling distance from the position, at which it blocks the scanner home sensor (PS201).
	C6103: The scanner home sensor (PS201) detects the scanner at its home position during a period of time that begins with the time when a prescan command and a scan preparation command are executed and ends when a home return command is executed.
Trouble isolation	Scanner
Relevant electrical parts	• Scanner home sensor (PS201) • Scanner motor (M201) • Scanner drive board (SCDB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Correct or change the scanner drive (pulley, gear, belt) if it is faulty.
2. Correct the scanner motor set screw if loose.
3. Adjust [Image Position: Leading Edge] and [Sub Scan Zoom Adj.].
4. Check the connector between M201-SCDB CN4 for proper connection and correct as necessary.
5. Check the connector between PS201-SCDB CN6 for proper connection and correct as necessary.
6. Check the connector between SCDB CN2-BASEB CN6E for proper connection and correct as necessary.
7. Check CPUB for proper installation and correct as necessary.
8. PS201 I/O check, sensor check
   - Control signal: SCDB CN6-3 (ON)
   - Location of electrical component: 13-P
9. M201 operation check
   - Control signal: SCDB CN4-1 to 4
   - Location of electrical component: 13-P
10. Replace SCDB.
11. Replace CPUB.
12. Replace BASEB.

3.13.4 C6104, C6105

Contents

Trouble type	• C6104: Back side cleaning home sensor abnormality (initial) • C6105: Back side cleaning home sensor abnormality (normal)
Rank	B
Trouble detection condition	C6104: • The CIS cleaning sensor (PS9) does not change from H to L even after the lapse of a given period of time after the home position detecting operation is started at the initial operation. • The CIS cleaning sensor (PS9) does not change from L to H even after the lapse of a given period of time after the home position detecting operation is started at the initial operation.
	C6105: At the time of operation other than the initial operation, the CIS cleaning sensor (PS9) error is detected.
Trouble isolation	Scanner
Relevant electrical parts	• CIS cleaning sensor (PS9) • CIS cleaning motor (M7) • DF control board (DFCB)

Procedure

1. Check if the opening and closing guide is firmly closed.
2. Check the connector between M7-relay CN61-DFCB CN14 for proper connection and correct as necessary.
3. Check the connector of M7 for proper drive coupling and correct as necessary.
4. Check the connector between PS9-relay CN121-DFCB CN18 for proper connection and correct as necessary.
5. PS9 I/O check, sensor check
   - Control signal: DFCB CN18-6 (ON)
   - Location of electrical component: DF 4-C
6. M7 load check
   - Check code: 60
   - Multi code: 65, 66, 67
   - Control signal: DFCB CN14-6 to 9
   - Location of electrical component: DF 7-C
7. Replace M7.
8. DFCB ICP4, ICP7, ICP15 conduction check
9. Replace DFCB.

3.13.5 C6704

Contents

Trouble type	C6704: Image input time out
Rank	C
Trouble detection condition	Image data is not input from the scanner to the CPU board (CPUB).

Trouble isolation	Scanner
Relevant electrical parts	• CCD unit • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Select [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Memory Bus Check] -> [Scanner -> Memory], and conduct the memory bus function.
2. Check the connector between CCDB CN2-BASEB CN6 for proper connection and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. Replace the CCD unit.
5. Replace CPUB.
6. Replace BASEB.

3.13.6 C6751

Contents

Trouble type	C6751: CCD clamp/gain adjustment failure
Rank	B
Trouble detection condition	• The adjustment value is 0 or 255 during a CCD clamp adjustment. • The peak value of the output data is 64 or less during a CCD gain adjustment.
Trouble isolation	Scanner
Relevant electrical parts	• LED exposure unit • CCD unit • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between CCDB CN2-BASEB CN6 for proper connection and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Check for possible extraneous light and correct as necessary.
4. Clean the lens, mirrors, CCD surface, and shading sheet if dirty.
5. Correct reflective mirror of the scanner if faulty, or change scanner mirror.
6. Replace the CCD unit.
7. Replace CPUB.
8. Replace BASEB.

3.13.7 C6752

Contents

Trouble type	C6752: ASIC clock input error (front side)
Rank	C
Trouble detection condition	When starting the machine, verification on reading and writing the predetermined value for image processing ASIC on CCD board (CCDB) was conducted, and verification failure was detected.
Trouble isolation	Scanner
Relevant electrical parts	• CCD unit • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between CCDB CN2-BASEB CN6 for proper connection and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Replace the CCD unit.
4. Replace CPUB.
5. Replace BASEB.

3.13.8 C6753

Contents

Trouble type	C6753: ASIC clock input error (back side)
Rank	C
Trouble detection condition	When starting the machine, verification on reading and writing the predetermined value for CPU (image processing section) on CPU board (CPUB) was conducted, and verification failure was detected.
Trouble isolation	Scanner
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check CPUB for proper installation and correct as necessary.
2. Replace CPUB.
3. Replace BASEB.

3.13.9 C6754, C6755

Contents

Trouble type	• C6754: CIS clamp adjustment failure • C6755: CIS gain adjustment failure
Rank	B
Trouble detection condition	• C6754: After the gain adjustment is performed at the start-up, the CIS clamp adjustment value is too high or too low. • C6755: After the gain adjustment is performed at the start-up, the peak value of the output data is lower than a given value.
Trouble isolation	Scanner
Relevant electrical parts	• CIS module (CIS) • CIS power supply (CISPU) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between CIS CN2-BASEB CN5 for proper connection and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Correct the harness connection between CIS CN1-CISPU CN2 if faulty.
4. Check for possible extraneous light and correct as necessary.
5. Clean the back side reading glass and the shading sheet if dirty.
6. Replace CIS.
7. Replace CISPU.
8. Replace CPUB.
9. Replace BASEB.

3.13.10 C6756

Contents

Trouble type	C6756: CCD power-supply voltage malfunction
Rank	C
Trouble detection condition	Power is not supplied to CCD after the lapse of a given period of time after the main power switch or power key is turned ON or the machine recovers from the sleep mode.
Trouble isolation	-
Relevant electrical parts	• CCD unit • Scanner drive board (SCDB) • DC power supply (DCPU) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Correct the harness connection between CCDB CN1-SCDB CN5 if faulty.
2. Correct the harness connection between SCDB CN1-BASEB CN7E if faulty.
3. Correct the harness connection between BASEB CN1E, CN14E-DCPU CN5, CN6 if faulty.
4. Check CPUB for proper installation and correct as necessary.
5. Replace the CCD unit.
6. SCDB ICP1 conduction check
7. Replace SCDB.
8. Replace CPUB.
9. Replace BASEB.
10. Replace DCPU.

3.13.11 C6901, C6902, C6903, C6911, C6912, C6913

Contents

Trouble type	• C6901: DSC board mount failure 1 (When SC-509 is installed) • C6902: DSC board bus check NG1-1 (When SC-509 is installed) • C6903: DSC board bus check NG1-2 (When SC-509 is installed) • C6911: DSC board mount failure 2 (When SC-509 is installed) • C6912: DSC board bus check NG2-1 (When SC-509 is installed) • C6913: DSC board bus check NG2-2 (When SC-509 is installed)
Rank	C
Trouble detection condition	• C6901: When MFP detects that DSC board/1 (front side) is not properly installed. • C6902, C6903: When DSC bus check (front side) detects an error. • C6911: When MFP detects that DSC board/1 (back side) is not properly installed. • C6912, C6913: When DSC bus check (back side) detects an error.
Trouble isolation	-
Relevant electrical parts	• DSC board/1 (DSCB/1; SC-509) • CPU board (CPUB)

Procedure

1. Check the connector between DSCB/1 CN1-CPUB CN9 for proper connection and correct as necessary.

2. Replace DSCB/1.
3. Replace CPUB.

3.13.12 C6F01, C6F02, C6F03, C6F04, C6F05, C6F06, C6F07, C6F08, C6F09, C6F0A, C6FDC, C6FDD

Contents

Trouble type	• C6F01: Scanner sequence trouble 1 • C6F02: Scanner sequence trouble 2 • C6F03: Scanner sequence trouble 3 • C6F04: Scanner sequence trouble 4 • C6F05: Scanner sequence trouble 5 • C6F06: Scanner sequence trouble 6 • C6F07: Scanner sequence trouble 7 • C6F08: Scanner sequence trouble 8 • C6F09: Scanner sequence trouble 9 • C6F0A: Scanner sequence trouble 10 • C6FDC: Scanner sequence trouble DC • C6FDD: Scanner sequence trouble DD
Rank	• C6F01 to C6F0A: C • C6FDC, C6FDD: B
Trouble detection condition	The original transport interval becomes shorter than the predetermined value due to an original transport control error in original reading in DF.
Trouble isolation	Scanner
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB) • DF control board (DFCB)

Procedure

1. Correct the harness connection between main body and DF if faulty.
2. Check CPUB for proper installation and correct as necessary.
3. Replace DFCB.
4. Replace CPUB.
5. Replace BASEB.

3.14 C7###

3.14.1 C7106

Contents

Trouble type	C7106: Paper exit/reverse motor failure
Rank	C
Trouble detection condition	After starting the motor, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Paper exit/reverse motor (M4) • Base board (BASEB)

Procedure

1. Check the connector between M4-relay CN820-BASEB CN18E for proper connection and correct as necessary.
2. Check the connector of M4 for proper drive coupling and correct as necessary.
3. M4 conduction check.
   - Control signal: BASEB CN18E-3 to 6
   - Location of electrical component: 6-C
4. Replace M4.
5. Replace BASEB.

3.14.2 C7107

Contents

Trouble type	C7107: ADU transport motor/1 failure
Rank	C
Trouble detection condition	After starting the motor, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• ADU transport motor/1 (M5) • Base board (BASEB)

Procedure

1. Check the connector between M5-relay CN86-BASEB CN18E for proper connection and correct as necessary.
2. Check the connector of M5 for proper drive coupling and correct as necessary.
3. M5 conduction check.
   - Control signal: BASEB CN18E-7 to 10
   - Location of electrical component: 6-C
4. Replace M5.
5. Replace BASEB.

3.14.3 C7111

Contents

Trouble type	C7111: Tray 1 lift-up motor failure
Rank	C
Trouble detection condition	After starting the motor, an error is detected for the malfunction detection signal.
Trouble isolation	Tray 1
Relevant electrical parts	• Tray 1 lift-up motor (M12) • Base board (BASEB)

Procedure

1. Check the connector between M12-relay CN180-BASEB CN25E for proper connection and correct as necessary.
2. Check the connector of M12 for proper drive coupling and correct as necessary.
3. M12 conduction check.
   - Control signal: BASEB CN25E-1 (REM)
   - Location of electrical component: 17-K
4. Replace M12.
5. Replace BASEB.

3.14.4 C7112

Contents

Trouble type	C7112: Tray 2 lift-up motor failure
Rank	C
Trouble detection condition	After starting the motor, an error is detected for the malfunction detection signal.
Trouble isolation	Tray 2
Relevant electrical parts	• Tray 2 lift-up motor (M13) • Base board (BASEB)

Procedure

1. Check the connector between M13-relay CN181-BASEB CN25E for proper connection and correct as necessary.
2. Check the connector of M13 for proper drive coupling and correct as necessary.
3. M13 conduction check.
   - Control signal: BASEB CN25E-10 (REM)
   - Location of electrical component: 18-K
4. Replace M13.
5. Replace BASEB.

3.14.5 C7132

Contents

Trouble type	C7132: Toner cartridge motor/K failure
Rank	C
Trouble detection condition	After starting the motor, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Toner cartridge motor/K (M25) • Expansion control board (EXCB)

Procedure

1. Check the connector between M25-relay CN128-EXCB CN11EX for proper connection and correct as necessary.
2. Check the connector of M25 for proper drive coupling and correct as necessary.
3. M25 conduction check.
   - Control signal: EXCB CN11EX-1 to 4
   - Location of electrical component: 15-P
4. Replace M25.
5. Replace EXCB.

3.14.6 C7137

Contents

Trouble type	C7137: Toner supply motor/K failure
Rank	C
Trouble detection condition	After starting the motor, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Toner supply motor/K (M6) • Expansion control board (EXCB)

Procedure

1. Check the connector between M6-relay CN126-EXCB CN10EX for proper connection and correct as necessary.
2. Check the connector of M6 for proper drive coupling and correct as necessary.
3. M6 conduction check.

- Control signal: EXCB CN10EX-16 to 19
- Location of electrical component: 23-P

4. Replace M6.
5. Replace EXCB.

3.14.7 C7139

Contents

Trouble type	C7139: Waste toner transport motor failure
Rank	C
Trouble detection condition	After starting the motor, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Waste toner transport motor (M20) • Expansion control board (EXCB)

Procedure

1. Check the connector between M20-relay CN92-EXCB CN10EX for proper connection and correct as necessary.
2. Check the connector of M20 for proper drive coupling and correct as necessary.
3. M20 conduction check.
   - Control signal: EXCB CN10EX-12 to 15
   - Location of electrical component: 22-P
4. Replace M20.
5. Replace EXCB.

3.14.8 C7141

Contents

Trouble type	C7141: Fusing pressure motor failure
Rank	C
Trouble detection condition	After starting the motor, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Fusing pressure motor (M11) • Expansion control board (EXCB)

Procedure

1. Check the connector between M11-relay CN112-EXCB CN14EX for proper connection and correct as necessary.
2. Check the connector of M11 for proper drive coupling and correct as necessary.
3. M11 conduction check.
   - Control signal: EXCB CN14EX-11 to 14
   - Location of electrical component: 18-P
4. Replace M11.
5. Replace EXCB.

3.14.9 C7160

Contents

Trouble type	C7160: Fusing shutter motor failure
Rank	B
Trouble detection condition	After starting the motor, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Fusing shutter motor (M15) • Expansion control board (EXCB)

Procedure

1. Check the connector between M15-relay CN164-EXCB CN14EX for proper connection and correct as necessary.
2. Check the connector of M15 for proper drive coupling and correct as necessary.
3. M15 conduction check.
   - Control signal: EXCB CN14EX-15 to 18
   - Location of electrical component: 18-P
4. Replace M15.
5. Replace EXCB.

3.14.10 C7162

Contents

Trouble type	C7162: Tray 2 vertical transport motor failure
Rank	B
Trouble detection condition	After starting the motor, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Tray 2 vertical transport motor (M23) • Base board (BASEB)

Procedure

1. Check the connector between M23-BASEB CN31E for proper connection and correct as necessary.
2. Check the connector of M23 for proper drive coupling and correct as necessary.
3. M23 conduction check.
   - Control signal: BASEB CN31E-5 to 8
   - Location of electrical component: 23-K
4. Replace M23.
5. Replace BASEB.

3.14.11 C7163

Contents

Trouble type	C7163: Registration motor failure
Rank	B
Trouble detection condition	After starting the motor, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Registration motor (M24) • Base board (BASEB)

Procedure

1. Check the connector between M24-BASEB CN31E for proper connection and correct as necessary.
2. Check the connector of M24 for proper drive coupling and correct as necessary.
3. M24 conduction check.
   - Control signal: BASEB CN31E-9 to 12
   - Location of electrical component: 24-K
4. Replace M24.
5. Replace BASEB.

3.14.12 C7164

Contents

Trouble type	C7164: ADU transport motor/2 failure
Rank	B
Trouble detection condition	After starting the motor, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• ADU transport motor/2 (M26) • Base board (BASEB)

Procedure

1. Check the connector between M26-relay CN12-BASEB CN18E for proper connection and correct as necessary.
2. Check the connector of M26 for proper drive coupling and correct as necessary.
3. M26 conduction check.
   - Control signal: BASEB CN18E-11 to 14
   - Location of electrical component: 6-C
4. Replace M26.
5. Replace BASEB.

3.14.13 C7202

Contents

Trouble type	C7202: Tray 2 paper feed clutch failure
Rank	C
Trouble detection condition	After starting the clutch, an error is detected for the malfunction detection signal.
Trouble isolation	Tray 2
Relevant electrical parts	• Tray 2 paper feed clutch (CL1) • Base board (BASEB)

Procedure

1. Check the connector between CL1-relay CN43-relay CN40-BASEB CN23E for proper connection and correct as necessary.
2. Check the connector of CL1 for proper drive coupling and correct as necessary.
3. CL1 conduction check.
   - Control signal: BASEB CN23E-16 (ON)
   - Location of electrical component: 16-K
4. Replace CL1.
5. Replace BASEB.

3.14.14 C7206

Contents

Trouble type	C7206: Bypass tray paper feed clutch failure
Rank	C
Trouble detection condition	After starting the clutch, an error is detected for the malfunction detection signal.

Trouble isolation	Manual
Relevant electrical parts	• Bypass tray paper feed clutch (CL7) • Base board (BASEB)

Procedure

1. Check the connector between CL7-relay CN20-relay CN13-BASEB CN26E for proper connection and correct as necessary.
2. Check the connector of CL7 for proper drive coupling and correct as necessary.
3. CL7 conduction check.
   - Control signal: BASEB CN26EA-12 (ON)
   - Location of electrical component: 10-K
4. Replace CL7.
5. Replace BASEB.

3.14.15 C7241

Contents

Trouble type	C7241: Bypass tray lift-up solenoid failure
Rank	C
Trouble detection condition	After starting the solenoid, an error is detected for the malfunction detection signal.
Trouble isolation	Manual
Relevant electrical parts	• Bypass tray lift-up solenoid (SD1) • Base board (BASEB)

Procedure

1. Check the connector between SD1-relay CN21-relay CN13-BASEB CN26E for proper connection and correct as necessary.
2. Check the connector of SD1 for proper drive coupling and correct as necessary.
3. SD1 conduction check.
   - Control signal: BASEB CN26EA-9 (ON)
   - Location of electrical component: 10-K
4. Replace SD1.
5. Replace BASEB.

3.14.16 C7242

Contents

Trouble type	C7242: Bypass tray pick-up roller solenoid failure
Rank	C
Trouble detection condition	After starting the solenoid, an error is detected for the malfunction detection signal.
Trouble isolation	Manual
Relevant electrical parts	• Bypass tray pick-up roller solenoid (SD6) • Base board (BASEB)

Procedure

1. Check the connector between SD6-relay CN191-relay CN13-BASEB CN26E for proper connection and correct as necessary.
2. Check the connector of SD6 for proper drive coupling and correct as necessary.
3. SD6 conduction check.
   - Control signal: BASEB CN26EA-7 (ON)
   - Location of electrical component: 10-K
4. Replace SD6.
5. Replace BASEB.

3.14.17 C7243

Contents

Trouble type	C7243: Exit path switch solenoid failure
Rank	C
Trouble detection condition	After starting the solenoid, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Exit path switch solenoid (SD3) • Base board (BASEB)

Procedure

1. Check the connector between SD3-relay CN208-relay CN108-BASEB CN13E for proper connection and correct as necessary.
2. Check the connector of SD3 for proper drive coupling and correct as necessary.
3. SD3 conduction check.
   - Control signal: BASEB CN13E-7 (ON)
   - Location of electrical component: 14-C
4. Replace SD3.
5. Replace BASEB.

3.14.18 C7251

Contents

Trouble type	C7251: Developing solenoid failure
Rank	C
Trouble detection condition	After starting the solenoid, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Developing solenoid (SD4) • Expansion control board (EXCB)

Procedure

1. Check the connector between SD4-relay CN159-EXCB CN14EX for proper connection and correct as necessary.
2. Check the connector of SD4 for proper drive coupling and correct as necessary.
3. SD4 conduction check.
   - Control signal: EXCB CN14EX-7 (REM)
   - Location of electrical component: 17-P
4. Replace SD4.
5. Replace EXCB.

3.14.19 C7301

Contents

Trouble type	C7301: PH/power supply cooling fan failure
Rank	C
Trouble detection condition	After starting the fan, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• PH/power supply cooling fan (FM1) • Expansion control board (EXCB)

Procedure

1. Check the connector between FM1-relay CN26-EXCB CN10EX for proper connection and correct as necessary.
2. Check the connector of FM1 for proper drive coupling and correct as necessary.
3. FM1 conduction check.
   - Control signal: EXCB CN10EX-6 (REM), EXCB CN10EX-8 (LOCK)
   - Location of electrical component: 22-P
4. Replace FM1.
5. Replace EXCB.

3.14.20 C7302

Contents

Trouble type	C7302: Transfer belt cleaner cooling fan failure
Rank	C
Trouble detection condition	After starting the fan, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Transfer belt cleaner cooling fan (FM2) • Expansion control board (EXCB)

Procedure

1. Check the connector between FM2-relay CN115-EXCB CN10EX for proper connection and correct as necessary.
2. Check the connector of FM2 for proper drive coupling and correct as necessary.
3. FM2 conduction check.
   - Control signal: EXCB CN10EX-9 (REM), EXCB CN10EX-11 (LOCK)
   - Location of electrical component: 22-P
4. Replace FM2.
5. Replace EXCB.

3.14.21 C7304

Contents

Trouble type	C7304: Toner cartridge cooling fan failure
Rank	C
Trouble detection condition	After starting the fan, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Toner cartridge cooling fan (FM4) • Expansion control board (EXCB)

Procedure

1. Check the connector between FM4-relay CN78-EXCB CN14EX for proper connection and correct as necessary.
2. Check the connector of FM4 for proper drive coupling and correct as necessary.
3. FM4 conduction check.

- Control signal: EXCB CN14EX-4 (REM), EXCB CN14EX-6 (LOCK)
- Location of electrical component: 17-P

4. Replace FM4.
5. Replace EXCB.

3.14.22 C7305

Contents

Trouble type	C7305: Paper cooling fan failure
Rank	C
Trouble detection condition	After starting the fan, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Paper cooling fan (FM8) • Expansion control board (EXCB)

Procedure

1. Check the connector between FM8-relay CN27-relay CN28-EXCB CN14EX for proper connection and correct as necessary.
2. Check the connector of FM8 for proper drive coupling and correct as necessary.
3. FM8 conduction check.
   - Control signal: EXCB CN14EX-1 (REM), EXCB CN14EX-3 (LOCK)
   - Location of electrical component: 17-P
4. Replace FM8.
5. Replace EXCB.

3.14.23 C7310

Contents

Trouble type	C7310: DV cooling fan failure
Rank	B
Trouble detection condition	After starting the fan, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• DV cooling fan (FM19) • Base board (BASEB)

Procedure

1. Check the connector between FM19-relay CN804-BASEB CN37E for proper connection and correct as necessary.
2. Check the connector of FM19 for proper drive coupling and correct as necessary.
3. FM19 conduction check.
   - Control signal: BASEB CN37E-1 (REM), BASEB CN37E-3 (LOCK)
   - Location of electrical component: 24-K
4. Replace FM19.
5. Replace BASEB.

3.14.24 C7311

Contents

Trouble type	C7311: Fusing edge cooling fan/Rr failure
Rank	B
Trouble detection condition	After starting the fan, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Fusing edge cooling fan/Rr (FM22) • Base board (BASEB)

Procedure

1. Check the connector between FM22-relay CN163-relay CN161-BASEB CN22E for proper connection and correct as necessary.
2. Check the connector of FM22 for proper drive coupling and correct as necessary.
3. FM22 conduction check.
   - Control signal: BASEB CN22E-16 (REM), BASEB CN22E-18 (LOCK)
   - Location of electrical component: 13-C
4. Replace FM22.
5. Replace BASEB.

3.14.25 C7312

Contents

Trouble type	C7312: Toner suction fan failure
Rank	B
Trouble detection condition	After starting the fan, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Toner suction fan (FM11) • Expansion control board (EXCB)

Procedure

1. Check the connector between FM11-relay CN62-relay CN63-EXCB CN15EX for proper connection and correct as necessary.
2. Check the connector of FM11 for proper drive coupling and correct as necessary.
3. FM11 conduction check.
   - Control signal: EXCB CN15EX-1 (REM), EXCB CN15EX-3 (LOCK)
   - Location of electrical component: 25-X
4. Replace FM11.
5. Replace EXCB.

3.14.26 C7313

Contents

Trouble type	C7313: UFP scavenging fan/Fr failure
Rank	B
Trouble detection condition	After starting the fan, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• UFP scavenging fan/Fr (FM17) • Base board (BASEB)

Procedure

1. Check the connector between FM17-relay CN801-relay CN5-BASEB CN22E for proper connection and correct as necessary.
2. Check the connector of FM17 for proper drive coupling and correct as necessary.
3. FM17 conduction check.
   - Control signal: BASEB CN22E-7 (REM), BASEB CN22E-9 (LOCK)
   - Location of electrical component: 12-C
4. Replace FM17.
5. Replace BASEB.

3.14.27 C7314

Contents

Trouble type	C7314: UFP scavenging fan/Rr failure
Rank	B
Trouble detection condition	After starting the fan, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• UFP scavenging fan/Rr (FM18) • Base board (BASEB)

Procedure

1. Check the connector between FM18-relay CN802-relay CN5-BASEB CN22E for proper connection and correct as necessary.
2. Check the connector of FM18 for proper drive coupling and correct as necessary.
3. FM18 conduction check.
   - Control signal: BASEB CN22E-10 (REM), BASEB CN22E-12 (LOCK)
   - Location of electrical component: 12-C
4. Replace FM18.
5. Replace BASEB.

3.14.28 C7315

Contents

Trouble type	C7315: Fusing edge cooling fan/Fr failure
Rank	B
Trouble detection condition	After starting the fan, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Fusing edge cooling fan/Fr (FM21) • Base board (BASEB)

Procedure

1. Check the connector between FM21-relay CN162-relay CN161-BASEB CN22E for proper connection and correct as necessary.
2. Check the connector of FM21 for proper drive coupling and correct as necessary.
3. FM21 conduction check.
   - Control signal: BASEB CN22E-13 (REM), BASEB CN22E-15 (LOCK)
   - Location of electrical component: 12-C
4. Replace FM21.
5. Replace BASEB.

3.14.29 C7317

Contents

Trouble type	C7317: Tacking fan/Fr failure
Rank	C
Trouble detection condition	After starting the fan, an error is detected for the malfunction detection signal.

Trouble isolation	-
Relevant electrical parts	• Tacking fan/Fr (FM23) • Expansion control board (EXCB)

Procedure

1. Check the connector between FM23-relay CN711-relay CN710-EXCB CN15EX for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. FM23 conduction check.
   - Control signal: EXCB CN15EX-4 (REM), EXCB CN15EX-6 (LOCK)
   - Location of electrical component: 26-X
4. Replace FM23.
5. Replace EXCB.

3.14.30 C7318

Contents

Trouble type	C7318: Machine internal cooling fan failure
Rank	C
Trouble detection condition	After starting the fan, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Machine internal cooling fan (FM25) • Base board (BASEB)

Procedure

1. Check the connector between FM25-relay CN402-BASEB CN1400E for proper connection and correct as necessary.
2. Check the connector of FM25 for proper drive coupling and correct as necessary.
3. FM25 conduction check.
   - Control signal: BASEB CN1400E-1 (REM), BASEB CN1400E-3 (LOCK)
   - Location of electrical component: 22-K
4. Replace FM25.
5. Replace BASEB.

3.14.31 C7319

Contents

Trouble type	C7319: Tacking fan/Rr failure
Rank	C
Trouble detection condition	After starting the fan, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Tacking fan/Rr (FM24) • Expansion control board (EXCB)

Procedure

1. Check the connector between FM24-relay CN404-relay CN403-relay CN401-EXCB CN8EX for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. FM24 conduction check.
   - Control signal: EXCB CN8EX-11 (REM), EXCB CN8EX-13 (LOCK)
   - Location of electrical component: 21-X
4. Replace FM24.
5. Replace EXCB.

3.14.32 C7401

Contents

Trouble type	C7401: Erase LED/K failure
Rank	C
Trouble detection condition	After erase LED/K started to light up, an error is detected for the failure detection signal.
Trouble isolation	-
Relevant electrical parts	• Erase LED/K (EL/K) • Expansion control board (EXCB)

Procedure

1. Check the connector between EL/K-EXCB CN16EX for proper connection and correct as necessary.
2. EL/K conduction check.
   - Control signal: EXCB CN16EX-2 (REM)
   - Location of electrical component: 19-X
3. Replace EL/K.
4. Replace EXCB.

3.14.33 C7402

Contents

Trouble type	C7402: Erase LED/C failure, Erase LED/M failure, Erase LED/Y failure
Rank	C
Trouble detection condition	• After erase LED/C started to light up, an error is detected for the failure detection signal. • After erase LED/M started to light up, an error is detected for the failure detection signal. • After erase LED/Y started to light up, an error is detected for the failure detection signal.
Trouble isolation	-
Relevant electrical parts	• Erase LED/C (EL/C) • Erase LED/M (EL/M) • Erase LED/Y (EL/Y) • Expansion control board (EXCB)

Procedure

1. Check the connector between EL/C-EXCB CN16EX for proper connection and correct as necessary.
2. Check the connector between EL/M-EXCB CN16EX for proper connection and correct as necessary.
3. Check the connector between EL/Y-EXCB CN16EX for proper connection and correct as necessary.
4. EL/C conduction check.
   - Control signal: EXCB CN16EX-6 (REM)
   - Location of electrical component: 19-X
5. Replace EL/C.
6. EL/M conduction check.
   - Control signal: EXCB CN16EX-8 (REM)
   - Location of electrical component: 19-X
7. Replace EL/M.
8. EL/Y conduction check.
   - Control signal: EXCB CN16EX-10 (REM)
   - Location of electrical component: 20-X
9. Replace EL/Y.
10. Replace EXCB.

3.14.34 C7501

Contents

Trouble type	C7501: Tray 2 upper limit sensor failure
Rank	C
Trouble detection condition	The tray 2 upper limit sensor (PS22) does not change even after the lapse of a predetermined period of time after tray 2 is opened and closed, after C-0204 (Tray 2 feeder up/down abnormality) is detected.
Trouble isolation	Tray 2
Relevant electrical parts	• Tray 2 upper limit sensor (PS22) • Base board (BASEB)

Procedure

1. Check the connector between PS22-relay CN40-BASEB CN23E for proper connection and correct as necessary.
2. Replace PS22.
3. Replace BASEB.

3.14.35 C7502

Contents

Trouble type	C7502: Tray 1 upper limit sensor failure
Rank	C
Trouble detection condition	The tray 1 upper limit sensor (PS25) does not change even after the lapse of a predetermined period of time after tray 1 is opened and closed, after C-0202 (Tray 1 feeder up/down abnormality) is detected.
Trouble isolation	Tray 1
Relevant electrical parts	• Tray 1 upper limit sensor (PS25) • Base board (BASEB)

Procedure

1. Check the connector between PS25-relay CN30-BASEB CN26E for proper connection and correct as necessary.
2. Replace PS25.
3. Replace BASEB.

3.14.36 C7601

Contents

Trouble type	C7601: Power line A1 error
Rank	C
Trouble detection condition	The fuse detection unit detected an error for a predetermined time.

Trouble isolation	-
Relevant electrical parts	• Transport motor (M1) • Base board (BASEB)

Procedure

1. BASEB F1E conduction check
2. Check the connector between M1-BASEB CN19E for proper connection and correct as necessary.
3. M1 load check
   - Check code: 40
   - Multi code: 1, 4, 5
   - Control signal: BASEB CN19E-1 to 5
   - Location of electrical component: 1-C
4. Replace M1.
5. Replace BASEB.

3.14.37 C7604

Contents

Trouble type	C7604: Power line A4 error
Rank	C
Trouble detection condition	The fuse detection unit detected an error for a predetermined time.
Trouble isolation	-
Relevant electrical parts	• Fusing motor (M3) • Base board (BASEB)

Procedure

1. BASEB F4E conduction check
2. Check the connector between M3-BASEB CN19E for proper connection and correct as necessary.
3. M3 load check
   - Check code: 45
   - Multi code: 1, 4, 5, 6
   - Control signal: BASEB CN19E-6 to 10
   - Location of electrical component: 1-C
4. Replace M3.
5. Replace BASEB.

3.14.38 C7605

Contents

Trouble type	C7605: Power line A5 error
Rank	C
Trouble detection condition	The fuse detection unit detected an error for a predetermined time.
Trouble isolation	-
Relevant electrical parts	• High voltage unit (HV) • Base board (BASEB)

Procedure

1. BASEB F5E conduction check
2. Check the connector between HV CN1-BASEB CN26E, HV CN2-BASEB CN21E for proper connection and correct as necessary.
3. Replace HV.
4. Replace BASEB.

3.14.39 C7606

Contents

Trouble type	C7606: Power line A6 error
Rank	C
Trouble detection condition	The fuse detection unit detected an error for a predetermined time.
Trouble isolation	-
Relevant electrical parts	• Base board (BASEB)

Procedure

1. BASEB F6E conduction check
2. Replace BASEB.

3.14.40 C7607

Contents

Trouble type	C7607: Power line A7 error
Rank	C
Trouble detection condition	The fuse detection unit detected an error for a predetermined time.

Trouble isolation	-
Relevant electrical parts	• Bypass tray paper feed clutch (CL7) • Base board (BASEB)

Procedure

1. BASEB F7E conduction check
2. Check the connector between CL7-relay CN20-relay CN13-BASEB CN26E for proper connection and correct as necessary.
3. CL7 conduction check.
   - Control signal: BASEB CN26EA-12 (ON)
   - Location of electrical component: 10-K
4. Replace CL7.
5. Replace BASEB.

3.14.41 C760A

Contents

Trouble type	C760A: Power line A10 error
Rank	C
Trouble detection condition	The fuse detection unit detected an error for a predetermined time.
Trouble isolation	• Tray 3 • Tray 4
Relevant electrical parts	• PC control board (PCCB) • Base board (BASEB)

Procedure

1. BASEB F11E conduction check
2. Check the connector between PCCB CN2-relay CN65-BASEB CN29E for proper connection and correct as necessary.
3. Replace PCCB.
4. Replace BASEB.

3.14.42 C760B

Contents

Trouble type	C760B: Power line A11 error
Rank	C
Trouble detection condition	The fuse detection unit detected an error for a predetermined time.
Trouble isolation	-
Relevant electrical parts	• Expansion control board (EXCB) • Base board (BASEB)

Procedure

1. BASEB F12E conduction check
2. Check the connector between EXCB CN1EX-BASEB CN11E for proper connection and correct as necessary.
3. Replace EXCB.
4. Replace BASEB.

3.14.43 C760C

Contents

Trouble type	C760C: Power line A12 error
Rank	C
Trouble detection condition	The fuse detection unit detected an error for a predetermined time.
Trouble isolation	-
Relevant electrical parts	• Total counter (TCT) (Japan models only) • Key counter (KCT) • Base board (BASEB)

Procedure

1. BASEB F13E conduction check
2. Check the connector between TCT-relay CN117-BASEB CN13E for proper connection and correct as necessary. (Japan models only)
3. Check the connector between KCT-relay CN119-BASEB CN3E for proper connection and correct as necessary.
4. Replace the key counter.
5. Replace BASEB.

3.14.44 C760D

Contents

Trouble type	C760D: Power line A13 error
Rank	C
Trouble detection condition	The fuse detection unit detected an error for a predetermined time.
Trouble isolation	-

Relevant electrical parts	• DF control board (DFCB) • Scanner drive board (SCDB) • Base board (BASEB)

Procedure

1. BASEB F14E conduction check
2. Check the connector between SCDB CN1-BASEB CN7E for proper connection and correct as necessary.
3. Check the connector between DFCB CN12-relay CN2DF-BASEB CN9E for proper connection and correct as necessary.
4. Replace SCDB.
5. Replace DFCB.
6. Replace BASEB.

3.14.45 C760E

Contents

Trouble type	C760E: Power line A14 error
Rank	C
Trouble detection condition	The fuse detection unit detected an error for a predetermined time.
Trouble isolation	-
Relevant electrical parts	• Front door switch (SW2) • Right door switch (SW3) • Base board (BASEB)

Procedure

1. BASEB F15E conduction check
2. Check the connector between SW2-BASEB CN3E for proper connection and correct as necessary.
3. Check the connector between SW3-BASEB CN3E, CN4E for proper connection and correct as necessary.
4. Replace SW2 or SW3.
5. Replace BASEB.

3.14.46 C760F

Contents

Trouble type	C760F: Power line A15 error
Rank	C
Trouble detection condition	The fuse detection unit detected an error for a predetermined time.
Trouble isolation	-
Relevant electrical parts	• Clean unit drive board (CUDB) • Base board (BASEB)

Procedure

1. BASEB F17E conduction check
2. Check the connector between CUDB CN1-relay CN28D-BASEB CN28E for proper connection and correct as necessary.
3. Replace CUDB.
4. Replace BASEB.

3.14.47 C7610

Contents

Trouble type	C7610: Power line A16 error
Rank	C
Trouble detection condition	The fuse detection unit detected an error for a predetermined time.
Trouble isolation	-
Relevant electrical parts	• Envelope detection board/RX (ENVDB/RX) • Base board (BASEB)

Procedure

1. BASEB F19E conduction check
2. Check the connector between ENVDB/RX CN1MD-relay CN255-relay CN256-BASEB CN36E for proper connection and correct as necessary.
3. Replace ENVDB/RX.
4. Replace BASEB.

3.14.48 C7622

Contents

Trouble type	C7622: Power line B2 error
Rank	C
Trouble detection condition	The fuse detection unit detected an error for a predetermined time.
Trouble isolation	-

Relevant electrical parts	• PH unit • Expansion control board (EXCB)

Procedure

1. EXCB ICP3 conduction check
2. Check the connector between the PH unit-relay CN306-EXCB CN10EX for proper connection and correct as necessary.
3. Replace the PH unit.
4. Replace EXCB.

3.14.49 C7624

Contents

Trouble type	C7624: Power line B4 error
Rank	C
Trouble detection condition	The fuse detection unit detected an error for a predetermined time.
Trouble isolation	-
Relevant electrical parts	• Envelope detection relay board (ENVDRB) • Expansion control board (EXCB)

Procedure

1. EXCB ICP5 conduction check
2. Check the connector between ENVDRB CN2-relay CN253-relay CN254-EXCB CN6EX for proper connection and correct as necessary.
3. Replace ENVDRB.
4. Replace EXCB.

3.14.50 C7631

Contents

Trouble type	C7631: Supply power line 1 error
Rank	C
Trouble detection condition	All of the fuse detection units of the same supply power line (24V11) detected an error for a predetermined time.
Trouble isolation	-
Relevant electrical parts	• DC power supply (DCPU) • Expansion control board (EXCB) • Base board (BASEB)

Procedure

1. BASEB F11E, F12E, F13E, F17E conduction check
2. EXCB ICP1, ICP3 or ICP5 conduction check.
3. Check the connector between DCPU CN6-BASEB CN14E for proper connection and correct as necessary.
4. Check the connector between BASEB CN11E-EXCB CN1EX for proper connection and correct as necessary.
5. Replace BASEB.
6. Replace EXCB.
7. Replace DCPU.

3.14.51 C7633

Contents

Trouble type	C7633: Supply power line 3 error
Rank	C
Trouble detection condition	All of the fuse detection units of the same supply power line (24V21) detected an error for a predetermined time.
Trouble isolation	-
Relevant electrical parts	• DC power supply (DCPU) • Base board (BASEB)

Procedure

1. BASEB F1E, F2E, F3E, F4E, F5E, F6E, F7E conduction check
2. Check the connector between DCPU CN6-BASEB CN20E for proper connection and correct as necessary.
3. Replace BASEB.
4. Replace DCPU.

3.15 C8###

3.15.1 C8103

Contents

Trouble type	C8103: Lift up mechanism trouble (Upward movement)
Rank	B
Trouble detection condition	The DF lift-up upper limit sensor (PS2) is not turned ON (blocked) after a lapse of a given time after the DF lift-up motor (M5) moves up (is turned forward).
Trouble isolation	DF

Relevant electrical parts	• DF lift-up motor (M5) • DF lift-up upper limit sensor (PS2) • DF control board (DFCB)

Procedure

1. Check the connector between M5-DFCB CN9 for proper connection and correct as necessary.
2. Check the connector of M5 for proper drive coupling and correct as necessary.
3. Check the connector between PS2-DFCB CN5A for proper connection and correct as necessary.
4. PS2 I/O check, sensor check
   - Control signal: DFCB CN5A-6 (ON)
   - Location of electrical component: DF 8-J
5. M5 load check
   - Check code: 60
   - Multi code: 97, 98
   - Control signal: DFCB CN9-1 to 5
   - Location of electrical component: DF 5-C
6. Replace M5.
7. DFCB ICP5 conduction check
8. Replace DFCB.

3.15.2 C8106

Contents

Trouble type	C8106: Lift up mechanism failure (Downward movement)
Rank	B
Trouble detection condition	The DF lift-up lower limit sensor (PS3) is not turned ON (blocked) after a lapse of a given time after the DF lift-up motor (M5) goes down (is turned backward).
Trouble isolation	DF
Relevant electrical parts	• DF lift-up motor (M5) • DF lift-up lower limit sensor (PS3) • DF control board (DFCB)

Procedure

1. Check the connector between M5-DFCB CN9 for proper connection and correct as necessary.
2. Check the connector of M5 for proper drive coupling and correct as necessary.
3. Check the connector between PS3-DFCB CN10 for proper connection and correct as necessary.
4. PS3 I/O check, sensor check
   - Control signal: DFCB CN10-3 (ON)
   - Location of electrical component: DF 10-C
5. M5 load check
   - Check code: 60
   - Multi code: 97, 98
   - Control signal: DFCB CN9-1 to 5
   - Location of electrical component: DF 5-C
6. Replace M5.
7. Replace DFCB.

3.15.3 C8107

Contents

Trouble type	C8107: Glass cleaning mechanism trouble
Rank	B
Trouble detection condition	The document reading glass cleaning sensor (PS18) is not turned ON (blocked) after the set period of time has elapsed after the document reading glass cleaning motor (M8) is energized.
Trouble isolation	DF
Relevant electrical parts	• Document reading glass cleaning motor (M8) • Document reading glass cleaning sensor (PS18) • DF control board (DFCB)

Procedure

1. Check the connector between M8-DFCB CN14 for proper connection and correct as necessary.
2. Check the connector of M8 for proper drive coupling and correct as necessary.
3. Check the connector between PS18-DFCB CN18 for proper connection and correct as necessary.
4. PS18 I/O check, sensor check
   - Control signal: DFCB CN18-3 (ON)
   - Location of electrical component: DF 3-C
5. M8 load check
   - Check code: 60
   - Multi code: 65, 66, 67
   - Control signal: DFCB CN14-1 to 4
   - Location of electrical component: DF 6-C
6. Replace M8.
7. Replace DFCB.

3.15.4 C8302

Contents

Trouble type	C8302: DF cooling fan failure
Rank	B
Trouble detection condition	The fan lock signal remains Low for a predetermined continuous period of time while the fan is turning.
Trouble isolation	DF
Relevant electrical parts	• DF cooling fan (FM) • DF control board (DFCB)

Procedure

1. Check the connector between FM-relay CN115-DFCB CN19 for proper connection and correct as necessary.
2. Check the fan for possible overload and correct as necessary.
3. FM load check
   - Check code: 60
   - Multi code: 113
   - Control signal: DFCB CN19-1 (REM), DFCB CN19-3 (LOCK)
   - Location of electrical component: DF 4-C
4. Replace FM.
5. Replace DFCB.

3.15.5 C8401

Contents

Trouble type	C8401: Data flash failure
Rank	C
Trouble detection condition	Can not access data flash normally.
Trouble isolation	DF
Relevant electrical parts	DF control board (DFCB)

Procedure

1. Turn OFF the main power switch, unplug and plug the power cord. Plug the power cord, wait for 10 sec. or more, and turn ON the main power switch.
2. Check the connectors of the DFCB for proper connection and correct as necessary.
3. Rewrite the firmware.
4. Replace DFCB.

3.15.6 C8402

Contents

Trouble type	C8402: Multi feed detection board failure
Rank	C
Trouble detection condition	When the main power switch ON or when the original is being conveyed, the AD value there is no paper loaded state is out of the predetermined range.
Trouble isolation	DF
Relevant electrical parts	• Multi feed detection board/TX (MFDB/TX) • Multi feed detection board/RX (MFDB/RX) • DF control board (DFCB)

Procedure

1. Check the connector between MFDB/TX-relay CN114-DFCB CN23 for proper connection and correct as necessary.
2. Check the connector between MFDB/RX-DFCB CN22 for proper connection and correct as necessary.
3. MFDB/TX operation check
   - Control signal: DFCB CN23-1 to 3
   - Location of electrical component: DF 11-J
4. MFDB/RX operation check
   - Control signal: DFCB CN22-1 to 4
   - Location of electrical component: DF 10-J
5. Replace DFCB.

3.16 C9###

3.16.1 C9401, C9402

Contents

Trouble type	• C9401: Exposure LED lighting failure • C9402: Exposure LED lighting abnormally
Rank	B
Trouble detection condition	• C9401: The output from the CCD sensor is a predetermined value or less during CCD sensor gain adjustment. • C9402: The average output value of the CCD sensor with the scanner at its standby position is a predetermined value or more at the end of a scan job.

Trouble isolation	Scanner
Relevant electrical parts	• LED exposure unit • Flat cable (LED exposure unit) • CCD unit • Scanner drive board (SCDB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Correct the harness connection between SCDB CN3-LU201 if faulty.
2. Check the connector between SCDB CN2-BASEB CN6E for proper connection and correct as necessary.
3. Check the connector between CCDB CN2-BASEB CN6 for proper connection and correct as necessary.
4. Check CPUB for proper installation and correct as necessary.
5. Replace the LED exposure unit.
6. Replace the CCD unit.
7. SCDB ICP2 conduction check
8. Replace SCDB.
9. Replace CPUB.
10. Replace BASEB.

3.16.2 C9403, C9404

Contents

Trouble type	• C9403: CIS LED lighting failure • C9404: CIS LED lighting abnormally
Rank	B
Trouble detection condition	• C9403: At the CIS gain adjustment, the machine detected that the output of the CIS LED is lower than the specified value. • C9404: After a scan job is completed, the machine detected that the average output of the CIS LED is greater than the specified value.
Trouble isolation	Scanner
Relevant electrical parts	• CIS cable • CIS module (CIS) • CIS power supply (CISPU) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the back side scanning shading shaft for any stain, and clean up it as necessary.
2. Check that the bushing of the back side glass cleaning roller unit is on the standby position.
3. Correct the harness connection between CIS CN2-BASEB CN5 if faulty.
4. Correct the harness connection between CIS CN1-CISPU CN2 if faulty.
5. Check CPUB for proper installation and correct as necessary.
6. Measure the voltage of CISPU CN1-2.
   - Control signal: CISPU CN1-2 (DC12V)
   - Location of electrical component: DF 4-I
7. Measure the voltage of CIS CN1-1, CN1-2 and CN1-5.
   - Control signal: CIS CN1-1 (DC5V), CIS CN1-2 (DC5V), CIS CN1-5 (DC12V)
   - Location of electrical component: DF 5-I
8. For any abnormality in the measurement result, replace the CIS cable.
9. Replace CIS.
10. Replace CISPU.
11. Replace CPUB.
12. Replace BASEB.

3.16.3 C9701

Contents

Trouble type	C9701: Front side reading device cable break detection
Rank	A
Trouble detection condition	The cable between the CCD board (CCDB) and the base board (BASEB) is break.
Trouble isolation	Scanner
Relevant electrical parts	• CCD unit • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Correct the cable connection between CCDB CN2-BASEB CN6 if faulty.
2. Check CPUB for proper installation and correct as necessary.
3. Replace the CCD unit.
4. Replace CPUB.
5. Replace BASEB.

3.16.4 C9702

Contents

Trouble type	C9702: Back side reading device cable break detection
Rank	A
Trouble detection condition	The cable between the CIS module (CIS) and the base board (BASEB) is break.
Trouble isolation	Scanner
Relevant electrical parts	• CIS cable • CIS module (CIS) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Correct the cable connection between CIS CN2- BASEB CN5 if faulty.
2. Check CPUB for proper installation and correct as necessary.
3. Replace the CIS cable.
4. Replace CIS.
5. Replace CPUB.
6. BASEB F19E conduction check
7. Replace BASEB.

3.17 CA###

3.17.1 CA051, CA052, CA053

Contents

Trouble type	• CA051: Standard controller configuration failure • CA052: Controller hardware error • CA053: Controller start failure
Rank	C
Trouble detection condition	• CA051: The controller of the CPU board (CPUB) is faulty. • CA052: A controller hardware error is detected in the network interface. • CA053: A controller start failure is detected in the controller interface.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check to see if the following setting has been correctly made: [Service Mode] -> [System 2] -> [Image Controller Setting].
   If changing the setting, turn OFF the main power switch and turn it ON again after 10 seconds or more.
2. Check the connectors on BASEB for proper connection and correct as necessary.
3. Replace CPUB.
4. Replace BASEB.

3.18 CB###

- For details, see “FAX TROUBLE CODE”.

3.19 CC###

3.19.1 CC002

Contents

Trouble type	CC002: Vendor internal error
Rank	C
Trouble detection condition	Error occurs inside the vendor.
Trouble isolation	-
Relevant electrical parts	• Vendor • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch. Turn OFF and ON the power switch at the vendor side.
2. Check the connector between the vendor-BASEB CN33E for proper connection and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. Replace CPUB.
5. Replace BASEB.
6. Replace the vendor.

3.19.2 CC151, CC152

Contents

Trouble type	• CC151: ROM contents error upon startup (MSC) • CC152: ROM contents error upon startup (IR)
Rank	C
Trouble detection condition	A fault is detected in a sequence of ROM contents check of the CPUB during starting.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the ROM version.
2. Rewrite the firmware.
3. Check CPUB for proper installation and correct as necessary.
4. Replace CPUB.
5. Replace BASEB.

3.19.3 CC155

Contents

Trouble type	CC155: Finisher ROM error (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)
Rank	C
Trouble detection condition	Data of flash ROM of the finishing options is determined to be faulty when the main power switch is turned ON.
Trouble isolation	-
Relevant electrical parts	FS control board (FSCB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Rewrite the firmware.
3. Replace FSCB. (FS-539/FS-539SD / FS-540/FS-540SD)

3.19.4 CC156

Contents

Trouble type	CC156: DF ROM error
Rank	C
Trouble detection condition	Upgrade of the firmware has not been successful.
Trouble isolation	-
Relevant electrical parts	DF control board (DFCB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Rewrite the firmware.
3. Replace DFCB.

3.19.5 CC159, CC15A

Contents

Trouble type	• CC159: ROM contents error upon startup (DSC1) • CC15A: ROM contents error upon startup (DSC2)
Rank	C
Trouble detection condition	A fault is detected in a sequence of ROM contents check of the DSC board during starting.
Trouble isolation	-
Relevant electrical parts	DSC board/1 (DSCB/1; SC-509)

Procedure

1. Correct the harness connection of DSCB/1 if faulty.
2. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
3. Rewrite the firmware.
4. Replace DSCB/1.

3.19.6 CC15B

Contents

Trouble type	CC15B: Flash ROM error (saddle) (When FS-539SD or FS-540SD is installed)

Rank	C
Trouble detection condition	Data of flash ROM of the saddle is determined to be faulty when the main power switch is turned ON.
Trouble isolation	-
Relevant electrical parts	SD control board (SDCB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Rewrite the firmware.
3. Replace SDCB. (FS-539SD / FS-540SD)

3.19.7 CC15C

Contents

Trouble type	CC15C: Engine Flash ROM writing error
Rank	C
Trouble detection condition	Data of flash ROM of the engine is determined to be faulty.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Check CPUB for proper installation and correct as necessary.
3. Rewrite the firmware.
4. Replace CPUB.
5. Replace BASEB.

3.19.8 CC163

Contents

Trouble type	CC163: ROM contents error (PRT)
Rank	C
Trouble detection condition	The wrong model of firmware is detected in the engine during the initial connection to the engine is being checked.
Trouble isolation	-
Relevant electrical parts	• Backup board (ERB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Rewrite the firmware.
2. Replace CPUB.
   NOTE
   - **When taking the above steps, check whether CPUB is defective or not without replacing the ERB.**

   1. Turn OFF the main power switch and replace the current CPUB with a new one.
   2. Update the firmware.
   3. After completing the firmware update, turn OFF and ON the main power switch and check to see that warm-up is started.
   4. When the trouble cannot be solved, reinstall the removed CPUB to the original board.
3. Replace BASEB.
4. If the above actions do not solve the problem, contact KM.

3.19.9 CC164

Contents

Trouble type	CC164: ROM contents error (MSC)
Rank	C
Trouble detection condition	• The wrong model of firmware is detected in the CPU board when the main power switch is turned ON. • The machine type information (Machine, Type) registered to the machine differs from the actual machine type.
Trouble isolation	-
Relevant electrical parts	• Storage board (STRGB) • CPU board (CPUB)

Procedure

1. Check the ROM version.
2. Check the machine type information registered and reenter as necessary.
   For details the machine information, see “Entering the machine type information”.
3. Rewrite the firmware.
4. Replace CPUB.
5. Replace STRGB.
6. If the above actions do not solve the problem, contact KM.

3.19.10 CC170, CC171, CC172, CC173, CC174, CC180, CC181, CC182, CC183, CC184, CC185, CC186

Contents

Trouble type	• CC170: Dynamic link error during starting (AP0) • CC171: Dynamic link error during starting (AP1) • CC172: Dynamic link error during starting (AP2) • CC173: Dynamic link error during starting (AP3) • CC174: Dynamic link error during starting (AP4) • CC180: Dynamic link error during starting (LDR) • CC181: Dynamic link error during starting (IBR) • CC182: Dynamic link error during starting (IID) • CC183: Dynamic link error during starting (IPF) • CC184: Dynamic link error during starting (IMY) • CC185: Dynamic link error during starting (SPF) • CC186: Dynamic link error during starting (OAP)
Rank	C
Trouble detection condition	A dynamic link error occurs in the program on the CPU board due to an insufficient memory space available, a ROM fault, or other reason when the main power switch is turned ON.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. If the trouble code “C-C172” has occurred, access [Service Mode] -> [System 2] -> [Image Controller Setting] and check to see if “Others” is set for image controller.
   If any of these is set, according to the kind of controller, select “Controller 0” or “Controller 1.”
2. If the trouble code "C-C180" has occurred, check to install the appropriate loadable device driver for an authentication unit which is installed to the MFP.
   When the appropriate loadable device driver is not installed, reinstall the appropriate loadable device driver.
3. Check CPUB for proper installation and correct as necessary.
4. Replace CPUB.
5. Replace BASEB.
6. If the above actions do not solve the problem, contact KM.

3.19.11 CC190

Contents

Trouble type	CC190: Outline font load error
Rank	C
Trouble detection condition	An error occurred while loading the outline font.
Trouble isolation	-
Relevant electrical parts	• Storage board (STRGB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check STRGB for proper installation and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Select [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Format] and perform the function.
4. Replace STRGB.
5. Replace CPUB.
6. Replace BASEB.

3.19.12 CC191

Contents

Trouble type	CC191: Setting parameter load error (LDR)
Rank	C
Trouble detection condition	Upon startup, the processing of the loadable device driver setting data file failed. • RAM disk file creation failed. • Reading from the flash ROM failed. • An error occurred in API of the authentication module.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.
2. Check CPUB for proper installation and correct as necessary.
3. Reinstall the loadable device driver.
4. Rewrite the firmware.
5. Replace CPUB.
6. Replace BASEB.

3.19.13 CC211

Contents

Trouble type	CC211: Authentication device general error
Rank	C
Trouble detection condition	When using the authentication device, authentication data is not to meet the specifications.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB) • Authentication unit

Procedure

1. Check the USB cable for proper connection. Reconnect the USB cable as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Turn OFF the main power switch, wait for 10 sec. or more, and turn ON the main power switch.

3.19.14 CC212

Contents

Trouble type	CC212: User validation error
Rank	C
Trouble detection condition	• An error occurred while validating the user authentication information. • The loadable device driver is not successfully installed.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB) • Authentication unit

Procedure

1. When this trouble code is generated after installing the loadable device driver, check to see if there is any file other than loadable device driver in USB memory used. If there is any file, reinstall the loadable device driver.
2. Check the USB cable for proper connection. Reconnect the USB cable as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. Turn OFF the main power switch, wait for 10 sec. or more, and turn ON the main power switch.
5. Re-register the user authentication information.
6. Replace the authentication unit.

3.19.15 CC213

Contents

Trouble type	CC213: User registration error/Card information setting error
Rank	C
Trouble detection condition	• IC card advanced settings data is not correct when starting-up the authentication device. • Authentication information data is not correct when starting-up the authentication device. • IC card advanced settings data is not correct when setting the IC card advanced settings. • Authentication information data is not correct when setting the IC card advanced settings. • IC card advanced settings data is not correct when registering the authentication information. • Authentication information data is not correct when registering the authentication information. • IC card advanced settings data is not correct when editing the authentication information. • Authentication information data is not correct when editing the authentication information.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB) • Authentication unit

Procedure

1. Check the USB cable for proper connection. Reconnect the USB cable as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Turn OFF the main power switch, wait for 10 sec. or more, and turn ON the main power switch.
4. Reset the authentication settings. (card type, IC card advanced settings, and etc.)
5. Re-register the user authentication information.

3.19.16 CC214

Contents

Trouble type	CC214: User information deletion error
Rank	C
Trouble detection condition	The deletion of the user information is uncompleted.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

	• Authentication unit

Procedure

1. Check the USB cable for proper connection. Reconnect the USB cable as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Turn OFF the main power switch, wait for 10 sec. or more, and turn ON the main power switch.

3.19.17 CC216

Contents

Trouble type	CC216: Acquisition failure of the number of trials/Initialize error of number of authentication
Rank	C
Trouble detection condition	An error occurred during user authentication using optional authentication unit AU-102.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB) • Authentication unit

Procedure

1. Check the USB cable for proper connection. Reconnect the USB cable as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Turn OFF the main power switch, wait for 10 sec. or more, and turn ON the main power switch.
4. Reset the number of authentication trials.

3.19.18 CC301

Contents

Trouble type	CC301: Authentication customize data error
Rank	B
Trouble detection condition	• The master authentication customize data is corrupted upon startup. • Registration of authentication customize data in the main body has failed upon startup.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check CPUB for proper installation and correct as necessary.
2. Reinstall the authentication customize data.
3. Rewrite the firmware.
4. Replace CPUB.
5. Replace BASEB.

3.19.19 CC302

Contents

Trouble type	CC302: Authentication customize data version mismatch error
Rank	B
Trouble detection condition	The authentication customize data version is later than the firmware version of the machine.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Rewrite the main body firmware with the latest one and reinstall the authentication customize data.
2. Replace CPUB.
3. Replace BASEB.

3.19.20 CCC00

Contents

Trouble type	CCC00: Public user account track information error
Rank	B
Trouble detection condition	At the first time of startup, the nonvolatile status is reset incompletely due to any trouble (such as a shut off of the main power).
Trouble isolation	-
Relevant electrical parts	• Storage board (STRGB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Replace STRGB.

2. Replace CPUB.
3. Replace BASEB.

3.20 CD###

3.20.1 CD002

Contents

Trouble type	CD002: JOB RAM save error
Rank	C
Trouble detection condition	The error in save of job data to the memory / storage and its read error are detected.
Trouble isolation	-
Relevant electrical parts	• Storage board (STRGB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check STRGB for proper installation and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Select [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Format] -> [Logical Format] and perform the function.
4. Replace STRGB.
5. Replace CPUB.
6. Replace BASEB.

3.20.2 CD004, CD00F, CD020

Contents

Trouble type	• CD004: Storage access error (connection failure) • CD00F: Storage data transfer error • CD020: Storage verify error
Rank	C
Trouble detection condition	• CD004: Unable to communicate between the storage and CPU board (CPUB). • CD00F: Data transfer from the storage is faulty. • CD020: The data abnormality is detected by the storage verify check.
Trouble isolation	-
Relevant electrical parts	• Storage board (STRGB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check STRGB for proper installation and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Replace STRGB.
4. Replace CPUB.
5. Replace BASEB.

3.20.3 CD010

Contents

Trouble type	CD010: Storage unformat
Rank	C
Trouble detection condition	Unformatted storage is connected.
Trouble isolation	-
Relevant electrical parts	• Storage board (STRGB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check STRGB for proper installation and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Select [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Format] and perform the function.
4. Replace STRGB.
5. Replace CPUB.
6. Replace BASEB.

3.20.4 CD011

Contents

Trouble type	CD011: Storage out of specifications mounted
Rank	C
Trouble detection condition	A storage that falls outside the specifications is connected.
Trouble isolation	-

Relevant electrical parts	Storage board (STRGB)

Procedure

1. Check the storage specifications.
2. Replace STRGB.

3.20.5 CD012

Contents

Trouble type	CD012: Mount error due to storage being unformatted
Rank	C
Trouble detection condition	• The storage is not logically formatted after the whole data in the storage has been deleted by overwriting. • The storage that has replaced an old one is not logically formatted.
Trouble isolation	-
Relevant electrical parts	Storage board (STRGB)

Procedure

1. Select [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Format] -> [Logical Format] and perform the function. Then, rewrite the firmware.
2. Replace STRGB.

3.20.6 CD030

Contents

Trouble type	CD030: Storage management information reading error
Rank	C
Trouble detection condition	The machine fails to read administrative information data saved in the storage.
Trouble isolation	-
Relevant electrical parts	Storage board (STRGB)

Procedure

1. Check STRGB for proper installation and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Select [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Format] -> [Logical Format] and perform the function.
4. Select [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Format] -> [Physical Format] and perform the function.
5. Replace STRGB.

3.20.7 CD041, CD042, CD043, CD044, CD045, CD046

Contents

Trouble type	CD041, CD042, CD043, CD044, CD045, CD046: Storage command execution error
Rank	C
Trouble detection condition	The error occurred inside the storage.
Trouble isolation	-
Relevant electrical parts	Storage board (STRGB)

Procedure

1. Check the storage specifications.
2. Select [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Format] and perform the function.
3. Replace STRGB.

3.20.8 CD047, CD048, CD049, CD04A, CD04B

Contents

Trouble type	CD047, CD048, CD049, CD04A, CD04B: Storage SCSI library error
Rank	C
Trouble detection condition	The error occurred inside the storage.
Trouble isolation	-
Relevant electrical parts	Storage board (STRGB)

Procedure

1. Check the storage specifications.
2. Select [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Format] and perform the function.
3. Replace STRGB.

3.20.9 CD050

Contents

Trouble type	CD050: Storage recovery timeout
Rank	C

Trouble detection condition	The storage fails to recover from the power save mode within the predetermined period of time.
Trouble isolation	-
Relevant electrical parts	• Storage board (STRGB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check STRGB for proper installation and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Reinstall STRGB.
4. Select [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Format] and perform the function.
5. Replace STRGB.

3.20.10 CD072

Contents

Trouble type	CD072: Second-hand storage or second-hand CPU board installed
Rank	C
Trouble detection condition	The storage board (STRGB) or CPU board (CPUB) used on other MFPs is installed.
Trouble isolation	-
Relevant electrical parts	• Storage board (STRGB) • CPU board (CPUB)

Procedure

1. Replace the board with the new STRGB and CPUB.
   Or, reuse the original STRGB and CPUB.

3.20.11 CD073

Contents

Trouble type	CD073: Storage type is different
Rank	C
Trouble detection condition	When the installed storage and the configured storage are different.
Trouble isolation	-
Relevant electrical parts	• Storage board (STRGB) • microSD

Procedure

1. Check the storage type settings and correct if the wrong storage is set.

3.20.12 CD110

Contents

Trouble type	CD110: Wireless LAN destination initialization error
Rank	C
Trouble detection condition	When an initialization error occurred on the settings of the wireless LAN in the upgrade kit (UK-221).
Trouble isolation	-
Relevant electrical parts	-

Procedure

1. Check the UK-221 connector for proper connection and correct as necessary.
2. Rewrite the firmware.
3. Replace UK-221.

3.20.13 CD201, CD202, CD203

Contents

Trouble type	• CD201: File memory mounting error • CD202: Memory capacity discrepancy • CD203: Memory capacity discrepancy 2
Rank	C
Trouble detection condition	CD201: • The file memory is not mounted. • The file has any abnormality.
	CD202: • File memory capacity on the CPU board (CPUB) is not enough. • File memory capacity necessary for duplex printing is not enough.
	CD203: File memory capacity on the CPU board (CPUB) is not enough.
Trouble isolation	-

Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check CPUB for proper installation and correct as necessary.
2. Replace CPUB.
3. Replace BASEB.

3.20.14 CD211, CD212

Contents

Trouble type	• CD211: PCI-SDRAM DMA operation failure • CD212: Compression/extraction timeout detection
Rank	C
Trouble detection condition	• CD211: Hardware related to the transfer of memory image of the CPU board (CPUB) fails to respond. • CD212: Hardware related to the BTC compression function of the CPU board (CPUB) fails to respond.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check CPUB for proper installation and correct as necessary.
2. Replace CPUB.
3. Replace BASEB.

3.20.15 CD241, CD242

Contents

Trouble type	• CD241: Encryption ASIC setting error • CD242: Encryption ASIC mounting error
Rank	C
Trouble detection condition	• CD241: Initialization error of the encrypted ASIC is detected during the machine is starting. • CD242: The faulty of the installation of encrypted ASIC is detected during the machine is starting.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check CPUB for proper installation and correct as necessary.
2. Check BASEB connector for proper connection and correct as necessary.
3. Replace CPUB.
4. Replace BASEB.

3.20.16 CD261

Contents

Trouble type	CD261: USB hub board failure
Rank	C
Trouble detection condition	• When a failure is detected in USB hub board included in the local interface kit. • Non-standard USB device is connected.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB) • USB hub board (USBHB EK-608 or EK-609)

Procedure

1. Check the operation with another USB device.
2. Check USBHB for proper connection and correct as necessary.
3. Replace USBHB.
4. Replace CPUB.
5. Replace BASEB.

3.20.17 CD262

Contents

Trouble type	CD262: Extension network adapter installation error
Rank	C
Trouble detection condition	• When the 2nd network card settings is set to “Set” but the upgrade kit (UK-221) is not installed. • Upgrade Kit (UK-221) is faulty.
Trouble isolation	-
Relevant electrical parts	-

Procedure

1. Check the settings of [Service Mode] -> [Network Settings] -> [2nd Network Setting] -> [2nd network card settings].
2. Check the UK-221 connector for proper connection and correct as necessary.
3. Rewrite the firmware.
4. Replace UK-221.

3.20.18 CD2D1

Contents

Trouble type	CD2D1: VLAN setting configuration error
Rank	B
Trouble detection condition	At start up of the MFP, the reception condition of VLAN setting activation is not satisfied.
Trouble isolation	-
Relevant electrical parts	• Storage board (STRGB) • Backup board (ERB)

Procedure

1. Check if all VLAN setting reception conditions are satisfied.

- The storage board (STRGB) must be installed.
- If the IC card reader is connected, the LDD of AU-201S has been installed.
- The software SW12 (bit1) has been set to "PKI unsupported" (0x00). (PKI mode setting unavailable)
- Service Mode -> [Billing Setting] -> [Management Function Choice] is set to "Unset".
- "TCP/IP" of Utility -> [Administrator] -> [Network] -> [TCP/IP Setting] -> [TCP/IP Setting1] is set to "ON".
- "Network I/F Configuration" of Utility -> [Administrator] -> [Network] -> [Network I/F Configuration] is set to other than "Wireless Only".

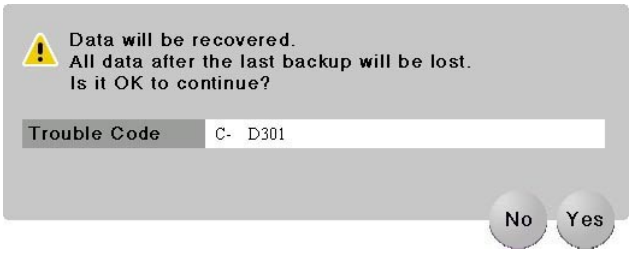
3.20.19 CD3##

Contents

Trouble type	CD3##: Nonvolatile data error
Rank	C
Trouble detection condition	CD3##: Abnormality is detected by the abnormal check of each nonvolatile data.
Trouble isolation	-

Action

1. Touch [Recover Data] displayed at the lower right portion on the trouble screen.
2. A screen confirming whether to recover data appears.



3. Select [Yes].
4. The screen will be shifted to the data restoration screen to perform data restoration.
   NOTE
   - **When the restoration is performed in a short time, data restoration screen may not be displayed.**
5. Check the message which indicates that the data restoration was successfully conducted. Turn OFF the main power switch and turn it ON again more than 10 seconds after.
   NOTE
   - **In case it failed to restore data, return to the trouble code screen.**

NOTE

- **Nonvolatile data backup will be automatically performed every hour. Backup can also be performed manually with the following setting. [Service Mode] -> [Enhanced Security] -> [Memory Data Backup]**

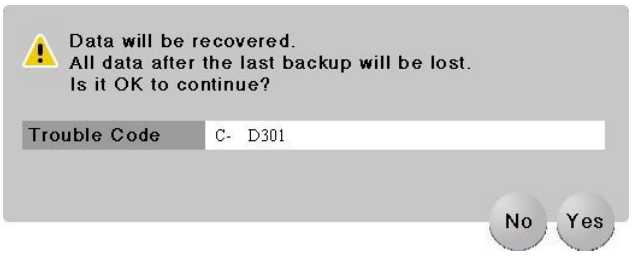
3.20.20 CD313

Contents

Trouble type	CD313: TPM key data error
Rank	C
Trouble detection condition	A fault occurs in the TPM key data.
Trouble isolation	-
Relevant electrical parts	-

Procedure

1. Touch [Recover Data] displayed at the lower right portion on the trouble screen.
2. A screen confirming whether to recover data appears.



3. Select [Yes].
4. The screen will be shifted to the data restoration screen to perform data restoration.
   NOTE
   - **When the restoration is performed in a short time, data restoration screen may not be displayed.**
5. Check the message which indicates that the data restoration was successfully conducted. Turn OFF the main power switch and turn it ON again more than 10 seconds after.
   NOTE
   - **In case it failed to restore data, return to the trouble code screen.**
6. Replace the current TPMB with a new one.
7. Replace CPUB.
8. Replace BASEB.

NOTE
- **Nonvolatile data backup will be automatically performed every hour. Backup can also be performed manually with the following setting. [Service Mode] -> [Enhanced Security] -> [Memory Data Backup]**

3.20.21 CD38E

Contents

Trouble type	CD38E: Nonvolatile data save error (SPI-Flash)
Rank	C
Trouble detection condition	The "ISW download flag" saved in the SPI-Flash has an illegal value.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Rewrite the firmware.
2. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.

3.20.22 CD390

Contents

Trouble type	CD390: Nonvolatile data checksum error
Rank	C
Trouble detection condition	C-D390 code is normally shown when the CPU board (CPUB) is replaced with a new one.
Trouble isolation	-
Relevant electrical parts	-

Procedure

1. Wait until “Recover Data” appears. (MFP will reboot maximum 2 times by itself.) Touch the “Recover Data” button and follow the instructions that appear on the control panel to restore (backup) data.

3.20.23 CD391

Contents

Trouble type	CD391: Nonvolatile data save error (Storage)
Rank	-
Trouble detection condition	-
Trouble isolation	-
Relevant electrical parts	-

Procedure

NOTE
- **Contact the responsible people of KM before taking some countermeasures.**

3.20.24 CD392

Contents

Trouble type	CD392: Nonvolatile data save error (EEPROM)
Rank	C

Trouble detection condition	The backup board (ERB) is replaced with a new one.
Trouble isolation	-
Relevant electrical parts	Backup board (ERB)

Procedure

1. Replace the following components with new ones.
   Configure [New Release] in Service Mode before replacing the image transfer belt unit and the fusing unit. When the transfer roller has been replaced with a new one, perform [Counter clear].
   - Developing unit/K
   - Drum unit/K
   - Toner cartridge/K
   - Transfer belt unit
   - Fusing unit
   - Transfer roller
   - Feed roller, pick-up roller, separation roller (including options)
2. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
3. Set the various setting values in the service mode again.
4. If the above actions do not solve the problem, contact KM.

3.20.25 CD3B1, CD3B3, CD3B4, CD3B5

Contents

Trouble type	• CD3B1: DB server startup failure • CD3B3: DB access failure • CD3B4: No DB definition file • CD3B5: DB definition file error
Rank	C
Trouble detection condition	• CD3B1: When starting the MFP, PostgreSQL server startup has not been successful. • CD3B3: When starting the MFP, SQL DB access fails in PostgreSQL server startup processing. • CD3B4: When starting the MFP, SQL DB definition file does not exist in PostgreSQL server startup processing. • CD3B5: When starting the MFP, there is an error in SQL DB definition file in PostgreSQL server startup processing.
Trouble isolation	-
Relevant electrical parts	CPU board (CPUB)

Procedure

1. Reboot the machine.
2. Check CPUB for proper installation and correct as necessary.
3. Rewrite the firmware.
4. Replace CPUB.

3.20.26 CD3C0

Contents

Trouble type	CD3C0: New board detection
Rank	C
Trouble detection condition	The board is replaced with a new one.
Trouble isolation	-
Relevant electrical parts	-

Procedure

1. Wait until “Recover Data” appears. (MFP will reboot maximum 2 times by itself.) Touch the “Recover Data” button and follow the instructions that appear on the control panel to restore (backup) data.

3.20.27 CD401, CD402, CD403, CD404, CD405, CD406, CD407, CD411, CD412, CD413

Contents

Trouble type	• CD401: NACK command incorrect • CD402: ACK command incorrect • CD403: Checksum error • CD404: Receiving packet incorrect • CD405: Receiving packet analysis error • CD406: ACK receiving timeout • CD407: Retransmission timeout • CD411: Touch panel board error • CD412: Touch panel type mismatch • CD413: Electrostatic touch panel operation mode error
Rank	C
Trouble detection condition	When abnormality is found in the communication of controller.
Trouble isolation	-

Relevant electrical parts	• Control panel • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check whether there is a strong electromagnetic noise source near the main body.
2. Check the connector between the control panel-BASEB CN7 for proper connection and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. Replace CPUB.
5. Replace BASEB.

3.20.28 CD601, CD602, CD603

Contents

Trouble type	CD601, CD602, CD603: Trouble related to security
Rank	-
Trouble detection condition	-
Trouble isolation	-

Procedure

1. Turn OFF the main power switch, wait for 10 sec. or more, and turn ON the main power switch. If the above actions do not solve the problem, contact KM.

3.20.29 CD701, CD702, CD703

Contents

Trouble type	• CD701: Mechanical controller flash ROM writing error • CD702: Mechanical controller flash ROM device error • CD703: FW download communication fault
Rank	C
Trouble detection condition	CD701: A mechanical controller flash ROM writing sequence is interrupted in its mid-operation due to, for example, power being shut off.
	CD702: An erase error or other device fault occurs during mechanical controller flash ROM writing.
	CD703: Irregular data is received during FW downloading. • Places are changed in the order of write completion pulses. • A write completion pulse is received for a memory for which binary writing is not permitted. • Final checksum mismatch in FW download • Two-minute timeout (no response from CTL, the number of transfer data items less than the specified)
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Rewrite the firmware.
3. Replace CPUB.
4. Replace BASEB.

3.20.30 CD704

Contents

Trouble type	CD704: Finisher Flash ROM device error (When FS-539, FS-539SD, FS-540, or FS-540SD is installed)
Rank	C
Trouble detection condition	An erase error or other device fault occurs during the finisher flash ROM writing.
Trouble isolation	-
Relevant electrical parts	FS control board (FSCB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Rewrite the firmware.
3. Replace FSCB. (FS-539/FS-539SD / FS-540/FS-540SD)

3.20.31 CDC##

Contents

Trouble type	CDC##: Trouble related to security
Rank	-

Trouble detection condition	-
Trouble isolation	-

Procedure

NOTE

- **Contact the responsible people of KM before taking some countermeasures.**

3.20.32 CDF50, CDF70, CDFA0

Contents

Trouble type	• CDF50: ASIC image version failure • CDF70: ASIC image access failure • CDFA0: ASIC image error
Rank	C
Trouble detection condition	Communication error is detected between the CPU board (CPUB) and the CCD board (CCDB).
Trouble isolation	-
Relevant electrical parts	• CCD unit • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between BASEB CN6-CCDB CN2 for proper connection and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Rewrite the firmware.
4. Replace the CCD unit.
5. Replace CPUB.
6. Replace BASEB.

3.20.33 CDF51, CDF71, CDFA1

Contents

Trouble type	• CDF51: ASIC image version failure (back side) • CDF71: ASIC image access failure (back side) • CDFA1: ASIC image error (back side)
Rank	C
Trouble detection condition	Communication error is detected between the CPU board (CPUB) and the CIS module (CIS).
Trouble isolation	-
Relevant electrical parts	• CIS module (CIS) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between CIS CN2-BASEB CN5 for proper connection and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Rewrite the firmware.
4. Replace CIS.
5. Replace CPUB.
6. Replace BASEB.

3.21 CE###

3.21.1 CE001, CE003, CE004, CE005, CE006, CE007, CE009

Contents

Trouble type	• CE001: Abnormal message queue • CE003: Task error • CE004: Event error • CE005: Memory access error • CE006: Header access error • CE007: DIMM initialize error • CE009: Memory resource shortage error
Rank	C
Trouble detection condition	CPU board (CPUB) is faulty.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connectors on BASEB for proper connection and correct as necessary.
2. Replace CPUB.
3. Replace BASEB.

3.21.2 CE002

Contents

Trouble type	CE002: Message and method parameter failure
Rank	C
Trouble detection condition	CPU board (CPUB) is faulty.
Trouble isolation	-
Relevant electrical parts	• Storage board (STRGB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Turn OFF the main power switch and turn it ON again, and conduct the following setting. [Service Mode] -> [System 1] -> [Initialization] -> [Clear All Data].
2. Select [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Format] and perform the function.
3. Replace STRGB.
4. Replace CPUB.
5. Replace BASEB.

3.21.3 CE012

Contents

Trouble type	CE012: Failed to receive the entropy from Haveged
Rank	C
Trouble detection condition	The machine fails to receive the entropy from Haveged.
Trouble isolation	-
Relevant electrical parts	-

Procedure

1. Turn OFF and ON the main power switch.

3.21.4 CE013

Contents

Trouble type	CE013: Virus scan engine startup failure (8 GB storage)
Rank	C
Trouble detection condition	When the virus scan settings are effective, change from storage board (STRGB) to microSD (8 GB).
Trouble isolation	-
Relevant electrical parts	microSD

Procedure

1. Reboot the machine.
2. To disable Virus Scan Functions.
3. Replace the microSD and replace the STRGB.

3.21.5 CE014

Contents

Trouble type	CE014: Virus scan engine startup failure (storage error)
Rank	C
Trouble detection condition	The file or data that is necessary to start the virus scan has been lost.
Trouble isolation	-
Relevant electrical parts	Storage board (STRGB)

Procedure

1. Reboot the machine. (MFP will reboot maximum 2 times by itself.)
2. Replace STRGB.

3.21.6 CE015

Contents

Trouble type	CE015: Secret information issue error
Rank	C
Trouble detection condition	When starting the machine, the machine fails to issue the secret information.
Trouble isolation	-
Relevant electrical parts	-

Procedure

1. Turn OFF and ON the main power switch.

3.21.7 CE101

Contents

Trouble type	CE101: Browser finish detected
Rank	C
Trouble detection condition	• The browser is automatically recovered (restarted) after the main body detected that the browser (separate process) has stopped with fault. • When the “Malfunction finish is detected over predetermined number of times” or “the browser task process is except in idle (printing, etc.)”.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connectors on BASEB for proper connection and correct as necessary.
2. Replace CPUB.
3. Replace BASEB.

3.21.8 CE201

Contents

Trouble type	CE201: Transmission operation log storage fault
Rank	C
Trouble detection condition	When the transmission log storage failed, it repeats retrial until transmission operation log is stored. The trouble is detected when the retrial failed for predetermined number of times.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connectors on BASEB for proper connection and correct as necessary.
2. Replace CPUB.
3. Replace BASEB.

3.21.9 CE202

Contents

Trouble type	CE202: PDL interpreter error
Rank	C
Trouble detection condition	An error inside the CPU board (CPUB) is detected during converting the PDL information.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Select [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Format] -> [Logical Format] and perform the function.
3. Select [Service Mode] -> [System 1] -> [Initialization] -> [Clear All Data] and perform the function.
4. Replace CPUB.
5. Replace BASEB.

3.21.10 CE203

Contents

Trouble type	CE203: Unrecoverable error
Rank	C
Trouble detection condition	An error does not recover even after an auto recovery.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Select [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Format] -> [Logical Format] and perform the function.
3. Select [Service Mode] -> [System 1] -> [Initialization] -> [Clear All Data] and perform the function.
4. Update the firmware.
5. Perform the self-diagnostic function.
6. Replace CPUB.
7. Replace BASEB.

3.21.11 CE204

Contents

Trouble type	CE204: SIP / T.38 library loading failure
Rank	C
Trouble detection condition	Installed an illegal library of SIP/T.38.
Trouble isolation	-
Relevant electrical parts	-

Procedure

1. Install a legal library of LK-117.

3.21.12 CE301, CE302, CE303, CE304, CE305

Contents

Trouble type	• CE301: Referring incorrect memory • CE302: Incorrect command • CE303: Finished due to error inside Qt library • CE304: Finished due to error outside Qt library • CE305: Program forced to stop
Rank	C
Trouble detection condition	• When performing treatment (program) to the firmware controlling the MFP controller, a malfunction is detected when the control sequence went abnormal. • In almost cases, when the control sequence goes abnormal in certain conditions and on certain timing, it results in malfunction.
Trouble isolation	-
Relevant electrical parts	-

Procedure

1. Execute [Self-diag. (Full)].
   For details, see “ L.4 TROUBLESHOOTING USING SELF-DIAG. (FULL)”.
2. If the diagnosis result of [Self-diag. (Full)] is OK, since no hardware parts related troubles occur, retrieve the “Machine Management List” and send inquiries to KM also with the information.
   For details, see “ I.12 List Output”.

3.21.13 CE401

Contents

Trouble type	CE401: Shared memory connection timeout
Rank	C
Trouble detection condition	A CPU communication error is detected when power save is turned ON.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Check CPUB for proper installation and correct as necessary.
3. Rewrite the firmware.
4. Replace CPUB.
5. Replace BASEB.

3.21.14 CED01

Contents

Trouble type	CED01: The authentication application information does not exist in the storage in the enhanced server authentication state.
Rank	C
Trouble detection condition	With “Enhanced Server Authentication” set, no authentication application registration information is found in the storage.
Trouble isolation	-
Relevant electrical parts	• Storage board (STRGB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Turn OFF and ON the main power switch.
2. Check STRGB for proper installation and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. Select [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Format] -> [Logical Format] and perform the function.

5. Replace STRGB.
6. If the above actions do not solve the problem, contact KM.

3.21.15 CEEE1, CEEE3

Contents

Trouble type	• CEEE1: CPU board (MSC) malfunction • CEEE3: Base board (ENG) malfunction
Rank	• CEEE1: C • CEEE3: A
Trouble detection condition	• CEEE1: CPU board is faulty. • CEEE3: Base board is faulty.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connectors on BASEB for proper connection and correct as necessary.
2. Replace CPUB.
3. Replace BASEB.

3.21.16 CEEE2

Contents

Trouble type	CEEE2: Scanner section malfunction
Rank	A
Trouble detection condition	A scanner part is faulty.
Trouble isolation	-
Relevant electrical parts	• LED exposure unit • CCD unit • Scanner drive board (SCDB)

Procedure

1. Correct the connector connection between CCDB and SCDB if faulty.
2. Replace SCDB.
3. Replace the CCD unit.

3.22 CF### (Abort code)

- When treatment on software control goes abnormal, an Abort code (CF###) will appear on the control panel.
- When an Abort code appears, see " L.4 TROUBLESHOOTING USING SELF-DIAG. (FULL)" and execute [Self-diag. (Full)] to hardware parts.
- When hardware parts related troubles are detected through [Self-diag. (Full)], replace corresponding parts.

3.22.1 CFA##

Contents

Trouble type	CFA##: Abort code
Rank	C
Trouble detection condition	• When performing treatment (program) to the firmware controlling the MFP controller, a malfunction is detected when the control sequence went abnormal. • In almost cases, when the control sequence goes abnormal in certain conditions and on certain timing, it results in malfunction.
Trouble isolation	-
Relevant electrical parts	-

Procedure

1. Execute [Self-diag. (Full)].
   For details, see " L.4 TROUBLESHOOTING USING SELF-DIAG. (FULL)".
2. If the diagnosis result of [Self-diag. (Full)] is OK, since no hardware parts related troubles occur, retrieve the "Machine Management List" and send inquiries to KM also with the information.
   For details, see "List Output".

3.22.2 CFB##

Contents

Trouble type	CFB##: Abort code
Rank	C
Trouble detection condition	• When performing treatment (program) to the firmware controlling the MFP controller, a malfunction is detected when the control sequence went abnormal. • In almost cases, when the control sequence goes abnormal in certain conditions and on certain timing, it results in malfunction.

Trouble isolation	-
Relevant electrical parts	-

Procedure

1. Execute [Self-diag. (Full)].
   For details, see “ L.4 TROUBLESHOOTING USING SELF-DIAG. (FULL)”.
2. If the diagnosis result of [Self-diag. (Full)] is OK, since no hardware parts related troubles occur, retrieve the “Machine Management List” and send inquiries to KM also with the information.
   For details, see “ I.12 List Output”.

3.22.3 CFC##

Contents

Trouble type	CFC##: Abort code
Rank	C
Trouble detection condition	• When performing treatment (program) to the firmware controlling the MFP controller, a malfunction is detected when the control sequence went abnormal. • In almost cases, when the control sequence goes abnormal in certain conditions and on certain timing, it results in malfunction.
Trouble isolation	-
Relevant electrical parts	-

Procedure

1. Execute [Self-diag. (Full)].
   For details, see “ L.4 TROUBLESHOOTING USING SELF-DIAG. (FULL)”.
2. If the diagnosis result of [Self-diag. (Full)] is OK, since no hardware parts related troubles occur, retrieve the “Machine Management List” and send inquiries to KM also with the information.
   For details, see “List Output”.

3.22.4 CFD##

Contents

Trouble type	CFD##: Abort code
Rank	C
Trouble detection condition	• When performing treatment (program) to the firmware controlling the MFP controller, a malfunction is detected when the control sequence went abnormal. • In almost cases, when the control sequence goes abnormal in certain conditions and on certain timing, it results in malfunction.
Trouble isolation	-
Relevant electrical parts	-

Procedure

1. Execute [Self-diag. (Full)].
   For details, see “ L.4 TROUBLESHOOTING USING SELF-DIAG. (FULL)”.
2. If the diagnosis result of [Self-diag. (Full)] is OK, since no hardware parts related troubles occur, retrieve the “Machine Management List” and send inquiries to KM also with the information.
   For details, see “List Output”.

3.22.5 CFE##

Contents

Trouble type	CFE##: Abort code
Rank	C
Trouble detection condition	• When performing treatment (program) to the firmware controlling the MFP controller, a malfunction is detected when the control sequence went abnormal. • In almost cases, when the control sequence goes abnormal in certain conditions and on certain timing, it results in malfunction.
Trouble isolation	-
Relevant electrical parts	-

Procedure

1. Execute [Self-diag. (Full)].
   For details, see “ L.4 TROUBLESHOOTING USING SELF-DIAG. (FULL)”.
2. If the diagnosis result of [Self-diag. (Full)] is OK, since no hardware parts related troubles occur, retrieve the “Machine Management List” and send inquiries to KM also with the information.
   For details, see “List Output”.

3.22.6 CFF##

Contents

Trouble type	CFF##: Abort code
Rank	C

Trouble detection condition	• When performing treatment (program) to the firmware controlling the MFP controller, a malfunction is detected when the control sequence went abnormal. • In almost cases, when the control sequence goes abnormal in certain conditions and on certain timing, it results in malfunction.
Trouble isolation	-
Relevant electrical parts	-

Procedure

1. Execute [Self-diag. (Full)].
   For details, see " L.4 TROUBLESHOOTING USING SELF-DIAG. (FULL)".
2. If the diagnosis result of [Self-diag. (Full)] is OK, since no hardware parts related troubles occur, retrieve the "Machine Management List" and send inquiries to KM also with the information.
   For details, see "List Output".

4. TROUBLESHOOTING USING SELF-DIAG. (FULL)

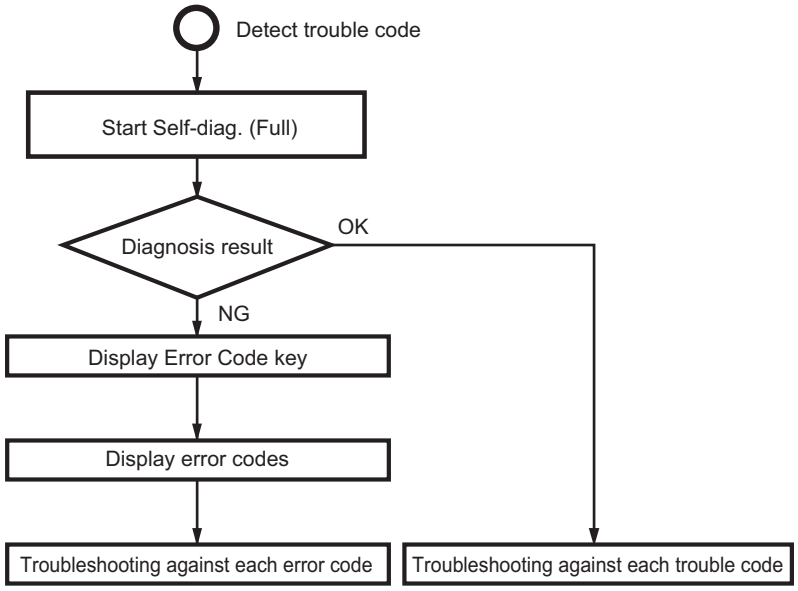
4.1 Overview of Self-diag. (Full) function

- If a trouble code occurs or the machine cannot operate normally due to defects of the control system hardware parts, by executing the "Self-diag. (Full)", the defective areas on the control system hardware parts can be identified.
- The reason for troubles is broadly divided into the control system hardware trouble and the firmware trouble, and it is difficult to identify where the trouble occurs with the trouble code.
  In the "Self-diag. (Full)", two functions are provided, the one diagnoses if troubles occur on the control system hardware, and the other one detects defective parts and displays the "error code" corresponding to the defective parts on the control panel.

NOTE

- **Before replacing the control system hardware parts like the base board, make sure to execute the "Self-diag. (Full)".**

Self-diag. (Full) flow for a trouble code



4.2 Self-diag. (Full) Procedure

1. When a trouble code is displayed, turn OFF the main power switch after the MFP is stopped.
2. Execute the Self-diag. (Full). For details of the method for executing the Self-diag. (Full), refer to I.13.11.2 Self-diag. (Full).
3. After completing the Self-diag. (Full), the diagnosis result will be displayed for each item. (OK/NG)
4. If [OK] is displayed for all items, turn OFF the main power switch.
5. If [NG] is included in the diagnosis result, after completing the diagnosis for all items, the [Error Code] key is displayed.
6. Touch the [Error Code] key to display the [Error Code].
7. Check the displayed [Error Code], then turn OFF the main power switch, and disconnect power cord from the outlet.
8. Refer to the Service Manual [Error Code List], and perform the troubleshooting against each error code.
   NOTE
   - **Perform the troubleshooting in the sequence from step 1 of "Corrective action procedure" against each item while checking that if each trouble has been resolved. Do not perform the troubleshooting against all troubles at once.**
   - **If no error code is displayed, perform the troubleshooting against each trouble code in "Trouble Code" displayed in step 1.**
9. Even if no [NG] is displayed (no trouble is reproduced) after executing the troubleshooting against each error code or the Self-diag. (Full), execute the "Self-diag. (Full)" again, and make sure that all troubles on each device have been resolved.

4.2.1 Auto Execution of Self-diag. (Full)

- Set the [Switch NO.163] to [00000010] at [Bit assignment] and [02] at [HEX assignment] in [Service Mode] -> [System 2] -> [Software Switch Setting], so that the "Self-diag. (Full)" can be executed automatically when a "trouble code" occurred.
  Refer to [Service Mode] -> [State Confirmation] -> [Self-diag. (Full)].

4.2.2 Error code resetting procedures

1. Stop the machine with the Error Code screen being displayed.
2. Turn OFF the main power switch. After waiting 10 seconds, turn ON the main power switch again.
3. Reboot the machine.

NOTE

- **If the error has not been resolved, the trouble code will reappear after rebooting the machine.**

4.3 Error Code List

Error code	Target device	Diagnosis item	Reason of error	Relevant electrical parts
E1-1	NVMe storage	Device recognition	Engagement failure Mounting failure	Storage board (STRGB) CPU board (CPUB)
E1-2		R/W check	STRGB error (data failure)	Storage board (STRGB)
E1-3		S.M.A.R.T diag.	STRGB error (data failure)	Storage board (STRGB)
E1-4		MFP FW checksum	STRGB error (data failure)	MFP firmware
E1-5		Partition check	STRGB error (data failure)	Storage board (STRGB)
E2-1	microSD	Device recognition	Engagement failure Mounting failure	microSD CPU board (CPUB)
E2-2		R/W check	microSD error (data failure)	microSD
E2-3		S.M.A.R.T diag.	microSD error (data failure)	microSD
E2-4		MFP FW checksum	microSD error (data failure)	MFP firmware
E2-5		Partition check	microSD error (data failure)	microSD
E3-1	I2C	TPM	Connection failure Parts defect	TPM board (TPMB) Base board (BASEB) CPU board (CPUB)
E3-2		AUDIO (control)	Connection failure Parts defect	Base board (BASEB) CPU board (CPUB)
E3-3		PS-CPU	Connection failure Parts defect	Base board (BASEB) CPU board (CPUB)
E4-1	System/image memory	WORK0 (Main memory ch.A)	Engagement failure Mounting failure DRAM failure	CPU board (CPUB)
E4-2		WORK1 (Main memory ch.B)	Engagement failure Mounting failure DRAM failure	CPU board (CPUB)
E4-3		FILE0 (A800 memory ch.A)	Engagement failure Mounting failure DRAM failure	Memory board (MEMB)
E4-4		FILE1 (A800 memory ch.B)	Engagement failure Mounting failure DRAM failure	Memory board (MEMB)
E5-1	Various USB devices	IRIS0	Connection failure Parts defect	CPU board (CPUB)
E5-2		USB3.0-HUB chip (base board)	Connection failure Parts defect	CPU board (CPUB) Base board (BASEB)
E5-3		USB2.0-HUB chip (base board)	Connection failure Parts defect	Base board (BASEB)
E5-4		USB device HUB chip (USB hub board)	Connection failure Parts defect	USB hub board (USBHB) Base board (BASEB)
E5-5		DAC-IC	Connection failure Parts defect	USB hub board (USBHB)
E5-6		Fax expansion board (HUB chip)	Connection failure Parts defect	Fax expansion board Base board (BASEB)
E5-7		Fax board (line 1)	Connection failure Parts defect	Fax board/1 (FAXB/1) Fax expansion board Base board (BASEB)
E5-8		Fax board (line 2)	Connection failure Parts defect	Fax board/2 (FAXB/2) Fax expansion board Base board (BASEB)
E5-9		Fax board (line 3)	Connection failure Parts defect	Fax board/3 (FAXB/3) Fax expansion board
E5-10		Fax board (line 4)	Connection failure Parts defect	Fax board/4 (FAXB/4) Fax expansion board
E5-11		Upgrade kit (UK-221)	Connection failure Parts defect	Wireless LAN board (WLANB) Base board (BASEB)
E5-12		Authentication unit	Connection failure Parts defect	Authentication unit Base board (BASEB)
E6-1	CCD board	I/P image bus check	Image bus failure	Connection cable CCD board (CCDB) CPU board (CPUB) Base board (BASEB)
E6-2		Line RAM comparison	CCD sensor failure	CCD board (CCDB)
E7-1	CIS module	I/P image bus check	Image bus failure	CIS cable CIS module (CIS)

Error code	Target device	Diagnosis item	Reason of error	Relevant electrical parts
				CPU board (CPUB) Base board (BASEB)
E7-2		Line RAM comparison	CIS sensor failure	CIS module (CIS)
E8-1	DF control board	MINET communication check	ADF microcomputer communication failure	Connection cable DF control board (DFCB) CPU board (CPUB) Base board (BASEB)
E9-1	Memory board (A800)	Compress/exp check	A800 error	Memory board (MEMB)
E10-1	DSC board (Security kit)	Image bus check (front side)	Engagement failure Mounting failure	DSC board/1 (DSCB/1)
E10-2		Image bus check (back side)	Engagement failure Mounting failure	DSC board/1 (DSCB/1) CPU board (CPUB)
E11-1	CPU board	Compress/exp check	S800 error	CPU board (CPUB)
E11-2		O/P image bus check	S800 error	CPU board (CPUB)
E12-1	PCIe	PCIe device check IRIS(0)	PCIe device error	CPU board (CPUB)
E12-2		PCIe device check IRIS(1)		CPU board (CPUB)
E12-3		PCIe device check NVMe storage		Storage board (STRGB) CPU board (CPUB)
E12-4		PCIe device check A800		Memory board (MEMB) CPU board (CPUB)

Troubleshooting against multiple error codes

Error code	Action
E1-1, E5-1, E12-1, E12-3	Execute E12-1.
E4-1, E4-2, E11-1, E11-2	Execute E4-1.
E4-3, E4-4, E9-1, E12-2, E12-4	Execute E12-2.

4.4 E1-1

Contents

Error code	E1-1
Target device	NVMe storage
Diagnosis item	Device recognition
Reason of error	Engagement failure Mounting failure
Relevant electrical parts	Storage board (STRGB) CPU board (CPUB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of STRGB if faulty.
3. Correct the mounting of CPUB if faulty.
4. Replace STRGB.
5. Replace CPUB.

4.5 E1-2

Contents

Error code	E1-2
Target device	NVMe storage
Diagnosis item	R/W check
Reason of error	STRGB error (data failure)
Relevant electrical parts	Storage board (STRGB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of STRGB if faulty.
3. Replace STRGB.

4.6 E1-3

Contents

Error code	E1-3
Target device	NVMe storage
Diagnosis item	S.M.A.R.T diag.
Reason of error	STRGB error (data failure)
Relevant electrical parts	Storage board (STRGB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of STRGB if faulty.
3. Replace STRGB.

4.7 E1-4

Contents

Error code	E1-4
Target device	NVMe storage
Diagnosis item	MFP FW checksum
Reason of error	STRGB error (data failure)
Relevant electrical parts	MFP firmware

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Perform re-installation of the firmware.

4.8 E1-5

Contents

Error code	E1-5
Target device	NVMe storage
Diagnosis item	Partition check
Reason of error	STRGB error (data failure)
Relevant electrical parts	Storage board (STRGB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of STRGB if faulty.
3. Select [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Format] -> [Logical Format] and perform the function.
4. Replace STRGB.

4.9 E2-1

Contents

Error code	E2-1
Target device	microSD
Diagnosis item	Device recognition
Reason of error	Engagement failure Mounting failure
Relevant electrical parts	microSD CPU board (CPUB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of microSD if faulty.
3. Correct the mounting of CPUB if faulty.
4. Replace microSD.
5. Replace CPUB.

4.10 E2-2

Contents

Error code	E2-2
Target device	microSD
Diagnosis item	R/W check

Reason of error	microSD error (data failure)
Relevant electrical parts	microSD

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of microSD if faulty.
3. Replace microSD.

4.11 E2-3

Contents

Error code	E2-3
Target device	microSD
Diagnosis item	S.M.A.R.T diag.
Reason of error	microSD error (data failure)
Relevant electrical parts	microSD

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of microSD if faulty.
3. Replace microSD.

4.12 E2-4

Contents

Error code	E2-4
Target device	microSD
Diagnosis item	MFP FW checksum
Reason of error	microSD error (data failure)
Relevant electrical parts	MFP firmware

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Perform re-installation of the firmware.

4.13 E2-5

Contents

Error code	E2-5
Target device	microSD
Diagnosis item	Partition check
Reason of error	microSD error (data failure)
Relevant electrical parts	microSD

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of microSD if faulty.
3. Select [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [Format] -> [Logical Format] and perform the function.
4. Replace microSD.

4.14 E3-1

Contents

Error code	E3-1
Target device	I2C
Diagnosis item	TPM
Reason of error	Connection failure Parts defect
Relevant electrical parts	TPM board (TPMB) CPU board (CPUB) Base board (BASEB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of TPMB if faulty.

3. Correct the mounting of CPUB if faulty.
4. Correct the mounting of BASEB or the connection of connectors if faulty.
5. Replace TPMB.
6. Replace CPUB.
7. Replace BASEB.

4.15 E3-2, E3-3

Contents

Error code	E3-2, E3-3	
Target device	I2C	
Diagnosis item	E3-2	AUDIO (control)
	E3-3	PS-CPU
Reason of error	Connection failure Parts defect	
Relevant electrical parts	CPU board (CPUB) Base board (BASEB)	

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of CPUB if faulty.
3. Correct the mounting of BASEB or the connection of connectors if faulty.
4. Replace CPUB.
5. Replace BASEB.

4.16 E4-1, E4-2

NOTE

- **When executing the Self-diag. (Full) after the trouble code (CE301, CE304) is displayed, the self-diagnosis may not complete. In that case, finish the Self-diag. (Full) forcibly, and perform the troubleshooting against each trouble code.**
- **Turning OFF the main power switch will finish the Self-diag. (Full) forcibly.**

Contents

Error code	E4-1, E4-2	
Target device	System/image memory	
Diagnosis item	E4-1	WORK0 (Main memory ch.A)
	E4-2	WORK1 (Main memory ch.B)
Reason of error	Engagement failure Mounting failure DRAM failure	
Relevant electrical parts	CPU board (CPUB)	

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of CPUB if faulty.
3. Replace CPUB.

4.17 E4-3, E4-4

Contents

Error code	E4-3, E4-4	
Target device	System/image memory	
Diagnosis item	E4-3	FILE0 (A800 memory ch.A)
	E4-4	FILE1 (A800 memory ch.B)
Reason of error	Engagement failure Mounting failure DRAM failure	
Relevant electrical parts	Memory board (MEMB)	

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of MEMB if faulty.
3. Replace MEMB.

4.18 E5-1

Contents

Error code	E5-1

Target device	Various USB devices
Diagnosis item	IRIS0
Reason of error	Connection failure Parts defect
Relevant electrical parts	CPU board (CPUB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of CPUB if faulty.
3. Replace CPUB.

4.19 E5-2

Contents

Error code	E5-2
Target device	Various USB devices
Diagnosis item	USB3.0-HUB chip (base board)
Reason of error	Connection failure Parts defect
Relevant electrical parts	CPU board (CPUB) Base board (BASEB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of CPUB if faulty.
3. Correct the mounting of BASEB or the connection of connectors if faulty.
4. Replace CPUB.
5. Replace BASEB.

4.20 E5-3

Contents

Error code	E5-3
Target device	Various USB devices
Diagnosis item	USB2.0-HUB chip (base board)
Reason of error	Connection failure Parts defect
Relevant electrical parts	Base board (BASEB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of BASEB or the connection of connectors if faulty.
3. Replace BASEB.

4.21 E5-4

Contents

Error code	E5-4
Target device	Various USB devices
Diagnosis item	USB device HUB chip (USB hub board)
Reason of error	Connection failure Parts defect
Relevant electrical parts	USB hub board (USBHB) Base board (BASEB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of USBHB or the connection of connectors if faulty.
3. Correct the mounting of BASEB or the connection of connectors if faulty.
4. Replace USBHB.
5. Replace BASEB.

4.22 E5-5

Contents

Error code	E5-5

Target device	Various USB devices
Diagnosis item	DAC-IC
Reason of error	Connection failure Parts defect
Relevant electrical parts	USB hub board (USBHB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of USBHB or the connection of connectors if faulty.
3. Replace USBHB.

4.23 E5-6, E5-7, E5-8, E5-9, E5-10

Contents

Error code	E5-6, E5-7, E5-8, E5-9, E5-10	
Target device	Various USB devices	
Diagnosis item	E5-6	Fax expansion board (HUB chip)
	E5-7	Fax board (line 1)
	E5-8	Fax board (line 2)
	E5-9	Fax board (line 3)
	E5-10	Fax board (line 4)
Reason of error	Connection failure Parts defect	
Relevant electrical parts	Fax board/1 (FAXB/1) Fax board/2 (FAXB/2) Fax board/3 (FAXB/3) Fax board/4 (FAXB/4) Fax expansion board Base board (BASEB)	

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of the fax board or the connection of connectors if faulty.
3. Correct the mounting of the fax expansion board or the connection of connectors if faulty.
4. Correct the mounting of BASEB or the connection of connectors if faulty.
5. Replace the fax board. (Fax board (line 1), Fax board (line 2) / Fax board (line 3), Fax board (line 4))
6. Replace the fax expansion board.
7. Replace BASEB.

4.24 E5-11

Contents

Error code	E5-11
Target device	Various USB devices
Diagnosis item	Upgrade kit (UK-221)
Reason of error	Connection failure Parts defect
Relevant electrical parts	Wireless LAN board (WLANB) Base board (BASEB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of the upgrade kit (UK-221) or the connection of connectors if faulty.
3. Correct the mounting of BASEB or the connection of connectors if faulty.
4. Replace WLANB.
5. Replace BASEB.

4.25 E5-12

Contents

Error code	E5-12
Target device	Various USB devices
Diagnosis item	Authentication unit
Reason of error	Connection failure Parts defect
Relevant electrical parts	Authentication unit Base board (BASEB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting and connection of the authentication unit if faulty.
3. Correct the mounting of BASEB or the connection of connectors if faulty.
4. Replace the authentication unit.
5. Replace BASEB.

4.26 E6-1, E6-2

Contents

NOTE

- **When executing the Self-diag. (Full) after the trouble code (C6###, C91##) is displayed, the self-diagnosis may not complete. In that case, finish the Self-diag. (Full) forcibly, and perform the troubleshooting against each trouble code.**
- **Turning OFF the main power switch will finish the Self-diag. (Full) forcibly.**

Error code	E6-1, E6-2	
Target device	CCD board	
Diagnosis item	E6-1	I/P image bus check
	E6-2	Line RAM comparison
Reason of error	E6-1	Image bus failure
	E6-2	CCD sensor failure
Relevant electrical parts	E6-1	Connection cable CCD board (CCDB) CPU board (CPUB) Base board (BASEB)
	E6-2	CCD board (CCDB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of CCDB or the connection cable if faulty.
3. Correct the mounting of CPUB if faulty.
4. Correct the mounting of BASEB or the connection of connectors if faulty.
5. Replace the connection cable.
6. Replace the CCD unit.
7. Replace CPUB.
8. Replace BASEB.

4.27 E7-1, E7-2

Contents

NOTE

- **When executing the Self-diag. (Full) after the trouble code (C6###, C91##) is displayed, the self-diagnosis may not complete. In that case, finish the Self-diag. (Full) forcibly, and perform the troubleshooting against each trouble code.**
- **Turning OFF the main power switch will finish the Self-diag. (Full) forcibly.**

Error code	E7-1, E7-2	
Target device	CIS module	
Diagnosis item	E7-1	I/P image bus check
	E7-2	Line RAM comparison
Reason of error	E7-1	Image bus failure
	E7-2	CIS sensor failure
Relevant electrical parts	E7-1	CIS cable CIS module (CIS) CPU board (CPUB) Base board (BASEB)
	E7-2	CIS module (CIS)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of CIS or the CIS cable if faulty.
3. Correct the mounting of CPUB if faulty.
4. Correct the mounting of BASEB or the connection of connectors if faulty.
5. Replace the CIS cable.
6. Replace CIS.
7. Replace CPUB.
8. Replace BASEB.

4.28 E8-1

Contents

Error code	E8-1
Target device	DF control board
Diagnosis item	MINET communication check
Reason of error	ADF microcomputer communication failure
Relevant electrical parts	Connection cable DF control board (DFCB) CPU board (CPUB) Base board (BASEB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of DFCB or the connection of connectors if faulty.
3. Correct the mounting of CPUB if faulty.
4. Correct the mounting of BASEB or the connection of connectors if faulty.
5. Correct the connection of the connection cable if faulty.
6. Replace the connection cable.
7. Replace DFCB.
8. Replace CPUB.
9. Replace BASEB.

4.29 E9-1

Contents

Error code	E9-1
Target device	Memory board (A800)
Diagnosis item	Compress/exp check
Reason of error	A800 error
Relevant electrical parts	Memory board (MEMB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of MEMB if faulty.
3. Replace MEMB.

4.30 E10-1, E10-2

Contents

Error code	E10-1, E10-2	
Target device	DSC board (Security kit)	
Diagnosis item	E10-1	Image bus check (front side)
	E10-2	Image bus check (back side)
Reason of error	Engagement failure Mounting failure	
Relevant electrical parts	DSC board/1 (DSCB/1)	

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of DSCB/1or the connection of connectors if faulty.
3. Replace DSCB/1.

4.31 E11-1, E11-2

Contents

Error code	E11-1, E11-2	
Target device	CPU board	
Diagnosis item	E11-1	Compress/exp check
	E11-2	O/P image bus check
Reason of error	E11-1	S800 error
	E11-2	S800 error
Relevant electrical parts	CPU board (CPUB)	

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.

2. Correct the mounting of CPUB if faulty.
3. Replace CPUB.

4.32 E12-1, E12-2, E12-3, E12-4

Contents

Error code	E12-1, E12-2, E12-3, E12-4	
Target device	PCIe	
Diagnosis item	E12-1	PCIe device check IRIS(0)
	E12-2	PCIe device check IRIS(1)
	E12-3	PCIe device check NVMe storage
	E12-4	PCIe device check A800
Reason of error	PCIe device error	
Relevant electrical parts	E12-1, E12-2	CPU board (CPUB)
	E12-3	Storage board (STRGB) CPU board (CPUB)
	E12-4	Memory board (MEMB) CPU board (CPUB)

Corrective action procedure

1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch.
2. Correct the mounting of STRGB if faulty.
3. Correct the mounting of MEMB if faulty.
4. Correct the mounting of CPUB if faulty.
5. Replace STRGB.
6. Replace MEMB.
7. Replace CPUB.

5. TROUBLESHOOTING WHEN NG IS DISPLAYED ON THE SELF-DIAG. (INDIVIDUAL)

5.1 I2S check

5.1.1 Troubleshooting when NG is displayed for AUDIO (voice)

1. Turn OFF the main power switch, disconnect power cord from the outlet.
2. Correct the mounting of the CPU board if faulty.
3. Correct the mounting of the base board or the connection of connectors if faulty.
4. Replace the CPU board.
5. Replace the base board.

5.2 Various USB Check

5.2.1 Troubleshooting when NG is displayed for Keyboard

1. Turn OFF the main power switch, disconnect power cord from the outlet.
2. Correct the mounting of the keyboard if faulty.
3. Correct the mounting of the USB hub board if faulty.
4. Replace the keyboard.
5. Replace the USB hub board.

5.2.2 Troubleshooting when NG is displayed for USB Memory

1. Turn OFF the main power switch, disconnect power cord from the outlet.
2. Correct the mounting of the USB memory if faulty.
3. Correct the mounting of the USB hub board if faulty.
4. Replace the USB memory.
5. Replace the USB hub board.

5.3 CPU board check

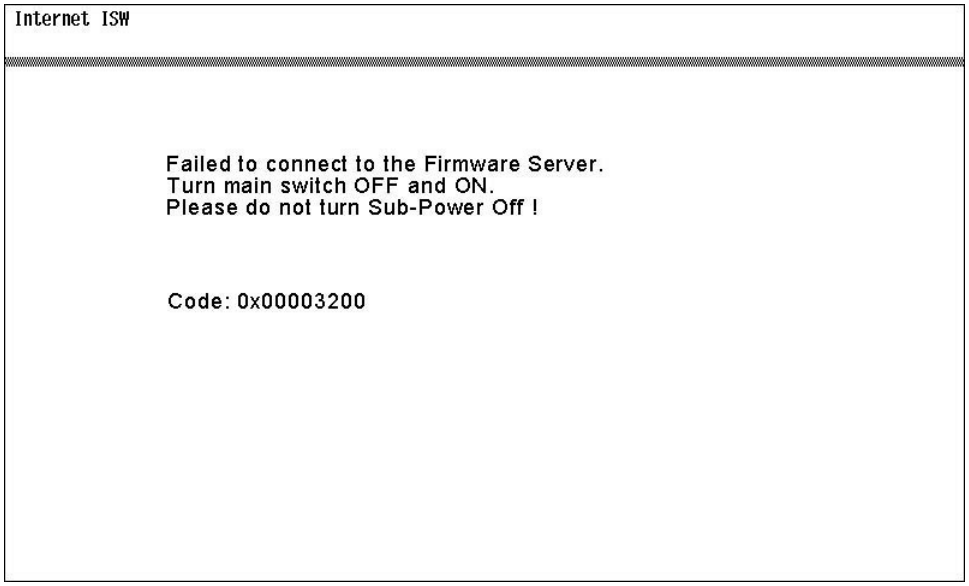
5.3.1 Troubleshooting when NG is displayed for Ping Test

1. Turn OFF the main power switch, disconnect power cord from the outlet.
2. Check, and correct the MFP network settings if faulty.
3. Correct the mounting of the CPU board if faulty.
4. Correct the mounting of the base board or the connection of connectors if faulty.
5. Replace the CPU board.
6. Replace the base board.

6. ERROR CODE FOR THE INTERNET ISW

6.1 Error code list for the Internet ISW

- When a trouble occurred while conducting the Internet ISW and it was not normally connected, the message on the status and the error code will be displayed on the control panel.



NOTE

- **When a code other than the error code list is displayed, contact and inform the error code.**

6.2 0x0#

Error code	Description	Countermeasure
0x00000001	Illegal error on the control	• Check if [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Internet ISW Set] is set to “ON”. • Check the status of [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Forwarding Access Setting]. • If the above process does not solve the problem, inform the corresponding error code to the KONICA MINOLTA.
0x00000010	Parameter error	• Check if [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Internet ISW Set] is set to “ON”. • If the above process does not solve the problem, inform the corresponding error code to the KONICA MINOLTA.
0x00111000	Error concerning the network • Connection has been completed.	• Check the User’s network environment. (LAN cable’s connection) • Check the status of [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Forwarding Access Setting]. • Check to see if the FTP server operates normally.
0x00111001	Error concerning the network • It cannot be connected to the server.	• Check the User’s network environment. • Check to see if the FTP server operates normally. • Check whether the URL of the data transfer server includes http://, ftp://, or the like to specify a protocol in [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Forwarding Access Setting].
0x00111100	Error concerning the network • Communication timeout.	
0x00111101	Error concerning the network • Disconnection occurred.	• Check the User’s network environment. • Check to see if the FTP server operates normally.
0x00111110	Error concerning the network • The network is not connected.	
0x00110010	Error concerning the network • Others	
0x00001###	FTP error • Reply code when it failed to be connected.	• Check to see if the FTP server operates normally. • Check the IP address, user’s name, etc.
0x00002###	FTP error • Error reply code for the user command or pass command.	Check to see if the FTP server operates normally.
0x00003###	FTP error • Error reply code for the CWD command.	
0x00004###	FTP error • Error reply code for the TYPE command.	Check to see if the FTP server operates normally.
0x00005###	FTP error	

Error code	Description	Countermeasure
	• Error reply code for the PORT command.	
0x00006###	FTP error • Error reply code for the PASV command.	• Check to see if the FTP server operates normally. • Set the PASV mode to “OFF”, and try it again.
0x00007###	FTP error • Error reply code for the RETR command.	• Check to see if the FTP server operates normally. • Wait for about 30 minutes and try it again.

6.3 0x1#

Error code	Description	Countermeasure
0x10000100	• It cannot be accepted because of the job currently being executed. • ISW being executed by other method.	Wait for the current job to be completed and try it again.
0x10000101	It cannot be accepted because the power key is OFF.	Turn power key ON and try it again.
0x10000102	The Internet ISW is already being executed.	Wait for the current Internet ISW to be completed.
0x10000103	It failed to prohibit the job. (It failed to lock the operation.) -> It failed to lock the job because the operation is already locked with Web Connection, etc.	• Check if [Service Mode] -> [Machine Update Setting] -> [Internet ISW] -> [Internet ISW Set] is set to “ON”. • If the above process does not solve the problem, inform the corresponding error code to the KONICA MINOLTA.
0x10000104	There is no space for firmware data to be downloaded.	
0x10000106	Check sum error	
0x10000107	File access error • The file downloaded has an error. • The header of the file which has been read has an error. • The size of the file to be downloaded is too large. • When it is identified to be the different type of firmware.	Check to see if the downloaded firmware is of the correct type.
0x10000108	The area firmware is stored is destroyed, and another ISW is necessary.	Wait until ISW is automatically executed on MFP side.

6.4 0x2#

Error code	Description	Countermeasure
0x20000000	The temporary error when running the subset • When starting the Internet ISW in a normal program, the rebooting will start and the Internet ISW will be executed with the subset program. During the process by the subset program, it has to be in the “Failed” status unless the Internet ISW is successfully conducted. This code is used temporarily to make it in error status.	Wait until ISW is automatically executed on MFP side.

7. CS REMOTE CARE ERROR CODE

7.1 Troubleshooting for CS Remote Care

If communication is not done properly, check the condition by following the procedures shown below.

1. Shift the screen in the order of [Service Mode] -> [CS Remote] -> [Remote Care].
   At this time, in the cases of initial transmitting / administrator transmitting / maintenance start transmitting / maintenance finish transmitting, the communication result will be displayed at the top of the screen.

NOTE

- **For the communication result, the following message will be displayed based on its success or failure.**

Display of communication result	Cause	How to correct
Communicating	-	-
Communication trouble with the center	Although the machine tries to communicate with the center, there is any trouble and the communication completes unsuccessfully.	See the list of error message and confirm the corresponding point.
Complete successfully	-	-
Modem trouble	Although the machine tries to communicate with the center, there is any trouble in the modem.	• Check if the power of modem in ON. • Check if there is any problem in connection between the modem and the main body.
Busy line	Although the machine tries to communicate with the center, the line to the center is busy.	Communicate with the center again.
No response	Although the machine tries to communicate with the center, there is no response from the center.	• Communicate with the center again. • Check the communication environment of the center side.

7.2 CS Remote Care Operation under Enhanced Security Mode

CS Remote Care can be used even when “ON” is selected in [Administrator] -> [Security] -> [Enhanced Security Mode].
However, to keep the enhanced security level, the following restrictions are accompanied.

- Only SSL communication is available.
- Error occurs if the Center tries to send the following commands.
  - Firmware update command
  - Command of reading and updating account track information
  - Machine settings update command
  - Command of reading and updating Internet ISW setting information

7.3 List of the CS Remote Care error code

7.3.1 When connecting by modem

NOTE

- **When a code other than the ones listed below is displayed, contact KM and inform the error code.**

Error code	Contents	Solution
0001	The line is busy • Busy detection	Transmit again manually.
0002	Failure of the Modem default setting at transmitting • When the transmission completes with modem initial setting failed	• Check if the power of the modem is ON. • Check the connecting condition between the modem and the main body.
0003	Timeout of CONNECT at transmitting • No response to ATD	• Transmit again manually. • Check if the power of the modem is ON. • Check the connecting condition between the modem and the main body.
0004	Timeout of response to receiving request • No response to receiving (start) request MSG	• Check if the power of the modem is ON. • Check the connecting condition between the modem and the main body.
0005	Timeout of CONNECT at receiving • No response to ATA	• Check if the power of the modem is ON. • Check the connecting condition between the modem and the main body.
0006	Shut down of the data modem line (Host) • Carrier OFF is detected	No solution, because the line is shut down at the host side.
0007	Forced line disconnection of data modem (main body) • The line is forcibly disconnected from the event	• Check if the power of the modem is ON. • Check the connecting condition between the modem and the main body.
0008	Timeout of start request telegram delivery • Start request telegram is not delivered after line connection	Transmit again manually.
0009	Timeout of finish request telegram delivery • Finish request telegram is not delivered (Start of shut down)	Transmit again manually.
000A	Receiving rejection • Receiving is made when the main body is set to reject receiving.	• Check the setting condition of the host side. • Check the setting condition of the main body side.

Error code	Contents	Solution
000E	Receiving ring buffer full • When receiving ring buffer is full	If the same error is detected several times, turn the modem power OFF and ON.
000F	Transmission ring buffer full • When transmission ring buffer is full	If the same error is detected several times, turn the modem power OFF and ON.
0014	Incorrect transmission data length • When transmission of a data with the length longer than the transmission ring buffer size is requested	If the same error is detected several times, turn the modem power OFF and ON.
0015	Status error (upon modem operation check)	Transmit again manually.
0016	Status error (upon data arrival)	Transmit again manually.
0017	Status error (upon line disconnection)	Transmit again manually.
0019	Center ID error • Center ID of the host is not identical with the one of start request telegram.	• Check center ID setting of the main body side. • Check the setting condition of the host side.
001A	Device ID inconsistency • Device ID of the main body is not identical with the one of start request telegram.	• Check device ID setting of the main body side. • Check the setting condition of the host side.
001B	Device ID unregistered • Request telegram 2 (Constant data transmitting, emergency call) comes from the main body that has not registered device ID yet.	• Check device ID setting of the main body side. • Check the setting condition of the host side.
001C	Grammar error • The specified format is not used in the received reply telegram.	Check the settings for CSRC application.
001D	Impossible to change (Item where change is prohibited) • Host inquires change of the setting of the item not allowed to be changed.	Check the settings for CSRC application.
001E	Impossible to change (during printing) • Setting cannot be changed because the setting change is made during the machine is printing or starts printing.	Try again when the machine is not printing.
001F	Impossible to change (Item where change is prohibited) • Host attempts to write data to the item of which current value has not been read.	Check the settings for CSRC application.
0020	Timeout of telegram delivery • At waiting mode of telegram delivery the machine fails to receive the telegram in a given time.	Try communication again.
0021	Telegram longer than the specified length. • A telegram longer than the specified length is received.	Check the settings for CSRC application.
0022	Transmission phase response NG	Try communication again.
0023	Timeout of transmission phase response MSG	Try communication again.
0024	Incorrect acquisition function of event data	Try communication again.
0025	Timeout of driver transmission check MSG	Try communication again.
0026	An internal inconsistence is detected	Try communication again.
0027	Transmission / receiving collision • Receiving is detecting during transmitting processing	Try communication again.

7.3.2 When connecting by e-mails

NOTE

- **When a code other than the ones listed below is displayed, contact KM and inform the error code.**

(1) 0###

Error code	Contents	Solution
0###	Transmission error ###: SMTP responding code (hexadecimal) For SMTP responding code, see RFC issued by IETF after converting hexadecimal number into decimal one.	Check the user's SMTP server system settings. • Authentication setting • Authentication ID • Authentication password • Address of the destination where the server is connected

(2) 1###

Error code	Contents	Solution
1030	Machine ID mismatching • Received an e-mail which tells that machine ID mismatches.	• Check the machine ID setting. • Check the machine ID setting on host side.
1050	Grammar error • Received mail did not define the CS Remote Care command (2 digits). • The Type of Subject and the command of attached file are not consistent.	Ask the host to send another mail.

Error code	Contents	Solution
1061	Modifying not allowed • The host sent a command mail that asked modifying data of item where setting change is not allowed.	Ask the host to send another instruction mail for modifying.
1062	Modifying not available due to the copy job currently performing • When informing the host that it cannot be modified due to the copy job currently performing.	Ask the host to send another instruction mail for modifying.
1080	Data length problem • LEN value of TEXT data and actual data length are not consistent.	Ask the host to send another instruction mail for modifying.
1081	Frame No. error • The last frame has not been received. • There are missing frame No.	Check the status of the machine registration on host side, and perform initial transmission as necessary.
1082	Subject Type problem • Received code did not define the Type of Subject.	Ask the host to send another instruction mail for modifying.
1084	Date expired • Expiration date for data modification command has passed.	Ask the host to send another instruction mail for modifying.
1091	Oversized command • Received attached file exceeds the machine's receive buffer size.	Ask the host to send another instruction mail for modifying.
1092	Received an error mail when center setup is not complete	Check the status of the machine registration on host side.
1099	Illegal request • Status not predicted in design is detected.	Check the status of the machine registration on host side, and perform initial transmission as necessary.

(3) 2###

Error code	Contents	Solution
2064	Network is down • LAN cable on main body side is detached.	• Check the connection between main body on the user's side and the network connector. • Check the network environment on the user's side.
206B	Communication from an MFP to the server is disabled due to problems on the server side • LAN cable on the copier side is detached.	• Check the connection between main body on the user's side and the network connector. • Check the network environment on the user's side.
203E	Connection timeout	Check timeout setting.

(4) 3###

Error code	Contents	Solution
3001	POP3_AUTHORIZATION_ERR	Check the user's POP3 server system settings. • Authentication setting • Connection ID • Password • Address of the destination where the server is connected
3002	POP3_TRANSACTION_ERR	
3003	POP3_CONNECT_ERR	
3004	POP3_TIMEOUT_ERR	
3005	POP3_FORMAT_ERR	
3006	POP3_MEMORY_ERR	
3007	POP3_JOBID_ERR	
3008	POP3_NO_DATA_ERR	
3009	POP3_DELETE_FAIL_ERR	
3010	POP3_MAILBOX_FULL	

(5) 4###

Error code	Contents	Solution
4103	During polling from main body, MIO is not active and MFP cannot start communication.	Wait for a while and try transmitting again.
4104	During e-mail transmission from main body to the center, the SMTP channel is not in the "Ready" status and main body cannot send e-mail.	Wait for a while and try transmitting again.
4105	During polling from main body, the POP3 channel is not in the "Ready" status and main body cannot receive e-mail.	Wait for a while and try transmitting again.
4106	During e-mail transmission from main body to the center, MIO is not active and MFP cannot start communication.	Wait for a while and try transmitting again.
41F9	Control error • In the CS Remote Care's internal sequence, message transfer failed.	Turn the main power switch OFF and then ON.
41FA	Control error	Turn the main power switch OFF and then ON.

Error code	Contents	Solution
	• MIO response timed out.	
41FB	Control error • As the file descriptor of the e-mail that MFP receives from MIO is invalid, MFP cannot receive the e-mail.	Turn the main power switch OFF and then ON.
41FC	Control error • During the creation of data to be sent by e-mail, the CS Remote Care's internal status error occurs or the data that need to be sent has not been created.	Turn the main power switch OFF and then ON.
41FD	Control error • During e-mail reception, the parameter sent from MIO to the CS Remote Care is invalid and MFP cannot receive the e-mail.	Turn the main power switch OFF and then ON.
41FE	Control error • After the completion of e-mail transmission, MFP received the transmission completion message from MIO. However, the CS Remote Care's internal status was not the status of transmission completion.	Turn the main power switch OFF and then ON.
41FF	Control error • During e-mail reception, MIO became inactive.	Turn the main power switch OFF and then ON.
4210	Control error • E-mail sent from MIO could not be properly handled in the CS Remote Care.	Turn the main power switch OFF and then ON.

(6) 5###

Error code	Contents	Solution
5###	MIO detects error when sending an attached file.	Check the SMTP server and POP3 server on user side.

(7) 6###

Error code	Contents	Solution
6###	MIO detects error during a sending sequence.	Check the SMTP server and POP3 server on user side.

7.3.3 When connecting by http

NOTE

- **When a code other than the ones listed below is displayed, contact KM and inform the error code.**

(1) 0###

Error code	Contents	Solution
0###	Transmission error ###: http responding code (hexadecimal) For http responding code, see RFC issued by IETF after converting hexadecimal number into decimal one.	Check the http server system settings. • Authentication setting for address of the destination where the server is connected • Location indicated for a folder • Connection ID • Password

(2) 1###

Error code	Contents	Solution
1030	Machine ID mismatching • Received file which tells that machine ID mismatches.	• Check the machine ID setting. • Check the machine ID setting on host side.
1050	Grammar error • Received file did not define the CS Remote Care command (2 digits). • The Type of Subject and the command of file are not consistent.	Check file content.
1061	Modifying not allowed • The host sent a command file that asked modifying data of item where setting change is not allowed.	Ask the host to send another instruction file for modifying.
1062	Modifying not available due to the copy job currently performing • When informing the host that it cannot be modified due to the copy job currently performing.	Ask the host to send another instruction file for modifying.
1080	Data length problem • LEN value of TEXT data and actual data length are not consistent.	Ask the host to send another instruction file for modifying.
1081	Frame No. error • The last frame has not been received. • There are missing frame No.	Check the status of the machine registration on host side.

Error code	Contents	Solution
1082	Subject Type problem • Received code did not define the Type of Subject.	Ask the host to send another instruction file for modifying.
1084	Date expired • Expiration date for data modification command has passed.	Ask the host to send another instruction file for modifying.
1091	Oversized command • Received file exceeds the machine's receive buffer size.	Ask the host to send another instruction file for modifying.
1099	Illegal request • Status not predicted in design is detected.	Contact KM and inform the error code

(3) 2###

Error code	Contents	Solution
2001	http request result problem • Internal status error	Check the http server system settings. • Authentication setting for address of the destination where the server is connected • Location indicated for a folder • Connection ID • Password
2002	http request result problem • File list acquisition result problem	
2003	http request result problem • Request header transmission failure	
2004	http request result problem • Request body transmission failure	
2005	http request result problem • Response header receive response failure	
2006	http request result problem • Response body receive response failure	
2007	http request result problem • Session ID inconsistent	

(4) 3###

Error code	Contents	Solution
3002	http request result problem • Unopened client ID was specified	Check the http server system settings. • Authentication setting for address of the destination where the server is connected • Location indicated for a folder • Connection ID • Password
3003	http request result problem • Receive time out occurred	
3004	http request result problem • Receive error occurred. Or wrong request URL was specified.	
3005	http request result problem • Content-Length or receive size exceeded the specified max. transfer size. Message body size was too large.	
3006	http request result problem • Due to reset, process was stopped. Or message body size exceeded the specified max. transfer size.	
3007	http request result problem • Internal error occurred. Or due to internal reset, process was stopped.	
3008	http request result problem • Connection to WebDAV server failed.	
3009	http request result problem • Error occurred during transmission to the WebDAV server.	
3010	http request result problem • Time out occurred during transmission to the WebDAV server.	
3011	http request result problem • Connection to the proxy server failed.	
3012	http request result problem • The proxy server refused CONNECT request.	
3013	http request result problem • The proxy server was set to enabled, but the proxy server host was not set.	
3014	http request result problem • Proxy server authentication failed.	
3015	http request result problem • Other errors were sent from the proxy server.	
3016	http request result problem • Internal error occurred.	
3017	http request result problem • As the device application specified MIO_REQBODY_ERROR, process was stopped.	

(5) 4###

Error code	Contents	Solution
4103	After the main power switch is switched ON, HTTP communication is attempted under the condition where HTTP communication is not ready.	Wait for a while and try transmitting again.
4106	When data is uploaded from main body to the web server, the network connection is not enabled and main body cannot start communication.	Wait for a while and try transmitting again.
41FA	Control error • MIO response timed out.	Turn the main power switch OFF and then ON.

(6) 5###

Error code	Contents	Solution
5###	MIO detects error at file sending.	Check the http server environment.

(7) 6###

Error code	Contents	Solution
6###	MIO detects error during a sending sequence.	Check the http server environment.

(8) 7###

Error code	Contents	Solution
7000	Failure occurs when a certificate for product authentication is acquired from a USB device or Web Connection.	Acquire a new certificate (within 6 days after the issue).

7.3.4 When connecting by Fax modem

Error code	Contents	Solution
T50	Host terminal ID not correct	Check the telephone number set for host.
R80	Serial number received from the host not correct.	Check the status of the machine registration on host side.
R81	Disconnection of writing instruction from host during machine is running.	Wait for a while and try transmitting again.
R82	Disconnection of FAX-CSRC instruction when FAX-CSRC is not allowed.	Check the status of the machine registration on host side.
R83	Host command error.	Contact KM and inform the error code.
R84	NVRAM writing error.	Contact KM and inform the error code.

8. CS REMOTE ANALYSIS ERROR CODE

8.1 When connecting by SOAP

NOTE

- **When a code other than the ones listed below is displayed, contact KM and inform the error code.**

8.1.1 1###

Error code	Contents	Solution
1001	Communication timeout. • Reception time out occurred.	[MFP side] Check the SOAP server system settings. • Authentication setting for address of the destination where the server is connected • Location indicated for a folder • Connection ID • Password Check the network environment (whether LAN is disconnected or etc).
		[Server side] Check whether the server has started up or etc.
1002	Command error	Contact KM and inform the error code

8.1.2 2###

Error code	Contents	Solution
2001	SOAP request result problem • An error occurred.	Check the SOAP server system settings. • Authentication setting for address of the destination where the server is connected • Location indicated for a folder • Connection ID • Password
2002	SOAP request result problem • Proxy server authentication failed.	
2003	SOAP request result problem • There isn't support of http version.	
2004	SOAP request result problem • Failed to connect.	
2005	SOAP request result problem • An error occurred while sending.	
2006	SOAP request result problem • Time out occurred while sending.	
2007	SOAP request result problem • An invalid request URL is specified.	
2008	SOAP request result problem • Content-Length or receive size exceeded the specified max. transfer size.	
2009	SOAP request result problem • The size of the message body is too large.	
200A	SOAP request result problem • The proxy server was set to enabled, but the proxy server host was not set.	
200B	SOAP request result problem • The proxy server refused CONNECT request.	
200C	SOAP request result problem • Other errors were sent from the proxy server.	
200D	SOAP request result problem • Connection to the proxy server failed.	
200E	SOAP request result problem • The process is cancelled by an internal reset.	
200F	SOAP request result problem • Other internal error occurred.	
2010	SOAP request result problem • Internal error occurred. (Task start)	
2011	SOAP request result problem • Internal error occurred. (MSG)	
2012	SOAP request result problem • Internal error occurred.	
2013	SOAP request result problem • As the device application specified MIO_REQBODY_ERROR, process was stopped.	

8.1.3 3###

Error code	Contents	Solution
3001 to 3053	SOAP request result problem (MFP side error)	Contact KM and inform the error code
3054 to 30FE	SOAP request result problem (Server side error)	Contact KM and inform the error code

8.1.4 4###

Error code	Contents	Solution
4000	Control error	Turn the main power switch OFF and then ON.

8.2 When connecting by http

NOTE

- **When a code other than the ones listed below is displayed, contact KM and inform the error code.**

8.2.1 0###

Error code	Contents	Solution
0###	Transmission error ###: http responding code (hexadecimal) For http responding code, see RFC issued by IETF after converting hexadecimal number into decimal one.	Check the http server system settings. • Authentication setting for address of the destination where the server is connected • Location indicated for a folder • Connection ID • Password

8.2.2 1###

Error code	Contents	Solution
1030	Machine ID mismatching • Received file which tells that machine ID mismatches.	• Check the machine ID setting. • Check the machine ID setting on host side.
1050	Grammar error • Received file did not define the CS Remote Care command (2 digits). • The Type of Subject and the command of file are not consistent.	Check file content.
1061	Modifying not allowed • The host sent a command file that asked modifying data of item where setting change is not allowed.	Ask the host to send another instruction file for modifying.
1062	Modifying not available due to the copy job currently performing • When informing the host that it cannot be modified due to the copy job currently performing.	Ask the host to send another instruction file for modifying.
1080	Data length problem • LEN value of TEXT data and actual data length are not consistent.	Ask the host to send another instruction file for modifying.
1081	Frame No. error • The last frame has not been received. • There are missing frame No.	Check the status of the machine registration on host side.
1082	Subject Type problem • Received code did not define the Type of Subject.	Ask the host to send another instruction file for modifying.
1084	Date expired • Expiration date for data modification command has passed.	Ask the host to send another instruction file for modifying.
1091	Oversized command • Received file exceeds the machine’s receive buffer size.	Ask the host to send another instruction file for modifying.
1099	Illegal request • Status not predicted in design is detected.	Contact KM and inform the error code

8.2.3 2###

Error code	Contents	Solution
2001	http request result problem • Internal status error	Check the http server system settings. • Authentication setting for address of the destination where the server is connected • Location indicated for a folder • Connection ID • Password
2002	http request result problem • File list acquisition result problem	
2003	http request result problem • Request header transmission failure	
2004	http request result problem • Request body transmission failure	
2005	http request result problem • Response header receive response failure	
2006	http request result problem • Response body receive response failure	
2007	http request result problem	

Error code	Contents	Solution
	• Session ID inconsistent	

8.2.4 3###

Error code	Contents	Solution
3002	http request result problem • Unopened client ID was specified	Check the http server system settings. • Authentication setting for address of the destination where the server is connected • Location indicated for a folder • Connection ID • Password
3003	http request result problem • Receive time out occurred	
3004	http request result problem • Receive error occurred. Or wrong request URL was specified.	
3005	http request result problem • Content-Length or receive size exceeded the specified max. transfer size. Message body size was too large.	
3006	http request result problem • Due to reset, process was stopped. Or message body size exceeded the specified max. transfer size.	
3007	http request result problem • Internal error occurred. Or due to internal reset, process was stopped.	
3008	http request result problem • Connection to WebDAV server failed.	
3009	http request result problem • Error occurred during transmission to the WebDAV server.	
3010	http request result problem • Time out occurred during transmission to the WebDAV server.	
3011	http request result problem • Connection to the proxy server failed.	
3012	http request result problem • The proxy server refused CONNECT request.	
3013	http request result problem • The proxy server was set to enabled, but the proxy server host was not set.	
3014	http request result problem • Proxy server authentication failed.	
3015	http request result problem • Other errors were sent from the proxy server.	
3016	http request result problem • Internal error occurred.	
3017	http request result problem • As the device application specified MIO_REQBODY_ERROR, process was stopped.	

8.2.5 4###

Error code	Contents	How to correct
4103	After the main power switch is switched ON, HTTP communication is attempted under the condition where HTTP communication is not ready.	Wait for a while and try transmitting again.
4106	When data is uploaded from main body to the web server, the network connection is not enabled and main body cannot start communication.	Wait for a while and try transmitting again.
41FA	Control error • MIO response timed out.	Turn the main power switch OFF and then ON.

8.2.6 5###

Error code	Contents	Solution
5###	MIO detects error at file sending.	Check the http server environment.

8.2.7 6###

Error code	Contents	Solution
6###	MIO detects error during a sending sequence.	Check the http server environment.

8.2.8 7###

Error code	Contents	Solution
7000	Failure occurs when a certificate for product authentication is acquired from a USB device or Web Connection.	Acquire a new certificate (within 6 days after the issue).

9. FAX TROUBLE CODE

9.1 The error in the transmission/reception system

- The error in the Txx/Rxx system may be caused under the effect of line noise, etc. even in usual operating condition.
- If the error occurs frequently, output the activity report, fax setting list, protocol trace list, service parameter list, address book list, group list and program list, and acquire detailed information of error status and error conditions from users. After acquiring required information, reports or lists, contact the KM support desk.

NOTE

- **Extending the timer, the transmission time will get longer, which will affect on the telephone bill to be paid by users. Additionally, for users who use fax frequently, waiting jobs are to be generated.**
- **Timer extension as an action to be taken for line matters must be kept to a minimum. Because there is a risk that defects will occur on other destination users.**

9.2 B0##

Error code	Category	Contents of error	Solution
B001	Fax board error	Fax board error 1 (fax ROM checksum error)	• Pull out and insert the connector of fax board to check its installation. • If the trouble is not yet corrected, hardware of the fax board may be defective. Replace the fax board in such a case.
B002		Fax board error 2 (DPRAM check error)	
B004	Installation issues	Fax board DipSw setting error	Check if the line for which "Set" is selected from the [Service Mode] -> [System 2] -> [Option Board Status] screen matches the DipSW settings for specifying a line on the fax board.
B005	Installation issues	No fax board is installed. Mistake in installation. Defective HW.	• Connect the fax board of the line for which "Set" is selected from the [Service Mode] -> [System 2] -> [Option Board Status] screen. • Disconnect and then connect the connector of fax board to check its installation. • Check if the USB connector of the fax board falls off. • Replace the power code. • Use the latest FW. • Replace the fax board. • Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output].
B006	USB I/F error	USB connection is interrupted	• Turn OFF and ON the main power switch. • Disconnect and then connect the connector of fax board to check its installation. • Check if the USB connector of the fax board falls off. • Replace the power code. • Use the latest FW. • Replace the fax board. • Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output].
B051		Fax board mount failure line 1	• Pull out and insert the connector of fax board to check its installation. • If the trouble is not yet corrected, check if the fax (circuit 1) is set to [Unset] on the [Service Mode] -> [System 2] -> [Option board Status]. • If it is set to [Unset], set to [Set].
B052		Fax board mount failure line 2	• Pull out and insert the connector of fax board to check its installation. • If the trouble is not yet corrected, check if the fax (circuit 2) is set to [Unset] on the [Service Mode] -> [System 2] -> [Option board Status]. • If it is set to [Unset], set to [Set].

9.3 B11#

Error code	Category	Contents of error	Solution
B110	MFP soft error	Program control error (instance acquisition error)	• Turn OFF and ON the main power switch. • Use the latest FW. • Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output].
B111		Configuration space initialization NG	
B112		Semaphore control error	
B113		I/F error among tasks	
B114		Message queue generation error	
B115		I/F error with fax (I/F error between main body and fax)	• Pull out and insert the connector of fax board to check its installation. • Use the latest FW. • Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output].
B116		Communication error between controller and fax board	
B117		ACK waiting timeout error	
B118		Receiving undefined frame	

Error code	Category	Contents of error	Solution
B119		DMA transfer error	

9.4 B12#

Error code	Category	Contents of error	How to correct
B120	Fax board soft error	Soft error	• Turn OFF and ON the main power switch. • Use the latest FW. • Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output].
B122	Fax board error	Modem-DAA initialize error	• Turn OFF and ON the main power switch. • Use the latest FW. • Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output]. • Replace the fax board.
B123		Modem-DAA power save recovery error	
B125		ISW failure of SubCPU	
B126	Fax board soft error	Timeout of suspension process (Codec control)	• Turn OFF and ON the main power switch. • Use the latest FW. • Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output].
B127		Timeout of suspension process (communication control)	
B128		Timeout of suspension process (line control)	

9.5 B13#

Error code	Category	Contents of error	Solution
B130	Fax board soft error	I/F error with main body (fax soft error)	• Turn OFF and ON the main power switch. • Use the latest FW. • Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output].
B131		I/F error with main body (reception frame error)	
B132		I/F error with main body (reception frame header error)	
B133		I/F error with main body (232C I/F sequence error)	
B134		I/F error with main body (sequence error)	
B135		I/F error with main body	
B136		ACK waiting timeout	
B137		I/F error with main body (RESET reception from main body)	

9.6 B14#

Error code	Category	Contents of error	Solution
B140	Fax board soft error	MSG I/F error with JC	• Turn OFF and ON the main power switch. • Use the latest FW. • Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output].
B141		Fax soft error (received unexpected command)	
B142		Fax soft error (received undefined command)	
B143		Fax soft error (command frame length error)	
B144		Fax soft error (parameter length error)	
B145		Fax soft error (received undefined parameter)	
B146		Fax soft error (command/response sequence error)	

9.7 B15#

Error code	Category	Contents of error	Solution
B150	MFP soft error	Program control error (instance acquisition error)	• Turn OFF and ON the main power switch. • Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output]. • Clear fax jobs by formatting the fax files. • Use the latest FW. • Disconnect and then connect the connector of the base board. • Execute self-diagnosis for all items. • Try replacing parts. Memory, storage and base board
B151		Job start error	
B152		Doc access error	
B153		Program control error (logic error)	
B154		Program control error (table control error)	

9.8 B16#

Error code	Category	Contents of error	Solution
B160	MFP soft error	Program control error (instance acquisition error)	• Turn OFF and ON the main power switch. • Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output]. • Clear fax jobs by formatting the fax files. • Use the latest FW. • Disconnect and then connect the connector of the base board. • Execute self-diagnosis for all items. • Try replacing parts. Memory, storage and base board
B161		Timeout error	
B162		Program control error (interface error)	
B163		Program control error (sequence error)	
B164		Semaphore acquisition/ release error	
B165		Program control error (table control error)	
B166		Reception resource check error	
B167	Image processing error	Sending image access error (image acquisition error)	
B168		Receiving image access error (image storage error)	
B169		Sending image access error (image deletion error)	

9.9 B17#

Error code	Category	Contents of error	Solution
B170	MFP soft error	Program control error (table control error)	• Turn OFF and ON the main power switch. • Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output]. • Use the latest FW. • Disconnect and then connect the connector of the base board. • Execute self-diagnosis for all items. • Try replacing parts. Memory, storage and base board
B171		Program control error (instance acquisition error)	
B172		Timeout error	
B173		Program control error (interface error)	
B174		Semaphore acquisition/ release error	
B175		Observer registration error	
B176	Memory allocation error	Unable to secure domain for header (TTI) image generation	
B177	Image processing error	Header (TTI) image generation error	
B178		Receiving job generation error	
B179		Sequence control error (line command error/mismatched status, mismatched event)	

9.10 B18#

Error code	Category	Contents of error	How to correct
B185	Receiving data error	Receiving data size logic error (Receiving data are not multiples of dotline)	• Turn OFF and ON the main power switch. • Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output]. • Use the latest FW. • Disconnect and then connect the connector of the base board. • Execute self-diagnosis for all items. • Try replacing parts. Memory, storage and base board
B186	Memory allocation error	Unable to secure domain for receiving image	
B187	Image processing error	Receiving image conversion error	
B188	MFP soft error	Program control error (table control error)	

9.11 B19#

Error code	Category	Contents of error	Solution
B190	USB I/F error	USB sending error	• Turn OFF the main power switch, and turn it ON again after a check of the USB connection. • Use the latest FW. • Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output].
B191		USB sending error	
B192		Error retry 5 sec. T.O (No response or other errors)	
B193		No response due to detach of USB	
B194		Error retry 3 sec. T.O (main body status error)	
B195		Attach not detected for 1 min. after recovery from sleep when receiving	
B196		Detach not detected for 1 min. after shift from sleep	• Turn OFF and ON the main power switch. • Use the latest FW.

Error code	Category	Contents of error	Solution
			• Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output].
B197		USB I/F error during formatting when main power switch ON	• Turn OFF the main power switch, and turn it ON again after a check of the USB connection. • Use the latest FW. • Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output].
B198		Attach not detected for 1 min. after recovery from sleep at the time other than receiving	

9.12 T0#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
T00	Sending (Ph.B)	Unable to detect fax signal (ANSam/CED/DIS) from the remote station by the time of T1 timeout	1. Check if the telephone number of the remote station is used for fax.	-
			2. Turn ON the monitor speaker, and check if the signal from the remote station can be heard.	-
			3. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			4. Extend the DCS retransmission interval. * If no effect is obtained, return the setting.	[Function Parameter]: 000E012D(L1), 000E023D(L2), 000E034D(L3), 000E045D(L4) bit1-0: 00 -> 11
			5. Extend T1 timer. Extend the response waiting time. (only for amount of extended T1 timer) • Increase by +10 seconds. * If no effect is obtained, return the setting.	• [Communication] -> [TIMER1] -> T1 • [Network] -> [Network Setting 2] -> Response Waiting Time
T01	Mixed size transmission (Ph.B')	Unable to detect the DIS (reception ability signal) from the remote station by the time of T1 timeout after it is exchanged to send the different-sized pages (PPS-EOM/MCF exchange)	1. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			2. Extend T1 timer. Extend the response waiting time. (only for amount of extended T1 timer) • Increase by +10 seconds. * If no effect is obtained, return the setting.	• [Communication] -> [TIMER1] -> T1 • [Network] -> [Network Setting 2] -> Response Waiting Time
			3. If the error occurs on the specific destination, avoid the mixed size transmission. (Due to issues on remote station)	-
T02	Sending (Ph.B)	A DCN is received when the remote station is disconnected first due to T1 timeout and etc.	1. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			2. Extend the DCS retransmission interval. * If no effect is obtained, return the setting.	[Function Parameter]: 000E012D(L1), 000E023D(L2), 000E034D(L3), 000E045D(L4) bit1-0: 00 -> 11
T03		Protocol error (received unexpected command during DIS waiting)	1. Extend V.21 signals interval. • Increase by +20 ms. * If no effect is obtained, return the setting.	[Function Parameter]: 000E0060 (×1ms)
			2. Extend the DCS retransmission interval. * If no effect is obtained, return the setting.	[Function Parameter]: 000E012D(L1), 000E023D(L2), 000E034D(L3), 000E045D(L4) bit1-0: 00 -> 11
T05		As an analysis result of received DIS signal, the remote station has no reception ability.	1. Place an sufficient interval, and send again. (since the remote station may be unable to receive fax temporarily)	-
			2. It cannot be dissolved by settings, so acquire a log. (since an error may occur on the DIS received from the remote station or altered by exchangers in midway) • Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report	-
T06		A DCN is received when the remote station is disconnected first due to T1 timeout and etc. Example: Training failure	1. Extend the DCS-TCF delay. • Increase by +20 ms. * If no effect is obtained, return the setting.	[Communication] -> [TIMER1] -> DCS-TCF DELAY
			2. Decrease the transmission beginning speed by two steps.	[Modem/NCU] -> [V17 Send Max Speed] -> TX Max. Speed

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
		Example: CSRC host disconnected first	3. Possibility of line defect (Example: FTT occurs frequently on protocol trace list) (One case example) Check all CSRC settings such as device ID, and send again from the initial transmission.)	-
T08		Training failed even at minimum speed (2400 bps)	1. Extend the DCS-TCF delay. • Increase by +20 ms. * If no effect is obtained, return the setting.	[Communication] -> [TIMER1] -> DCS-TCF DELAY
			2. Set the transmission beginning speed to V.29-9600bps.	[Modem/NCU] -> [V17 Send Max Speed] -> TX Max. Speed
			3. Possibility of line defect (Example: FTT occurs frequently on protocol trace list)	-
T09		Training failed after tried three times Example: The remote station is disconnected first due to T1 timeout and etc.	1. Extend the DCS-TCF delay. • Increase by +20 ms. * If no effect is obtained, return the setting.	[Communication] -> [TIMER1] -> DCS-TCF DELAY
			2. Decrease the transmission beginning speed by two steps.	[Modem/NCU] -> [V17 Send Max Speed] -> TX Max. Speed
			3. Decrease the resolution.	-
			4. Possibility of line defect (Example: FTT occurs frequently on protocol trace list)	-

9.13 T1#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
T11	Sending (Ph.D)	Received a DCN instead of the response of post message command (PPS-EOP/MPS/NULL) Example: The remote station is disconnected first since no post message command is detected.	1. Extend the PIX-PMC delay. • Increase by +20 ms. (Example: Assumed that the T.38 Gateway could not analyze signals.) (since the remote station may be disconnected first without receiving anything due to an insufficient post message waiting time) * If no effect is obtained, return the setting.	[Communication] -> [TIMER1] -> PIX-PMC DELAY
			2. Possibility of line defect (Wrong control of signal analysis by exchangers)	-
T12		Protocol error (received unexpected command during waiting response of post message)	Extend the PIX-PMC delay. • Increase by +20 ms. * If no effect is obtained, return the setting.	[Communication] -> [TIMER1] -> PIX-PMC DELAY
T13		Unable to receive response (MCF/PPR) of the post message command (PPS-EOP/MPS/NULL) from the remote station after sending image data Example: The remote station is disconnected first since no image data is detected. Example: The remote station is disconnected first since no post message command is detected.	1. Extend the PIX-PMC delay. • Increase by +20 ms. * If no effect is obtained, return the setting.	[Communication] -> [TIMER1] -> PIX-PMC DELAY
			2. Connect the ground for the MFP or TA.	-
			3. Increase the number of times for resending the post message command.	[Function Parameter]: 000E0127(L1), 000E0237(L2), 000E0347(L3), 000E0457(L4) bit1-0: 00 -> 01
			4. Extend the interval for resending the post message command. * If no effect is obtained, return the setting.	[Function Parameter]: 000E012E(L1), 000E023E(L2), 000E034E(L3), 000E045E(L4) bit1-0 00: 3.0 s 01: 3.5 s 10: 4.0 s 11: 4.5 s
			5. Set the transmission beginning speed to V.29-9600bps.	[Modem/NCU] -> [V17 Send Max Speed] -> TX Max. Speed
			6. Possibility of line defect (Wrong control of signal analysis by exchangers)	-
T18	Sending (Ph.B)	As an analysis result of received DIS signal, a receive reject notification is received from the remote station. Example: The remote station cannot receive fax temporarily.	1. Place a sufficient time interval, and redial.	-
			2. It cannot be dissolved by settings, so acquire a log. (since an error may occur on the DIS received from the remote station or altered by exchangers in midway) • Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report	-

9.14 T2#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
T28	Sending (Ph.B)	Timeout of RR/RNR sequence (60 seconds) Example: Since an error occurred during image data processing on the remote station, the MCF (reception check response) cannot be received.	1. Set the coding method to MH/MR/MMR.	[Communication] -> [Others] -> Coding Ability
			2. Set the transmission beginning speed to V.29-9600bps.	[Modem/NCU] -> [V17 Send Max Speed] -> TX Max. Speed
			3. Extend the PIX-PMC delay. • Increase by +20 ms. * If no effect is obtained, return the setting.	[Communication] -> [TIMER1] -> PIX-PMC DELAY
			4. Extend V.21 signals interval. • Increase by +20 ms. * If no effect is obtained, return the setting.	[Function Parameter]: 000E0060 (×1ms)
			5. Possibility of line defect (Wrong control of signal analysis by exchangers)	-

9.15 T3#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
T32	Sending (Ph.D)	Unable to send image data even when falling back at the minimum speed Example: Received resending request (PPR) continuously from the remote station	1. Set the transmission beginning speed to V.29-9600bps.	[Modem/NCU] -> [V17 Send Max Speed] -> TX Max. Speed
			2. Set JBIG of the coding method to OFF.	[Communication] -> [Others] -> Coding Ability
			3. Possibility of line defect (Wrong control of signal analysis by exchangers)	-
T35		Exceeded the maximum frequency of the RR/RNR sequence Example: Since an error occurred during image data processing on the remote station, the MCF (reception check response) cannot be received.	1. Set the transmission beginning speed to V.29-9600bps.	[Modem/NCU] -> [V17 Send Max Speed] -> TX Max. Speed
			2. Extend V.21 signals interval. • Increase by +20 ms. * If no effect is obtained, return the setting.	[Function Parameter]: 000E0060 (×1ms)
			3. Increase the number of times for resending the post message command.	[Function Parameter]: 000E0127(L1), 000E0237(L2), 000E0347(L3), 000E0457(L4) bit1-0: 00 -> 01
			4. Possibility of line defect (Wrong control of signal analysis by exchangers)	-
T36		A DCN is received when the remote station is disconnected first during RR/RNR sequence continuing. Example: Since an error occurred during image data processing on the remote station	1. Set the transmission beginning speed to V.29-9600bps.	[Modem/NCU] -> [V17 Send Max Speed] -> TX Max. Speed
			2. Extend V.21 signals interval. • Increase by +20 ms. * If no effect is obtained, return the setting.	[Function Parameter]: 000E0060 (×1ms)
			3. Possibility of line defect (Wrong control of signal analysis by exchangers)	-
T38	F-Code TX	Received unexpected protocol from the remote station during F code polling TX	It cannot be dissolved by settings, so acquire a log. (since an error may occur on the DIS received from the remote station or altered by exchangers in midway) • Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report	-

9.16 T4#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
T40	Sending	Fax soft error	It cannot be dissolved by settings, so acquire a log. (since an error may occur on the DIS received from the remote station or altered by exchangers in midway) • Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report • Data saved in the storage	-
T42	Non-ECM sending (Ph.D)	Large amount of error lines in image data on the remote station	1. Check the ECM settings.	[Communication] -> [Others] -> ECM Function
			2. If the ECM function is disabled on the remote station, ask the remote station to enable the ECM function.	-

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
		Example: At time of Non-ECM communication, if the specified amount of error lines is exceeded, PIP/PIN may be received instead of the resending request.	3. Possibility of line defect (Wrong control of signal conversion by exchangers)	-
T43	Sending	Received request for V.21 signal retransmission (CRP) three times continuously Example: The remote station cannot detect retransmission signal.	1. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			2. Possibility of line defect (example: packet loss, echo, distortion, wrong control of signal conversion by exchanger)	-
T44		Unable to receive image data from the main body	1. Turn OFF and ON the main power switch.	-
			2. Dissolve the high load issues.	-
			3. Acquire a log. • Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report • Data saved in the storage	-
T48		Mismatched dialed number and the telephone number information (CSI) set on the remote station device when enabling the destination check function. Example: No telephone number (local ID) has been set on the remote station, or the set telephone number is mismatched with the actual fax number.	1. Make the remote station disable the destination check function and receive fax normally, then identify the CSI information from the remote station with the protocol trace list.	-
			2. Ask the remote station to change the telephone number (local ID).	-
			3. Make a study on operation when the destination check setting is disabled.	-

9.17 T5#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
T50	CSRC sending	Mismatched host device ID	Reset from the initial transmission.	-
T51	Sending	Fax soft error	1. Turn OFF and ON the main power switch.	-
			2. Set the coding method to MH/MR/MMR.	[Communication] -> [Others] -> Coding Ability
			3. If the error reoccurs on the specific remote station, it cannot be dissolved by settings, so acquire a log. • Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report • Data saved in the storage	-
T52		Communication error between fax board and base board	1. Check the connection of the fax board USB cable and the power cord.	-
			2. Turn OFF and ON the main power switch.	-
			3. If the error reoccurs on the specific remote station, it cannot be dissolved by settings, so acquire a log. • Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report • Data saved in the storage	-

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
T58	Polling RX	Calling by polling reception, but the remote station does not have polling transmission documents	Ask the remote station to register the polling original.	-

9.18 T6#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
T60	Polling TX	Received the polling transmission request (DTC), but no polling transmission original contained in both normal box and bulletin board box	Register the polling transmission original.	-
T61		Received the bulletin board polling transmission request, but there is no transmission original in the bulletin board box	Register the transmission original in the bulletin board box.	-
T62		Received the bulletin board polling transmission request, but the specified bulletin box number is not valid	Inform the remote station of the correct bulletin board number.	-
T68	Polling RX	At polling RX, no selective polling (SEP) function in the remote station	Check the polling RX settings.	-

9.19 T7#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
T73	Sending	Fax soft error	1. Dissolve the high load issues.	
			2. Turn OFF V.34 if it is limited to V.34 communication. • For manual input, turn OFF V.34 from Application. • For abbreviated registration, turn OFF V.34 for corresponding abbreviated registration. • If this error occurs frequently, turn OFF V.34 by service.	• - • - • [Communication] -> [Protocol] -> V8/V34 Protocol
			3. Change the coding method to MH/MR/MMR.	[Communication] -> [Others] -> Coding Ability
			4. It cannot be dissolved by settings, so acquire a log. • Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report • Data saved in the storage	-
T74		V.34 communication disabled due to line noise	Turn OFF V.34. • For manual input, turn OFF V.34 from Application. • For abbreviated registration, turn OFF V.34 for corresponding abbreviated registration. • If this error occurs frequently, turn OFF V.34 by service.	• - • - • [Communication] -> [Protocol] -> V8/V34 Protocol
T75		V.34 communication disabled due to line noise	Turn OFF V.34. • For manual input, turn OFF V.34 from Application. • For abbreviated registration, turn OFF V.34 for corresponding abbreviated registration. • If this error occurs frequently, turn OFF V.34 by service.	• - • - • [Communication] -> [Protocol] -> V8/V34 Protocol
T76		V.34 communication disabled due to line noise The remote station is disconnected.	1. Turn OFF V.34. • For manual input, turn OFF V.34 from Application. • For abbreviated registration, turn OFF V.34 for corresponding abbreviated registration. • If this error occurs frequently, turn OFF V.34 by service.	• - • - • [Communication] -> [Protocol] -> V8/V34 Protocol

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
			2. Check if an error has occurred on the machine on other end of line first.	-
T77		V.34 communication disabled due to line noise	Turn OFF V.34. • For manual input, turn OFF V.34 from Application. • For abbreviated registration, turn OFF V.34 for corresponding abbreviated registration. • If this error occurs frequently, turn OFF V.34 by service.	• - • - • [Communication] -> [Protocol] -> V8/V34 Protocol
T78		Fax image conversion error	1. Turn OFF and ON the main power switch.	-
			2. Change the resolution.	-
			3. Set the coding method to MH/MR/MMR.	[Communication] -> [Others] -> Coding Ability
			4. It cannot be dissolved by settings, so acquire a log. • Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report • Data saved in the storage	-
T79		Fax soft error	1. Change the resolution.	-
			2. Set the coding method to MH/MR/MMR.	[Communication] -> [Others] -> Coding Ability
			3. If the error occurs frequently, acquire a log. • Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report • Data saved in the storage	-

9.20 T8#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
T80	Sending (Ph.A)	Telephone line connection error 1. The telephone line is not connected. (Disconnected due to breakage) 2. The telephone line is connected to a digital line. 3. The telephone line is shared with other devices. When it is being used by other devices, the line is detected as disconnection.	1. Check it again for proper connection.	-
			2. Check if the port of the telephone line is exclusively used for analog lines. If it is connected to a digital line, the Dial Tone cannot be heard even when the hand set is in an off-hook state.	-
			3. If it is shared with other devices, set to T81 and redial.	[Function Parameter]: 000E00EE(L1), 000E01FE(L2), 000E030E(L3), 000E041E(L4) bit0: 0 -> 1
T81		At the time of offhook, unable to detect the correct Dial Tone within the specified time • The Dial Tone from the PBX or TA/router is mismatched with the fax destination to be used. • It is too late that the PBX or TA/router sends the Dial Tone.	1. Extend the inter-station timer. (There is a PBX requiring a certain waiting time from the end of the last communication)	[Function Parameter]: 000B0010
			2. If it requires an external transmission, conduct PBX connection settings properly. For intermittent sound, it is most likely in the PBX environment.	-
			3. Extend the Dial Tone waiting time by +2 seconds. There is a PBX from which the Dial Tone is sent too late. For backup, it is desired to record and check.	[Network] -> [Network Settings4/5] -> [Wait Time] PBX DT Wait Time: 000E00AF(L1), 000E01BF(L2), 000E02CF(L3), 000E03DF(L4) ×1s 1st DT Wait Time: 000E00B6(L1), 000E01C6(L2), 000E02D6(L3), 000E03E6(L4) ×1s
			4. Ask the carrier to change the Dial Tone frequency and pattern, or to configure settings in [Network Settings4/5].	[Network] -> [Network Settings4/5] -> [Tone Det. Frequency]
			5. Verify the frequency of Dial Tone. Play each type of sound, search for the close one, then change the detection frequency settings. (The hand set is more useful for check than the MFP monitor speaker.)	-

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
			6. Check the length of the Dial Tone. (For intermittent sound, check of the length regulation with the record is more effective.) (you can also check with the record which is made by the monitor speaker)	-
T82		After dialing, unable to receive fax signal (ANSam/CED) from the remote station	1. Check the destination. (There is a possibility that the remote station is not a fax device.)	-
			2. Extend the response waiting time by +10 ms. * If no effect is obtained, return the setting.	[Network] -> [Network Setting 2] -> Response Waiting Time
			3. Turn ON the monitor speaker, and check if the signal from the remote station can be heard.	-
			4. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
T83		Detected Busy Tone at calling	1. Since the remote station may be on the phone, place a time interval and redial.	-
			2. Check if the input telephone number is correct.	-
			3. Check if the telephone number is valid when being dialed from a telephone.	-
			4. Increase the number of times or the intervals of redial to make a redial soon after the end of busy state.	-
T84		Dial error	1. Input the destination telephone number only continuously to the external button. (Number input error is detected at PBX connection setting.)	-
			2. Turn OFF and ON the main power switch.	-
			3. Replace the fax board.	-
T85		Detected short disconnection (line disconnection) before dialing	Check for any telephone line connection error. A breakage on underfloor wiring may be a possible cause.	-
T86		Dial Tone continued even after dialing	1. Check settings in [Network Settings4/5]. Details can be checked with the record which is made by the monitor speaker or telephone line.	[Network] -> [Network Settings4/5]
			2. Possibility of line defect	-
T89	Sending (control unit)	When the control unit is connected, a capacity shortage occurs during communication (To be determined before start of communication when using a coin vendor)	Check the remaining capacity of the control unit.	-

9.21 T9#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
T90	Sending (line selection)	Data may have been transmitted with no line specified when "No" is selected for TX-Line Auto Switch Setting.	Specify the line to be used to send.	-
T91		Data may have been transmitted with an illegal line specified.	Change the line specification of the abbreviated registration. (Since the abbreviated registration has been imported with an uninstalled line specified, the abbreviated registration must be modified.)	-
T95	Reception	Detected short disconnection (line disconnection) during reception	Check for any telephone line connection error. A breakage on underfloor wiring may be a possible cause.	-

9.22 R0#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
R00	Reception (Ph.B)	Unable to detect fax signal (CNG/DCS) from the remote station by the time of T1 timeout	1. Set the Receive Signal Detection Mode to No. of Times.	[Network] -> [Network Setting 1] -> Receive Signal Detection Mode
			2. Set the 1300Hz Detection setting to OFF if possible. (Fax destination: Japan only)	[Network] -> [Network Setting 2] -> 1300Hz Detection
			3. For 1300Hz Detection (JP), connect the ground for the MFP/TA/PBX. (Fax destination: Japan only)	-
			4. Change the setting of 1300Hz detection frequency. (Fax destination: Japan only)	[Function Parameter]: 000E0051 bit1-0: 00 -> 01
			5. Turn ON the monitor speaker, and check if the fax signal from the remote station can be heard. If cannot, it is judged as a wrong number.	-
			6. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			7. Extend T1 timer. Extend the response waiting time. (only for amount of extended T1 timer) • Increase by +10 seconds. * If no effect is obtained, return the setting.	• [Communication] -> [TIMER1] -> T1 • [Network] -> [Network Setting 2] -> Response Waiting Time
			8. Extend the DIS retransmission interval.	[Function Parameter]: 000E0053 -> 4.5 sec (0x2D=00101101)
R01	Mixed size reception (Ph.B')	Unable to detect the DCS (reception ability signal) from the remote station by T1 timeout after received the change instructions (PPS-EOM) of original size or resolution	1. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			2. Extend T1 timer. Extend the response waiting time. (only for amount of extended T1 timer) • Increase by +10 seconds. * If no effect is obtained, return the setting.	[Communication] -> [TIMER1] -> T1
			3. If the error occurs on the specific destination, ask it to pay attention not to send fax with mixed-size original or incorrect resolution. (Due to issues on remote station)	-
R02	Reception (Ph.B)	A DCN is received when the remote station is disconnected first due to T1 timeout and etc.	1. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			2. Extend the DIS retransmission interval. * If no effect is obtained, return the setting.	[Function Parameter]: 000E0053 -> 4.5 sec (0x2D=00101101)
R03		Protocol error (received unexpected command during DCS waiting)	1. Extend V.21 signals interval. Increase by +20 ms. * If no effect is obtained, return the setting.	[Function Parameter]: 000E0060 (×1ms)
			2. Extend the DIS retransmission interval to 4.5 seconds. * If no effect is obtained, return the setting.	[Function Parameter]: 000E0053 4.5s=0x2D(00101101)
R04		Unable to identify the analysis result and the communication mode of the received DCS signal	It cannot be dissolved by settings, so acquire a log. (since an error may occur on the DIS received from the remote station or altered by exchangers in midway) • Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report	-
R06	Reception (Ph.D)	An image data error in all frames exceeds a predetermined frequency	1. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			2. Set the reception beginning speed to V.29/V.27ter.	[Modem/NCU] -> [V17 Send Max Speed] -> RX Max. Speed
			3. Possibility of line defect (example: echo, distortion)	-
R07	Reception (Ph.C)	Unable to detect image data	1. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
		Example: The fax machine is disconnected, or the image data cannot be identified due to a line defect.		• [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			2. Implement test on the CFR return timing with each value. (80ms/100ms/120ms/140ms/160ms/180ms)	[Function Parameter]: 000E005C (×10ms)
			3. Set the reception beginning speed to V.29/V.27ter.	[Modem/NCU] -> [V17 Send Max Speed] -> RX Max. Speed
			4. Connect the ground for the MFP or TA.	-
			5. Possibility of line defect (example: echo, distortion)	-
R08		Signal interrupted while receiving image data Example: The image data terminal cannot be detected and the post message (PPS-EOP/ MPS/NULL) cannot be detected.	1. Check the telephone line.	-
			2. Check the possibility that the job may be deleted from the fax machine.	-
			3. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/ SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			4. Set the reception beginning speed to V.29/V.27ter.	[Modem/NCU] -> [V17 Send Max Speed] -> RX Max. Speed
			5. Possibility of line defect (example: echo, distortion)	-
R09	Reception (Ph.D)	Received the DCN when waiting the post message (PPSEOP/ MPS/NULL) Example: The remote station is disconnected due to exceeded number of times for retransmission (Also occurs after returning the MCF/PPR)	1. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/ SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			2. Possibility of line defect (example: packet loss, echo, distortion)	-

9.23 R1#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
R10	Reception (Ph.D)	Protocol error (received unexpected command during waiting the post message)	1. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/ SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			2. Extend the PMC-PMR delay. • Increase by +20 ms. * If no effect is obtained, return the setting.	[Communication] -> [TIMER1] -> PIX-PMC DELAY
			3. It cannot be dissolved by settings, so acquire a log. (since an error may occur on the DIS received from the remote station or altered by exchangers in midway) • Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report	-
			4. Possibility of line defect	-
R11		Unable to receive the post message (PPS-EOP/MPS/NULL) Example: The remote station is disconnected due to exceeded number of times for retransmission (Also occurs after returning the MCF/PPR)	1. Check if the job is canceled or a communication error occurred on the remote station.	-
			2. Extend the allowable number of times of the post message reception timeout.	[Function Parameter]: 000E0127(L1), 000E0237(L2), 000E0347, 000E0457(L4) bit4: 0 -> 1
			3. Possibility of line defect	-
R12	NonECM reception (Ph.C)	State that unable to receive image data continued for more than 13 seconds Example: The fax machine is disconnected, or the line	1. Enable communication with ECM ON. If ECM has been already set to ON on your machine, request the sending end to do it.	[Communication] -> [Others] -> ECM Function
			2. Set the reception beginning speed to V.29-9600bps.	[Modem/NCU] -> [V17 Send Max Speed] -> RX Max. Speed

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
		of the fax machine or the remote station is disconnected.		
R18	Reception	Unable to receive fax due to insufficient space in the box	Since either of the following conditions is satisfied, delete the document from each box. • Total number of pages in all boxes • Total number of user boxes • Maximum number of documents in user box • Maximum number of documents in memory RX box • Maximum number of documents in confidential RX box • Maximum number of documents in PC-FAX RX box	-

9.24 R2#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
R20	Reception (Ph.A)	The telephone number of the remote station has been registered as a reception rejection address. * Fax destination: Japan only	1. Check the reception rejection address.	-
R21	Reception (Ph.B) Closed network RX	Mismatched password in the closed network RX setting	Check the password.	-
R22		Unable to receive password in the closed network RX setting	Check the settings for the closed network RX.	-
R24	Reception (Ph.D)	Timeout of RR/RNR sequence (120 seconds) Example: The image data conversion or saving does not finish.	1. Set the coding method to MH/MR/MMR.	[Communication] -> [Others] -> Coding Ability
			2. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			3. Set the reception beginning speed to V.29-9600bps.	[Modem/NCU] -> [V17 Send Max Speed] -> RX Max. Speed
			4. Possibility of line defect (example: packet loss, echo, distortion)	-
R25		RR/RNR sequence stopped halfway Example: The machine is disconnected first.	1. Set the coding method to MH/MR/MMR.	[Communication] -> [Others] -> Coding Ability
			2. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			3. Set the reception beginning speed to V.29-9600bps.	[Modem/NCU] -> [V17 Send Max Speed] -> RX Max. Speed
			4. Possibility of line defect (example: packet loss, echo, distortion)	-
R26		Protocol error (received unexpected command for response to RNR)	1. Set the coding method to MH/MR/MMR.	[Communication] -> [Others] -> Coding Ability
			2. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			3. Set the reception beginning speed to V.29-9600bps.	[Modem/NCU] -> [V17 Send Max Speed] -> RX Max. Speed
			4. Possibility of line defect (example: packet loss, echo, distortion)	-
			5. It cannot be dissolved by settings, so acquire a log. • Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report	-

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
R27		A DCN is received when the remote station is disconnected first during RR/RNR sequence continuing. Example: The time of timeout on the fax machine is too short.	1. Set the coding method to MH/MR/MMR.	[Communication] -> [Others] -> Coding Ability
			2. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			3. Set the reception beginning speed to V.29-9600bps.	[Modem/NCU] -> [V17 Send Max Speed] -> RX Max. Speed
			4. Possibility of line defect (example: packet loss, echo, distortion)	-
R28		Incorrect information of PageCnt/BlockCnt specified with the post message command (PPS-EOP/MPS/NULL)	1. Set the coding method to MH/MR/MMR.	[Communication] -> [Others] -> Coding Ability
			2. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			3. Set the reception beginning speed to V.29-9600bps.	[Modem/NCU] -> [V17 Send Max Speed] -> RX Max. Speed
			4. Possibility of line defect (example: packet loss, echo, distortion)	-
			5. It cannot be dissolved by settings, so acquire a log. • Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report	-
R29	Reception (Ph.C)	Timeout due to interruption while receiving image data	1. Increase the timer between frames by +10 seconds. * If no effect is obtained, return the setting.	[Function Parameter]: 000E0016 (×1s)
			2. After the V.17 reception error occurred, configure settings to decrease the constant time capacity on V.29/V.27ter.	[Function Parameter]: 000E0134(L1), 000E0244(L2), 000E0354(L3), 000E0464(L4) bit2: 0 -> 1
			3. Decrease the reception beginning speed to V.29/V.27ter.	[Modem/NCU] -> [V17 Send Max Speed] -> RX Max. Speed
			4. Possibility of line defect (example: packet loss, echo, distortion)	-

9.25 R3#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
R33	Polling TX (Ph.B)	DIS is received after switching to Polling TX.	Turn OFF the DTS function.	[Function Parameter]: 000E0052 bit0: 1 -> 0
R34	F code reception (Ph.B)	When performing F-code (confidential/relay) communication, the password information as well as the box number (SUB) are received with PWD but not SID.	Request the machine on sending end to set the password information to SID but not PWD. NOTE) PWD is used for SEP polling.	-
R37	Reception	V.34 communication disabled due to line noise Example: The machine is disconnected first.	1. Turn OFF V.34.	[Communication] -> [Protocol] -> V8/V34 Protocol
			2. Check if an error has occurred on the machine on other end of line first.	-
R38		V.34 communication disabled due to line noise	Turn OFF V.34.	[Communication] -> [Protocol] -> V8/V34 Protocol

9.26 R4#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
R40	Reception	Fax soft error	1. Dissolve the high load issues.	-
			2. It cannot be dissolved by settings, so acquire a log. (since an error may occur on the DIS received from the remote station or altered by exchangers in midway)	-

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
			• Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report • Data saved in the storage	
R45	NonECM reception (Ph.C)	Timeout due to interruption while receiving image data	1. Check the fax machine for that if a job is canceled or a communication error occurred.	-
			2. Enable communication with ECM. If ECM has been already set to ON on your machine, request the sending end to do it.	[Communication] -> [Others] -> ECM Function
			3. Set 000E000D bit7 to 0 to turn OFF the timer.	-
			4. Possibility of line defect (due to wrong control of signal conversion by exchanger)	-
R49	Reception	DCN is received after CFR has been sent back. Example: The remote station is disconnected due to T1 timeout.	1. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			2. Possibility of line defect (example: packet loss, echo, distortion)	-

9.27 R5#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
R50	NonECM reception	Amount of error lines in image data exceeded specific value when decoding image data (detected from fax board)	1. Enable communication with ECM. If ECM has been already set to ON on your machine, request the sending end to do it.	[Communication] -> [Others] -> ECM Function
			2. Possibility of line defect (example: packet loss, distortion)	-
R51	Reception	Fax soft error	1. Turn OFF and ON the main power switch.	-
			2. Set the coding method to MH/MR/MMR.	[Communication] -> [Others] -> Coding Ability
			3. If the error reoccurs on the specific remote station, it cannot be dissolved by settings, so acquire a log. • Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report • Data saved in the storage	-
R52		Communication error between fax board and base board	1. Check the connection of the fax board USB cable and the power cord.	-
			2. Turn OFF and ON the main power switch.	-
			3. If the error reoccurs on the specific remote station, it cannot be dissolved by settings, so acquire a log. • Protocol trace list for errors (including remote station) • Line information for both fax machine and remote station • Machine management list (CSV save), activity report • Data saved in the storage	-

9.28 R6#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
R60	NonECM reception	Amount of error lines in image data exceeded specific value (detected from MFP)	1. Enable communication with ECM. If ECM has been already set to ON on your machine, request the sending end to do it.	[Communication] -> [Others] -> ECM Function
			2. Possibility of line defect (example: packet loss, distortion)	-
R63	Reception	Received request for V.21 signal retransmission (CRP) three times continuously Example: The remote station cannot detect retransmission signal.	1. Change the lowest reception sensitivity to -43 dBm. Change the signal transmission level to -15 dBm.	• [Modem/NCU] -> [Level] -> CD/SED ON Level • [Modem/NCU] -> [TxATT] -> PIX TxATT, TONE/Procedure Signal TxATT, CED/ANSam TxATT
			2. Possibility of line defect (example: packet loss, echo, distortion, wrong control of signal conversion by exchanger)	-

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
			3. Acquire a log. • Protocol trace list for errors • Line information for both fax machine and remote station • Machine management list (CSV save), activity report • Data saved in the storage	-
R67	F code reception (Ph.B)	Although, it has been declared with DIS that there is no SUB reception ability, but a SUB instruction is received.	It cannot be dissolved by settings, so acquire a log. • Protocol trace list for errors • Machine management list (CSV save), activity report	-
R69	Reception	Received an end-of-retransmission (EOR) command from fax machine	1. It cannot be dissolved by settings, so acquire a log. • Protocol trace list for errors • Line information for both fax machine and remote station • Machine management list (CSV save), activity report	-
			2. Possibility of line defect (example: packet loss, echo, distortion)	-

9.29 R7#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
R70	Reception (Ph.C)	Error occurred when decoded a JBIG image data	1. Set the coding method to MH/MR/MMR.	[Communication] -> [Others] -> Coding Ability
			2. It cannot be dissolved by settings, so acquire a log. • Original (on fax machine if possible) • Protocol trace list for errors • Machine management list (CSV save), activity report	-
R71	NonECM reception (Ph.C)	Amount of edge marks of the image data less that setting value Example: Low account of EOL regarded as RTC	1. Enable communication with ECM. If ECM has been already set to ON on your machine, request the sending end to do it.	[Communication] -> [Others] -> ECM Function
			2. Set the account of EOL regarded as RTC lower.	[Function Parameter]: 000E001B bit2-0: 001 -> 000
R72	Reception	The reception length for a long-sized original exceeded 1000 mm.	1. Ask the fax machine to check that no multiple pages have been read together, and to send it again.	-
			2. Request the fax machine to resend with TTI information while keeping the length within 1000 mm.	-
R73		Fax soft error (modem control)	1. Set the coding method to MH/MR/MMR.	[Communication] -> [Others] -> Coding Ability
			2. Turn OFF V.34.	[Communication] -> [Protocol] -> V8/V34 Protocol
R74		Detected HDLC frame error during image data receiving	1. It cannot be dissolved by settings, so acquire a log. • Protocol trace list for errors • Machine management list (CSV save), activity report • Data saved in the storage	-
			2. Possibility of line defect (example: packet loss, echo, distortion)	-
R75		V.34 communication disabled due to line noise	Turn OFF V.34.	[Communication] -> [Protocol] -> V8/V34 Protocol
R76		V.34 communication disabled due to line noise	Turn OFF V.34.	[Communication] -> [Protocol] -> V8/V34 Protocol
R77	Reception (Ph.C)	Fax soft error (image processing)	1. Set the coding method to MH/MR/MMR.	[Communication] -> [Others] -> Coding Ability
			2. It cannot be dissolved by settings, so acquire a log. • Original (on fax machine if possible) • Protocol trace list for errors • Machine management list (CSV save), activity report	-
R78		Fax soft error (image processing control)	1. Set the coding method to MH/MR/MMR.	[Communication] -> [Others] -> Coding Ability
			2. It cannot be dissolved by settings, so acquire a log. • Original (on fax machine if possible) • Protocol trace list for errors • Machine management list (CSV save), activity report	-

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
R79	Reception	Fax soft error (job control)	It cannot be dissolved by settings, so acquire a log. • Original (on fax machine if possible) • Protocol trace list for errors • Machine management list (CSV save), activity report	-

9.30 R8#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
R80	CSRC	Mismatched serial number from the CSRC host	Reset it from the initial transmission.	-
R81		Received an writing instruction from the CSRC host during machine running	Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output].	-
R82		Received a FAX-CSRC instruction when FAX-CSRC is not allowed	1. Make line 1 receive the fax.	-
			2. Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output].	-
R83		Command error from the CSRC host	Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output].	-
R84		NVRAM writing error	Acquire the data saved in the storage from [Service Mode] -> [Debug Settings] -> [Debug Log Output].	-

9.31 R9#

Error code	Category	Contents of error	How to correct	Installation position (Service Mode -> [FAX] -> [Line #])
R93	Reception	Mismatched password for confidential reception box	Inform the fax machine of the correct password, and ask it to rend again.	-
R94		Mismatched relay box password Or, no relay destination found	1. Check the relay destinations (group) in the relay box, and ask the fax machine to send again.	-
			2. Inform the fax machine of the correct password, and ask it to send again.	-
R96		No box specified by SUB for confidential RX, relay RX or PC-FAX RX Or, the relay RX function disabled	1. Check if the box for confidential RX, relay RX or PC-FAX RX has been created.	-
			2. Check if the relay function is disabled. Utility -> [Administrator] -> [Fax Settings] -> [Function Setting] -> [Function ON/OFF Setting] -> Relay RX	-
			3. Contact the fax machine, and ask it to send again with the correct box number.	-
R97		Received an PC-FAX RX indication, but the password mismatched	1. Check the communication password for PC-FAX RX settings.	-
			2. Inform the fax machine of the correct password, and ask it to send again.	-
R99	Others	The machine has issued a reception instruction command before a reception notification is sent from the fax board to the machine.	1. Set the Receive Signal Detection Mode to No. of Times.	[Network] -> [Network Setting 1] -> [Receive Signal Detection Mode]
			2. Distribute and reduce other options of the MFP.	-

9.32 Other

Error code	Category	Contents of error	How to correct
-	Others	When the main body recovers from the sleep mode while receiving a fax, the ring tone is generated more than the set number of times. (2 to 3 times)	This error is avoidable with any one of the following settings. • Set [Administrator] -> [Maintenance] -> [Timer Setting] -> [Power Settings] -> [Power Consumption in Sleep Mode] to “Disabled”. • Set [Administrator] -> [Fax Settings] -> [Line Parameter Setting] -> [Number of RX Call Rings] to “0 x”.

10. DIAGNOSTIC CODES

10.1 Outline

- The diagnostic code is a 22-digit hexadecimal code indicating a communication conditions and status.
- The diagnostic code is printed on the activity report.
- The purpose of the diagnostic code is to obtain detailed information of communication results and conditions so as to analyze communication troubles.

NOTE

- **It will be displayed when [Service Mode] -> [FAX] -> [List Output] -> [Report Addition Information] select that Diagnosis Code.**

10.2 Explanation

10.2.1 The diagnostic code

XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)

10.2.2 Information of communication results and conditions

Items	Description							
	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
(1) Types of call out / called	F network (Japan)	PSTN	Dial-in (Japan)	Telephone	Group	One-touch dialing	Abbreviated dialing	Key pad dialing
(2) Communication mode	Sending	Error page resending	Forwarding transmission	Polled transmission	Receiving	Recovery transmission	Called turnaround	Polling RX
(3) Applied function specification	Mixed size transmission All pages/ cover	Frame erasure transmission	Book mode transmission	2in1 transmission	Original size appointing TX	Upside down	Special scanning non standard/ Zfold/Long	(Not used)
(4) One-time communication parameter specification	Timer TX	(Not used)	CSRC	PC-Fax transmission (RX/V2)	V.34 appoint transmission	F-code transmission	ECM specification TX	International mode transmission
(5) Communication type	Relay	Confidential	Manual transmission	Bulletin	Line used (line 1 to 4)			
(6) H_RES specification 1 (HR)	400 dpi	300 dpi	200 dpi	(Not used)	16 pels/mm	(Not used)	8 pels/mm	(Not used)
(7) H_RES specification 2 (HR)	(Not used)	(Not used)	(Not used)	(Not used)	(Not used)	(Not used)	(Not used)	600 dpi
(8) V_RES specification 1	400 dpi	300 dpi	200 dpi	100 dpi	15.4 l/mm	(Not used)	7.7 l/mm	3.85 l/mm
(9) V_RES specification 2	(Not used)	(Not used)	(Not used)	(Not used)	(Not used)	(Not used)	(Not used)	600 dpi
(10) Coding specification	(Not used)	(Not used)	(JPEG)	(JBIG)	MMR	MR	MH	THRU
(11) Original length specification	(Not used)	(Not used)	(Legal)	(Letter)	A3	B4	A4	(Not used)
(12) Original length specification	(Not used)	No limits	(Legal)	(Letter)	(Not used)	B4	A4	(Not used)
(13) Speed specification 0	(Not used)	(Not used)	(Not used)	V.29-96	V.29-72	(Not used)	V.27-48	V.27-24
(14) Speed specification 1	V.17-144	V.17-120	V.17-96	V.17-72	(V.33-144)	(V.33-120)	(V.33-96)	(V.33-72)
(15) Speed specification 2	V.34-192	V.34-168	V.34-144	V.34-120	V.34-96	V.34-72	V.34-48	V.34-24
(16) Speed specification 3	(Not used)	(Not used)	V.34-336	V.34-312	V.34-288	V.34-264	V.34-240	V.34-216
(17) MSLT specification	(Not used)	(Not used)	(Not used)	(Not used)	(Not used)	MSLT of resolution shown as vertical RES		
(18) Communication parameter specification	ECM frame size 0: 256 / 1: 64	ECM	DIAG (CSRC)	(BFT)	(BTM)	PWD	SEP	SUB
(19) Remote station coding specification	(Not used)	(Not used)	(JPEG)	(JBIG)	MMR	MR	MH	THRU
(20) Remote station length specification	(Not used)	(Not used)	(Legal)	(Letter)	A3	B4	A4	(Not used)
(21) Remote station length specification	(Not used)	No limits	(Legal)	(Letter)	(Not used)	B4	A4	(Not used)

Items	Description							
	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
(22) Remote station communication	(Not used)	ECM	DIAG (CSRC)	(BFT)	(BTM)	PWD	SEP	SUB

- (Not used): bit is set to 0.

11. NETWORK FAX ERROR CODE

- When there occurs any trouble with this machine, the error screen is displayed. And on this error screen, the following error message is shown. Take a necessary step referring to the table given below.

11.1 Error code list of the transmission system

Error code	Category	Contents of error	Redial	Corrective action
N10	Connection error	Server connection error	No	• Check the condition of the other party machine. • Check the network setting of local machine. • Ask the network administrator if the network is operating normally.
N11	Connection error	Connection declined by the other party machine	No	Reception is declined. Check the condition of the other party machine.
N12	Connection error	Disconnection of the line	Yes	Check to see if there occurs any abnormal condition with the network, such as the disconnection of a cable.
N13	Connection error	No response received from the network	No	• Check the condition of the other party machine. • Check the network setting of local machine. • Ask the network administrator if the network is operating normally.
N14	Connection error	Mail delivery error	No	Check the condition of the other party machine. Send it again after waiting for a while.
N15	Remote reset	Connection reset by the other party machine	Yes	Check the condition of the other party machine. Send it again after waiting for a while.
N16	Remote busy	Remote machine is busy	Yes	Check the condition of the other party machine. Send it again after waiting for a while.
N17	LAN access	Communication time out	Yes	Check the condition of the other party machine. Send it again after waiting for a while.
N18	Network error	Network error	No	• Check the each settings. • Check to see if there occurs any abnormal condition with the network, such as the disconnection of a cable. • After turning off and on the main power switch, send it again.
N20	Memory error	Memory overflow	No	• The memory is full. • Check to see if there is any other job being handled. • With the number of transmission sheets reduced or the resolution for read reduced, send it again.
N21	Storage error	Storage error	No	• Storage is full. • Delete unnecessary files. • With the number of transmission sheets reduced or the resolution for read reduced, send it again.
N22	Conversion error	Conversion error	No	After turning off and on the main power switch, send it again.
N25	Memory overflow	Memory overflow	No	• The memory is full. • Check to see if there is any other job being handled. • With the number of transmission sheets reduced or the resolution for read reduced, send it again.
N35	Forward TX	A request for transmission has been received with the NetFAX with the Function Settings OFF. (A request for transfer of the IP address FAX while the IP Address FAX function is being OFF in the service mode.)	No	-
N36		A request has been received for transmission of images that cannot be sent.	No	-

11.2 Error code list of the reception system

Error code	Category	Contents of error	Corrective action
N50	SMTP reception	SMTP reception error	When the SMTP reception does not start in 60 minutes after connection for an incoming call, this error may be resulted. Ask the sender to send it again.
N51	Decode	In excess of the length specified for reception	Ask the sender to send it again after the length of the text being reduced.

Error code	Category	Contents of error	Corrective action
N52	Decode	In excess of the number of pages specified for reception	Ask the sender to send it again after the number of text sheets being reduced.
N53	Decode	File error	Ask the sender to send it again in a correct file format as shown below. • Internet Fax: TIFF • IP Address Fax: PDF or TIFF
N54	Decode	Decode error	The data has been received in an incorrect format. Ask the sender to send it again in a correct format.

11.3 Other

Error code	Category	Contents of error	How to correct

-	Others	A communication error occurs in IP fax (SIP).	• Check the settings for the sender side and receiver side.
			  • Check the port number in [Administrator] -> [Network] -> [SIP setting] -> [SIP Basic Setting], and change the number if it is same as the rooter SIP RX port number.
			• Use G3-FAX via the rooter TEL port.
			• **NOTE**
			  ▪ **Perform communication with a remote station who has an experience of IP fax (SIP).**

12. OPEN API RELATED TROUBLE

12.1 Outline

- Through the Certification Management System provided by OpenAPI, if error is found in communication between the machine and interacting applications developed by company other than KM, an error message is displayed.

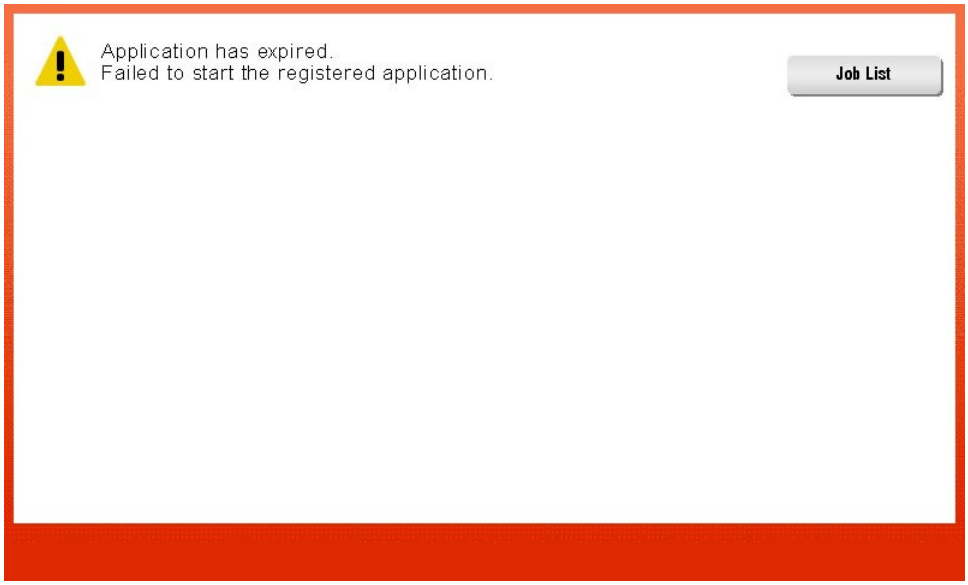
12.2 Types of Trouble

- The Certification Management System provided by OpenAPI certificates and manages communication between main body and non-KM applications that run on the computer connected to the machine. If trouble is detected, the trouble message is displayed on the control panel of the machine or the screen of the computer on which the applications run.
  Trouble messages displayed on the control panel of the main body and actions are described below.

NOTE

- **A message that appears on the computer screen may be different depending on the application being used for communication. The corresponding action may be different, so contact the application vendor for an appropriate action.**

<Examples of trouble messages>



12.3 Solution

- The below describes the OpenAPI certification related trouble messages displayed on the control panel of the main body and actions, dividing them by possible situation.

12.3.1 When using an application

No.	Symptom and message	Action
1	When starting an application, the following message is displayed: Application has expired. Failed to start the registered application. When starting the machine, the following message is displayed: The Enhanced Server Authentication application has expired. Change the User Authentication method to one other than Enhanced Server Authentication.	1. In [Utility] -> [Administrator] -> [Maintenance] -> [Date/Time Setting] -> [Manual Setting], check that the date and time that is set is same as the actual date and time. If a wrong date and time is set, correct it. 2. Contact the application vendor and obtain a new Solution Key (or the application software itself). Using it, perform the steps below. 1) Delete the application. 2) Using the Solution Key (or the application software itself), register the application again.
2	When starting an application, the following message is displayed: Failed to start the registered application. Please contact your service representative. When starting the machine, the following message is displayed: The enhanced server authentication application cannot be used. Please contact your service representative.	In [Service Mode] -> [System1] -> [Marketing Area], change the marketing area of the machine to the one that was selected when the application was registered.
3	In the screen saver application, after a time set, the screen saver does not work.	1. In [Utility] -> [Administrator] -> [Maintenance] -> [Date/Time Setting] -> [Manual Setting], check that the date and time that is set is same as the actual date and time. If a wrong date and time is set, correct it. 2. Contact the application vendor and obtain a new Solution Key (or the application software itself). Using it, perform the steps below. 1) Delete the application. 2) Using the Solution Key (or the application software itself), register the application again.

No.	Symptom and message	Action
		3. In [Service Mode] -> [System1] -> [Marketing Area], change the marketing area of the machine to the one that was selected when the application was registered.

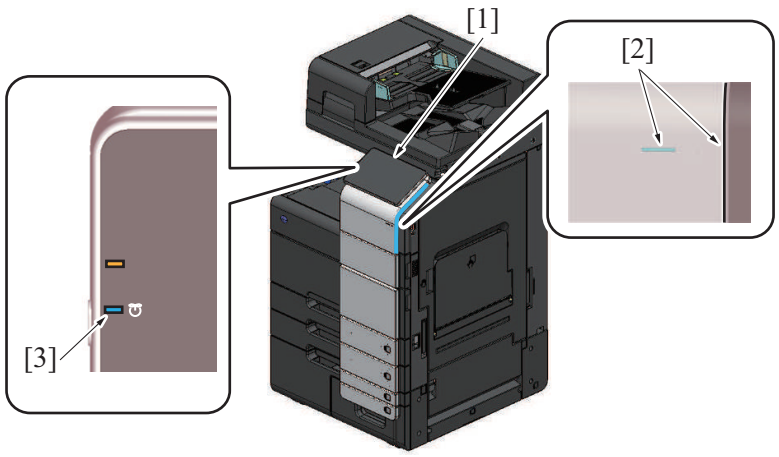
12.3.2 After rewriting the firmware of the machine

No.	Symptom and message	Action
1	When starting an application, the following message is displayed: Failed to start the registered application. Please contact your service representative.	After deleting the application in question, register the application again.
	When starting the machine, the following message is displayed: The enhanced server authentication application cannot be used. Please contact your service representative.	
	In the screen saver application, after a time set, the screen saver does not work.	

13. PANEL BLACKOUT TROUBLE (BOOT DIAGNOSIS FUNCTION)

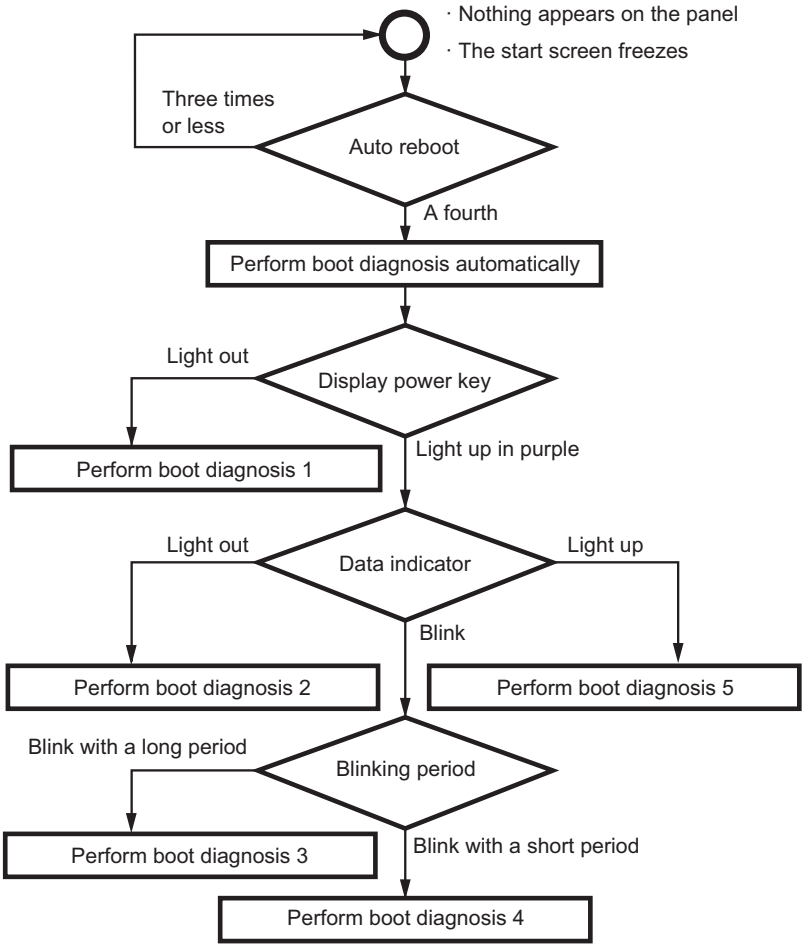
13.1 Boot diagnosis function

- The boot diagnosis is performed when the start screen on the touch panel of the machine freezes or blacks out for some faulty condition.
- The boot diagnosis can be performed automatically to identify a cause of a problem when the machine fails to start properly. (The boot diagnosis can also be performed manually.)
- The result of the boot diagnosis is determined on the basis of the light conditions of "data indicator" and "power key".



[1]	Touch panel	[2]	Data indicator
[3]	Power key	-	-

Boot diagnosis flowchart



13.1.1 Boot diagnosis sequence

1. A fault is detected when the machine is started. (Start screen freezes or blacks out)
2. Auto reboot is performed. (a maximum of three times)

3. The boot diagnosis is performed automatically.
4. After the boot diagnosis is completed, the machine stops in any of the state described in the Boot diagnosis result list.

13.1.2 Manual boot diagnosis procedure

1. Turn OFF the main power switch under the condition in which the start screen freezes or blacks out during the startup sequence.
2. Turn the main power switch on while pressing the power key.
3. After a short beep sound is made once, release the power key and close the front lower door or the front door.
4. The combination of "power key" and "data indicator" displays the result of the boot diagnosis.
5. Check the display combination and turn OFF the main power switch.
6. Perform the procedure according to the result of the boot diagnosis.

13.1.3 Boot diagnosis result list

No.	Power key	Data indicator	Target device	Reason of error	Corrective action procedure
1	Light out	Light out	Control panel unit	• Control panel unit engagement /mounting failure • Control panel unit failure	1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch. 2. Check the control panel unit for proper installation. Correct the mounting of control panel unit if faulty. 3. Reinstall the control panel unit. 4. Replace the cable for the control panel unit. 5. Replace the control panel unit.
2	Light up in purple	Light out	Unable to determine	• Cable breakage • Firmware abnormality	1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch. 2. Check the base board for proper installation. Correct the mounting of control panel unit if faulty. 3. Check the CPU board for proper installation. Correct the mounting of control panel unit if faulty. 4. Replace the cable for the base board. 5. Replace the CPU board. 6. Replace the base board.
3	Light up in purple	Blink (long period)	Memory	On-board memory failure	1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch. 2. Replace the CPU board. 3. Replace the base board.
4	Light up in purple	Blink (short period)	Storage board	• Storage board engagement /mounting failure • Storage board failure	1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch. 2. Reinstall the storage board. 3. Replace the storage board. 4. Replace the CPU board. 5. Replace the base board.
5	Light up in purple	Light up	Software	Software trouble	1. Turn OFF the main power switch and unplug the power cord. Connect the power cord after 15 sec. or more, and turn ON the main power switch. 2. Reinstall the firmware. 3. Reinstall the storage board. 4. Replace the storage board. After that, reinstall the firmware. 5. Replace the CPU board. 6. Replace the base board.

NOTE

- **Perform the troubleshooting in the sequence from step 1 of "Corrective action procedure" against each item while checking that if each trouble has been resolved. Do not perform the troubleshooting against all troubles at once.**

13.1.4 How to reset the boot diagnosis result

1. Turn OFF the main power switch. Wait for 10 sec. or more, and turn ON the main power switch.
   Reboot the machine.
   NOTE
   - **The freeze state is reproduced if the cause of the fault has not been eliminated.**

14. TROUBLES THAT DO NOT DISPLAY THE TROUBLE CODE

14.1 Machine is not energized at all (DCPU operation check)

Contents

Trouble type	Machine is not energized at all
Rank	-
Trouble detection condition	-
Trouble isolation	-
Relevant electrical parts	• Main power switch (SW1) • Base board (BASEB) • DC power supply (DCPU)

Procedure

Step	Check item	Location of electrical component	Result	Action
1	Is a power voltage supplied across CN1-1 and 2 on DCPU?	7-T	NO	Check wiring from power outlet to DCPU CN1.
2	Are the fuses on DCPU conducting?	-	NO	Replace DCPU.
3	Is DC5 V being output to CN5-1, 2, 3 on DCPU?	9 to 10-T	NO	Replace DCPU.
4	Is DC24 V being output to CN6-3, 10 on DCPU?	7 to 8-T	NO	• Check the WIRING from the wall BASEB to DCPU. • Replace DCPU. • Replace BASEB.
5	The LED on BASEB is blinking?	-	NO	Replace BASEB.
6	Is DC24 V being output to CN6-1, 8 on DCPU?	7 to 8-T	NO	Replace DCPU.

14.2 Fusing heaters do not operate

Contents

Trouble type	Fusing heaters do not operate
Rank	-
Trouble detection condition	-
Trouble isolation	-
Relevant electrical parts	• Main power switch (SW1) • Right door switch (SW3) • DC power supply (DCPU) • Base board (BASEB) • Fusing unit

Procedure

Step	Check item	Location of electrical component	Result	Action
1	Is a power voltage supplied across CN6-1, 8 on DCPU? During this time, the right door should be closed.	7 to 8-T	NO	Check wiring from power outlet to DCPU to BASEB to SW3.
2	Is the power source voltage applied across BASEB CN4E-5, 13?	7 to 8-F	YES	Replace the fusing unit.
			NO	• Replace DCPU. • Replace BASEB.

14.3 Power is not supplied to DF

Contents

Trouble type	Power is not supplied to DF
Rank	-
Trouble detection condition	-
Trouble isolation	-
Relevant electrical parts	• DC power supply (DCPU) • DF

Procedure

Step	Check item	Location of electrical component	Result	Action
1	Is DC24 V being output from CN1DF-1 on DF?	3-K	YES	Malfunction in DF.
2	Is DC24 V being output from CN6-5 on DCPU?	8-T	NO	Check wiring from DCPU to DF.
3	Are the fuses on DCPU conducting?	-	YES	Replace DCPU.
			NO	Malfunction in DF.

14.4 Power is not supplied to option

Contents

Trouble type	Power is not supplied to FS-539/FS-539SD/FS-540/FS-540SD.
Rank	-
Trouble detection condition	-
Trouble isolation	-
Relevant electrical parts	• DC power supply (DCPU) • FS-539/FS-539SD/FS-540/FS-540SD

Procedure

Step	Check item	Location of electrical component	Result	Action
1	Is DC24 V being output from CN1FS-1?	5-K	NO	Malfunction in finisher.
2	Is DC24 V being output from CN6-6 on DCPU?	8-T	NO	Check wiring from DCPU to finisher.
3	Are the fuses on DCPU conducting?	-	YES	Replace DCPU.
			NO	Malfunction in finisher.

15. OTHER TROUBLE

15.1 Firmware error warning

- Warning message: A firmware error occurred.
- While the enhanced security mode is enabled, if MFP is restarted by turning the main power switch OFF and ON or other operations, self-testing is performed internally. If the self-testing detects firmware error, this warning appears.

Action

1. Set Enhanced Security Mode to “OFF” in Administrator Settings and touch “OK.”
2. Turn OFF and ON the main power switch.
3. Check that the warning screen is not displayed.
4. Rewrite the firmware.
5. Set the Enhanced Security Mode.

15.2 Storage lock password error warning

Detection timing

- Warning message: Reset Storage Lock Password.
- There is a mismatch between the password registered in the storage and that registered in the main body.
- Wrong machine type information is input.

Action

< Checking the machine type information >

NOTE

- **Perform the following steps, if this malfunction occurs when the CPU board is replaced with a new one.**
- **Prepare a USB flash drive in which firmware data is recorded.**

1. Call the firmware update selection screen to the display.
   NOTICE
   - K.2 USB memory
2. Touch [Machine Type Select].
3. Check the setting values of [Machine] and [Type] and enter the correct setting values. For details, see “Entering the machine type information”.

< Re-registering the correct Storage Lock Password >

1. Touch Menu.
2. Touch [Utility].
3. Touch [Storage Management].
4. Enter the administrator password and touch [OK].
5. Touch [Storage Lock Password].
6. Enter the currently set Storage Lock Password twice.
7. Touch [END].
8. When the screen that indicates the completion of setting of the Storage Lock Password appears, turn OFF and ON the main power switch.

< Performing Storage Physical Format >

1. Call the Service Mode to the screen.
2. Touch these keys in this order: [State Confirmation] -> [Memory/Storage Adjustment] -> [Format].
3. Touch [Physical Format].
4. Touch [Start].
5. When Physical Format is completed, turn OFF and ON the main power switch.

16. TROUBLESHOOTING OF i-Option

16.1 Structure of license management

- The functions available with i-Option can be activated by entering “License code” to the main body.
- License code is issued and controlled by License Management System (LMS).
  To prevent unauthorized use of the license code, each main body is identified individually so that the license code cannot be activated unless it matches with the authorized the main body.

16.2 License management information

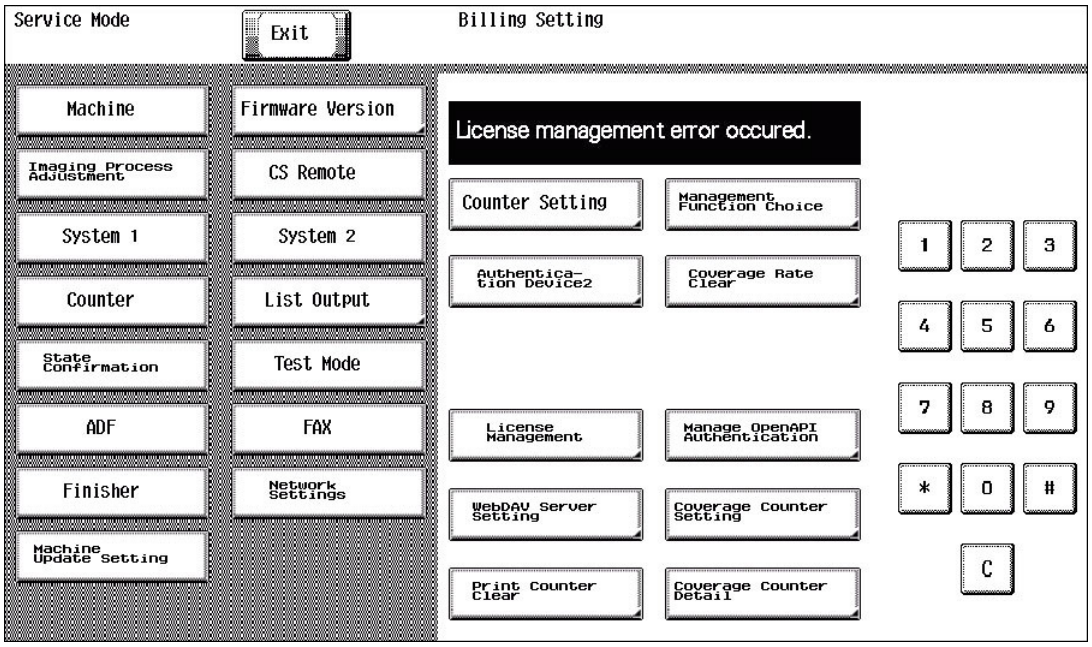
- Since license code needs to identify each main body, it is issued using the serial number of main body and “unique value” that is generated inside the main body.
- The “unique value” is stored to the memory region on the CPU board and at the same time some parts of it are memorized by storage board. The activated function cannot be used unless the both figures conform.
  Since these figures are out of target of [Memory Data Backup], when any trouble occurs at either nonvolatile memory, “License Management Error” is generated due to discordance of the figures.

16.3 Error message

16.3.1 License management error

- When abnormal value is detected in the license management information that is stored to the CPU board or storage board, or some values are detected cleared, warning is issued to let the user know the abnormality.
- The abnormality is detected at the timing of start-up or restart due to any condition.
- When the abnormality is detected, the corresponding i-Option function cannot be used, other ordinal functions, however, such as copy, scanning, print or etc, can be used without interruption. (Error message is displayed on the Service Mode screen.)

(1) Example of error message



(2) Main reasons of trouble

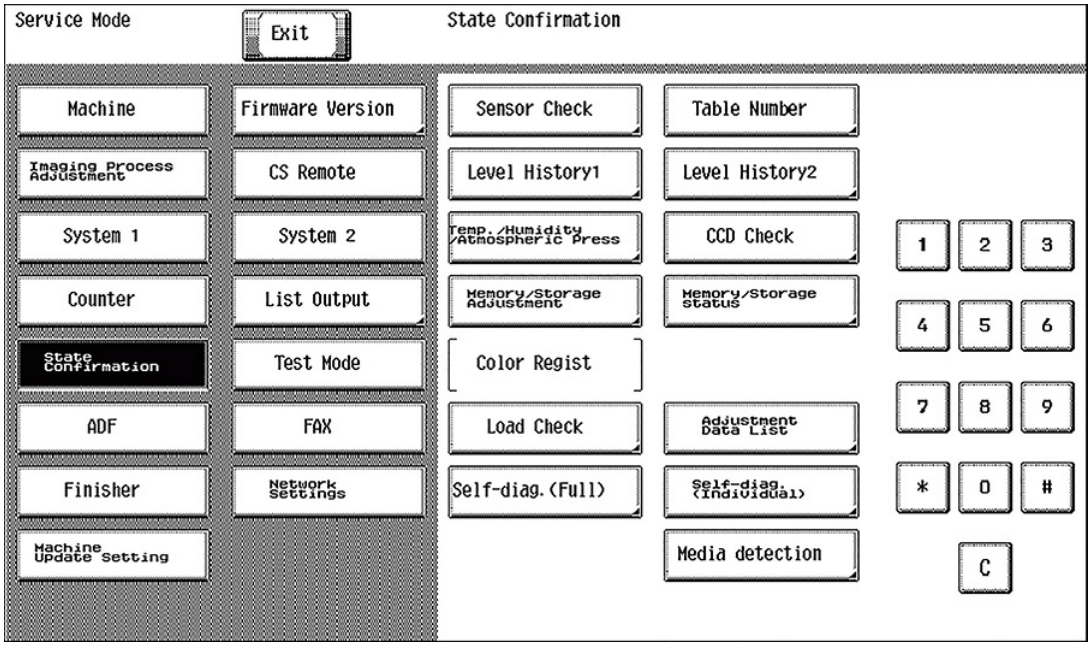
- The following shows the possible trouble factors and their countermeasure.

Board replacement	Action
When CPU board and storage board are replaced with the new ones at the same time.	Install firmware, follow the setup procedure.
When mounting the CPU board of the machine whose function(s) have already been activated and a new storage board.	Install firmware, then restore the data using restore procedure.

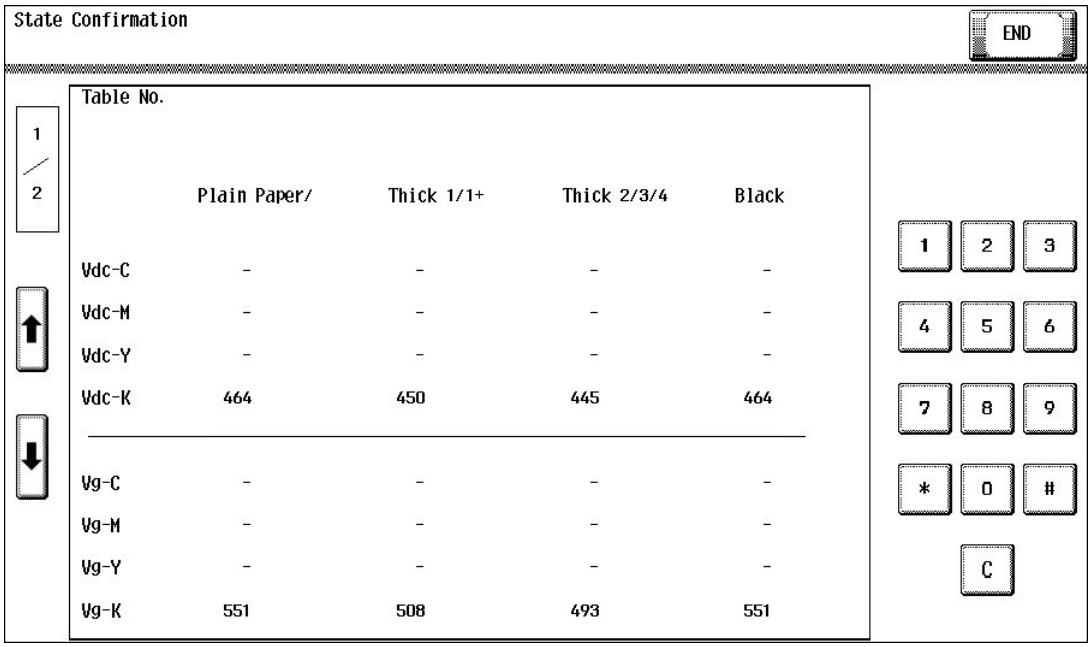
17. IMAGE QUALITY PROBLEM

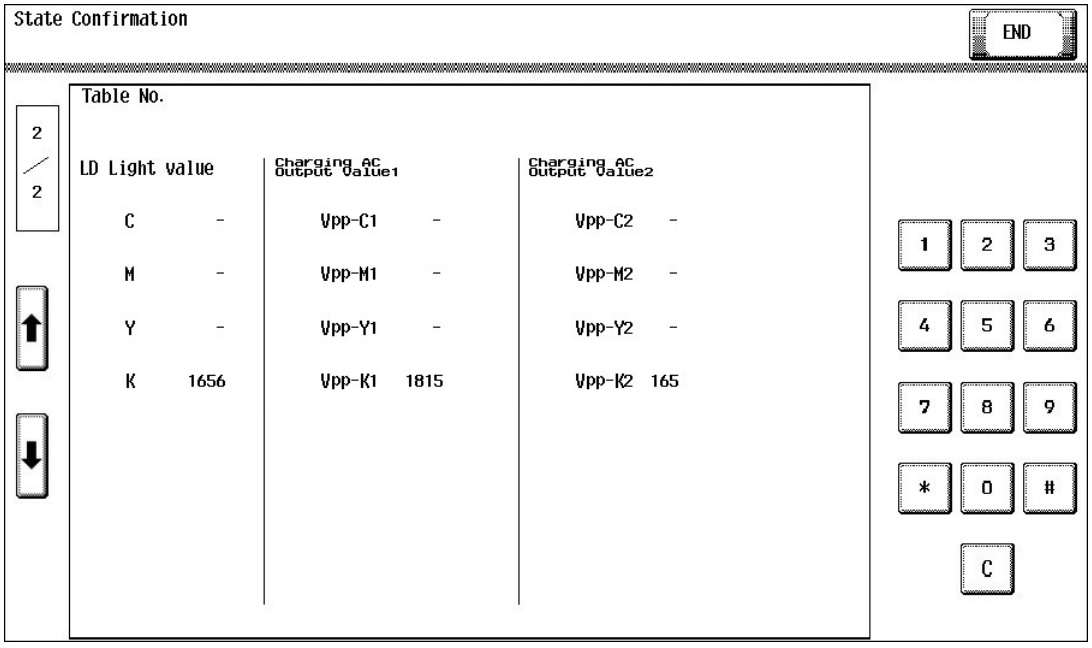
17.1 How to read element data

- As part of troubleshooting procedures, the numeric values set for “State Confirmation” available from “Service Mode” can be used to isolate the cause of the image problem.



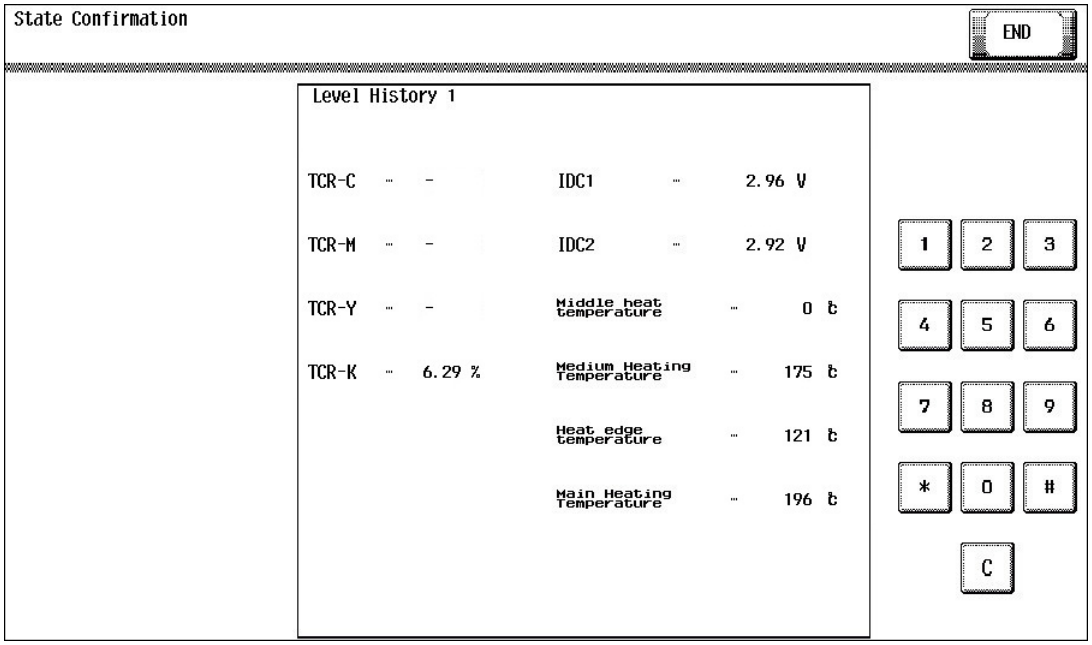
17.1.1 Table Number





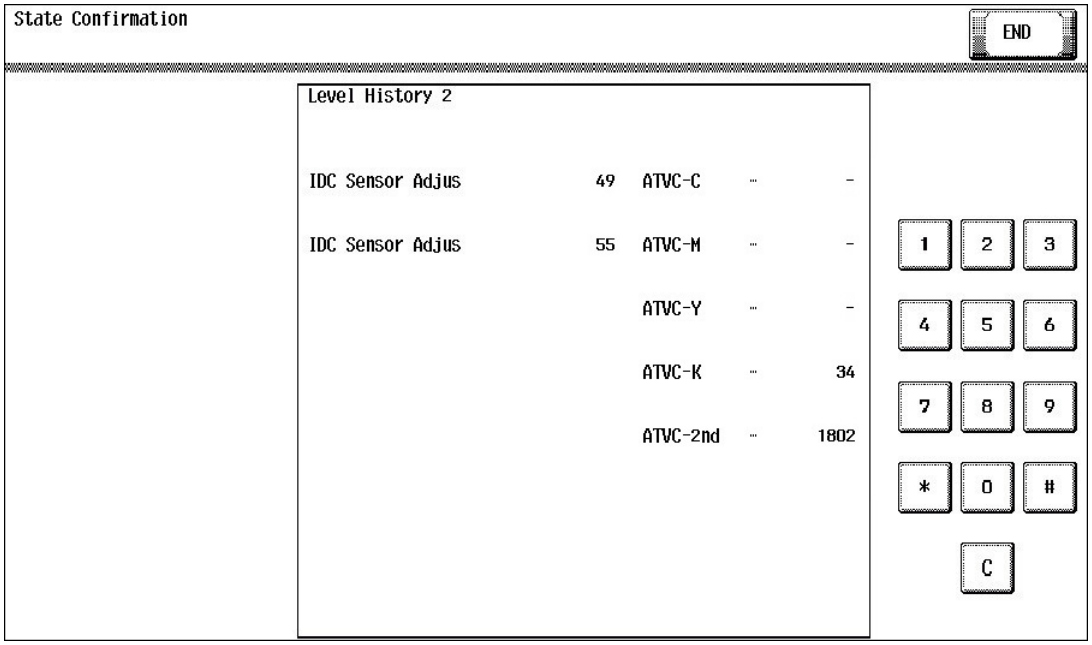
Vdc-C (Not used) Vdc-M (Not used) Vdc-Y (Not used) Vdc-K	• Shows the developing bias value of toner during print image formation. • Standard values: Around 300 to 500 (100 to 800) • The specific numeric values vary with different developing units. (The values incorporate corrections to match the proper density after image stabilization.) * As a guide, the value tends to be high when the developer is new and the humidity of the installation environment is low, and the value is low when the developer has been used and the humidity of the installation environment is high. • Relevant components: Developing unit, drum unit, high voltage unit (HV)
Vg-C (Not used) Vg-M (Not used) Vg-Y (Not used) Vg-K	• Shows the grid voltage value of toner during print image formation. • Standard values: Around 400 to 600 (300 to 1000) • The specific numeric values vary with different developing units. (The values incorporate corrections to match the proper density after image stabilization.) * As a guide, the value is determined by the Vdc determined by stabilization control and image background adjustment value. • Relevant components: Developing unit, drum unit, high voltage unit (HV)
LD Light Value (C, M, Y) (Not used) LD Light Value (K)	• Shows the LD light value of toner during print image formation. • Standard values: Around 1500 to 2200 (1400 to 3600) * As a guide, the value tends to be low when the photoconductor is new, and the value is high when the photoconductor has been used. • Relevant components: PH unit, drum unit
Charging AC Output Value 1 Vpp-C1 (Not used) Vpp-M1 (Not used) Vpp-Y1 (Not used) Vpp-K1	• Shows the AC voltage value applied to the charging roller of toner during print image formation. • Standard values: Around 1200 to 2000 (500 to 3000) • Relevant components: Drum unit, high voltage unit (HV)
Charging AC Output Value 2 Vpp-C2 (Not used) Vpp-M2 (Not used) Vpp-Y2 (Not used) Vpp-K2	• Shows the current value applied to the charging roller of toner during print image formation. • Standard values: Around 120 to 145 (0 to 350) • Relevant components: Drum unit, high voltage unit (HV)

17.1.2 Level History 1



TCR-C (Not used) TCR-M (Not used) TCR-Y (Not used) TCR-K	• Shows the T/C ratio. (in 0.01 % increments) • Target: 5 to 8 % • As a guide, when the value is high, tends to be fogging, and when the value is low, tends to be low image density followability. • Relevant components: TCR sensor
IDC1 IDC2	• Shows the IDC bare surface output value. (in 0.01 V increments) • It should normally be around 3.0 V. • The output range is 0 V to 3.4 V. • Relevant components: IDC sensor, transfer belt unit
Middle heat temperature Medium Heating Temperature Heat edge temperature Main Heating Temperature	• Shows the temperature of the fusing unit. (in 1 °C increments) • Relevant components: Fusing unit

17.1.3 Level History 2



IDC Sensor Adjust 1 IDC Sensor Adjust 2	• Shows the IDC intensity adjustment value. • It should normally be around 70. • The range is 0 to 255. • The value becomes greater as the transfer belt unit has been used more. • Relevant components: IDC sensor, transfer belt unit
ATVC -C (Not used) ATVC -M (Not used) ATVC -Y (Not used) ATVC -K	• Shows the latest ATVC level (which varies according to the paper type). • ATVC-K: 11 µA to 41 µA • ATVC-2nd: 300 V to 5,000 V • Relevant components: Transfer belt unit, High voltage unit (HV), 2nd transfer roller

ATVC -2nd	

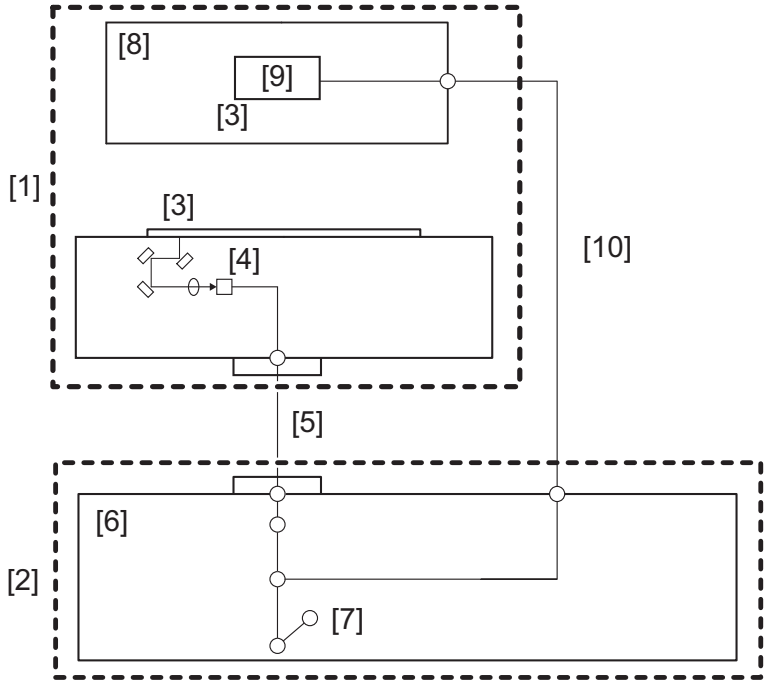
17.2 Troubleshooting procedure overview

17.2.1 Test pattern printing

- Following give an overview of a procedure to isolate a faulty spot of an image trouble using a test pattern.
- A faulty spot that is responsible for an image trouble is isolated by printing a test pattern to determine whether an image trouble is evident.

(1) Classify procedure where image trouble is occurred

- If an image trouble occurs during a copy cycle, use the image trouble that may be evident on the test pattern printed to determine whether the trouble is attributable to the scanner system or the printer system.
- If no image trouble occurs on a test pattern produced following a print cycle, the image trouble is determined to be attributable to the scanner system.



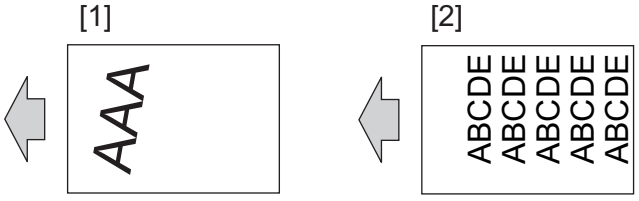
[1]	Scanner system	[2]	Printer system
[3]	Document scan	[4]	CCD board (CCDB)
[5]	I/F cable (only front side)	[6]	Base board (BASEB)
[7]	Print output	[8]	DF
[9]	CIS module (CIS)	[10]	I/F cable (only rear side)

17.3 Corrective action procedure

17.3.1 Skewed image/Image deviation

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.

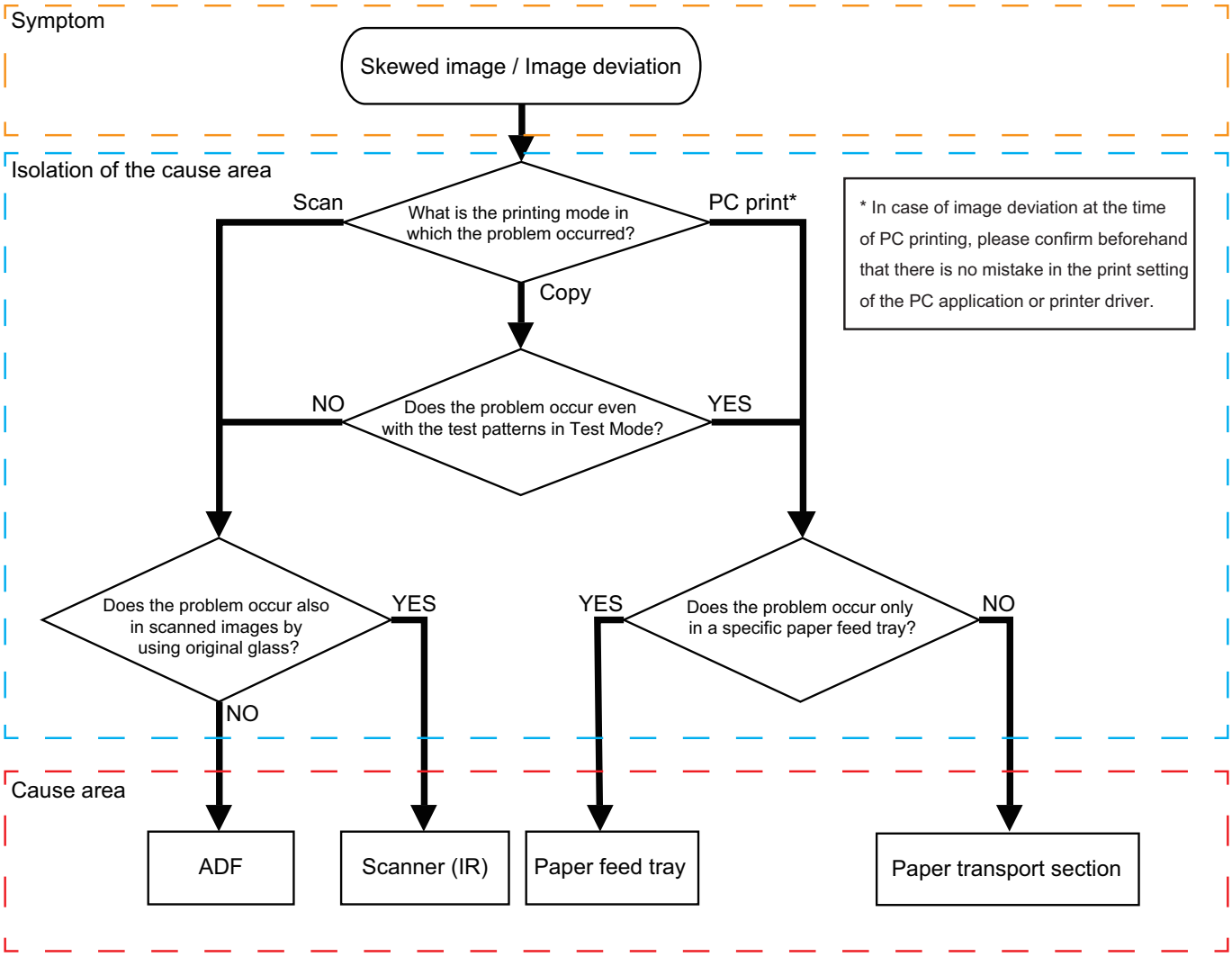


[1]	Skewed image	[2]	Image deviation

(2) Troubleshooting procedure

Flowchart for isolating the cause area

- The figure below is a flowchart for isolating the cause area of image deviation / skewed image (four main cause areas are covered).
- After isolating the cause area according to the flowchart, please perform the troubleshooting described on the next page for each cause area.



Troubleshooting steps for each cause area

NOTE

- **If the problem can not be solved after "(1) First steps of troubleshooting," check "(2) Individual adjustment items".**
- **In "(2) Individual adjustment item," perform adjustment and test according to the manual description procedure of each item.**

< ADF >

(1) First steps of troubleshooting

Step	Contents
1	Check the set position of original and document width guide, and correct it if needed.
2	Check the paper path, and remove any paper pieces or foreign matters.
3	Check each roller for dirt and wear, and clean or replace it if needed.
4	If there is looseness in the screw of the ADF hinge part, fix it and perform the installation settings of ADF.
5	Perform test printing/scanning to check whether the problem has been resolved. If it can not be resolved, confirm "(2) individual adjustment items".

(2) Individual adjustment items

Skewed image	1. ADF adjusting the height
	2. Skew Measurement
	3. Registration Loop Adj. (Perform this item only if the problem is not resolved by adjustment 1 and 2.)
Image deviation	1. Feed Zoom
	2. FD-Mag. Adj. (B)
	3. Auto Stop Position Adjustment (Before performing this adjustment, adjustment 1 and 2 needs to be completed.)

NOTE

- **If the trouble can not be solved by the above adjustment, replace the CCD unit.**
- **If there is a problem only on the back side image after the above adjustment, replace the CIS module.**

< Scanner (IR) >

(1) First steps of troubleshooting

Step	Contents
1	Check the set position of original, and correct it if needed.

Step	Contents
2	When using a thick original (like a book), check whether the user strongly presses the document cover/ADF. *The scanner section may not move smoothly due to the excessive pressure, and which may cause image deviation.
3	If original glass is not installed properly, reinstall original glass.
4	Perform test printing/scanning to check whether the problem has been resolved. If it can not be resolved, confirm "(2) individual adjustment items".

(2) Individual adjustment items

Image deviation	Scanner Area

NOTE
If the trouble can not be solved by the above adjustment, replace the CCD unit.

< Paper feed tray >
(1) First steps of troubleshooting

Step	Contents
1	Correct the paper settings, if the paper size/type in the tray and the paper settings selected on the machine are not matched.
2	Check the set position of paper or paper length guide / paper width guide, and correct it if needed. * For a paper tray that uses only a specific paper size, it is possible to fix the paper width guide to a specific paper size position by attaching a screw to the screw hole on the paper width guide (back side). It is possible to prevent problems due to wrong paper setting, but be careful as users will not be able to change paper sizes by themselves.
3	Check the paper path and the back side of the tray, and remove any paper pieces or foreign matters.
4	Check each roller for dirt and wear, and clean or replace it if needed.
5	Perform test printing to check whether the problem has been resolved. If it can not be resolved, confirm "(2) individual adjustment items".

(2) Individual adjustment items

Skewed image	Printer Reg. Loop Adj.
Image deviation	Printer Area * If the image deviation in the main scan direction (side edge) can not be adjusted completely, perform the mechanical adjustment on below for the affected tray.
	Mechanical adjustment: Centering adjustment of the tray 1/2 / Centering adjustment of the tray 3/4

NOTE
If the trouble can not be solved by the above adjustment, check the Paper transport section.

< Paper transport section >
(1) First steps of troubleshooting

Step	Contents
1	Check the set position of paper or paper length guide / paper width guide, and correct it if needed. * For a paper tray that uses only a specific paper size, it is possible to fix the paper width guide to a specific paper size position by attaching a screw to the screw hole on the paper width guide (back side). It is possible to prevent problems due to wrong paper setting, but be careful as users will not be able to change paper sizes by themselves.
2	If the Right door unit / Regist unit (inner door on the vertical transport section) is half-open, make it correct position.
3	Check the paper path, transport rollers, and registration section, and remove any paper pieces / foreign matters / paper dust.
4	Perform test printing to check whether the problem has been resolved. If it can not be resolved, confirm "(2) individual adjustment items".

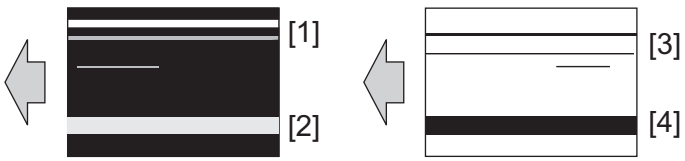
(2) Individual adjustment items

Skewed image	Printer Reg. Loop Adj.

NOTE
If the trouble can not be solved by the above adjustment, reinstall the Right door unit / Regist unit.

17.3.2 White line 1, white band 1, black line 1, black band 1

Typical faulty images
The arrow in the exemplary image troubles indicates the paper feeding direction.



[1]	White line	[2]	White band
[3]	Black line	[4]	Black band

Initial troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
2	Service Mode -> Stabilizer	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only] and the image trouble is eliminated.	NO	Go to the next step.
3	Service Mode -> Gradation Adjust	Select [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust] and the image trouble is eliminated.	NO	Go to the next step.
4	Image check	• Select [Service Mode] -> [Test Mode] -> [Halftone Pattern]. Select "SINGLE", "HYPER", "Error diffusion", "1-Sided", "Black(1PC)", and "Full Bleed", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • Check the image after printing and the abnormal image is evident.	YES	Go to engine troubleshooting procedure.
			NO	Go to scanner troubleshooting procedure.

Engine troubleshooting procedure

Step	Section	Check item	Result	Action
1	Write section	Sharp white line or black line is blurry.	YES	Clean the PH window.
2	Charging section	Foreign matter on charging roller.	YES	Lightly wipe the surface clean of foreign matter using hydro-wipe (65AA-99##). Note: Do not apply a strong force to the surface of the charging roller. As doing so can damage the surface.
3	Photoconductor section	There is a positive contact between the electrostatic charger application terminals and the high voltage unit connection terminals.	NO	Clean or correct the terminal.
4	Developing section	There is a positive contact between the developing bias application terminals and the high voltage unit connection terminals (B1).	NO	Clean or correct the terminal.
5	Photoconductor section	Scratches on photoconductor.	YES	• Clean. • Replace the drum unit.
6	Photoconductor section	Toner line or dirt on photoconductor. (improper cleaning)	YES	Replace the drum unit.
7	Photoconductor section	Faint lines evident on the entire surface as if the surface were brushed off.	YES	Replace the drum unit.
8	1st transfer section	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1-1).	NO	Clean or correct the terminal.
9	1st transfer section	Scratches or dirt on 1st transfer roller.	YES	• Clean. • Replace the transfer belt unit.
10	Developing section	Toner bristles not even on the developing roller, resulting in a line or band.	YES	Replace the developing unit.
11	Paper path	There is dirty or foreign matter on paper path.	YES	Check or clean the paper path including the duplex section.
12	Transfer belt unit	Lines that can be removed by cleaning are evident on the transfer belt. (improper cleaning)	YES	• Check or clean the cleaning blade. • Replace the transfer belt unit.
13	Transfer belt unit	Dirt, scratches, or foreign matter on the transfer belt.	YES	• Clean. • Replace the transfer belt unit.
14	2nd transfer section	Dirt or foreign matter on the 2nd transfer roller.	YES	• Remove the foreign matter. • Replace the transfer roller unit.
15	2nd transfer section	There is a positive contact between the application terminals of the 2nd transfer and the connection terminals (T2, E1) and ground terminal of the high voltage unit.	NO	Clean or correct the terminal.
16	Fusing unit	There is dirty or foreign matter on paper path of fusing unit.	YES	Clean. (Disassembling the fusing unit is prohibited.)
17	Fusing unit	Scratches on belt or roller in fusing unit.	YES	Replace the fusing unit.
			NO	• Replace the PH unit. • Replace the high voltage unit. • Replace the base board.

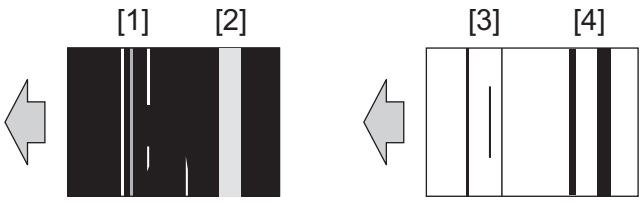
Scanner troubleshooting procedure

Step	Section	Check item	Result	Action
1	Original	Original is damaged or dirty.	YES	Change the original.
2	When original glass is being used	A fault occurs in the image read through the original glass.	YES	Go to step 5.
3	When DF is being used: 1st side	A fault occurs in the image read from the 1st side while DF is being used.	YES	Go to step 11.
4	When DF is being used: 2nd side	A fault occurs in the image read from the 2nd side while DF is being used.	YES	Go to step 18.
Main body side_original glass				
5	DF side_ Original pad	Original pad of DF is dirty.	YES	Clean.
6	Original glass	Original glass is dirty.	YES	Clean.
7	Shading sheet	Shading sheet is dirty.	YES	Clean.
8	End face of original is reproduced as a line	Select [Service Mode] -> [Machine] -> [Scan Area] -> [Scanner Image Side Edge] and make the necessary adjustment, and the image trouble is eliminated.	NO	Go to the next step.
9	Line occurring due to faulty shading	Select [Service Mode] -> [Machine] -> [Scan Area] -> [Image Position: Leading Edge] and make the necessary adjustment, and the image trouble is eliminated.	NO	Go to the next step.
10	Parts along scanning path	Mirror, lens, light guide or reflectors is dirty.	YES	Clean.
			NO	• Replace the LED exposure unit. • Replace the CCD unit.
Main body side_DF original reading section				
11	Main body side_reading section	Document reading glass of main body is dirty.	YES	Clean.
12	DF side_ document reading glass cleaning brush	Document reading glass cleaning brush of DF is dirty.	YES	Clean.
13	Main body side_shading sheet	Shading sheet of main body is dirty.	YES	Clean.
14	When DF is being used: 1st side: End face of original is reproduced as a line	Select [Service Mode] -> [ADF] -> [Original Stop Position] -> [Sub Scanning Direction 1-Side] and make the necessary adjustment, and the image trouble is eliminated.	NO	Go to the next step.
15	Service Mode -> Read Pos Adj	Select [Service Mode] -> [ADF] -> [Read Pos Adj] -> [Auto Adjust] and the image trouble is eliminated.	NO	Go to the next step.
16	Line occurring due to faulty shading	Select [Service Mode] -> [Machine] -> [Scan Area] -> [Image Position: Leading Edge] and make the necessary adjustment, and the image trouble is eliminated.	NO	Go to the next step.
17	Parts along scanning path	Mirror, lens, light guide, or reflectors is dirty.	YES	Clean.
			NO	• Replace the LED exposure unit. • Replace the CCD unit.
DF side_original reading section				
18	CIS glass cleaning	CIS glass is dirty.	YES	Clean.
19	CIS reading section	CIS reading section is dirty.	YES	Clean.
20	CIS cleaning brush	CIS cleaning brush is dirty.	YES	Clean.
21	Shading sheet	Shading sheet is dirty.	YES	Clean.
22	When is DF being used: 2nd side: End face of original is reproduced as a line	Select [Service Mode] -> [ADF] -> [Original Stop Position] -> [Sub Scanning Direction 2-Side] and make the necessary adjustment, and the image trouble is eliminated.	NO	Go to the next step.
23	When DF is being used: 2nd side: Home Read Position	Select [Service Mode] -> [ADF] -> [Home Read Position Adjust] and the image trouble is eliminated.	NO	Go to the next step.
24	Scanning section	CIS reading section is dirty.	YES	Clean.
			NO	Replace the CIS module.

17.3.3 White line 2, white band 2, black line 2, black band 2

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



[1]	White line	[2]	White band
[3]	Black line	[4]	Black band

Initial troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
2	Service Mode -> Stabilizer	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only] and the image trouble is eliminated.	NO	Go to the next step.
3	Service Mode -> Gradation Adjust	Select [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust] and the image trouble is eliminated.	NO	Go to the next step.
4	Image check	• Select [Service Mode] -> [Test Mode] -> [Halftone Pattern]. Select "SINGLE", "HYPER", "Error diffusion", "1-Sided", "Black(1PC)", and "Full Bleed", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • Check the image after printing and the abnormal image is evident.	YES	Go to engine troubleshooting procedure.
			NO	Go to scanner troubleshooting procedure.

Engine troubleshooting procedure

Step	Section	Check item	Result	Action
1	Write section	Sharp white line or black line is blurry.	YES	Clean the PH window.
2	Charging section	Foreign matter on charging roller.	YES	Lightly wipe the surface clean of foreign matter using hydro-wipe (65AA-99##). Note: Do not apply a strong force to the surface of the charging roller. As doing so can damage the surface.
3	Photoconductor section	There is a positive contact between the electrostatic charger application terminals and the high voltage unit connection terminals.	NO	Clean or correct the terminal.
4	Developing section	There is a positive contact between the developing bias application terminals and the high voltage unit connection terminals (B1).	NO	Clean or correct the terminal.
5	Photoconductor section	Scratches on photoconductor.	YES	• Clean. • Replace the drum unit.
6	Photoconductor section	Toner line or dirt on photoconductor. (improper cleaning)	YES	Replace the drum unit.
7	1st transfer section	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1-1).	NO	Clean or correct the terminal.
8	1st transfer section	Scratches or dirt on 1st transfer roller.	YES	• Clean. • Replace the transfer belt unit.
9	Developing section	Toner bristles not even on the developing roller, resulting in a line or band.	YES	Replace the developing unit.
10	Paper path	There is dirty or foreign matter on paper path.	YES	Check or clean the paper path including the duplex section.
11	Transfer belt unit	Lines that can be removed by cleaning are evident on the transfer belt. (improper cleaning)	YES	• Check or clean the cleaning blade. • Replace the transfer belt unit.
12	Transfer belt unit	Dirt, scratches, or foreign matter on the transfer belt.	YES	• Clean. • Replace the transfer belt unit.
13	Transfer belt unit	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1-1).	NO	Clean or correct the terminal.
14	2nd transfer section	Dirt or foreign matter on the 2nd transfer roller.	YES	• Remove the foreign matter. • Replace the transfer roller unit.

Step	Section	Check item	Result	Action
15	2nd transfer section	There is a positive contact between the application terminals of the 2nd transfer and the connection terminals (T2, E1) and ground terminal of the high voltage unit.	NO	Clean or correct the terminal.
16	Fusing unit	Dirt or foreign matter on paper path or separation claw of the fusing unit.	YES	Clean. (Disassembling the fusing unit is prohibited.)
17	Fusing unit	Scratches on belt or roller in fusing unit.	YES	Replace the fusing unit.
			NO	• Replace the PH unit. • Replace the high voltage unit. • Replace the base board.

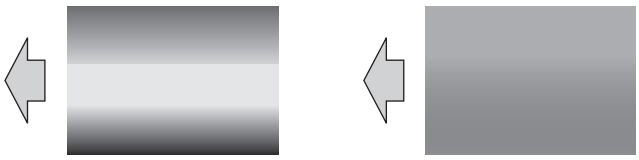
Scanner troubleshooting procedure

Step	Section	Check item	Result	Action
1	Original	Original is damaged or dirty.	YES	Change the original.
2	Original Type	Select [Copy] -> [Original Type] and change the setting, and the image trouble is eliminated.	YES	Correct the setting.
3	When original glass is being used: Service Mode -> Scan Area	Select [Service Mode] -> [Machine] -> [Scan Area] -> [Image Position: Leading Edge] and make the necessary adjustment, and the image trouble is eliminated.	NO	Go to the next step.
4	When original glass is being used	Original glass or original pad is dirty.	YES	Clean.
			NO	Replace the CCD unit.
5	When DF is being used: 1st side: End face of original is reproduced as a line	Select [Service Mode] -> [ADF] -> [Auto Stop Position Adjustment] -> [Main Scanning (Front)] and the image trouble is eliminated.	NO	Go to the next step.
6	When DF is being used: 2nd side: End face of original is reproduced as a line	Select [Service Mode] -> [ADF] -> [Auto Stop Position Adjustment] -> [Main Scanning (Back)] and the image trouble is eliminated.	NO	Go to the next step.
7	When DF is being used: 1st side	Document reading glass or document reading glass cleaning brush is dirty.	YES	Clean.
			NO	Replace the CCD unit.
8	When DF is being used: 2nd side	CIS glass or CIS cleaning brush is dirty.	YES	Clean.
			NO	Replace the CIS module.

17.3.4 Uneven density 1

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



Troubleshooting procedure

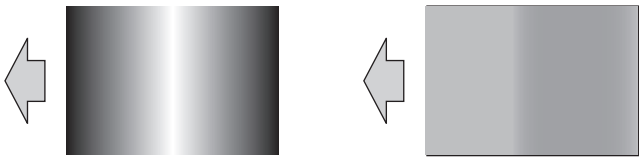
Step	Section	Check item	Result	Action
1	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
2	IDC sensor	IDC sensor is dirty.	YES	Clean.
3	Service Mode -> Stabilizer	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only] and the image trouble is eliminated.	NO	Go to the next step.
4	Service Mode -> Gradation Adjust	Select [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust] and the image trouble is eliminated.	NO	Go to the next step.
5	Image check	• Select [Service Mode] -> [Test Mode] -> [Halftone Pattern]. Select "SINGLE", "HYPER", "Error diffusion", "1-Sided", "Black(1PC)", and "Full Bleed", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • Check the image after printing and the abnormal image is evident.	YES	Go to the next step.

Step	Section	Check item	Result	Action
6	High image density original	Uneven density in sub scan direction occurs at a pitch of 40 mm to 50 mm when a multi-copy cycle is run using an original with high image density (50% or more).	YES	Feed 10 to 20 blank sheets of paper with no originals placed, as the developing unit fails to keep up with a high demand for toner.
7	Service Mode -> LD 1/2 Balance Adjustment	Select [Service Mode] -> [Machine] -> [LD adjustment] -> [LD 1/2 Balance Adj.] and the image trouble is/ eliminated.	NO	Go to the next step.
8	Service Mode -> TCR Level Setting	Select [Service Mode] -> [Imaging Process Adjustment] -> [TCR Level Setting] and make the necessary adjustment, and the image trouble is eliminated.	NO	Go to the next step.
9	Write section	Dirt or foreign matter on the dust-proof glass of the PH.	YES	Clean the PH window.
10	Charging section	Foreign matter on charging roller.	YES	Lightly wipe the surface clean of foreign matter using hydro-wipe (65AA-99##). Note: Do not apply a strong force to the surface of the charging roller. As doing so can damage the surface.
11	Photoconductor section	Dirt, scratches, or foreign matter on the photoconductor.	YES	• Clean. • Replace the drum unit.
12	1st transfer section	Dirt, scratches, or foreign matter on the 1st transfer roller.	YES	• Clean. • Replace the transfer belt unit.
13	1st transfer section	Faulty pressure/retraction operation of the 1st transfer roller.	YES	• Correct or replace the drive system. • Replace the transfer belt unit.
14	Developing section	Toper hopper operates improperly or contains foreign matter.	YES	• Correct or remove. • Replace the hopper drive unit.
15	Developing section	Toner bristles not even on the developing roller, resulting in a line or band.	YES	Replace the developing unit.
16	Paper path	There is dirty or foreign matter on paper path.	YES	Check and clean the paper path including the duplex section.
17	Transfer belt unit	Lines that can be removed by cleaning are evident on the transfer belt. (improper cleaning)	YES	• Check and clean the cleaning blade. • Replace the transfer belt unit.
18	Transfer belt unit	Dirt, scratches, or foreign matter on the transfer belt.	YES	• Clean. • Replace the transfer belt unit.
19	Transfer belt unit	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1-1).	NO	Clean or correct the terminal.
20	Transfer belt unit	Transfer belt rotates faultily.	YES	Replace the transfer belt unit.
21	2nd transfer section	Dirt or foreign matter on the 2nd transfer roller.	YES	• Remove the foreign matter. • Replace the transfer roller unit.
22	2nd transfer section	Faulty pressure/retraction operation of the 2nd transfer roller.	YES	• Correct. • Replace the transfer roller unit.
23	2nd transfer section	There is a positive contact between the application terminals of the 2nd transfer and the connection terminals (T2, E1) and ground terminal of the high voltage unit.	NO	Clean or correct the terminal.
24	Fusing unit	There is dirty or foreign matter on paper path of fusing unit.	YES	Clean. (Disassembling the fusing unit is prohibited.)
25	Service Mode -> Initialize + Image Stabilization	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Initialize + Image Stabilization] and [Gradation Adjust], and the image trouble is eliminated.	YES	Readjust.
			NO	• Replace the fusing unit. • Replace the PH unit. • Replace the high voltage unit. • Replace the base board.

17.3.5 Uneven density 2

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
2	IDC sensor	IDC sensor is dirty.	YES	Clean.
3	Service Mode -> Stabilizer	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only] and the image trouble is eliminated.	NO	Go to the next step.
4	Service Mode -> Gradation Adjust	Select [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust] and the image trouble is eliminated.	NO	Go to the next step.
5	Image check	• Select [Service Mode] -> [Test Mode] -> [Halftone Pattern]. Select "SINGLE", "HYPER", "Error diffusion", "1-Sided", "Black(1PC)", and "Full Bleed", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • Check the image after printing and the abnormal image is evident.	YES	Go to the next step.
6	Write section	Dirt or foreign matter on the dust-proof glass of the PH.	YES	Clean the PH window.
7	Charging section	Foreign matter on charging roller.	YES	Lightly wipe the surface clean of foreign matter using hydro-wipe (65AA-99##). Note: Do not apply a strong force to the surface of the charging roller. As doing so can damage the surface.
8	Photoconductor section	Dirt, scratches, or foreign matter on the photoconductor.	YES	• Clean. • Replace the drum unit.
9	Photoconductor section	Photoconductor drives faultily.	YES	• Correct. • Replace the drum unit.
10	1st transfer section	Scratches or dirt on 1st transfer roller.	YES	• Clean. • Replace the transfer belt unit.
11	Developing section	Toner bristles not even on the developing roller, resulting in a line or band.	YES	Replace the developing unit.
12	Paper path	There is dirty or foreign matter on paper path.	YES	Check and clean the paper path including the duplex section.
13	Transfer belt unit	Dirt, scratches, or foreign matter on the transfer belt.	YES	• Clean. • Replace the transfer belt unit.
14	Transfer belt unit	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1-1).	NO	Clean or correct the terminal.
15	Transfer belt unit	Transfer belt rotates faultily.	YES	• Correct. • Replace the transfer belt unit.
16	2nd transfer section	Dirt or foreign matter on the 2nd transfer roller.	YES	• Remove the foreign matter. • Replace the transfer roller unit.
17	2nd transfer section	Faulty pressure/retraction operation of the 2nd transfer roller.	YES	• Correct. • Replace the transfer roller unit.
18	2nd transfer section	There is a positive contact between the application terminals of the 2nd transfer and the connection terminals (T2, E1) and ground terminal of the high voltage unit.	NO	Clean or correct the terminal.
19	Fusing unit	There is dirty or foreign matter on paper path of fusing unit.	YES	Clean. (Disassembling the fusing unit is prohibited.)
20	Service Mode -> Initialize + Image Stabilization	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Initialize + Image Stabilization] and [Gradation Adjust], and the image trouble is eliminated.	YES	Readjust.
			NO	• Replace the PH unit. • Replace the fusing unit. • Replace the high voltage unit.

Step	Section	Check item	Result	Action
				• Replace the base board.

17.3.6 Faint image, low image density (ID lowering)

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



Initial troubleshooting procedure

Step	Section	Check item	Result	Action
1	Malfunction code	The maintenance call mark is displayed on the panel.	YES	Perform the relevant troubleshooting procedure corresponding to the malfunction code.
2	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
3	Damp paper	Paper is damp.	YES	Change paper to one just unwrapped from its package.
4	IDC sensor	IDC sensor is dirty.	YES	Clean.
5	Service Mode -> Stabilizer	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only] and the image trouble is eliminated.	NO	Go to the next step.
6	Service Mode -> Gradation Adjust	Select [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust] and the image trouble is eliminated.	NO	Go to the next step.
7	Image check	• Select [Service Mode] -> [Test Mode] -> [Gradation Pattern]. Select "SINGLE", "HYPER", "Error diffusion", "1-Sided", "Black (1PC)", "Full Bleed", and "12 gradations", and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • Check the image after printing and the abnormal image is evident.	YES	Go to engine troubleshooting procedure.
			NO	Go to scanner troubleshooting procedure.

Engine troubleshooting procedure

Step	Section	Check item	Result	Action
1	Write section	Dirt or foreign matter on the dust-proof glass of the PH.	YES	Clean the PH window.
2	Charging section	Foreign matter on charging roller.	YES	Lightly wipe the surface clean of foreign matter using hydro-wipe (65AA-99##). Note: Do not apply a strong force to the surface of the charging roller. As doing so can damage the surface.
3	Photoconductor section	There is a positive contact between the electrostatic charger application terminals and the high voltage unit connection terminals.	NO	Clean or correct the terminal.
4	Developing section	There is a positive contact between the developing bias application terminals and the high voltage unit connection terminals (B1).	NO	Clean or correct the terminal.
5	Hopper drive unit section	Faulty connector connection between the toner supply motor (M6) and expansion control board (CN10EX).	YES	Reconnect the connector.
6	Hopper drive unit section	Faulty in the drive of sub hopper.	YES	• Correct. • Replace the hopper drive unit.
7	Transfer belt unit	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1-1).	NO	Clean or correct the terminal.
8	2nd transfer section	There is a positive contact between the application terminals of the 2nd transfer and the connection terminals (T2, E1) and ground terminal of the high voltage unit.	NO	Clean or correct the terminal.

Step	Section	Check item	Result	Action
9	Service Mode -> TCR data	Select [Service Mode] -> [State Confirmation] -> [Level History 1] and the measured value is correct. TCR-K: Normal value 5 to 8%	NO	Select [Service Mode] -> [Imaging Process Adjustment] -> [Manual Toner Add] and perform the function.
10	Service Mode -> Max Image Density Adj	Select [Service Mode] -> [Imaging Process Adjustment] -> [Max Image Density Adj] and make the necessary adjustment, and the image trouble is eliminated.	NO	Go to the next step.
11	Service Mode -> Initialize + Image Stabilization	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Initialize + Image Stabilization] and [Gradation Adjust], and the image trouble is eliminated.	YES	Readjust.
			NO	• Check the high voltage unit, developing unit, and the drum unit for wiring and connection. • Replace the drum unit. • Replace the developing unit. • Replace the PH unit. • Replace the transfer belt unit. • Replace the high voltage unit. • Replace the expansion control board. • Replace the base board.

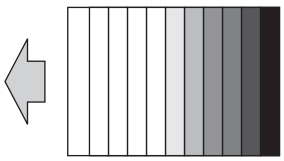
Scanner troubleshooting procedure

Step	Section	Check item	Result	Action
1	Original Type	Select [Copy] -> [Original Type] and change the setting, and the image trouble is eliminated.	YES	Correct the setting.
2	When original glass is being used	Original glass or original pad is dirty.	YES	Clean.
3	Parts along scanning path	Mirror, lens, light guide, or reflectors is dirty.	YES	Clean.
4	Main body side_shading sheet	Shading sheet of main body is dirty.	YES	Clean.
			NO	• Replace the LED exposure unit. • Replace the CCD unit.
5	When DF is being used: 1st side	Document reading glass or document reading glass cleaning brush is dirty.	YES	Clean.
			NO	• Replace the LED exposure unit. • Replace the CCD unit.
6	When DF is being used: 2nd side	• Shading correction surface of DF is dirty. • CIS glass or CIS cleaning brush is dirty.	YES	Clean.
			NO	Replace the CIS module.

17.3.7 Gradation reproduction failure

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



Troubleshooting procedure

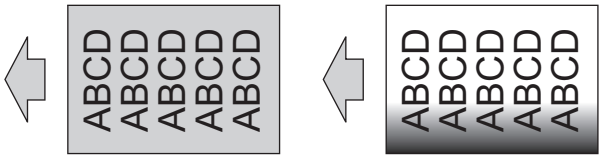
Step	Section	Check item	Result	Action
1	Malfunction code	The maintenance call mark is displayed on the panel.	YES	Perform the relevant troubleshooting procedure corresponding to the malfunction code.
2	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
3	Image check	• Select [Service Mode] -> [Test Mode] -> [Gradation Pattern]. Select "SINGLE", "HYPER", "Error diffusion", "1-Sided", "Black (1PC)", "Full Bleed", and "12 gradations", and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • Check the image after printing and the abnormal image is evident.	-	Go to the next step.
4	Write section	Dirt or foreign matter on the dust-proof glass of the PH.	YES	Clean the PH window.

Step	Section	Check item	Result	Action
5	Charging section	Foreign matter on charging roller.	YES	Lightly wipe the surface clean of foreign matter using hydro-wipe (65AA-99##). Note: Do not apply a strong force to the surface of the charging roller. As doing so can damage the surface.
6	IDC sensor	IDC sensor is dirty.	YES	Clean.
7	Service Mode -> Stabilizer	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only] and the image trouble is eliminated.	NO	Go to the next step.
8	Service Mode -> Gradation Adjust	Select [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust] and the image trouble is eliminated.	NO	Go to the next step.
9	Service Mode -> Max Image Density Adj	Select [Service Mode] -> [Imaging Process Adjustment] -> [Max Image Density Adj] and make the necessary adjustment, and the image trouble is eliminated.	NO	Go to the next step.
10	Service Mode -> Initialize + Image Stabilization	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Initialize + Image Stabilization] and [Gradation Adjust], and the image trouble is eliminated.	YES	Readjust.
			NO	• Replace the drum unit. • Replace the developing unit. • Replace the PH unit. • Replace the high voltage unit. • Replace the expansion control board. • Replace the base board.

17.3.8 Foggy background

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



Initial troubleshooting procedure

Step	Section	Check item	Result	Action
1	Malfunction code	The maintenance call mark is displayed on the panel.	YES	Perform the relevant troubleshooting procedure corresponding to the malfunction code.
2	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
3	Damp paper	Paper is damp.	YES	Change paper to one just unwrapped from its package.
4	IDC sensor	IDC sensor is dirty.	YES	Clean.
5	Service Mode -> Stabilizer	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only] and the image trouble is eliminated.	NO	Go to the next step.
6	Service Mode -> Gradation Adjust	Select [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust] and the image trouble is eliminated.	NO	Go to the next step.
7	Service Mode -> Charge AC Output fine adjustment	Fog occurs unevenly on the left-hand side with respect to the paper feeding direction. Or fog occurs in part of the paper. The fog is reduced when [Service Mode] -> [Imaging Process Adjustment] -> [Charge AC Output fine adjustment] are selected and the setting value is increased.	NO	Return the setting value to the original one and go to the next step.
8	Service Mode -> Image Background Adj	Select [Service Mode] -> [Imaging Process Adjustment] -> [Image Background Adj] and [Stabilizer] and the image trouble is eliminated.	NO	Set the fog margin value back to the original one and go to the next step.
9	Image check	• Select [Service Mode] -> [Test Mode] -> [Lattice Pattern]. Select "SINGLE", "HYPER", "1-Sided", "Black(1PC)", "600dpi", and "Normal", enter "20" for	YES	Go to engine troubleshooting procedure.
			NO	Go to scanner troubleshooting procedure.

Step	Section	Check item	Result	Action
		CD width, "20" for FD width, and "255" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • Check the image after printing and the abnormal image is evident.		

Engine troubleshooting procedure

Step	Section	Check item	Result	Action
1	Write section	Dirt or foreign matter on the dust-proof glass of the PH.	YES	Clean the PH window.
2	Charging section	Foreign matter on charging roller.	YES	Lightly wipe the surface clean of foreign matter using hydro-wipe (65AA-99##). Note: Do not apply a strong force to the surface of the charging roller. As doing so can damage the surface.
3	Photoconductor section	There is a positive contact between the electrostatic charger application terminals and the high voltage unit connection terminals.	NO	Clean or correct the terminal.
4	Developing section	There is a positive contact between the developing bias application terminals and the high voltage unit connection terminals (B1).	NO	Clean or correct the terminal.
5	Transfer belt unit	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1-1).	NO	Clean or correct the terminal.
6	2nd transfer section	There is a positive contact between the application terminals of the 2nd transfer and the connection terminals (T2, E1) and ground terminal of the high voltage unit.	NO	Clean or correct the terminal.
7	Service Mode -> TCR data	Select [Service Mode] -> [State Confirmation] -> [Level History 1] and the measured value is correct. TCR-K: Normal value 5 to 8%	NO	Select [Service Mode] -> [Imaging Process Adjustment] -> [Manual Toner Add] and perform the function.
8	Service Mode -> Max Image Density Adj	Select [Service Mode] -> [Imaging Process Adjustment] -> [Max Image Density Adj] and make the necessary adjustment, and the image trouble is eliminated.	NO	Go to the next step.
9	Connector connection	Faulty connector connection the high voltage unit (CN1,CN2), base board (CN12E, CN21E, CN26E), and expansion control board (CN2EX, CN10EX).	YES	Reconnect the connector.
10	Service Mode -> Initialize + Image Stabilization	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Initialize + Image Stabilization] and [Gradation Adjust], and the image trouble is eliminated.	YES	Readjust.
			NO	• Replace the drum unit. • Replace the PH unit. • Replace the transfer belt unit. • Replace the high voltage unit. • Replace the base board.

Scanner troubleshooting procedure

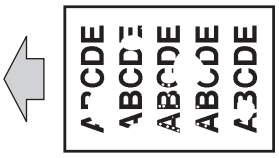
Step	Section	Check item	Result	Action
1	Original	Original is damaged or dirty.	YES	Change the original.
2	Original Type	Select [Copy] -> [Original Type] and change the setting, and the image trouble is eliminated.	NO	Go to the next step.
3	Basic -> Density	Change the density setting, and the image trouble is eliminated.	NO	Go to the next step.
4	When DF is being used	DF does not lie flat.	YES	• Adjust the DF height. • Replace DF if it is deformed or hinges are broken.
5	When original glass is being used	Original glass or original pad is dirty.	YES	Clean.
6	Parts along scanning path	Mirror, lens, light guide, or reflectors is dirty.	YES	Clean.
7	Main body side_shading sheet	Shading sheet of main body is dirty.	YES	Clean.
8	When DF is being used: 1st side	Document reading glass or document reading glass cleaning brush is dirty.	YES	Clean.
			NO	• Replace the LED exposure unit. • Replace the CCD unit.
9	When DF is being used: 2nd side	• Shading correction surface of DF is dirty. • CIS glass or CIS cleaning brush is dirty.	YES	Clean.
			NO	Replace the CIS module.

17.3.9 Void areas, White spots

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.

[1]



[2]



[1]	Void areas	[2]	White spots

Troubleshooting procedure

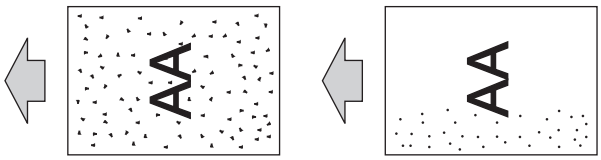
Step	Section	Check item	Result	Action
1	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
2	Use in areas with low atmospheric pressure	Select [Service Mode] -> [Imaging Process Adjustment] -> [Grad/Dev AC Bias V Selection] and change the setting to [ON]. This eliminates the trouble.	NO	Change the setting to [OFF] and go to the next step.
3	IDC sensor	IDC sensor is dirty.	YES	Clean.
4	Service Mode -> Stabilizer	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only] and the image trouble is eliminated.	NO	Go to the next step.
5	Service Mode -> Gradation Adjust	Select [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust] and the image trouble is eliminated.	NO	Go to the next step.
6	Service Mode -> Charge AC Output fine adjustment	The white spots is eliminated when [Service Mode] -> [Imaging Process Adjustment] -> [Charge AC Output fine adjustment] are selected and the setting value is increased.	NO	Return the setting value to the original one and go to the next step.
7	Service Mode -> Primary transfer adj.	Select [Service Mode] -> [Imaging Process Adjustment] -> [Transfer Voltage Fine Adj] -> [Primary transfer adj.] and the image trouble is eliminated. * Decrease the setting value for white dots.	NO	Return the setting value to the original one and go to the next step.
8	Service Mode -> 2nd transfer adj.	Select [Service Mode] -> [Imaging Process Adjustment] -> [Transfer Voltage Fine Adj] -> [2nd Transfer Adj.] and the image trouble is eliminated. * Increase or decrease the setting value to find a specific value at which the trouble is eliminated.	NO	Return the setting value to the original one and go to the next step.
9	Enhanced Security -> Engine FW Dip SW	Select [Service Mode] -> [Enhanced Security] -> [Engine FW Dip SW] -> [No. 8], set OFF, perform [2nd Transfer Adj.] again, and the image trouble is eliminated. * Increase or decrease the setting value to find a specific value at which the trouble is eliminated.	NO	Return the setting value to the original one and go to the next step.
10	Service Mode -> TCR Level Setting	Select [Service Mode] -> [Imaging Process Adjustment] -> [TCR level] and set the adjustment value of [Black] to "+3". Next, select [Service Mode] -> [Imaging Process Adjustment] -> [Manual Toner Add], select [Black], and press the start key. (This starts a toner replenishing sequence.) Then, select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Initialize + Image Stabilization] and perform the function. Then, select [Service Mode] -> [Imaging Process Adjustment] -> [Transfer Voltage Fine Adj.] -> [2nd Transfer Adj.], perform the function, and the image trouble is eliminated. * Increase or decrease the setting value to find a specific value at which the trouble is eliminated.	NO	Return the setting value to the original one and go to the next step.
11	Image check	• Select [Service Mode] -> [Test Mode] -> [Halftone Pattern]. Select "SINGLE", "HYPER", "Error diffusion", "1-Sided", "Black(1PC)", and "Full Bleed", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • If the abnormal image does not recur, change Density to "255" and make a print check. • Check the image after printing and the abnormal image is evident.	YES	Go to the next step.

Step	Section	Check item	Result	Action
12	Write section	Dirt or foreign matter on the dust-proof glass of the PH.	YES	Clean the PH window.
13	Charging section	Foreign matter on charging roller.	YES	Lightly wipe the surface clean of foreign matter using hydro-wipe (65AA-99##). Note: Do not apply a strong force to the surface of the charging roller. As doing so can damage the surface.
14	Photoconductor section	Dirt, scratches, or foreign matter on the photoconductor.	YES	• Clean. • Replace the drum unit.
15	Photoconductor section	There is a positive contact between the electrostatic charger application terminals and the high voltage unit connection terminals.	NO	Clean or correct the terminal.
16	Developing section	Toner bristles not even on the developing roller, resulting in a void area.	YES	Replace the developing unit.
17	1st transfer section	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1-1).	NO	Clean or correct the terminal.
18	Transfer belt unit	Dirt, scratches, or foreign matter on the transfer belt.	YES	• Clean. • Replace the transfer belt unit.
19	2nd transfer section	Dirt or foreign matter on the 2nd transfer roller.	YES	• Remove the foreign matter. • Replace the transfer roller unit.
20	Paper path	There is dirty or foreign matter on paper path.	YES	Check and clean the paper path including the duplex section.
21	Connector connection	Faulty connector connection the high voltage unit (CN1,CN2), base board (CN12E, CN21E, CN26E), and expansion control board (CN2EX, CN10EX).	YES	Reconnect the connector.
22	Service Mode -> Initialize + Image Stabilization	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Initialize + Image Stabilization] and [Gradation Adjust], and the image trouble is eliminated.	YES	Readjust.
			NO	• Replace the drum unit. • Replace the PH unit. • Replace the high voltage unit.

17.3.10 Black spots

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



Initial troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
2	IDC sensor	IDC sensor is dirty.	YES	Clean.
3	Service Mode -> Stabilizer	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only] and the image trouble is eliminated.	NO	Go to the next step.
4	Service Mode -> Gradation Adjust	Select [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust] and the image trouble is eliminated.	NO	Go to the next step.
5	Service Mode -> Charge AC Output fine adjustment	Fine black spots evident on the left-hand side with respect to the paper feeding direction. Or fine black spots are evident on a particular portion in the paper. The black spots are reduced when [Service Mode] -> [Imaging Process Adjustment] -> [Charge AC Output fine adjustment] are selected and the setting value is increased.	NO	Return the setting value to the original one and go to the next step.
6	Service Mode -> Transfer Voltage Fine Adj	Select [Service Mode] -> [Imaging Process Adjustment] -> [Transfer Voltage Fine Adj] and the image trouble is eliminated.	NO	Return the setting value to the original one and go to the next step.

Step	Section	Check item	Result	Action
		* Decrease the setting value for black spots.		
7	Image check	• Select [Service Mode] -> [Test Mode] -> [Solid Pattern]. Select "SINGLE", "HYPER", "Error diffusion", and "1-Sided", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • Check the image after printing and the abnormal image is evident.	YES	Go to engine troubleshooting procedure.
			NO	Go to scanner troubleshooting procedure.

Engine troubleshooting procedure

Step	Section	Check item	Result	Action
1	Write section	Dirt or foreign matter on the dust-proof glass of the PH.	YES	Clean the PH window.
2	Charging section	Foreign matter on charging roller.	YES	Lightly wipe the surface clean of foreign matter using hydro-wipe (65AA-99##). Note: Do not apply a strong force to the surface of the charging roller. As doing so can damage the surface.
3	Photoconductor section	Dirt, scratches, or foreign matter on the photoconductor.	YES	• Clean. • Replace the drum unit.
4	Photoconductor section	There is a positive contact between the electrostatic charger application terminals and the high voltage unit connection terminals.	NO	Clean or correct the terminal.
5	Developing section	There is a positive contact between the developing bias application terminals and the high voltage unit connection terminals (B1).	NO	Clean or correct the terminal.
6	Transfer belt unit	Dirt, scratches, or foreign matter on the transfer belt.	YES	• Clean. • Replace the transfer belt unit.
7	2nd transfer section	Dirt or foreign matter on the 2nd transfer roller.	YES	• Remove the foreign matter. • Replace the transfer roller unit.
8	Paper path	There is dirty or foreign matter on paper path.	YES	Check or clean the paper path including the duplex section.
9	Connector connection	Faulty connector connection the high voltage unit (CN1,CN2), base board (CN12E, CN21E, CN26E), and expansion control board (CN2EX, CN10EX).	YES	Reconnect the connector.
10	Service Mode -> Initialize + Image Stabilization	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Initialize + Image Stabilization] and [Gradation Adjust], and the image trouble is eliminated.	YES	Readjust.
			NO	• Replace the drum unit. • Replace the PH unit. • Replace the high voltage unit.

Scanner troubleshooting procedure

Step	Section	Check item	Result	Action
1	Original	Original is damaged or dirty.	YES	Change the original.
2	Original Type	Select [Copy] -> [Original Type] and change the setting, and the image trouble is eliminated.	YES	Correct the setting.
3	When original glass is being used	Original glass or original pad is dirty.	YES	Clean.
			NO	Replace the CCD unit.
4	When DF is being used: 1st side	Document reading glass or document reading glass cleaning brush is dirty.	YES	Clean.
			NO	• Replace the LED exposure unit. • Replace the CCD unit.
5	When DF is being used: 2nd side	CIS glass or CIS cleaning brush is dirty.	YES	Clean.
			NO	Replace the CIS module.

17.3.11 Blurred image

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



Initial troubleshooting procedure

Step	Section	Check item	Result	Action
1	Damp paper	Paper is damp.	YES	Change paper to one just unwrapped from its package.
2	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
3	Service Mode -> Stabilizer	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only] and the image trouble is eliminated.	NO	Go to the next step.
4	Service Mode -> Gradation Adjust	Select [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust] and the image trouble is eliminated.	NO	Go to the next step.
5	Image check	• Select [Service Mode] -> [Test Mode] -> [Lattice Pattern]. Select "SINGLE", "HYPER", "1-Sided", "Black(1PC)", "600dpi", and "Normal", enter "10" for CD width, "10" for FD width, and "255" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • Check the image after printing and the abnormal image is evident.	YES	Go to engine troubleshooting procedure.
			NO	Go to scanner troubleshooting procedure.

Engine troubleshooting procedure

Step	Section	Check item	Result	Action
1	Write section	Dirt or foreign matter on the dust-proof glass of the PH.	YES	Clean the PH window.
2	Charging section	Foreign matter on charging roller.	YES	Lightly wipe the surface clean of foreign matter using hydro-wipe (65AA-99##). Note: Do not apply a strong force to the surface of the charging roller. As doing so can damage the surface.
3	Photoconductor section	Dirt, scratches, or foreign matter on the photoconductor.	YES	• Clean. • Replace the drum unit.
			NO	Replace the PH unit.

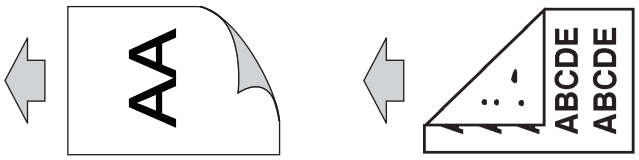
Scanner troubleshooting procedure

Step	Section	Check item	Result	Action
1	Original	Original is folded, bent, or raised.	YES	Change the original.
2	Original Type	Select [Copy] -> [Original Type] and change the setting, and the image trouble is eliminated.	YES	Correct the setting.
3	When original glass is being used	Original glass tilts.	YES	Corrected to the correct position.
4	Parts along scanning path	Mirror, lens, light guide, or reflectors is dirty.	YES	Clean.
5	When DF is being used	DF does not lie flat.	YES	• Adjust the DF height. • Replace DF if it is deformed or hinges are broken.
6	When DF is being used: 1st side	Document reading glass tilts.	YES	Corrected to the correct position.
			NO	• Replace the LED exposure unit. • Replace the CCD unit.
7	When DF is being used: 2nd side	CIS glass or CIS cleaning brush is tilted.	YES	Corrected to the correct position.
			NO	Replace the CIS module.

17.3.12 Back marking

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



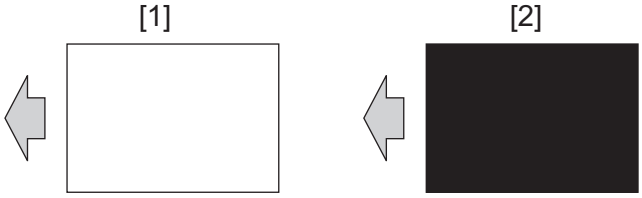
Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
2	Paper path	There is dirty or foreign matter on paper path.	YES	Check and clean the paper path including the duplex section.
3	2nd transfer section	Dirt or foreign matter on the 2nd transfer roller.	YES	• Remove the foreign matter. • Replace the transfer roller unit.
4	Fusing unit	There is dirty or foreign matter on paper path of fusing unit.	YES	Clean. (Disassembling the fusing unit is prohibited.)
5	Fusing unit	Scratches on belt or roller in fusing unit.	YES	Replace the fusing unit.
			NO	Replace the high voltage unit.

17.3.13 Blank copy, Black copy

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



[1]	Blank copy	[2]	Black copy

Initial troubleshooting procedure

Step	Section	Check item	Result	Action
1	Service Mode -> Stabilizer	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only] and the image trouble is eliminated.	NO	Go to the next step.
2	Image check	• Select [Service Mode] -> [Test Mode] -> [Solid Pattern]. Select "SINGLE", "HYPER", "Error diffusion", and "1-Sided", enter "120" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • Check the image after printing and the abnormal image is evident.	YES	Go to engine troubleshooting procedure.
			NO	Go to scanner troubleshooting procedure.

Engine troubleshooting procedure

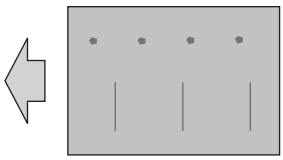
Step	Section	Check item	Result	Action
1	2nd transfer section	There is a positive contact between the application terminals of the 2nd transfer and the connection terminals (T2, E1) and ground terminal of the high voltage unit.	NO	Clean or correct the terminal.
2	Transfer belt unit	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1-1).	NO	Clean or correct the terminal.
3	Photoconductor section	The drum unit is installed properly.	NO	Reinstall.
4	Photoconductor section	There is a positive contact between the electrostatic charger application terminals and the high voltage unit connection terminals.	NO	Clean or correct the terminal.
5	Developing section	There is a positive contact between the developing bias application terminals and the high voltage unit connection terminals (B1).	NO	Clean or correct the terminal.
6	Connector connection	Faulty connector connection the high voltage unit (CN1, CN2) and base board (CN21E, CN26E).	YES	Reconnect the connector.

Step	Section	Check item	Result	Action
7	Write section	Faulty connector connection the expansion control board (CN10EX).	YES	Reconnect the connector.
8	Service Mode -> Self-diagnostic	Select [Service Mode] -> [State Confirmation] -> [Self-diag.(Full)] and perform the function. Then, "NG" appears.	YES	Take relevant action corresponding to the check item in which "NG" has appeared.
			NO	• Replace the high voltage unit. • Replace the PH unit. • Replace the expansion control board. • Replace the base board.

Scanner troubleshooting procedure
*: Apply FLOIL No. 947P or Launa 40 oil to the scanner rails. FLOIL is a product manufactured by KANTO KASEI LTD. (http://www.kanto-kasei.co.jp/).

17.3.14 Uneven pitch

Typical faulty images
The arrow in the exemplary image troubles indicates the paper feeding direction.



Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
2	Service Mode -> Stabilizer	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only] and the image trouble is eliminated.	NO	Go to the next step.
3	Service Mode -> Gradation Adjust	Select [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust] and the image trouble is eliminated.	NO	Go to the next step.
4	Image check	• Select [Service Mode] -> [Test Mode] -> [Halftone Pattern]. Select "SINGLE", "HYPER", "Error diffusion", "1-Sided", "Black(1PC)", and "Full Bleed", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • Check the image after printing and the abnormal image is evident.	YES	Go to the next step.
5	Uneven pitch at 94 to 96 mm interval	Dirt, scratches, or foreign matter on the photoconductor.	YES	• Clean. • Replace the drum unit.
6	Uneven pitch at 36 mm interval	Dirt, scratches, or foreign matter on the developing roller.	YES	• Clean. • Replace the developing unit.
7	Write section	Dirt or foreign matter on the dust-proof glass of the PH.	YES	Clean the PH window.
8	Charging section	Foreign matter on charging roller.	YES	Lightly wipe the surface clean of foreign matter using hydro-wipe (65AA-99##). Note: Do not apply a strong force to the surface of the charging roller. As doing so can damage the surface.
9	Connector connection	Faulty connector connection the high voltage unit (CN1, CN2) and base board (CN21E, CN26E).	YES	Reconnect the connector.
10	Uneven pitch	Dirt, scratches, or foreign matter on the transfer belt.	YES	• Clean. • Replace the transfer belt unit.
11	Uneven pitch at 75 mm interval	Dirt or foreign matter on the 2nd transfer roller.	YES	• Remove the foreign matter. • Replace the transfer roller unit.
12	Uneven pitch at 126 mm interval	Dirt, scratches, or foreign matter on the fusing belt.	YES	• Clean. • Replace the fusing unit.
13	Uneven pitch at 100 mm interval	Dirt, scratches, or foreign matter on the fusing pressure roller.	YES	• Clean. • Replace the fusing unit.

Step	Section	Check item	Result	Action
14	Paper path	There is dirty or foreign matter on paper path.	YES	Check or clean the paper path including the duplex section.
			NO	• Replace the transfer belt unit. • Replace the high voltage unit. • Replace the base board.

17.3.15 Uneven gloss, Rough gloss

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



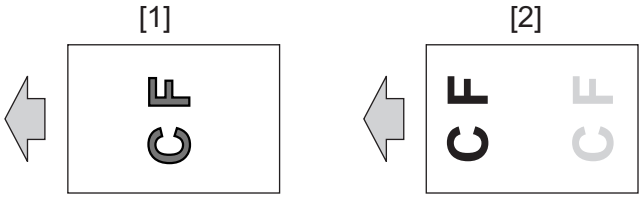
Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
2	Image check	• Select [Service Mode] -> [Test Mode] -> [Halftone Pattern]. Select "SINGLE", "HYPER", "Error diffusion", "1-Sided", "Black(1PC)", and "Full Bleed", enter "255" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • Check the image after printing and the abnormal image is evident. (rough gloss)	YES	Go to the next step.
3	Service Mode -> Fusing Temperature	Select [Service Mode] -> [Machine] -> [Fusing Temperature] and lower the fusing temperature, and the image trouble is eliminated.	NO	Return the fusing temperature to the original one and go to the next step.
4	Exit tray front roller, Exit roller	Faulty pressure operation of the exit tray front roller or exit roller.	YES	Correct.
5	Fusing unit	There is dirty or foreign matter on paper path of fusing unit.	YES	Clean. (Disassembling the fusing unit is prohibited.)
6	Fusing unit	Scratches on belt or roller in fusing unit.	YES	Replace the fusing unit.
			NO	Replace the power supply of fusing.

17.3.16 Poor fusing performance, Offset

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



[1]	Poor fusing performance	[2]	Offset

Troubleshooting procedure

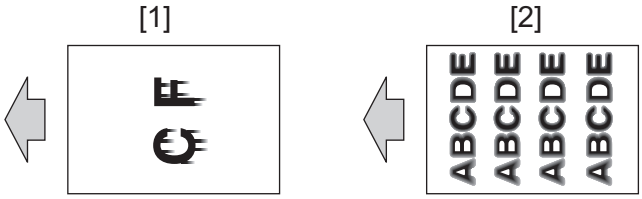
Step	Section	Check item	Result	Action
1	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
2	Image check: Poor fusing performance	• Select [Service Mode] -> [Test Mode] -> [Halftone Pattern]. Select "SINGLE", "HYPER", "Error diffusion", "1-Sided", "Black(1PC)", and "Full Bleed", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle.	YES	Go to the next step.

Step	Section	Check item	Result	Action
		• Check the image after printing and the abnormal image is evident.		
3	Image check: Poor fusing performance	• Select [Service Mode] -> [System 2] -> [Smart Fusing Control] and select [Prohibit]. • Check the image after printing and the abnormal image is evident.	YES	Return the setting to the original one and go to the next step.
4	Image check: Offset	• Select [Service Mode] -> [Test Mode] -> [Gradation Pattern]. Select "SINGLE", "HYPER", "Error diffusion", "1-Sided", "Black (1PC)", "Full Bleed", and "12 gradations", and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • Check the image after printing and the abnormal image is evident.	YES	Go to the next step.
5	Service Mode -> Fusing Temperature	Select [Service Mode] -> [Machine] -> [Fusing Temperature] and make the necessary adjustment, and the image trouble is eliminated. * Poor fusing performance: Decrease the setting value * Offset: Increase or decrease the setting value	NO	Return the setting value to the original one and go to the next step.
6	Fusing unit	There is dirty or foreign matter on paper path of fusing unit.	YES	Clean. (Disassembling the fusing unit is prohibited.)
7	Fusing unit	Scratches on belt or roller in fusing unit.	YES	Replace the fusing unit.
			NO	Replace the power supply of fusing.

17.3.17 Brush effect, Image bleeding

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



[1]	Brush effect	[2]	Image bleeding

Troubleshooting procedure

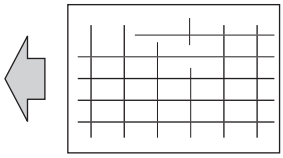
Step	Section	Check item	Result	Action
1	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
2	Damp paper	Paper is damp.	YES	Change paper to one just unwrapped from its package.
3	Service Mode -> Stabilizer	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only] and the image trouble is eliminated.	NO	Go to the next step.
4	Service Mode -> Gradation Adjust	Select [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust] and the image trouble is eliminated.	NO	Go to the next step.
5	Image check	• Select [Service Mode] -> [Test Mode] -> [Lattice Pattern]. Select "SINGLE", "HYPER", "1-Sided", "Black(1PC)", "600dpi", and "Normal", enter "10" for CD width, "10" for FD width, and "255" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • Check the image after printing and the abnormal image is evident.	YES	Go to the next step.
6	Transfer belt unit	Dirt, scratches, or foreign matter on the transfer belt.	YES	• Clean. • Replace the transfer belt unit.
7	2nd transfer section	Dirt or foreign matter on the 2nd transfer roller.	YES	• Remove the foreign matter. • Replace the transfer roller unit.
8	Service Mode -> Fusing Temperature	Select [Service Mode] -> [Machine] -> [Fusing Temperature] and make the necessary adjustment, and the image trouble is eliminated. * Increase or decrease the setting value	NO	Return the setting value to the original one and go to the next step.

Step	Section	Check item	Result	Action
9	Service Mode -> Fusing Transport Speed	Select [Service Mode] -> [Machine] -> [Fusing Transport Speed] and make the necessary adjustment, and the image trouble is eliminated. * Brush effect: Increase or decrease the setting value * Image bleeding: Increase or decrease the setting value	NO	Return the setting value to the original one and go to the next step.
10	Fusing unit	There is dirty or foreign matter on paper path of fusing unit.	YES	Clean. (Disassembling the fusing unit is prohibited.)
11	Fusing unit	Scratches on belt or roller in fusing unit.	YES	Replace the fusing unit.
			NO	Replace the power supply of fusing.

17.3.18 Blurred fine lines

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



Initial troubleshooting procedure

Step	Section	Check item	Result	Action
1	Damp paper	Paper is damp.	YES	Change paper to one just unwrapped from its package.
2	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
3	Unclear thin line in main scan direction	Select [Service Mode] -> [Machine] -> [LD adjustment] -> [LD Light Width Adjustment] and the image trouble is eliminated.	NO	Return the setting value to the original one and go to the next step.
4	Service Mode -> Stabilizer	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only] and the image trouble is eliminated.	NO	Go to the next step.
5	Service Mode -> Gradation Adjust	Select [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust] and the image trouble is eliminated.	NO	Go to the next step.
6	Image check	• Select [Service Mode] -> [Test Mode] -> [Lattice Pattern]. Select "SINGLE", "FEET", "1-Sided", "Black(1PC)", "600dpi", and "Normal", enter "3" for CD width, "3" for FD width, and "255" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • Check the image after printing and the abnormal image is evident.	YES	Go to engine troubleshooting procedure.
			NO	Go to scanner troubleshooting procedure.

Engine troubleshooting procedure

Step	Section	Check item	Result	Action
1	Write section	Dirt or foreign matter on the dust-proof glass of the PH.	YES	Clean the PH window.
2	Charging section	Foreign matter on charging roller.	YES	Lightly wipe the surface clean of foreign matter using hydro-wipe (65AA-99##). Note: Do not apply a strong force to the surface of the charging roller. As doing so can damage the surface.
3	Photoconductor section	Dirt, scratches, or foreign matter on the photoconductor.	YES	• Clean. • Replace the drum unit.
4	Transfer belt unit	Dirt, scratches, or foreign matter on the transfer belt.	YES	• Clean. • Replace the transfer belt unit.
			NO	Replace the PH unit.

Scanner troubleshooting procedure

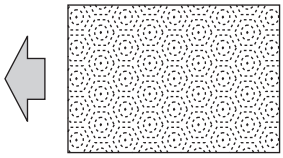
Step	Section	Check item	Result	Action
1	Original	Original is folded, bent, or raised.	YES	Change the original.

Step	Section	Check item	Result	Action
2	Original Type	Select [Copy] -> [Original Type] and change the setting, and the image trouble is eliminated.	YES	Correct the setting.
3	When original glass is being used	Original glass tilts.	YES	Corrected to the correct position.
4	When DF is being used	DF does not lie flat.	YES	• Adjust the DF height. • Replace DF if it is deformed or hinges are broken.
5	When DF is being used: 1st side	Document reading glass tilts.	YES	Corrected to the correct position.
			NO	• Replace the LED exposure unit. • Replace the CCD unit.
6	When DF is being used: 2nd side	CIS glass or CIS cleaning brush is tilted.	YES	Corrected to the correct position.
			NO	Replace the CIS module.

17.3.19 Moire

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



Initial troubleshooting procedure

Step	Section	Check item	Result	Action
1	Original	Original is damaged or dirty.	YES	Change the original.
2	Original Type	Select [Copy] -> [Original Type] and change the setting, and the image trouble is eliminated.	NO	Go to the next step.
3	Original direction	Change the direction in which the original is placed. This eliminates moire.	YES	Change the original direction.
4	Service Mode -> Stabilizer	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only] and the image trouble is eliminated.	NO	Go to the next step.
5	Service Mode -> Gradation Adjust	Select [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust] and the image trouble is eliminated.	NO	Go to the next step.
6	Image check	• Select [Service Mode] -> [Test Mode] -> [Halftone Pattern]. Select "SINGLE", "HYPER", "Error diffusion", "1-Sided", "Black(1PC)", and "Full Bleed", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle. • Check the image after printing and the abnormal image is evident.	YES	Go to engine troubleshooting procedure.
			NO	Go to scanner troubleshooting procedure.

Engine troubleshooting procedure

Step	Section	Check item	Result	Action
1	Service Mode -> Paper Feed Direction Adj.	Select [Service Mode] -> [Machine] -> [Printer Area] -> [Paper Feed Direction Adj.] and make the necessary adjustment, and the image trouble is eliminated.	NO	Go to the next step.
2	Service Mode -> Initialize + Image Stabilization	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Initialize + Image Stabilization] and [Gradation Adjust], and the image trouble is eliminated.	YES	Readjust.
			NO	• Replace the PH unit. • Replace the base board.

Scanner troubleshooting procedure

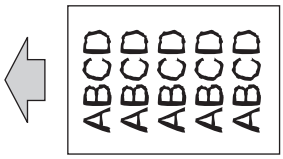
Step	Section	Check item	Result	Action
1	When original glass is being used: Sub Scan Zoom Adj.	Select [Service Mode] -> [Machine] -> [Scan Area] -> [Sub Scan Zoom Adj.] and make the necessary adjustment, and the image trouble is eliminated.	YES	Readjust.
			NO	Replace the CCD unit.
2	When DF is being used: 1st side: Feed Zoom	Select [Service Mode] -> [ADF] -> [Feed Zoom] and make the necessary adjustment, and the image trouble is eliminated.	YES	Readjust.
			NO	Replace the CCD unit.
3	When DF is being used: 2nd side: FD-Mag. Adj. (B)	Select [Service Mode] -> [ADF] -> [FD-Mag. Adj. (B)] and make the necessary adjustment, and the image trouble is eliminated.	NO	Go to the next step.

Step	Section	Check item	Result	Action
4	When DF is being used: 2nd side: Main Scanning Direction Zoom	Select [Service Mode] -> [ADF] -> [Main Scanning Direction Zoom] and make the necessary adjustment, and the image trouble is eliminated.	YES	Readjust.
			NO	Replace the CIS module.

17.3.20 Distorted image

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



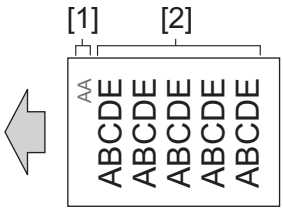
Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Installation state	Machine not installed on a flat site.	YES	Install the machine horizontally.
2	Original Type	Select [Copy] -> [Original Type] and change the setting, and the image trouble is eliminated.	YES	Correct the setting.
3	When original glass is being used	Original glass not installed properly.	YES	Corrected to the correct position.
			NO	Replace the CCD unit.
4	When DF is being used: Distortion on 1st side	CCD board not installed properly.	YES	Corrected to the correct position.
			NO	Replace the CCD unit.
5	When DF is being used: Distortion on 2nd side	CIS module not installed properly.	YES	Corrected to the correct position.
			NO	Replace the CIS module.

17.3.21 ACS malfunction

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



[1]	Color original section	[2]	Black and white original section

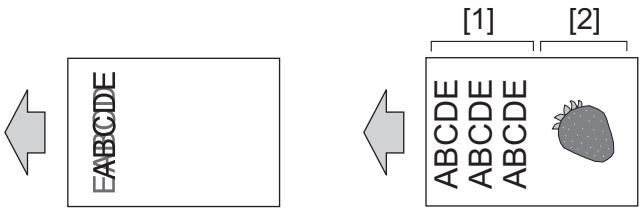
Troubleshooting procedure

Procedure	Section	Check item	Result	Action
1	Original Type	Select [Copy] -> [Original Type] and change the setting, and the image trouble is eliminated.	YES	Correct the setting.
2	Original direction	Change the direction in which the original is placed. This eliminates the trouble.	YES	Change the original direction.
3	Utility -> Auto Color Level Adjustment	Select [Utility] -> [Utility] -> [System Settings] -> [Auto Color Level Adjustment] and the image trouble is eliminated.	YES	Readjust.
			NO	• Change the original direction. • Make the setting according to the type of original. (If the original contains a colored area at its corner, colored area detection NG may result.)

17.3.22 Abnormal image

Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



[1]	Data on the previous page	[2]	Data on the next page

Troubleshooting procedure

Step	Section	Check item	Result	Action
1	When original glass is being used When DF is being used: 1st side	None of the terminal pins of the connection cable between the CCD board (CN2) and the base board (CN6) is bent and a positive connection is made.	NO	Reconnect the connector.
2	When original glass is being used When DF is being used: 1st side	Replace the connection cable between the CCD board and the base board. This eliminates the trouble.	YES	Replace the connection cable.
			NO	• Replace the CCD unit. • Replace the base board.
3	When DF is being used: 2nd side	Faulty connector connection the CIS power supply (CN50), relay connector (CN117), main body connection section (CN1DF), base board (CN10E, CN14E), and DC power supply (CN6).	YES	Reconnect the connector.
4	When DF is being used: 2nd side	Faulty connector connection the high CIS module (CN2) and base board (CN5).	YES	Reconnect the connector.
5	When DF is being used: 2nd side	Replace the connection cable between the CIS module and the dual scan image processing board. This eliminates the trouble.	YES	Replace the connection cable.
6	Service Mode -> Self-diagnostic	Select [Service Mode] -> [State Confirmation] -> [Self-diag.(Full)] and perform the function. Then, "NG" appears.	YES	Take relevant action corresponding to the check item in which "NG" has appeared.
			NO	• Replace the CIS module. • Replace the base board.

18. IC PROTECTOR

18.1 Outline

- To increase product safety, this MFP has an IC protector installed in each board. ICP is a component that protects IC.
- If the amount of the current supplied to the electrical parts such as motor exceeds the set level, ICP trips to protect IC from over current.
- The IC is provided with an over current protective function which works when the current exceeds the specified value to protect the IC from over current.
  For an IC that is provided with an over current protective function and being protected, if the problem is solved, the MFP will recover after turning OFF/ON the main power switch without replacing the board.
- The following list contains IC protector installed in each board, related devices, and symptoms when an over current occurs.

18.2 IC protector list

18.2.1 bizhub 750i

(1) Base board

(a) ICP

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
F1E	M1	Transport motor	Power line A1 error	C7601
F4E	M3	Fusing motor	Power line A4 error	C7604
F5E	HV	High voltage unit	Power line A5 error	C7605
F6E	-	24V clamp circuit in mechanical controller of base board	Power line A6 error	C7606
F7E	CL7	Bypass tray paper feed clutch	Power line A7 error	C7607
F8E	-	3.3 V DC/DC converter in mechanical controller of base board	Mechanical controller ASIC communication error	C40A6
F9E	-	DF	No fuse detection function	-
F10E	-	Scanner unit	No fuse detection function	-
F11E	PCCB	PC control board	Power line A10 error	C760A
F12E	EXCB	Expansion control board	Power line A11 error	C760B
F13E	TCT	Total counter (Japan models only)	Power line A12 error	C760C
	KCT	Key counter		
F14E	DFCB	DF control board	Power line A13 error	C760D
	SCDB	Scanner drive board		
	-	F15E		
F15E	SW2	Front door switch	Power line A14 error	C760E
	SW3	Right door switch		
F17E	CUDB	Clean unit drive board	Power line A15 error	C760F
F19E	-	DF	Back side reading device cable break detection	C9702
	-	Scanner unit		
	ENVDB/RX	Envelope detection board/RX	Power line A16 error	C7610
ICP5	FAXB/2	Fax board/2 (FAX line 2)	FAX board error 5 (No fax board is installed. Mistake in installation. Defective HW.)	CB005
ICP6	FAXB/1	Fax board/1 (FAX line 1 or FAX line 1 to 3, FAX line 1 to 4)	FAX board error 5 (No fax board is installed. Mistake in installation. Defective HW.)	CB005
F1	FM3	Rear side cooling fan	Rear side cooling fan failure to turn	C5370

(b) IC with over current protective function

ICP No.	Symbol	Target part name	When over current protective function works	
			Symptom in each load	Trouble code and others
IC2	-	Control panel	Control panel power not turned ON	-
IC61	-	Vendor	Unable to detect vendor "Turn ON the power of the vendor" display	-
IC85	-	Wireless LAN	Extension network adapter installation error	CD262
IC86	USBHB	USB hub board	Unable to detect USB memory	-
	-	Authentication unit	Unable to detect authentication unit "Cannot find the connection with authentication unit. Turn OFF/ON the main power switch after the connection is found." display	-

(2) Expansion control board

(a) ICP

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
ICP3	M14	Polygon motor	Power line B2 error	C7622
ICP5	ENVDRB	Envelope detection relay board	Power line B4 error	C7624

(3) Scanner drive board

(a) ICP

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
ICP1	CCDB	CCD board	CCD power-supply voltage malfunction Scanner sequence trouble 2	C6756 C6F02
	M201	Scanner motor		
	PS201	Scanner home sensor		
ICP2	LU201	LED exposure unit	Exposure LED lighting failure	C9401

(4) PC control board

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
F4	M151	Intermediate motor	Tray 3/4 horizontal transport section	17-31
			Tray 3/4 intermediate transport roller section	17-40 17-41
F10	LUDB	LU drive board	Misfeed at external LCT paper feed section	15-01
F11	PCCB	PC control board	Paper feed communication error	C0002
	LUDB	LU drive board		
F12	LUDB	LU drive board	External LCT up/down abnormality	C0216
			Misfeed at external LCT paper feed section	15-01 15-40
F300	M152	Transport motor	Tray 3/4 feeder transportation motor failure to turn	C0104
PS300	M143	Tray 3 lift-up motor	Tray 3 feeder up/down abnormality	C0206
PS301	M144	Tray 4 lift-up motor	Tray 4 feeder up/down abnormality	C0208

18.2.2 DF-713

(1) DF control board

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
ICP1	M3	Document reading motor	Misfeed at image reading section	-
ICP2	M1	Document feed motor	Misfeed at paper feed section	-
ICP3	M2	Document registration motor	Misfeed at transport section	-
ICP4	-	DC5V generation circuit	Back side cleaning home sensor abnormality (initial)	C6104
ICP5	M5	DF lift-up motor	Lift up mechanism trouble (Upward movement)	C8103
ICP6	PS1	Document empty sensor	Misfeed at paper feed section	-
ICP7	M8	Document reading glass cleaning motor	Back side cleaning home sensor abnormality (initial)	C6104
	M7	CIS cleaning motor		
	M4	Document exit motor		
ICP8	SD1	Stamp solenoid	Unable to place a stamp	-
ICP10	FM	DF cooling fan	Misfeed at paper feed section	-
	CL1	Document feed clutch		
ICP11	PS4	After separate sensor	Misfeed at transport section	-
	PS5	Document registration sensor		
	PS6	Document reading sensor		
	PS11	Document length size sensor/2		
	PS21	Document feed sensor		
ICP15	PS2	DF lift-up upper limit sensor	Back side cleaning home sensor abnormality (initial)	C6104
	PS3	DF lift-up lower limit sensor		

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
	PS7	Document exit sensor		
	PS9	CIS cleaning sensor		
	PS10	Document length size sensor/1		
	PS13	Mixed Original sensor/1		
	PS14	Mixed Original sensor/2		
	PS15	Mixed Original sensor/3		
	PS16	Upper door sensor		
	PS18	Document reading glass cleaning sensor		
	PS20	CIS cover sensor		
	PS26	Document feed tray sensor		
	TH	DF temperature sensor		
	VR1	Document width size sensor		
	MFDB/RX	Multi feed detection board/RX		
ICP16	MFDB/TX	Multi feed detection board/TX	No double feed detection function	-

(2) CIS power supply

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
ICP1	-	CIS unit	CIS LED does not light up.	C6753
				C6754
				C6755
				C9403

18.2.3 FS-539/FS-539SD

(1) FS control board

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
F2	M1	RU transport motor	Misfeed at RU section	-
F3	M11	Main tray up/down motor	Main tray up/down motor drive malfunction	C1102
F4	-	24V to 5V DC to DC converter	Unable to be detected	-
F5	SW1	Front door open detect switch	No operation of inrush current prevention function	-
F6	PS2	RU entrance sensor	Residual paper jam or unspecified malfunction display	-
	PS3	RU cover open/close detection sensor		
	PS4	FNS entrance sensor		
	PS5	Saddle exit sensor		
	PS8	Sub tray exit sensor		
	PS11	Receiving roller retraction sensor		
	PS12	Alignment plate home sensor/Fr		
	PS13	Alignment plate home sensor/Rr		
	PS14	Upper paddle home sensor		
	PS16	Main tray exit sensor		
	PS20	Trailing edge stopper home sensor		
	PS25	Main tray up/down motor sensor		
	PS30	Route change gate home sensor		
	PS32	Upper door open/close detection sensor		
	PS36	Manual staple sensor		
	PS37	Front door open/close detection sensor		
	PS1	Punch home sensor		
	PS2	Punch position sensor		
	PS3	Punch motor sensor		
	PS4	Punch dust full sensor/out		
	PS5	Punch dust full sensor/in		
F7	PS1	Punch home sensor	Punch drive motor drive malfunction	C1132

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
	PS2	Punch position sensor		
	PS3	Punch motor sensor		
F8	PS6	Main tray upper sensor/out	Bundle eject motor drive malfunction, Stapler movement motor malfunction, Pre-eject drive motor drive malfunction	C1105, C1106, C1144
	PS7	Main tray upper sensor/in		
	PS10	Main tray middle position sensor		
	PS15	Pre-eject encoder sensor		
	PS17	Gripper motor sensor		
	PS18	Gripper home sensor		
	PS19	Gripper position sensor		
	PS21	Pre-eject home sensor		
	PS22	Pre-eject away sensor		
	PS23	Corner staple position sensor/Rr		
	PS24	Stapler center position sensor		
	PS26	Main tray upper position sensor/Rr		
	PS27	Main tray upper position sensor/Fr		
	PS28	Paper delivery control home sensor		
	PS29	Main tray full sensor		
	PS31	Alignment tray paper detection sensor		
	PS33	Flat staple position sensor/Rr		
	PS34	Corner staple position sensor/Fr		
	PS35	Stapler home sensor		
	PS38	Sub tray full sensor		
	PS39	Main tray empty sensor		
	PS113	Booklet tray empty detection sensor/in		
	PS114	Booklet tray empty detection sensor/out		
	SDCB	SD control board		
F9	M11	Main tray up/down motor	Main tray up/down motor drive malfunction	C1102
F10	PS8	Sub tray exit sensor	Residual paper jam display	-
	PS23	Corner staple position sensor/Rr	Stapler movement motor drive malfunction	C1106
	PS34	Corner staple position sensor/Fr		
	PS35	Stapler home sensor		

(2) SD control board

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
F1	-	24V to 5V DC to DC converter	Unable to detect the saddle unit Unable to detect the finisher "There is an open component." display	-

18.2.4 FS-540/FS-540SD

(1) FS control board

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
F1	M1	RU transport motor	Misfeed at RU section	-
F2	-	24V to 5V DC to DC converter	Unable to be detected	-
F3	ZURB	ZU relay board	Tray up/down malfunction at initial operation, unable to be detected upper position of Z-fold batch	-
F4	M134	Paper transport belt motor	Paper transport belt motor malfunction	C1152
F5	M6	Main tray up/down motor	Main tray up/down motor drive malfunction	C1102
F6	SW1	Front door open detect switch	No operation of inrush current prevention function	-
F7	-	Stapler unit	Stapler motor malfunction	C1112
	PKCB	Punch control board	Unable to be detected	-
	MSTIB	Manual staple indicator board	No light up of manual staple LED	-

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
F8	M6	Main tray up/down motor	Main tray up/down motor drive malfunction	C1102
	M134	Paper transport belt motor	Paper transport belt motor malfunction	C1152
F9	ZUDB	ZU drive board	No operation of ZU folding motor	-
F10	PS6	Alignment plate home sensor/Rr	Stapler movement motor drive malfunction	C1106
	PS7	Trailing edge stopper sensor/Rr		
	PS9	Alignment plate home sensor/Fr		
	PS10	Trailing edge stopper sensor/Fr		
	PS11	Paper delivery control home sensor		
	PS12	Main tray full sensor		
	PS13	Main tray empty sensor		
	PS14	Main tray lift down detection sensor/Fr		
	PS15	Main tray lift down detection sensor/Rr		
	PS16	Main tray lift up detection sensor/Fr		
	PS17	Main tray lift up detection sensor/Rr		
	PS18	Flat staple position sensor/Rr		
	PS19	Corner staple position sensor/Rr		
	PS20	Stapler center position sensor		
	PS21	Route change gate home sensor		
	PS22	Receiving roller retraction sensor		
	PS24	Sub tray exit sensor		
	PS25	Upper paddle home sensor		
	PS26	Arm home sensor		
	PS27	Paddle up/down home sensor		
	PS32	Alignment tray paper detection sensor		
	PS35	SD discharge sensor		
	PS37	Main tray exit sensor		
	PS38	Main tray upper sensor/out		
	PS39	Sub tray full sensor/out		
	PS40	Main tray upper sensor/in		
	PS41	Sub tray full sensor/in		
	PS51	Main tray middle position sensor		
	PS52	Flat staple position sensor/Fr		
F11	PS23	Sub tray/JS route change gate home sensor	ZU transport motor drive malfunction Folding guide motor drive malfunction Pressure motor drive malfunction Cover opened display Residual paper jam display Unable to detect SD Unable to detect ZU	C1130 C1131 C1133
	PS33	PI discharge sensor		
	PS34	FNS entrance sensor		
	PS36	FNS middle sensor		
	PS401	Job tray door sensor		
	PS402	Job tray paper exit sensor		
	PS403	Job tray full sensor		
	PS2	RU entrance sensor		
	PS3	RU cover open/close detection sensor		
	PIDB	PI drive board		
	PIRB	PI relay board		
	ZURB	ZU relay board		
	SDCB	SD control board		
F12	PS1	Gripper motor sensor	Main tray up/down motor drive malfunction “Remove paper.” display	C1102
	PS2	Pre-eject encoder sensor		
	PS3	Gripper home sensor		
	PS4	Stacker plate encoder sensor		
	PS29	Stacker plate position sensor		
	PS30	Stacker plate home sensor		
	PS31	Trailing edge stopper home sensor		
	PS55	Front door open/close detection sensor		
	PS135	SD exit full sensor		

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
	PS141	SD exit tray limit sensor		
	PS143	SD exit tray lift sensor		
F13	PS18	Flat staple position sensor/Rr	Stapler movement motor drive malfunction	C1106
	PS19	Corner staple position sensor/Rr		
	PS20	Stapler center position sensor		
	PS24	Sub tray exit sensor		
	PS39	Sub tray full sensor/out		
	PS52	Flat staple position sensor/Fr		
	PS53	Corner staple position sensor/Fr		
	PS54	Manual staple sensor		
	PS402	Job tray paper exit sensor		

(2) SD control board

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
F1	-	24V to 5V DC to DC converter	Unable to detect the saddle unit Unable to detect the finisher "There is an open component." display	-

18.2.5 PK-526

(1) Punch control board

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
ICP1	-	DC5V sensor and others in the board	Finisher communication error (Finisher detection)	C1014
ICP2	M302	Punch oscillating motor	Punch oscillating motor drive malfunction	C1127

18.2.6 PI-507

(1) PI drive board

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
ICP1	-	DC5V sensor and others in the board	Finisher communication error (Finisher detection)	C1014
ICP3	M203	Transport motor	Misfeed at paper feed section	-
ICP4	CL201	Transfer clutch /Up	Misfeed at paper feed section	-
	CL202	Transfer clutch /Lw		-
	CL203	Registration clutch		-
	SD201	Pick-up solenoid /Up		-
	SD202	Pick-up solenoid /Lw		-

18.2.7 ZU-609

(1) ZU drive board

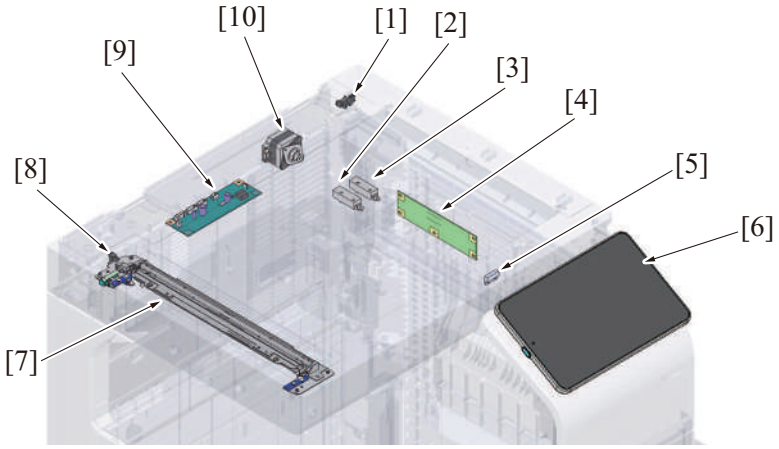
ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
ICP1	M501	Center folding guide motor	Misfeed at fold section	-
ICP2	M501	Center folding guide motor		
ICP3	M502	Pressure motor	Pressure motor drive malfunction	C1133

M PARTS/CONNECTOR LAYOUT DRAWING

1. PARTS LAYOUT DRAWING

1.1 bizhub 750i

1.1.1 Scanner section

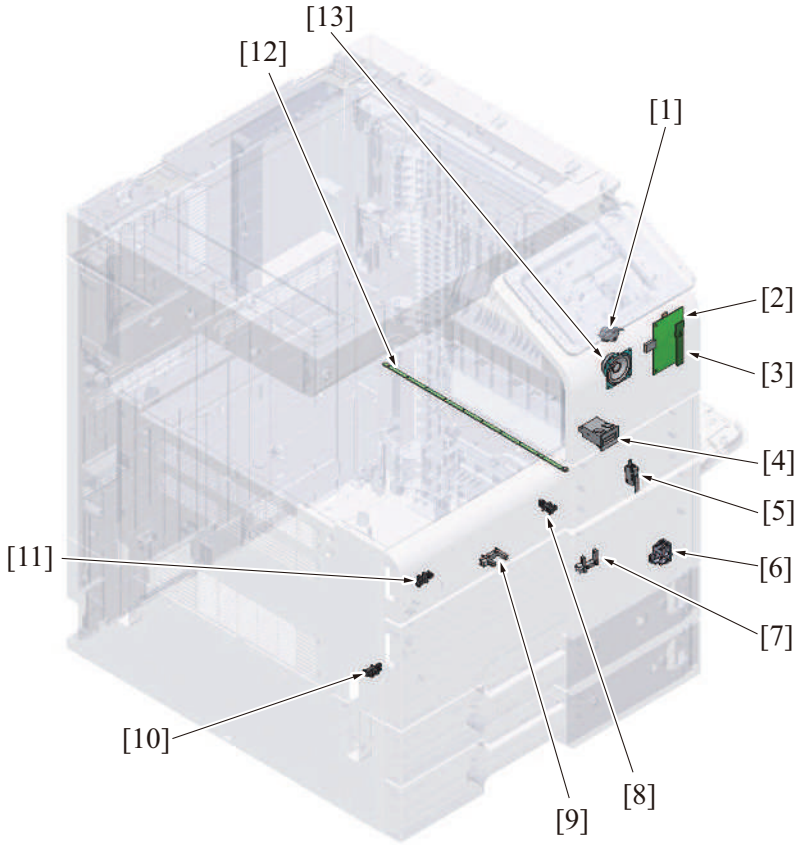


[1]	Angle sensor (PS202)	[2]	Original size sensor/1 (PS204)
[3]	Original size sensor/2 (PS205) *	[4]	CCD board (CCDB)
[5]	Original cover sensor (RS201)	[6]	Control panel unit
[7]	LED exposure unit (LU201)	[8]	Scanner home sensor (PS201)
[9]	Scanner drive board (SCDB)	[10]	Scanner motor (M201)

*: Excluding Japan models

1.1.2 Front side

(1) Board/switch/sensor/others

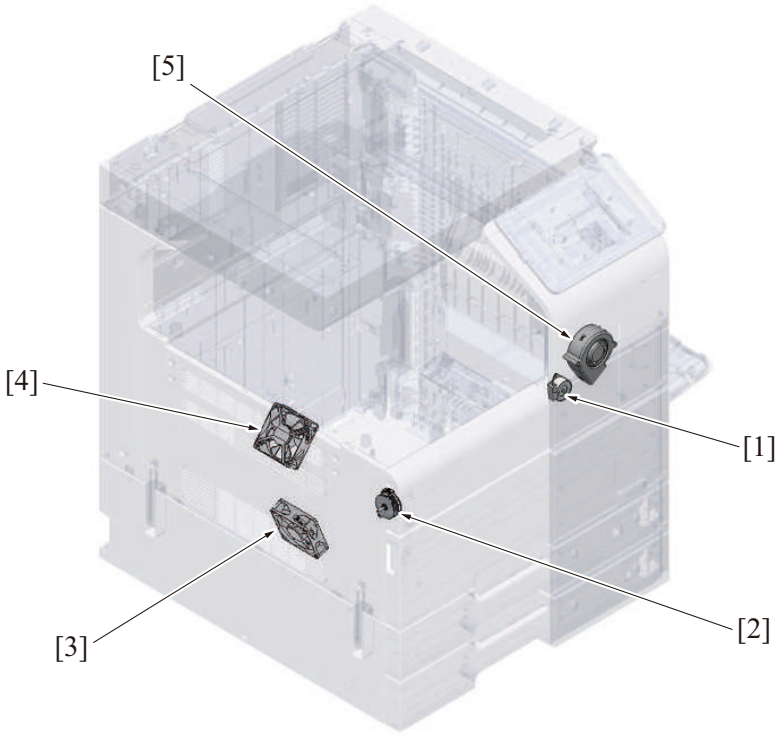


[1]	Right door switch (SW3)	[2]	USB hub board (USBHB) *1
[3]	Machine condition monitor board (MCMB)	[4]	Total counter (TCT) *2
[5]	Front door switch (SW2)	[6]	Main power switch (SW1)

[7]	Waste toner box set sensor (PS102)	[8]	Toner empty sensor/K (PS31)
[9]	Waste toner full sensor (PS101)	[10]	Waste toner box drive detection sensor (PS100)
[11]	Front upper door sensor (PS43)	[12]	Erase LED/K (EL/K)
[13]	Fax speaker (SP1)	-	-

*1: Option
*2: Japan models only

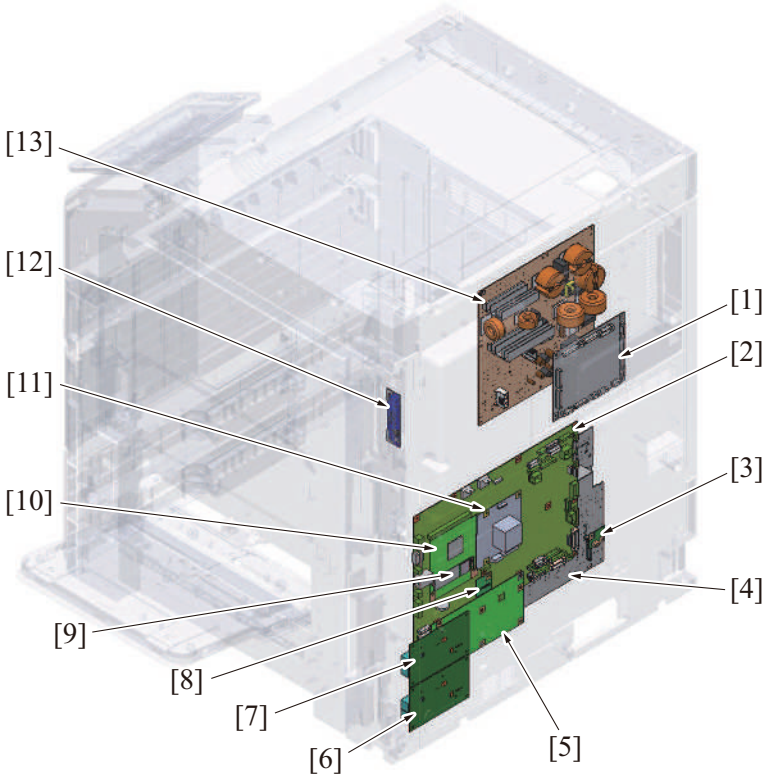
(2) Load



[1]	Toner supply motor/K (M6)	[2]	Waste toner transport motor (M20)
[3]	PH/power supply cooling fan (FM1)	[4]	Transfer belt cleaner cooling fan (FM2)
[5]	Machine internal cooling fan (FM25)	-	-

1.1.3 Back side

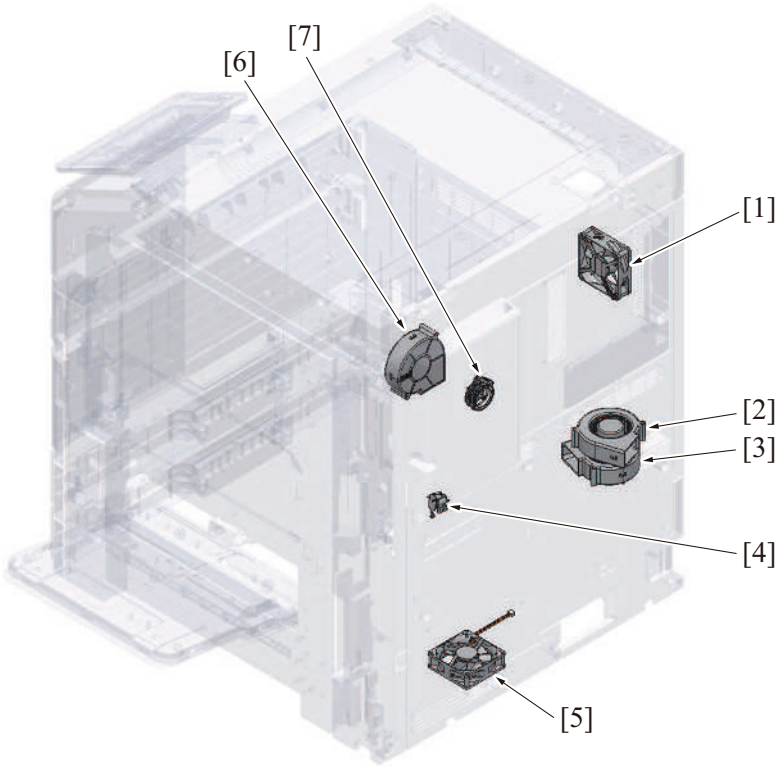
(1) Board



[1]	Expansion control board (EXCB)	[2]	Base board (BASEB)
[3]	Backup board (ERB)	[4]	High voltage unit (HV)
[5]	DSC board/1 (DSCB/1) *1	[6]	Fax board/1 (FAXB/1) *1
[7]	Fax board/2 (FAXB/2) *1	[8]	TPM board (TPMB)
[9]	Storage board (STRGB)	[10]	CPU board (CPUB)
[11]	Memory board (MEMB)	[12]	Wireless LAN board (WLANB) *1
[13]	HaCS power supply (FUPU)	-	-

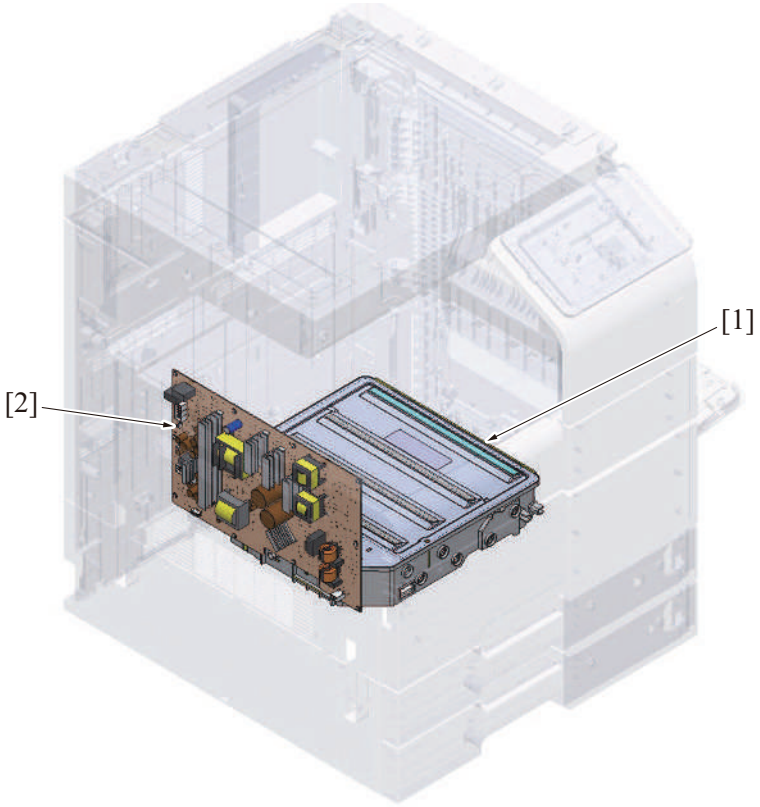
*1: Option

(2) Load



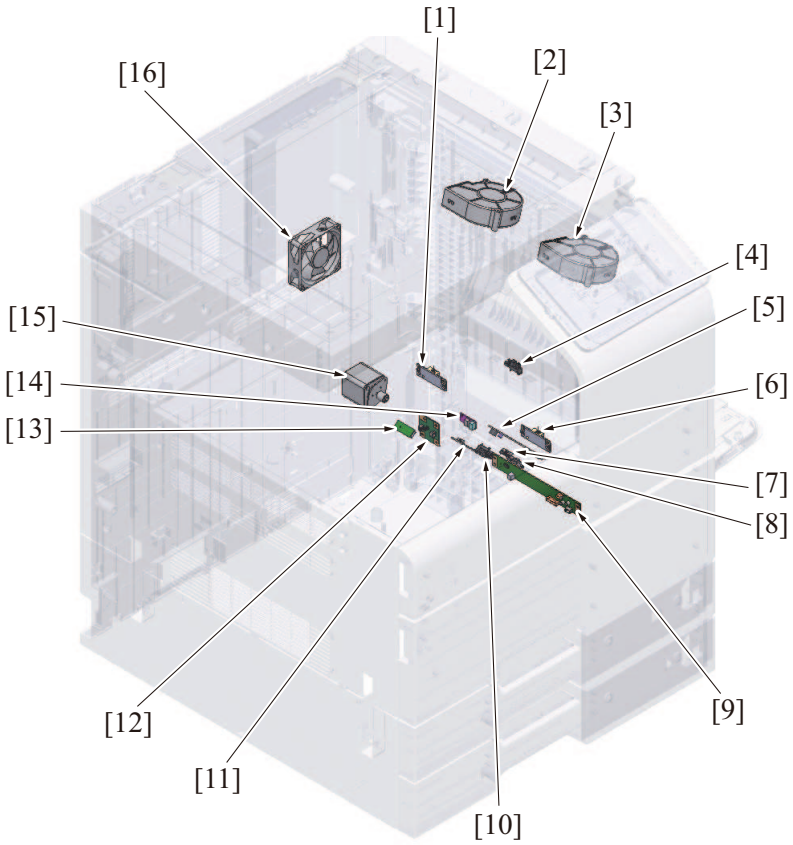
[1]	HaCS power supply cooling fan (FM5)	[2]	Toner suction fan (FM11)
[3]	DV cooling fan (FM19)	[4]	Developing solenoid (SD4)
[5]	Rear side cooling fan (FM3)	[6]	Paper cooling fan (FM8)
[7]	Toner cartridge motor/K (M25)	-	-

1.1.4 Left side



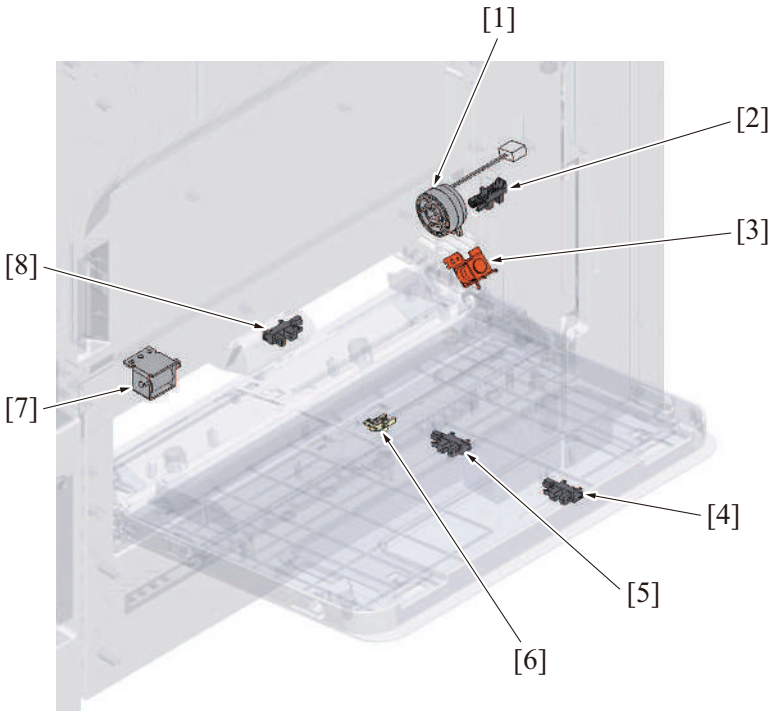
[1]	PH unit	[2]	DC power supply (DCPU)

1.1.5 Right side



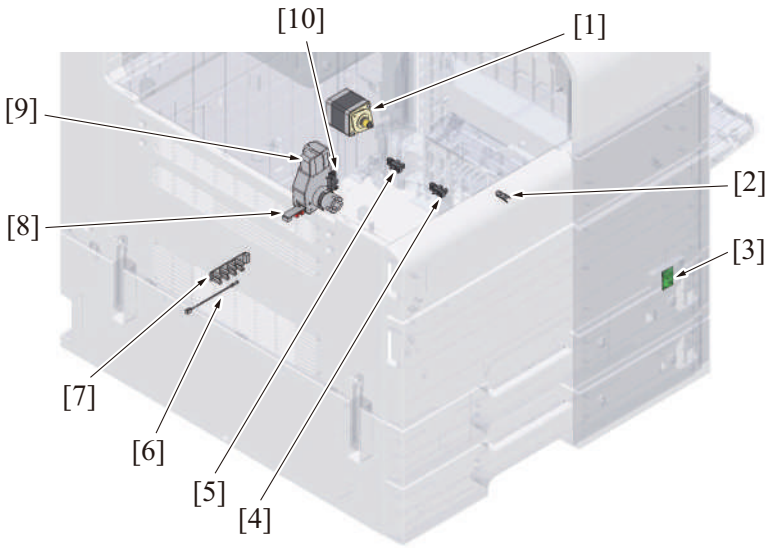
[1]	IDC sensor/Rr (IDCS/Rr)	[2]	UFP scavenging fan/Rr (FM18)
[3]	UFP scavenging fan/Fr (FM17)	[4]	Fusing loop sensor (PS2)
[5]	Envelope detection board/RX (ENVDB/RX)	[6]	IDC sensor/Fr (IDCS/Fr)
[7]	Registration sensor/2 (PS72)	[8]	Paper basis weight detection board/TX (PBWDB/TX)
[9]	Paper basis weight detection board/RX (PBWDB/RX)	[10]	Registration sensor/1 (PS1)
[11]	Envelope detection board/TX (ENVDB/TX)	[12]	Envelope detection relay board (ENVDRB)
[13]	TCR sensor/K (TCRS/K)	[14]	Temperature/humidity sensor (TEM/HUMS)
[15]	Registration motor (M24) *3	[16]	Toner cartridge cooling fan (FM4)

1.1.6 Manual bypass tray



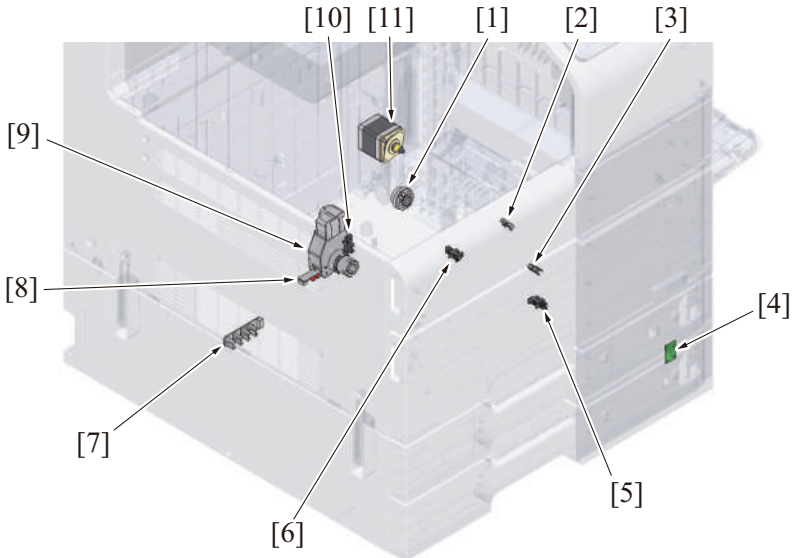
[1]	Bypass tray paper feed clutch (CL7)	[2]	Bypass tray lift-up position sensor (PS26)
[3]	Bypass tray lift-up solenoid (SD1)	[4]	Bypass tray FD paper size sensor/2 (PS29)
[5]	Bypass tray FD paper size sensor/1 (PS28)	[6]	Bypass tray CD paper size VR (VR1)
[7]	Bypass tray pick-up roller solenoid (SD6)	[8]	Bypass tray paper empty sensor (PS27)

1.1.7 Tray 1



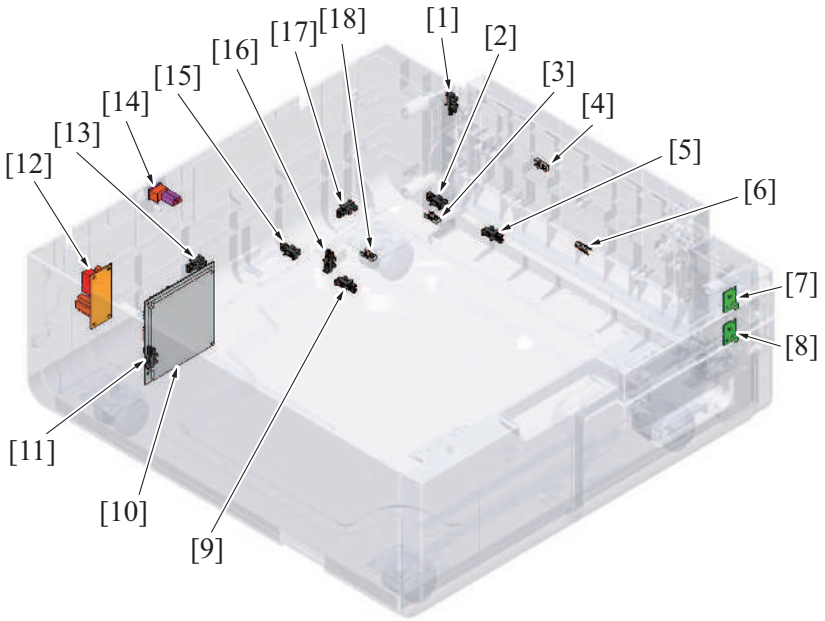
[1]	Paper feed motor (M22)	[2]	Tray 1 paper feed sensor (PS23)
[3]	Tray 1 paper empty indicator board (PEIB/1)	[4]	Tray 1 paper empty sensor (PS24)
[5]	Tray 1 upper limit sensor (PS25)	[6]	Paper feed thermistor (TH4)
[7]	Tray 1 FD paper size board (FDPSB/1)	[8]	Tray 1 CD paper size board (CDPSB/1)
[9]	Tray 1 lift-up motor (M12)	[10]	Tray 1 paper near empty sensor (PS11)

1.1.8 Tray 2



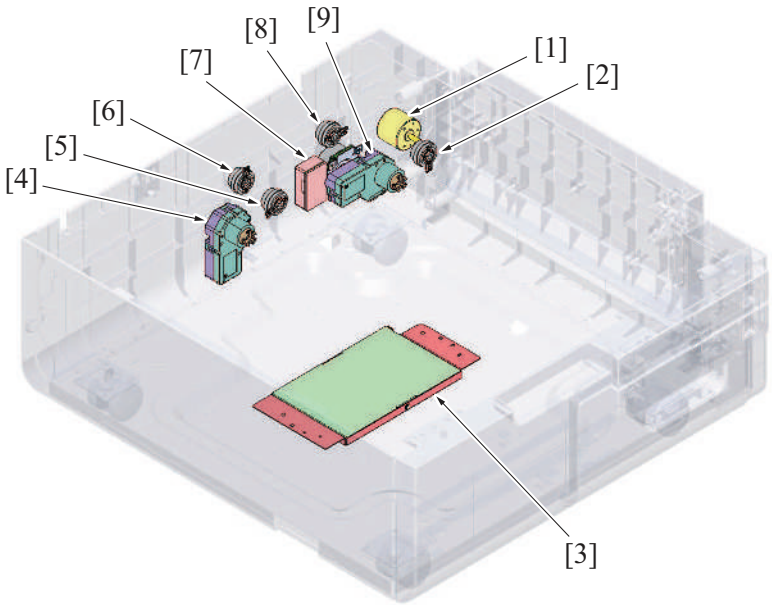
[1]	Tray 2 paper feed clutch (CL1)	[2]	Tray 2 vertical transport sensor (PS19)
[3]	Tray 2 paper feed sensor (PS20)	[4]	Tray 2 paper empty indicator board (PEIB/2)
[5]	Tray 2 paper empty sensor (PS21)	[6]	Tray 2 upper limit sensor (PS22)
[7]	Tray 2 FD paper size board (FDPSB/2)	[8]	Tray 2 CD paper size board (CDPSB/2)
[9]	Tray 2 lift-up motor (M13)	[10]	Tray 2 paper near empty sensor (PS12)
[11]	Tray 2 vertical transport motor (M23)	-	-

1.1.9 Tray 3/4



[1]	Right bottom door sensor (PS151)	[2]	Tray 4 paper empty sensor (PS164)
[3]	Horizontal transport sensor (PS158)	[4]	Vertical transport sensor (PS153)
[5]	Tray 4 upper limit sensor (PS166)	[6]	Tray 4 paper feed sensor (PS162)
[7]	Tray 3 paper empty indicator board (PEIB/3)	[8]	Tray 4 paper empty indicator board (PEIB/4)
[9]	Tray 3 upper limit sensor (PS156)	[10]	PC control board (PCCB)
[11]	Tray 3 set sensor (PS157)	[12]	Dehumidifier relay board (DERYB) *
[13]	Tray 3 paper near empty sensor (PS155)	[14]	Dehumidification heater switch (SW4) *
[15]	Tray 3 paper empty sensor (PS154)	[16]	Tray 4 set sensor (PS167)
[17]	Tray 4 paper near empty sensor (PS165)	[18]	Tray 3 paper feed sensor (PS152)

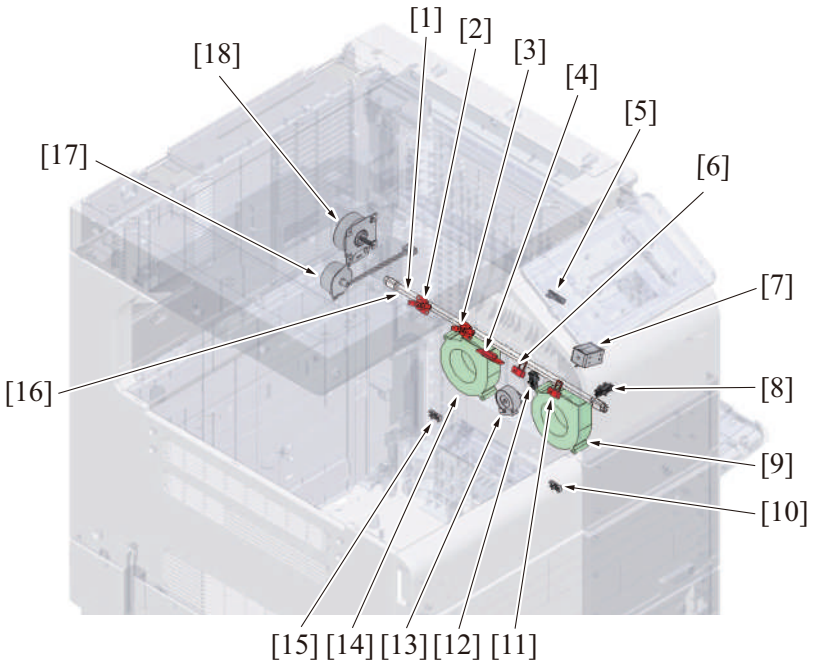
*: Japan models only



[1]	Intermediate motor (M151)	[2]	Tray 4 paper feed clutch (CL161)
[3]	Dehumidifier heater (DH111) *	[4]	Tray 3 lift-up motor (M143)
[5]	Tray 3 paper feed clutch (CL151)	[6]	Tray 3 transport clutch (CL152)
[7]	Transport motor (M152)	[8]	Horizontal transport clutch (CL153)
[9]	Tray 4 lift-up motor (M144)	-	-

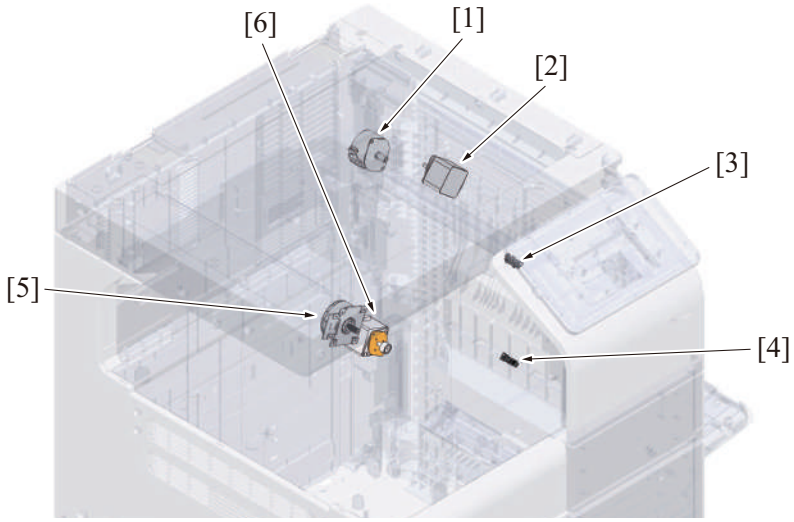
*: Japan models only

1.1.10 Fusing/paper exit section



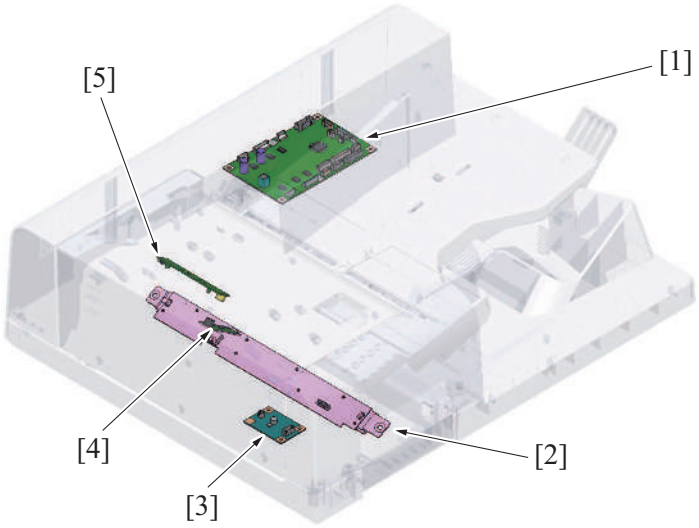
[1]	Fusing heater lamp/1 (FH1)	[2]	Heating roller thermostat/Edg (TS2)
[3]	Heating roller thermostat/Ctr (TS1)	[4]	Heating roller temperature sensor (TEMS)
[5]	Paper exit sensor (PS3)	[6]	Heating roller thermistor/Ctr (TH2)
[7]	Exit path switch solenoid (SD3)	[8]	Fusing pressure home sensor (PS38)
[9]	Fusing edge cooling fan/Fr (FM21)	[10]	Feeding paper size sensor/1 (PS50)
[11]	Heating roller thermistor/Edg (TH1)	[12]	Fusing shutter home sensor/1 (PS47)
[13]	Fusing shutter motor (M15)	[14]	Fusing edge cooling fan/Rr (FM22)
[15]	Feeding paper size sensor/2 (PS51)	[16]	Fusing heater lamp/2 (FH2)
[17]	Fusing pressure motor (M11)	[18]	Fusing motor (M3)

1.1.11 Duplex section

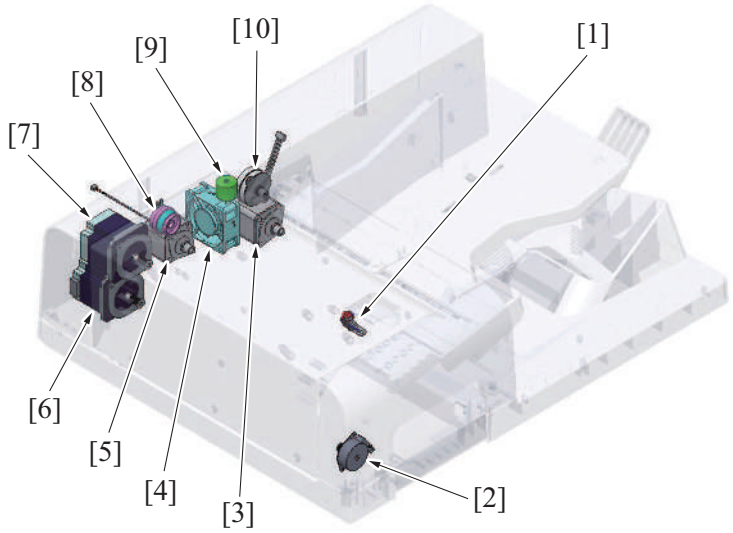


[1]	Paper exit/reverse motor (M4)	[2]	ADU transport motor/1 (M5)
[3]	ADU paper passage sensor/1 (PS40)	[4]	ADU paper passage sensor/2 (PS41)
[5]	Transport motor (M1)	[6]	ADU transport motor/2 (M26)

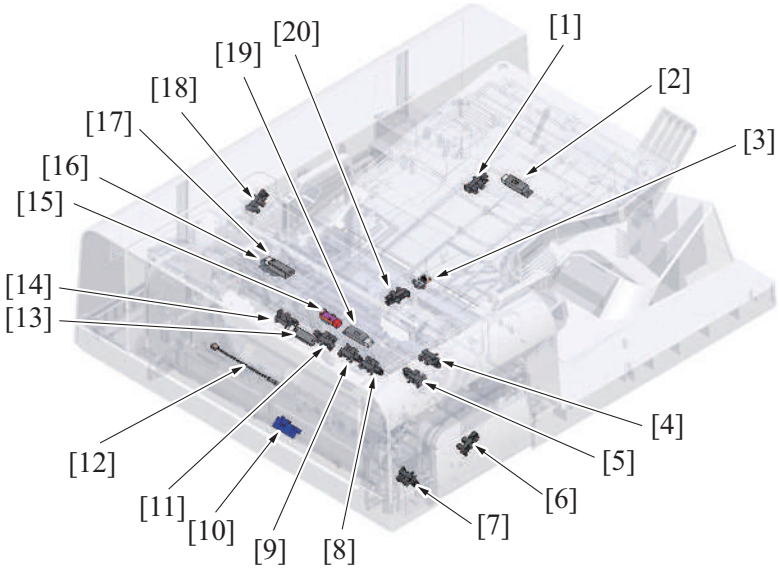
1.2 DF-713



[1]	DF control board (DFCB)	[2]	CIS module (CIS)
[3]	CIS power supply (CISPU)	[4]	Multi feed detection board/TX (MFDB/TX)
[5]	Multi feed detection board/RX (MFDB/RX)	-	-

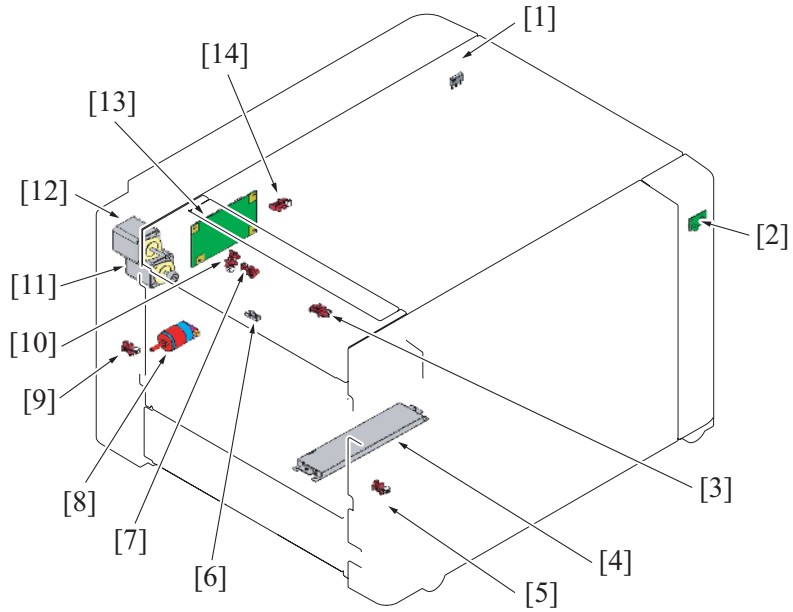


[1]	Stamp solenoid (SD)	[2]	Document reading glass cleaning motor (M8)
[3]	Document exit motor (M4)	[4]	DF cooling fan (FM)
[5]	Document feed motor (M1)	[6]	Document registration motor (M2)
[7]	Document reading motor (M3)	[8]	Document feed clutch (CL1)
[9]	DF lift-up motor (M5)	[10]	CIS cleaning motor (M7)



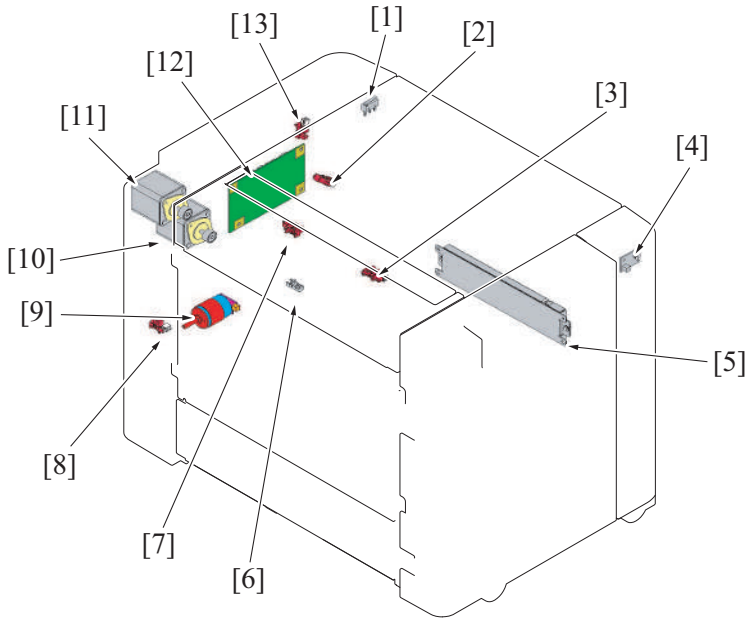
[1]	Document length size sensor/1 (PS10)	[2]	Document length size sensor/2 (PS11)
[3]	Document width size sensor (VR1)	[4]	Document exit sensor (PS7)
[5]	DF lift-up lower limit sensor (PS3)	[6]	CIS cover sensor (PS20)
[7]	Front side cleaning home sensor (PS18)	[8]	Mixed original sensor/3 (PS15)
[9]	Mixed original sensor/2 (PS14)	[10]	Document reading sensor (PS6)
[11]	Mixed original sensor/1 (PS13)	[12]	DF temperature sensor (TH)
[13]	Registration sensor (PS5)	[14]	Document feed tray sensor (PS26)
[15]	After separate sensor (PS4)	[16]	Back side cleaning home sensor (PS9)
[17]	Document feed sensor (PS21)	[18]	Upper door sensor (PS16)
[19]	Document empty sensor (PS1)	[20]	Upper limit sensor (PS2)

1.3 LU-205



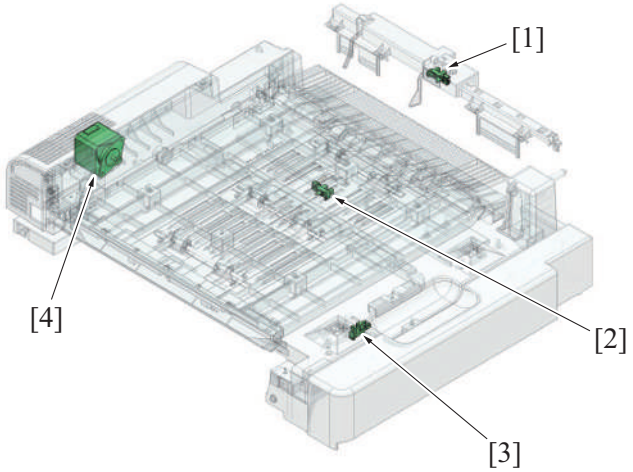
[1]	LU door switch (MS1)	[2]	Tray LED (LED)
[3]	LU paper empty sensor (PS4)	[4]	Dehumidification heater (DH)
[5]	LU set sensor/Fr (PS7)	[6]	LU paper feed sensor (PS3)
[7]	LU upper limit sensor (PS2)	[8]	LU lift-up motor (M1)
[9]	LU set sensor/Rr (PS1)	[10]	LU paper near empty sensor/2 (PS6)
[11]	LU paper feed motor (M2)	[12]	LU transport motor (M3)
[13]	LU drive board (LUDB)	[14]	LU paper near empty sensor/1 (PS5)

1.4 LU-303



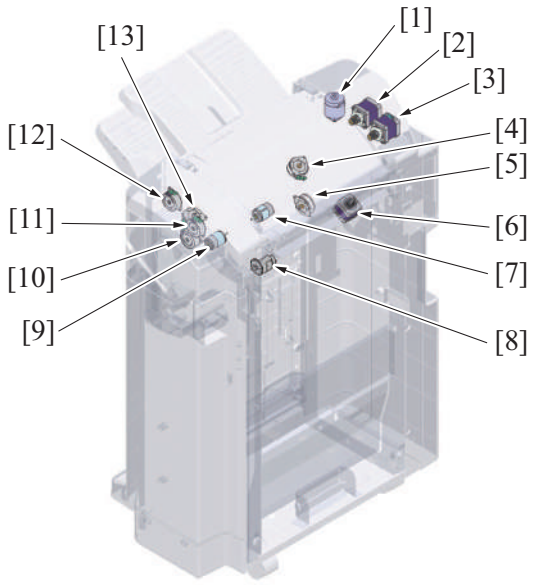
[1]	LU door switch (MS1)	[2]	LU paper near empty sensor/2 (PS6)
[3]	LU paper empty sensor (PS4)	[4]	Tray LED (LED)
[5]	Dehumidification heater (DH)	[6]	LU paper feed sensor (PS3)
[7]	LU upper limit sensor (PS2)	[8]	LU set sensor (PS1)
[9]	LU lift-up motor (M1)	[10]	LU paper feed motor (M2)
[11]	LU transport motor (M3)	[12]	LU drive board (LUDB)
[13]	LU paper near empty sensor/1 (PS5)	-	-

1.5 RU-519

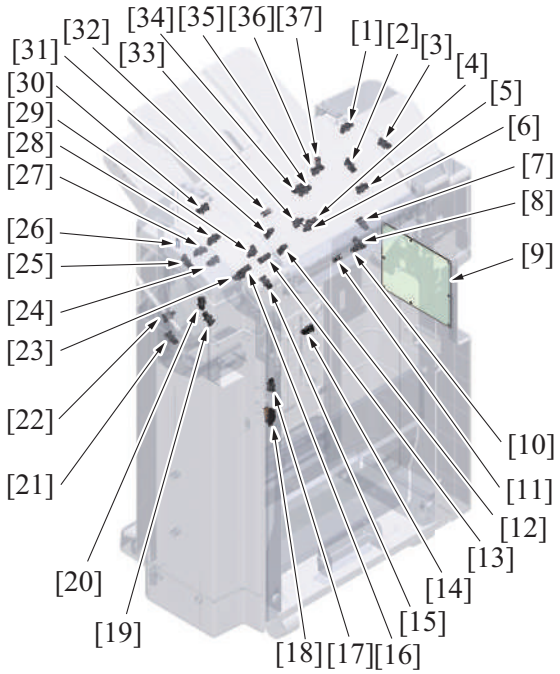


[1]	3rd exit tray full sensor (PS1)	[2]	RU entrance sensor (PS2)
[3]	RU cover open/close detection sensor (PS3)	[4]	RU transport motor (M1)

1.6 FS-539/FS-539SD



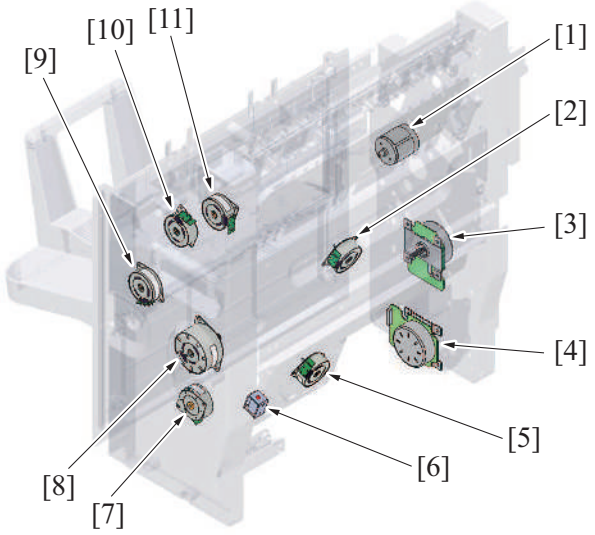
[1]	Main tray up/down motor (M11)	[2]	FNS discharge motor (M3)
[3]	FNS entry transport motor (M2)	[4]	Alignment motor/Rr (M8)
[5]	Paper delivery control motor (M12)	[6]	Stapler movement motor (M13)
[7]	Pre-eject drive motor (M9)	[8]	Stapler motor (M14)
[9]	Bundle eject motor (M10)	[10]	Trailing edge stopper motor (M6)
[11]	Receiving roller retraction motor (M4)	[12]	FNS paddle motor (M5)
[13]	Alignment motor/Fr (M7)	-	-



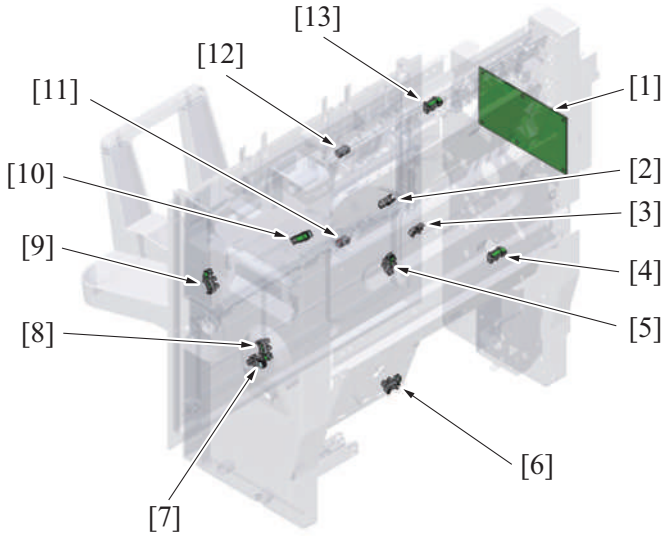
[1]	Sub tray full sensor (PS38)	[2]	Alignment plate home sensor/Rr (PS13)
[3]	Main tray up/down motor sensor (PS25)	[4]	Main tray exit sensor (PS16)
[5]	Main tray middle position sensor (PS10)	[6]	Gripper home sensor (PS18)
[7]	Corner staple position sensor/Rr (PS23)	[8]	Flat staple position sensor/Rr (PS33)
[9]	FS control board (FSCB)	[10]	FNS entrance sensor (PS4)
[11]	Saddle exit sensor (PS5)	[12]	Pre-eject home sensor (PS21)
[13]	Pre-eject encoder sensor (PS15)	[14]	Main tray full sensor (PS29)
[15]	Stapler center position sensor (PS24)	[16]	Gripper motor sensor (PS17)
[17]	Front door open/close detection sensor (PS37)	[18]	Front door open detect switch (SW1)

[19]	Corner staple position sensor/Fr (PS34)	[20]	Paper delivery control home sensor (PS28)
[21]	Stapler home sensor (PS35)	[22]	Manual staple sensor (PS36)
[23]	Route change gate home sensor (PS30)	[24]	Receiving roller retraction sensor (PS11)
[25]	Alignment plate home sensor/Fr (PS12)	[26]	Main tray upper sensor/in (PS7)
[27]	Upper paddle home sensor (PS14)	[28]	Main tray upper position sensor/Fr (PS27)
[29]	Trailing edge stopper home sensor (PS20)	[30]	Upper door open/close detection sensor (PS32)
[31]	Pre-eject away sensor (PS22)	[32]	Alignment tray paper detection sensor (PS31)
[33]	Gripper position sensor (PS19)	[34]	Main tray upper position sensor/Rr (PS26)
[35]	Sub tray exit sensor (PS8)	[36]	Main tray empty sensor (PS39)
[37]	Main tray upper sensor/out (PS6)	-	-

1.7 FS-539SD saddle section



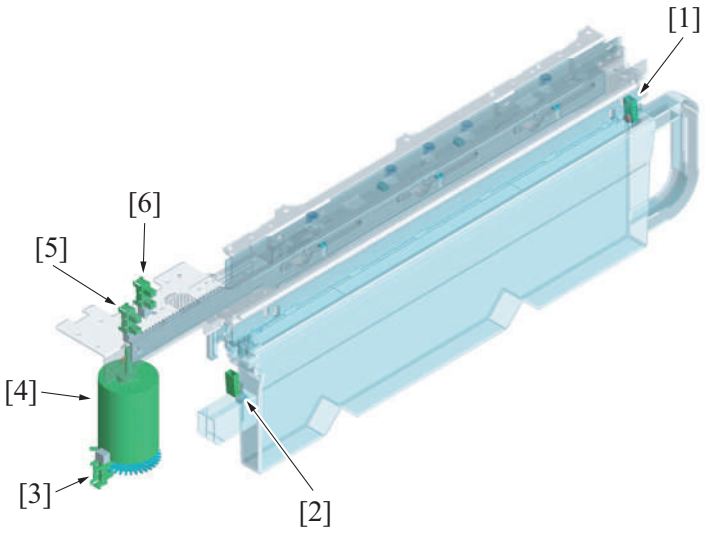
[1]	Center stapler motor (M110)	[2]	Alignment motor (M103)
[3]	Center fold roller motor (M105)	[4]	Center fold knife motor (M109)
[5]	Stopper drive motor (M104)	[6]	Stopper solenoid (SD101)
[7]	SD paddle motor (M107)	[8]	Center fold guide motor (M106)
[9]	Tri-folding guide motor (M108)	[10]	Paper discharge control motor (M102)
[11]	SD transport motor (M101)	-	-



[1]	SD control board (SDCB)	[2]	Fold exit sensor (PS112)
[3]	Center fold knife home sensor (PS108)	[4]	Center staple/fold stacker paper detect sensor (PS103)
[5]	Alignment home sensor (PS104)	[6]	Stopper home sensor (PS106)
[7]	Paddle home sensor (PS105)	[8]	Guide home sensor (PS107)

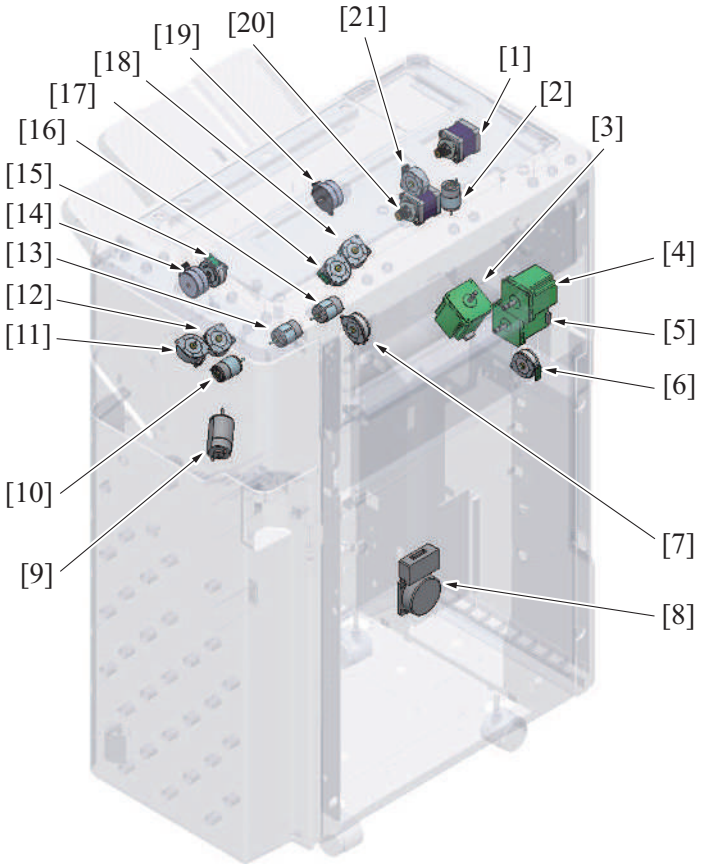
[9]	Tri-folding gate home sensor (PS111)	[10]	Curl cover detection sensor (PS102)
[11]	Booklet tray empty detection sensor/out (PS114)	[12]	Booklet tray empty detection sensor/in (PS113)
[13]	SD entrance sensor (PS101)	-	-

1.8 PK-524



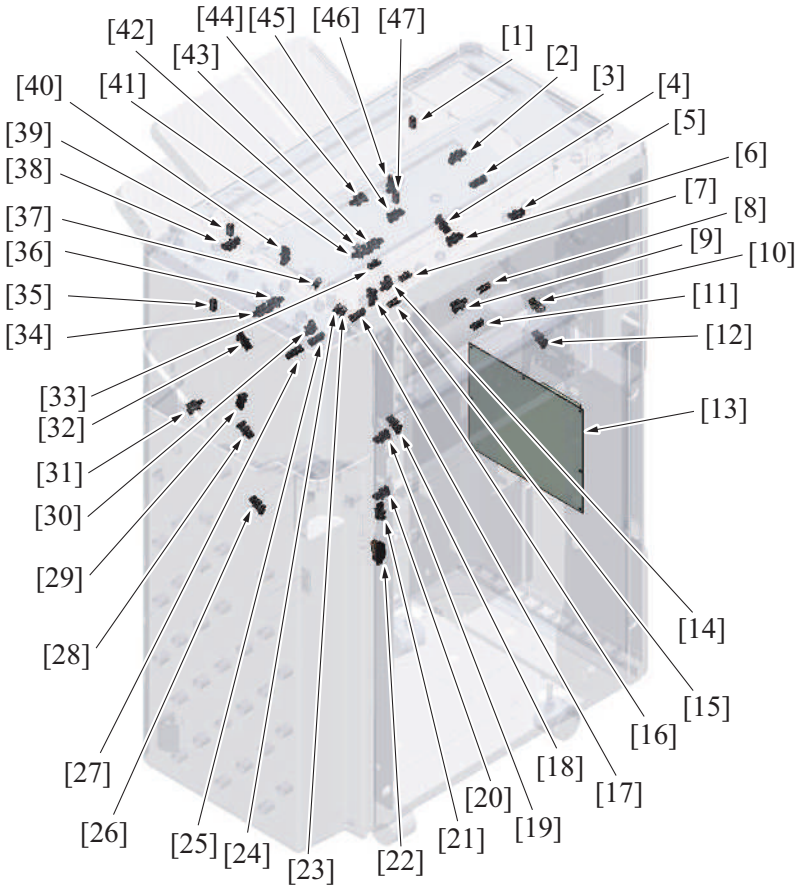
[1]	Punch dust full sensor/out (PS4)		[2]	Punch dust full sensor/in (PS5)
[3]	Punch motor sensor (PS3)		[4]	Punch drive motor (M1)
[5]	Punch position sensor (PS2)		[6]	Punch home sensor (PS1)

1.9 FS-540/FS-540SD



[1]	Sub tray exit motor (M18)	[2]	Route change gate motor (M4)
[3]	Stapler movement motor (M19)	[4]	FNS entry transport motor (M20)
[5]	ZU discharge motor (M21)	[6]	SD discharge motor (M16)

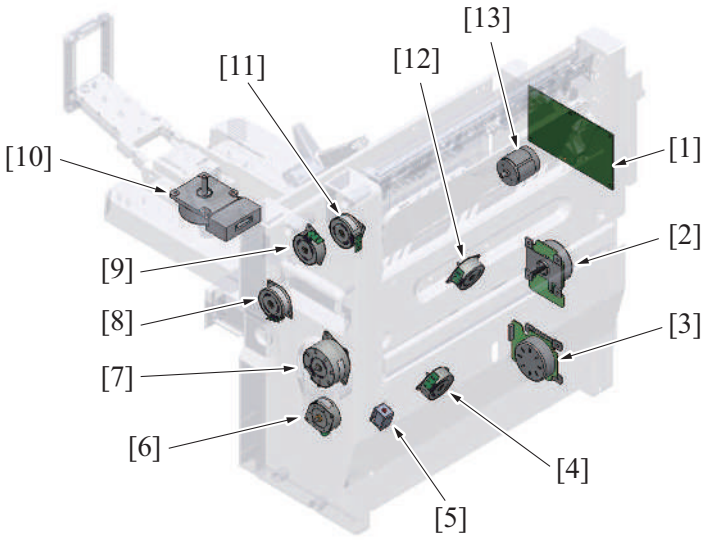
[7]	Stapler motor (M5)	[8]	Paper delivery control motor (M15)
[9]	Main tray up/down motor (M6)	[10]	Bundle eject motor (M1)
[11]	Alignment motor/Fr (M14)	[12]	Trailing edge stopper motor/Fr (M12)
[13]	Stacker plate drive motor (M3)	[14]	Arm drive motor (M8)
[15]	FNS paddle motor (M9)	[16]	Pre-eject drive motor (M2)
[17]	Trailing edge stopper motor/Rr (M11)	[18]	Paddle up/down motor (M7)
[19]	Alignment motor/Rr (M13)	[20]	FNS discharge motor (M17)
[21]	Receiving roller retraction motor (M10)	-	-



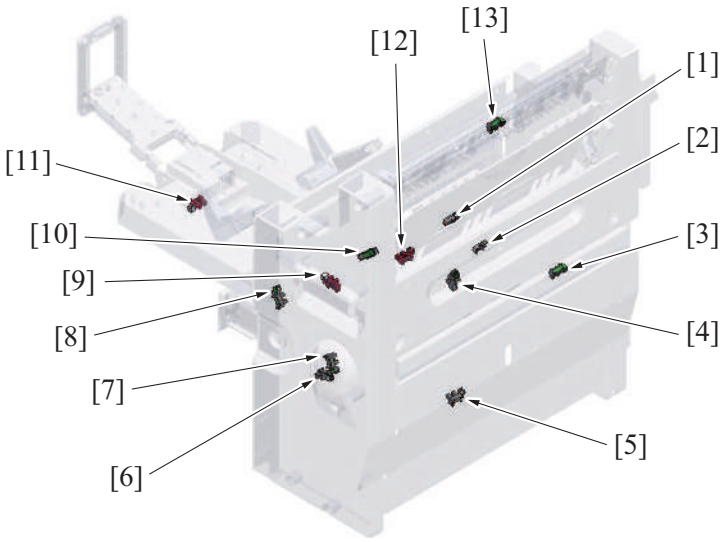
[1]	Sub tray full sensor/out (PS39)	[2]	Sub tray/JS route change gate home sensor (PS23)
[3]	Receiving roller retraction sensor (PS22)	[4]	Alignment plate home sensor/Rr (PS6)
[5]	Route change gate home sensor (PS21)	[6]	Main tray middle position sensor (PS51)
[7]	FNS middle sensor (PS36)	[8]	PI discharge sensor (PS33)
[9]	Flat staple position sensor/Rr (PS18)	[10]	Punch scraps box set sensor (PS28)
[11]	FNS entrance sensor (PS34)	[12]	Corner staple position sensor/Rr (PS19)
[13]	FS control board (FSCB)	[14]	Trailing edge stopper sensor/Rr (PS7)
[15]	SD discharge sensor (PS35)	[16]	Gripper home sensor (PS3)
[17]	Pre-eject encoder sensor (PS2)	[18]	Stapler center position sensor (PS20)
[19]	Main tray full sensor (FS-540SD) (PS12)	[20]	Main tray full sensor (FS-540) (PS12)
[21]	Front door open/close detection sensor (PS55)	[22]	Front door open detect switch (SW1)
[23]	Trailing edge stopper home sensor (PS31)	[24]	Stacker plate home sensor (PS30)
[25]	Stacker plate encoder sensor (PS4)	[26]	Corner staple position sensor/Fr (PS53)
[27]	Gripper motor sensor (PS1)	[28]	Flat staple position sensor/Fr (PS52)
[29]	Paper delivery control home sensor (PS11)	[30]	Trailing edge stopper sensor/Fr (PS10)
[31]	Manual staple sensor (PS54)	[32]	Main tray exit sensor (PS37)
[33]	Alignment plate home sensor/Fr (PS9)	[34]	Main tray lift up detection sensor/Fr (PS16)
[35]	Main tray upper sensor/out (PS38)	[36]	Main tray lift down detection sensor/Fr (PS14)
[37]	Stacker plate position sensor (PS29)	[38]	Arm home sensor (PS26)
[39]	Sub tray full sensor/in (PS41)	[40]	Paddle home sensor (PS25)

[41]	Alignment tray paper detection sensor (PS32)	[42]	Main tray lift down detection sensor/Rr (PS15)
[43]	Main tray lift up detection sensor/Rr (PS17)	[44]	Sub tray exit sensor (PS24)
[45]	Main tray empty sensor (PS13)	[46]	Paddle up/down home sensor (PS27)
[47]	Main tray upper sensor/in (PS40)	-	-

1.10 FS-540SD saddle section

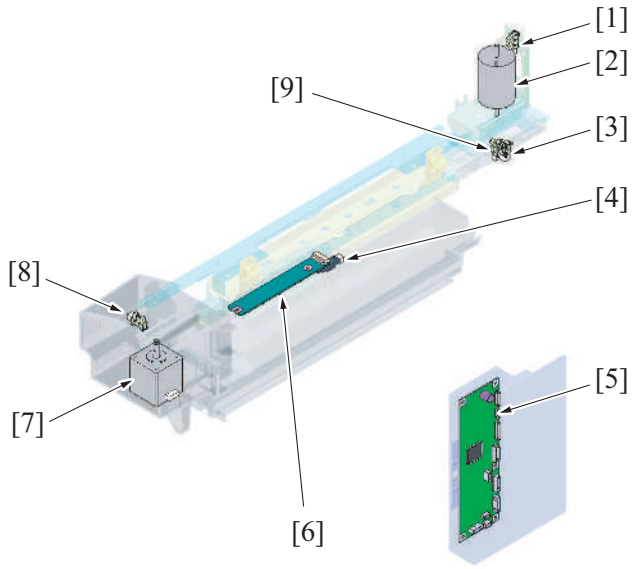


[1]	SD control board (SDCB)	[2]	Center fold roller motor (M105)
[3]	Center fold knife motor (M109)	[4]	Stopper drive motor (M104)
[5]	Stopper solenoid (SD101)	[6]	SD paddle motor (M107)
[7]	Center fold guide motor (M106)	[8]	Tri-folding guide motor (M108)
[9]	Paper discharge control motor (M102)	[10]	Paper transport belt motor (M134)
[11]	SD transport motor (M101)	[12]	Alignment motor (M103)
[13]	Center stapler motor (M110)	-	-



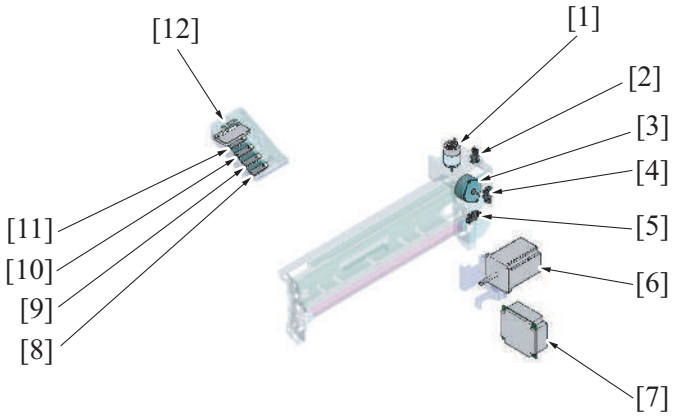
[1]	Center staple/fold stacker paper detect sensor (PS103)	[2]	Fold exit sensor (PS112)
[3]	Center fold knife home sensor (PS108)	[4]	Alignment home sensor (PS104)
[5]	Stopper home sensor (PS106)	[6]	Paddle home sensor (PS105)
[7]	Guide home sensor (PS107)	[8]	Tri-folding gate home sensor (PS111)
[9]	SD exit full sensor (PS135)	[10]	Curl cover detection sensor (PS102)
[11]	SD exit tray limit sensor (PS141)	[12]	SD exit tray lift sensor (PS143)
[13]	SD entrance sensor (PS101)	-	-

1.11 PK-526



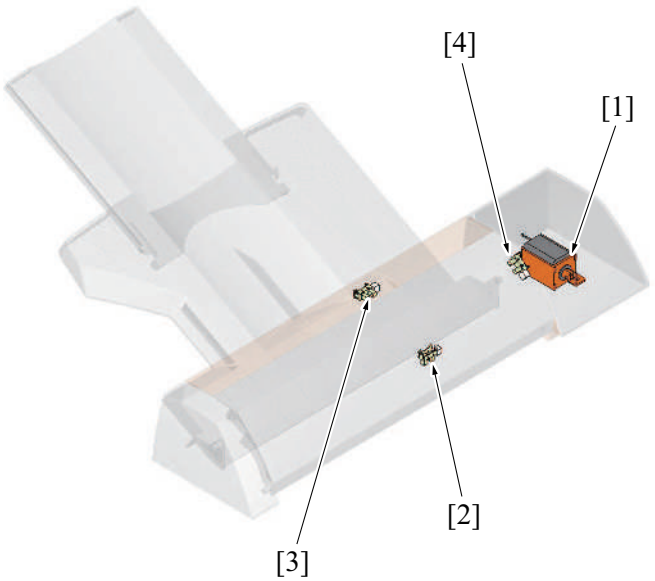
[1]	Punch motor sensor (PS306)		[2]	Punch drive motor (M301)
[3]	Punch position sensor (PS307)		[4]	Punch hole scraps box full sensor (PS302)
[5]	Punch control board (PKCB)		[6]	Paper size detect board (PSDTB)
[7]	Punch oscillating motor (M302)		[8]	Punch oscillating home sensor (PS303)
[9]	Punch home sensor (PS301)		-	-

1.12 ZU-609



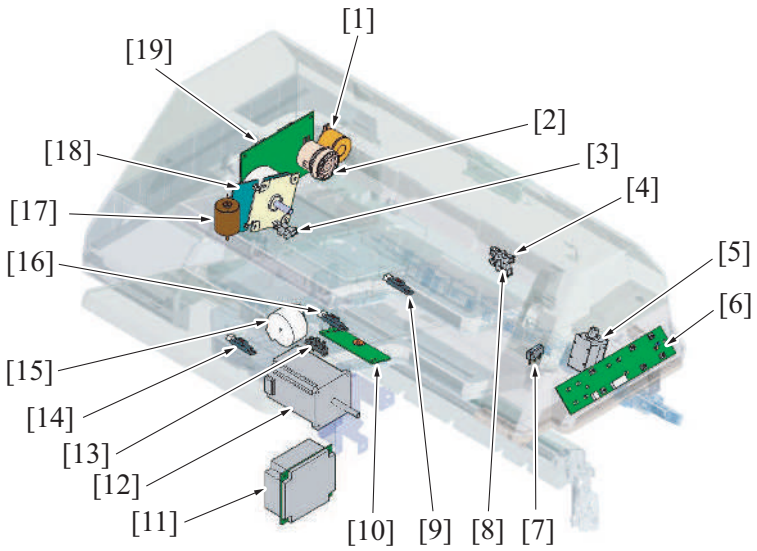
[1]	Pressure motor (M502)	[2]	Press home sensor (PS502)
[3]	Folding guide motor (M501)	[4]	Guide home sensor (PS500)
[5]	Chopper home sensor (PS501)	[6]	ZU transport motor (M500)
[7]	ZU drive board (ZUDB)	[8]	Upper limit sensor/4 (PS506)
[9]	Upper limit sensor/3 (PS505)	[10]	Upper limit sensor/2 (PS504)
[11]	Upper limit sensor/1 (PS503)	[12]	ZU relay board (ZURB)

1.13 JS-602



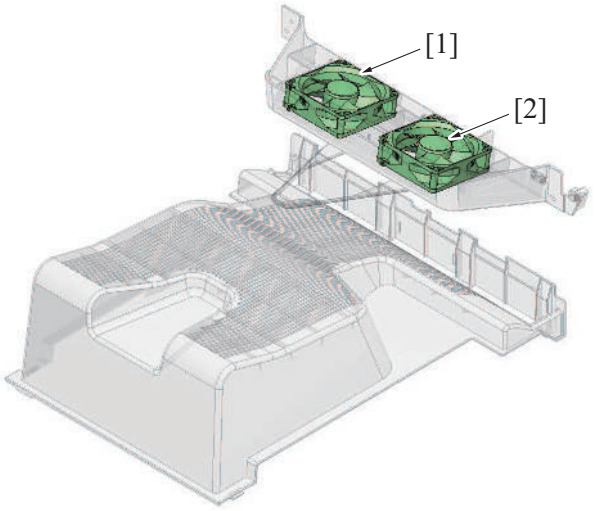
[1]	Entrance switching solenoid (SD401)	[2]	Job tray paper exit sensor (PS402)
[3]	Job tray full sensor (PS403)	[4]	Job tray door sensor (PS401)

1.14 PI-507



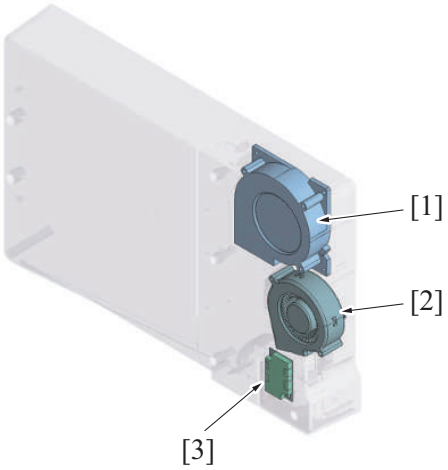
[1]	Registration clutch (CL203)	[2]	Transfer clutch /Lw (CL202)
[3]	Tray lower limit sensor/Lw (PS210)	[4]	Tray upper limit sensor/Lw (PS209)
[5]	Pick-up solenoid/Lw (SD202)	[6]	PI operation board (PIOB)
[7]	Upper door open/close switch (MS205)	[8]	Paper entrance sensor /Lw (PS206)
[9]	Paper empty sensor /Lw (PS207)	[10]	Paper size VR/Lw (VR202)
[11]	PI relay board (PIRB)	[12]	Transport roller drive motor (M204)
[13]	Chopper home sensor (PS501)	[14]	L size sensor /Lw (PS212)
[15]	Folding guide motor (M501)	[16]	Paper set sensor /Lw (PS208)
[17]	Tray lift motor /Lw (M202)	[18]	Transfer motor (M203)
[19]	PI drive board (PIDB)	-	-

1.15 OT-514



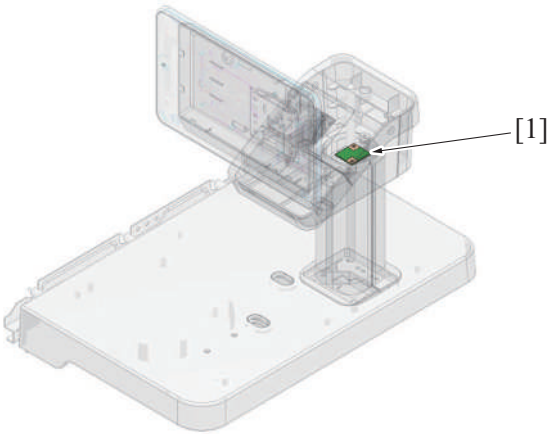
[1]	Tacking fan/Rr (FM24)	[2]	Tacking fan/Fr (FM23)

1.16 CU-102



[1]	Exhaust fan/1 (FM14)	[2]	Exhaust fan/2 (FM15)
[3]	Clean unit drive board (CUDB)	-	-

1.17 WT-519



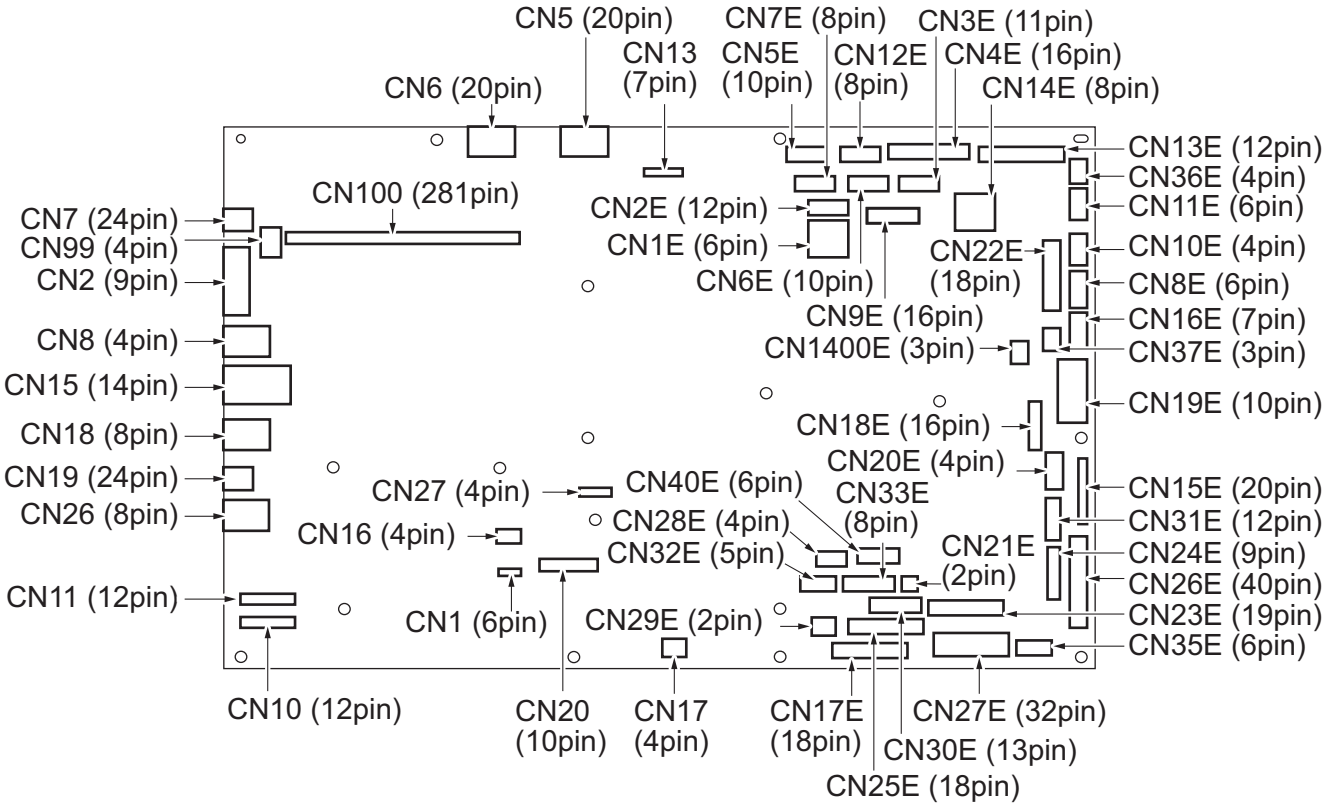
[1]	NFC relay board (NFCRB)	-	-

2. CONNECTOR LAYOUT DRAWING

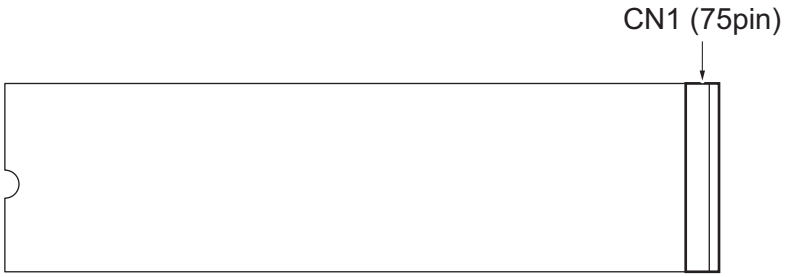
2.1 BOARD CONNECTOR LAYOUT DRAWING

2.1.1 bizhub 750i

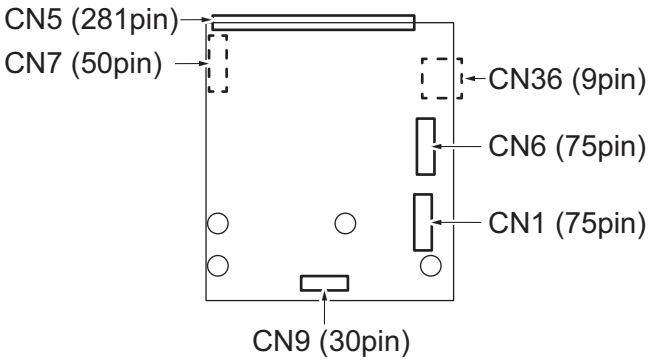
(1) Base board (BASEB)



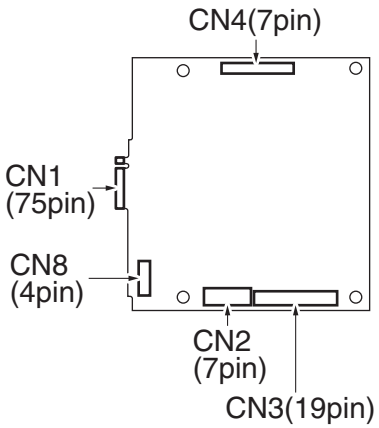
(2) Storage board (STRGB)



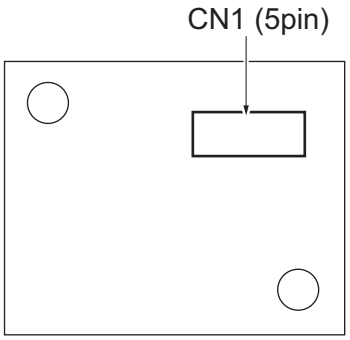
(3) CPU board (CPUB)



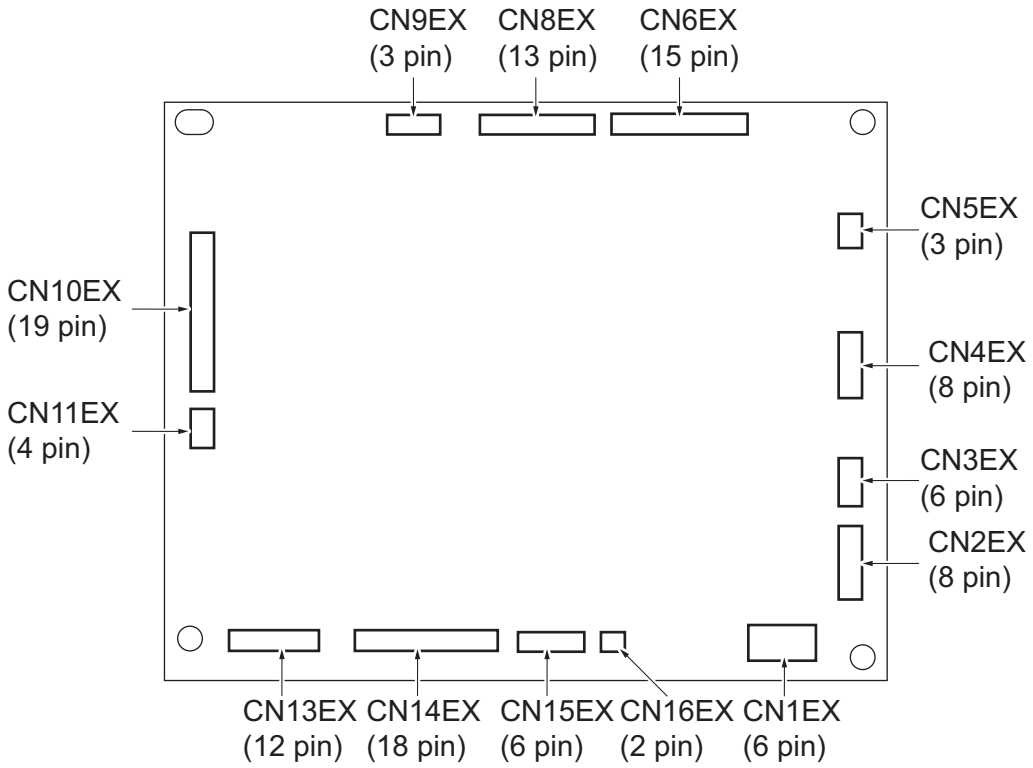
(4) Memory board (MEMB)



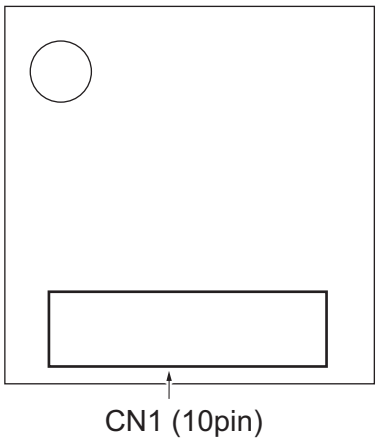
(5) Backup board (ERB)



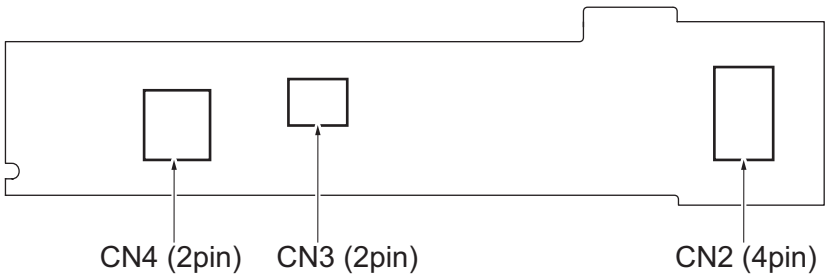
(6) Expansion control board (EXCB)



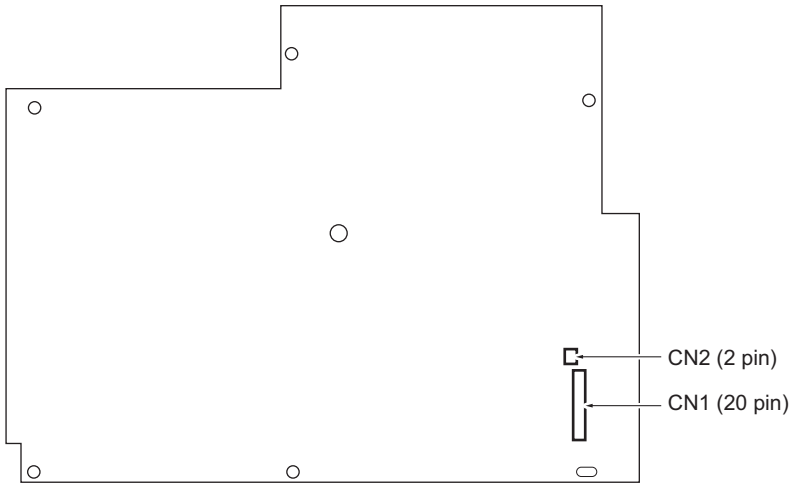
(7) TPM board (TPMB)



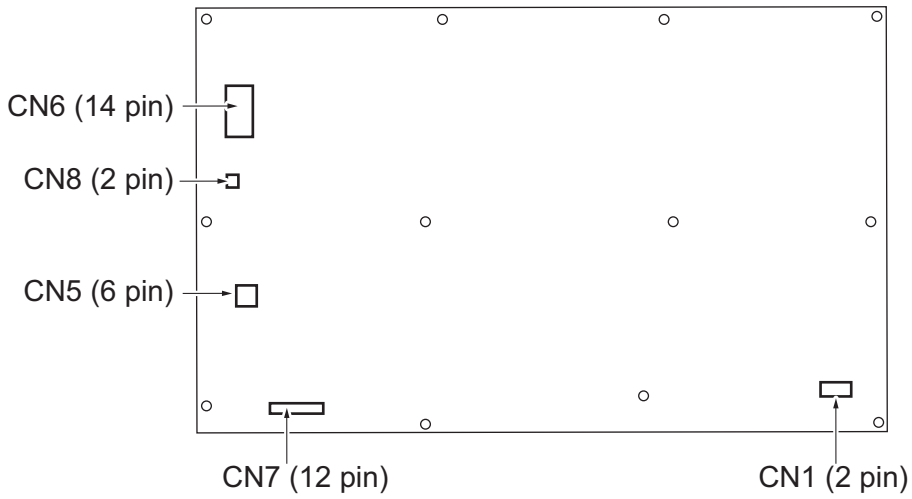
(8) Machine condition monitor board (MCMB)



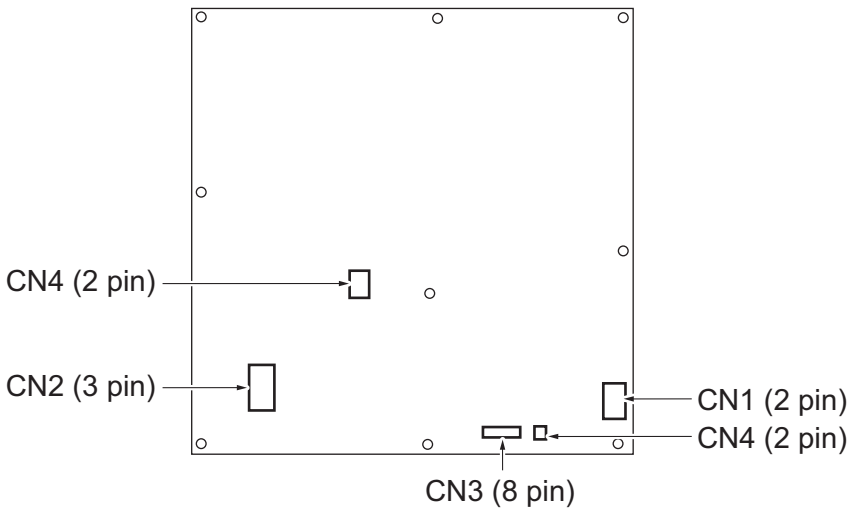
(9) High voltage unit (HV)



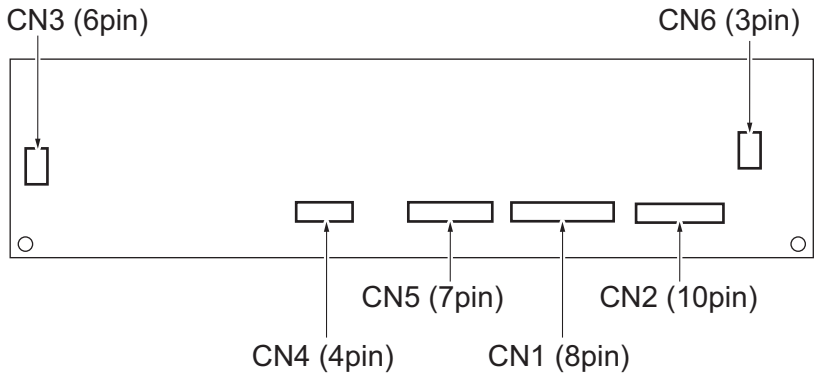
(10) DC power supply (DCPU)



(11) HaCS power supply (FUPU)

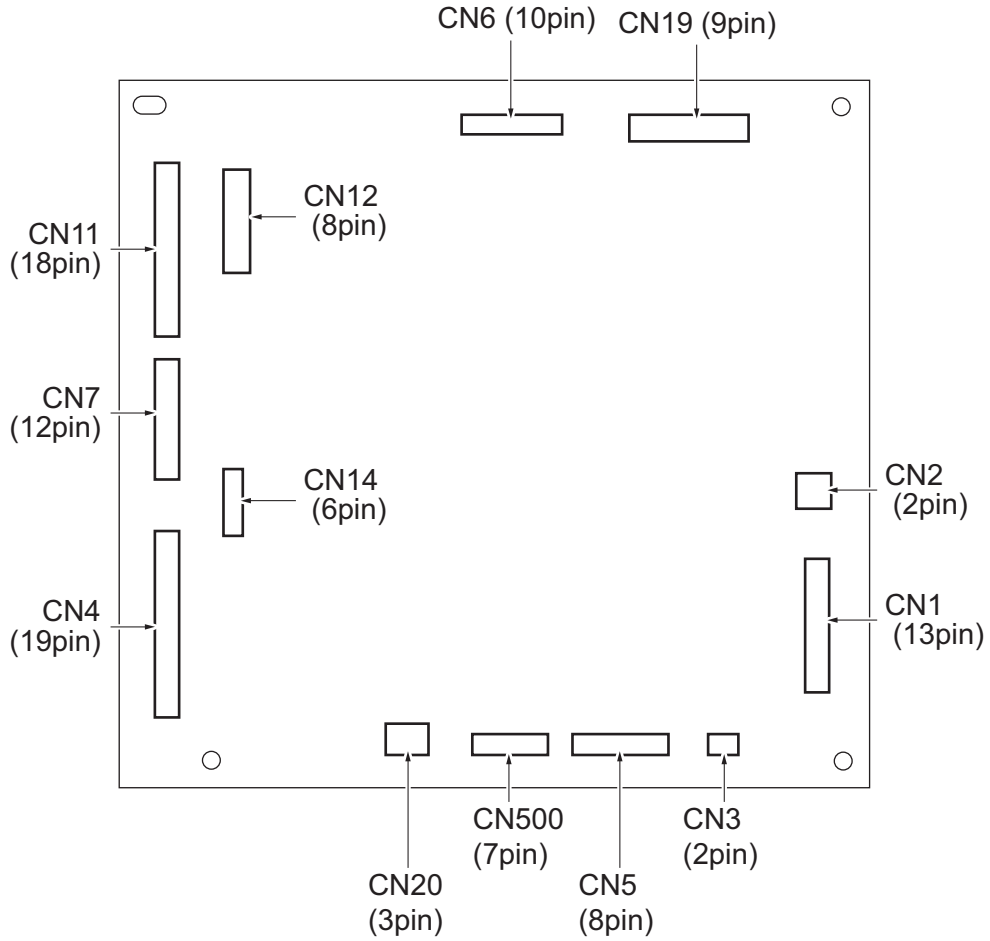


(12) Scanner drive board (SCDB)



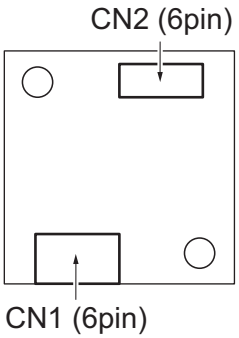
2.1.2 Tray 3/4

PC control board (PCCB)



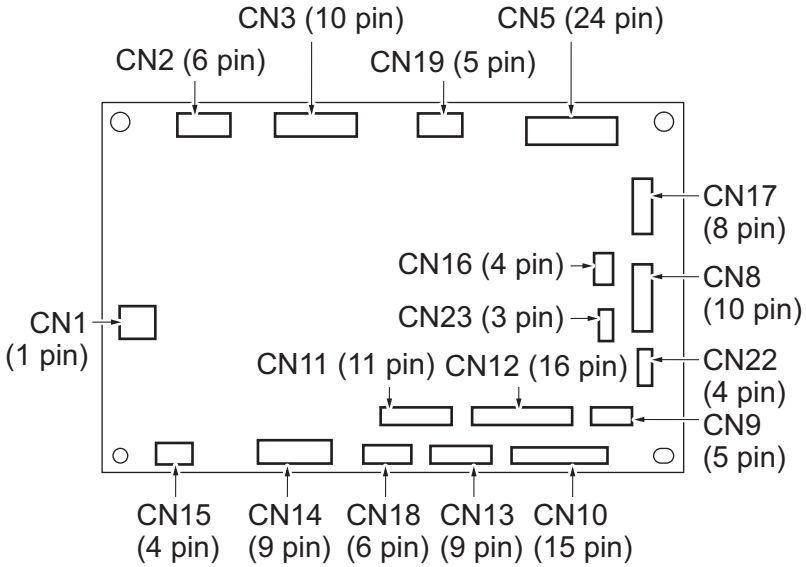
2.1.3 WT-519

NFC relay board (NFCRB)

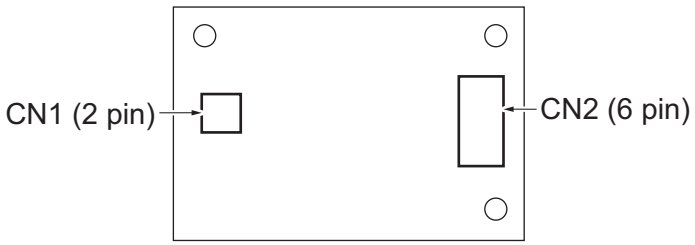


2.1.4 DF-713

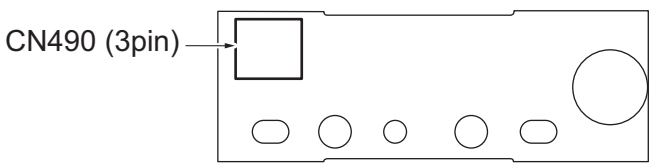
DF control board (DFCB)



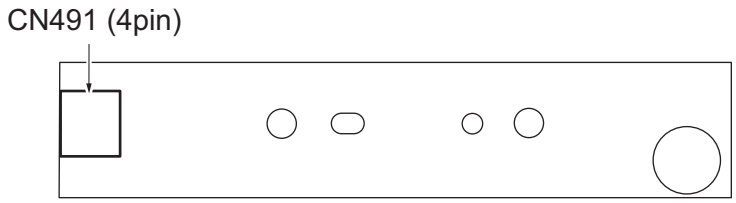
CIS power supply (CISPU)



Multi feed detection board/TX (MFDB/TX)

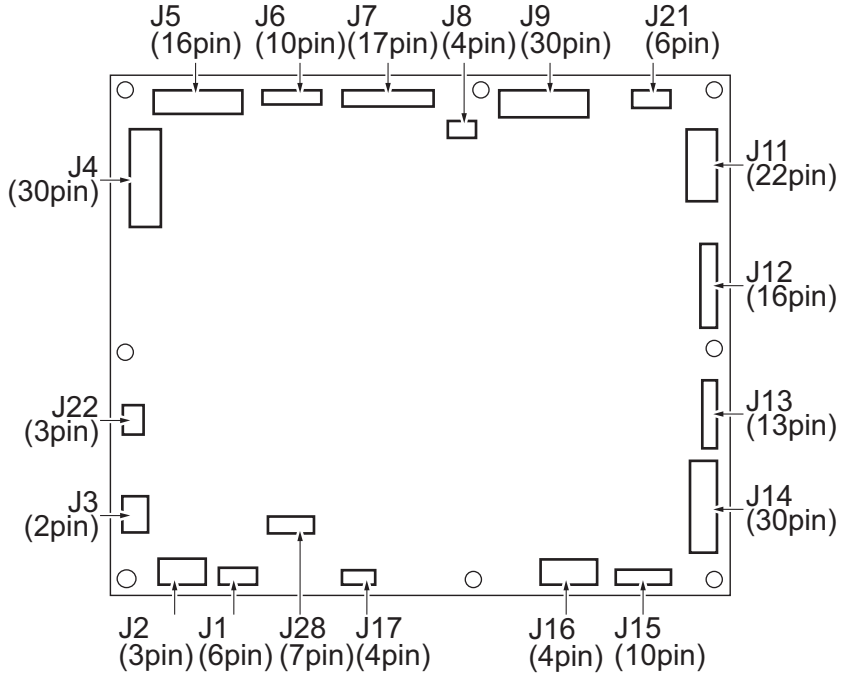


Multi feed detection board/RX (MFDB/RX)



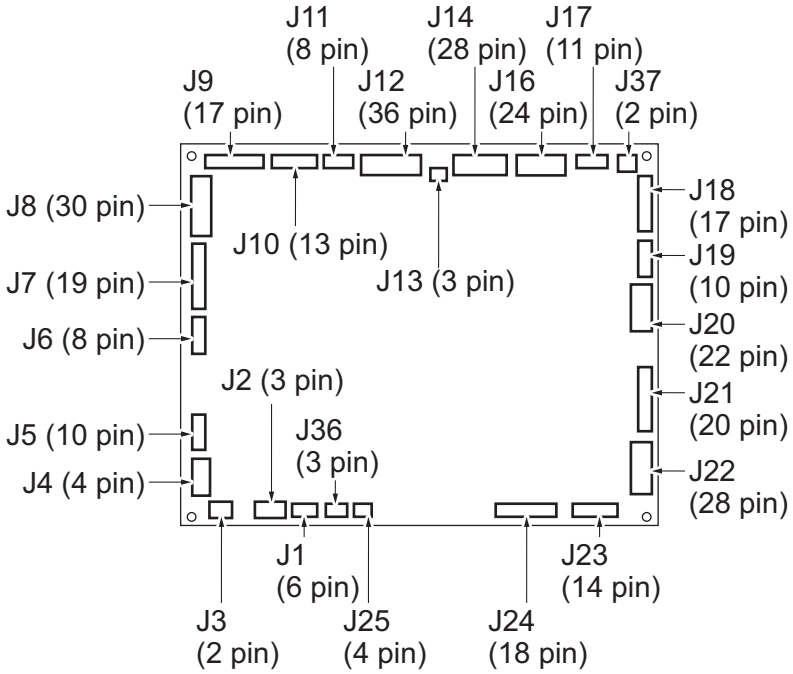
2.1.5 FS-539/FS-539SD

FS control board (FSCB)



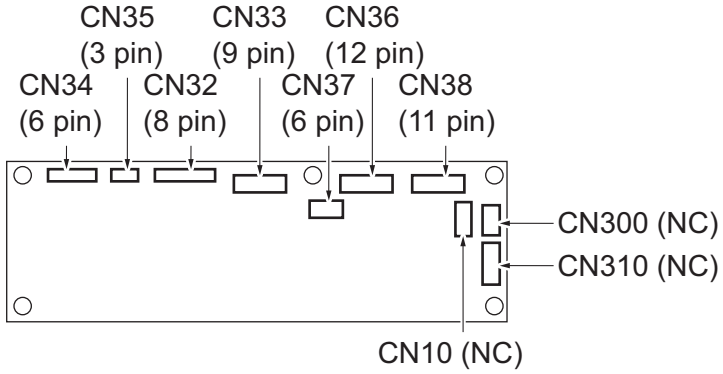
2.1.6 FS-540/FS-540SD

FS control board (FSCB)



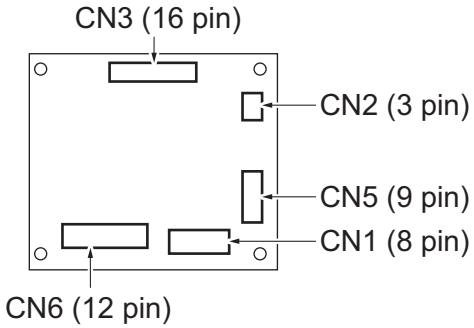
2.1.7 PK-526

PK control board (PKCB)

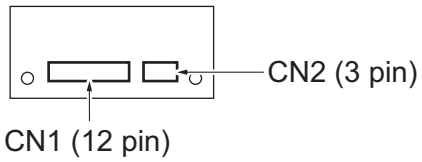


2.1.8 ZU-609

ZU drive board (ZUDB)

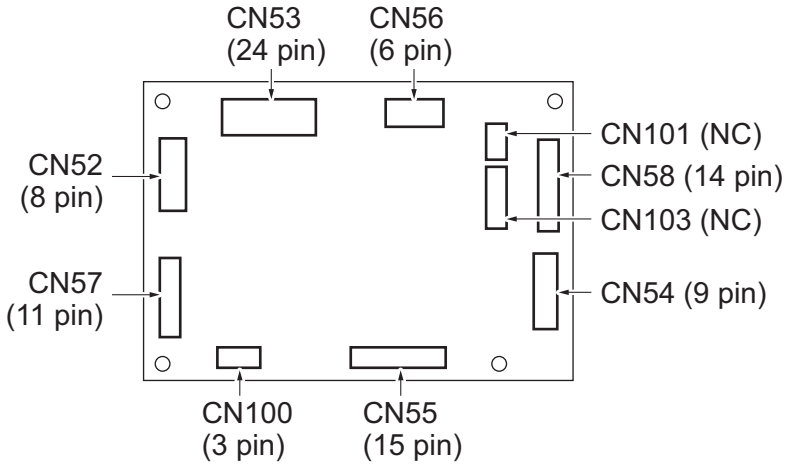


ZU relay board (ZURB)

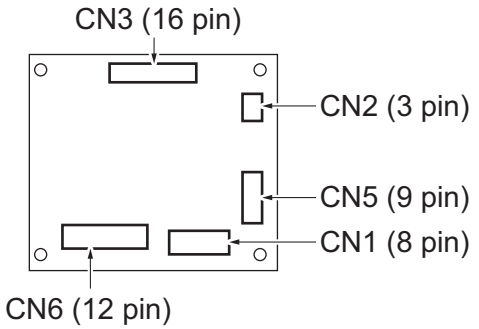


2.1.9 PI-507

PI drive board (PIDB)

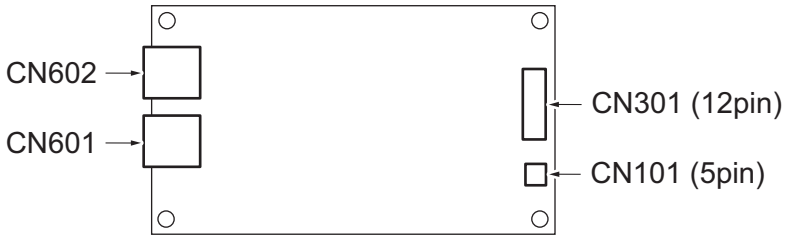


PI relay board (PIRB)



2.1.10 FK-514 (line 1/2)

Fax board (FAXB)



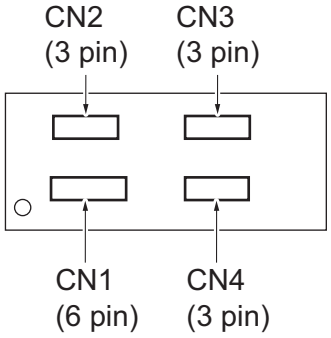
2.1.11 FK-515 (line 3/4)

Fax board (FAXB)



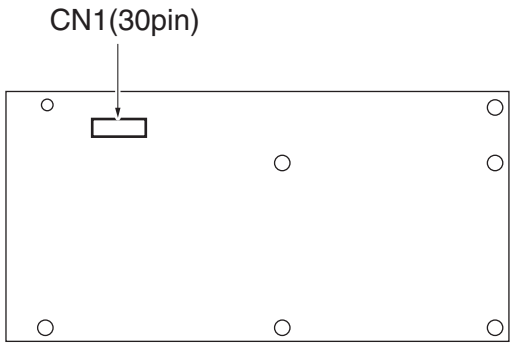
2.1.12 CU-102

Clean unit drive board (CUDB)

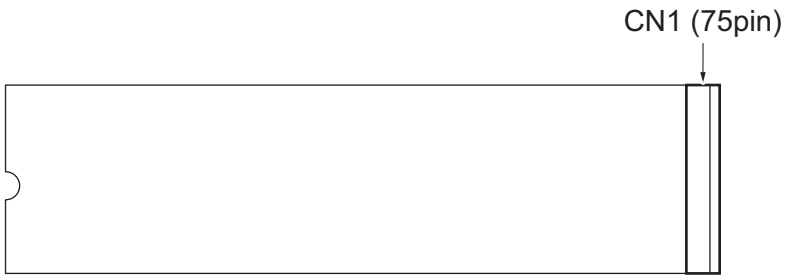


2.1.13 SC-509

DSC board/1 (DSCB/1)



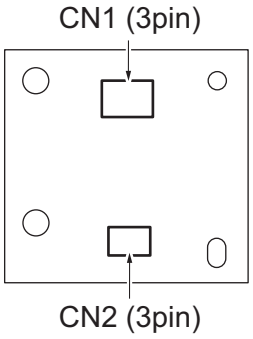
2.1.14 EM-908



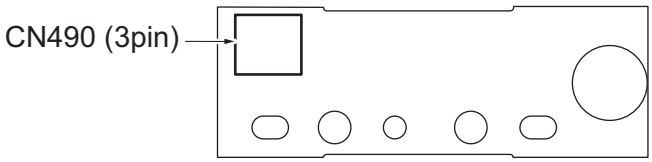
2.1.15 IM-102

DF control board (DFCB)

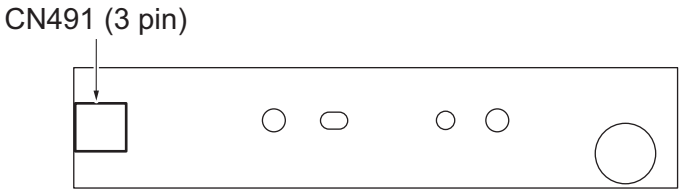
(1) Envelope detection relay board (ENVDRB)



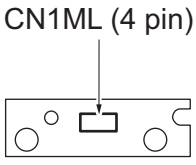
(2) Envelope detection board/TX (ENVDB/TX)



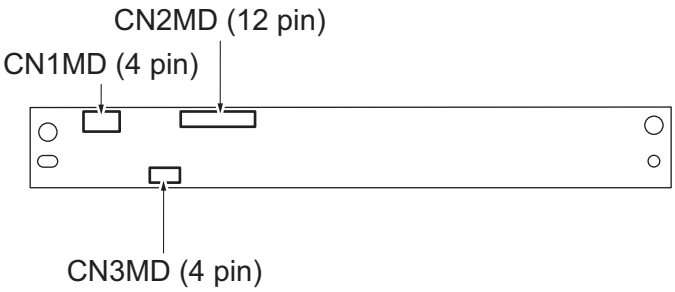
(3) Envelope detection board/RX (ENVDB/RX)



(4) Paper basis weight detection board/TX (PBWDB/TX)

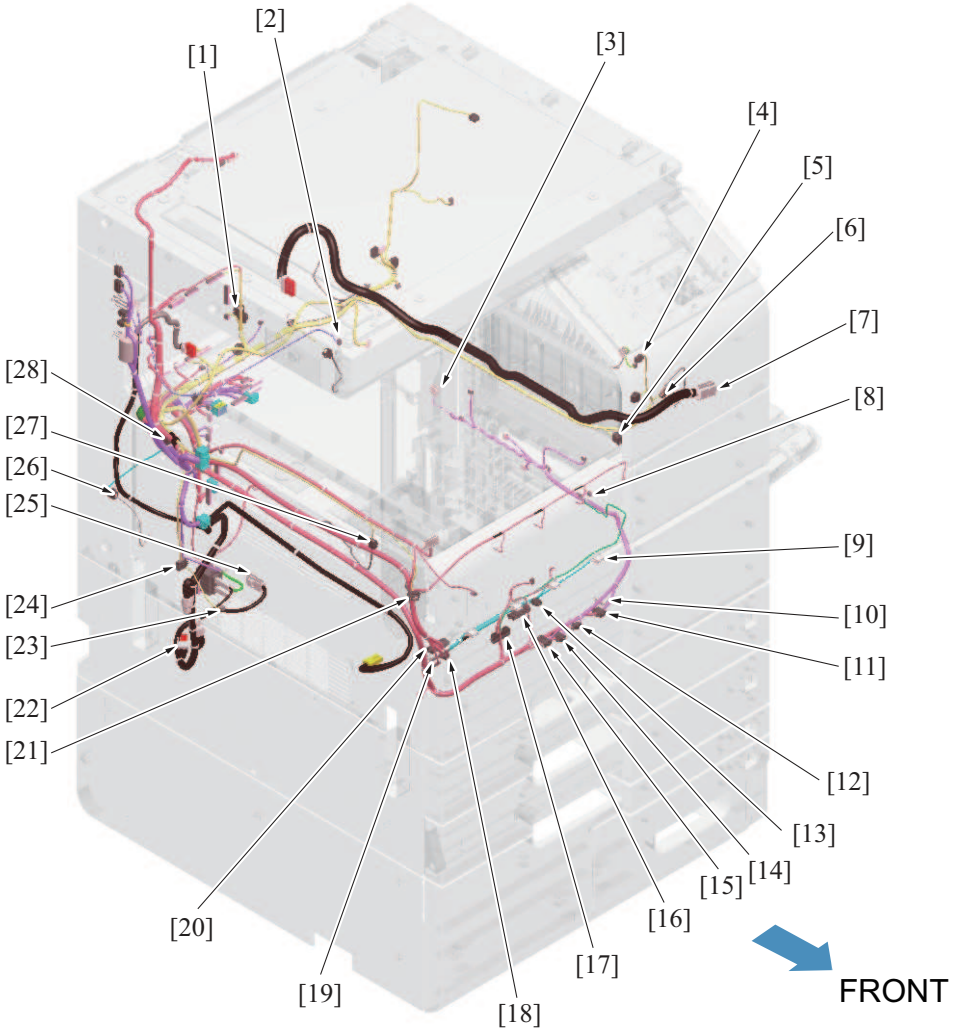


(5) Paper basis weight detection board/RX (PBWDB/RX)

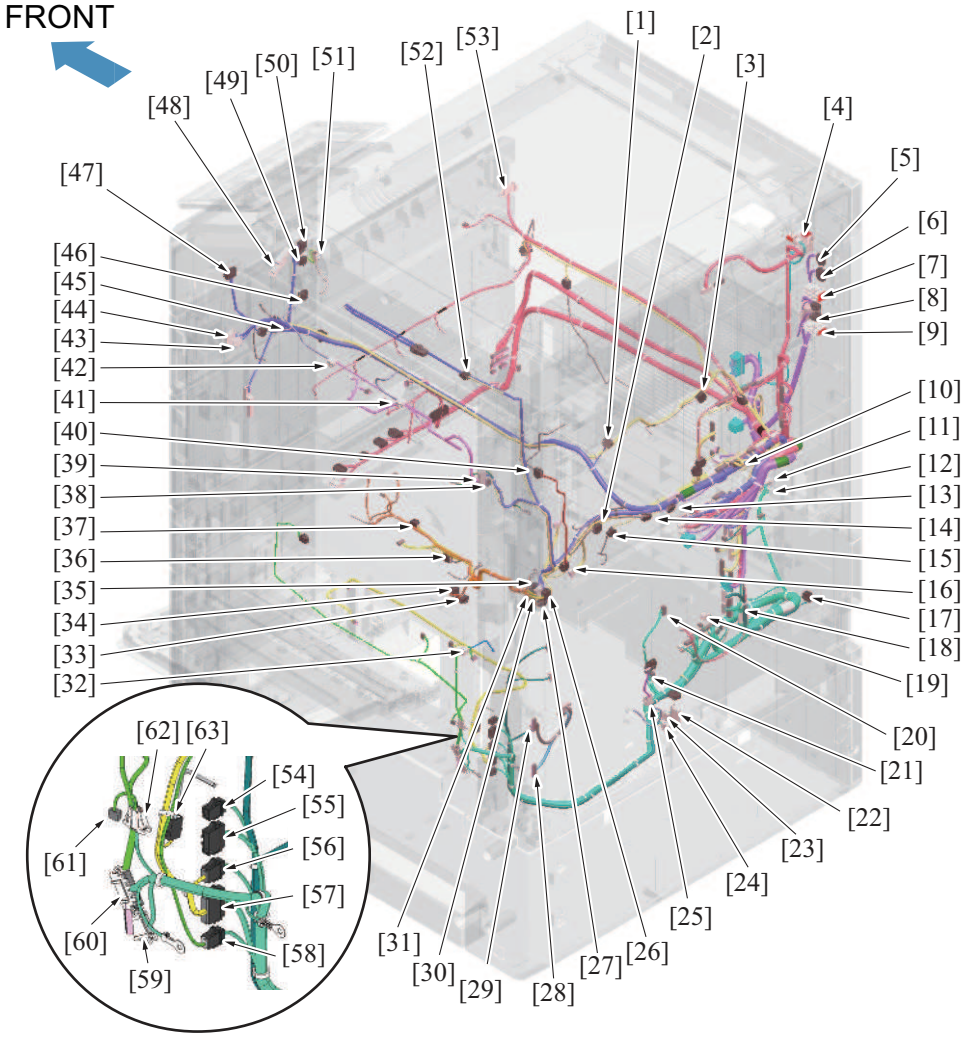


2.2 RELAY CONNECTOR LAYOUT DRAWING

2.2.1 Main body



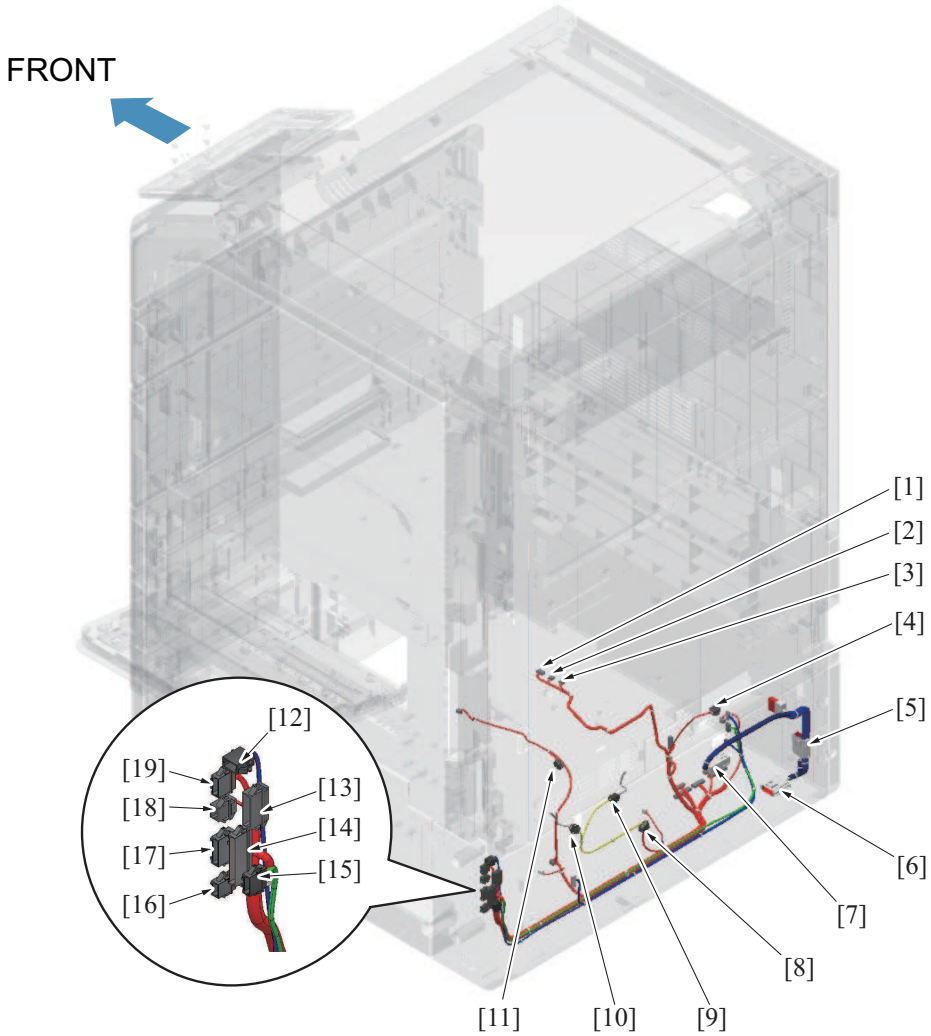
No.	CN No.	Pin	Location	No.	CN No.	Pin	Location
[1]	CN401	3 Pin	21-W	[2]	CN83	3 Pin	17-W
[3]	CN73	2 Pin	3-C	[4]	CN403	3 Pin	21-W
[5]	CN126	4 Pin	23-Q	[6]	CN402	3 Pin	22-J
[7]	CN2FIX	4 Pin	7-D	[8]	CN48	3 Pin	23-W
[9]	CN252	5 Pin	22-W	[10]	CN111	7 Pin	2-D
[11]	CN77	8 Pin	4-D	[12]	CN172	3 Pin	5-D
[13]	CN255	4 Pin	25-Q	[14]	CN170	9 Pin	3-D
[15]	CN171	6 Pin	5-D	[16]	CN253	19 Pin	24-Q
[17]	CN149	12 Pin	23-W	[18]	CN256	4 Pin	25-R
[19]	CN25	5 Pin	23-W	[20]	CN254	19 Pin	24-R
[21]	CN92	4 Pin	22-Q	[22]	CN1AC	2 Pin	6-X, 8-X
[23]	CN26	3 Pin	22-Q	[24]	CN306	5 Pin	21-Q
[25]	CN2AC	2 Pin	25-E	[26]	CN62	3 Pin	25-W
[27]	CN115	3 Pin	22-Q	[28]	CN63	3 Pin	25-W



No.	CN No.	Pin	Location	No.	CN No.	Pin	Location
[1]	CN113	3 Pin	13-D	[2]	CN78	3 Pin	17-Q
[3]	CN128	4 Pin	15-Q	[4]	CN150	4 Pin	9-P
[5]	CN3DF	7 Pin	4-K	[6]	CN2DF	9 Pin	3-K
[7]	CN1DF	6 Pin	3-K	[8]	CN2FN	6 Pin	5-K
[9]	CN1FN	3 Pin	5-K	[10]	CN607	4 Pin	24-R
[11]	CN307	16 Pin	18-Q	[12]	CN308	2 Pin	19-Q
[13]	CN503	10 Pin	20-D	[14]	CN112	4 Pin	18-Q
[15]	CN159	2 Pin	17-Q	[16]	CN28	3 Pin	17-R
[17]	CN804	3 Pin	24-I	[18]	CN29	2 Pin	13-J
[19]	CN28D	6 Pin	28-I	[20]	CN180	9 Pin	17-I
[21]	CN181	9 Pin	18-I	[22]	CN66	13 Pin	26-E
[23]	CN355	3 Pin	27-D	[24]	CN65	2 Pin	26-E
[25]	CN193	4 Pin	24-E	[26]	CN164	4 Pin	18-Q
[27]	CN608	4 Pin	26-O	[28]	CN155	12 Pin	22-D
[29]	CN154	12 Pin	21-D	[30]	CN161	6 Pin	12-D
[31]	CN9	13 Pin	15-W	[32]	CN20	2 Pin	10-J
[33]	CN606	4 Pin	26-P	[34]	CN602	3 Pin	15-W
[35]	CN12	4 Pin	6-D	[36]	CN163	3 Pin	12-Q
[37]	CN162	3 Pin	12-Q	[38]	CN86	6 Pin	6-D
[39]	CN5	12 Pin	11-D	[40]	CN27	3 Pin	17-Q
[41]	CN802	3 Pin	12-C	[42]	CN801	3 Pin	11-C
[43]	CN96	3 Pin	7-D	[44]	CN95	9 Pin	7-D
[45]	CN156	2 Pin	14-C	[46]	CN710	3 Pin	26-W
[47]	CN120	6 Pin	9-E	[48]	CN900	2 Pin	8-D
[49]	CN108	2 Pin	13-D	[50]	CN153	3 Pin	13-D
[51]	CN208	2 Pin	13-C	[52]	CN820	4 Pin	5-D

No.	CN No.	Pin	Location	No.	CN No.	Pin	Location
[53]	CN151	12 Pin	17-W	[54]	CN34	3 Pin	15-I
[55]	CN30	8 Pin	11-I	[56]	CN36	4 Pin	15-I
[57]	CN40	10 Pin	16-I	[58]	CN37	3 Pin	15-I
[59]	CN19	6 Pin	19-I	[60]	CN13	12 Pin	10-I
[61]	CN21	2 Pin	10-J	[62]	CN16	3 Pin	19-I
[63]	CN43	2 Pin	16-J	-	-	-	-

2.2.2 Tray 3/4

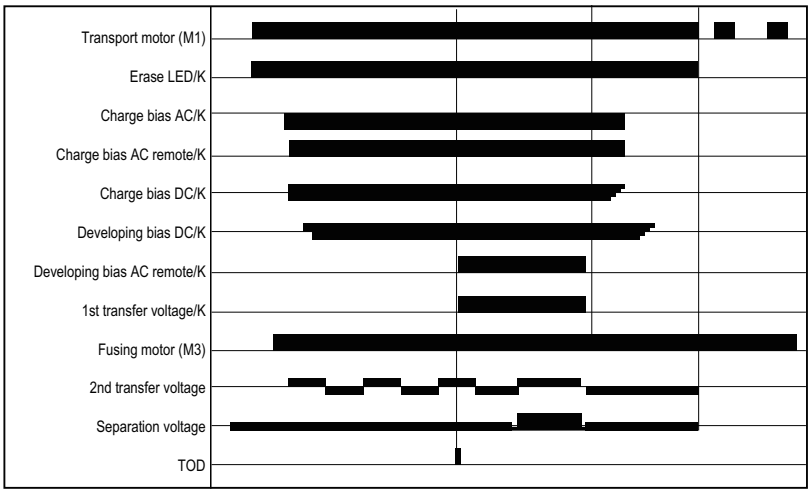


No.	CN No.	Pin	Location	No.	CN No.	Pin	Location
[1]	CN25	6 Pin	4-E	[2]	CN33	3 Pin	5-E
[3]	CN68	3 Pin	6-D	[4]	CN56	3 Pin	5-J
[5]	CN1DH	3 Pin	9-G	[6]	CN2DH	3 Pin	9-G
[7]	CN1TR	4 Pin	11-G	[8]	CN167	4 Pin	6-E
[9]	CN67	2 Pin	6-D	[10]	CN69	2 Pin	5-D
[11]	CN42	3 Pin	6-J	[12]	CN73	3 Pin	7-J
[13]	CN27	8 Pin	3-J	[14]	CN28	18 Pin	2-J
[15]	CN501	6 Pin	-	[16]	CN32	4 Pin	2-E
[17]	CN29	6 Pin	2-E	[18]	CN170	2 Pin	6-E
[19]	CN47	9 Pin	3-E	-	-	-	-

N TIMING CHART

1. bizhub 750i

1.1 Timing chart when printing

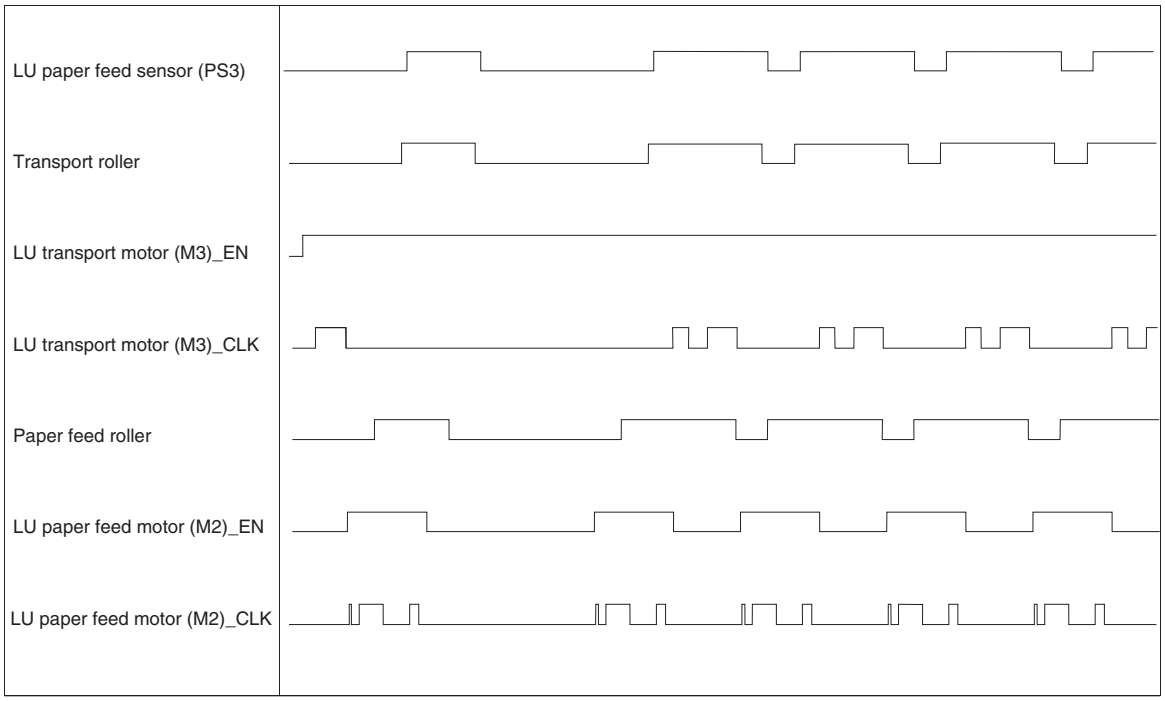


2. LU-205/LU-303

Operating conditions

Paper type	Plain paper
Plain size	A4(LEF) or 8 1/2 x 11(LEF)
Paper feeding mode	Multi feed print

Timing chart

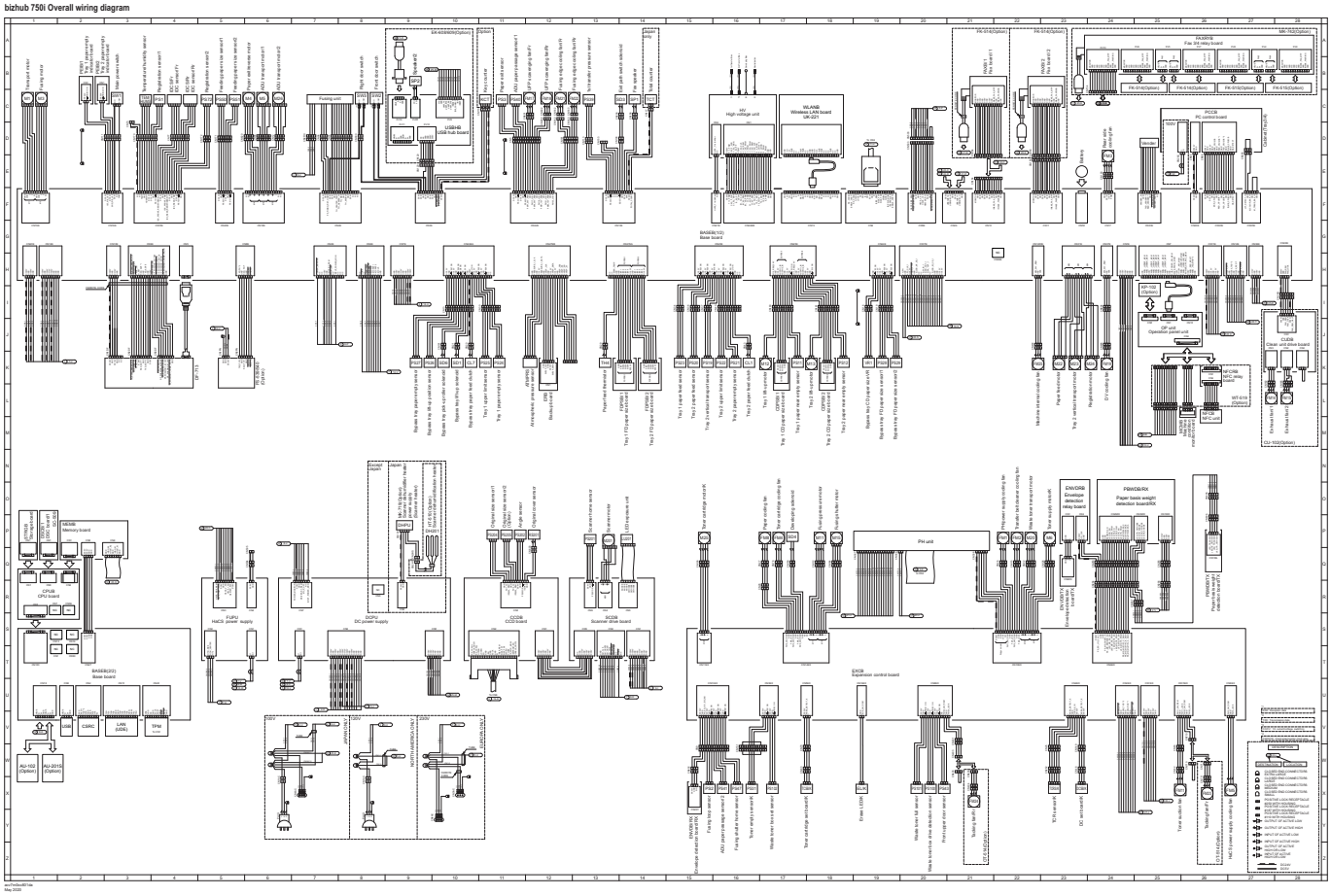


O WIRING DIAGRAM

1. bizhub 750i

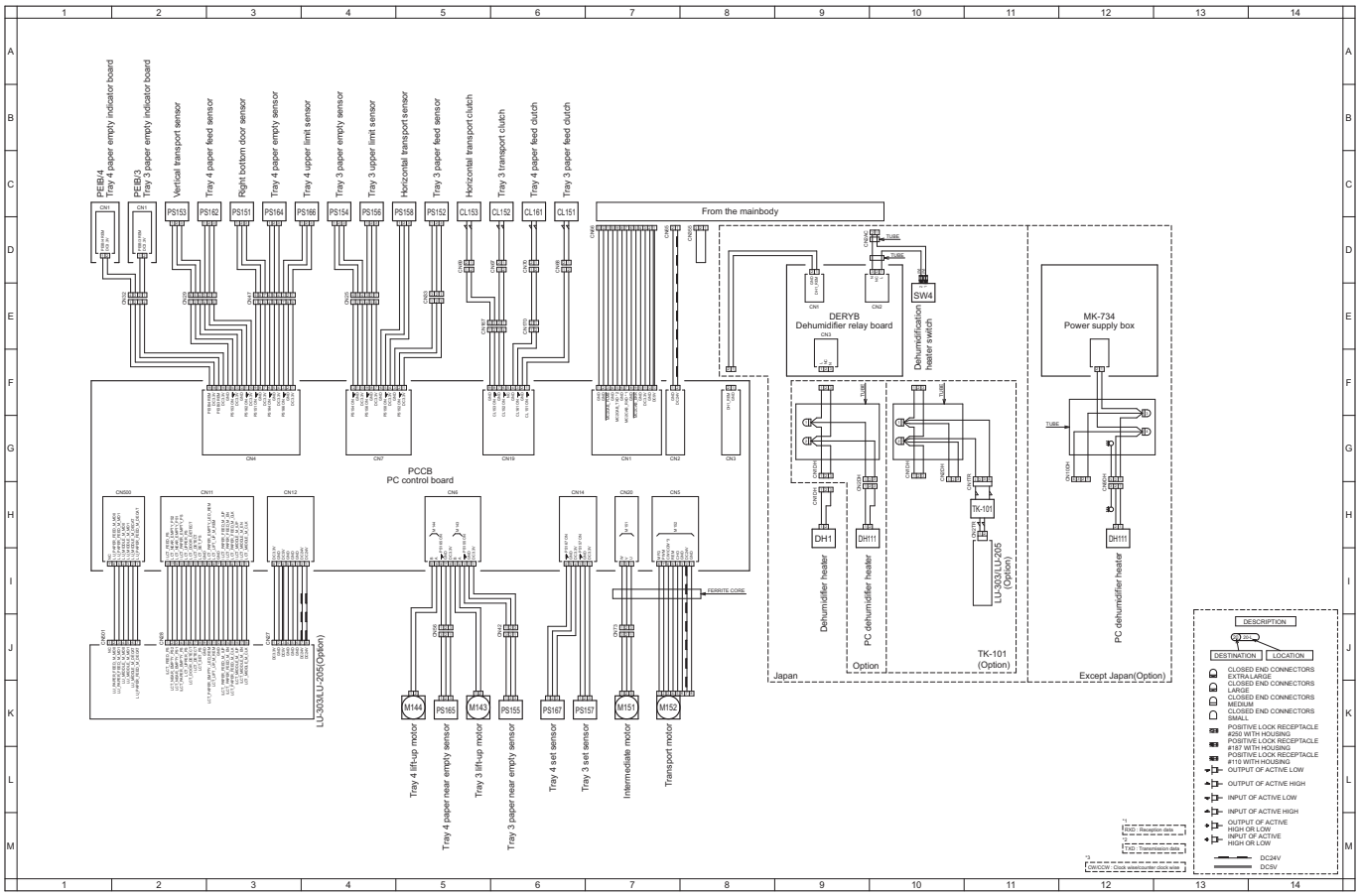
1.1 Main body

bizhub 750i Overall wiring diagram



- bizhub 750i Wiring diagram (acv7m0oc801da.pdf 3.38 MB)
- bizhub 750i Wiring diagram A3 size (1/4) (acv7m0oc811da.pdf 1.37 MB)
- bizhub 750i Wiring diagram A3 size (2/4) (acv7m0oc812da.pdf 1.46 MB)
- bizhub 750i Wiring diagram A3 size (3/4) (acv7m0oc813da.pdf 1.16 MB)
- bizhub 750i Wiring diagram A3 size (4/4) (acv7m0oc814da.pdf 1.23 MB)

Cabinet(Tray3/4) Overall wiring diagram

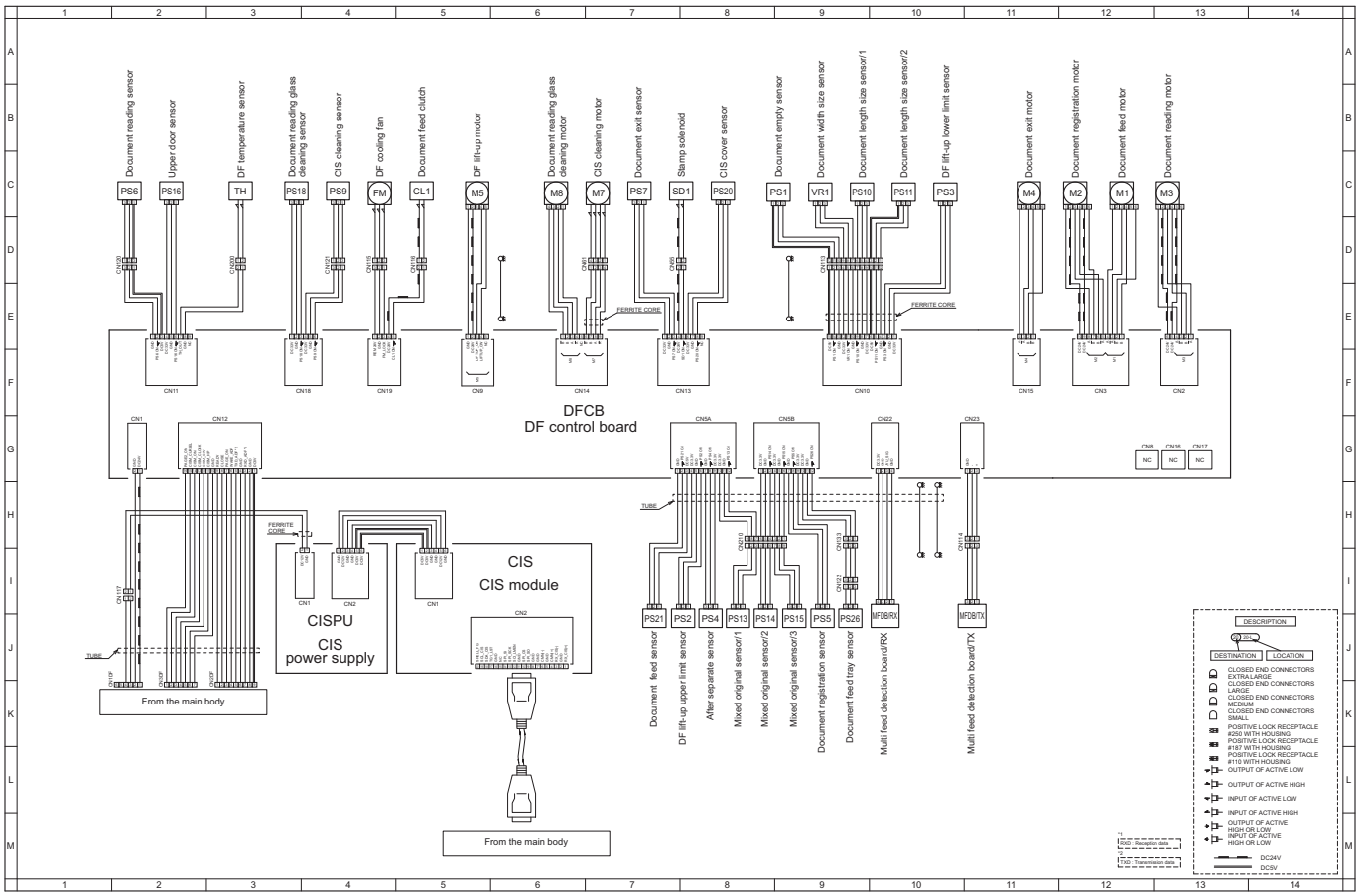


acv7m0oc802da
May 2020

- bizhub 750i Wiring diagram (acv7m0oc802da.pdf 1.21 MB)

2. DF-713

DF-713 Overall wiring diagram

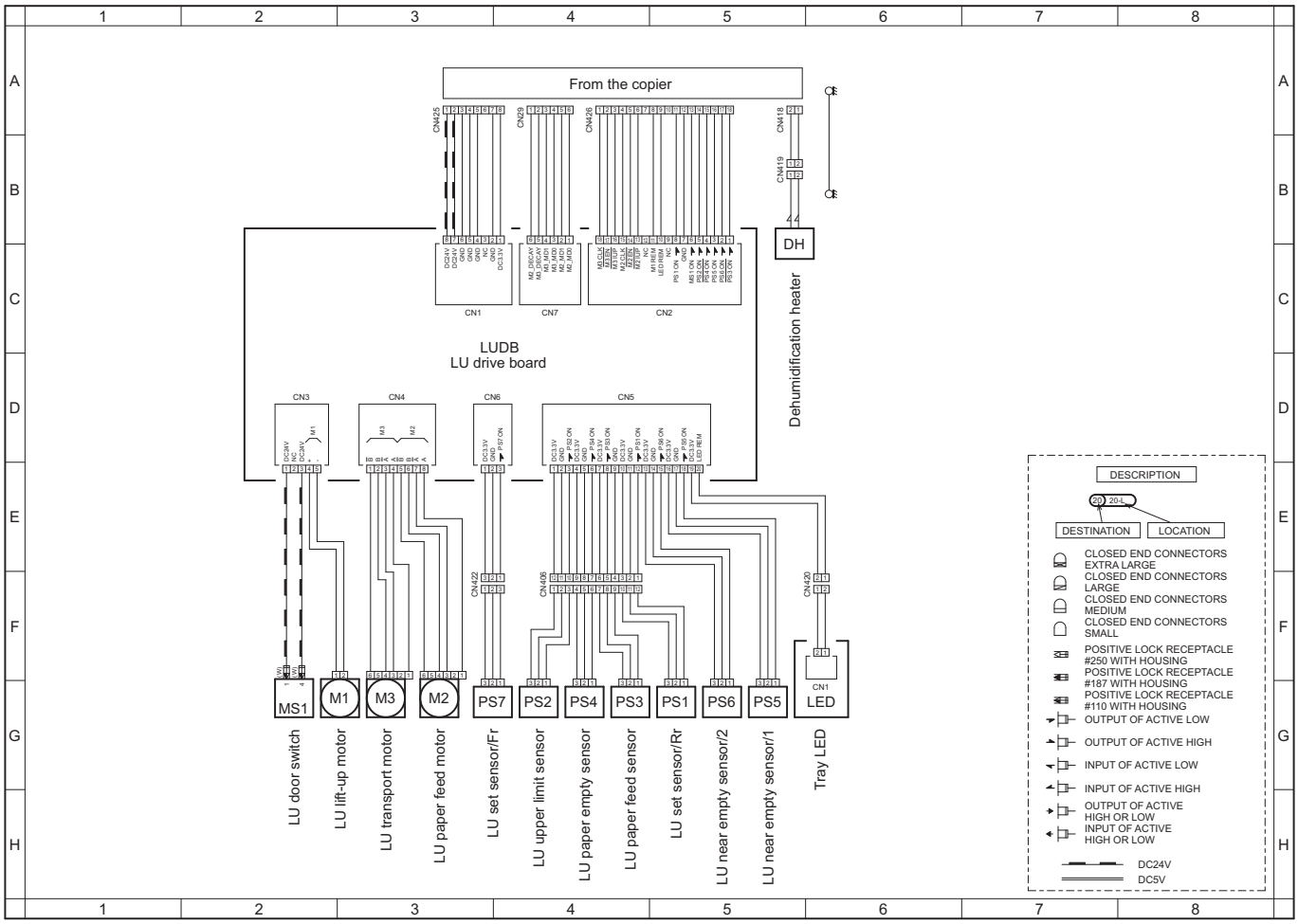


aampm0oc801da
Nov. 2019

- DF-713 Wiring diagram (aampm0oc801da.pdf 1.36 MB)

3. LU-205

LU-205 Overall wiring diagram

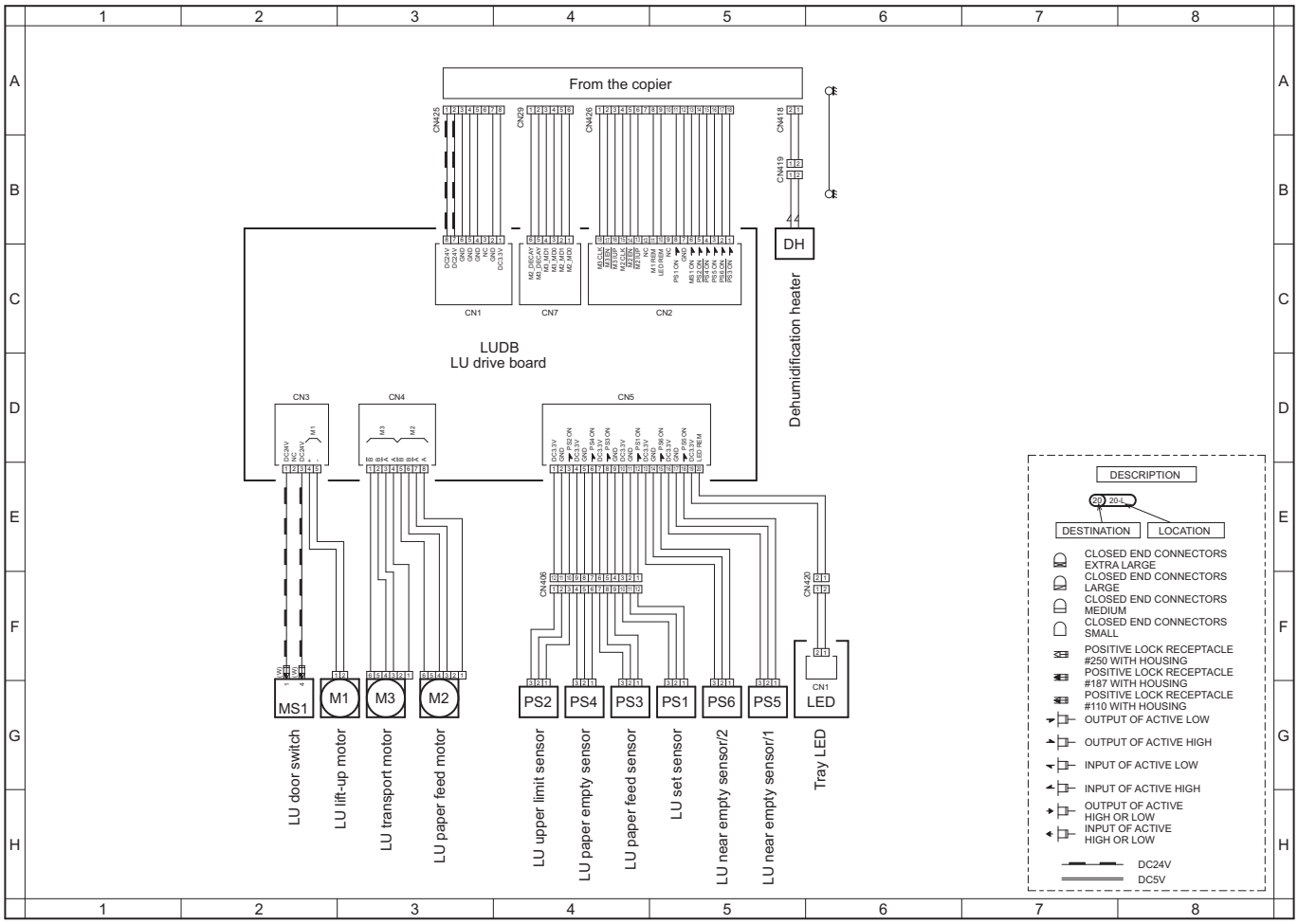


a8h7m0nc801db
Apr. 2020

- LU-205 Wiring diagram (a8h7m0nc801db.pdf 1.04 MB)

4. LU-303

LU-303 Overall wiring diagram

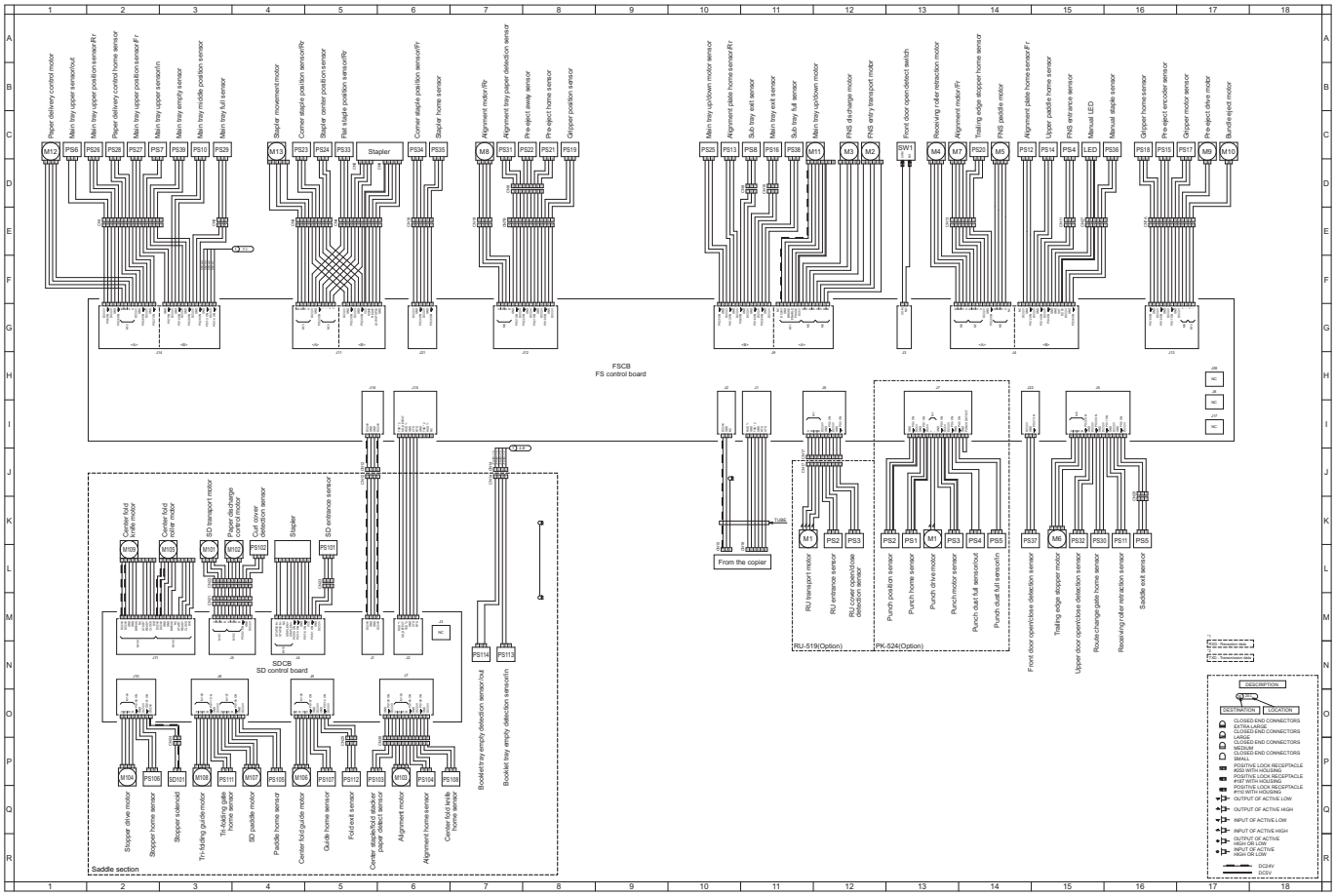


a8h6m0nc801db
Apr. 2020

- LU-303 Wiring diagram (a8h6m0nc801db.pdf 1.03 MB)

5. FS-539/FS-539SD

FS-539/FS-539SD Overall wiring diagram

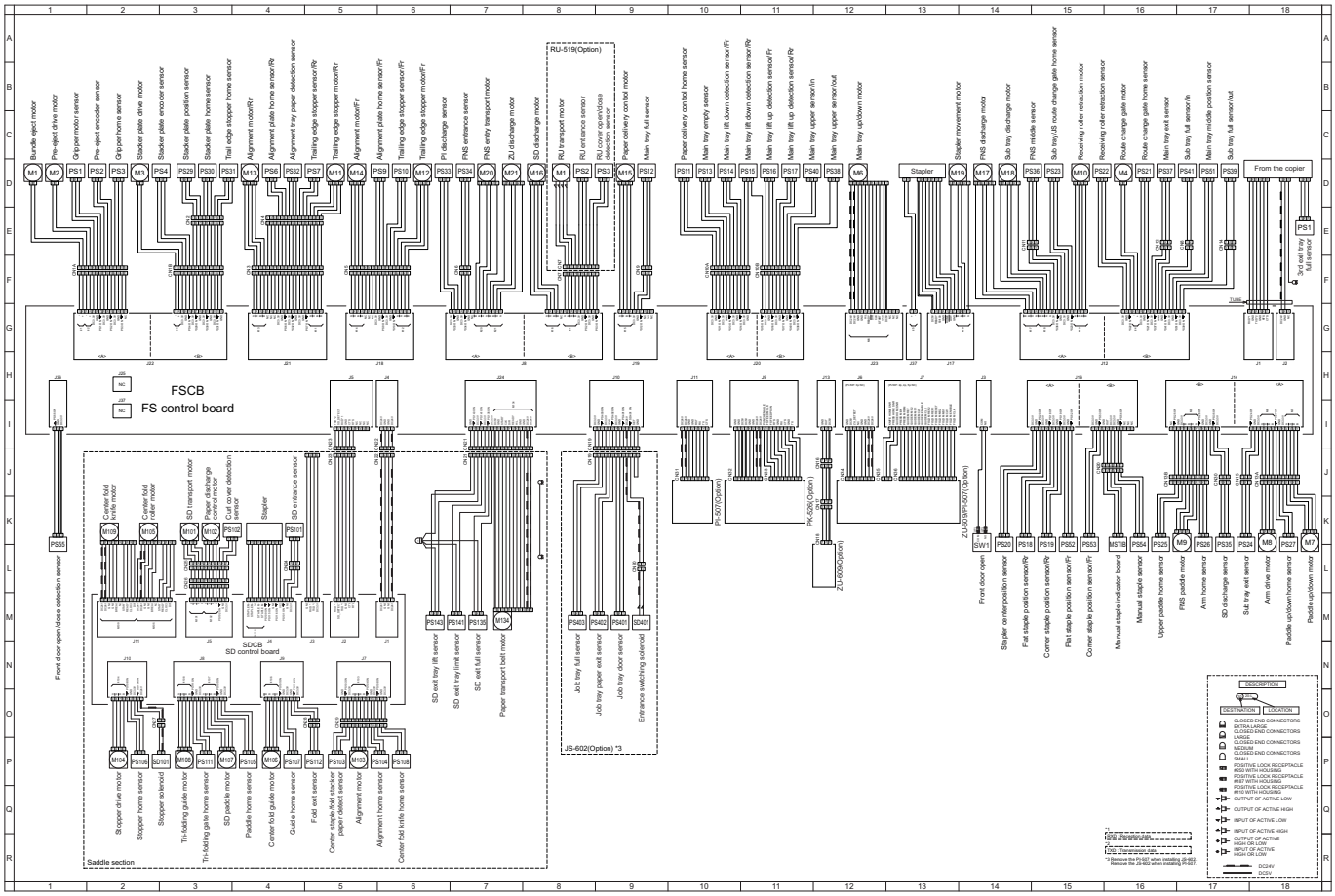


aar4m0oc824da
Apr. 2020

- FS-539/FS-539SD Wiring diagram (aar4m0oc821da.pdf 1.6 MB)
- FS-539/FS-539SD Wiring diagram A3 size (1/2) (aar4m0oc822da.pdf 1.37 MB)
- FS-539/FS-539SD Wiring diagram A3 size (2/2) (aar4m0oc823da.pdf 1.22 MB)

6. FS-540/FS-540SD

FS-540/FS-540SD Overall wiring diagram

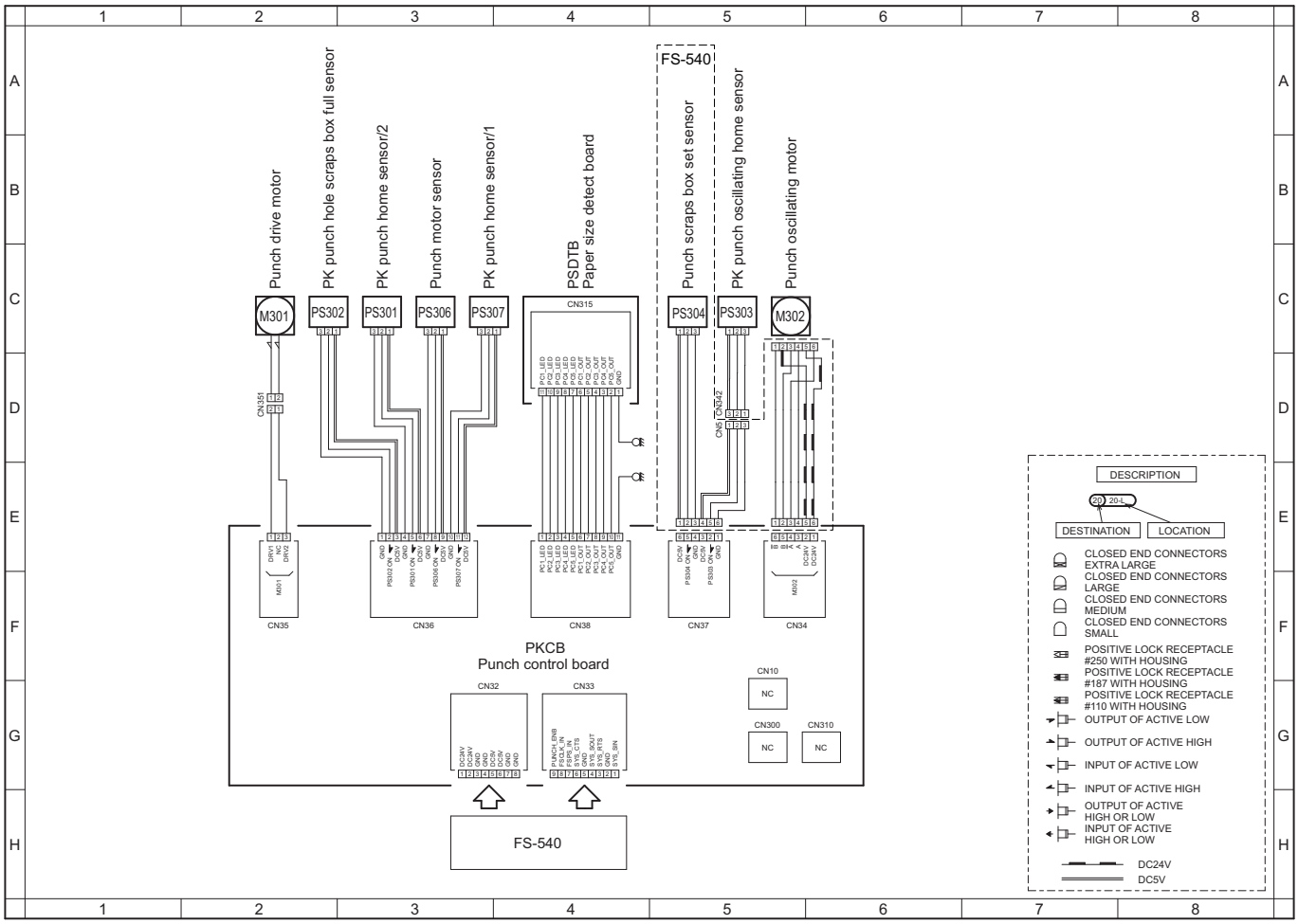


aar5m0oc824da
Apr. 2020

- FS-540/FS-540SD Wiring diagram (aar5m0oc821da.pdf 1.84 MB)
- FS-540/FS-540SD Wiring diagram A3 size (1/2) (aar5m0oc822da.pdf 1.64 MB)
- FS-540/FS-540SD Wiring diagram A3 size (2/2) (aar5m0oc823da.pdf 1.42 MB)

7. PK-526

PK-526 Overall wiring diagram

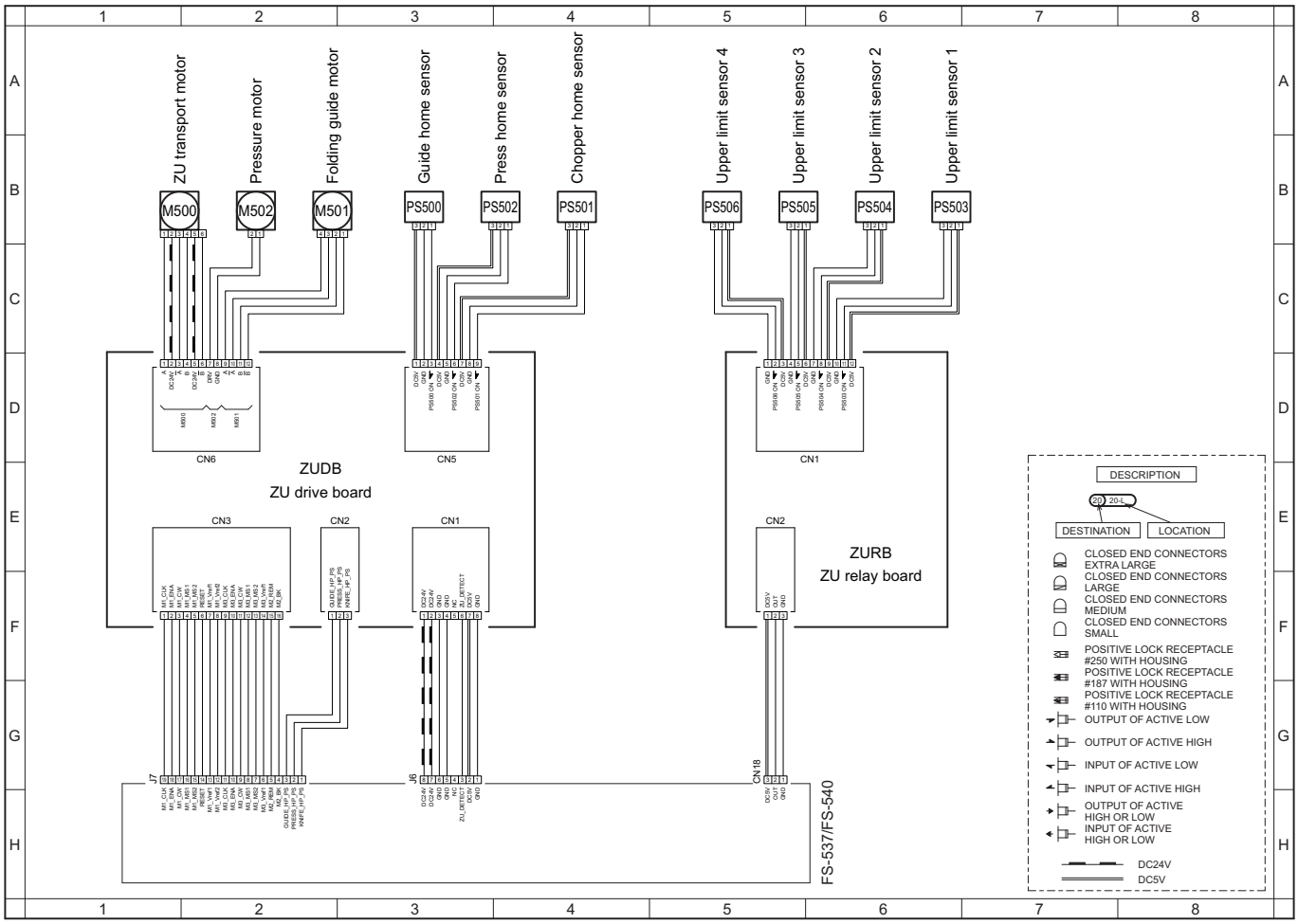


a99km0oc801da
Nov. 2019

- PK-526 Wiring diagram (a99km0oc801da.pdf 1.04 MB)

8. ZU-609

ZU-609 Overall wiring diagram

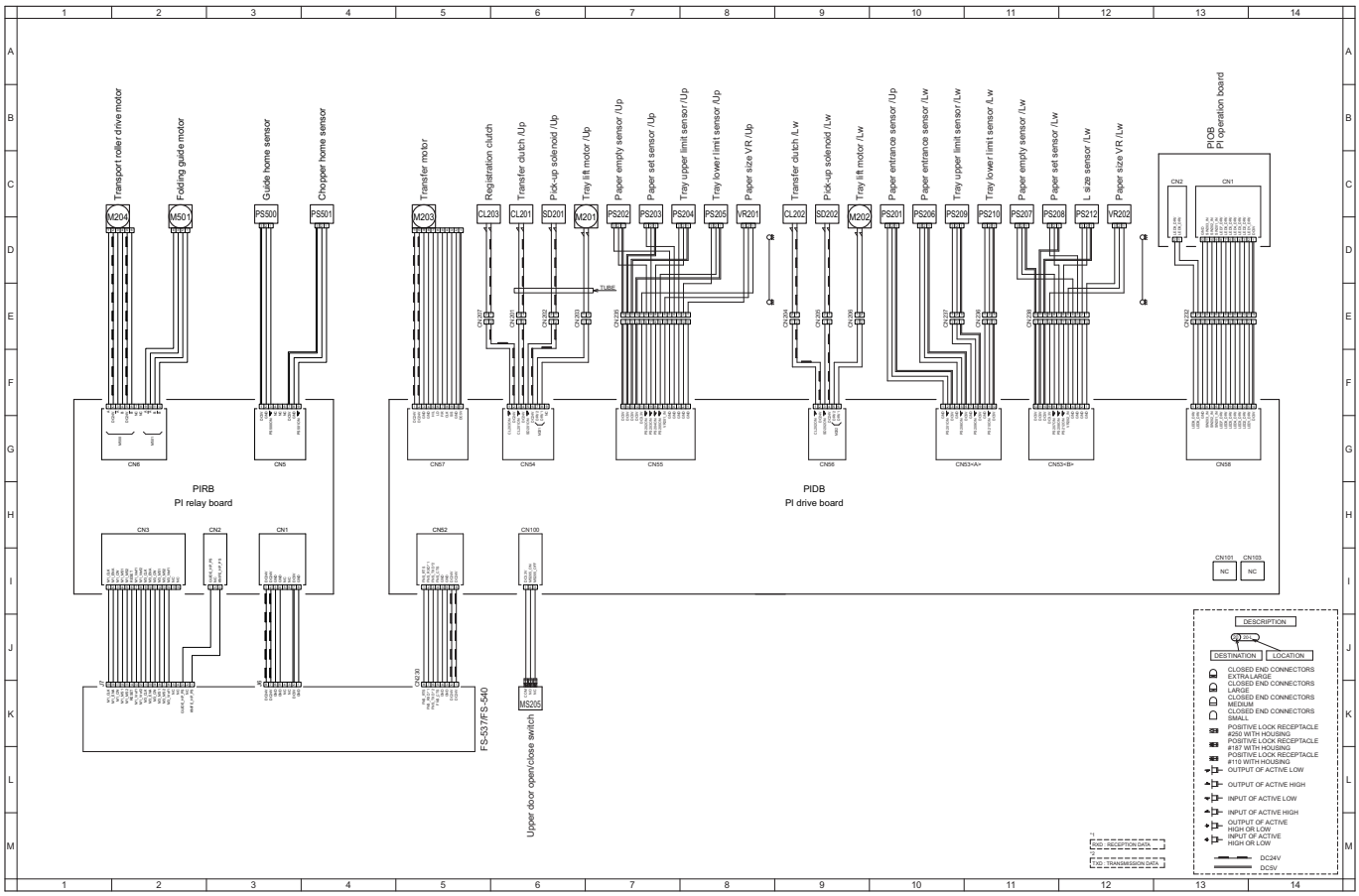


a63gm0nc801db
Nov.2019

- ZU-609 Wiring diagram (a63gm0nc801db.pdf 1.04 MB)

9. PI-507

PI-507 Overall wiring diagram



a8c6m0nc801db
Nov.2019

- PI-507 Wiring diagram (a8c6m0nc801db.pdf 1.28 MB)

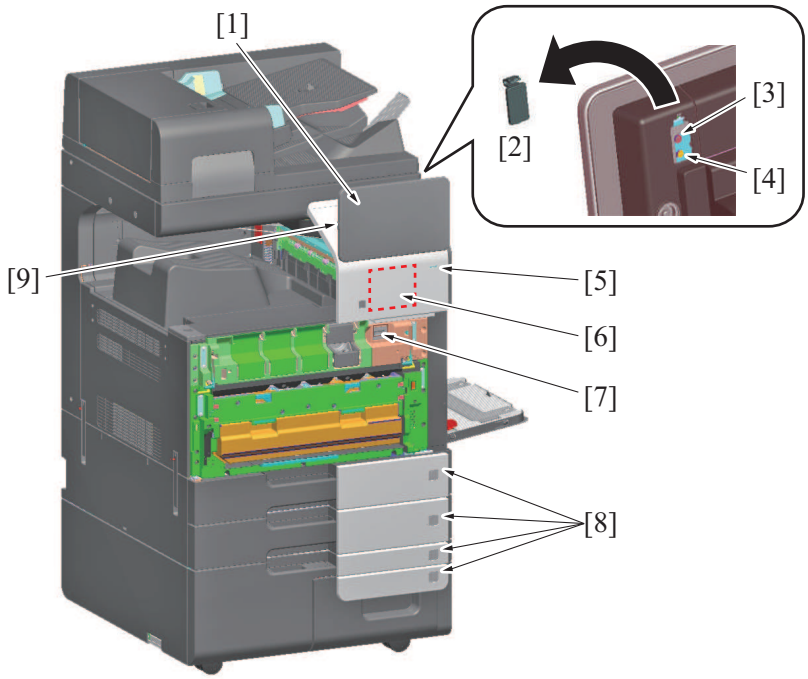
P THEORY OF OPERATION

1. bizhub 750i

1.1 INTERFACE SECTION

1.1.1 Configuration

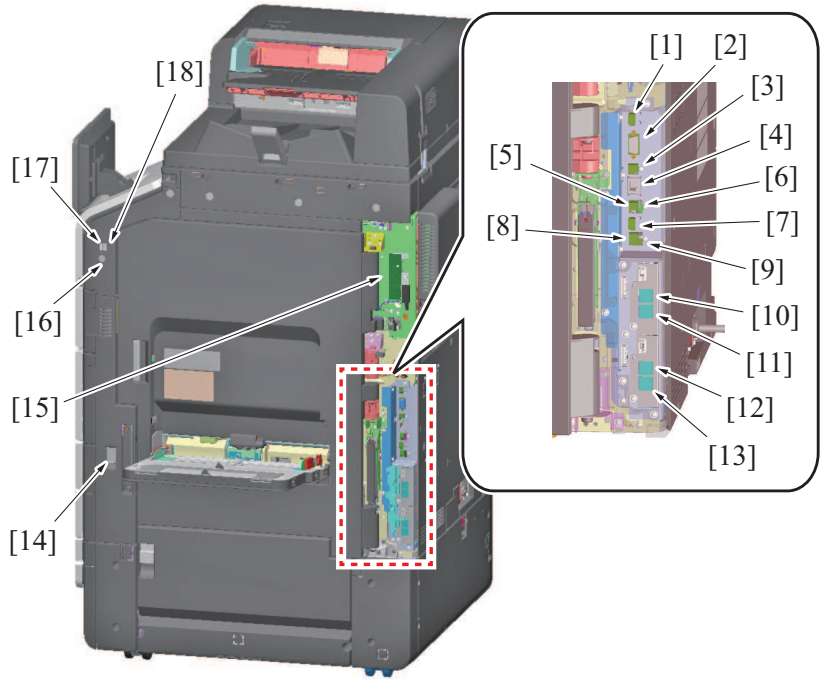
(1) Front side



[1]	Control panel	[2]	Key cover
[3]	Rear stop key	[4]	Rear reset key
[5]	Operation status indicator section	[6]	IC card reading position (*1)
[7]	Total counter (*2)	[8]	Paper remaining amount display
[9]	Power key	-	-

- *1: When equipped with optional authentication unit.
- *2: Japan model only

(2) Right side



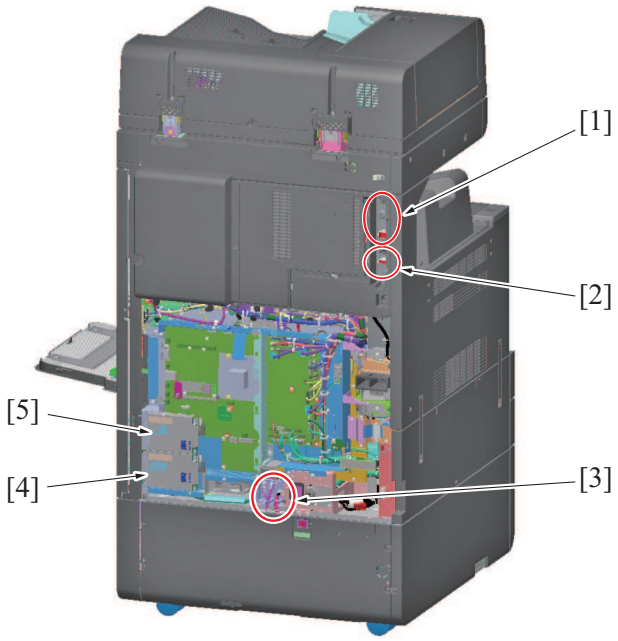
[1]	Control panel connection connector	[2]	Serial port (for CS Remote Care modem connection)
[3]	USB port (Type B) USB2.0/1.1	[4]	Network port (1000Base-T/100Base-TX/10Base-T)
[5]	USB port (Type A, connect to the USB board at the front side)	[6]	USB port (Type A, for authentication unit)
[7]	USB port (Type C, for wireless LAN)	[8]	USB port (Type A, for Fax line 1)
[9]	USB port (Type A, for Fax line 2)	[10]	LINE port 2 (for telephone line 2) (*2)
[11]	TEL port 2 (not used)	[12]	LINE port 1 (for telephone main line) (*1)
[13]	TEL port 1 (for external telephone main line) (*1)	[14]	Main power switch (SW1)
[15]	Wireless LAN board (UK-221)	[16]	Voice guidance output terminal (*3)
[17]	USB port (Type A, optional) (*3)	[18]	USB port (Type A, standard)

- *1: When only one optional FK-514 unit is mounted
- *2: When two optional FK-514 units are mounted
- *3: When local interface kit EK-608/EK-609 is mounted.

NOTE

- **If only one optional FK-514 is mounted, always mount it to the main line position (lower side).**

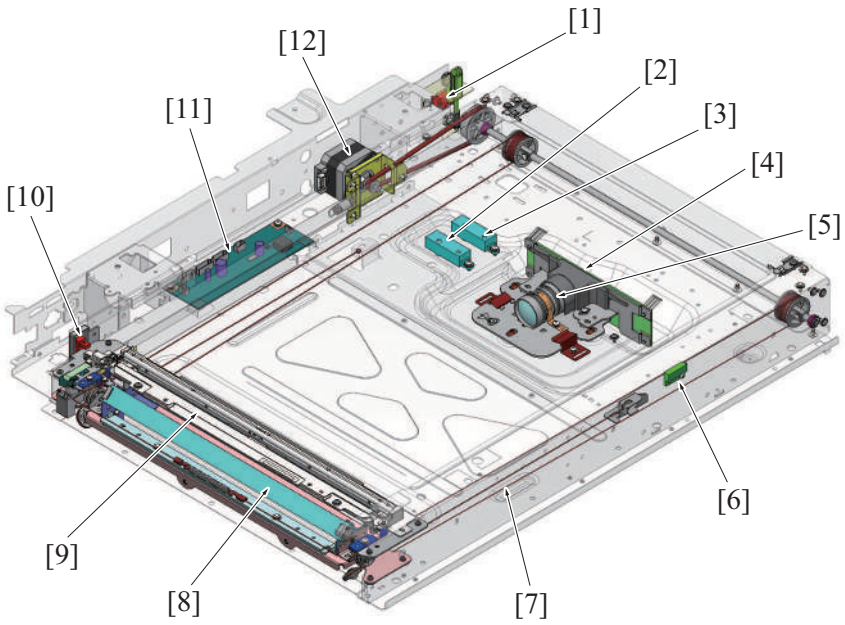
(3) Rear side



[1]	Document feeder connection connector	[2]	Finisher connection connector
[3]	Paper feed cabinet connection connector	[4]	FAX Kit FK-514 (for main line)
[5]	FAX Kit FK-514 (for line 2)	-	-

1.2 SCANNER SECTION

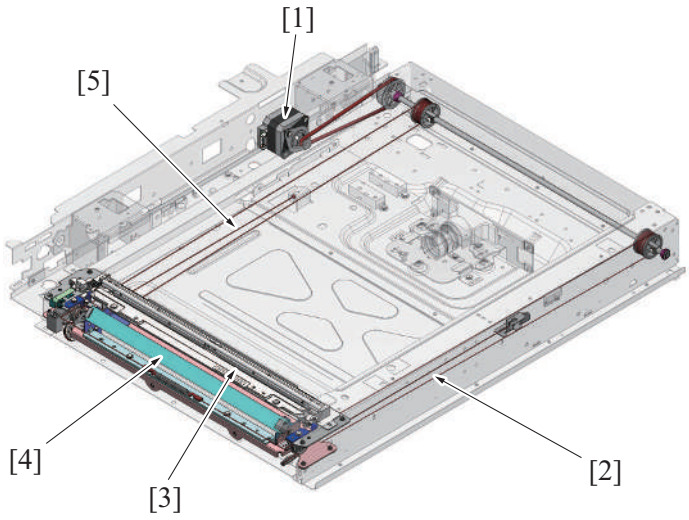
1.2.1 Configuration



[1]	Angle sensor (PS202)	[2]	Original size sensor/1 (PS204)
[3]	Original size sensor/2 (PS205) *1	[4]	CCD board (CCDB)
[5]	CCD unit	[6]	Original cover sensor (RS201)
[7]	Scanner cable	[8]	Mirror unit
[9]	LED exposure unit (LU201)	[10]	Scanner home sensor (PS201)
[11]	Scanner drive board (SCDB)	[12]	Scanner motor (M201)

*1
Japan: Not included
Asia Pacific: Standard equipment
North America, Europe: Optional (compatible with service parts)

1.2.2 Drive

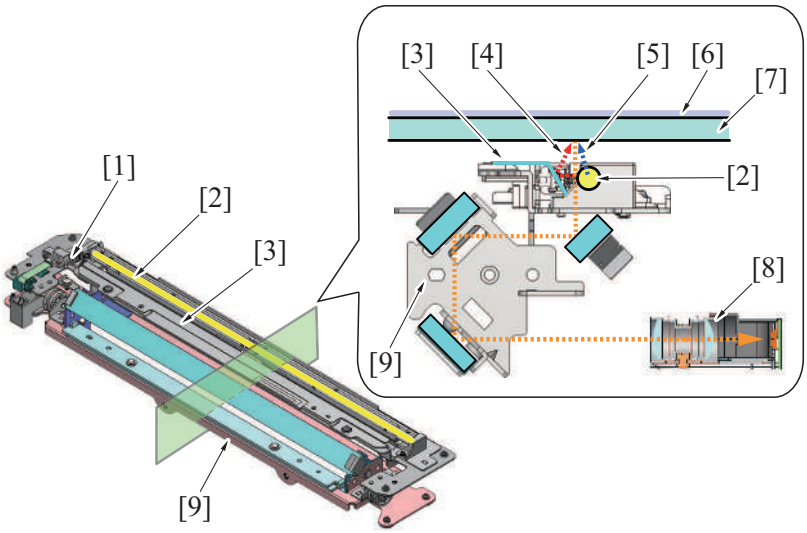


[1]	Scanner motor (M201)	[2]	Scanner drive cable/Fr
[3]	LED exposure unit (LU201)	[4]	Mirror unit
[5]	Scanner drive cable/Rr	-	-

1.2.3 LED exposure unit

- LEDs (Light Emitting Diodes) are used for the light source of the scanner section for power saving.
- LEDs mounted on the LED board on one side (rear side) of the LED exposure unit emit light.

- Light emitted from the LED travels along the light guide.
- A direct light that has traveled along the light guide and an indirect light reflected from the reflective mirror are irradiating on the original. Thus the original is exposed to steady, uniform light.
- The light reflected off the exposed original is irradiated onto the CCD unit by the mirror unit.



[1]	LED board	[2]	Light guide
[3]	Reflective mirror	[4]	Indirect light
[5]	Direct light	[6]	Original
[7]	Original glass	[8]	CCD unit
[9]	Mirror unit	-	-

1.2.4 When the power is ON

1. When the power is turned ON, the LED exposure unit moves to the home position.
2. With the LED exposure unit located at the home position, the LED lights up and then the LED exposure unit moves to the shading position (under the shading correction sheet).
3. The gain value of the CCD sensor output voltage to R, G, and B is adjusted.
4. After adjusting the gain value, a shading correction is performed.
5. The LED exposure unit moves in the return direction and stops at the home position.
6. When the DF (or the original cover) is raised for placement of the original, the LED exposure unit moves to the original size detection position.

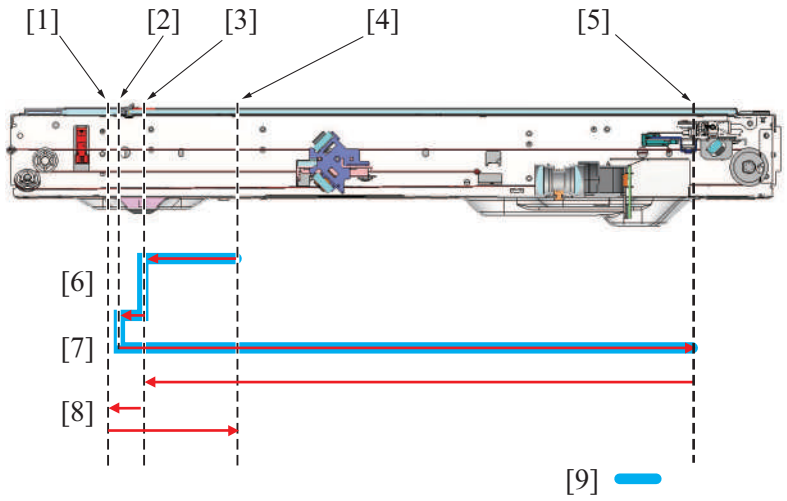
1.2.5 Control when the Start key is pressed

(1) Original scanning mode

- Original scanning mode has two types: Original cover mode and DF mode.

(a) Original cover mode

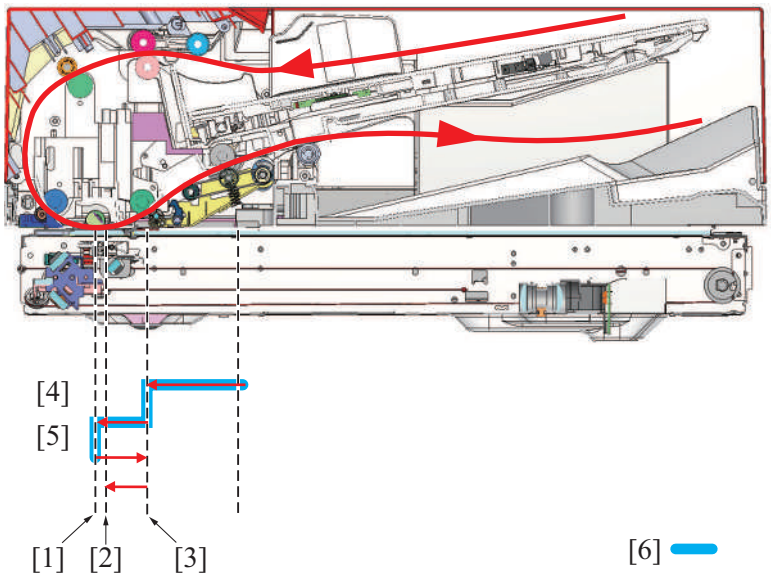
1. Turning the Start key ON will turn the LED ON.
2. The LED exposure unit moves in the return direction and stops at the shading position. At the shading position, the gain adjustment is made.
3. The LED exposure unit moves in the return direction and stops at the scan start position.
4. To start a scan, the LED exposure unit moves from the scan start position to the leading edge of an original while performing shading correction.
   The exposure unit will start reading the original image from the leading edge.
   The unit will finish reading the image at the trailing edge of the original.
5. The LED will turn OFF when the reading is complete.
6. The LED exposure unit returns from the position of the trailing edge of the original. At the shading position, it is determined that the LED is turned OFF.
   Then the LED exposure unit moves to the home position, and next moves to the original size detection position.
   It scans only once even for the color-copies, since R, G, and B data will all be memorized in one scanning.



[1]	Home position	[2]	Scan start position
[3]	Shading position	[4]	Original size detection position
[5]	Trailing edge of the image	[6]	Gain adjustment
[7]	Read original	[8]	Return
[9]	The LED turns ON	-	-

(b) DF mode

- The original fed by the document feeder will be read at the DF original glass for. The LED exposure unit will move to the reading position and stops. The original will be read as the paper is transferred.



[1]	Original reading position	[2]	Home position
[3]	Shading position	[4]	Shading correction
[5]	Read original	[6]	The LED turns ON

(2) Original scanning control

- The light reflected off the exposed original reaches the CCD sensor via the mirror unit and lens.
- The CCD sensor outputs an electric signal (analog) that varies according to the intensity of the light.
- One CCD sensor has a photo receiver that individually responds to each of the three primary colors of R, G, and B.
- The electric signal is converted to digital data for each of R, G, and B by the board (CCDB), becoming individual digital signals.

(a) Calibration

The following adjustment and correction (calibration) are made before the original is scanned, so that the image of the original can be adequately read.

- Gain adjustment

- Shading correction

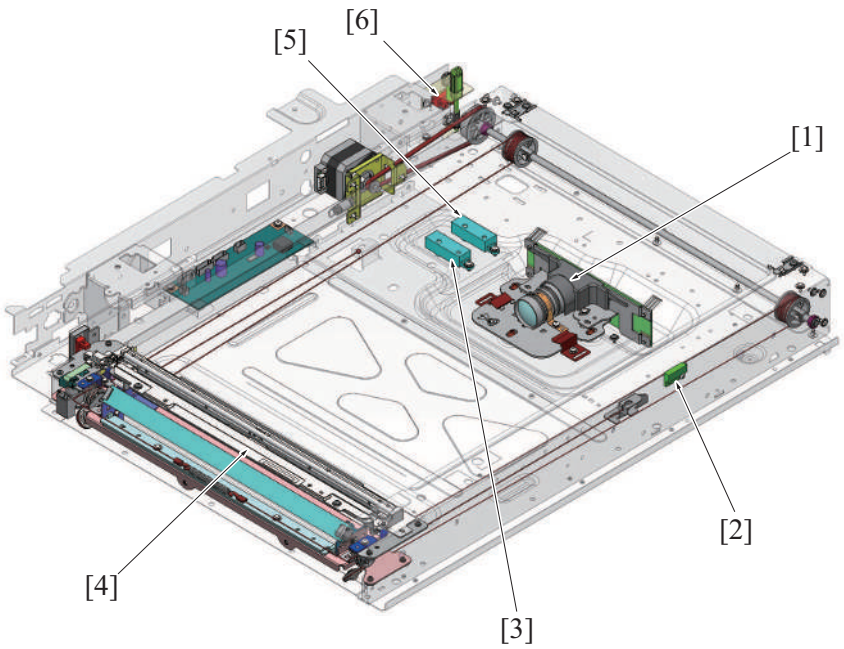
1.2.6 Original scanning area

- Main scanning direction: Max. 297.0 mm (11 11/16 inches)
- Sub scanning direction: Max. 431.8 mm (17 inches)

1.2.7 Original size detection control

(1) Detection method

- For the length direction, the fixed reflective original size sensor is used.
- CCD reads the original width direction, so that the width size can be detected.
- A standard original size is determined depending on the detection state of the original size sensor and the width that the CCD detects.
- For a custom size, the control sets a smallest possible standard size that is larger than the custom size in question to thereby prevent void image.

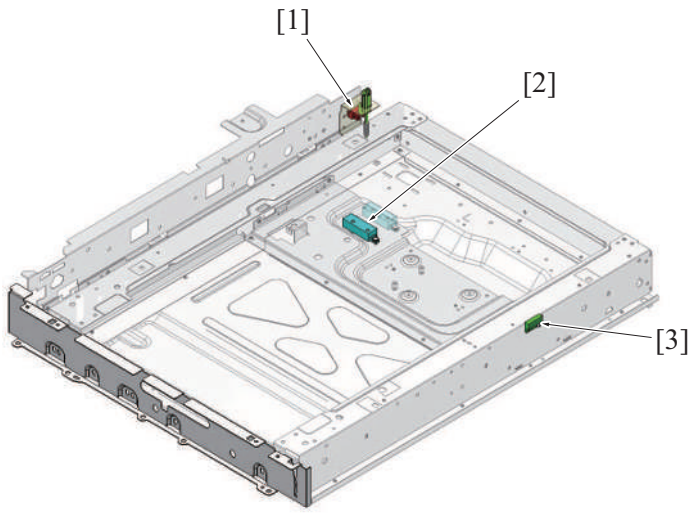


[1]	CCD unit	[2]	Original cover sensor (RS201)
[3]	Original size sensor/1 (PS204)	[4]	LED exposure unit (LU201)
[5]	Original size sensor/2 (PS205) *1	[6]	Angle sensor (PS202)

*1
Japan: Not included
Asia Pacific: Standard equipment
North America, Europe: Optional (compatible with service parts)

(2) Detection timing

- The size in the length direction is detected and determined depending on the state of the original size sensor when the angle sensor is activated from the deactivated state.
- The size in the width direction is detected twice. First when the angle sensor is activated and second when the original cover sensor is activated.
- The original size is reset when the original cover sensor is deactivated from activated state as a result of the DF being raised.



[1]	Angle sensor (PS202)	[2]	Original size sensor 1 (PS204)
[3]	Original cover sensor (RS201)	-	-

(3) Original size judgment

NOTE

- **Table 1 or 2 can be selected in the service mode.**

(a) Criterion (for Japan)

Table 1

Original size sensor/1	Main scanning width (mm)					
	0 to 130.0 sheets	Up to 153.0	Up to 187.0	Up to 215.0	Up to 262.0	262.1 or over
OFF	No original	A5S	B5S	A4S	B5	A4
ON	A3	B4	B4	B4	B4	A3

Table 2

Original size sensor/1	Main scanning width (mm)								
	0 to 130.0 sheets	Up to 143.9	Up to 153.0	Up to 187.0	Up to 213.0	Up to 220.9	Up to 262.0	Up to 284.4	284.5 or over
OFF	No original	$5^1/_2$×$8^1/_2$S	A5S	B5S	A4S	$8^1/_2$×11S	B5	$8^1/_2$×11	A4
ON	A3	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	B4S	11×17S	A3

(b) Criterion (for China and countries using the metric)

Table 1

Original size sensor		Main scanning width (mm)								
/1	/2	0 to 130.0 sheets	Up to 153.0	Up to 187.0	Up to 200.0	Up to 215.0	Up to 225.0	Up to 261.5	Up to 275.0	Up to 275.1
OFF	-	No original	A5 S	B5S	16K S	A4S	B5	B5	16K	A4
ON	-	A3	FLS	FLS	FLS	FLS	FLS	B4	8K	A3

Table 2

Original size sensor		Main scanning width (mm)											
/1	/2	0 to 130.0 sheets	Up to 143.9	Up to 153.0	Up to 187.0	Up to 200.0	Up to 213.0	Up to 220.9	Up to 225.0	Up to 261.5	Up to 274.7	Up to 284.4	Up to 284.5
OFF	OFF	No original	$5^1/_2$×$8^1/_2$ S	A5 S	B5S	16K S	A4S	$8^1/_2$×11 S	B5	B5	16K	$8^1/_2$×11	A4
ON	OFF	A3	FLS	FLS	FLS	FLS	FLS	FLS	FLS	B4	8K	11×17	A3
OFF	ON	A3	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	B4	B4	8K	11×17	A3
ON	ON	A3	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	B4	B4	8K	11×17	A3

(c) Criterion (for countries using inch)

Table 1

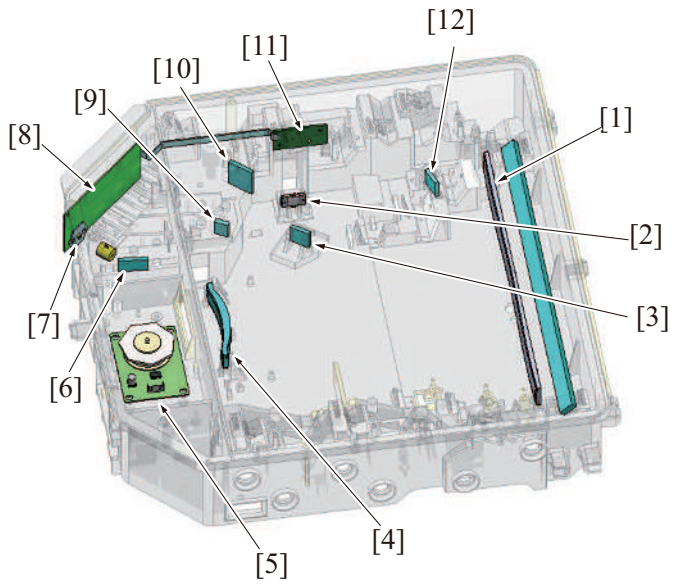
Original size sensor		Main scanning width (mm)			
/1	/2	0 to 130.0 sheets	Up to 144.7	Up to 220.9	Up to 221.0
OFF	-	No original	$5^1/_2$×$8^1/_2$S	$8^1/_2$×11 S	$8^1/_2$×11
ON	-	11×17	$8^1/_2$×14	$8^1/_2$×14	11×17

Table 2

Original size sensor		Main scanning width (mm)									
/1	/2	0 to 130.0 sheets	Up to 143.9	Up to 153.0	Up to 187.0	Up to 213.0	Up to 220.9	Up to 225.0	Up to 262.0	Up to 284.4	Up to 284.5
OFF	OFF	No original	$5^1/_2$×$8^1/_2$S	A5 S	B5S	A4S	$8^1/_2$×11 S	B5	B5	$8^1/_2$×11	A4
ON	OFF	A3	FLS	FLS	FLS	FLS	FLS	FLS	B4	11×17	A3
OFF	ON	A3	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	B4	B4	11×17	A3
ON	ON	A3	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	$8^1/_2$×14	B4	B4	11×17	A3

1.3 WRITE SECTION (PH SECTION)

1.3.1 Configuration

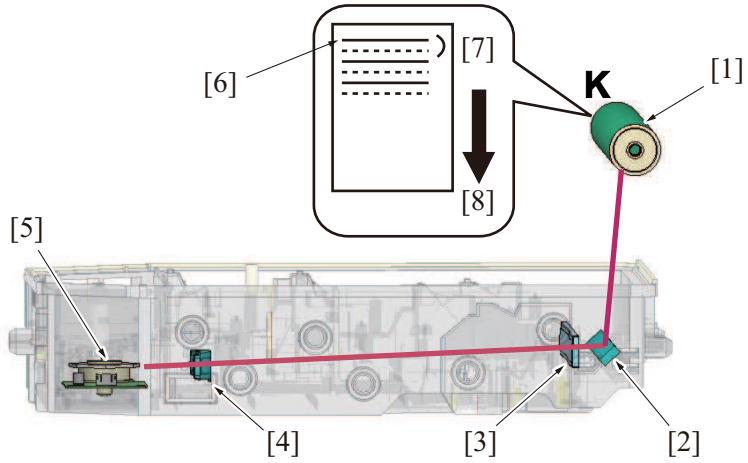


[1]	G2 lens	[2]	Index lens
[3]	Return mirror (Index)	[4]	G1 lens
[5]	Polygon motor (M14)	[6]	Synthetic mirror/K
[7]	Laser diode/K (LD/K)	[8]	Laser drive board (LDDB)
[9]	Cylindrical lens	[10]	Return mirror (light source)
[11]	Index board (INDEXB)	[12]	Index mirror

1.3.2 Overview

- The surface of the photoconductor is irradiated with a laser light and an electrostatic latent image is thereby formed.
- The polygon mirror has seven faces.
- A rotating polygon mirror is irradiated with a laser light emitted from the laser diode on the laser drive board to let the laser light scan.
- A two-beam-array laser diode is equipped. Two beams of laser light are irradiated from the two vertically arranged elements. With the laser light, A two-line scanning is performed through a single face of the polygon mirror.

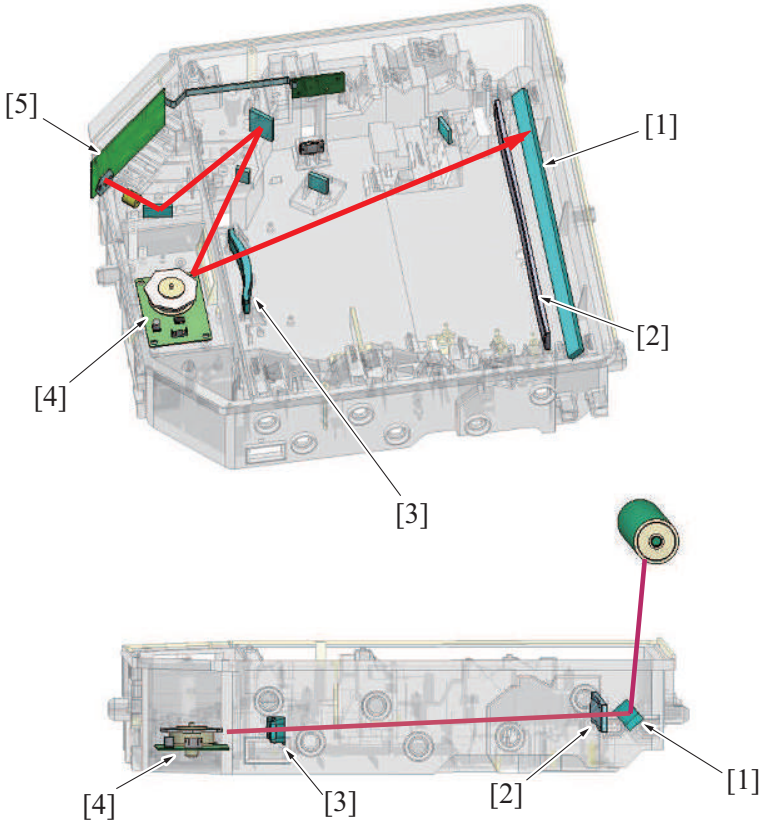
Image of two-beam laser



[1]	Photoconductor K	[2]	Return mirror 1
[3]	G2 lens	[4]	G1 lens
[5]	Polygon mirror	[6]	Beam
[7]	One line, two scan	[8]	Photoconductor rotation direction

1.3.3 Laser exposure process

1. The laser light enters the cylindrical lens via the synthetic mirror and return mirror (light source).
2. At the cylindrical lens, laser light is condensed in the vicinity of the polygon mirror.
3. The condensing angle of the laser light is corrected by the G1 lens and then reaches return mirror 1.
4. The laser light is condensed on the photoconductor surface via the G2 lens and return mirror 1.

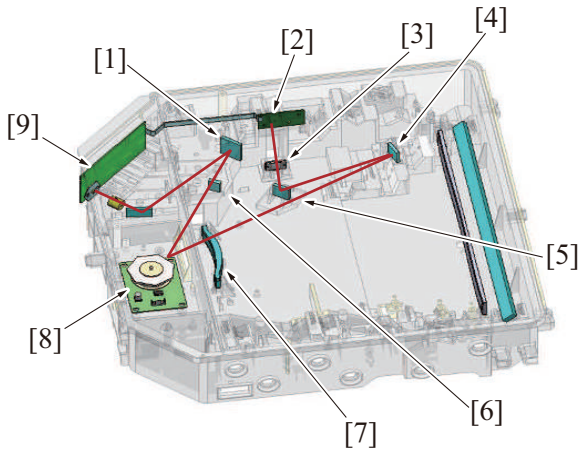


[1]	Return mirror 1	[2]	G2 lens
[3]	G1 lens	[4]	Polygon motor (M14)
[5]	Laser diode/K (LD/K)	-	-

1.3.4 Laser emission timing

- After a print cycle has been started, when the stable rotation signals of photoconductor and polygon motor are detected, a laser ON signal is output from the base board.
- The laser ON signal causes the laser diode to turn ON and emit a laser beam.

- The laser light that is irradiated to the index board after it passes through the return mirror (light source), cylindrical lens, polygon mirror, G1 lens, index mirror, return mirror (index), and index lens generates an index signal.
- This index signal has a function of keeping the same laser light emission timing per every one line in the main scanning direction.
- If the index signal is not detected within a predetermined period of time, the machine determines that it is a laser emission fault, displaying “trouble code: C4501 laser malfunction”.
- The machine continuously monitors the index signal. If the index signal cannot be detected at regular intervals, the machine determines that it is a laser emission fault, displaying “trouble code: C4501 laser malfunction”.



[1]	Return mirror (light source)	[2]	Index board (INDEXB)
[3]	Index lens	[4]	Index mirror
[5]	Return mirror (Index)	[6]	Cylindrical lens
[7]	G1 lens	[8]	Polygon motor (M14)
[9]	Laser diode/K (LD/K)	-	-

1.3.5 Laser emission stop

Emission of the laser beam is stopped if any of the following conditions is encountered during printing:

- End of a print job
- The front door or any other door is opened.
- A misfeed occurs.
- A malfunction occurs.

1.3.6 Laser emission area

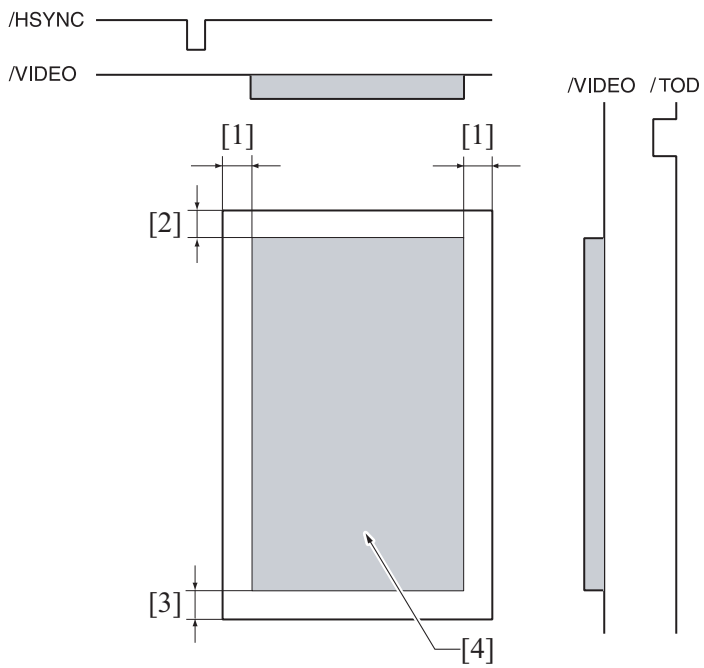
(1) Main scanning direction

- The print start position in the main scanning direction is determined by the main scanning print start signal (HSYNC) and the width of the paper.
- The laser emission area is determined by the paper size. The area on both edges of the paper is, however, the void image area.

(2) Sub scanning direction

- The print start position in the sub scanning direction is determined with the image write signal (TOD). Also, it is determined with the system speed.
- The laser emission area is determined by the paper size. The area on both edges of the paper is, however, the void image area.

Modes	Void image area	
	Main scanning direction	Sub scanning direction
Copy	3 mm (1/8 inches) from the edge of the paper	4.2 mm (3/16 inches) from the leading edge of the paper
	3 mm (1/8 inches) from the edge of the paper	3 mm (1/8 inches) from the trailing edge of the paper
PC Print	4.2 mm (3/16 inches) from the edge of the paper	4.2 mm (3/16 inches) from the leading edge of the paper
	4.2 mm (3/16 inches) from the edge of the paper	4.2 mm (3/16 inches) from the trailing edge of the paper



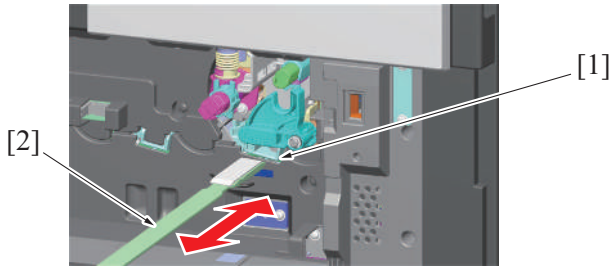
[1]	Void image area at edge of paper	[2]	Void image area at leading edge of paper
[3]	Void image area at trailing edge of paper	[4]	Laser emission area

1.3.7 PH unit temperature detection control

- The temperature inside the PH unit is measured at intervals of 30 sec. by the PH temperature sensor mounted in the PH unit.
- The detected temperature data is recorded to form part of the environmental information data and used for controlling, for example, 1st transfer output determination and transfer roller cleaning.

1.3.8 PH window cleaning

- The PH window, if contaminated, blocks the path of the laser beam and the surface of the photoconductor can no longer be exposed properly. This could result in image problems, including white bands or white lines on the print image.
- The PH window is provided with a cleaning guide that prevents any image problem caused by a dirty PH window from occurring.



[1]	Cleaning port	[2]	PH window cleaning tool

PH window cleaning procedures

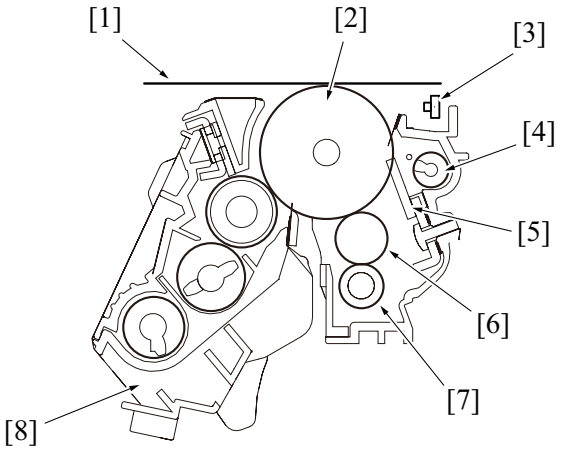
- Slowly pull to the front the PH window cleaning tool and push it back into the original position. This allows the cleaning material mounted on the PH window cleaning tool to remove any foreign matter from the surface of the PH window.
- The machine is not equipped with any mechanism that automatically cleans the PH window. This makes it necessary to clean the PH window manually at regular intervals.

PH window cleaning timing

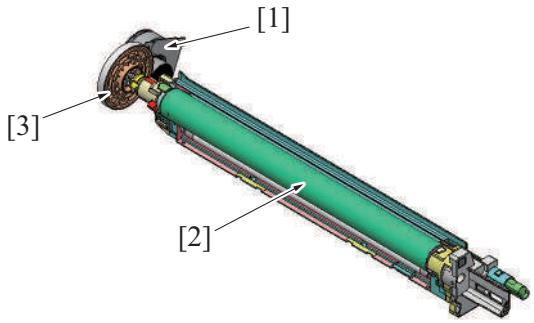
- Clean the PH window when the drum unit/K is replaced with a new one.

1.4 PHOTOCONDUCTOR SECTION

1.4.1 Configuration



[1]	Transfer belt	[2]	Photoconductor
[3]	Erase LED	[4]	Toner collecting screw
[5]	Cleaning blade	[6]	Charging roller
[7]	Cleaning roller	[8]	Developing unit

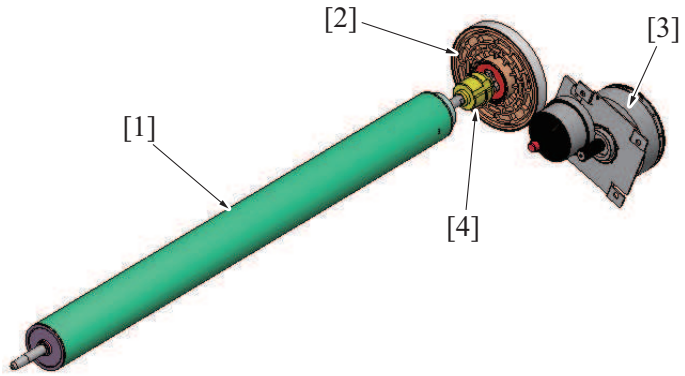


[1]	Transport motor (M1)	[2]	Drum unit/K
[3]	PC drive gear/K	-	-

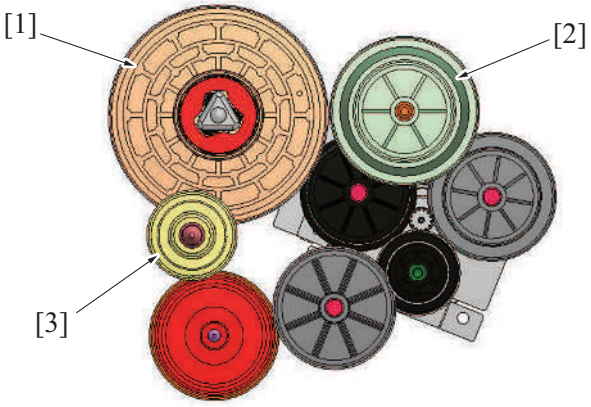
1.4.2 Drive

(1) Photoconductor/K drive mechanism

- The transport motor drives the photoconductor/K.
- The transport motor is the common source that provides a drive to manual bypass feed, tray feed, transfer belt, and others.
- Drive is transmitted to the photoconductor when the triangular-prism-shaped shaft is engaged with the mating coupling part.



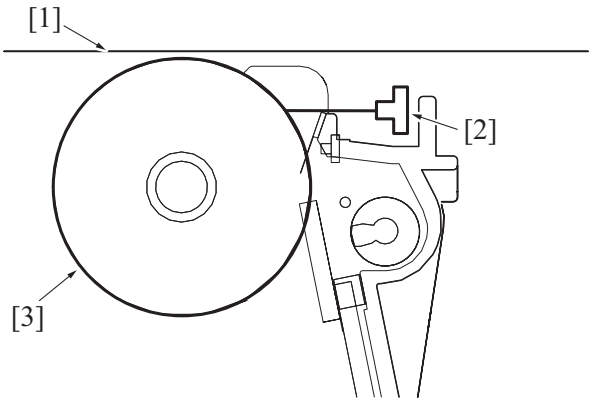
[1]	Photoconductor/K	[2]	Photoconductor drive gear/K
[3]	Transport motor (M1)	[4]	Coupling



[1]	Photoconductor drive gear/K	[2]	Transfer belt drive gear
[3]	Developing unit drive gear	-	-

1.4.3 Erase LED control

- The potential left on the photoconductor is neutralized by turning ON the erase LED.
- The neutralization of any residual potential on the photoconductor helps improve cleaning performance of toner left on the surface of the photoconductor.



[1]	Transfer belt	[2]	Erase LED
[3]	Photoconductor	-	-

Erase LED ON timing

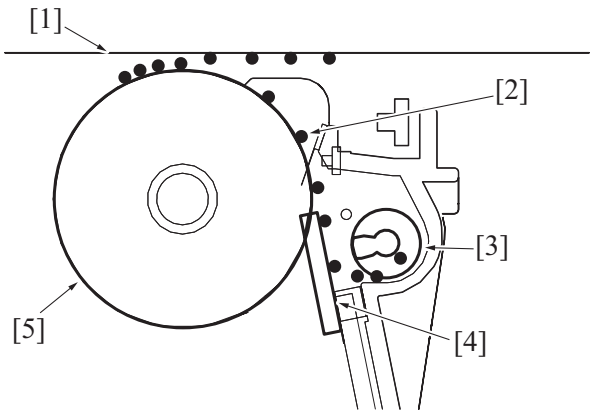
- The erase LED is turned ON when the photoconductor starts rotating.

Erase LED OFF timing

- The erase LED is turned OFF after the lapse of a predetermined period of time after the corona charge output has been shut down. (That is, the erase lamp is turned OFF after all charge left on the surface of the photoconductor is neutralized.)

1.4.4 Photoconductor cleaning

- Part of the toner image that is not transferred is left on the surface of the photoconductor. The residual toner is scraped off by the cleaning blade.
- Toner, which has been scraped off the surface of the photoconductor, is conveyed by the toner collecting screw toward to the front of the machine. It is discharged in the waste toner box.



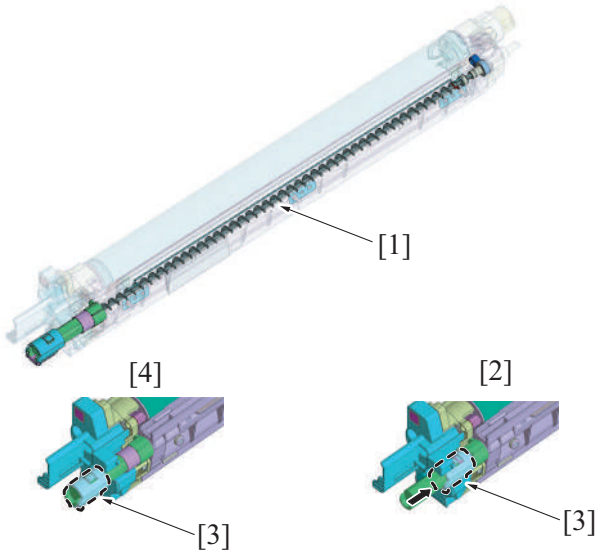
[1]	Transfer belt	[2]	Waste toner
[3]	Toner collecting screw	[4]	Cleaning blade
[5]	Photoconductor	-	-

Cleaning blade

- The cleaning blade is pressed up against the surface of the photoconductor at all times. No cleaning blade retraction mechanism is provided.
- The cleaning blade scrapes residual toner off the surface of the photoconductor as the photoconductor is rotated.

Toner conveyance/collection mechanism

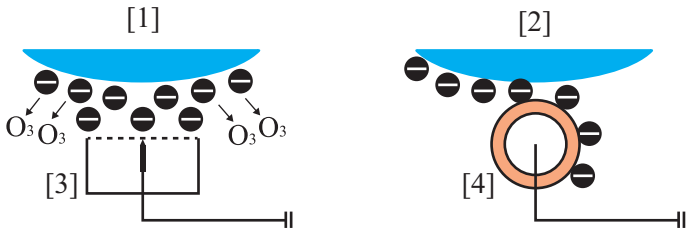
- The toner collecting screw is rotated by the driving force transmitted from the photoconductor. (The toner collecting screw rotates in time with the rotation of the photoconductor.)
- Rotation of the toner collecting screw conveys toner scraped off the surface of the photoconductor toward the front of the machine.
- The toner conveyed to the front of the machine is discharged via the toner collecting port into the waste toner box.
- The toner collecting port is provided with a shutter mechanism. Mounting the waste toner transport unit pushes the shutter at the toner collecting port, opening the toner collecting port. The shutter is closed by the waste toner transport unit removal and prevents the toner spilling from the toner collecting port.



[1]	Toner collecting screw	[2]	Shutter open
[3]	Shutter	[4]	Shutter close

1.4.5 Electrostatic charger control

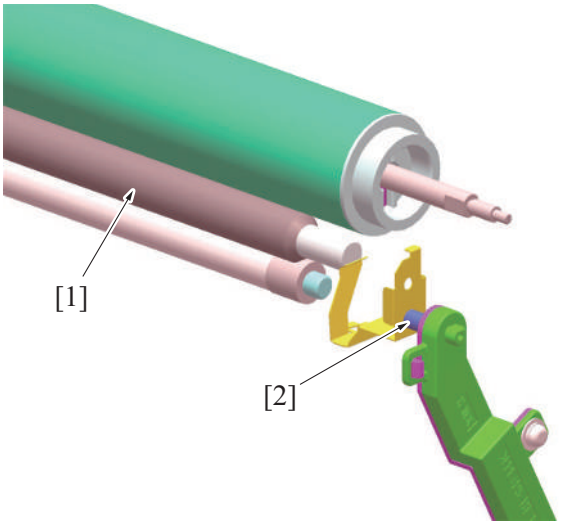
- A charging roller is used in the electrostatic charger.
- The charging roller does not apply high voltages in comparison to a comb electrode and generates no ozone, so that no ozone filter is mounted.



[1]	Comb electrode charge	[2]	Roller charging
[3]	Comb electrode	[4]	Charging roller

<Charge application start timing>
- Charge is applied to the electrostatic charger application terminal when the photoconductor (transport motor) drive motor starts rotating at a steady speed.

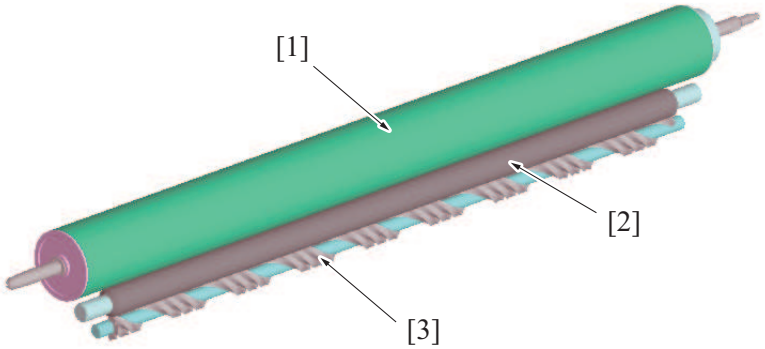
<Charge application end timing>
- Application of the charge to the electrostatic charger application terminal is terminated when the surface of the photoconductor which faces the transfer belt as the 1st transfer output is turned OFF moves past the charging position.



[1]	Charging roller	[2]	Electrostatic charger application terminal

1.4.6 Charging roller cleaning

- If the charging roller becomes contaminated, the surface of the photoconductor can no longer be charged uniformly, so that uneven charge occurs. Uneven charge of the photoconductor results in irregular streaks or other print image defects.
- The cleaning roller rotates by following the rotation of the charging roller, continuously cleaning contamination from the charging roller surface.



[1]	Photoconductor	[2]	Charging roller
[3]	Cleaning roller	-	-

1.4.7 Drum unit mounting detection

The drum unit is provided with a DC set board. The board detects set of the corresponding drum unit.

NOTE

- **For details of the unit life, refer to " E.1 Concept of maintenance."**

Detection timing

- The unit mounting detection control is performed under any of the following conditions:
  - "The power switch is turned ON (with the front door and right door are closed)"
  - "The front door or right door is opened and closed with the power switch in ON position"

Operation when it is detected that no units are mounted

- The message "Drum Unit Installation Error" appears on the control panel and the machine prohibits initiation of any new print cycle.
- The message "Drum Unit Installation Error" disappears as soon as a drum unit is mounted.

(1) New article detection

Detection timing

- The new article detection control is performed if it is determined through the "unit mounting detection" control that the drum unit is correctly mounted in place.

Operation when the drum unit is determined to be new

- The life counter of the drum unit is reset to zero and the control proceeds to the life detection control.
- The result of the new article detection is recorded in the storage board of the main body.
- The life counter value of the drum unit is recorded in the storage board of the main body.

(2) New release disable mode

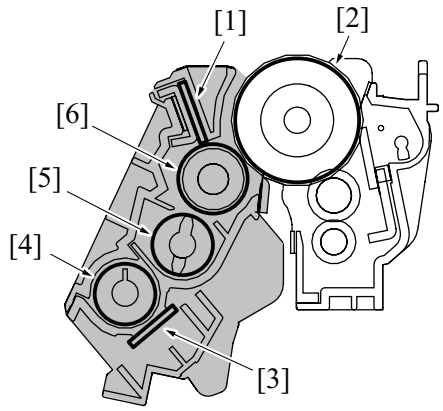
- No new article detection control is performed for the drum unit when the new release disable mode is used.
- The new release disable mode should be used only for troubleshooting purposes.

NOTE

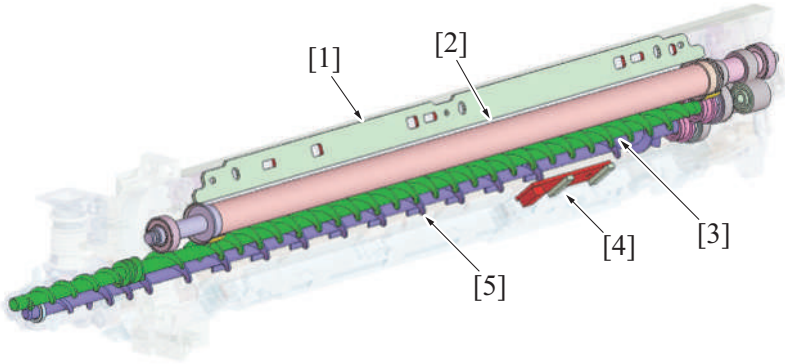
- **See " J.2.10.1 (1) New Release Disable mode" for more detailed operating precautions.**

1.5 DEVELOPING SECTION

1.5.1 Configuration



[1]	Doctor blade	[2]	Photoconductor
[3]	TCR sensor	[4]	Toner supply screw
[5]	Toner collecting screw	[6]	Developing roller



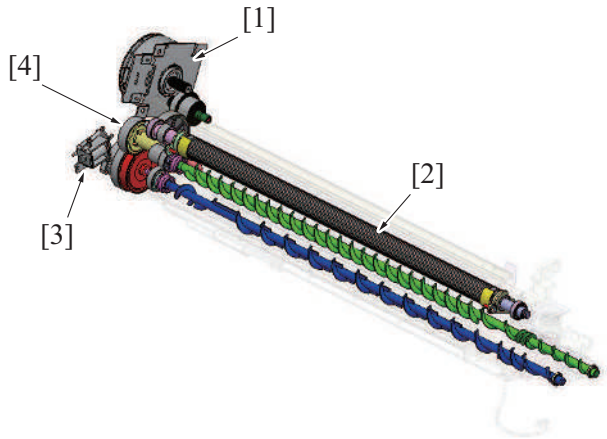
[1]	Doctor blade	[2]	Developing roller

[3]	Toner collecting screw	[4]	TCR sensor
[5]	Toner supply screw	-	-

1.5.2 Drive

(1) Developing section/K drive mechanism

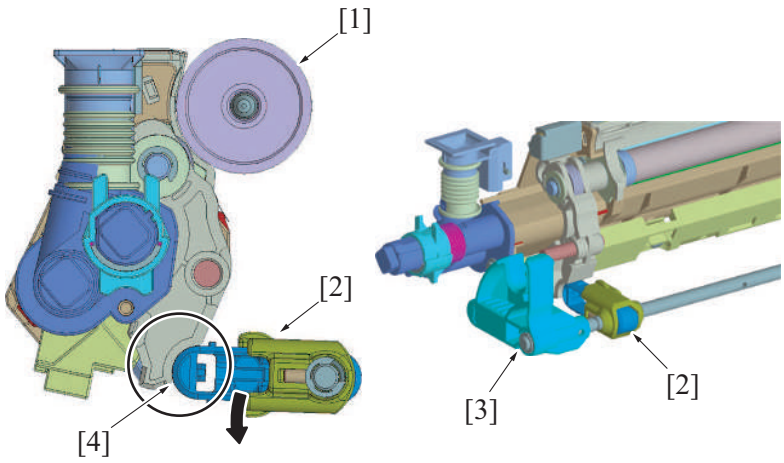
- The transport motor rotates to transmit the drive force to the developing drive gear/K. Thus, the developing roller/K is driven.



[1]	Transport motor (M1)	[2]	Developing roller/K
[3]	Developing solenoid (SD4)	[4]	Developing drive gear/K

1.5.3 Developing unit pressure/releases mechanism

- A mechanism is provided that releases the developing unit from the PC drum to prevent the photoconductor from being damaged when the drum unit is to be removed.
- Rotating the release lever clockwise will cause the rib fixed to the lever to fit into the groove in the developing unit, so that the developing unit is pressed against the drum unit.
- Rotating the release lever counterclockwise will cause the rib fixed to the lever to leave the groove in the developing unit, so that the developing unit is released from the drum unit.



[1]	Photoconductor	[2]	Rib
[3]	Release lever	[4]	Groove

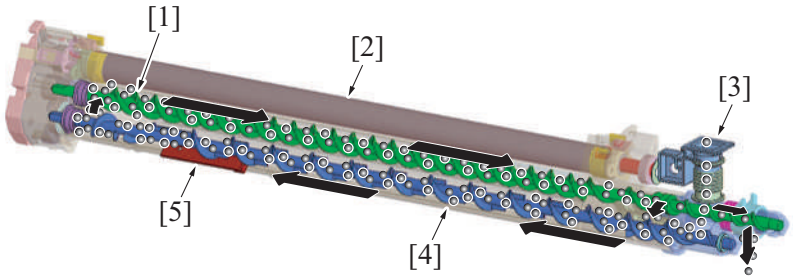
1.5.4 Developer flow

1. Toner replenished via the toner replenishing port located at the front side of the main body is fed to the toner supply screw.
2. The developer is conveyed toward the rear of the unit, while being agitated and electrically charged, by the toner supply screw.
3. The TCR sensor is equipped on the underside of the developing unit detects toner to carrier (T/C) ratio during this time. If the T/C ratio is lower than a predetermined value, toner is replenished.
4. The developer, fed to the rear of the developing unit, is conveyed further onto the toner collecting screw.
5. The developer fed to the toner collecting screw is conveyed onto the developing roller because of the magnetic pole positioning of the developing roller.
6. The doctor blade then controls the height of the developer brush to ensure that the developer on the developing roller levels out.
7. Only the toner contained in the developer sticks to the electrostatic latent image on the surface of the photoconductor. The developer that is left on the developing roller is returned to the toner collecting screw by the magnetic pole positioning of the developing roller.

8. The part of the circulating developer is collected in the waste toner box through the toner collecting port located at the front side of the toner collecting screw. The toner collecting port is provided with a shutter mechanism. Mounting the waste toner box pushes the shutter at the toner collecting port, opening the toner collecting port. The shutter is closed by the waste toner box removal and prevents the toner spilling from the toner collecting port.

NOTE

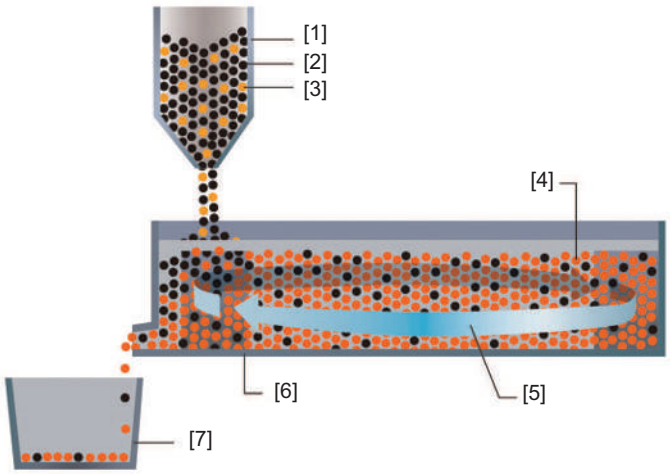
- **The toner replenishing port of the developing unit is not provided with a shutter mechanism. (The toner hopper section is equipped with a shutter.)**
- **When removing the developing unit, the developing unit must be held in a horizontal position with care not to allow toner to spill from the toner replenishing port.**



[1]	Toner collecting screw	[2]	Developing roller
[3]	Toner replenishing port	[4]	Toner supply screw
[5]	TCR sensor	-	-

1.5.5 Auto refining developing system

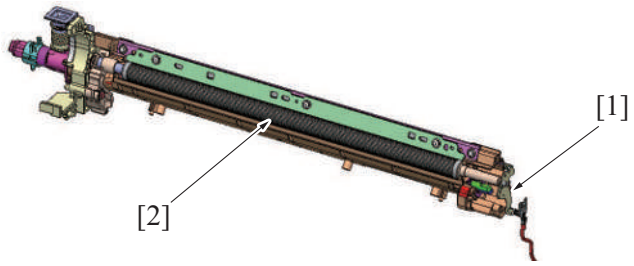
- The developing unit/K incorporates the auto refining developing system.
- The interior of the toner cartridge is packed with both toner and carrier. The developing unit is replenished with fresh carrier at the same time of replenishing the toner.
- Excess carrier in the developing unit is discharged, thereby inhibiting carrier left in the developing unit from being deteriorated and maintaining stable image quality for an extended period of time.



[1]	Toner cartridge	[2]	Toner
[3]	New carrier	[4]	Low degree of deterioration of entire carrier
[5]	Circulation and agitation	[6]	Developing unit
[7]	Waste toner box	-	-

1.5.6 Developing bias

- The developing bias voltage (Vdc) is applied to the developing roller so that an adequate amount of toner is attracted onto the surface of the photoconductor.
- In addition to the negative DC (-) component, +AC voltage is applied during development to help toner to be attracted more easily to the surface of the photoconductor. This AC component is applied only while development is taking place. At any other timing, only the DC (-) Vdc is applied.
- The developing bias (Vdc) is supplied from high voltage unit.
- The developing bias voltage supplied from the high voltage unit is applied to the developing roller via the metal shaft of the developing drive gear.
- See “IMAGE FORMING CONTROL” for the timing to apply the bias voltage.



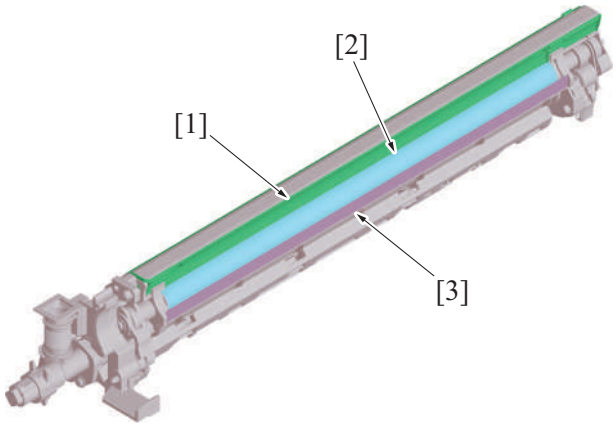
[1]	Developing bias voltage application terminal/K	[2]	Developing roller/K

Grad/Dev AC Bias V Selection

- The “Grad/Dev AC Bias V” can be changed by changing the setting of [Service Mode] -> [Imaging Process Adjustment] -> [Grad/Dev AC Bias V Selection]. This provides development performance that responds to various types of environment of the users.
- Turning ON the “Grad/Dev AC Bias V Selection” allows the “Grad/Dev AC Bias V” to be decreased down to a voltage value lower than the ordinary specified value.
- With the ordinary specified value set for the “Grad/Dev AC Bias V” in low atmospheric pressure environments, such as at high altitudes, leak could occur, resulting in white dots. Leak, and thus white dots on the image, can be prevented from occurring by lowering the “Grad/Dev AC Bias V”.
- For details of the Service Mode, see “ I.7.12 Grad/Dev AC Bias V Selection.”

1.5.7 Toner scattering prevention

- The toner scattering prevention plate and toner scattering prevention sheet are equipped in an area around the developing roller, functioning to prevent toner from scattering.



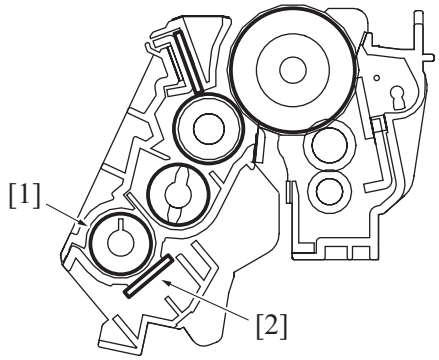
[1]	Toner scattering prevention plate	[2]	Developing roller
[3]	Toner scattering prevention sheet	-	-

1.5.8 Developing cooling

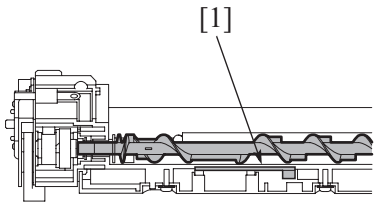
- The transfer belt cleaner cooling fan is provided to circulate air through the inside of the machine, so that the areas around the developing unit, drum unit, toner hopper, and the transfer belt unit can be cooled.

1.5.9 Toner density control

- The TCR sensor is mounted on the underside of the developing section. The TCR sensor is a non-contact magnetic type. The sensor detects toner-to-carrier ratio (TC) of the developer. The reading is used for determining the amount of toner supplied.
- Only when a new developing unit is installed in the machine, an automatic adjustment (calibration) is made of the TCR sensor. The automatic adjustment of the TCR sensor cannot be done at your own discretion.
- The target TC ratio is 4.0% to 8.5%.
- The magnetic permeability (powder density) of the carrier in the developer is measured to determine the TC ratio.
- The TCR sensor is integrated with the developing unit. When the TCR sensor is to be replaced with a new one, the entire developing unit must be replaced.



[1]	Toner supply screw	[2]	TCR sensor



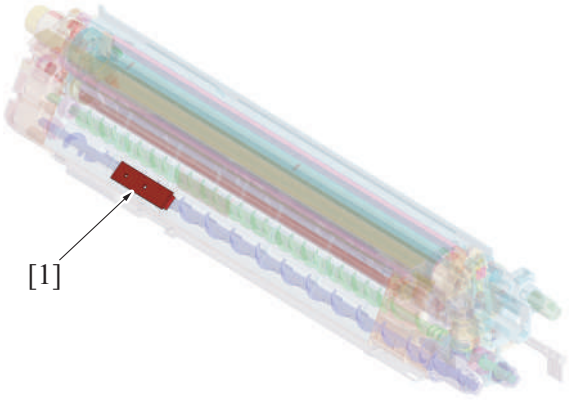
[1]	TCR sensor	-	-

1.5.10 Developing unit mounting detection

- The developing unit is provided with a TCR sensor. The sensor detects the mounting state of the corresponding developing unit.

NOTE

- **For details of the unit life, refer to " E.1 Concept of maintenance".**



[1]	TCR sensor	-	-

Detection timing

- The unit mounting detection control is performed under any of the following conditions:
  - "The power switch is turned ON (with the front door and right door are closed)"
  - "The front door or right door is opened and closed with the power switch in ON position"

Operation when it is detected that no units are mounted

- The message "Developing Unit Installation Error" appears on the control panel and the machine prohibits initiation of any new print cycle.
- The message "Developing Unit Installation Error" disappears as soon as a developing unit is mounted.

(1) New article detection

- The TCR sensor detects whether the developing unit is new or not.

Detection timing

- The new article detection control is performed if it is determined through the "unit mounting detection" control that the developing unit is correctly mounted in place.

Operation when the developing unit is determined to be new

- The TCR sensor automatic adjustment control (calibration) is performed.
- The image stabilization control is performed.
- The life counter of the developing unit is reset to zero.
- After the above controls are performed, the operation proceeds to the life detection control.
- The result of the new article detection is recorded in the storage board of the main body.
- The life counter value of the developing unit is recorded in the storage board of the main body.

(2) New release disable mode

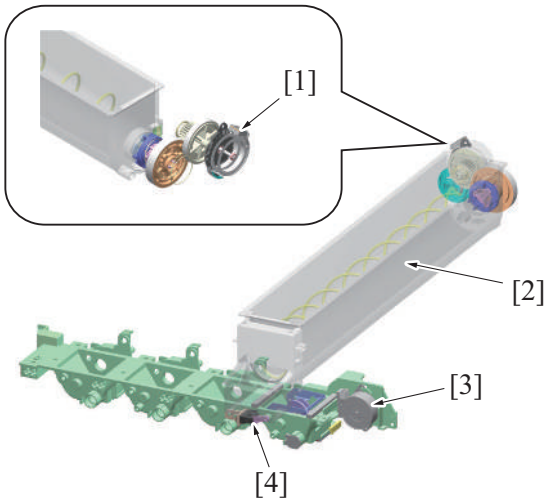
- The new release disable mode is used when a new developing unit is temporarily used for performing troubleshooting procedures of a machine.
- No new article detection control is performed for the developing unit when the new release disable mode is used.
- The new release disable mode should be used only for troubleshooting purposes.

NOTE

- **See " J.2.10.1 (1) New Release Disable mode" for more detailed operating precautions.**

1.6 TONER SUPPLY SECTION

1.6.1 Configuration

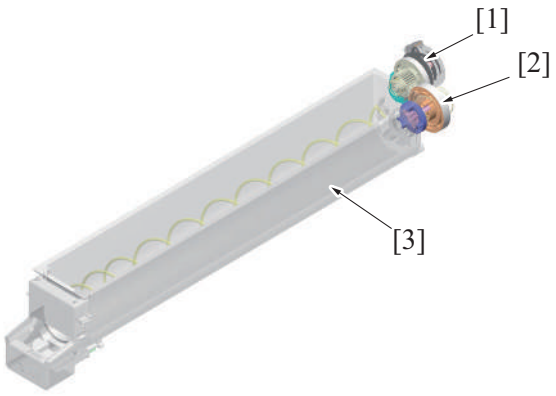


[1]	Toner cartridge motor/K (M25)	[2]	Toner cartridge/K
[3]	Toner supply motor/K (M6)	[4]	Toner empty sensor/K (PS31)

1.6.2 Drive

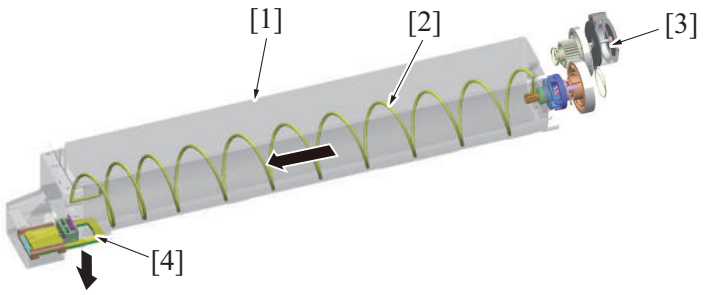
(1) Toner cartridge drive

- The toner cartridge motor/K drives the toner cartridge/K.



[1]	Toner cartridge drive gear/K	[2]	Toner cartridge motor/K (M25)
[3]	Toner cartridge/K	-	-

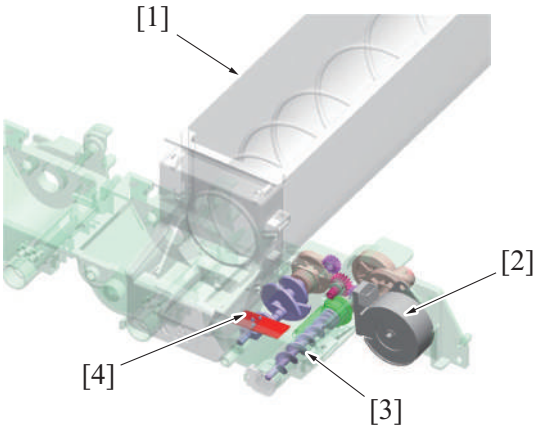
- The toner cartridge motor rotates to drive the toner transport coil inside the toner cartridge.
- As the toner transport coil rotates, toner inside the toner cartridge is conveyed toward the toner replenishing port that is located at the front side. So that the toner hopper is replenished with the toner from the toner cartridge.



[1]	Toner cartridge	[2]	Toner transport coil
[3]	Toner cartridge motor	[4]	Toner replenishing port

(2) Toner hopper drive

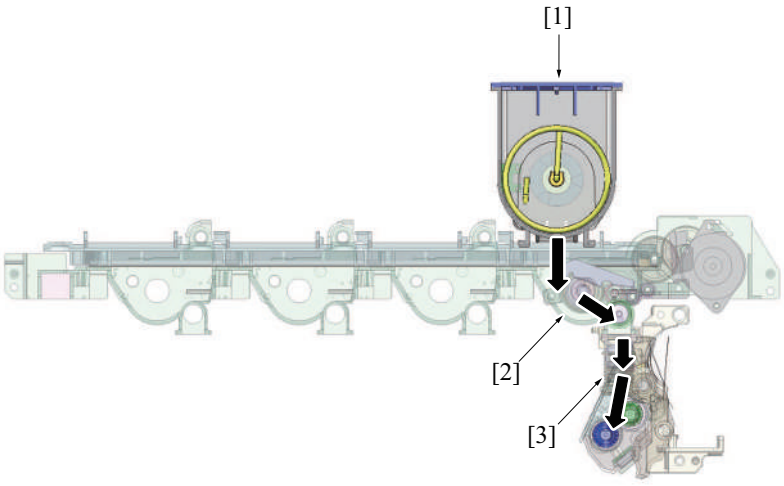
- Rotation of the toner supply motor causes the toner agitating blade and toner conveying screw inside the toner hopper to rotate.
- Toner conveyed into the toner hopper is agitated by the toner agitating blade.
- As the toner conveying screw rotates, toner is conveyed onto the toner replenishing port located at the front side inside the toner hopper, so that the toner is fed into the developing unit via the toner replenishing pipe.



[1]	Toner cartridge/K	[2]	Toner supply motor/K (M6)
[3]	Toner conveying screw/K	[4]	Toner agitating blade/K

1.6.3 Toner replenishing overview

- The toner replenishing mechanism has a two-step replenishing structure. One is replenishing the toner hopper with the toner from the toner cartridge. The other one is replenishing the developing unit with the toner from the toner hopper.
- The toner cartridge incorporates the auto refining developing system.

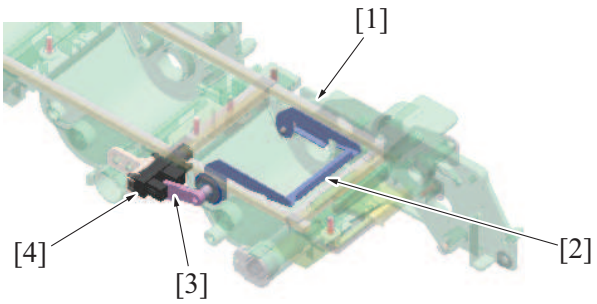


[1]	Toner cartridge	[2]	Toner hopper
[3]	Toner replenishing pipe	-	-

1.6.4 Toner replenishing from toner bottle to toner hopper

(1) Toner replenishing mechanism

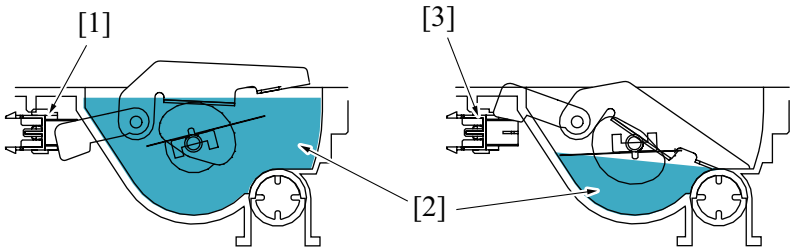
- The toner replenishing from the toner cartridge to the toner hopper is determined by unblocking and blocking the toner empty sensor.
- If the toner empty sensor is unblocked a predetermined number of times, the machine determines that the toner in the toner hopper decreases. So that, the toner cartridge motor is energized and a toner replenishing sequence is started.
- The toner hopper is provided with a toner empty sensor.
- The cam mounted coaxially with the toner agitating blade moves the detection plate up and down.
- The actuator that is mounted on the detection plate is operatively associated with the detection plate, that changes the state of the toner empty sensor.



[1]	Toner hopper	[2]	Detection plate
[3]	Actuator	[4]	Toner empty sensor/K (PS31)

(2) Toner replenishing control

- The toner replenishing control is started when the drive of the toner cartridge motor is started.
- During a predetermined period of time, when the toner empty sensor switches from OFF to ON, the machine increments the empty counter by one. Next, the toner cartridge motor is rotated for a predetermined period of time, so that toner is supplied from the toner cartridge to the toner hopper.
- When the empty counter reaches the predetermined value, the machine determines that the toner hopper is in the empty condition.
- If the toner empty sensor remains OFF, the machine resets the empty counter to zero.

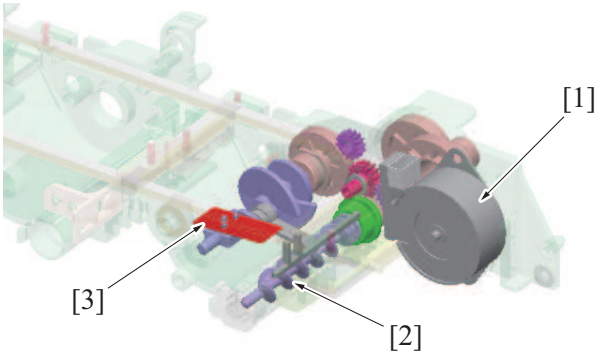


[1]	Toner empty sensor: OFF	[2]	Toner
[3]	Toner empty sensor: ON	-	-

1.6.5 Toner replenishing from toner hopper to developing unit

(1) Toner replenishing mechanism

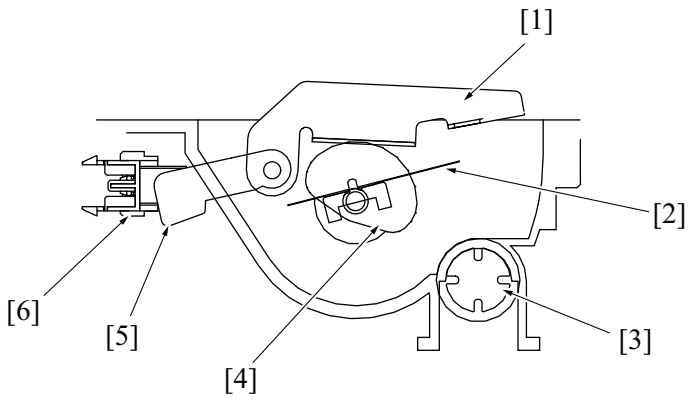
- The toner supply motor drives the toner conveying screw and the toner agitating blade.
- The toner agitating blade rotates to agitate toner in the toner hopper.
- The toner conveying screw rotates to replenish the developing unit with toner.



[1]	Toner supply motor/K (M6)	[2]	Toner conveying screw/K
[3]	Toner agitating blade/K	-	-

(2) Toner agitating blade drive

1. Toner conveying screw is rotated by the driving of the toner supply motor.
2. The rotation of the toner conveying screw is transmitted to the toner agitating blade drive gear, which results in the toner agitating blade being rotated. The toner agitating blade rotates to agitate toner in the toner hopper.
3. The cam mounted coaxially with the toner agitating blade moves the detection plate and actuator up and down.



[1]	Detection plate	[2]	Toner agitating blade
[3]	Toner conveying screw	[4]	Cam (operatively connected to toner agitating blade shaft)
[5]	Actuator	[6]	Toner empty sensor

(3) Toner replenishing control

- Control of replenishing the developing unit with toner from the toner hopper is performed only when the developing unit is driven.
- The toner replenishing time (the amount of toner supplied) during the toner replenishing control is determined based on the T/C ratio detected by the TCR sensor (noncontact magnetic type) disposed at the developing unit and the amount of toner to be consumed (estimated) for the image to be printed.
- If replenishing is interrupted by a paper misfeed, the front door opened or closed, or any similar event, the required replenishing time is carried forward to the next replenishing control sequence.

1.6.6 Auxiliary toner replenishing control for toner hopper

- If the amount of toner in the toner hopper is likely decreasing, control is performed to supply toner forcibly from the toner cartridge to the toner hopper.
- The machine prohibits initiation of any new print cycle while the auxiliary toner replenishing control is being executed.

(1) Operation timing

- Rotate the toner cartridge motor for a predetermined time to supply toner from the toner cartridge to the toner hopper under one of the following conditions:
  - [Manual Toner Add] is executed from [Service Mode] -> [Imaging Process Adjustment].
  - The toner cartridge is replaced with a new one after a toner empty condition is detected in the toner cartridge (toner empty reset control is performed)

(2) End timing

- The auxiliary toner replenishing control is terminated under any of the following conditions:
  - A predetermined period of time elapses after the toner cartridge motor has been energized

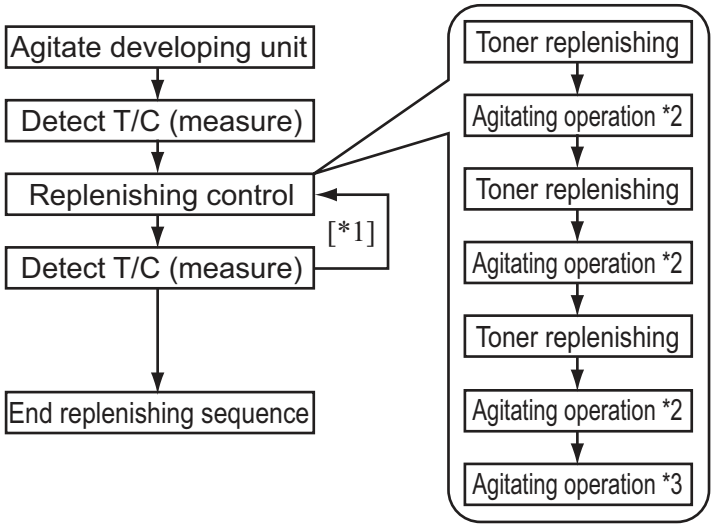
- The front door is opened and closed
- An error or malfunction occurs
- The machine enters the power save or sleep mode

1.6.7 Auxiliary toner replenishing control for developing unit

- If the T/C ratio detected by the TCR sensor is equal to, or lower than, a predetermined value at the start of a print cycle, initiation of the print cycle is prohibited and the developing unit is replenished with toner from the toner hopper until the T/C value reaches the predetermined value.
- The auxiliary toner replenishing control for developing unit is terminated as soon as the predetermined T/C ratio is recovered. It is also terminated if the auxiliary toner replenishing control for developing unit is repeated ten sets. Also, it will be terminated when a toner empty condition is detected in the toner cartridge.

(1) Operation flow

- When the auxiliary toner replenishing control is performed, the following operations will also be performed. Agitate the toner hopper, calculate the T/C ration with the TCR sensor, and replenish toner from the toner cartridge to the toner hopper are performed.
- The auxiliary toner replenishing control is performed for a maximum of about 5 min.



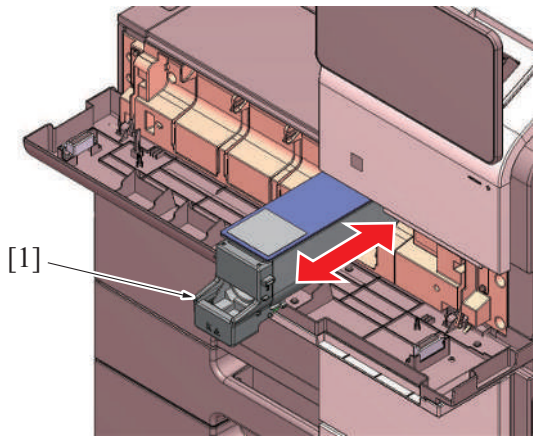
- *1: If a predetermined T/C is not reached, return to replenishing control. (a maximum of 10 times)
- *2: Agitate developing unit during replenishing
- *3: Agitate developing unit after replenishing

1.6.8 Toner spillage prevention shutter

(1) Toner cartridge

Mounting

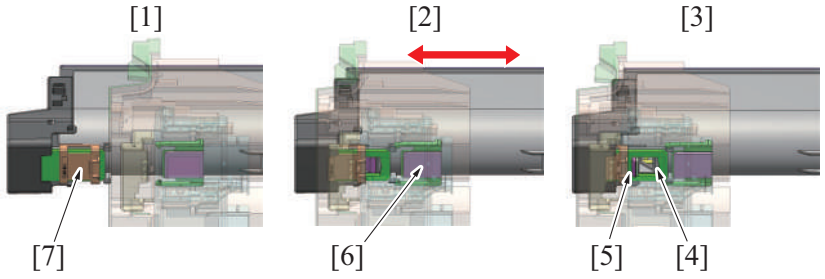
- The shutter of the toner replenishing port is opened when the toner cartridge has been inserted straight into the toner cartridge mounting portion.



[1]	Toner cartridge/K	-	-

Removal

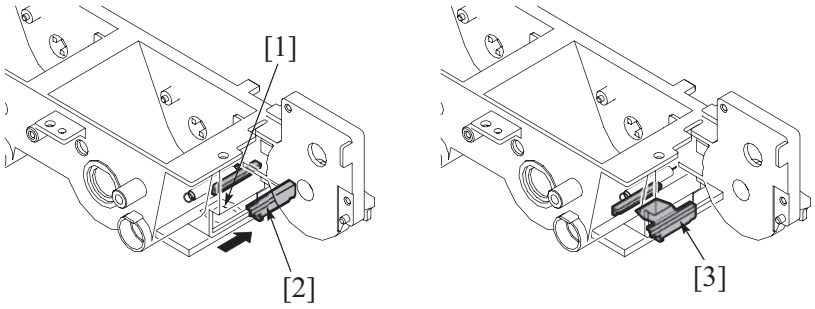
- The shutter at the toner replenishing port must be closed when the toner cartridge is to be removed.
- Pulling out the handle of the toner cartridge straight closes the shutter of the toner replenishing port.
- The toner cartridge has a two-layered structure consisting of an inner shutter and an outer shutter. When the toner cartridge is pulled out, the inner shutter starts to close, and the toner is thereby prevented from spilling from the toner supply port.



[1]	The toner cartridge removed	[2]	Detaching the toner cartridge
[3]	The toner cartridge installed	[4]	Toner cartridge toner replenishing port
[5]	Inner shutter	[6]	Shutter on main body side
[7]	Outer shutter	-	-

(2) Toner hopper

- The toner replenishing port of the toner hopper is provided with a toner spillage prevention shutter that prevents toner from spilling during removal or reinstallation of the developing unit.
- Mounting the developing unit pushes the shutter at the toner replenishing port, opening the toner replenishing port. Removing the developing unit, on the other hand, closes the shutter and toner is thereby prevented from spilling from the toner replenishing port.



[1]	Toner replenishing port	[2]	Toner hopper toner spillage prevention shutter (opened: toner replenishing position)
[3]	Toner hopper toner spillage prevention shutter (closed: developing unit removal position)	-	-

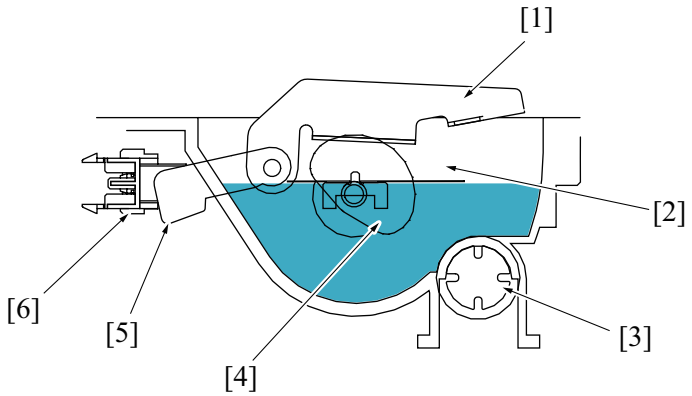
1.6.9 Toner empty detection control

NOTE

- **For the life of the toner cartridge, refer to " E.1 Concept of maintenance."**

(1) Toner empty detection

- The toner empty sensor provided for the toner hopper is used to determine the amount of toner still available for use in the toner hopper.
- The cam that is mounted coaxially with the detection plate moves up and down depending on the remaining amount of the toner. Thus, the toner empty sensor detects the condition.
- If the empty counter exceeds 3 during control of replenishing the toner hopper with toner, a toner empty condition is considered. As a result, it prompts to perform the toner empty control.



[1]	Detection plate	[2]	Toner agitating blade
[3]	Toner conveying screw	[4]	Cam (operatively connected to toner agitating blade shaft)

[5]	Actuator	[6]	Toner empty sensor

Toner empty detection timing

- The toner replenishing control is started when the drive of the toner supply motor is started.
- The output of the toner empty sensor is monitored for a predetermined period of time. If the toner empty sensor is turned ON from the OFF state, during the predetermined period of time, the machine determines that the “toner hopper runs out of toner (or there is only a small amount of toner left in the toner hopper)” and increments the empty counter by one.
- If the toner empty sensor remains OFF, the machine determines that “toner is still available for use in the toner hopper”, resetting the empty counter to zero.
- These operations are repeated. When the empty counter reaches the predetermined value, the machine determines that the toner hopper is in the empty condition. Then, it shows the message “Toner is near empty” on the control panel.

(2) Resetting the toner near empty and toner empty conditions

- After a toner near empty condition and a toner empty condition have been detected, either of the two controls will be performed. “Auxiliary toner replenishing control for toner hopper” or “auxiliary toner replenishing control for developing unit” (Both may be performed in certain cases)
- The toner near empty/empty display is reset when the control is normally terminated.
- Initiation of a new print cycle is prohibited during execution of the “auxiliary toner replenishing control for toner hopper” and “auxiliary toner replenishing control for developing unit”.

List of controls

Control name	Parts to be controlled	Description
Auxiliary toner replenishing control for developing unit	Developing unit	Recovers the T/C ratio of the developer in the developing unit.
Auxiliary toner replenishing control for toner hopper	Toner hopper	Recovers the amount of toner in the toner hopper.

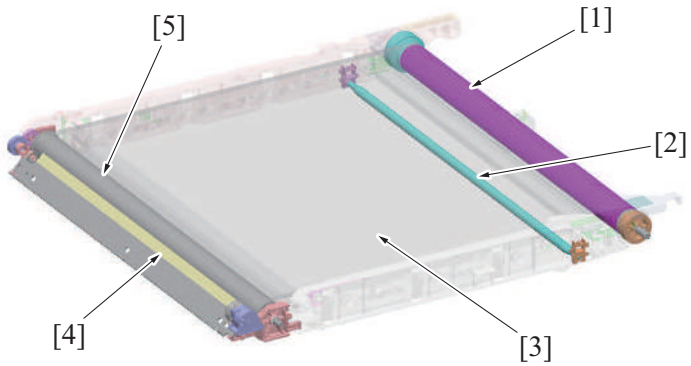
Condition	Toner in unit	
	Toner hopper	Toner cartridge
Near empty	Available	Decreasing
Empty 1	Decreasing	Not available
Empty 2	Not available	Not available

Toner empty condition resetting timing

- The “auxiliary toner replenishing control for toner hopper” or “auxiliary toner replenishing control for developing unit” is executed under any of the following conditions after a toner near empty/toner empty condition has been detected:
  “The main power switch is turned ON”
  “Release in sub power off mode”
  “Opening/closing the upper front door”

1.7 1ST TRANSFER SECTION

1.7.1 Configuration

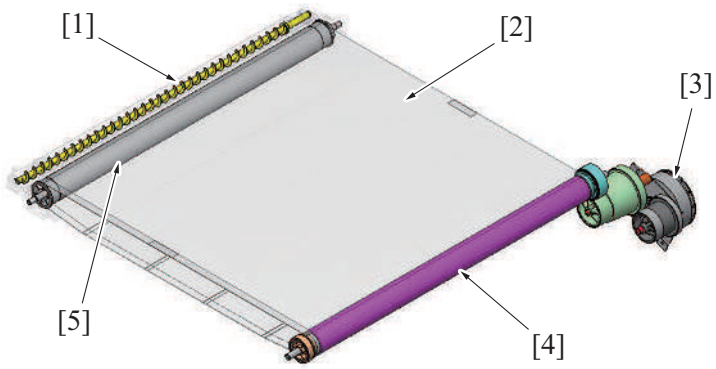


[1]	Transfer belt drive roller	[2]	1st transfer roller/K
[3]	Transfer belt	[4]	Cleaning blade
[5]	Transfer belt driven roller	-	-

1.7.2 Drive

(1) Transfer belt drive

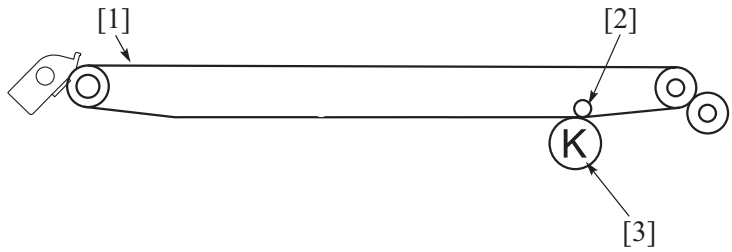
- The transfer belt drive roller is rotated by the driving force of the transport motor.
- Rotation of the transfer belt causes the transfer belt driven roller to rotate. The drive transmission gear located at the transfer belt driven roller rotates the waste toner conveying screw of the cleaning mechanism.



[1]	Waste toner conveying screw	[2]	Transfer belt
[3]	Transport motor (M1)	[4]	Transfer belt drive roller
[5]	Transfer belt driven roller	-	-

1.7.3 1st transfer roller control

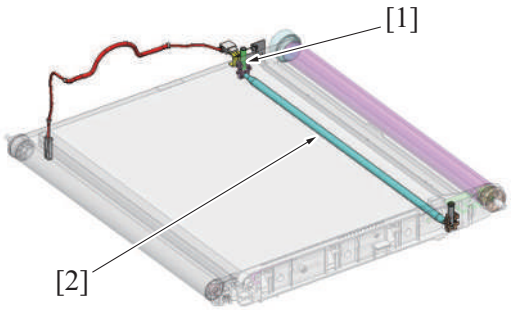
- The 1st transfer roller/K always presses the transfer belt to the photoconductor/K.



[1]	Transfer belt	[2]	1st transfer roller/K
[3]	Photoconductor/K	-	-

1.7.4 1st transfer control

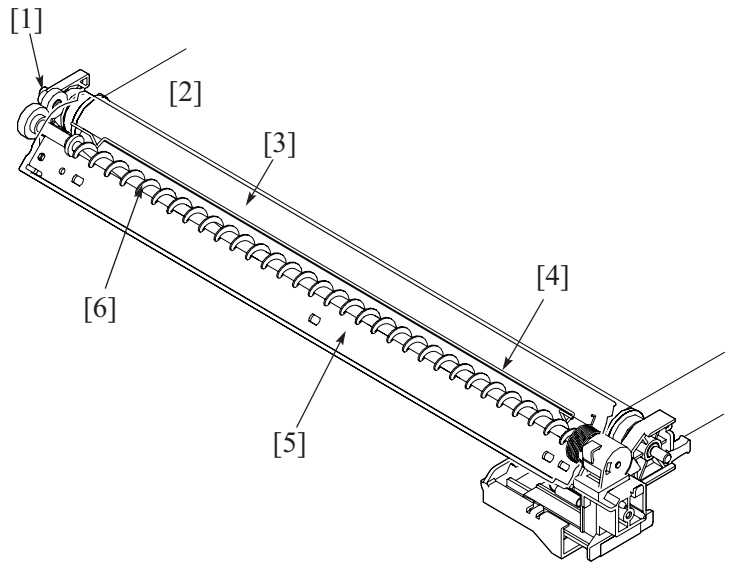
- To transfer the toner image formed on the surface of the photoconductor onto the transfer belt, the transfer current supplied from the high voltage unit is applied to the 1st transfer roller.



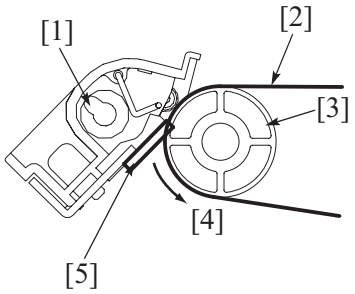
[1]	1st transfer current application terminal/K	[2]	1st transfer roller/K

1.7.5 Transfer belt cleaning

- The toner image on the surface of the transfer belt is transferred onto the paper. (2nd transfer)
- Part of the toner image is left on the surface of the transfer belt after the 2nd transfer. A cleaning blade is provided on the transfer belt. It functions to remove the residual toner (waste toner).



[1]	Drive transmission gear	[2]	Transfer belt
[3]	Transfer belt driven roller	[4]	Caking-of-toner prevention blade
[5]	Cleaning blade	[6]	Toner collecting screw



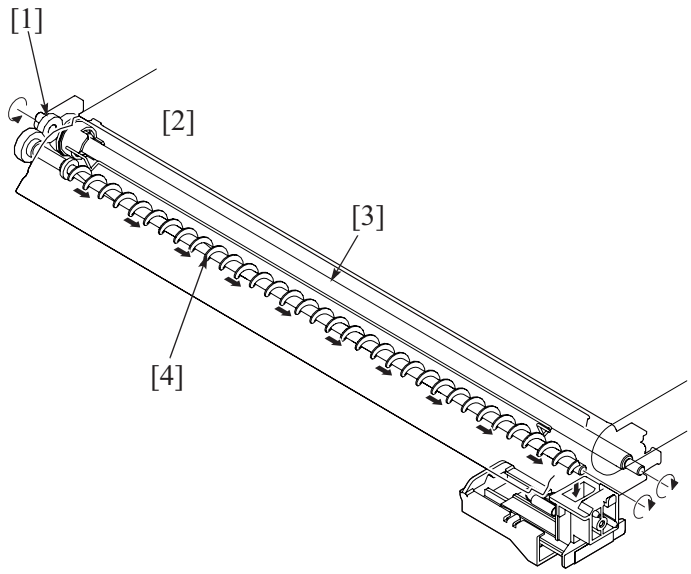
[1]	Toner collecting screw	[2]	Transfer belt
[3]	Transfer belt driven roller	[4]	Transfer belt rotative direction (forward rotation)
[5]	Cleaning blade	-	-

(1) Cleaning blade

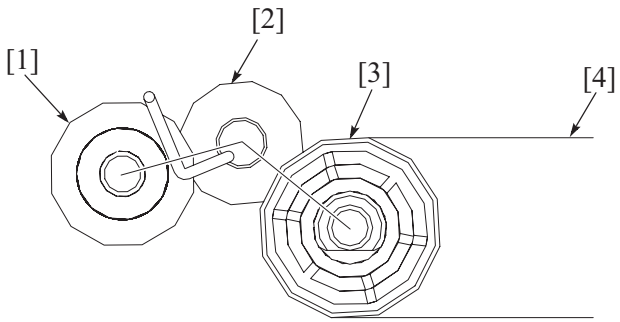
- The cleaning blade, of a fixed blade type, is pressed up against the surface of the transfer belt at all times. No cleaning blade retraction mechanism is provided.
- The waste toner on the surface of the transfer belt is scraped off as the transfer belt is rotated.

(2) Waste toner conveying/collecting mechanism

- Drive for the toner collecting screw comes from the transfer belt driven roller. (The toner collecting screw rotates in time with rotation of the transfer belt.)
- The rotation of the toner collecting screw conveys waste toner scraped off the surface of the transfer belt toward the front of the machine.
- There is a caking-of-toner prevention blade installed. It prevents waste toner from caking at the toner collecting screw portion.
- The toner conveyed to the front of the machine is discharged via the toner collecting port into the waste toner box.



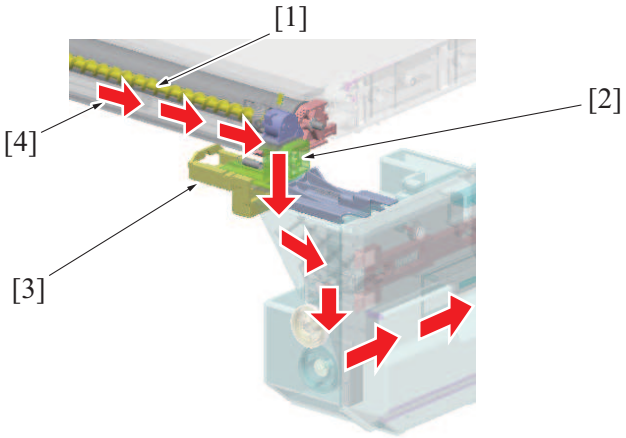
[1]	Drive connecting gear	[2]	Transfer belt
[3]	Transfer belt driven roller	[4]	Toner collecting screw



[1]	Toner collecting screw	[2]	Drive connecting gear
[3]	Transfer belt driven roller	[4]	Transfer belt

1.7.6 Waste toner spillage prevention shutter

- The toner collecting port is provided with a waste toner spillage prevention shutter that prevents waste toner from spilling during removal or reinstallation of the waste toner box.
- Mounting the waste toner box pushes the shutter at the toner collecting port, opening the toner collecting port. The shutter is closed by the waste toner box removal and prevents the toner spilling from the toner collecting port.



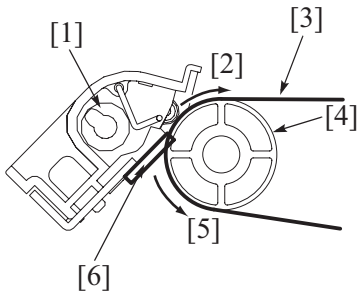
[1]	Toner collecting screw	[2]	Toner collecting port
[3]	Shutter	[4]	Waste toner flow

1.7.7 Cleaning blade foreign matter removal control

- The transfer belt is rotated backward to a small extent and then rotated forward to remove foreign matter (dust, toner, etc.) wedged between the transfer belt and the edge of the cleaning blade.

<Operation timing>

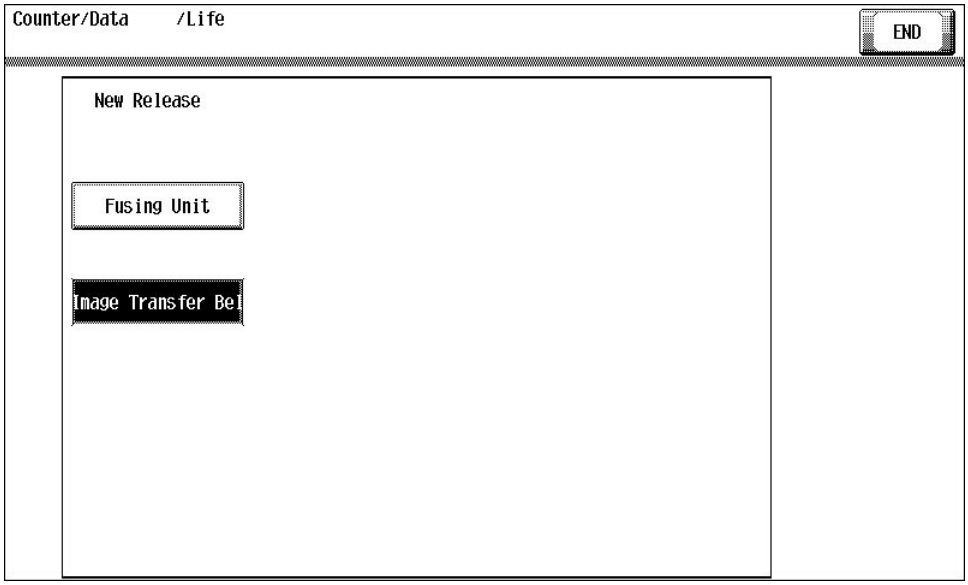
- The backward rotation control is provided at the completion of every print job.



[1]	Toner collecting screw	[2]	Backward rotation
[3]	Transfer belt	[4]	Transfer belt driven roller
[5]	Forward rotation	[6]	Cleaning blade

1.7.8 Transfer belt new article detection

- The transfer belt unit is not provided with any new article detection mechanism. If the transfer belt is replaced with a new one, therefore, “New Release” must be performed from [Service Mode] -> [Counter] -> [Life].

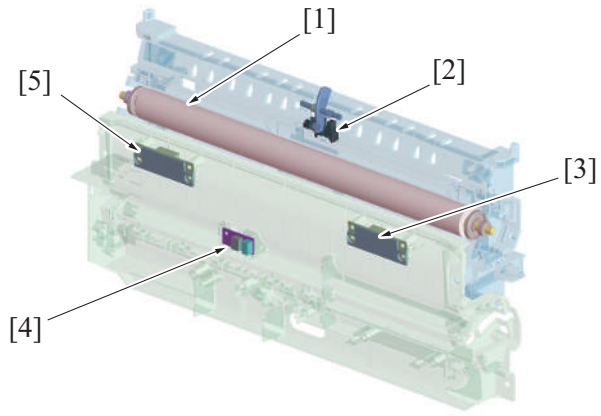


NOTE

- **For the life of the toner cartridge, refer to “ E.1 Concept of maintenance.”**

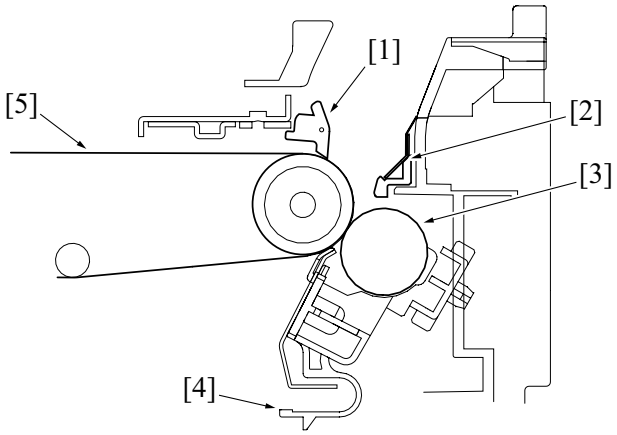
1.8 2ND TRANSFER SECTION

1.8.1 Configuration



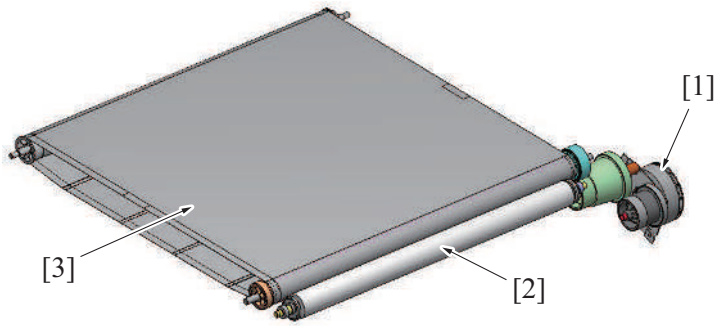
[1]	2nd transfer roller	[2]	Fusing loop sensor (PS2)

[3]	IDC sensor/Fr (IDCS/Fr)	[4]	Temperature/humidity sensor (TEM/HUMS)
[5]	IDC sensor/Rr (IDCS/Rr)	-	-



[1]	Separation claw	[2]	Charge neutralizing needle
[3]	2nd transfer roller	[4]	2nd transfer roller lock release lever
[5]	Transfer belt	-	-

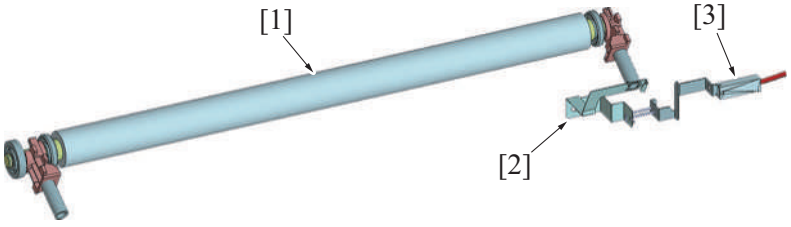
1.8.2 Drive



[1]	Transport motor (M1)	[2]	2nd transfer roller
[3]	Transfer belt	-	-

1.8.3 2nd transfer control

- To transfer the toner image formed on the transfer belt onto the paper, the 2nd transfer voltage supplied from the high voltage unit is applied to the 2nd transfer roller.
- Resistance of the 2nd transfer roller changes with an environmental change, durability, and other factors. To maintain an optimum output voltage, fixed current is passed through the 2nd transfer roller and the voltage being outputted at that time is detected. An appropriate 2nd transfer voltage is determined based on the measured voltage and other information such as “type of paper used”, “temperature and humidity”, and “1-sided/2-sided”.



[1]	2nd transfer roller	[2]	2nd transfer voltage conductive plate
[3]	2nd transfer voltage application terminal	-	-

Execution timing

- The 2nd transfer control is executed when a print job is received under any of the following conditions:
  "Main power switch is turned ON"
  "Power key is pushed"
  "The machine exits the sleep mode"
  "The threshold value of a change in machine interior temperature is exceeded."

2nd transfer control during image stabilization control

- The 2nd transfer roller does not have a retraction mechanism, so that the transfer belt and 2nd transfer roller are pressed up against each other at all times.
- During image stabilization control, a toner image for adjustment purpose is formed on the surface of the transfer belt. A negative voltage is therefore applied to the 2nd transfer roller during image stabilization control. The amount of toner sticking to the 2nd transfer roller is thereby reduced.

1.8.4 Control of toner application to 2nd transfer roller

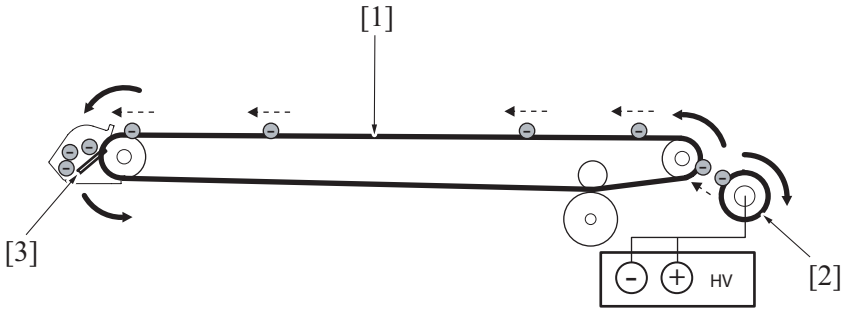
- The 2nd transfer roller does not have a retraction mechanism, so that the transfer belt and 2nd transfer roller are pressed up against each other at all times.
- If a new 2nd transfer roller that has replaced an old one is left to stand idle for a long period of time, a substance contained in the new roller sticks to the surface of the transfer belt, which could result in noise in the print image.
- To prevent the substance contained in the 2nd transfer roller from sticking to the transfer belt, toner is applied to the surface of a new 2nd transfer roller at the time of replacement. (The toner image that corresponds to two complete revolutions of the transfer roller is formed on the surface of the transfer belt and is then transfer red onto the surface of the 2nd transfer roller.)

Execution timing

- The control is executed when the life counter of the 2nd transfer roller in the service mode is reset to zero.

1.8.5 2nd transfer roller cleaning

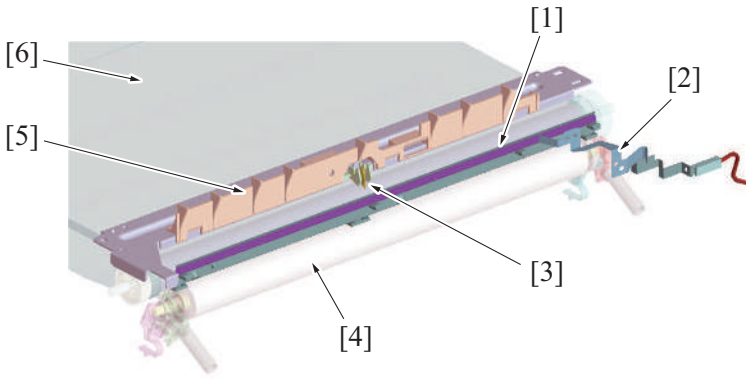
- In order to remove the remaining toner on the 2nd transfer roller, -/+ (DC) charge is applied alternately to transfer the remaining toner on the 2nd transfer roller to the transfer belt. (The number of times that electrical charge is applied to the 2nd transfer roller is different depending on each situation.)
- The cleaning blade then scrapes off the toner on the surface of the transfer belt.



[1]	Transfer belt	[2]	2nd transfer roller
[3]	Cleaning blade	-	-

1.8.6 Charge neutralization and separation of paper

- To neutralize any residual potential on the paper which has undergone the 2nd transfer process, there is a charge neutralizing needle mounted on the guide plate after the 2nd transfer roller. There is a resin guide that prevents the electrode from directly contacting the paper.
- The residual potential neutralized by the charge neutralizing needle is grounded via a conductive plate.
- In order to separate the paper from the transfer belt without fail after the 2nd transfer, a separation claw is mounted (center one point.)
- The paper winding prevention guide prevents paper from being wound around the transfer belt again after its being separated from the transfer belt by the separation claw.



[1]	Charge neutralizing needle	[2]	Charge neutralizing needle conductive plate (ground)
[3]	Separation claw	[4]	2nd transfer roller
[5]	Paper winding prevention guide	[6]	Transfer belt

1.8.7 2nd transfer roller new article detection

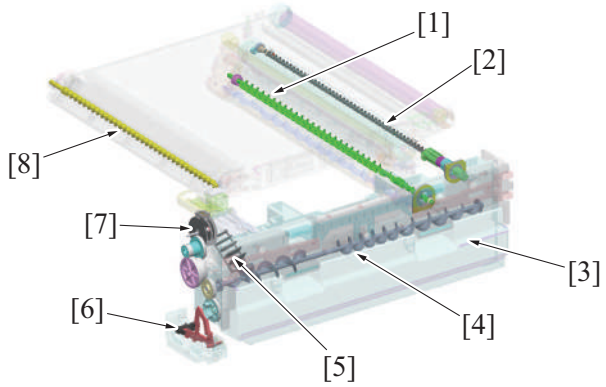
- The 2nd transfer roller is not provided with any new article detection mechanism. If the 2nd transfer roller is replaced with a new one, therefore, “New Release” in “Transfer Belt Unit” must be performed from [Service Mode] -> [Counter] -> [Life]. Performing “New Release” of the “Transfer Belt Unit” will also reset the life counter of the 2nd transfer roller to zero.

NOTE

- **For the life of the 2nd transfer roller, refer to “ E.1 Concept of maintenance.”**

1.9 TONER COLLECTING SECTION

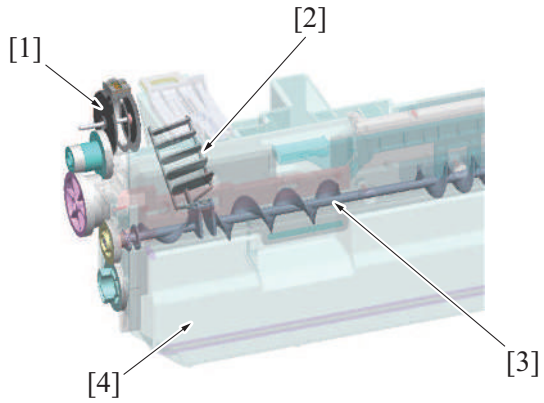
1.9.1 Configuration



[1]	Toner collecting screw (Drum unit)	[2]	Toner collecting screw (Developing unit)
[3]	Waste toner box	[4]	Waste toner conveying screw
[5]	Toner agitating blade	[6]	Waste toner box drive detection sensor (PS100)
[7]	Waste toner transport motor (M20)	[8]	Toner collecting screw (Transfer belt unit)

1.9.2 Waste toner box drive mechanism

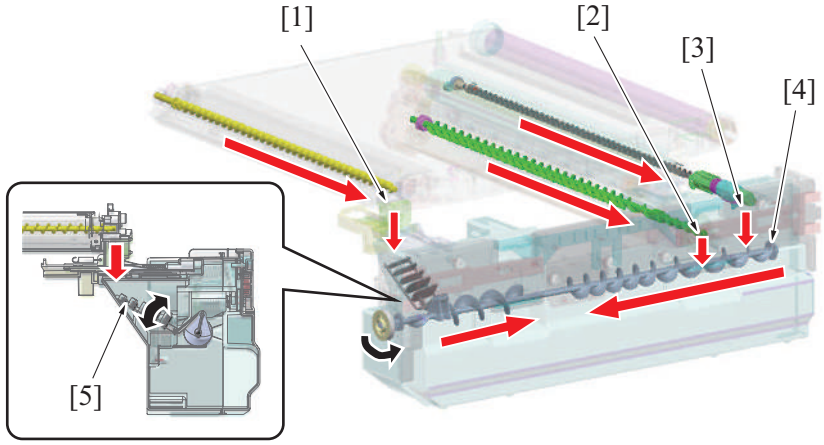
- The waste toner box is driven by the dedicated waste toner transport motor.
- The driving force of the waste toner transport motor is transmitted to the waste toner conveying screw of the waste toner box.



[1]	Waste toner transport motor (M20)	[2]	Toner agitating blade
[3]	Waste toner conveying screw	[4]	Waste toner box

1.9.3 Control of waste toner conveyance through waste toner box

- Waste toner in the transfer belt unit and the drum unit, and excess toner in the developing unit are conveyed onto the waste toner box by the toner collecting screw.
- Waste toner and waste developer (waste carrier + waste toner) are collected through the toner collecting ports for the each units.
- The toner collecting port (transfer belt unit) is provided with a toner agitating blade that prevents toner stagnation. The toner agitating blade is moved up and down by the waste toner conveying screw rotation.
- The waste toner screw transports the collected waste toner uniformly to the center of the waste toner box.
- A window for detecting a waste toner full condition is equipped at the center of the waste toner box. When the waste toner that is conveyed to the center of the waste toner box exceeds a predetermined height, waste toner spills over the waste toner full condition detection

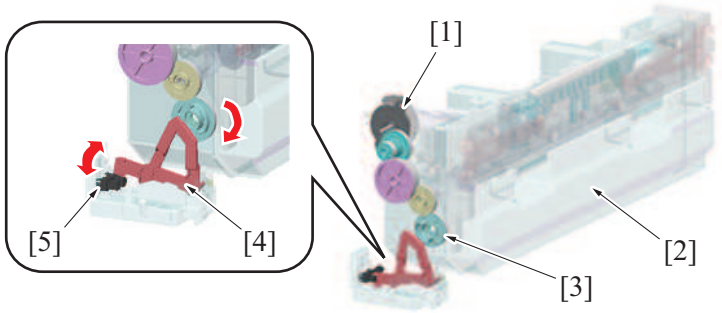


section.

[1]	Toner collecting port (transfer belt unit)	[2]	Toner collecting port (developing unit)
[3]	Toner collecting port (drum unit)	[4]	Waste toner conveying screw
[5]	Toner agitating blade	-	-

1.9.4 Waste toner box drive section rotation detection

- The waste toner box is equipped with a waste toner box drive detection sensor. It prevents a failure of the main body such as waste toner stagnation due to a rotation failure.
- A rotation detection cam that is connected with the drive gear of the waste toner conveying screw rotates and moves the lever.
- The waste toner box drive detection sensor detects that the drive section works properly by unblocked or blocked by the lever.

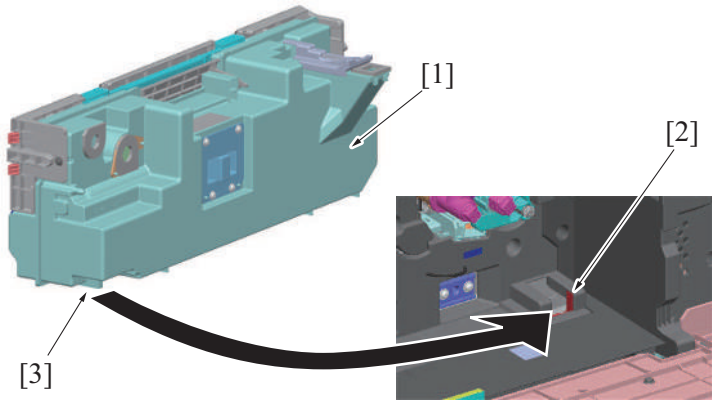


[1]	Waste toner transport motor (M20)	[2]	Waste toner box

[3]	Rotation detection cam	[4]	Lever
[5]	Waste toner box drive detection sensor (PS100)	-	-

1.9.5 Waste toner box-in-position detection

- The waste toner box set sensor detects mounting condition of the waste toner box. It prevents the machine from being operated with the waste toner box yet to be mounted in place.
- When the waste toner box is installed the detection plate blocks the waste toner box set sensor, thus the machine determines that the waste toner box is installed.
- When the waste toner box is determined to be installed, the display showing that waste toner box is not installed is cleared and printing will be enabled.



[1]	Waste toner box	[2]	Waste toner box set sensor (PS102)
[3]	Detection plate	-	-

1.9.6 Waste toner box full detection

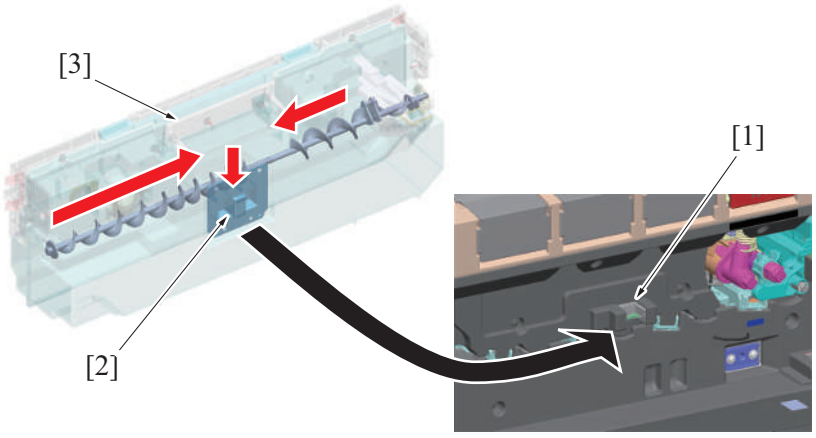
- The waste toner full sensor provided on the waste toner box install section is used to determine the amount of waste toner that is accumulated in the waste toner box.

NOTE

- **For the life of the waste toner box, refer to " E.1 Concept of maintenance".**

Waste toner near-full

- The waste toner conveying screw provided in the waste toner box conveys waste toner in the box. A window for detecting a waste toner full condition is equipped at of the waste toner box. When the conveyed waste toner exceeds a predetermined height, it spills over the waste toner full condition detection window.
- If the waste toner full sensor is blocked by the waste toner stagnant over the waste toner full condition detection window for a predetermined period of time or longer, the "waste toner full detection counter" is incremented according to the image density information of the print image during each of subsequent print jobs.
- When the waste toner full detection counter reaches a threshold value, the machine determines that there is a waste toner near-full condition.



[1]	Waste toner full sensor (PS101)	[2]	Waste toner full condition detection window
[3]	Waste toner box	-	-

<Execution timing>

- The waste toner box near-full detection control is performed under any of the following conditions:
  - "The machine determines that the waste toner box is mounted in place using the waste toner box set sensor."
  - "During a print cycle"
  - "During execution of image stabilization control"

Waste toner full

- When the waste toner full detection counter reaches a threshold value, the machine determines that there is a waste toner full condition.

<Execution timing>

- The waste toner box full detection control is performed under any of the following conditions:
  - "The machine determines that the waste toner box is mounted in place using the waste toner box set sensor."
  - "A waste toner near-full condition is detected."
  - "During a print cycle"
  - "During execution of image stabilization control"

1.9.7 Waste toner box new article detection

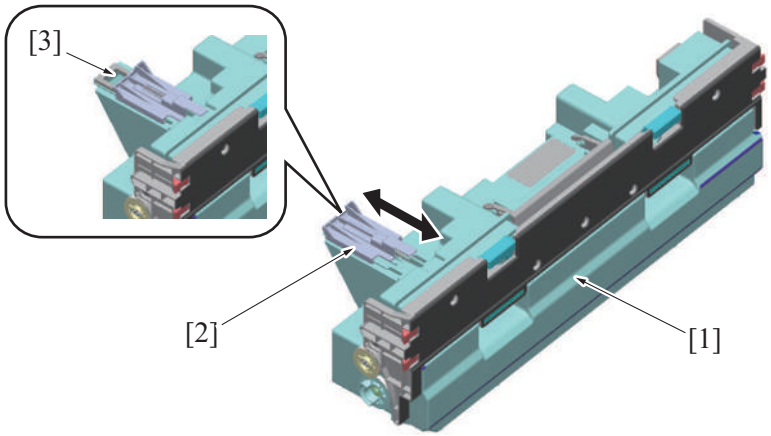
- The waste toner box is not provided with any new article detection mechanism. Detection made by the waste toner full sensor is used for detecting a new waste toner box.
- When the waste toner full display appears, the existing waste toner box is replaced with a new one. When the waste toner full sensor remains unblocked for a predetermined period of time or more, the machine determines that the normal state is recovered (the old waste toner box is replaced with a new one).
- Determining that a new waste toner box has been mounted, the machine resets the waste toner full display, allowing the initiation of a new print cycle.

Timing at which to reset the waste toner full display

- The waste toner box full detection control is performed under any of the following conditions:
  - "The waste toner full sensor detects a waste toner full condition."
  - "The power switch is turned ON"
  - "The front door is closed"

1.9.8 Waste toner spillage prevention shutter

- A toner spillage prevention shutter is provided at the port where the waste toner is collected from the transfer belt unit. It prevents the waste toner from spilling from the transfer belt during removal or reinstallation of the waste toner box.
- Inserting the waste toner box into its mounting position pushes the shutter at toner collecting port of the waste toner box, thus opening the toner collecting port.
- Removing the waste toner box allows the shutter spring to close the shutter at the toner collecting port.

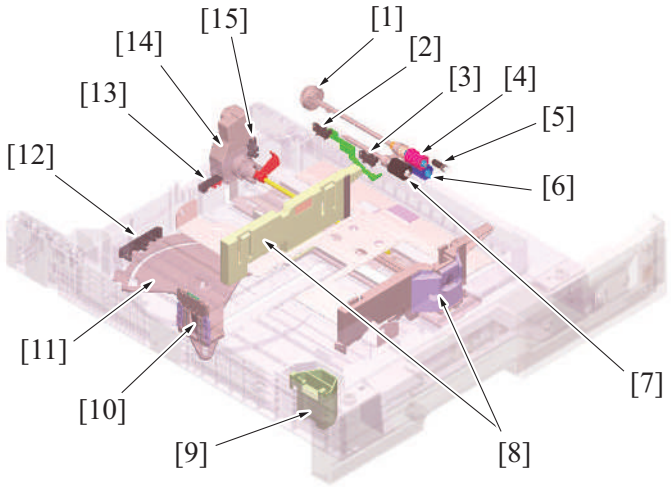


[1]	Waste toner box	[2]	Shutter
[3]	Toner collecting port	-	-

1.10 PAPER FEED SECTION (TRAY 1/2)

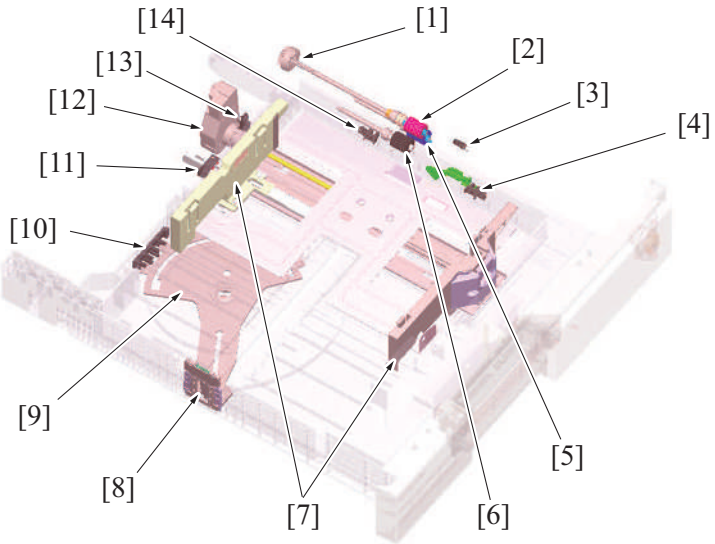
1.10.1 Configuration

(1) Tray 1



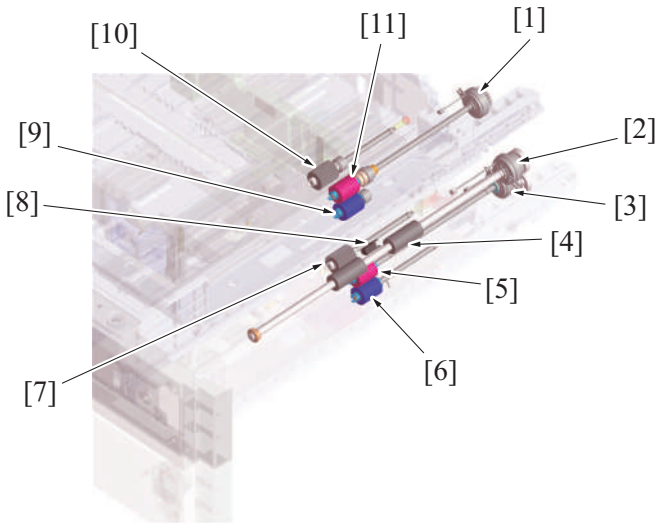
[1]	Tray 1 paper feed clutch (CL3)	[2]	Tray 1 paper empty sensor (PS24)
[3]	Tray 1 upper limit sensor (PS25)	[4]	Feed roller
[5]	Tray 1 paper feed sensor (PS23)	[6]	Separation roller
[7]	Pick-up roller	[8]	Paper width guide
[9]	Attachment for small-sized paper	[10]	Paper length guide
[11]	Paper length detection plate	[12]	Tray 1 FD paper size board (FDPSB/1)
[13]	Tray 1 CD paper size board (CDPSB/1)	[14]	Tray 1 lift-up motor (M12)
[15]	Tray 1 paper near empty sensor (PS11)	-	-

(2) Tray 2



[1]	Tray 2 paper feed clutch (CL1)	[2]	Feed roller
[3]	Tray 2 paper feed sensor (PS20)	[4]	Tray 2 paper empty sensor (PS21)
[5]	Separation roller	[6]	Pick-up roller
[7]	Paper width guide	[8]	Paper length guide
[9]	Paper length detection plate	[10]	Tray 2 FD paper size board (FDPSB/2)
[11]	Tray 2 CD paper size board (CDPSB/2)	[12]	Tray 2 lift-up motor (M13)
[13]	Tray 2 paper near empty sensor (PS12)	[14]	Tray 2 upper limit sensor (PS22)

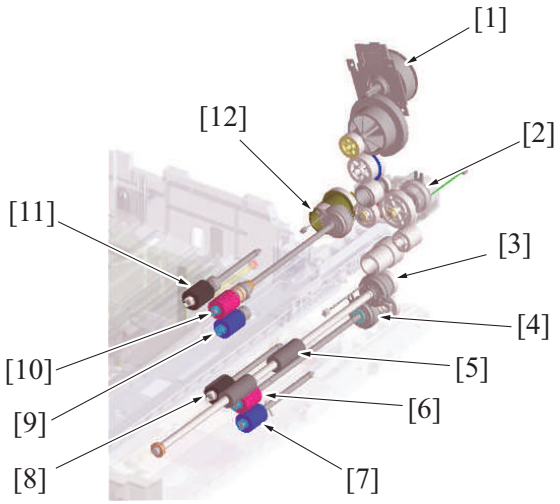
(3) Paper feed/transport section



[1]	Tray 1 paper feed clutch (CL3)	[2]	Tray 2 vertical transport clutch (CL2)
[3]	Tray 2 paper feed clutch (CL1)	[4]	Tray 2 vertical transport roller
[5]	Tray 2 feed roller	[6]	Tray 2 separation roller
[7]	Tray 2 pick-up roller	[8]	Tray 2 vertical transport sensor (PS19)
[9]	Tray 1 separation roller	[10]	Tray 1 pick-up roller
[11]	Tray 1 feed roller	-	-

1.10.2 Drive

- Drive parts are arranged in the same way in tray 1 and tray 2. If the description that follows is not identified with tray 1 or tray 2, it is applicable to both tray 1 and tray 2 in terms of mechanism and control.
- Transport motor drives the tray1 and 2 paper feed roller section.
- The drive section of each tray has a clutch that controls rotation of the paper feed roller section.



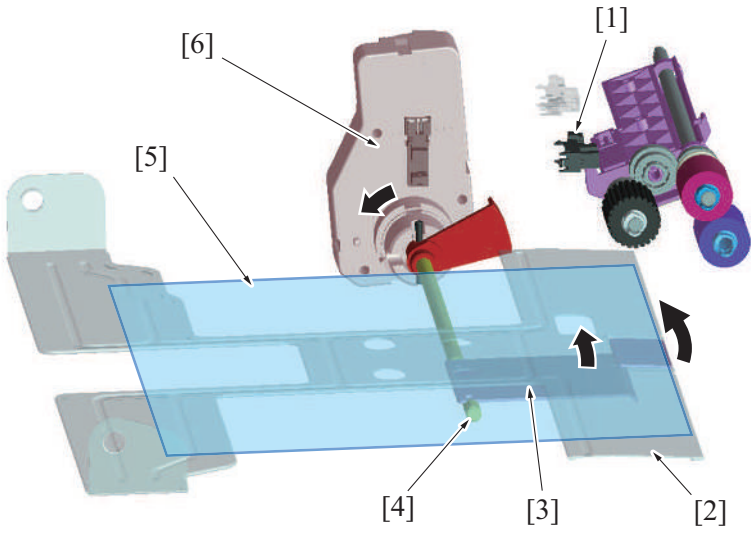
[1]	Transport motor (M1)	[2]	Paper feed roller fast clutch (CL10)
[3]	Tray 2 vertical transport clutch (CL2)	[4]	Tray 2 paper feed clutch (CL1)
[5]	Tray 2 vertical transport roller	[6]	Tray 2 feed roller
[7]	Tray 2 separation roller	[8]	Tray 2 pick-up roller
[9]	Tray 1 separation roller	[10]	Tray 1 feed roller
[11]	Tray 1 pick-up roller	[12]	Tray 1 paper feed clutch (CL3)

1.10.3 Up/down control

- Tray 1 and tray 2 are controlled in the same control procedure.

(1) Up operation

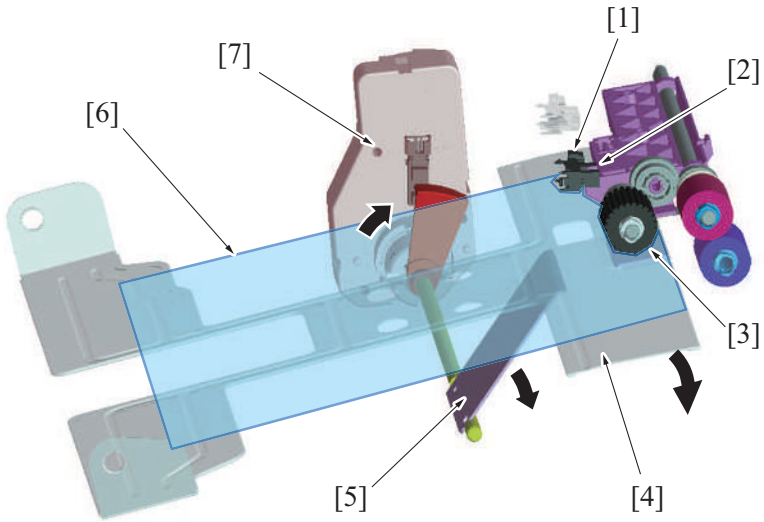
- The paper lift-up plate B is located under the paper lift-up plate A.
- The lift-up plate drive shaft of the tray 1/2 lift-up motor is connected to paper lift-up plate B.
- When the drive shaft of the tray 1/2 lift-up motor rotates, paper lift-up plate B raises paper lift-up plate A.



[1]	Tray 1 upper limit sensor (PS25) Tray 2 upper limit sensor (PS22)	[2]	Paper lift-up plate A
[3]	Paper lift-up plate B	[4]	Lift-up plate drive shaft
[5]	Paper	[6]	Tray 1 lift-up motor (M12) Tray 2 lift-up motor (M13)

(2) Down operation

- When the tray is slid out of the machine, the coupling of tray 1/2 lift-up motor and the lift-up plate drive shaft are disconnected from each other.
- When the driving force of tray 1/2 lift-up motor is released from the lift-up plate drive shaft, the paper lift-up plate starts lowering by its own weight.



[1]	Tray 1 upper limit sensor (PS25) Tray 2 upper limit sensor (PS22)	[2]	Light blocking plate of upper limit sensor
[3]	Pick-up roller	[4]	Paper lift-up plate A
[5]	Paper lift-up plate B	[6]	Paper
[7]	Tray 1 lift-up motor (M12) Tray 2 lift-up motor (M13)	-	-

(3) Operation timing

(a) When the tray is slid in

- When the tray is slid into the machine, the sensor on the tray 1/2 FD paper size board is blocked. The machine then determines that the tray is slid into position.
- The paper lift-up plate is lowering when the tray is slid out, so that the tray 1/2 upper limit sensor is unblocked.

- Determining after tray insertion that the tray 1/2 upper limit sensor is unblocked, the machine lets the tray 1/2 lift-up motor rotate to start the up operation of the paper lift-up plate.
- When the paper stack is raised to a predetermined height after the up operation of the paper lift-up plate has been started, the tray 1/2 upper limit sensor is blocked.
- Determining that the tray 1/2 upper limit sensor is blocked, the machine stops the tray 1/2 lift-up motor to complete the up operation of the paper lift-up plate.
- Control is provided to make sure that only one tray performs the up operation at one time.
- If the tray is slid out during the up operation of the paper lift-up plate and accordingly the sensor on the tray 1/2 FD paper size board is unblocked, the up operation of the paper lift-up plate is terminated.

(b) During a print cycle

- When the amount of paper decreases as the unit keeps printing, the pick-up roller will gradually come down to unblock the tray 1/2 upper limit sensor. The tray 1/2 lift-up motor will rotate again to lift up the paper lift-up plate.
- When the tray 1/2 upper limit sensor is blocked, the tray 1/2 lift-up motor will stop to stop lift-up the paper lift-up plate.
- The sequence of these operations is repeated to keep constant the pressure between the pick-up roller and paper stack (paper take-up pressure) regardless of the amount of paper still available for use.

1.10.4 Paper feed control

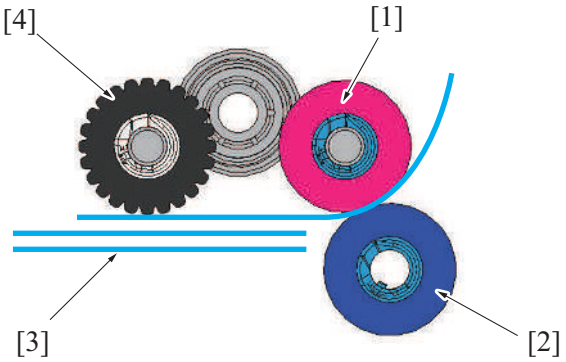
- Tray 1 and tray 2 are controlled in the same control procedure.

Pick-up control

- The tray 1/2 paper feed clutch is energized after the lapse of a predetermined period of time after the print start signal.
- The driving force of the transport motor is transmitted to the pick-up roller and paper feed roller when the tray 1/2 paper feed clutch is energized. These rollers rotate to pick up and feed a sheet of paper into the machine.

Separation control

- The separation roller is pressed up against the feed roller by the pressure of a spring and an acting pressure generated from torque of the torque limiter.
- The acting pressure of the feed roller/separation roller/torque limiter serves as the limit torque for preventing double feed.
- When there is no sheet of paper or only one sheet of paper between the separation roller and feed roller, the limit torque is exceeded and the separation roller follows the rotation of the feed roller.
- If there are two or more sheets of paper between the separation roller and feed roller, the limit torque is greater than the friction force of the paper, so that the separation roller is not rotated.
- The separation roller causes the lower sheet of paper in contact with the separator roller to be pushed backward in the direction of the tray, so that the lower sheet of paper is properly separated.



[1]	Feed roller	[2]	Separation roller
[3]	Paper	[4]	Pick-up roller

1.10.5 Paper feed retry control

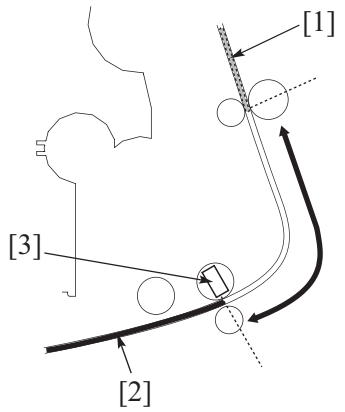
- If the specified sensor is unable to detect the paper even after the lapse of a predetermined period of time after the start of the paper feed sequence, the machine determines that there is a paper misfeed. To reduce possibility of paper misfeed, if a paper misfeed is detected during a print job under the following conditions, the paper feed sequence is performed again (retry) only once. A paper misfeed results if the specified sensor is still unable to detect the paper even after the paper feed retry sequence, the machine determines that there is a paper misfeed.
- The paper feed retry control performs paper feed retry in two ways depending on the paper ports. One is to perform paper feed retry only. The other one is to discard the created image data, and recreate a new image data, then perform paper feed retry.

Paper port	Paper feed retry control	Sensor name
Manual bypass tray	To perform paper feed retry only.	Registration sensor
Tray 1	To perform recreate image data and paper feed retry.	
Tray 2	To perform paper feed retry only.	Tray 2 vertical transport sensor
Tray 3		Tray 3 paper feed sensor
Tray 4		Tray 4 paper feed sensor
LCT (Option: Large capacity unit)		LU paper feed sensor

1.10.6 Feed roller speed reduction control

- During multi-print cycles, the target printed pages number is maintained due to correction of the transport speed variations and a proper paper-to-paper distance.
- Measure the time that is taken from starting paper feed to the paper feed sensor ON. If the paper-to-paper distance is too narrow, the paper roller is decelerated for a predetermined time, so that a proper paper-to-paper distance can be achieved.
- Feed roller speed reduction control is implemented when paper is fed from the following paper trays.

Paper port	Controlled roller	Sensor name
Tray 1	Tray 1 feed roller	Tray 1 paper feed sensor
Tray 2	Tray 2 feed roller	Tray 2 paper feed sensor



[1]	Preceding sheet	[2]	Sheet of paper being controlled
[3]	Paper feed sensor	-	-

1.10.7 Vertical transport roller speed reduction control

- In the same manner as with the feed roller speed reduction control, control is performed to reduce the speed of the vertical transport roller during a multi-print cycle, thereby maintaining a proper paper-to-paper distance.
- Time it takes the vertical transport sensor to be activated after the start of a paper feed sequence is measured. If the distance between two sheets of paper is determined to be narrow, the vertical transport roller is decelerated for a predetermined period of time, so that a proper paper-to-paper distance can be achieved.
- Vertical transport roller speed reduction control is implemented paper is fed from the following paper trays.

Paper port	Controlled roller	Sensor name
LCT (Option: Large capacity unit)	LU roller	LU paper feed sensor

1.10.8 Paper transport control

(1) Tray 1

- The tray 1 feed roller feeds the paper onto the registration roller.
- The tray 1 paper feed sensor located downstream of the tray 1 feed roller detects the paper fed from the feed roller.
- When the paper fed from the feed roller moves past the registration roller and reaches a predetermined position, the tray 1 paper feed clutch is deenergized to disconnect the driving force of the transport motor. The pick-up roller and feed roller follow the movement of the paper, continuing rotating. The pick-up roller and feed roller stop rotating as soon as the paper moves past them.
- If the registration sensor is unable to detect paper even after the lapse of a predetermined period of time, the machine determines that there is a paper misfeed at tray 1.

(2) Tray 2

- The tray 2 feed roller feeds the paper onto the tray 2 vertical transport roller.
- The tray 2 paper feed sensor located downstream of the tray 2 feed roller detects the paper fed from the tray 2 feed roller.
- When the tray 2 vertical transport sensor located downstream of the tray 2 vertical transport roller along the paper path detects the leading edge of the paper fed from the feed roller, the tray 2 paper feed clutch is deenergized to disconnect the driving force of the transport motor. The pick-up roller and feed roller follow the movement of the paper, continuing rotating. The pick-up roller and feed roller stop rotating as soon as the paper moves past them.
- If the tray 2 vertical transport sensor is unable to detect the leading edge of paper even after the lapse of a predetermined period of time, the machine determines that there is a paper misfeed at tray 2.

1.10.9 Downstream exit control during multi-print cycle

- When a paper jam in the paper feed section is detected, the print operation does not stop immediately. Paper that has been printed completely and paper that can be printed completely is discharged outside of the machine after being printed.
- Completely discharge printed paper to make jam removal easily and reduce paper consumption.

Downstream exit control jams

Misfeed at tray 1 paper feed section	Misfeed at LCT (Large capacity unit) paper feed section
Misfeed at tray 2 paper feed section	Misfeed at manual bypass tray paper feed section
Misfeed at tray 3 paper feed section	Misfeed at vertical transport section
Misfeed at tray 4 paper feed section	-

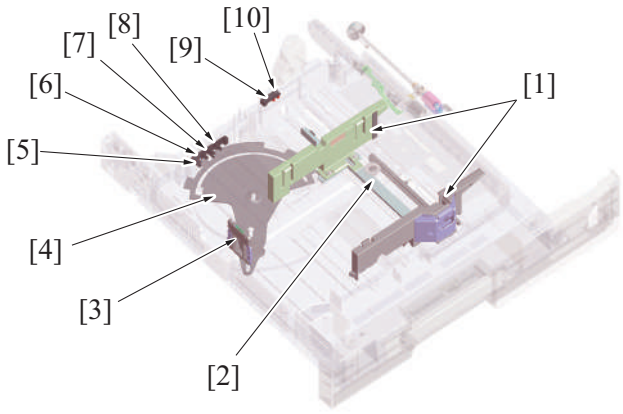
1-sided printing

1. Stops the feeding of paper where the jam occurred and the transport operation.
2. Sheet after a 1-sided image transfer is discharged.
3. Transfer and fuse image onto, and exit, sheet before a 1-sided image.

2-sided printing

1. Stops the feeding of paper where the jam occurred and the transport operation.
2. Sheet after a 2-sided image transfer is discharged.
3. Transfers, fuses 1-sided image onto the sheets at the reverse/duplex section, and then exit the sheets.
4. 2-sided printing is performed on the sheet before 1-sided image transfer, which is then discharged.

1.10.10 Paper size detection control



[1]	Paper width guide	[2]	Paper width detection plate
[3]	Paper length detection plate	[4]	Paper length guide
[5]	Paper length sensor 4	[6]	Paper length sensor 3
[7]	Paper length sensor 2	[8]	Paper length sensor 1
[9]	Paper width sensor 1	[10]	Paper width sensor 2

Paper width detection (CD)

- The size in paper width is detected with the combination of ON/OFF the transmission type photosensors 1, 2 on the CD paper size board.
- The paper width sensor is unblocked or blocked depending on the position of the paper width detection plate that is connected with the paper width guide.

Paper length detection (FD)

- The size in paper length is detected with the combination of ON/OFF transmission type photosensors 1 to 4 on the FD paper size board.
- The paper length sensors 1 to 4 are unblocked or blocked depending on the paper length detection plate that is connected with the paper length guide.
- The sensor on the FD paper size board also functions to detect whether the tray is mounted.

(1) Sheet size determination

- Two paper width sensors detect the paper width, and four paper length sensors detect the paper length. Paper size is determined with the combination of the above paper width and paper length.

Paper size	FD paper size board				CD paper size board	
	Sensor 4	Sensor 3	Sensor 2	Sensor 1	Sensor 2	Sensor 1
SRA3 (*1)	H	L	L	H	H	H
A3 Wide (*1)	H	L	L	H	L	H
A3	L	L	H	L	L	H
B4	L	H	H	H	L	H
A4S	H	H	L	L	L	L
A4	H	L	L	H	L	H
B5S	L	H	H	L	L	L
B5	L	H	L	L	L	H
A5S (*2)	H	L	H	L	L	L
Invoice S (*2)	H	L	H	L	L	L
Ledger (11×17)	L	L	H	L	H	H
$8^1/_2$×14 (Legal)	L	H	H	H	L	L
$8^1/_2$×11S (LetterS)	L	L	L	H	L	L
$8^1/_2$×11 (Letter)	H	L	H	L	H	H
FLS S (*3)	H	H	H	H	L	L
8K S (270 mm x 390 mm)	L	H	L	H	H	H

Paper size	FD paper size board				CD paper size board	
	Sensor 4	Sensor 3	Sensor 2	Sensor 1	Sensor 2	Sensor 1
16K (270 mm × 195 mm)	L	H	H	L	H	H

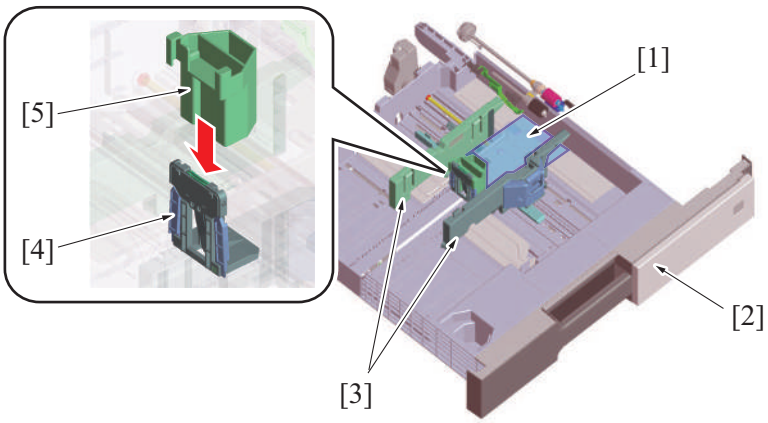
- *1: SRA3 and A3 Wide are support only from the tray 2 and the bypass tray.
- *2: For regions using inches, Invoice S size is detected. For other regions, A5S size is detected.
- *3: One of the following paper sizes can be selected from [Service Mode] -> [System 1] -> [I.9.5 Foolscap Size Setting] to be set for FLS.
  - 8 $^1/_2$×13 $^1/_2$, 8×13, 8 $^1/_4$×13, 8 $^1/_2$×13

Sensor states

Sensor	Physical state	
	HIGH signal	LOW signal
FD paper size board: sensor 1 to 4	Blocking	Unblocked
CD paper size board: sensor 1, 2		

1.10.11 Regulation of trailing edge of small-sized paper

- Small-sized paper whose length is 148 mm to 182 mm can be set to Tray 1.
- To set small-sized paper, attach the attachment for small-sized paper provided in Tray 1 to the paper length guide.



[1]	Small-sized paper	[2]	Tray 1
[3]	Paper width guide	[4]	Paper length guide
[5]	Attachment for small-sized paper	-	-

1.10.12 Remaining paper detection control

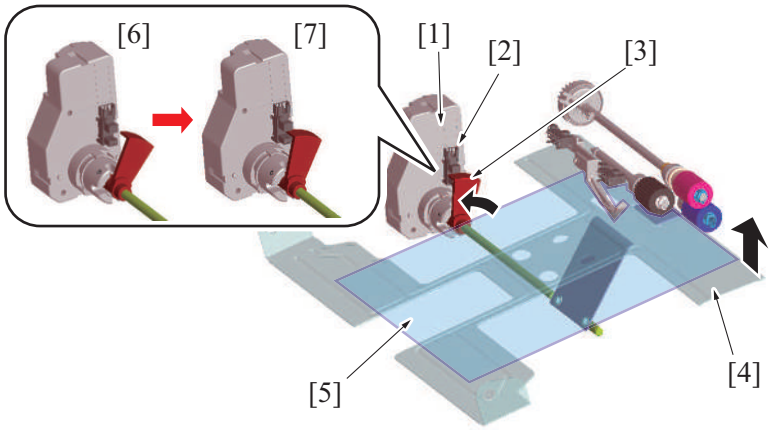
- The remaining paper detection control is performed under any of the following conditions:
  - “Tray 1/tray 2 is closed in position”
  - “The up/down control of the paper lift-up plate is completed”

(1) Paper near-empty detection

- The tray 1/2 near empty sensor detects a paper near-empty condition of the tray.
- As paper is consumed, the paper lift-up plate is raised. This raises the near empty detection actuator provided at the lift-up plate drive shaft of the lift-up motor.
- When the near empty detection actuator is raised to a position at which the tray 1/2 near empty sensor is blocked, the machine detects a near-empty condition.

NOTE

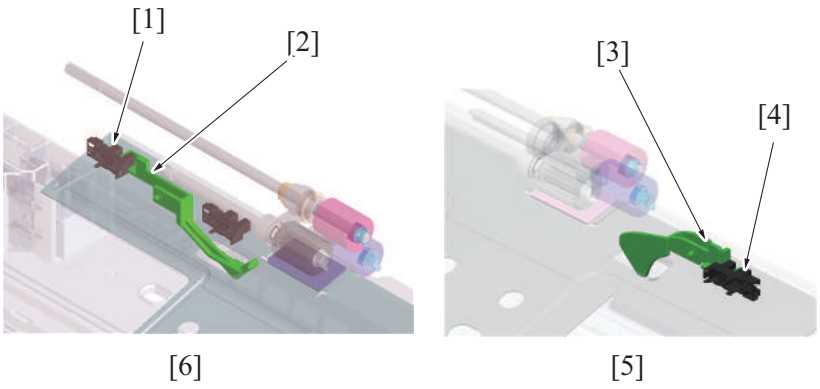
- **A near-empty condition is detected when the amount of paper still available for use becomes about 50 sheets.**



[1]	Tray 1 lift-up motor (M12) Tray 2 lift-up motor (M13)	[2]	Tray 1 paper near empty sensor (PS11) Tray 2 paper near empty sensor (PS12)
[3]	Actuator	[4]	Paper lift-up plate
[5]	Paper	[6]	When a sufficient amount of paper is loaded
[7]	Near empty condition	-	-

(2) Paper empty detection

- A paper empty condition is detected by the tray 1/2 paper empty sensor.
- The actuator goes down when all paper in the tray is fed.
- The actuator detects an empty condition when the paper empty sensor is blocked.



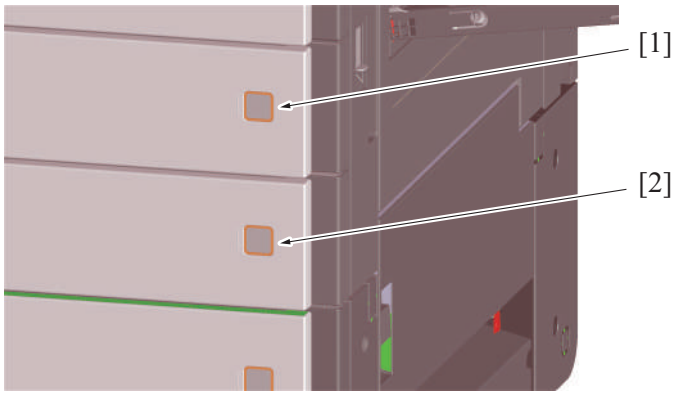
[1]	Tray 1 paper empty sensor (PS24)	[2]	Actuator
[3]	Actuator	[4]	Tray 2 paper empty sensor (PS21)
[5]	Tray 2	[6]	Tray 1

(3) Remaining paper level display

- The amount of remaining paper is indicated by the LED on the right side of each tray and by the screen of the control panel.
- The following table shows display statuses.

Tray condition	Empty	Near empty	Other statuses (Including during lift-up and no tray conditions)
LED status	Lit	Blinking/OFF *	OFF

- *: LED turns OFF when Paper Remainder is set to Type 2: [Service Mode] -> [System 1] -> [Machine State LED Setting] -> [Paper Remainder].



[1]	Tray 1 empty indicator	[2]	Tray 2 empty indicator

1.10.13 Paper feed tray locking mechanism

- The paper feed tray is provided with a locking mechanism.

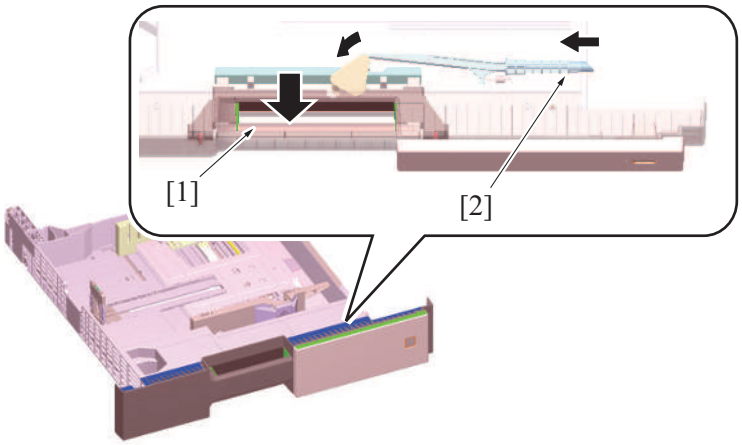
(1) Unlocking the paper feed tray

- By drawing the lever on the back of handle to the front, the tray lock lever equipped on the right side of the paper feed tray is disengaged.
- Rollers are provided for the right and left tray rails. They reduce the operating force required for sliding in/out the paper feed tray.

(2) Locking the paper feed tray

- Pushing the paper feed tray all the way toward the rear will allow the paper feed tray to be slid into the machine.

- When the paper feed tray is inserted all the way in place, the tray lock lever equipped on the right side of the paper feed tray locks the tray in place.
- To prevent false detection, the paper feed tray is equipped with a spring in the rear that pushes the tray back out if the tray is not inserted all the way in place.

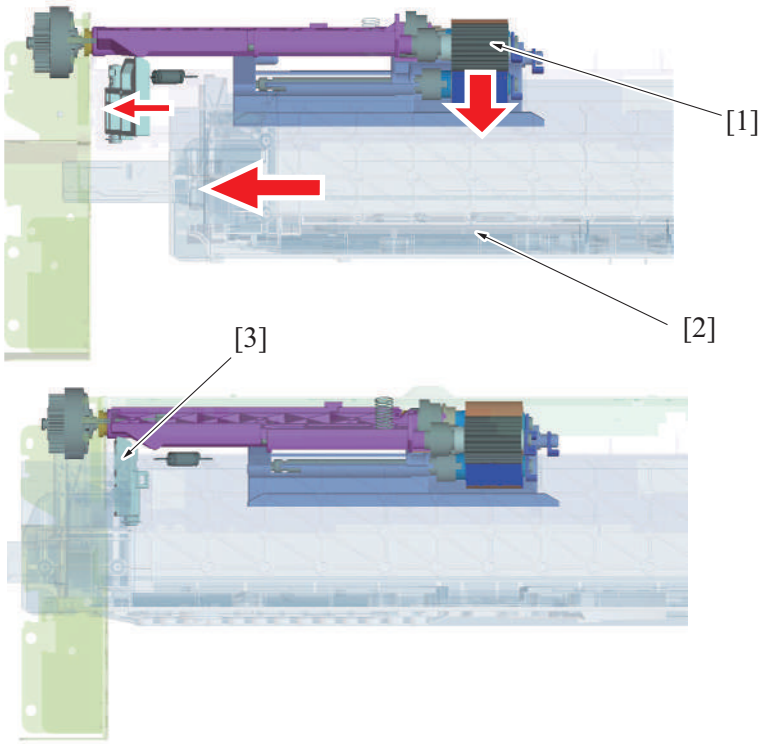


[1]	Lever of the paper feed tray	[2]	Lock lever

1.10.14 Roller retract mechanism

(1) Pick-up roller retract mechanism

- A mechanism to retract the pick-up roller is provided, in order to avoid damaging stacked paper when the paper feed tray is inserted.
- When the paper feed tray is open, the retraction lever in the back of the machine presses the pick-up roller up to the retract position.
- When the pick-up roller is in the retract position, paper cannot be damaged as the pick-up roller does not make contact with the stacked paper.
- Closing the paper feed tray presses the retraction lever to move the pick-up roller to the a position such that it can supply paper.

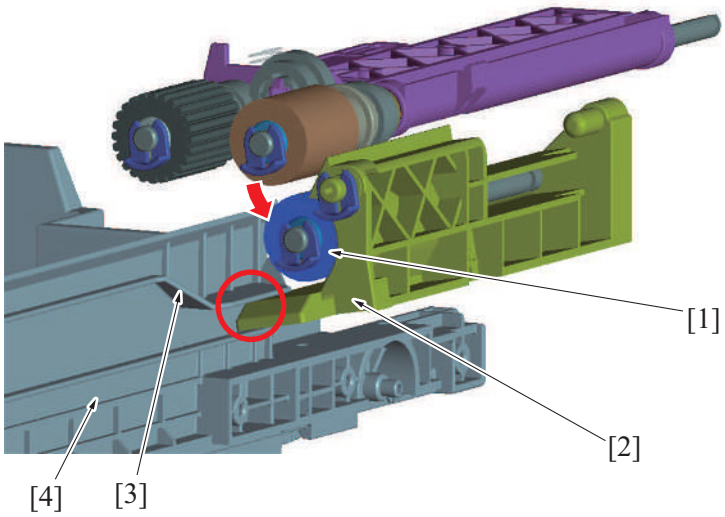


[1]	Pick-up roller	[2]	Paper Tray
[3]	Retraction lever	-	-

(2) Separation roller retract mechanism

- A mechanism to pressure/release the separation roller is provided. It prevents the paper that is remained in the machine from being damaged or spilling out into the machine.
- Ribs on the paper feed tray pass over the top of the separation roller holder protrusion when the tray is opened or closed. It releases the separation roller and feed roller.
- Paper that is caught between the rollers is released through releasing separation roller and feed roller. It helps prevent paper from accumulating inside the machine.

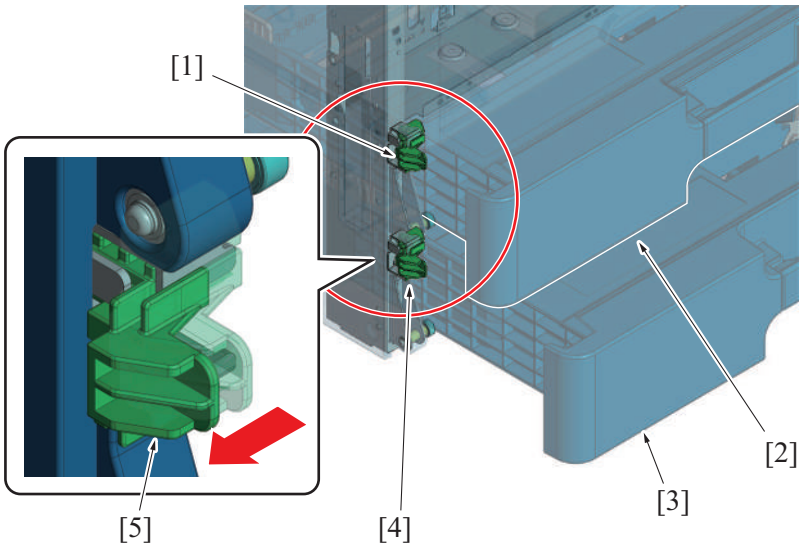
- When the feed tray is closed completely, the tray ribs and separation roller holder protrusion do not interfere with each other. This design pressures the separation roller and feed roller to supply paper.



[1]	Separation roller	[2]	Separation roller holder
[3]	Rib	[4]	Paper Tray

1.10.15 Paper feed tray stopper release mechanism

- The paper feed tray is equipped with a stopper mechanism.
- When paper is placed, the stopper prevents the paper feed tray from falling off from the machine even if it is pulled out.
- The paper feed tray can be removed if paper is remained inside the machine at the time of handling a paper jam or a misfeed.



[1]	Tray 1 stopper	[2]	Tray 1
[3]	Tray 2	[4]	Tray 2 stopper
[5]	Tray stopper release	-	-

Releasing the paper feed tray stopper

- Press the stopper on its left side, the stopper lock will be released.

Locking the paper tray stopper

- Press the stopper on its right side, the stopper lock will be locked.

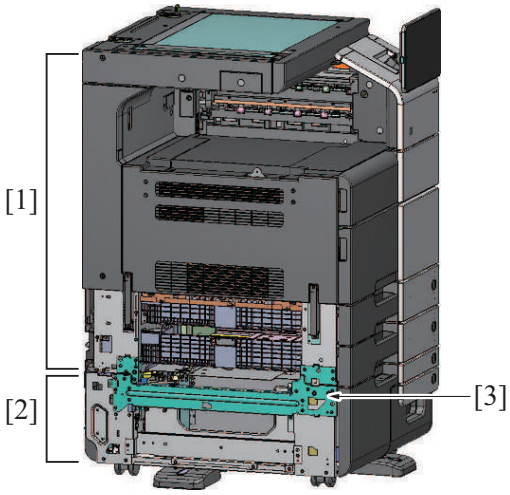
NOTE

- **A mechanism is provided to push and lock the stopper through closing the paper tray to its home position even if you forget to lock it. (Mechanism to prevent forgetting lock)**

1.11 PAPER FEED SECTION (TRAY 3/4)

1.11.1 Outline

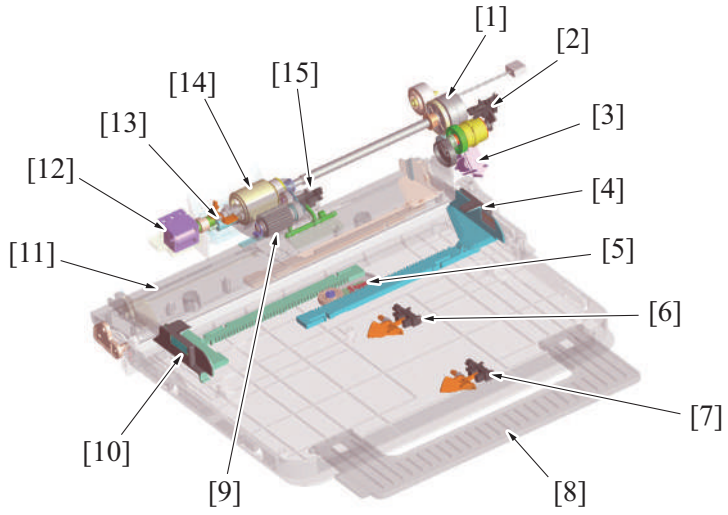
- The tray 3/4 of this machine works based on the Paper Feed Cabinet PC-417.
- The mechanism and operation are the same as the PC-417, so refer to the P.3 PC-417 for details.
- The MFP and the paper feed cabinet are secured with the reinforcement plate, so that it is an inseparable structure.



[1]	MFP	[2]	Tray 3/4 (Paper Feed Cabinet PC-417)
[3]	Reinforcement plate	-	-

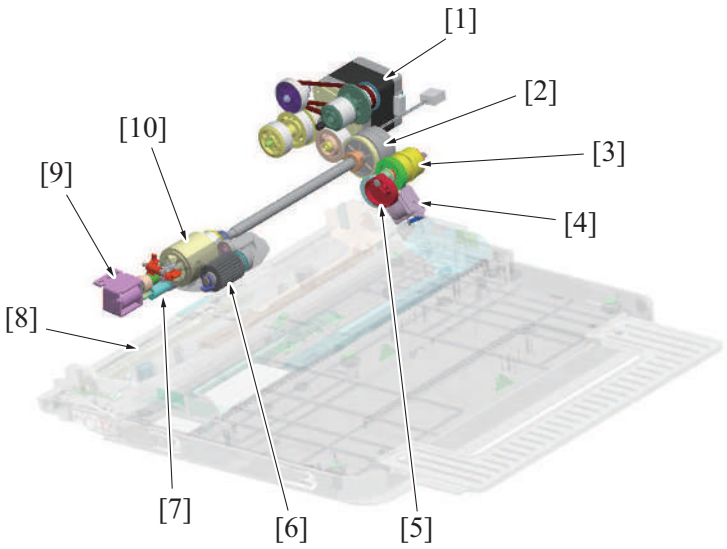
1.12 PAPER FEED SECTION (MANUAL BYPASS TRAY)

1.12.1 Configuration



[1]	Bypass tray paper feed clutch (CL7)	[2]	Bypass tray lift-up position sensor (PS26)
[3]	Bypass tray lift-up solenoid (SD1)	[4]	Paper guide (rear side)
[5]	Bypass tray CD paper size VR (VR1)	[6]	Bypass tray FD paper size sensor/1 (PS28)
[7]	Bypass tray FD paper size sensor/2 (PS29)	[8]	Sub tray
[9]	Bypass pick-up roller	[10]	Paper guide (front side)
[11]	Paper lift-up plate	[12]	Bypass tray pick-up roller solenoid (SD6)
[13]	Manual bypass tray separation roller	[14]	Manual bypass tray feed roller
[15]	Bypass tray paper empty sensor (PS27)	-	-

1.12.2 Drive



[1]	Paper feed motor (M22)	[2]	Bypass tray paper feed clutch (CL7)
[3]	Paper lift-up plate clutch (mechanical)	[4]	Bypass tray lift-up solenoid (SD1)
[5]	Paper lift-up cam	[6]	Bypass pick-up roller
[7]	Manual bypass tray separation roller	[8]	Paper lift-up plate
[9]	Bypass tray pick-up roller solenoid (SD6)	[10]	Manual bypass tray feed roller

1.12.3 Up/down control

- The paper lift-up plate is moved up and down by the paper feed motor.

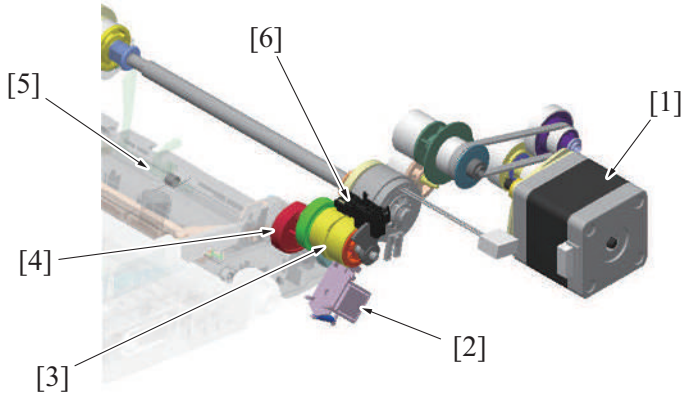
(1) Up operation

- The bypass tray lift-up solenoid is energized for a predetermined period of time during rotation of the motor. This unlocks the paper lift-up plate clutch and the driving force of the motor is transmitted to the paper lift-up cam.

- As the paper lift-up cam rotates, the paper lift-up plate which has so far been pushed down by the paper lift-up cam is raised to the paper feed position by the spring.

(2) Down operation

- The bypass tray lift-up solenoid is energized for a predetermined period of time during rotation of the motor. This rotates the paper lift-up cam, so that the cam pushes the paper lift-up plate down into its standby position.

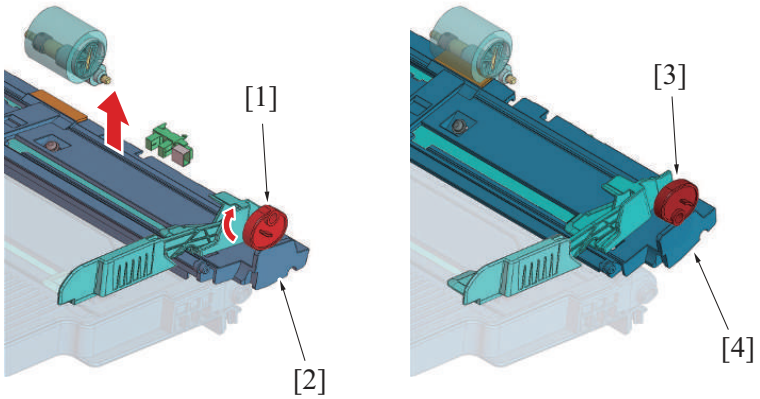


[1]	Paper feed motor (M22)	[2]	Bypass tray lift-up solenoid (SD1)
[3]	Paper lift-up plate clutch (mechanical)	[4]	Paper lift-up cam
[5]	Paper lift-up plate	[6]	Bypass tray lift-up position sensor (PS26)

(3) Operation timing

(a) Move to paper feed position (up)

- At the start of a manual bypass paper feed sequence, the paper lift-up plate is raised to the paper feed position.
- After the lapse of a predetermined period of time, the bypass tray lift-up solenoid is deenergized. The paper lift-up plate is stopped at the paper feed position.
- The actuator of bypass lift-up position sensor rotates in synchronism with the paper lift-up cam. When the paper lift-up plate is raised, the actuator rotates to thereby unblock the bypass tray lift-up position sensor. Then, the machine determines that the paper lift-up plate is raised to the paper feed position.
- If the bypass tray lift-up position sensor remains unblocked even after the bypass tray lift-up solenoid has been deenergized, the machine determines that the paper lift-up plate is at the paper feed position.
- As the paper level lowers during paper feed, the spring pushes up the paper lift-up plate, so that the paper stack is pushed up to the optimum paper feed position.



[1]	Paper lift-up cam (standby position)	[2]	Paper lift-up plate (standby position)
[3]	Paper lift-up cam (paper feed position)	[4]	Paper lift-up plate (paper feed position)

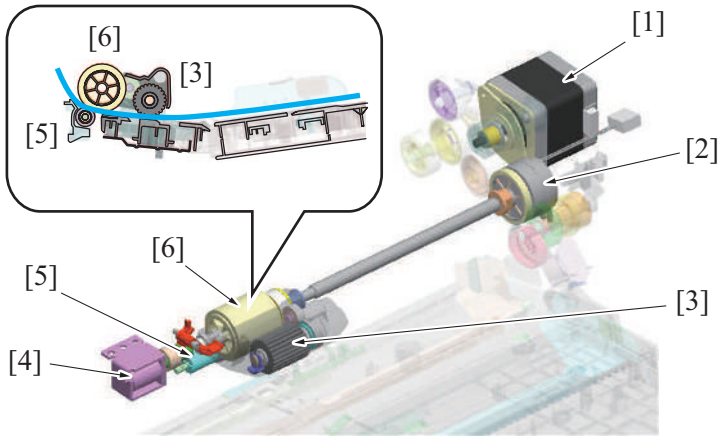
(b) Move to standby position (down)

- The paper lift-up plate is lowered if there is no print job that uses the manual bypass trays and the paper exit sensor detects a sheet of paper fed from the manual bypass tray.
- The paper lift-up plate is lowered if the above conditions are met even during execution of another job.
- If a bypass paper empty condition is detected at the paper feed position, the paper lift-up plate is lowered to the standby position.
- If a paper misfeed occurs, the paper lift-up plate is stopped at the paper feed position. When the motor rotates stably after the misfeed is cleared, the paper lift-up plate is lowered to the standby position.
- After the lapse of a predetermined period of time, the bypass tray lift-up solenoid is deenergized. The paper lift-up plate is stopped at the standby position. As the paper lift-up plate lowers, the bypass lift-up position sensor is blocked. The machine determines that the paper lift-up plate is at the standby position based on the fact that the bypass lift-up position sensor is blocked even after the bypass tray lift-up solenoid has been deenergized.

1.12.4 Paper feed control

(1) Pick-up control

- The paper feed motor drives the manual bypass tray to feed paper.
- The bypass tray lift-up solenoid is energized by a print start signal and the paper is raised to the paper feed position.
- The bypass tray pick-up roller solenoid is energized, and the bypass tray pick-up roller is pressed onto the paper.
- The bypass tray paper feed clutch is energized.
- When the bypass tray paper feed clutch is energized, the drive from the motor is transmitted to the bypass tray pick-up roller and manual bypass tray paper feed roller, so that the paper can be fed in.
- The manual bypass tray paper feed roller feeds the paper onto the registration roller.
- When the paper fed from the manual bypass tray is reached onto the registration roller, the bypass tray paper feed clutch is deenergized to stop the manual bypass tray paper feed roller from rotating.
- The bypass tray pick-up roller solenoid is deenergized, and the bypass tray pick-up roller is released from the paper.
- The bypass tray lift-up solenoid is energized and the paper is lowered to the standby position.
- If the registration sensor does not detect paper even after the lapse of a predetermined period of time, the machine determines that there is a paper misfeed at the manual bypass tray. Note, however, that the paper feed sequence is repeated a second time if a paper misfeed is detected. If the registration sensor is still unable to detect paper, the machine determines that there is a paper misfeed at the manual bypass tray. (Paper feed retry control)



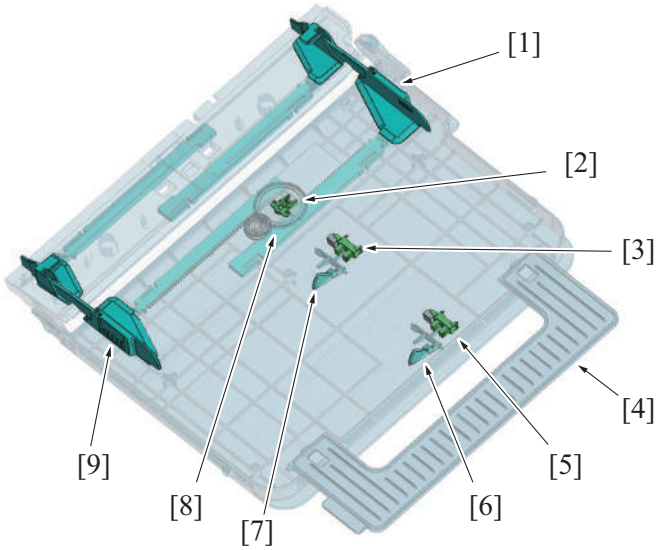
[1]	Paper feed motor (M22)	[2]	Bypass tray paper feed clutch (CL7)
[3]	Bypass pick-up roller	[4]	Bypass tray pick-up roller solenoid (SD6)
[5]	Manual bypass tray separation roller	[6]	Manual bypass tray feed roller

(2) Separation control

- The manual bypass tray separation roller is pressed up against, and driven by, the manual bypass tray feed roller. A torque limiter is equipped on the shaft of the manual bypass tray separator roller.
- The acting pressure of the manual bypass tray feed roller/manual bypass tray separation roller/torque limiter serves as the limit torque for preventing double feed.
- When there is no sheet of paper or only one sheet of paper between the manual bypass tray separation roller and manual bypass tray feed roller, the limit torque is exceeded and the manual bypass tray separation roller follows the rotation of the manual bypass tray paper feed roller.
- If there are two or more sheets of paper between the manual bypass tray separation roller and manual bypass tray feed roller, the limit torque is greater than the friction force of the paper, so that the manual bypass tray separation roller stops rotating.
- Because of the stationary manual bypass tray separation roller, the lower sheet of paper in contact with the manual bypass tray separation roller is not fed in, so that the first sheet of paper is properly separated from the second sheet of paper.

1.12.5 Paper size detection control

- The standard size of the paper loaded in the manual section is detected automatically by the combination of ON or OFF positions of the two bypass FD paper size sensors and the bypass CD paper size VR.
- The two bypass FD paper size sensors are mounted in positions at which they can detect length even with the sub tray closed.
- The size detection gear rotates by the moving of the paper guide. The bypass CD paper size VR mounted on the same axis as the size detection gear detects the paper width.
- The machine supports detection of SRA3 size.
- Irregular paper sizes and postcard can be used by entering the custom size.



[1]	Paper guide (rear side)	[2]	Bypass tray CD paper size VR (VR1)
[3]	Bypass tray FD paper size sensor/1 (PS28)	[4]	Sub tray
[5]	Bypass tray FD paper size sensor/2 (PS29)	[6]	Actuator 2
[7]	Actuator 1	[8]	Size detection gear
[9]	Paper guide (front side)	-	-

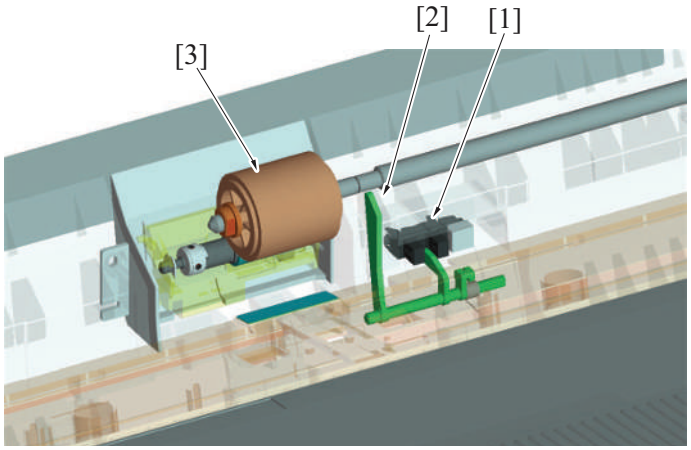
(1) Sheet size determination

Paper size detected	Bypass FD paper size sensor/1	Bypass FD paper size sensor/2	Bypass CD paper size VR
			Unit: mm
A6S	OFF	OFF	Less than 115
B6S			115 to 144 inclusive
A5 (*)			196 to 225 inclusive (*)
Invoice (5 1/2× 8 1/2) (*)			
B5 *			242 to 268 inclusive (*)
Executive (7 1/4 × 10 1/2) (*)			
A5S (*)	ON	OFF	133 to 164 inclusive (*)
Invoice S (5 1/2× 8 1/2 S) (*)			
B5S (*)			169 to less than 196 (*)
Executive S (7 1/4× 10 1/2 S) (*)			
A4S (*)			196 to 225 inclusive (*)
Letter S (8 1/2×11S) (*)			
Letter (8 1/2×11)			255 to less than 288
A4			288 to 330 inclusive
Legal (8 1/2×14)	ON	ON	201 to 231 inclusive
B4			242 to less than 268
Ledger (11 × 17)			268 to less than 288
A3			288 to less than 301
A3 wide (12 × 18)			301 to 312.5 inclusive
SRA3			Over 312.5 and up to 330

- *: When the area is in inches, the size is detected in inches; for other areas, A/B size is detected.

1.12.6 Paper empty detection control

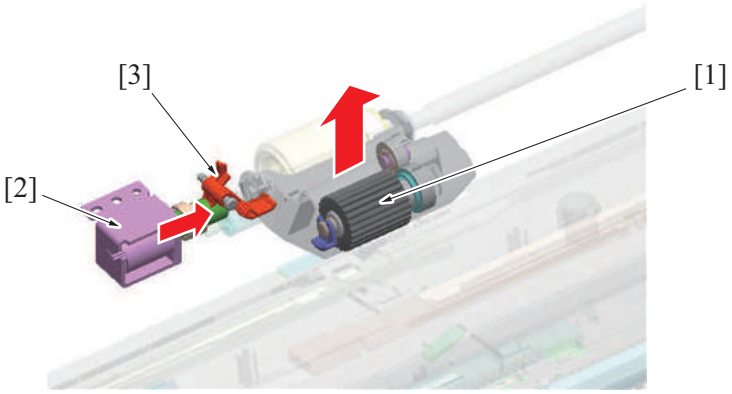
- When the paper is loaded in the manual bypass tray, the paper empty detection actuator is pressed by the leading edge of the paper. The paper empty detection actuator is pressed to unblock the bypass paper empty sensor.
- When there is no paper on the manual tray, the paper empty detection actuator is raised. The paper empty detection actuator is returned to its original position to thereby block the bypass paper empty sensor.



[1]	Bypass tray paper empty sensor (PS27)	[2]	Actuator
[3]	Manual bypass tray feed roller	-	-

1.12.7 Bypass tray pick-up roller retract mechanism

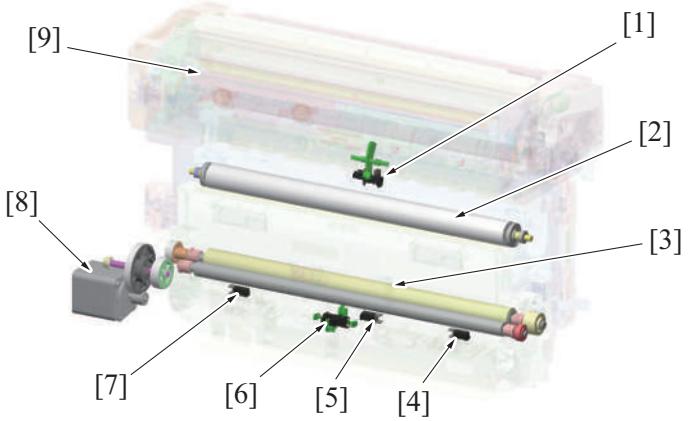
- When the paper is set to the paper feed tray, there is a mechanism which retracts the pick-up roller and the separation roller to prevent the paper damage.
- When printing, the bypass tray pick-up roller solenoid is energized, and the bypass tray pick-up roller is pressed onto the paper.
- After a print job, the bypass tray pick-up roller solenoid is deenergized, and the bypass tray pick-up roller is released from the paper.



[1]	Bypass pick-up roller	[2]	Bypass tray pick-up roller solenoid (SD6)
[3]	Lever	-	-

1.13 REGISTRATION SECTION

1.13.1 Configuration



[1]	Fusing loop sensor (PS2)	[2]	2nd transfer roller
[3]	Registration roller	[4]	Feeding paper size sensor/1 (PS50)
[5]	Registration sensor/2 (PS72)	[6]	Registration sensor/1 (PS1)
[7]	Feeding paper size sensor/2 (PS51)	[8]	Registration motor (M24)

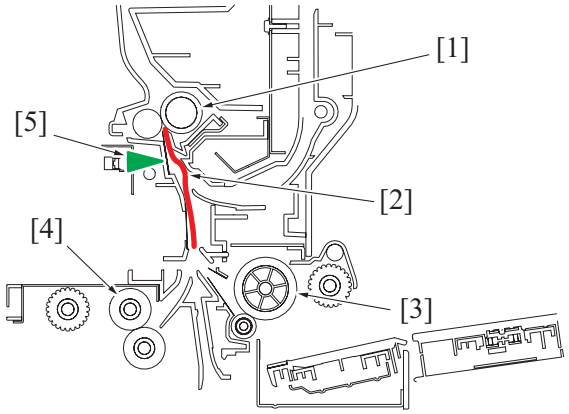
[9]	Fusing unit	-	-

1.13.2 Registration control

- The registration motor controls the rotation of the registration roller.
- The paper will create a loop between the tray 1 paper feed roller (or tray 2 vertical transport roller or bypass paper feed roller) and the registration roller when the paper is being conveyed in order to correct the skew.
- Registration roller is controlled in order to synchronize the timing the unit starts writing the image and conveying paper.
- The amount of the loop of the paper can be adjusted in the [Service Mode] -> [Machine] -> [Printer Reg. Loop Adj.]. Changing the adjustment value will change the amount of loop in the paper.

(1) Operation

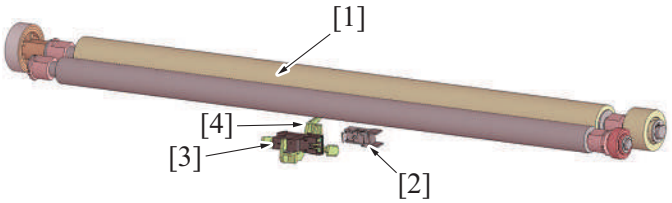
1. The paper is transported while the registration roller is stationary.
2. The registration sensor1 detects the leading edge of the paper, which is interpreted to mean that the paper has reached the registration roller.
3. A paper loop is formed thus skew in the paper is corrected.
4. The registration roller rotates to transport the paper.



[[1]]	Registration roller	[[2]]	Loop formation
[[3]]	Manual bypass tray feed roller	[[4]]	Tray 1 paper feed roller
[[5]]	Registration sensor/1 (PS1)	-	-

1.13.3 Paper trailing edge detection

- A registration sensor/2 is installed to detect the trailing edge of the paper.
- The registration sensor/2 is a reflective optical sensor which detects paper using reflected light.
- The registration sensor/1 detects the leading edge/trailing edge of paper. However, the detection accuracy with the registration sensor/1 (photo sensor + actuator) decreases due to the increase of the paper transporting speed.
- The combination of the registration sensor/1 and registration sensor/2 can increase the detection accuracy and reduce the variation of paper transport.



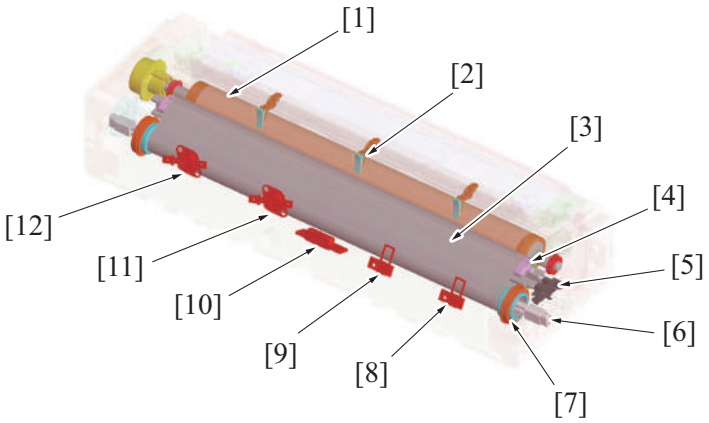
[1]	Registration roller	[2]	Registration sensor/2
[3]	Registration sensor/1	[4]	Actuator for registration sensor/1

1.13.4 Automatic detection of paper type

- Intelligent media sensor (IM-102) is provided as a standard equipment which enables detecting the paper kind.
- See “ P.16 IM-102” for information of the intelligent media sensor.

1.14 FUSING SECTION

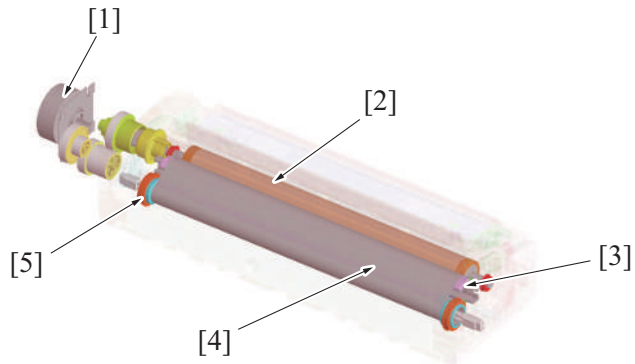
1.14.1 Configuration



[1]	Pressure roller	[2]	Paper separator claws (contact type)
[3]	Fusing belt	[4]	Fusing pad
[5]	Fusing pressure home sensor (PS38)	[6]	Fusing heater lamp assy
[7]	Heating roller	[8]	Heating roller thermistor/Edg (TH1)
[9]	Heating roller thermistor/Ctr (TH2)	[10]	Heating roller temperature sensor (TEMS)
[11]	Heating roller thermostat/Ctr (TS1)	[12]	Heating roller thermostat/Edg (TS2)

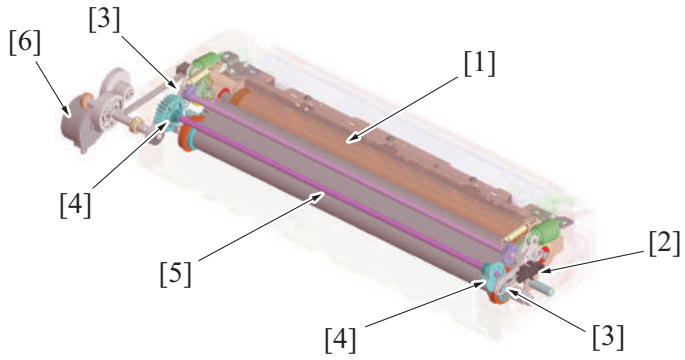
1.14.2 Drive

(1) Fusing section roller drive



[1]	Fusing motor (M3)	[2]	Pressure roller
[3]	Fusing pad	[4]	Fusing belt
[5]	Heating roller	-	-

(2) Pressure roller pressure drive



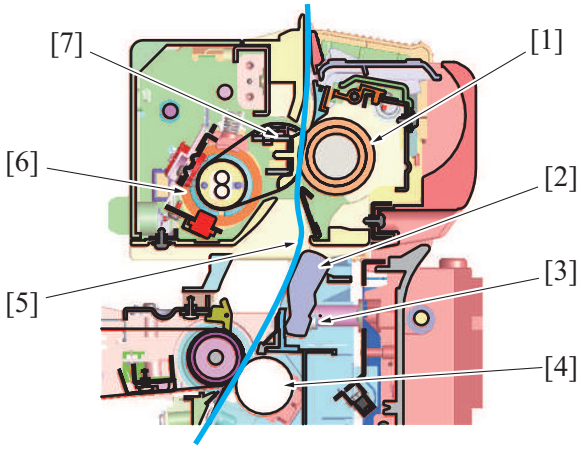
[1]	Pressure roller	[2]	Fusing pressure home sensor (PS38)
[3]	Fusing lever	[4]	Pressure cam
[5]	Cam shaft	[6]	Fusing pressure motor (M11)

1.14.3 Fusing speed correction

(1) Fusing loop control

- To prevent double transferred images and brush effects that occur due to a difference in speed between paper transport during image transfer and fusing, a loop is formed in the paper between the 2nd transfer and fusing sections.
- The fusing loop sensor detects the length of the loop formed in the paper between the 2nd transfer section and the fusing roller.
- The fusing motor increases or decreases the fusing speed according to the length of loop in the paper, thereby ensuring that the length of loop falls within a predetermined range.

Fusing loop sensor	Loop amount	Fusing speed
Unblocking	Large	Speed-up
Blocking	Small	Slowdown



[1]	Pressure roller	[2]	Actuator
[3]	Fusing loop sensor (PS2)	[4]	2nd transfer roller
[5]	Fusing loop	[6]	Heating roller
[7]	Fusing pad	-	-

Operation timing

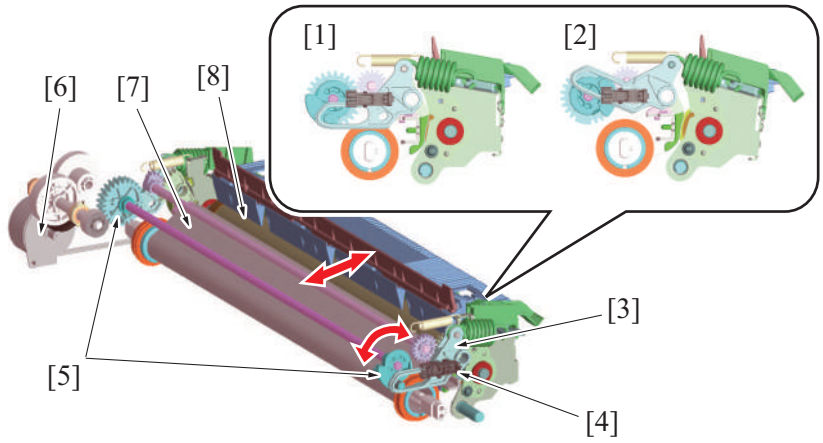
- It starts controlling when the front-edge of the paper reaches to the predetermined position before the fusing roller.
- The fusing speed is decelerated so that a loop is formed in the paper between the 2nd transfer roller and the fusing roller.
- When the paper loop amount is large, the fusing loop sensor is unblocked, and the fusing speed is increased.
- When the paper loop amount is small, the fusing loop sensor is blocked, and the fusing speed is decreased.
- The fusing speed is increased or decreased as necessary to make sure that the paper loop amount falls within a predetermined range, thereby absorbing a difference between the fusing speed and image transfer speed.
- The fusing loop control will finish after the trailing of the paper passes the 2nd transfer roller.

Fusing speed adjustment

- If double transferred images or brush effects occur due to inadequate paper loop before fusing, adjust the fusing speed using [Service Mode] -> [Machine] -> [Fusing transport speed].

1.14.4 Fusing pressure/retraction control

- To maintain durability of the fusing belt, the fusing pressure roller is retracted (*1) from the fusing belt during any time other than a print cycle. (The roller is, however, retracted during a print cycle using envelopes/postcard (Japan model only).)
  *1: The pressure roller does not completely retract from the fusing belt but is slightly pressed to the fusing belt.
- The pressure roller is pressed against, and retracted from, the fusing belt by rotating the pressure cam through forward or backward rotation of the fusing pressure motor.
- The fusing pressure home sensor detects the pressure roller at its pressure position.
- The position at which the pressure roller is retracted is controlled by the period of time (number of pulses) through which the fusing pressure motor is rotated.
- When there is no change in the output of the fusing pressure home sensor even after the lapse of a predetermined period of time after the fusing pressure motor has started rotating, the machine determines that there is a pressure/retraction fault and displays the “Trouble code C3101: Pressure roller separation failure” message or “Trouble code C3103: Pressure roller release failure” message.



[1]	Pressure position	[2]	Release position
[3]	Pressure lever	[4]	Fusing pressure home sensor (PS38)
[5]	Pressure cam	[6]	Fusing pressure motor (M11)
[7]	Fusing belt	[8]	Pressure roller

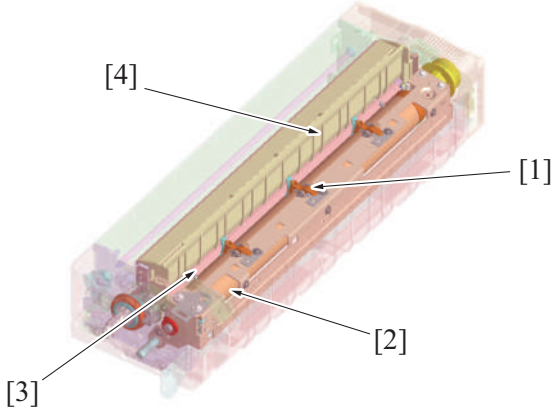
(1) Operation timing

State		Pressure roller position
Warm-up	At the start of a warm-up cycle	Retraction
Pre-standby	At the start of the pre-standby	Pressure
Standby	At the start of the standby	Retraction
Printing	For envelopes/postcards (*3)	Retraction
	For paper types other than envelopes/ postcards (*3)	Pressure
When printing the multi jobs	When current printing is for other than envelopes/postcards (*3) and the next job is for the envelopes/postcards (*3).	Pressure -> Retraction (*1)
	When current printing is for the envelopes/ postcards (*3) and the next job is for other than envelopes/postcards (*3).	Retraction -> Pressure (*1)
Energy save mode (lower power mode, sleep mode)		Full retraction (*2)
When a malfunction or misfeed occurs		Full retraction (*2)
When the fusing heater lamp is turned OFF (a door opened, a malfunction occurs, or other factors.)		Stop

- *1: Pressure/retraction will be conducted after the currently printed paper passes between the fusing belt and the pressure roller. The timing for the next paper to be fed will be delayed during the pressure/retraction and keep the certain period of time between feeding the papers.
- *2: The pressure roller and the fusing belt are fully retracted.
- *3: Japan model only

1.14.5 Paper separation mechanism

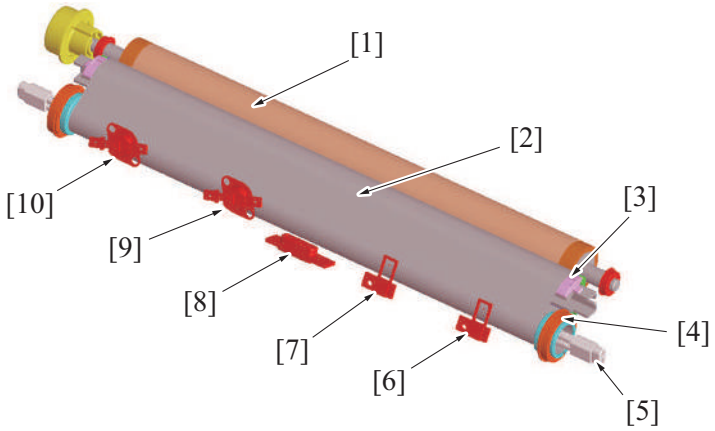
- Paper separator claws are provided on the pressure roller side and the fusing belt side in order to separate the sheet of paper reliably after the fusing process.
- Three contact type paper separator claws are installed on the pressure roller side.
- 13 noncontact type paper separator claws are installed on the fusing belt side.



[1]	Paper separator claws (contact type)	[2]	Pressure roller
[3]	Fusing belt	[4]	Paper separator claws (noncontact)

1.14.6 Fusing temperature control

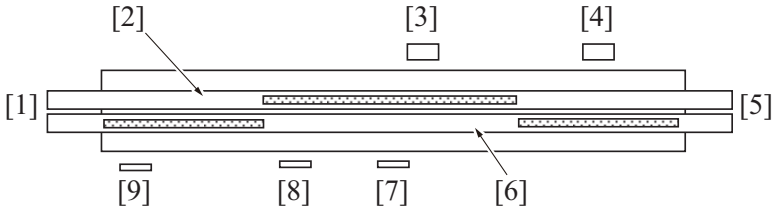
- Fusing temperature control uses the heating roller temperature sensor and the heating roller thermistor that detect the surface temperature of the fusing belt to turn ON or OFF the fusing heater lamp as necessary.
- The fusing heater lamp when turned ON heats the fusing belt to a set temperature.



[1]	Pressure roller	[2]	Fusing belt
[3]	Fusing pad	[4]	Heating roller
[5]	Fusing heater lamp assy	[6]	Heating roller thermistor/Edg (TH1)
[7]	Heating roller thermistor/Ctr (TH2)	[8]	Heating roller temperature sensor (TEMS)
[9]	Heating roller thermostat/Ctr (TS1)	[10]	Heating roller thermostat/Edg (TS2)

(1) Fusing heater lamp

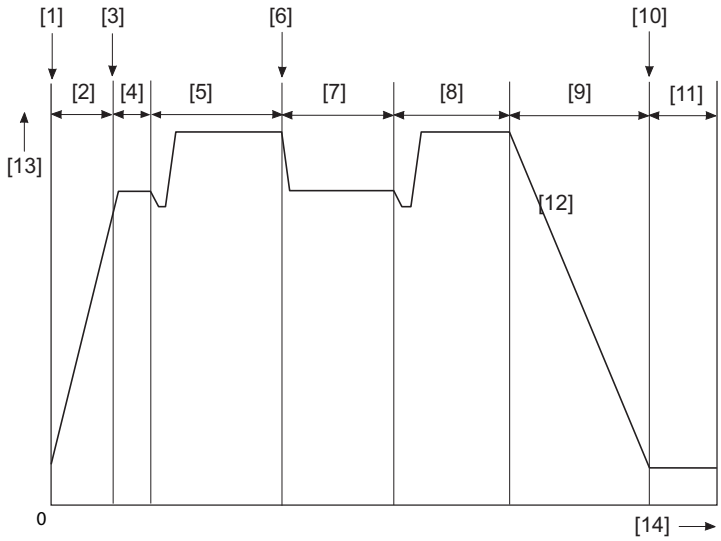
- The heating roller contains a fusing heater lamp assy in it. The fusing heater lamp turns ON to generate heat, which heats the heating roller and fusing belt.
- The fusing heater lamp assy consists of two heaters, each having a unique heating range different from each other.
  - The fusing heater lamp/1 (center) heats on the central portion of the heating roller.
  - The fusing heater lamp/2 (side) heats on both ends of the heating roller.
- The fusing heater lamp is turned ON or OFF according to the width of the paper and the surface temperature of the fusing belt.
  - For a paper width of 209 mm or less, the fusing heater lamp/1 is used to heat the central portion.
  - For a paper width exceeding 209 mm, the surface temperature of the fusing belt is measured and only the fusing heater lamp/1 and both the fusing heater lamps/1 and 2 are alternately turned ON.



[1]	Front of machine	[2]	Fusing heater lamp/1 (FH1)
[3]	Heating roller thermostat/Ctr (TS1)	[4]	Heating roller thermostat/Edg (TS2)
[5]	Rear of machine	[6]	Fusing heater lamp/2 (FH2)
[7]	Heating roller temperature sensor (TEMS)	[8]	Heating roller thermistor/Ctr (TH2)
[9]	Heating roller thermistor/Edg (TH1)	-	-

(2) Temperature control chart

* An example when a machine is warmed up under a normal ambient condition

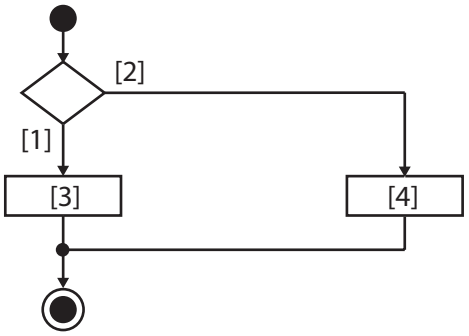


[1]	Main power switch ON	[2]	Warm-up control
[3]	Warm-up completed	[4]	Pre-standby control
[5]	Standby control (including a countermeasure against overshoot)	[6]	Print request
[7]	Print control	[8]	In standby
[9]	Low power mode	[10]	Entry in sleep mode
[11]	Sleep mode	[12]	Fusing belt temperature
[13]	Temperature	[14]	Time

(3) Fusing temperature control during warm-up

- To prevent image fixability from being degraded due to environmental changes when the main power switch is turned ON, two different warm-up modes are incorporated for fusing temperature control.
- The warm-up mode is performed “at low temperatures”, or “at ordinary temperatures”.
- When the temperature of the fusing belt reaches the warm-up completion temperature, control is passed onto the pre-standby process.

Warm up mode	Conditions
Warm-up at low temperatures	• Temp-Inside: 15°C or less • Heating roller thermistor/Ctr (TH2) detected temperature: 15°C or less
Warm-up at ordinary temperatures	• Temp-Inside: Exceeds 15°C



[1]	Temp-Inside: 15°C or less Heating roller thermistor/Ctr (TH2) detected temperature: 15°C or less	[2]	Temp-Inside: Above 15°C
[3]	Warm-up at low temperatures	[4]	Warm-up at ordinary temperatures

(4) Temperature control during pre-standby

- After the warm-up completion temperature is reached, control is then passed onto the pre-standby process.
- The temperature control in the pre-standby state turns ON or OFF the fusing heater lamp as necessary in order to maintain the fusing belt temperature at a level that enables printing.
- A print job, when received during the pre-standby state, can be started without waiting.

(5) Temperature control during stand-by

- If no print request is received after the temperature control in the pre-standby state is started, control is passed onto the standby process.
- The temperature control in the standby state maintains the fusing belt temperature at a predetermined temperature.
- The control is intended to shorten time it takes the temperature to reach the printable level when a print request is received.
- An overshoot preventive process may be performed before control is passed onto the temperature control in the standby state.
- The fusing motor repeats rotating (at low speed) and stopping for 15 seconds after the standby starts.
  After the 15-sec. period, the fusing motor is deenergized.

(6) Temperature control during the print cycle

(a) Temperature control

- The machine enters a print state as it receives a print control and carries out a print cycle at a set temperature corresponding to the type of paper selected for the job.
- The fusing temperature is measured during the print cycle and temperature control suitable for the print condition is performed accordingly.

(7) Energy save mode

- The machine enters the energy save mode from any standby state to thereby reduce power consumption (TEC value).
- The energy save mode may be either the low power mode or sleep mode, whichever is enabled depending on the set conditions.

NOTE

TEC value (Typical Electricity Consumption):

- **Energy saving criteria for copiers and printers to comply with the Energy Start program.**
- **Power consumption (kWh) at the office assuming operation of a product for one week (5 working days + 2 holidays) is calculated from the print speed and power consumption of the product.**

(a) Temperature control during low power mode

- To reduce power consumption during the low power mode, power to the fusing heater lamp is shut down to stop heating the fusing belt.

(b) Temperature control during sleep mode

- To reduce power consumption during the sleep mode, power to the fusing heater lamp is shut down to stop heating the fusing belt.
- If the fusing belt temperature is decreased to room temperature, the printable temperature can be recovered within the same period of time as that of warm-up.

(8) Fusing-related control

- The following types of control are available as they relate to fusing temperature:
- For detailed setting method, see each item.

(a) Service Mode

- [Machine] -> [Fusing Temperature]
- [Machine] -> [Heater Control Level]
- [System 1] -> [Warmup]
- [System 2]-> [Smart Fusing Control]

(b) Enhanced Security

- [Engine FW DipSW / No.5 Choice of high humidity circumstance]
- [Engine FW DipSW / No.13 Choice of securing fusibility]

1.14.7 HaCS control

- Feed back of the heat main temperature controls the halogen heater, and adjust heat roller temperature to an optimal level.

Fixed power control

- To adjust the heat roller temperature with predetermined power, regardless of the heat main temperature.
- To perform fixed power control during warming up.

PID control

- To adjust the temperature through increasing or decreasing the reference power according to the difference between the heat main temperature and the heat roller target temperature. (P control)
  - If the heat main temperature is lower than the target temperature, increase the reference power.
  - If the heat main temperature is higher than the target temperature, decrease the reference power.
- In the temperature adjustment for P control, an error may occur against the target temperature. At regular intervals, calculate the difference between the heat main temperature and the heat roller target temperature. If the calculated value is out of the predetermined range, the predetermined value is added to or subtracted from the reference power to correct the error. (I control)
- For I control, to make the correction with calculating the difference, it takes a long time to correct the power after a temperature difference occurs. Therefore, it is not possible to deal with a rapid temperature change. Thus, if the difference between the heat main temperature and the heat roller target temperature is out of the predetermined range, the predetermined value is added to or subtracted from the reference power to deal with the rapid temperature change. (D control)
- PID control combines the P control, I control and D control. It determines the heater power and adjusts the temperature.
- During standby and printing, the PID control is performed.

1.14.8 Plain paper fusing temperature control

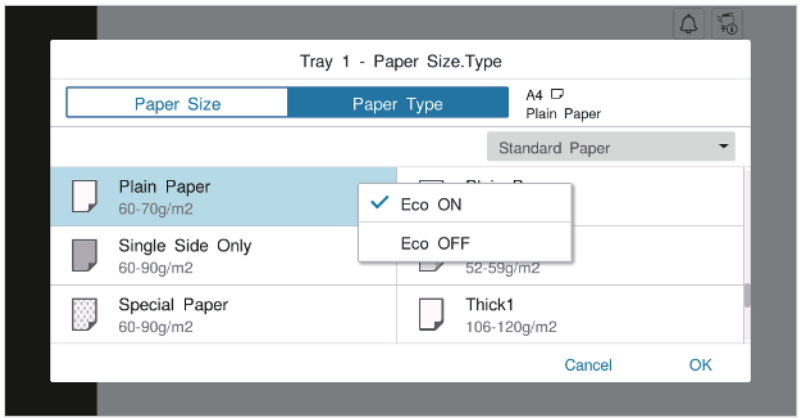
- Two different target temperatures control the printing on plain paper.

Basis weight	Control contents

Plain paper (60 g/m^2 to 70 g/m^2 (15 15/16 lb to 18 5/8 lb))	The base weight is limited to 60 g/m^2 to 70 g/m^2 (15 15/16 lb to 18 5/8 lb). Power consumption (TEC value) is controlled through lowering the target temperature to lower than the normal fusing temperature.
Plain paper (60 g/m^2 to 90 g/m^2 (15 15/16 lb to 23 15/16 lb))	The normal target temperature controls the fusing temperature control of plain paper.

(1) Setting procedure

Display example



1. Select [Paper] on the basic screen.
2. Select a paper port.
3. Select [Paper Type].
4. After selecting [Plain paper], touch the set key to display the setting screen.
5. Set [Eco] to ON.

NOTE

- **"ON" is specified by default for Japan.**
- **You can only use the [Alter Paper Thickness] key for plain paper.**

1.14.9 Smart fusing control

- Lower the target temperature as much as possible according to the information of each sheet of paper to control the fusing temperature adjustment. In this way, the power consumption (TEC value) is controlled.
- Smart fusing control is only performed when the execution conditions below are met.
- If these execution conditions are not met, the normal fusing temperature control is performed.
- Smart fusing control can also prohibit control execution from [Service Mode] -> [System 2] -> [Smart Fusing Control].

(1) Smart fusing control execution conditions

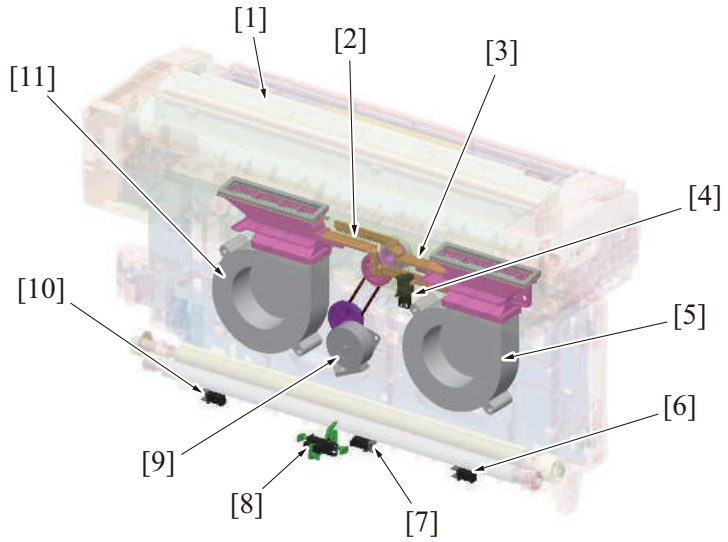
Function		Execution conditions
Temp-Inside		10 °C and above
Print mode		Only for PC printing, BOX printing, and direct printing (USB) (*1)
Basic Settings	Print zoom	Only 100%
	Paper Type	Plain paper only
Layout	Combination	1 in 1 only
	Image shift	No
Cover sheet insertion	Cover sheet	No
	Back cover	No
	Inter sheet	No
	OHP interleave	No
	Booklet	No
Image quality	Toner save (density 50%)	No
	Edge enhancement	No
	Negative-positive reversal	No
	Maximum black density	80% or more to 95% or less
	Line width	1.5pt or less
	Character decoration	Normal characters only (*2)
	Character size	16pt or less
	Image object	No
Stamp/page printing	No watermarks	No
	No overlay	No
	No copy security	No

Function		Execution conditions
	No header/footer	No
	No management number	No

- *1: Copies are not included in the control
- *2: Bold characters are not included in the control

1.14.10 Fusing edge cooling mechanism

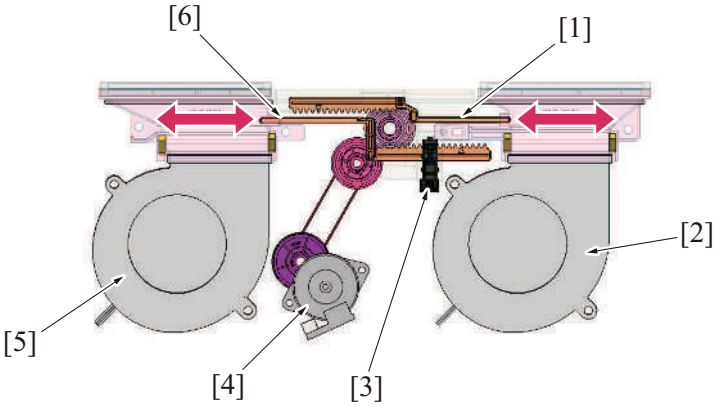
- When small-size paper is fed continuously, the temperature at both ends of the fusing unit rises in the area outside the paper feeding area.
- Two cooling fans are provided before and after the door inside the main body. They blow air to both ends of the fusing unit to control the rise in the temperature.
- Change the cooling area according to the size of the paper passing through.



[1]	Fusing unit	[2]	Shutter/Rr
[3]	Shutter/Fr	[4]	Fusing shutter home sensor (PS47)
[5]	Fusing edge cooling fan/Fr (FM21)	[6]	Feeding paper size sensor/1 (PS50)
[7]	Registration sensor/2 (PS72)	[8]	Registration sensor/1 (PS1)
[9]	Fusing shutter motor (M15)	[10]	Feeding paper size sensor/2 (PS51)
[11]	Fusing edge cooling fan/Rr (FM22)	-	-

Changing the cooling area

- A shutter is equipped in both fusing edge cooling fan/Fr and fusing edge cooling fan/Rr.
- The shutter operates depending on the width of the paper passing through, which changes the width of the fan opening.
- The fusing shutter motor drives the shutter.
- The fusing shutter home sensor detects the shutter home position (fully opened position).



[1]	Shutter/Fr	[2]	Fusing edge cooling fan/Fr (FM21)
[3]	Fusing shutter home sensor (PS47)	[4]	Fusing shutter motor (M15)
[5]	Fusing edge cooling fan/Rr (FM22)	[6]	Shutter/Rr

Feeding paper width detection

- The feeding paper width is determined by the setting value of the paper tray and the feeding paper size sensor/1 and /2.
- If the paper tray setting is 250 mm or more, check the status of the feeding paper size sensor.
- When the media detection function is used, check the state of the feeding paper size sensor after the media detection is exactly done.

- When the OHP is used, it is not need to check the state of the feeding paper size sensor.
- When the leading edge of the paper passes a predetermined distance from the feeding paper size sensor, check the feeding paper size sensor.
- If either sensor is OFF, a warning is displayed to show that the paper size is mismatched.

1.14.11 Protection from abnormal temperatures

(1) First approach: software protection

- If the heating roller temperature sensor detects a predetermined temperature or more continuously, the temperature is determined to be abnormally high and a “trouble code C3725: Fusing abnormally high temperature detection (Main of the heating side)” will be displayed.
- If the heating roller thermistor/Edg detects a predetermined temperature or more continuously, the temperature is determined to be abnormally high and a “trouble code C3722: Fusing abnormally high temperature detection (Edge of the heating side)” will be displayed.
- If the heating roller thermistor/Ctr detects a predetermined temperature or more continuously, the temperature is determined to be abnormally high and a “trouble code C3726: Fusing abnormally high temperature detection (Center of the heating side)” will be displayed.
- When the trouble code is displayed, printing will be prohibited.

(2) Second approach: hardware protection

- A different protection is provided when the CPU overruns, becoming unable to detect the malfunction of an abnormally high temperature. If the heating roller temperature sensor detects an abnormal temperature, the heater relay of the DC power supply is turned OFF through the base board. Power supply to the fusing heater lamp is then shut down.
- When the hardware circuit in the base board detects the heater relay being OFF, the temperature is judged to be abnormally high. Trouble code C3737: Fusing abnormally high temperature detection (Hard protector) will be displayed.
- Through these control procedures, the power supply to the heater lamps can be shut down before the thermostat is activated. It thereby suppresses damage to the fusing unit itself.

(3) Third approach: thermostat protection

- If detection of the abnormally high temperature through approaches 1 and 2 above is not possible due to a defective the heating roller temperature sensor, heating roller thermistor or other reason, the thermostat comes into play to shut down the power supply to the heater lamp.

1.14.12 Fusing PPM control

(1) PPM control

- To achieve the intended level of fixability of printed images, the PPM control reduces the number of printed pages per minute by widening the distance between sheets of paper.

PPM mode	Control execution conditions	Purpose	Specific controls	Print productivity (*1)
Low temperature environment mode	Room temperature at the start of the print cycle is 18°C or less	To achieve the intended level of fixability under low temperature environment	To prevent fixability from being degraded in a multi-print cycle, paper-to-paper distance is widened to thereby limit a decrease in the fusing temperature.	100%: Default value 90% 80% 70% 60% 50%
High humidity environment mode (*2)	Environmental humidity at the start of the print cycle is a predetermined value or more	To suppress occurrence of paper curl under high humidity environment	Paper-to-paper distance is widened in a multi-print cycle run under high humidity environment so as to prevent paper from curling, thereby achieving a required fusing temperature.	100%: Default value 70% 50%
Paper curl suppression mode	“Mode 3” is selected for “Change Warm Up Time” of the service mode	To suppress occurrence of paper curl under conditions other than high humidity environment	Paper-to-paper distance is widened in a multi-print cycle run under any condition other than high humidity environment so as to prevent paper from curling, thereby achieving a required fusing temperature.	100%: Default value 50%
Heating roller end temperature rise suppression mode	• Print request is received for paper with a paper width of 209 mm or less • Temperature of the heating roller ends becomes a predetermined value or more	To suppress inordinate rise in temperature on heating roller ends in a print cycle using paper of a small size	Paper-to-paper distance is widened in a multi-print cycle so as to prevent the temperature on ends of the heating roller from increasing, thereby promoting reduction in temperature.	100%: Default value 90% 80% 70% 60% 50% 40% 30%
Reduced power supply mode	Only an insufficient power is supplied to the fusing heater lamp, resulting in a fusing temperature lower than a predetermined value	To achieve the intended level of fixability under low power supply condition	To prevent fixability from being degraded in a multi-print cycle, paper-to-paper distance is widened to thereby limit a decrease in the fusing temperature.	70%: Default value 50%

PPM mode	Control execution conditions	Purpose	Specific controls	Print productivity (*1)
Thin paper mode	“100%” is selected for “PPM Control Choice” of the service mode	To increase the print productivity of thin paper and recycled paper. To increase productivity during printing using thin paper. * The choice of 100% may result in paper curling.	Paper-to-paper distance is narrowed to thereby increase productivity.	100% 70%: Default value (*3)
Fusing strength improving mode	Choice of improving the fusibility strength (Engine FW DIP SW: No.35) is set	To achieve the fusing strength and prevent the paper from curling when choice of improving the fusibility strength is being used.	• During the eraser test raise the setting temperature to achieve the fusing strength. • Improve the heat supply to the paper and the toner, and prevent the paper from curling at the same time.	70%
105 g/m^2 paper mode	Plain paper+ (91-105 g/m^2) is selected	To achieve the intended level of fixability when the 105 g/m^2 paper is being used	Normally, 105 g/m^2 paper is passed through at full speed. However, when the fusing unit is not warmed up, such as first in the morning, change the productivity and achieve the intended level of fixability.	100%: Default value 90%
Index paper mode	The index paper is selected	To prevent the paper curl in high temperature and high humidity circumstance	When the detected temperature of the paper temperature sensor exceeds 28°C, lower productivity to control the temperature rise of the fusing unit.	100%: Default value 70%
Feeding paper size sensor failure detection mode	The paper size was not detected due to dirt or malfunction of the feeding paper size sensor	To prevent losing durability of the fusing unit during the feeding paper size sensor failure.	Lower productivity during the outbreak of feeding paper size sensor failure (Malfunction code: P-38).	Depends on the paper type and the print mode. • Plain paper (black): 60%
Coated paper passage mode	The coated paper is being used	To stabilize the inrush temperature when the coated paper is fed, and prevent the roughness of coated paper surface.	Widen the distance between sheets of paper and lower productivity. The paper is fed after the temperature between sheets of paper is stabilized.	70%

- *1: Exemplary calculation of print speed: If 75 ppm can be achieved at a print productivity of 100% on A4 plain paper, a change in print productivity to 90% results in 67.5 ppm.
- *2: Execution of the control for the high humidity environment mode can be prohibited when “No. 5 PPM control (high humidity environment mode) prohibited” is turned ON in [Service Mode] -> [Enhanced Security] -> [Engine FW DIP SW].
- *3: For recycled paper, the print productivity will be set to 70% when “Mode 3” is selected for warm-up choice. For thin paper, the print productivity will be set to 70% regardless of the mode setting for warm-up choice.

1.14.13 Fusing unit new article detection

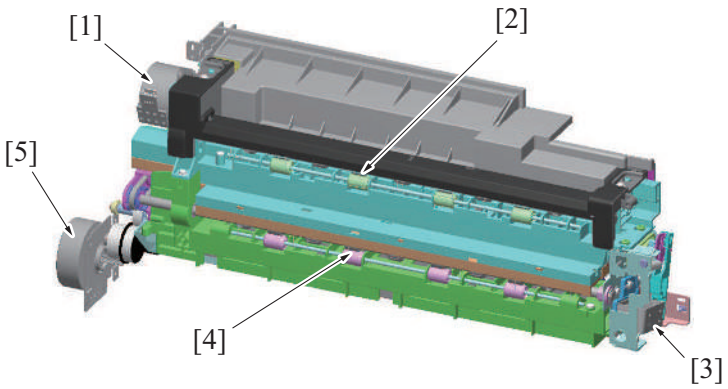
- Any new article detection mechanism is not provided to the fusing unit. When the fusing unit is replaced with a new one, "New Release" of "Fusing Unit" must be performed in [Service Mode] -> [Counter] -> [Life].

NOTE

- **Fusing For details of the unit life, refer to “ E.1 Concept of maintenance.”**

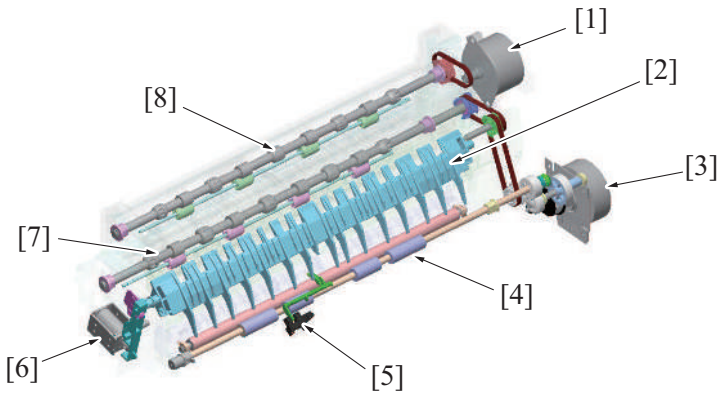
1.15 PAPER EXIT/REVERSE SECTION

1.15.1 Configuration



[1]	Paper exit/reverse motor (M4)	[2]	Reverse roller
[3]	Exit path switch solenoid (SD3)	[4]	Paper exit roller
[5]	Fusing motor (M3)	-	-

1.15.2 Drive

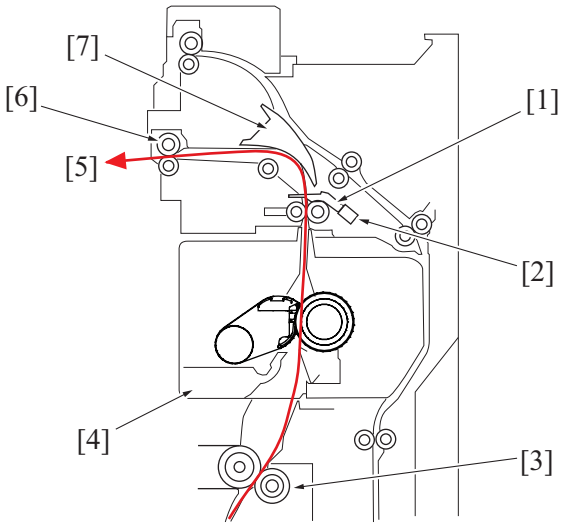


[1]	Paper exit/reverse motor (M4)	[2]	Paper exit/reverse switch gate
[3]	Fusing motor (M3)	[4]	Exit tray front roller
[5]	Paper exit sensor (PS3)	[6]	Exit path switch solenoid (SD3)
[7]	Paper exit roller	[8]	Reverse roller

1.15.3 Transport control

(1) Paper exit by paper exit roller

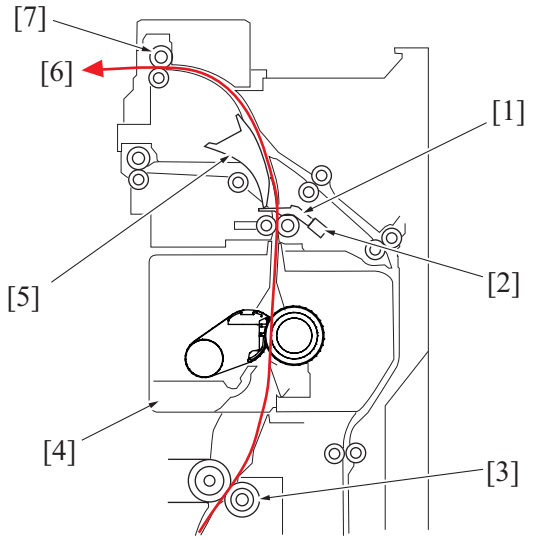
- If the paper is fed out by way of the paper exit roller, the paper exit roller is rotated forward to transport the paper.
- The initial position of the paper exit/reverse switch gate establishes a paper path through the paper exit roller, so that its position is not changed.
- The paper exit roller is driven by the fusing motor.



[1]	Actuator	[2]	Paper exit sensor (PS3)
[3]	2nd transfer roller	[4]	Fusing unit
[5]	Transported to paper exit tray or finisher	[6]	Paper exit roller
[7]	Paper exit/reverse switch gate: solenoid OFF position	-	-

(2) Paper exit by reverse roller

- The paper is fed from the reverse roller to the paper exit tray, only if RU-519 capable of feeding paper out through the reverse roller is mounted.
- When the paper is to be fed out via the reverse roller, the switchback motor is rotated forward to thereby transport the paper.
- The exit path switch solenoid is energized in order to establish a paper path through the reverse roller by changing the position of the paper exit/reverse switch gate.
- The reverse roller is started at timing at which the leading edge of the paper enters the paper exit/reverse section.
- The reverse roller is stopped when the paper is fed a predetermined distance after the reverse roller after the paper exit sensor has detected the trailing edge of the paper.

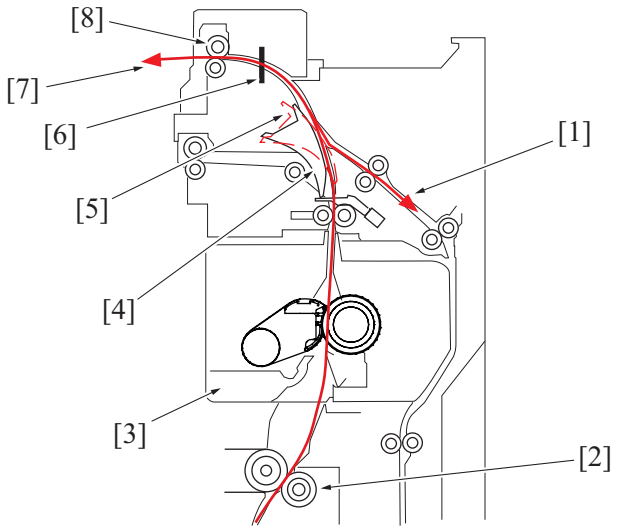


[1]	Actuator	[2]	Paper exit sensor (PS3)
[3]	2nd transfer roller	[4]	Fusing unit
[5]	Paper exit/reverse switch gate: solenoid ON position	[6]	Paper exit to paper exit tray
[7]	Reverse roller	-	-

(3) Duplex section transport

- When the paper is to be fed into the duplex section, the reverse roller is rotated forward to transport the paper to the reverse position and then rotated backward, thereby transporting the paper onto the duplex section.
- Until the paper is transported up to the reverse stop position, the exit path switch solenoid is energized to place the paper exit/reverse switch gate in a position at which the paper path through the reverse roller is established.
- When the paper reaches the reverse stop position, the paper exit/reverse switch gate returns to its original position to thereby prevent the paper from moving backward into the fusing section.
- The reverse roller is started to rotate forward at timing at which the leading edge of the paper enters the paper exit/reverse section.

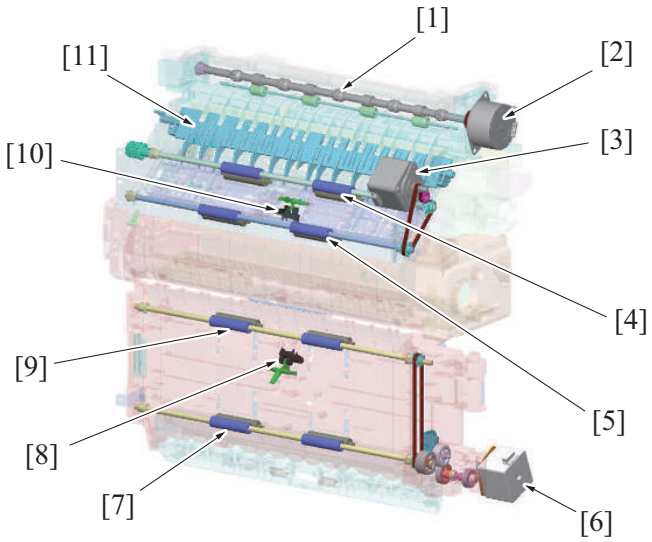
- The reverse roller is stopped from forward rotation at timing at which the paper reaches the reverse stop position after the paper exit sensor has detected the trailing edge of the paper.
- The reverse roller is started to rotate backward at timing at which the preceding paper moves past a predetermined position of the duplex section.
- The reverse roller is stopped from backward rotation at timing at which the trailing edge of the paper enters the duplex section.



[1]	Transporting to duplex section	[2]	2nd transfer roller
[3]	Fusing unit	[4]	Paper exit/reverse switch gate: solenoid ON position
[5]	Paper exit/reverse switch gate: solenoid OFF position	[6]	Reverse stop position
[7]	Transporting to reverse stop position	[8]	Reverse roller

1.16 DUPLEX SECTION

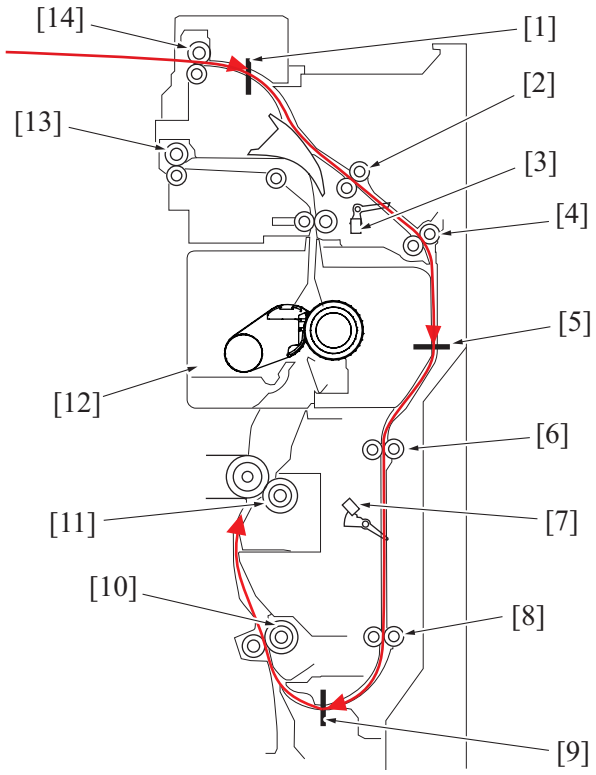
1.16.1 Configuration



[1]	Reverse roller	[2]	Paper exit/reverse motor (M4)
[3]	ADU transport motor/1 (M5)	[4]	ADU transport roller1
[5]	ADU transport roller2	[6]	ADU transport motor/2 (M26)
[7]	ADU transport roller4	[8]	ADU paper passage sensor/2 (PS41)
[9]	ADU transport roller3	[10]	ADU paper passage sensor/1 (PS40)
[11]	Paper exit/reverse switch gate	-	-

1.16.2 Paper transport control

- In duplex transportation, the paper transported from the reverse roller is transported to the internal duplex section by the ADU transport roller 1 and ADU transport roller 2.
- In duplex pre-registration, the paper is conveyed to the registration roller at the vertical transport section by the ADU transport roller 3 and ADU transport roller 4.



[1]	Stop position 1	[2]	ADU transport roller1
[3]	ADU paper passage sensor/1 (PS40)	[4]	ADU transport roller2
[5]	Stop position 2	[6]	ADU transport roller3
[7]	ADU paper passage sensor/2 (PS41)	[8]	ADU transport roller4
[9]	Stop position 3	[10]	Registration roller
[11]	2nd transfer roller	[12]	Fusing unit
[13]	Paper exit roller	[14]	Reverse roller

(1) Transport roller control

- The ADU transport motor/1 drives the ADU transport roller 1 and ADU transport roller 2.
- The ADU transport motor/2 drives the ADU transport roller 3 and ADU transport roller 4.

(2) Paper entrance control

- The reverse motor at the paper exit/reverse section is deenergized to stop transport of the paper temporarily (stop position 1). The reverse motor thereafter rotates in reverse to transport the paper into the duplex section.
- At the same time that the reverse motor is rotated backward, ADU transport roller 1 and ADU transport roller 2 start rotating.
- The ADU paper passage sensor/1 located downstream of the ADU transport roller 1 detects the leading edge of the paper transported to the duplex section.
- If a preceding sheet of paper being transported through the duplex section is yet to reach a predetermined position downstream of the registration roller, the transport of the paper is stopped temporarily (stop position 2).
- When the advanced sheet of paper moves past the specified position, the transport of the paper is resumed.
- If the ADU paper passage sensor/2 does not detect the leading edge of the paper even after the lapse of a predetermined period of time after the ADU paper passage sensor/1 has detected the leading edge of the paper, the machine determines that a paper misfeed occurs at the duplex transport part.
- When the leading edge of paper reaches the predetermined position, the ADU transport roller 3 and ADU transport roller 4 start rotating to transport the paper.
- ADU paper passage sensor/2 detects the leading edge of the paper.
- When the paper moves past ADU transport roller 4 and reaches the specified position, the transport of the paper is stopped temporarily (stop position 3).

(3) Duplex paper feed control

- The ADU transport roller 3 and ADU transport roller 4 start rotating at a predetermined paper feed time to resume the transport of the paper.
- ADU transport roller 1 and ADU transport roller 2 start rotating, if they have been stationary.
- The paper is fed from ADU transport roller 4 onto the registration roller at the vertical transport part.

1.16.3 Duplex circulation control

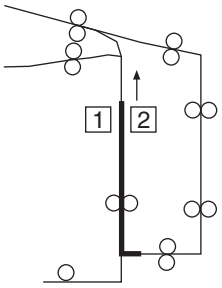
- The duplex circulation control is performed differently according to the length of the paper path direction.

Length of paper in the feed direction	Duplex circulation control
458 mm or less	One-sheet circulation operation

Length of paper in the feed direction	Duplex circulation control
432 mm or less	Two-sheet circulation operation
216 mm or less	Three-sheet circulation operation

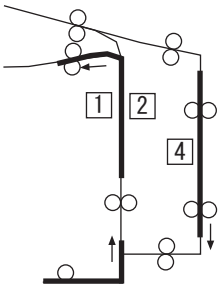
(1) One-sheet circulation operation

- After the second side is printed for each sheet, the paper is transported to the duplex pre-registration section. After the first side is printed, the paper is then discharged outside of the machine.



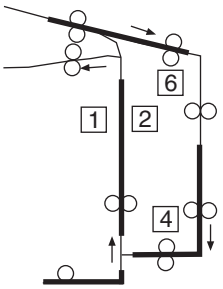
(2) Two-sheet circulation operation

- The sheet having the first side being printed and the sheet having the second side being printed are transported alternately.



(3) Three-sheet circulation operation

- The sheet having the first side being printed and the sheet having the second side being printed are transported alternately. A third sheet is stored in the machine during printing the other sheets.

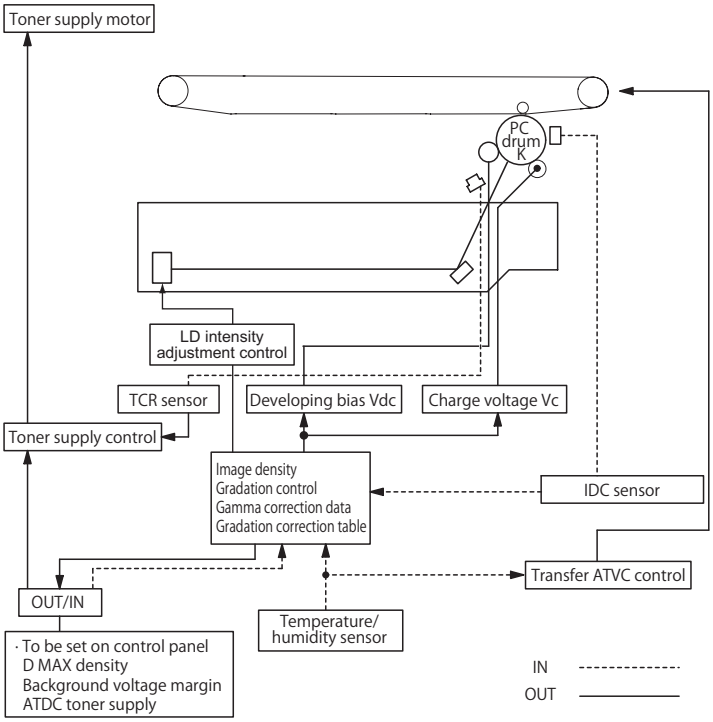


1.17 IMAGE STABILIZATION CONTROL

1.17.1 Overview

- The machine provides the following image stabilization control to ensure stabilized copy image.

Purpose	Control	Control means
To stabilize image density To stabilize gradation	IDC sensor adjustment control Max. density adjustment control LD intensity adjustment control Gamma correction control	IDC sensor Temperature/humidity sensor
To stabilize toner density	TCR control	TCR sensor
To stabilize image transfer	Transfer output control Transfer ATVC	Temperature/humidity sensor



1.17.2 Description of control

(1) IDC sensor adjustment control

- Controls changes in characteristics due to change with time and contamination of the transfer belt and IDC sensor, part-to-part variations in the sensors, and change of environment.
- The intensity (current value) of the IDC sensor is adjusted on the surface of the transfer belt, on which no toner sticks (background level).

(2) Max. density adjustment control

- The developing bias (Vdc) is adjusted to control changes in the solid density resulting from changes in the amount of charge in toner due to variations in developing characteristics and exposure intensity, variations in sensitivity of the photoconductor, environment, and durability.
- Patterns are produced on the surface of the transfer belt and the IDC sensor detects the amount of toner sticking to them.
- Referring to the detected data and the environment data taken by the temperature/ humidity sensors, the developing bias value that results in the appropriate maximum density is calculated and stored in memory.

(3) LD intensity adjustment control

- It adjusts the variation in reproducibility of the thin line and the reverse outline, which is resulting from the variations in electrostatic characteristics of the photoconductor, developing characteristics and transfer characteristics in terms of individual difference, environment and durability, to make it the target level.
- It produces detection patterns on the surface of the transfer belt with the given level of LD intensity and detects the output value of IDC sensor.
- LD intensity is calculated from the detected IDC sensor data.

(4) Gamma correction control

- The output level for each gradation is adjusted to correct the changes in gradation characteristics to a linear one. The changes in gradation characteristics are caused with variations in the photoconductor sensitivity, developing characteristics, durability, environment, and parts variations in manufacturing.
- Patterns are produced on the surface of the transfer belt and the IDC sensor calculates the gradation characteristics output by the current engine.
- An optimum output level is determined for each gradation by calculating gamma correction data from the detected data of each gradation.

1.17.3 Control contents

(1) Image stabilization type (mode)

- Two different modes of image stabilization are provided corresponding to each environment and printing status.
- A specific mode is selected according to the environmental conditions and print requirements, thereby achieving stabilized image at all times.

Stabilization type	Description
Mode 1 (initialization and image stabilization)	Executed when “Initialize + Image Stabilization” is selected from the control panel. (Executed with all parameters set to their default values.)
Mode 1 (monochrome, long image stabilization (new))	Executed when change in developing characteristics is assumed to be large such as when consumables are replaced.
Mode 2 (monochrome, short image stabilization)	Executed when the count of the number of printed pages during a print cycle reaches 400.

(2) Control sequence by mode

- A different control sequence applies according to the mode of image stabilization.
- Control is performed in the specified sequence for each mode.

Sequence	Mode 1	Mode 2
1	IDC sensor adjustment	IDC sensor detection (*1)
2	Dmax density adjustment	Dmax density adjustment
3	LD light intensity adjustment	Gamma correction
4	Dmax density adjustment	-
5	Gamma correction	-

- *1: The IDC sensor uses the output value calculated in the last IDC registration sensor adjustment and check that the value measured on the surface of the transfer belt (background level) is within the specified range. If the measured value is out of the specified range, mode 1 is used when the next image stabilization is carried out.

1.17.4 Operation timing

(1) Predrive operation

- The following describe the stabilization operations executed when, for example, the main power switch is turned ON, the sleep mode is canceled, the front door is closed, or a malfunction is reset.

Mode	Operation condition
Mode 1	• A new drum unit, a new developing unit or a new transfer belt is detected. • The machine recovers from a toner empty condition. • While a malfunction code is being displayed. • In the last image stabilization, the value of IDC sensor detection was out of the specified range. • A change in environment is detected. (a change in environment exceeding the threshold value is detected since the last image stabilization sequence) • The count of the number of printed pages is 10,000 as counted from the last LD adjustment.
Mode 2	• A Dmax adjustment request is received as a result of the last gamma correction. • The count of the number of printed pages after the gamma adjustment is 400 or more. • Information is provided indicating that the last stabilization control was discontinued. • A predetermined period of time or more elapses after a developing drive stop.

(2) During a print cycle

- When the stabilization execution condition is met during printing, a specific image stabilization mode according to the condition is selected and executed.

Stabilization execution condition (*1)	Print count after gamma correction	Stabilization execution condition (*2)	Stabilization (mode)	Operation timing during print
Any of the conditions is met	-	-	Mode 1	Executed by interrupting the print cycle
None of the conditions is met	400 sheets or more	Any of the conditions is met	Mode 1	Executed by interrupting the print cycle
		None of the conditions is met	Mode 2	Executed by interrupting the print cycle

- *1: Stabilization execution condition:
  - A change in environment is detected. (a change in environment exceeding the threshold value is detected since the last image stabilization sequence)
  - The count of the number of printed pages is 10,000 as counted from the last LD adjustment.
- *2: Stabilization execution condition:
  - In the last image stabilization, the value of IDC sensor detection was out of the specified range.
  - The last warning code is displayed.

(3) Service Mode

- Types (modes) of image stabilization to be executed with the menu of the service mode will be described.

Menu of service mode	Type (mode) of image stabilization to be executed	
Gradation Adjust ([Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust])	Mode 2	
Stabilizer ([Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer])	Initialize+Image Stabilization	Mode 1
	Stabilization Only	Mode 2

(4) Expert Adjustment

- Types (modes) of image stabilization to be executed with the menu of the expert mode will be described.

Menu of expert mode	Type (mode) of image stabilization to be executed	
Gradation Adjustment ([Utility] -> [Expert Adjustment] -> [Gradation Adjustment])	Mode 2	
Image Stabilization ([Utility] -> [Expert Adjustment] -> [Image Stabilization])	Initialize+Image Stabilization	Mode 1
	Stabilization Only	Mode 2

1.17.5 Image stabilization control during SRA3 size printing

- This control is enabled when the Engine FW DIPSW No.19 is set.
- In the following cases, the image stabilization control is executed according to each paper size before printing. When the paper size is changed from the SRA3 size to other size or from other size to the SRA3 size.

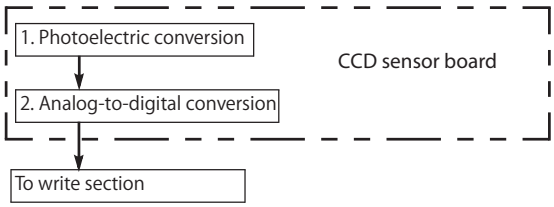
Paper size		Image stabilization control executed	
Before change	After change	Normal	Monochrome-dedicated mode
SRA3 size	Except for the SRA3 size	Long image stabilization	Monochrome long image stabilization
Except for the SRA3 size	SRA3 size	SRA3 long image stabilization before printing *1	SRA3 monochrome long image stabilization before printing *2

*1: The control contents of the SRA3 long image stabilization before printing are the same as long image stabilization.
*2: The control contents of the SRA3 monochrome long image stabilization before printing are the same as monochrome long image stabilization.

1.18 IMAGE PROCESSING

1.18.1 Scanner section image processing block diagram

(1) Processing flow



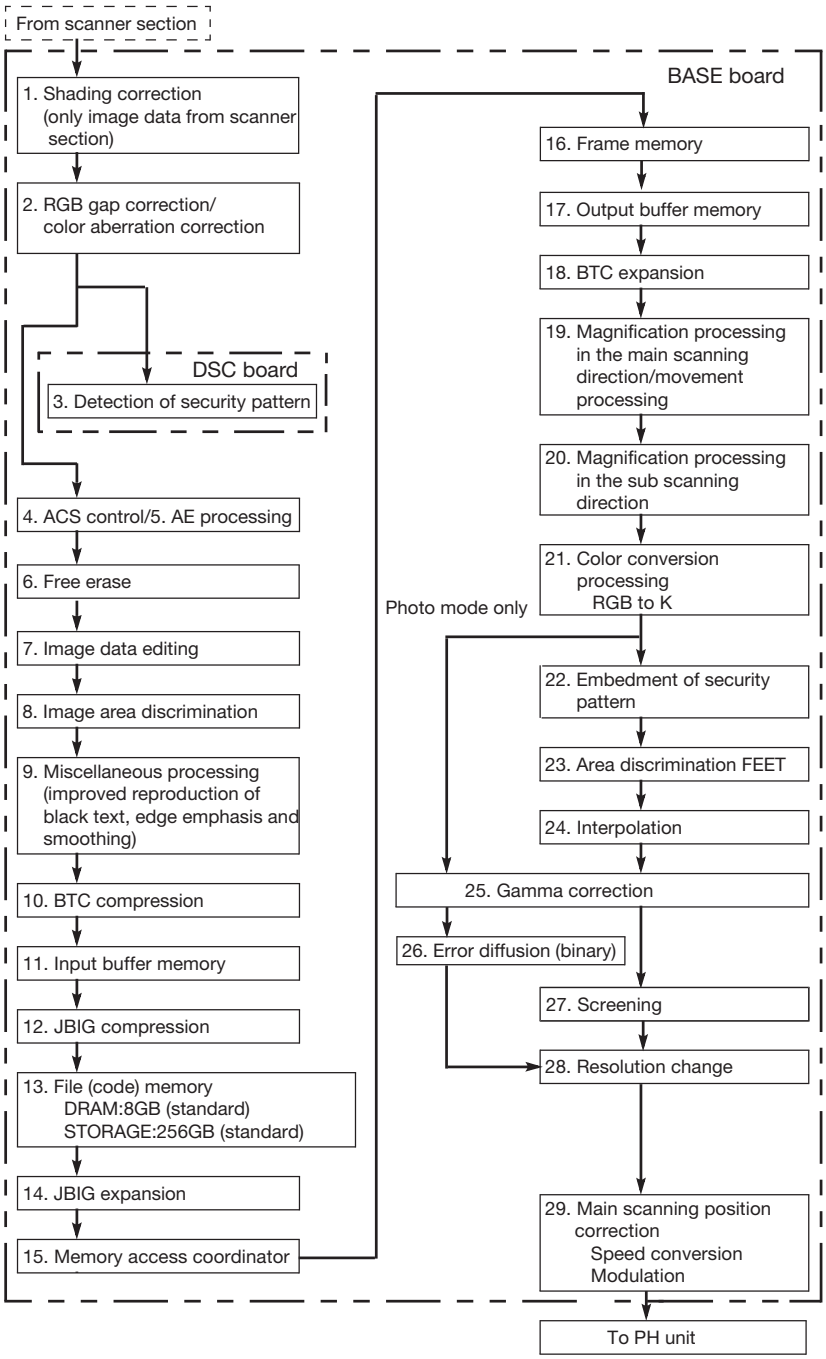
(2) Detail

The following detail the image processing operations performed by the scanner section.

1. A reduction type CCD sensor is used to read the light reflected off the original and convert the optical data to a corresponding electric signal. To make data processing faster, data transfer and output are done through two channels, one for even-numbered pixels and the other for odd-numbered pixels.
2. The odd and even analog signals output from the CCD sensor chips are synthesized to form a single string of signal data which is in turn converted to 10-bit digital signals (1024 gradation levels).
3. The image data is transmitted to base board on the write section through the interface cable.

1.18.2 Write section image processing block diagram

(1) Processing flow



(2) Detail

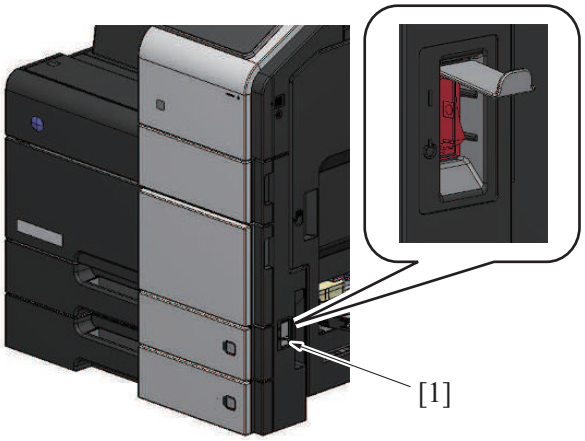
The following detail the image processing operations performed by base board on the Write section.

1. Correct variations in reading caused by pixel-to-pixel variations in sensitivity of the CCD sensor and uneven light distribution by the exposure LED. A peak-hold-type shading correction is performed, in which the maximum value of two or more readings of two or more lines is taken to prevent effect due to dust or dirt on the shading sheet. (only image data from scanner section)
2. To correct differences in the position of each chip of CCD sensors R, G, and B, FIFO memory is adopted to match the output timing. Also correct color aberration of the lens.
3. The security pattern created during printing on this machine is detected and copying is enabled or disabled through a password. (when the security kit SC-509 is mounted)
4. The scanning area is divided into multiple blocks. The ratio of color or monochrome is calculated for each of these blocks. The machine then determines whether the entire original is colored or monochrome.
5. A histogram of lightness for AE processing is generated. The AE level of the document is determined based on this histogram and AE processing is performed.
6. If outer document elimination is selected from the control panel, document area determination processing is performed for each line within the document area data acquired during prescan. Then, the START and END positions of the document area in the main scanning direction are detected and the area outside the START and END positions is erased as the outside-the-document area.
7. R, G, and B data are then converted to value and color component data for adjustments of saturation, lightness, and hue.
8. Each image area, whether it is a color edge area, black edge area, dot area, or a continuous gradation area, is discriminated.
9. Other types of processing performed are the improved reproduction of black text, edge emphasis and smoothing.
10. Each image data of R, G, and B is compressed to reduce the consumption of data capacity.

11. Temporarily stores the BTC-compressed image data.
12. The stored image data is compressed in the JBIG (Joint bi-level image experts group) format.
13. Each image data of R, G, and B in the copy, print, scan, and fax mode is stored. In PS printing, multi-valued data of K is stored.
14. The image data read from the file memory is uncompressed through a method in a reverse way of JBIG compression. At this time, image rotating or sorting processing is conducted.
15. JBIG image data are expanded in the frame memory.
16. Each image data of R, G, and B is stored in frame memory.
17. Temporarily stores the image data output from the frame memory.
18. The image data is expanded through a method opposite to that used in the BTC compression.
19. FIFO memory is used to enlarge or reduce images in the main scanning direction. The image is enlarged by increasing the number of data readings and reduced by decreasing the number of data readings.
20. Reduction processing is conducted in sub scanning direction. No processing is done at same size or zoom, but at reduction, the lines are thinned out.
21. The R, G, and B data is converted to the density data. Also, the masking processing, which compensates for the deviation in the spectral reflection characteristics of the toner, and UCR/BP processing are performed on the image data.
22. The security pattern is embedded in the image data. Either enabling copying through a password or unconditionally prohibiting copying can be selected from the control panel for the security pattern to be embedded. (when the security kit SC-509 is mounted)
23. Edge of letter and lineal drawing gets area discrimination and FEET processing is conducted according to the discrimination result.
24. When FEET processing is conducted, interpolation is done so that no influence is given to continuous gradation portion.
25. Makes the necessary corrections so that the printed gradations have linear characteristics, since the image density of the input image data is not directly proportional to that of the printed image because of the changing developing and photoconductor characteristics.
26. In photo mode during copying and PC print, the image is processed as multi-valued data (8-bit data). In any mode other than photo, the error diffusion method is employed to process the image as binary (1-bit) data.
27. Creates the density distribution of a predetermined pattern to enable outstanding gradation reproduction.
28. For 1200 dpi writing, the 600 dpi image data is converted to corresponding 1200 dpi image data.
29. Correct the shear in printing start position in the main scanning direction, which occurs when the PH unit is exposed on the photoconductor. Adjust the processing speed in the board (main scanning) to conform to the input processing speed.

1.19 POWER SUPPLY SECTION

1.19.1 Main power switch



[1]	Main power switch	-	-

NOTE

- **To turn OFF and ON the main power switch, first turn OFF the main power switch and wait for 10 sec. or more before turning it ON again. If a setting value or values in the service mode are changed, it takes 10 sec. or more to incorporate the setting changes properly in the machine.**

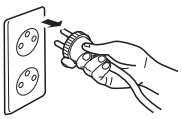
(1) Power supply

⚠WARNING

When the power cord is unplugged after turning OFF the main power switch, partial power switches will remain powered for monitoring the operation of the main power switch.

Therefore, at the time of disassembly and reassembly, be sure to turn OFF the main power switch and unplug the power cord from the power outlet.

Turn OFF the main power switch and unplug the power cord from the power outlet.



When replacing a unit or board with the power cord being connected to the power outlet, a risk of electric shock or damaging the unit or board exists.

- When the main power switch is turned OFF but the power cord is still connected to the power outlet, only the following power switches are powered.

5.1V	• Base board (BASEB) • DC power supply unit (DCPU) • Dehumidifier drive board (DEDB) • Paper feed cabinet (Tray 3/4) • Large Capacity Unit (Option)

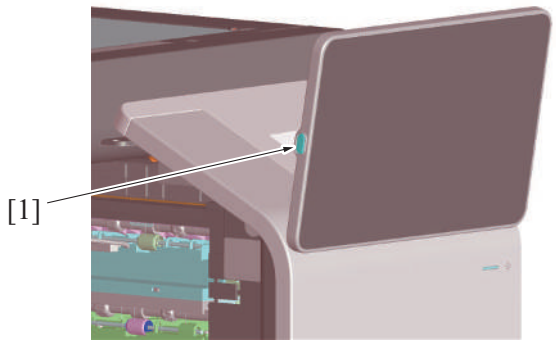
(2) Quick start up function

- This function shortens the start up time (*).
- A “Quick start up data” is generated, the CPU operating power is powered between a certain time after the main power switch is turned OFF to maintain the On Board Memory in the storage board.
- After the “Quick start up data” has been saved, the CPU operating power turns OFF. However, partial power switches will remain powered for monitoring the operation of the main power switch.
- At next time, the saved “Quick start up data” will be used to start up the machine.

NOTE

- ***: Start up time indicates "Panel accessible time", "BOX screen accessible time" and "Network accessible time".**
- **After the main power switch is turned OFF, turn on the main power switch before the "Quick start up data" is saved to start up the machine at normal speed.**
- **Also, when the power cord is unplugged before the "Quick start up data" is saved after the main power switch is turned OFF, the machine will start up at normal speed.**

1.19.2 Power key



[1]	Power key	-	-

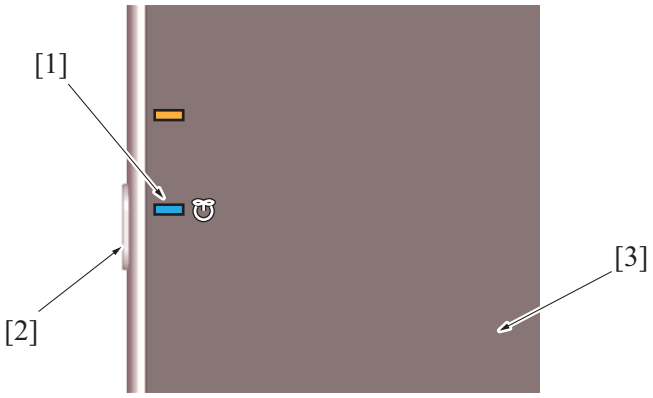
(1) Power key functions

- The power key offers two functions, serving as the power save button and the sub-power switch found in conventional models, depending on how long it is held down.
- In the default setting, holding down the power key for a short time sets the machine into the power save mode (low power mode) and holding it down for a long time sets the machine into the sub power OFF mode.
- The mode can be changed from the following: [Administrator] -> [Maintenance] -> [Timer Setting] -> [Power Settings].

How long the power key is held down	Default setting	Settings changed by Administrator Settings
Short time	Low power mode (*2)	Sleep mode (*2)
		Sub power OFF mode (*1)
Long time	Sub power OFF mode	ErP auto power off mode (*1)

- *1: [Administrator] -> [Maintenance] -> [Timer Setting] -> [Power Settings] -> [Power Key Setting]
- *2: [Administrator] -> [Maintenance] -> [Timer Setting] -> [Power Settings] -> [Power Save Settings]

(2) Status in each mode



[1]	Power key LED	[2]	Power key
[3]	Control panel	-	-

Mode		State	Power key LED
Standby		All functions are ready to accept and ready to perform jobs.	Lit up blue
Power save mode	Low power mode	• Power consumption is limited to a level lower than the standby state with the fusing temperature control minimized. • Reset when a job is received or the machine is operated.	Blinking in blue
	Sleep mode (*2) (Not reduce)	• Power consumption is reduced in low power mode. • Sensors that are used internally are operating.	Blinking in blue
	Sleep mode (*2) (Reduce)	• Power is supplied only to a portion of the base board required for receiving a job. • When an original is placed on the scanner, a job is received, or the machine is operated, the system wakes up.	

Mode		State	Power key LED
	Sleep mode (*2) (High)	• Power is supplied only to a portion of the base board required for receiving a job. • Reset when a job is received or the machine is operated.	
Sub power OFF mode	Sleep mode (*3) (Not reduce)	• Power consumption is reduced in low power mode. • Sensors that are used internally are operating. • Wake-up time is shorter than when “Enabled or High” is selected. • The system wakes up when the sub power is turned on.	Lit up orange
	Sleep mode (*3) (Reduce)	• Power is supplied only to a portion of the base board required for receiving a job. • A job can be received, but printing is performed when power is turned ON. • Wake-up time is longer than when “Disabled” is selected.	
	Sleep mode (*3) (High)	• Power is supplied only to the base board. • A job can be received, but printing is performed when power is turned ON. • Wake-up time is longer than when “Disabled” is selected. • Power is reduced when “Enabled” is selected.	
ErP auto power off mode		• Power consumption to the lowest level. • Reset only by the power key or the weekly timer setting. • No jobs can be received. (*1) • The system can also wake up when this machine is equipped with the optional wireless LAN kit.	Blinking in orange

- *1: In ErP auto power OFF mode, this machine cannot receive data or faxes, and also it cannot scan or print an original.
- *2: [Disable], [Enabled] and [High] are selectable in [Administrator] -> [Maintenance] -> [Timer Setting] -> [Power Settings] -> [Power Consumption in Sleep Mode].
- *3: Even in sub power off mode, [Disable], [Enabled] and [High] are selectable in [Administrator] -> [Maintenance] -> [Timer Setting] -> [Power Supply/Power Save Settings] -> [Power Consumption in Sleep Mode].

(3) Power supply

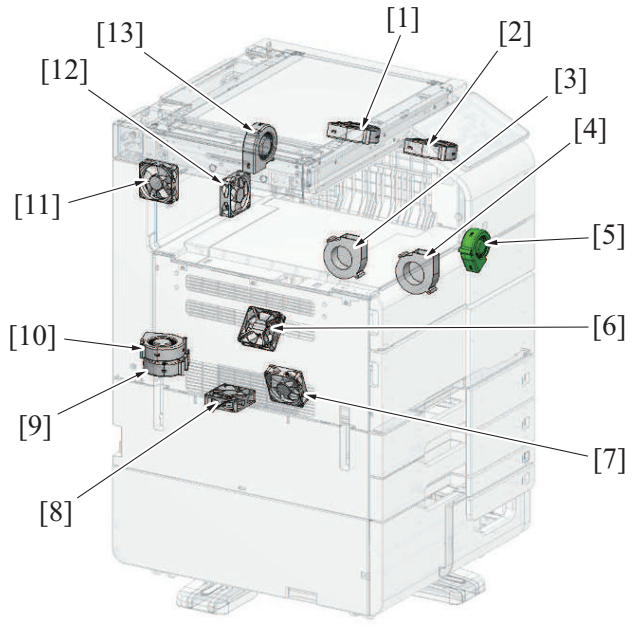
Power is supplied only to the following portions in the sleep mode and the sub power OFF mode.

5.1V	• MFP controller • FAX CPU • Main body storage (*1) • USB board
	• Angle sensor (*2) • Original cover sensor (*2) • Control panel key

- *1: When [Enabled] and [High] are selected in [Administrator] -> [Maintenance] -> [Timer Setting] -> [Power Settings] -> [Power Consumption in Sleep Mode], the power is not supplied.
- *2: When [High] is selected in [Administrator] -> [Maintenance] -> [Timer Setting] -> [Power Settings] -> [Power Consumption in Sleep Mode], the power is not supplied.

1.20 FAN CONTROL

1.20.1 Configuration



[1]	UFP scavenging fan/Rr (FM18)	[2]	UFP scavenging fan/Fr (FM17)

[3]	Fusing edge cooling fan/Rr (FM22)	[4]	Fusing edge cooling fan/Fr (FM21)
[5]	Machine internal cooling fan (FM25)	[6]	Transfer belt cleaner cooling fan (FM2)
[7]	PH/power supply cooling fan (FM1)	[8]	Rear side cooling fan (FM3)
[9]	DV cooling fan (FM19)	[10]	Toner suction fan (FM11)
[11]	Toner cartridge cooling fan (FM4)	[12]	HaCS power supply cooling fan (FM5)
[13]	Paper cooling fan (FM8)	-	-

1.20.2 Control

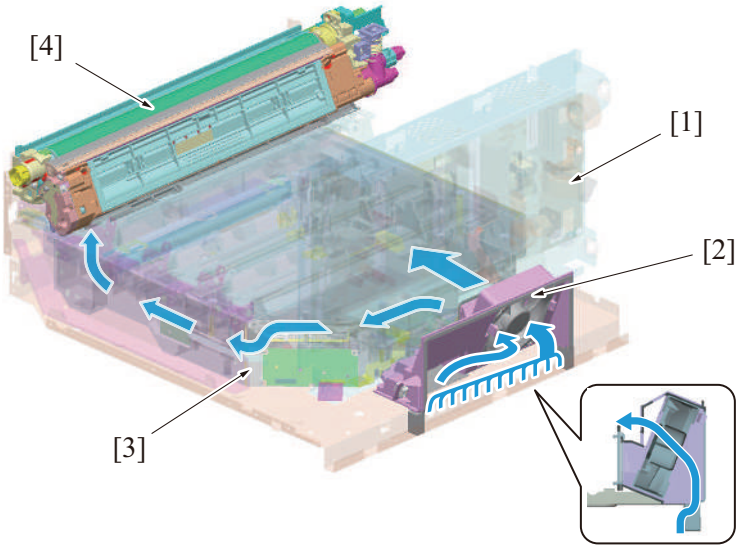
Motor name	Control conditions (outline)	Control
PH/power supply cooling fan (FM1)	In standby (*1)	Stop
	During warm-up	Full speed
	Printing	Full speed
	At initial operation, image stabilization, transfer cleaning, drive function (*2)	Full speed
	At paper-jam, in trouble	Stop
	In low-power	Stop
	Sleep mode	Stop
Transfer belt cleaner cooling fan (FM2)	In standby (*1)	Stop
	During warm-up	Stop
	Printing	Half or full speed (*3)
	At initial operation, image stabilization, transfer cleaning, drive function (*2)	Half or full speed (*3)
	At paper-jam, in trouble	Stop
	In low-power	Stop
	Sleep mode	Stop
Rear side cooling fan (FM3)	In standby	30% air flow relative to that of full speed
	During warm-up	30% air flow relative to that of full speed
	Printing	Full speed
	At initial operation, image stabilization, transfer cleaning, drive function (*2)	Full speed
	At paper-jam, in trouble	30% air flow relative to that of full speed
	In low-power	30% air flow relative to that of full speed
	Sleep mode	Stop
Toner cartridge cooling fan (FM4)	In standby (*1)	Stop
	During warm-up	Stop (*4)
	Printing	Full speed
	At initial operation, image stabilization, transfer cleaning, drive function (*2)	Full speed
	At paper-jam, in trouble	Stop (*4)
	In low-power	Stop (*4)
	Sleep mode	Stop
HaCS power supply cooling fan (FM5)	In standby (*1)	Stop
	During warm-up	Full speed
	Printing	Full speed
	At initial operation, image stabilization, transfer cleaning, drive function (*2)	Full speed
	At paper-jam, in trouble	Stop
	In low-power	Stop
	Sleep mode	Stop
Paper cooling fan (FM8)	In standby (*1)	Stop
	At warm-up	Full speed
	Printing	Half speed (*5)
	At initial operation, image stabilization, transfer cleaning, drive function (*2)	Full speed
	At paper-jam, in trouble	Stop

Motor name	Control conditions (outline)	Control
	In low-power	Stop
	Sleep mode	Stop
Toner suction fan (FM11)	In standby	Stop
	During warm-up	Stop
	Printing	Full speed
	At initial operation, image stabilization, transfer cleaning, drive function (*2)	Full speed
	At paper-jam, in trouble	Stop
	In low-power	Stop
	Sleep mode	Stop
UFP scavenging fan/Fr (FM17) UFP scavenging fan/Rr (FM18)	In standby (*1)	Stop
	During warm-up	Full speed
	Printing	Half speed (*5)
	At initial operation, image stabilization, transfer cleaning, drive function (*2)	Full speed
	At paper-jam, in trouble	Stop
	In low-power	Stop
	Sleep mode	Stop
DV cooling fan (FM19)	In standby (*1)	Stop
	During warm-up	Stop
	Printing	Half or full speed (*3)
	At initial operation, image stabilization, transfer cleaning, drive function (*2)	Half or full speed (*3)
	At paper-jam, in trouble	Stop
	In low-power	Stop
	Sleep mode	Stop
Fusing edge cooling fan/Fr (FM21) Fusing edge cooling fan/Rr (FM22)	In standby	Stop
	During warm-up	Stop
	Printing	Full speed
	At initial operation, image stabilization, transfer cleaning, drive function (*2)	Stop
	At paper-jam, in trouble	Stop
	In low-power	Stop
	Sleep mode	Stop
Machine internal cooling fan (FM25)	In standby (*1)	Stop
	During warm-up	Stop
	Printing	Half or full speed (*3)
	At initial operation, image stabilization, transfer cleaning, drive function (*2)	Half or full speed (*3)
	At paper-jam, in trouble	Stop
	In low-power	Stop
	Sleep mode	Stop

- *1: If the machine enters the “In standby” state, the fan motor turns for predetermined time before stopping.
- *2: Some operations selected in the service mode (Paper path check etc.)
- *3: Half speed when the temperature in the machine is below 35°C, and full speed when the temperature is above 35°C.
- *4: Full speed when the operating rate exceeds 25%.
- *5: Full speed when an optional clean unit is installed.

1.20.3 PH/power supply cooling fan

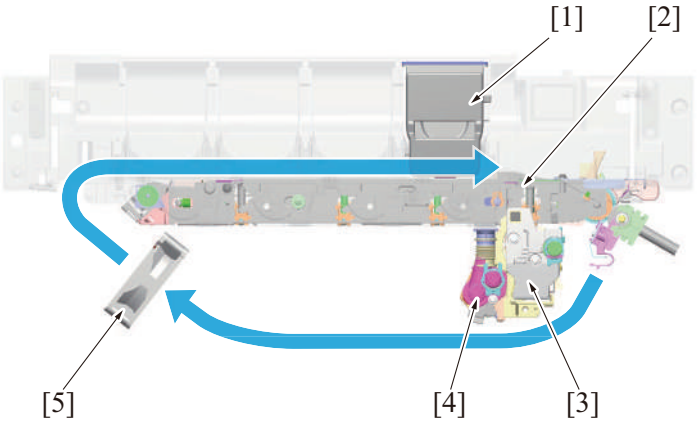
- Draws outside air into the inside of the machine to prevent the temperature around the DC power supply, PH unit section, developing/drum unit.
- Air is drawn from around the edges of the first paper cassette and sent to each unit via ducts.



[1]	DC power supply section	[2]	PH/power supply cooling fan (FM1)
[3]	PH unit	[4]	Developing/drum unit

1.20.4 Transfer belt cleaner cooling fan

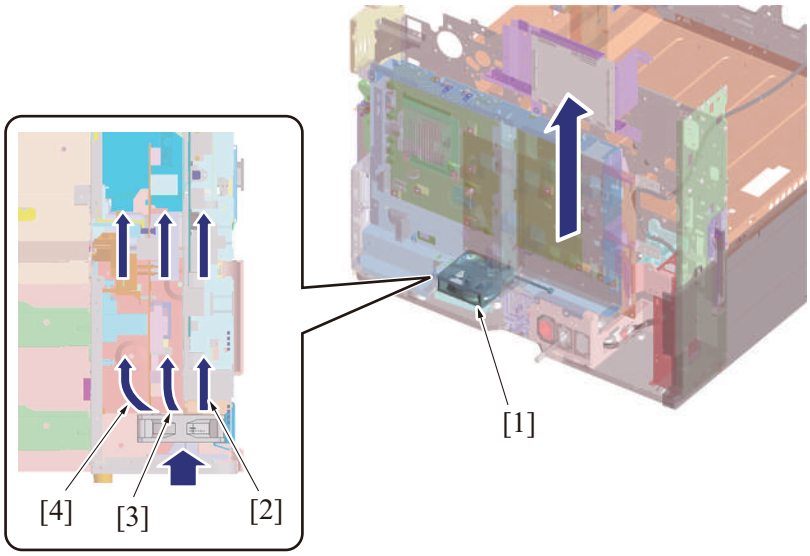
- The transfer belt cleaner cooling fan is provided to circulate air through the inside of the machine, so that the areas around the developing unit, drum unit, toner hopper, and the transfer belt unit can be cooled.
- Air around the developing unit and drum unit is drawn in.
- The air drawn in flows between the toner cartridge and the transfer belt unit and is blown against the toner cartridge/K.



[1]	Toner cartridge/K	[2]	Transfer belt unit
[3]	Drum unit	[4]	Developing unit
[5]	Transfer belt cleaner cooling fan (FM2)	-	-

1.20.5 Rear side cooling fan

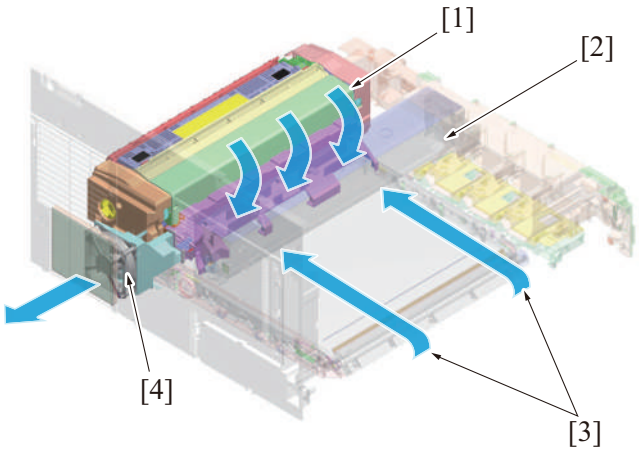
- The machine draws outside air from the bottom rear side. The air is blown inside the machine to cool the base board, high voltage unit and drive unit to prevent the surrounding temperature from rising.



[1]	Machine rear side cooling fan (FM3)	[2]	Air to the base board
[3]	Air to the high voltage unit	[4]	Air to drive unit section

1.20.6 Toner cartridge cooling fan

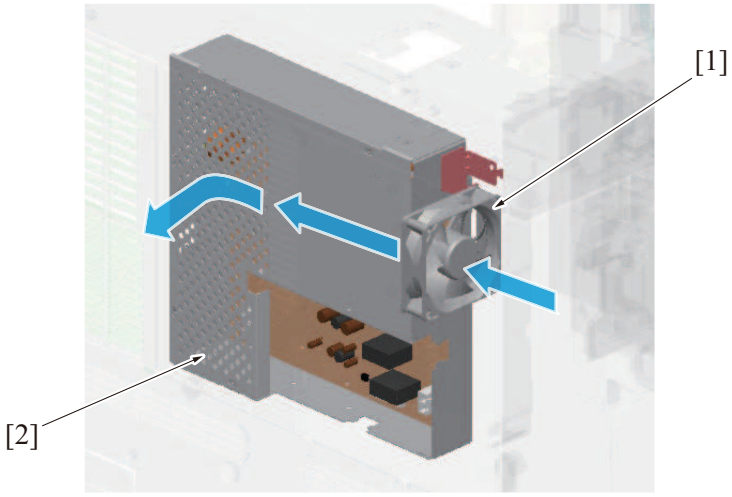
- The machine is equipped with a toner cartridge cooling fan to equipped cooling to the toner cartridge area and the fusing section.
- The air from the transfer belt cleaner cooling fan is drawn into the toner cartridge area and cooled.
- Creation of air flow between the fusing unit and toner cartridge may make the heat generates from the fusing unit hardly reach the toner cartridge area. This structure limits the increase in temperature of the toner cartridge area.
- The toner cartridge cooling fan sucks the air and sends it to the back of the main body through the duct. Then, the air is discharged out of the machine via the filter.



[1]	Fusing unit	[2]	Toner cartridge/K
[3]	Air from transfer belt cleaner cooling fan	[4]	Toner cartridge cooling fan (FM4)

1.20.7 HaCS power supply cooling fan

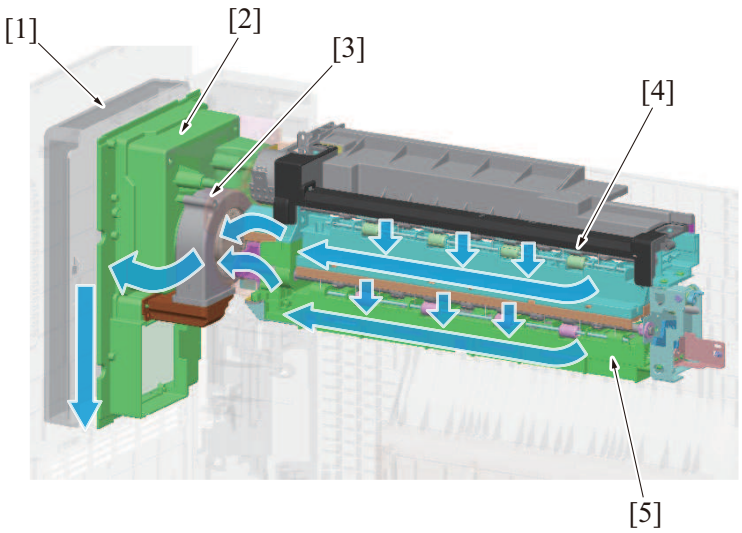
- The HaCS power supply cooling fan cools the HaCS power supply.
- The HaCS power supply cooling fan in the power supply box draws the air from the sides of the main body. It blows this air to cool the power supply boards.



[1]	HaCS power supply cooling fan (FM5)	[2]	Power supply box

1.20.8 Paper cooling fan

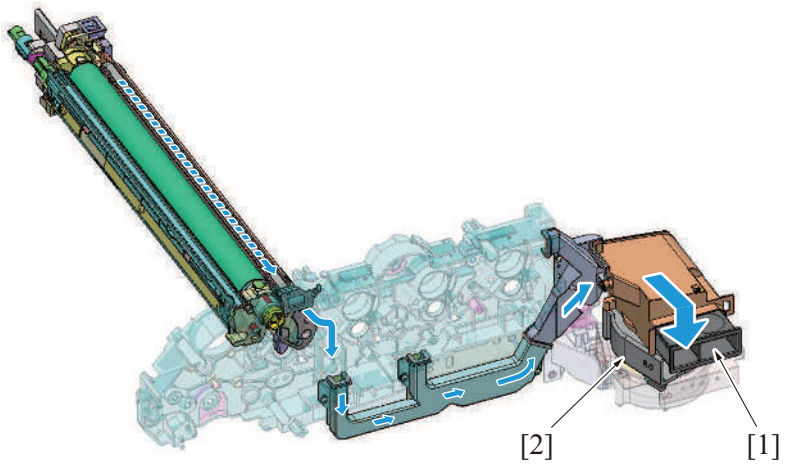
- The paper cooling fan cools the paper after fusing and the paper exit/reverse section.
- The paper cooling fan sucks the warm air from the area of the paper exit/reverse section and discharges it out of the machine via the filter.
- The air is discharged externally from the main body rear side and is exhausted downward from the ventilation cover.



[1]	Ventilation cover	[2]	Filter
[3]	Paper cooling fan (FM8)	[4]	Paper reverse section
[5]	Paper exit section	-	-

1.20.9 Toner suction fan

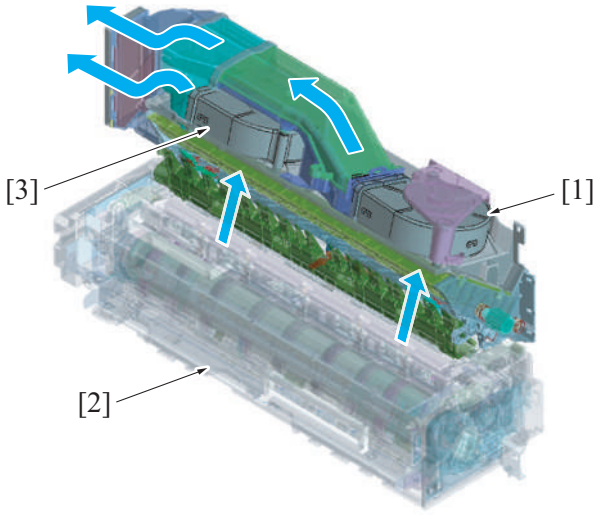
- The toner suction fan draws the toner dust from the ends of the developer unit to prevent the contamination of the main body.
- The air that is sucked through the duct is discharged out of the machine through the toner filter.



[1]	Toner filter	[2]	Toner suction fan (FM11)

1.20.10 UFP scavenging fan

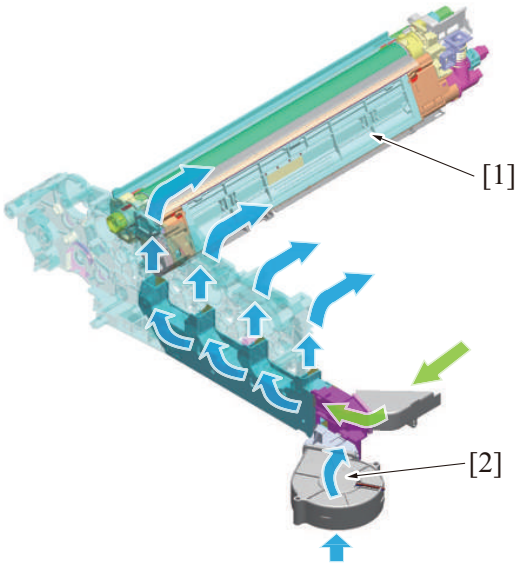
- The external air is sucked from the paper reverse section. Thus the hot air around the fusing section and the reverse section is discharged out of the machine.
- The UFP scavenging fan sucks the air and sends it to the rear side of the main body through the duct. Then the air is discharged out of the machine via the filter.



[1]	UFP scavenging fan/Fr (FM17)	[2]	Fusing unit
[3]	UFP scavenging fan/Rr (FM18)	-	-

1.20.11 DV cooling fan

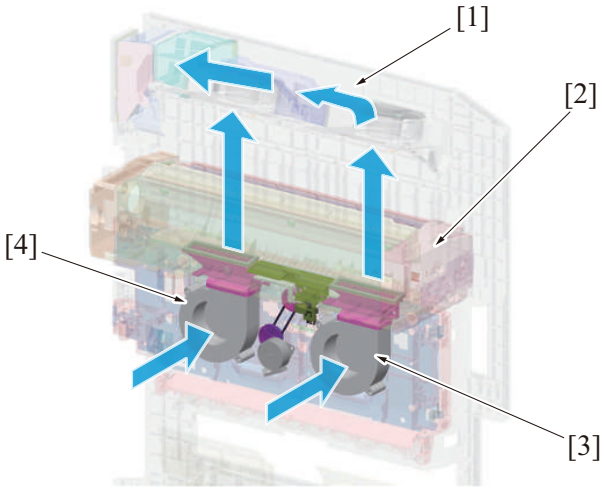
- The external air that is sucked from the rear side of the main body is blown into the machine via the duct.
- The air that is sucked in cools the developing unit and the drum unit.



[1]	Developing unit	[2]	DV cooling fan (FM19)

1.20.12 Fusing edge cooling fan

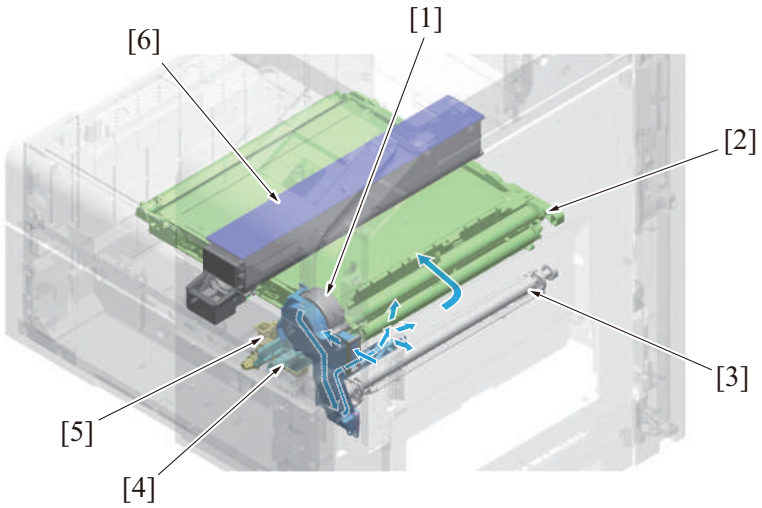
- When small-size paper is fed continuously, the temperature at both ends of the fusing unit rises in the area outside the paper feeding area.
- Two cooling fans are arranged before and after the door inside the main body. Therefore, the temperature at both ends of the fusing section is prevented from rising. These fans blow air from the lower side of the fusing section.
- A mechanism for switching the cooling width according to the size of the paper passing through is provided.
- The UFP scavenging fan which is arranged at the top of the right door sends the cooled air to the rear side of the main body. Then the air is discharged out of the machine via the filter.



[1]	Exhaust from the UFP scavenging fan out of the machine	[2]	Fusing unit
[3]	Fusing edge cooling fan/Fr (FM21)	[4]	Fusing edge cooling fan/Rr (FM22)

1.20.13 Machine internal cooling fan

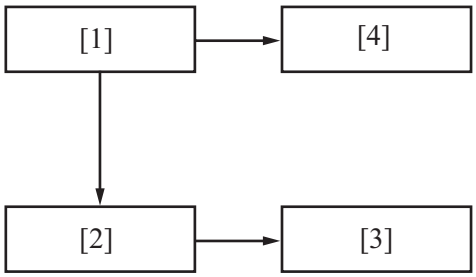
- To control the increase of the machine internal temperature, a machine internal cooling fan is installed. It draws the outside air from the right side of the main body.
- The air that is drawn in is blown against the developing unit, drum unit, toner cartridge, transfer belt unit and the area around the 2nd transfer section.



[1]	Machine internal cooling fan (FM25)	[2]	Transfer belt unit
[3]	2nd transfer section	[4]	Drum unit
[5]	Developing unit	[6]	Toner cartridge

1.21 COUNTER CONTROL

1.21.1 Configuration



[1]	Base board (mechanical control area) (BASEB)	[2]	Base board (controller area) (BASEB)
[3]	Electronic counter	[4]	Total counter
[5]	Key counter (option)	-	-

1.21.2 Operation

Name	Function/system
Total counter	• Number of total for copying/printing all jobs will be displayed. • A mechanical counter driven by an electric signal • Counts one when an exit signal is applied to it.
Electronic counter	• Number of total in copy/print/fax/scan mode will be displayed on the screen as described below. • Total counter, large size counter, total (copy + printer), scan counter, fax TX counter, fax RX counter, No. of originals counter, No. of prints counter, total duplex counter • Counts one when an exit signal is applied to it.
Key counter (option)	• When charging prints by using the key counter, copies cannot be made without the key counter. However PC prints and fax TX/RX service are available without the key counter. • Displays the cumulative number of copies while the key counter is being mounted. • A mechanical counter driven by an electric signal • Counts one when a paper feed start signal or image forming start signal, whichever occurs earlier, is applied to it

NOTE

- **The counting modes can be selected at [Billing Setting] -> [Counter Setting] of Service Mode.**

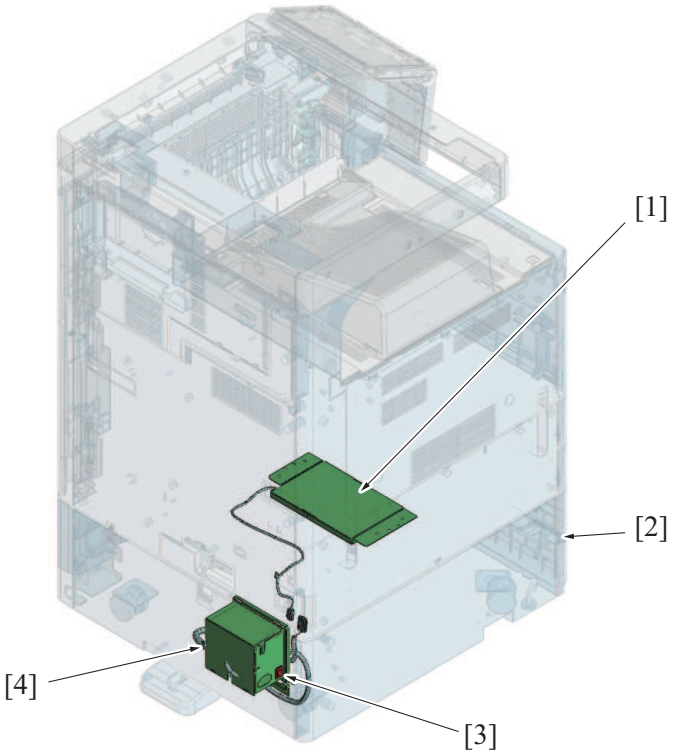
1.22 HEATER

1.22.1 HT-509/MK-734

(1) Configuration

- Optional heater HT-509 can be attached to the bottom (top of the paper feed cabinet) of the paper tray 2 on the machine.

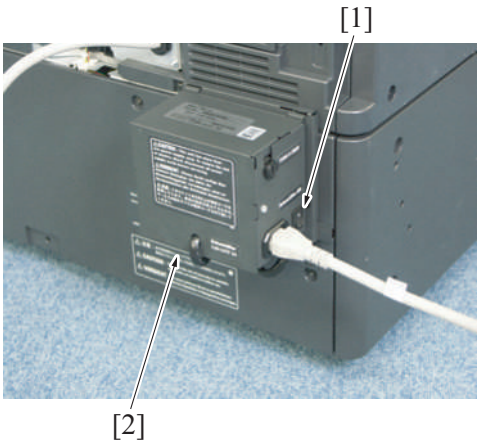
Rear view



[1]	Dehumidifier heater (DH111): HT-509	[2]	Paper feed cabinet (Example: PC-216)
[3]	Dehumidifier heater switch	[4]	Power Supply BOX MK-734

(2) Control

- The heater provides heat when it is energized to prevent paper in the paper feed cabinet and paper feed trays from absorbing damp. It prevents paper curling, paper misfeeds, paper jams, and abnormal images that occur when paper absorbs the damp.
- Turn on the dehumidifier heater switch of Power Supply BOX MK-734 to perform humidity control.
- Turn off the dehumidifier heater switch to stop the dehumidifier heater function.



[1]	Dehumidifier heater switch	[2]	Power Supply BOX MK-734

(a) Operation timing

- If the machine is stopped*, the heater is energized and generates heat.
- When the machine starts normally, it stops energizing the heater.

NOTE

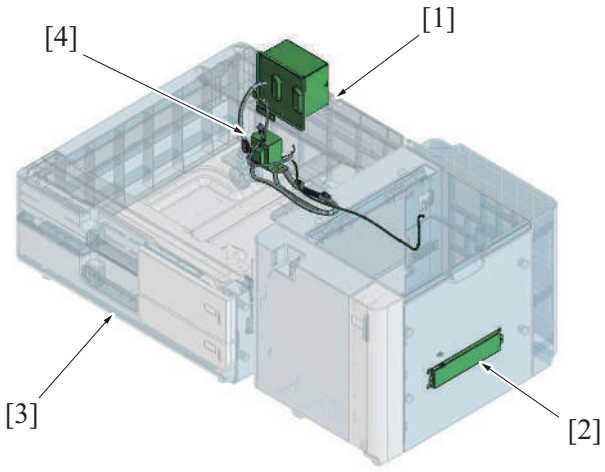
- ***: When the covers are opened, a problem or paper jam occurs, or in power-saving mode.**

1.22.2 LU/TK-101

(1) Configuration

- To make use of the function of the dehumidifier heater, the following combined optional equipment is required.
- Transformer kit TK-101

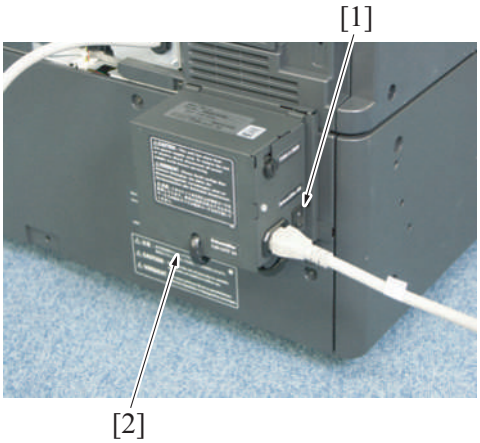
- Power Supply BOX MK-734
- Paper feed cabinet PC-116, PC-216, PC-416 or PC-417.



[1]	Power Supply BOX MK-734	[2]	Dehumidifier heater (DH): Standard equipment
[3]	Paper feed cabinet (Example: PC-216)	[4]	Transformer kit TK-101

(2) Control

- The heater provides heat when it is energized to prevent paper in the large capacity unit tray from absorbing damp. It prevents paper curling, paper misfeeds, paper jams, and abnormal images that occur when paper absorbs the damp.
- Turn on the dehumidifier heater switch on power supply box MK-734 to perform humidity control.
- Turn off the dehumidifier heater switch to stop humidity control.



[1]	Dehumidifier heater switch	[2]	Power Supply BOX MK-734

(a) Operation timing

- If the machine is stopped*, the heater is energized and generates heat.
- When the machine starts normally, it stops energizing the heater.

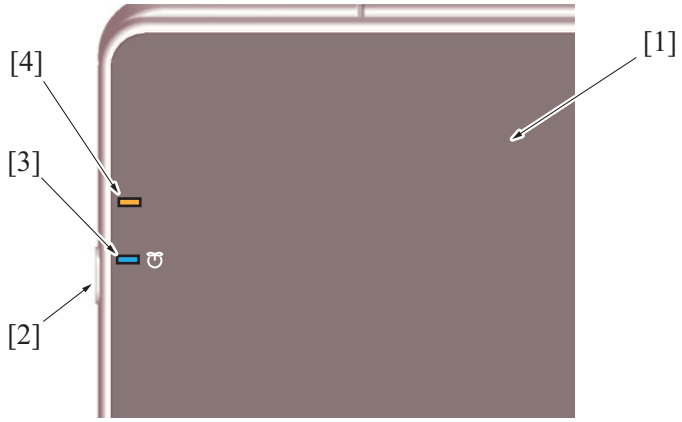
NOTE

- ***: When the covers are opened, a problem or paper jam occurs, or in power-saving mode.**

1.23 INDICATOR FUNCTION

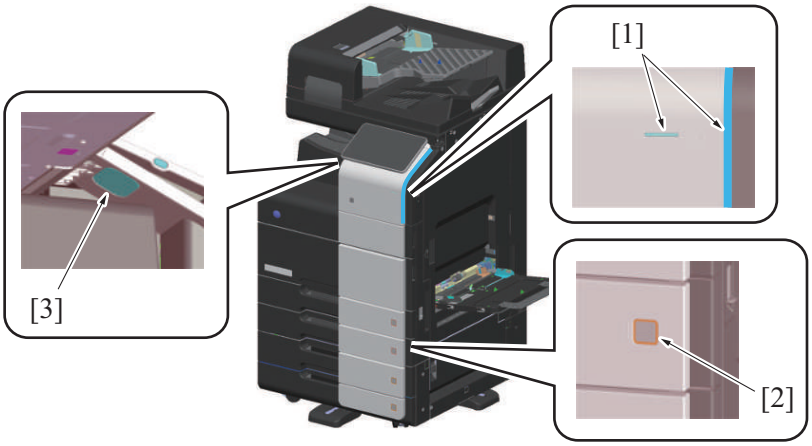
1.23.1 Configuration

(1) Control panel section



[1]	Control panel	[2]	Power key
[3]	Power key LED	[4]	Warning status indicator section

(2) Front side section



[1]	Operation status indicator section (front side)	[2]	Remaining paper level display section
[3]	Operation status indicator section (exit tray side)	-	-

1.23.2 Control

- The lighting control for the LED on each indicator section is described below.

(1) Power key LED

Condition	Power key LED status
During warm-up	Lit up blue
In standby	Lit up blue
During copying or printing	Lit up blue
Paper misfeed or trouble	Lit up blue
Low power mode Sleep mode	Blinking in blue
ErP auto power off mode	Blinking in orange
Sub power OFF mode	Lit up orange

(2) Warning status indicator section

Condition	LED indicator
When machine stops	Lit up orange
When warning occurs	Blinking in orange
Other status	OFF

(3) Operation status indicator section (front side)

Condition	LED indicator
Printing	Blinking in white
After printing	Lit up white (*)
Job is currently	Lit up blue
Receiving a job	Blinking in blue
Upon reception of FAX	Lit up blue
Other status	OFF

*: The lit up time length varies by settings in [Administrator] -> [System Settings] -> [Print end notification lamp ON time settings].

(4) Operation status indicator section (exit tray side)

Condition	LED indicator
Printing	Blinking in white
After printing	Lit up white (*)
Other status	OFF

*: The lit up time length varies by settings in [Administrator] -> [System Settings] -> [Print end notification lamp ON time settings].

(5) Remaining paper level display section

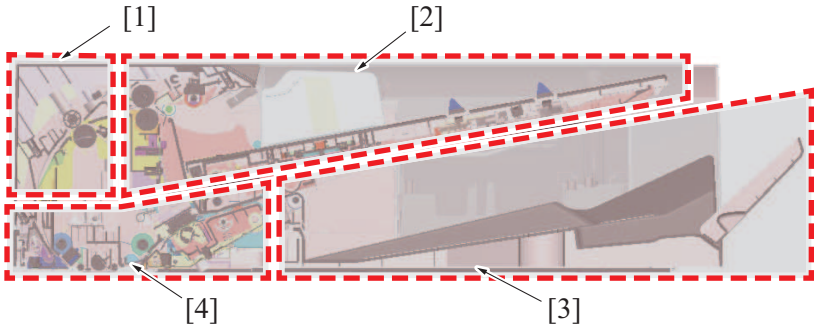
Condition	LED indicator
Paper empty	Lit up orange
Paper near-empty	Blinking in orange or unlit *
Other statuses (Including lifting-up, and an opened tray)	Unlit

- *: The lighting status varies depending on the following settings. [Service Mode] -> [System 1] -> [Machine State LED Setting]. Type 1: Blinks in orange, Type 2: Unlit

2. DF-713

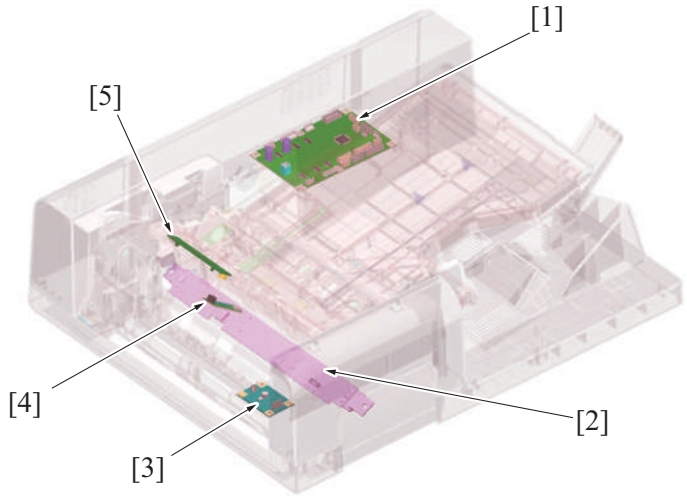
2.1 Configuration

2.1.1 Section configuration

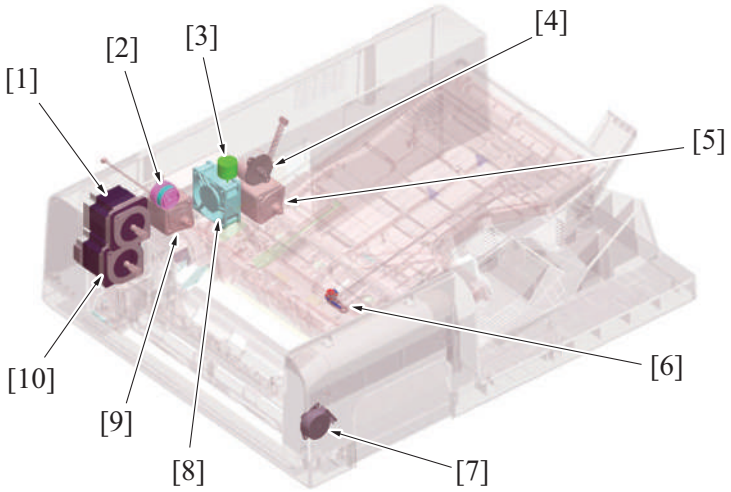


[1]	Document registration section	[2]	Document feed section
[3]	Document exit section	[4]	Document reading section

2.1.2 Main part configuration

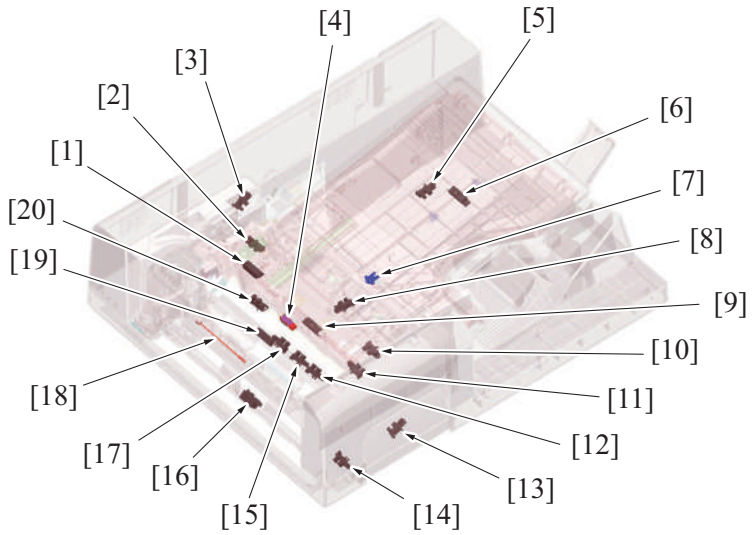


[1]	DF control board (DFCB)	[2]	CIS module (CIS)
[3]	CIS power supply (CISPU)	[4]	Multi feed detection board/TX (MFDB/TX)
[5]	Multi feed detection board/RX (MFDB/RX)	-	-



[1]	Document reading motor (M3)	[2]	Document feed clutch (CL1)
[3]	DF lift-up motor (M5)	[4]	CIS cleaning motor (M7)

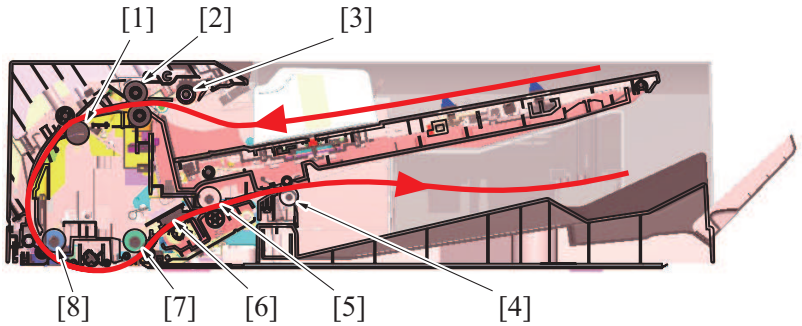
[5]	Document exit motor (M4)	[6]	Stamp solenoid (SD1)
[7]	Document reading glass cleaning motor (M8)	[8]	DF cooling fan (FM)
[9]	Document feed motor (M1)	[10]	Document registration motor (M2)



[1]	Document feed sensor (PS21)	[2]	CIS cleaning sensor (PS9)
[3]	Upper door sensor (PS16)	[4]	After separate sensor (PS4)
[5]	Document length size sensor/1 (PS10)	[6]	Document length size sensor/2 (PS11)
[7]	Document width size sensor (VR1)	[8]	DF lift-up upper limit sensor (PS2)
[9]	Document empty sensor (PS1)	[10]	Document exit sensor (PS7)
[11]	DF lift-up lower limit sensor (PS3)	[12]	Mixed original sensor/3 (PS15)
[13]	CIS cover sensor (PS20)	[14]	Document reading glass cleaning sensor (PS18)
[15]	Mixed original sensor/2 (PS14)	[16]	Document reading sensor (PS6)
[17]	Mixed original sensor/1 (PS13)	[18]	DF temperature sensor (TH)
[19]	Document registration sensor (PS5)	[20]	Document feed tray sensor (PS26)

2.2 Outline

Paper path



[1]	Document registration roller	[2]	Document feed roller
[3]	Document pick-up roller	[4]	Document exit roller
[5]	Document reading roller 3	[6]	CIS module (CIS)
[7]	Document reading roller 2	[8]	Document reading roller 1

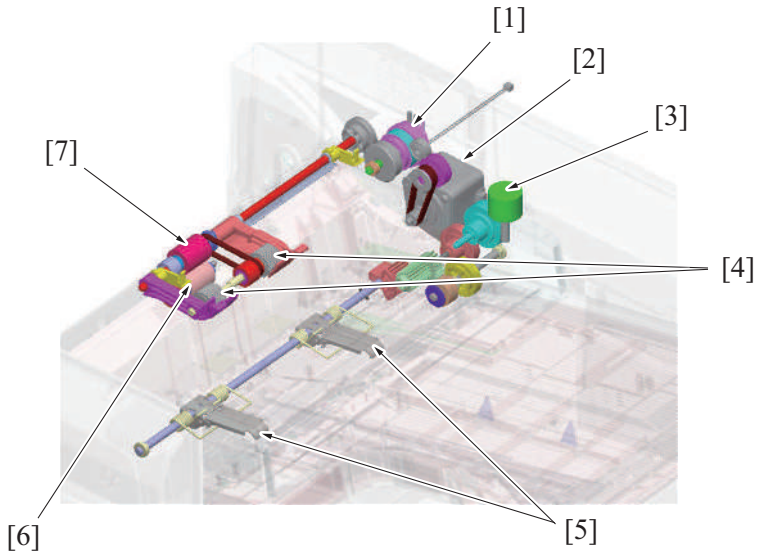
Paper path operation

1. When the original is set, the document empty sensor detects the leading edge of the original.
2. When the Start key is pressed, the DF lift-up motor is energized and the document feed tray rises to the feed position.
3. The document feed motor is energized, and the document pick-up roller and document feed roller are rotated to start feeding the first original.
4. When the document registration sensor detects the leading edge of the original, a loop is formed in the original.
5. After a loop is created in the original, the document registration motor turns ON. The drive of the document registration motor rotates the document registration roller, transporting the original to the reading section.
6. The document reading motor is energized at a predetermined time after the document registration motor turned ON. The drive of the document reading motor rotates the reading rollers 1, 2, 3 and the document exit roller.

7. The scanner starts reading the front side of the original at a predetermined time after the document reading sensor detects the leading edge of the original.
8. When the leading edge of the original moves past the reading roller 2, reading of the back side of the original is started by the CIS module. (Reading of the back side of the original is done only in the 2-sided mode.)
9. The drive of the reading roller 3 transports the original to the original exit section.
10. The drive of the exit roller feeds the original out.
11. The document reading motor is deenergized after the lapse of a predetermined period of time after the trailing edge of the original has deactivated the document exit sensor.

2.3 Document feed section

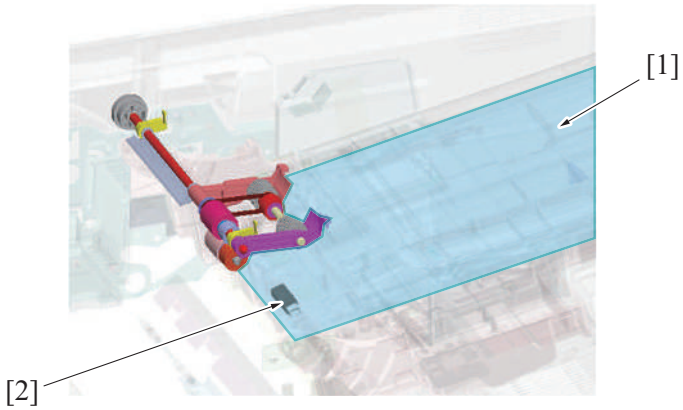
2.3.1 Drive



[1]	Document feed clutch (CL1)	[2]	Document feed motor (M1)
[3]	DF lift-up motor (M5)	[4]	Document pick-up roller
[5]	Lift-up lever	[6]	Document separation roller
[7]	Document feed roller	-	-

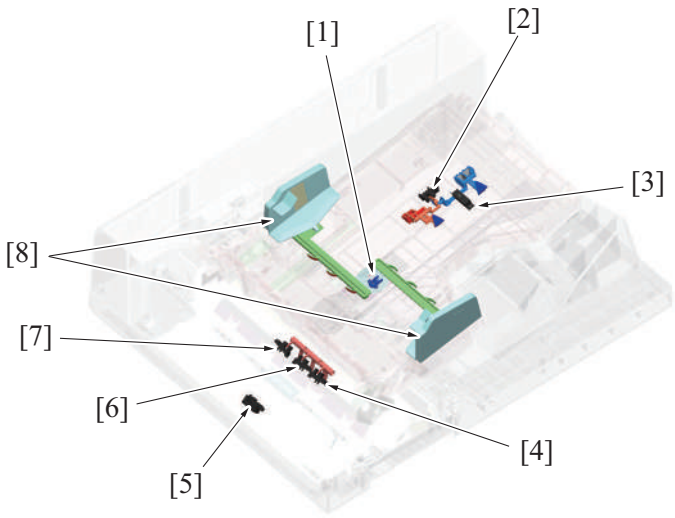
2.3.2 Document set/empty detection

- When an original is loaded on the document feed tray, the document empty sensor detects that the presence of the original.
- When all pages of the original are fed in, the document empty sensor detects that there are no more originals on the document feed tray.

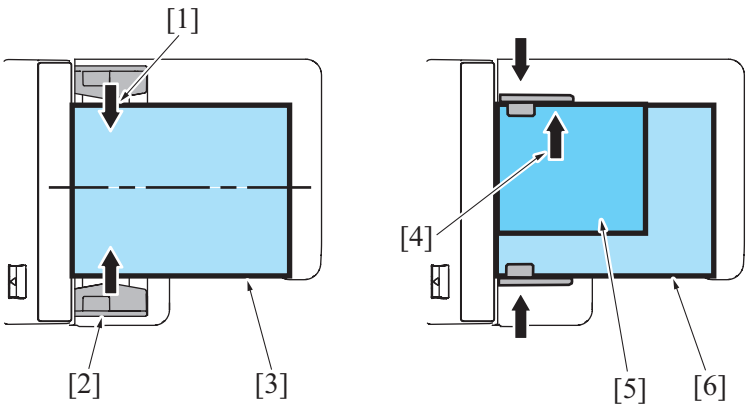


[1]	Original	[2]	Document empty sensor (PS1)

2.3.3 Document size detection mechanism



[1]	Document width size sensor (VR1)	[2]	Document length size sensor/1 (PS10)
[3]	Document length size sensor/2 (PS11)	[4]	Mixed original sensor/3 (PS15)
[5]	Document reading sensor (PS6)	[6]	Mixed original sensor/2 (PS14)
[7]	Mixed original sensor/1 (PS13)	[8]	Document width guide



[1]	Adjust the document width guide plates (center alignment)	[2]	Document width guide plates
[3]	Original (standard mode)	[4]	Align the original with narrow width with the rear side of the document width guide plates (rear alignment)
[5]	Original with narrow width (mixed original mode)	[6]	Original with wide width (mixed original mode)

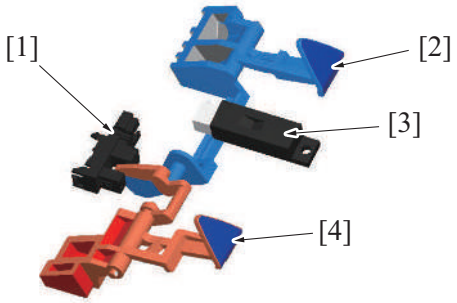
(1) Standard mode

(a) Detecting the width of the original

- The width of the original is set on the document feed tray will be detected by the document width sensor.
- A variable resistor is incorporated in the document width sensor. Its resistance value varies in association with the movement of the document width guide.
- The original is to be loaded in the document feed tray by aligning it with reference to the center of the document feed tray in the standard mode. In the mixed original mode, the original is aligned to the rear side.

(b) Detecting the length of the original

- The length of the original is set on the document feed tray will be detected by the document length sensors/1 and /2.
- The document length sensor/1 is a transmission type, while document length sensor/2 is a reflection type. Document length size sensor/1 is detected by two actuators, those are actuator 1 and actuator 2.
- When the document feed tray is not loaded with any originals, document length sensor/1 is blocked. When an original is loaded and only actuator 1 is pressed, the document length size sensor/1 is unblocked. When both actuator 1 and actuator 2 are pressed, a blocked document length sensor/1 is detected by actuator 2.



[1]	Document length size sensor/1 (PS10)	[2]	Actuator 2
[3]	Document length size sensor/2 (PS11)	[4]	Actuator 1

(c) Document feed tray size detection

- The original size is determined by the combination of the results of detection made of the width and length of the original.

<For Japan>

Sensor		Original size			
Document length size sensor/2 (PS11)		OFF	OFF	Reflector	Reflector
Document length size sensor/1 (PS10)		Blocked	Unblocked	Unblocked	Blocked
Document width size sensor (VR1)	114.5 mm (4 1/2 inches)	Postcard	B5S	A4S	A3
	136 mm (5 3/8 inches)	B6S	B5S	A4S	A3
	163 mm (6 7/16 inches)	A5S	B5S	A4S	A3
	190.6 mm (7 1/2 inches)	B5S	B5S	A4S	A3
	236.5 mm (9 5/16 inches)	A5	8 1/2 x 11 S	A4S	Foolscap
	266.2 mm (10 1/2 inches)	B5	B4	B4	B4
	286.2 mm (11 1/4 inches)	8 1/2 x 11	11 x 17	11 x 17	11 x 17
	(307 mm)	A4	A3	A3	A3

<For North America>

Sensor		Original size			
Document length size sensor/2 (PS11)		OFF	OFF	Reflector	Reflector
Document length size sensor/1 (PS10)		Blocked	Unblocked	Unblocked	Blocked
Document width size sensor (VR1)	158.7 mm (6 1/4 inches)	5 1/2 x 8 1/2S	8 1/2 x 11 S	8 1/2 x 14	11 x 17
	194 mm (7 5/8 inches)	B5S	B5S	8 1/2 x 14	11 x 17
	236.5 mm (9 5/16 inches)	5 1/2 x 8 1/2	8 1/2 x 11 S	A4S	8 1/2 x 14
	266.2 mm (10 1/2 inches)	B5	B4	B4	B4
	286.2 mm (11 1/4 inches)	8 1/2 x 11	11 x 17	11 x 17	11 x 17
	(307 mm)	A4	A3	A3	A3

<For Europe>

Sensor		Original size			
Document length size sensor/2 (PS11)		OFF	OFF	Reflector	Reflector
Document length size sensor/1 (PS10)		Blocked	Unblocked	Unblocked	Blocked
Document width size sensor (VR1)	114.5 mm (4 1/2 inches)	A6S	B5S	A4S	A3
	136 mm (5 3/8 inches)	B6S	B5S	A4S	A3
	163 mm (6 7/16 inches)	A5S	B5S	A4S	A3
	190.6 mm (7 1/2 inches)	B5S	B5S	A4S	A3
	236.5 mm (9 5/16 inches)	A5	8 1/2 x 11 S	A4S	Foolscap

Sensor		Original size			
	266.2 mm (10 1/2 inches)	B5	B4	B4	B4
	286.2 mm (11 1/4 inches)	$8^1/_2$ x 11	11 x 17	11 x 17	11 x 17
	(307 mm)	A4	A3	A3	A3

(2) Mixed original detection/AMS mode

(a) Detecting the width of the original

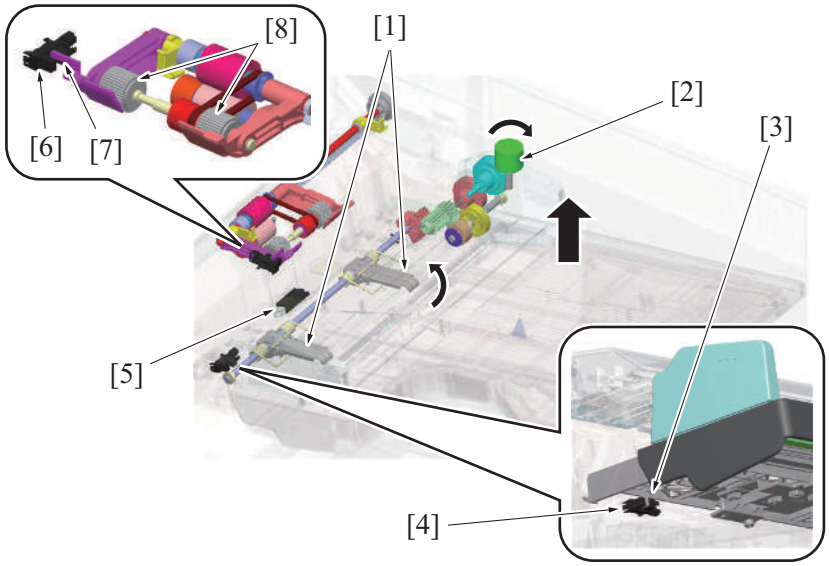
- In the mixed original/AMS mode, no width is determined on the document feed tray; rather, the width is detected while the originals are being fed. Three mixed original sensors are disposed at positions immediately after the document feed section, functioning to detect the width of the original.

(b) Detecting the length of the original

- In the mixed original/AMS mode, no length is determined on the document feed tray; rather, the length of the original is calculated and determined based on the period of time during which the document reading sensor remains activated.

2.3.4 Up/down control for the document feed tray

- The document feed tray rises to feed originals.
- The DF lift-up motor performs up/down control of the document feed tray.
- The document feed tray is lowered due to completion of a job, paper jam, or paper misloading.



[1]	Lift-up lever	[2]	DF lift-up motor (M5)
[3]	Lower limit detection actuator	[4]	DF lift-up lower limit sensor (PS3)
[5]	Document empty sensor (PS1)	[6]	DF lift-up upper limit sensor (PS2)
[7]	Upper limit detection actuator	[8]	Document pick-up roller

(1) Preliminary up operation

- The document feed tray stops in the lower limit position during standby.
- When a job starts with the document feed tray at the lower limit position, the tray will take longer to rise until paper is fed.
- To shorten the time from the job start to end, raise the document feed tray to the standby position in advance.
- The document feed tray standby position can be adjusted through [Administrator] -> [System Settings] -> [ADF Settings]. If OFF is selected, do not raise the tray but stand by at the lower limit position.

(2) Up operation

- The document feed tray stops in the lower limit position during standby.
- When an original is loaded into the tray, the document empty sensor detects the original. The DF lift-up motor turns ON when the control panel is touched.
- The drive of the DF lift-up motor moves the lift-up lever and raise the document feed tray to the standby position.
- The DF lift-up motor is driven to lift the document feed tray to the document feed position when the Start key is pressed.
- The top surface of the original pushes up the document pick-up roller. The lift operation stops at the timing when the DF lift-up upper limit sensor is unblocked.
- The number of originals decrease as each original is fed. The lift operation is performed again once the DF lift-up upper limit sensor is blocked to maintain an optimal paper feed position.

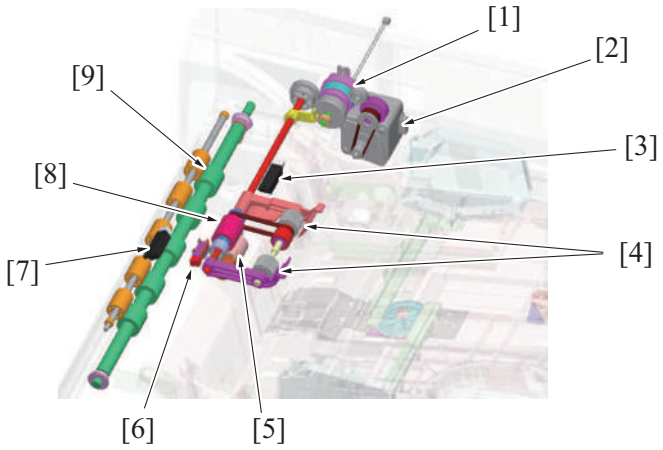
(3) Down operation

- When all pages of an original has been fed and the document empty sensor detects the empty state, the DF lift-up motor operates in reverse.
- The drive of the DF lift-up motor moves the lift-up lever and lower the document feed tray.
- The operation to lower the document feed tray stops when the DF lift-up lower limit sensor is blocked.

- The document feed tray is lowered in an original empty state when a job is completed or originals are removed.
- The document feed tray is lowered due to a paper jam, paper misloading, or a state that the DF is raised.

2.3.5 Document feed control

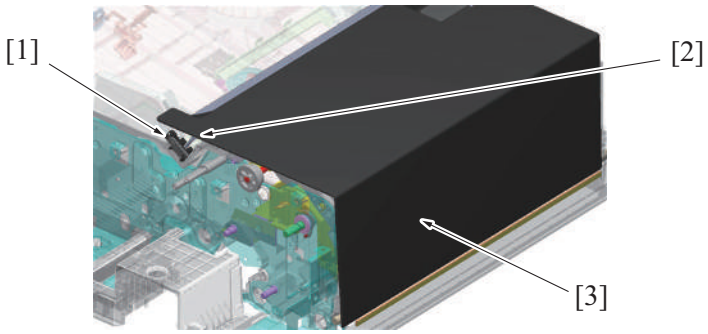
- The document feed motor drives the document feeding.
- The drive from the document feed motor is transmitted to the document pick-up roller and document feed roller when the document feed clutch is energized. The original is picked up and fed in by the rotation of the rollers.
- The original picked up and fed in is transported onto the document registration roller.



[1]	Document feed clutch (CL1)	[2]	Document feed motor (M1)
[3]	Document feed sensor (PS21)	[4]	Document pick-up roller
[5]	Document separation roller	[6]	After separate sensor (PS4)
[7]	Document registration sensor (PS5)	[8]	Document feed roller
[9]	Document registration roller	-	-

2.3.6 Upper door open/close detection mechanism

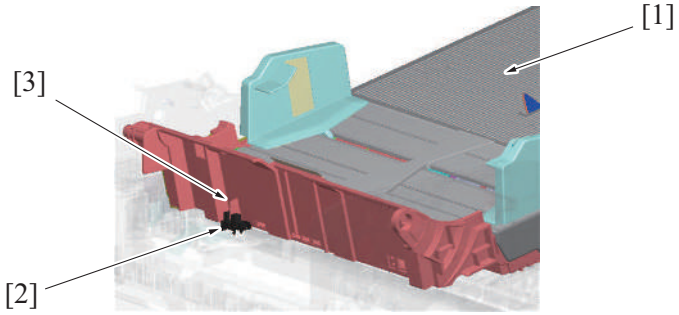
- An upper door sensor is provided to detect the state of the upper door of the document feed section.
- A rib on the upper cover blocks the upper door sensor to detect that the upper door of the document feed section is closed.



[1]	Upper door sensor (PS16)	[2]	Rib
[3]	Upper door	-	-

2.3.7 Document feed tray open and close detection mechanism

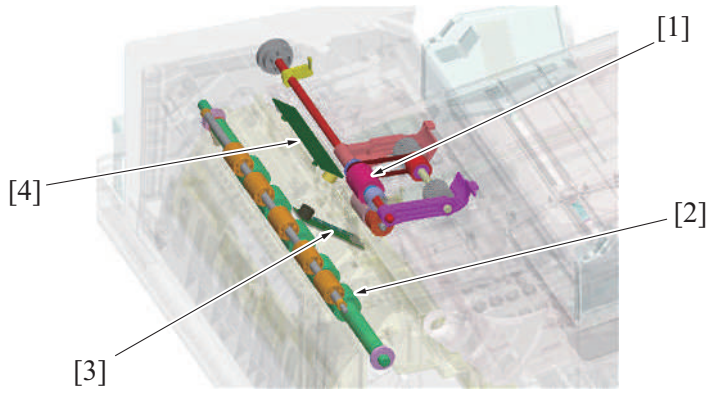
- The document feed tray sensor is provided to detect the state of the document feed tray.
- A rib at the bottom of the document feed tray blocks the document feed tray sensor to detect that the document feed tray is closed.



[1]	Document feed tray	[2]	Document feed tray sensor (PS26)
[3]	Rib	-	-

2.3.8 Double feed detection

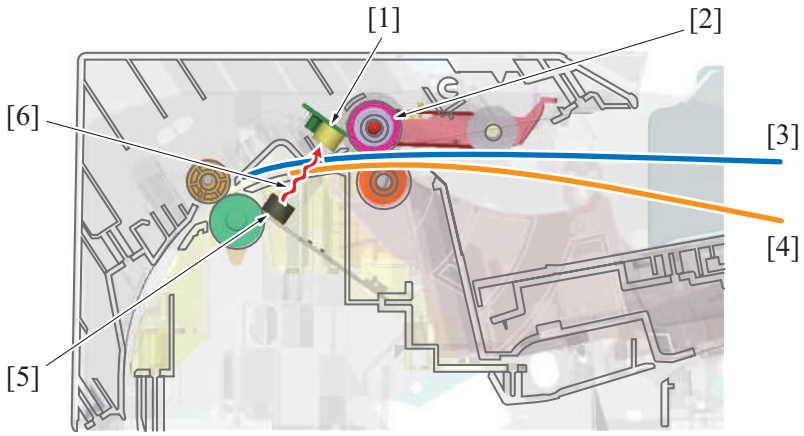
- A sensor is provided as a standard equipment which enables detecting double feed of originals.
- At double feed detection, the passing originals come in contact with ultrasonic waves. Depending on the amount of unblocked ultrasonic waves, it can be determined whether originals are double feed.
- Double feed detection uses a detection board that is configured with one pair of a receiver and a transmitter.



[1]	Document feed roller	[2]	Document registration roller
[3]	Multi feed detection board/TX (MFDB/TX)	[4]	Multi feed detection board/RX (MFDB/RX)

(1) Double feed detection control

- Originals come into contact with ultrasonic waves that are transmitted from the multi feed detection board/TX (transmitter). The ultrasonic waves are received on the multi feed detection board/RX (receiver).
- The ultrasonic waves attenuate due to the air layer between originals when originals are double feed.
- The voltage at the receiver is checked. A determination of original double feed is made if the voltage is the same as or less than a predetermined value.
- The following lists the type of originals that can be detected for double feed.
  - Originals with weight of 35 to 210 g/m^2 (9 5/16 to 55 7/8 lb). Other types of originals may not be detected properly when double feed occurs.



[1]	Multi feed detection board/RX (MFDB/RX)	[2]	Document feed roller
[3]	Scanned original	[4]	Double feed original
[5]	Multi feed detection board/TX (MFDB/TX)	[6]	Ultrasonic waves

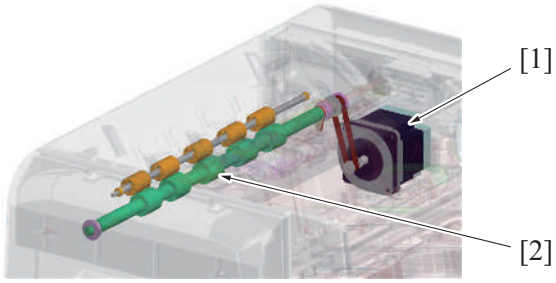
(2) Operation after double feed detection

- The following two operations are available when double feeds are detected.
  The desired operation can be selected from [Switch No. 121] in [Service Mode] -> [System 2] -> [Software Switch Setting].
  - Stop transporting the double feed originals at the time that the double feed is detected.
    The software switch settings value is "Bit assignment 00000000 / HEX assignment 00".
  - Discharge the fed originals after a double feed is detected and then stop feeding paper.
    The software switch settings value is "Bit assignment 00000010 / HEX assignment 02".

2.4 Document registration section

2.4.1 Drive

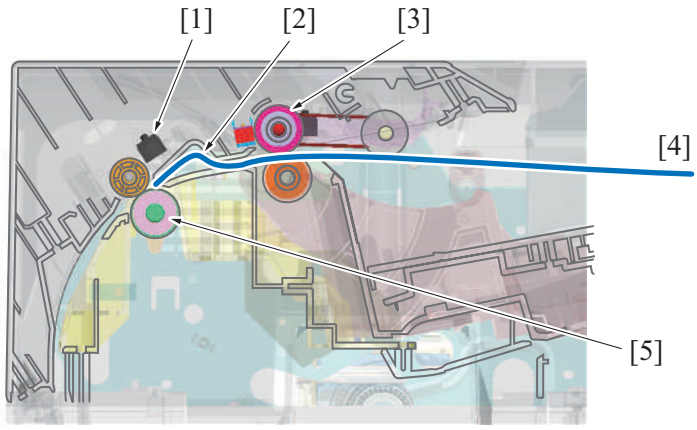
- The document registration motor drives the document registration roller.



[1]	Document registration motor (M2)	[2]	Document registration roller

2.4.2 Registration control

- During transporting an original, a loop is created on the original between the document feed roller and document registration roller to correct any original skew.
- The document registration sensor detects original, and controls the timing to de-energize the document registration motor.



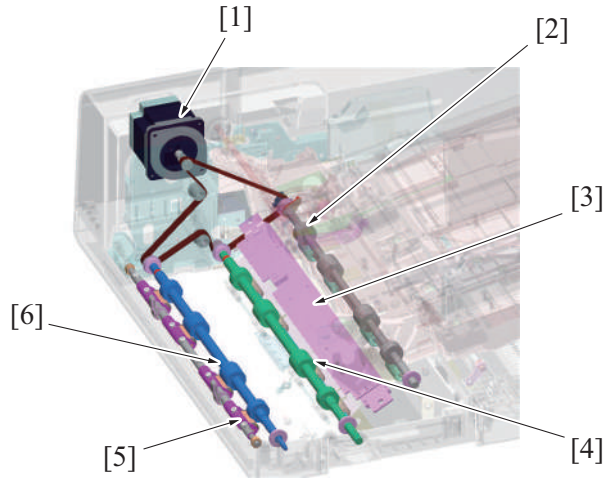
[1]	Document registration sensor (PS5)	[2]	Loop formation
[3]	Document feed roller	[4]	Original
[5]	Registration roller	-	-

2.5 Document reading section

2.5.1 Drive

Document reading drive

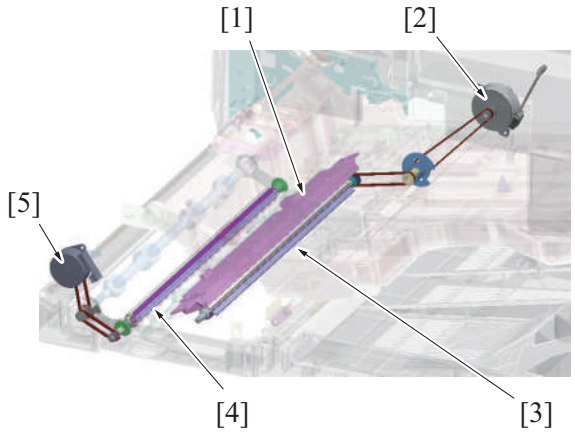
- The document reading rollers 1, 2, and 3 are driven by the document reading motor.



[1]	Document reading motor (M3)	[2]	Document reading roller 3
[3]	CIS module (CIS)	[4]	Document reading roller 2
[5]	Document reading roll	[6]	Document reading roller 1

Document reading glass / CIS glass cleaning drive

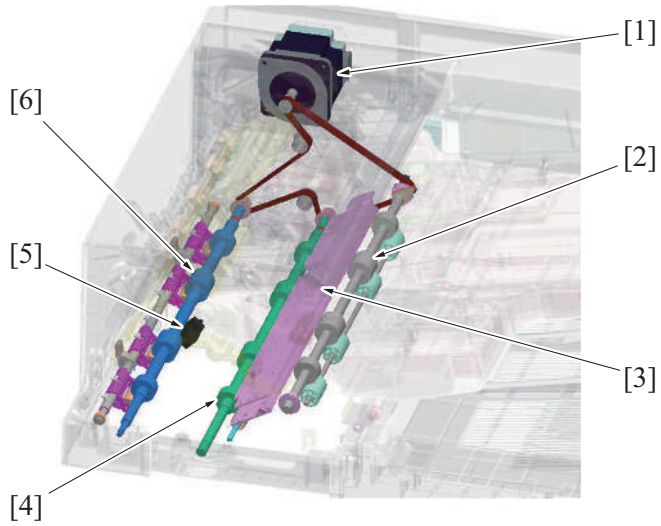
- The document reading glass cleaning brush is rotated by the document reading glass cleaning motor and the glass surface is thereby cleaned.
- The CIS cleaning brush is rotated by the CIS cleaning motor and the CIS surface is thereby cleaned.



[1]	CIS module (CIS)	[2]	CIS cleaning motor (M7)
[3]	CIS cleaning brush	[4]	Document reading glass cleaning brush
[5]	Document reading glass cleaning motor (M8)	-	-

2.5.2 Document reading transport control

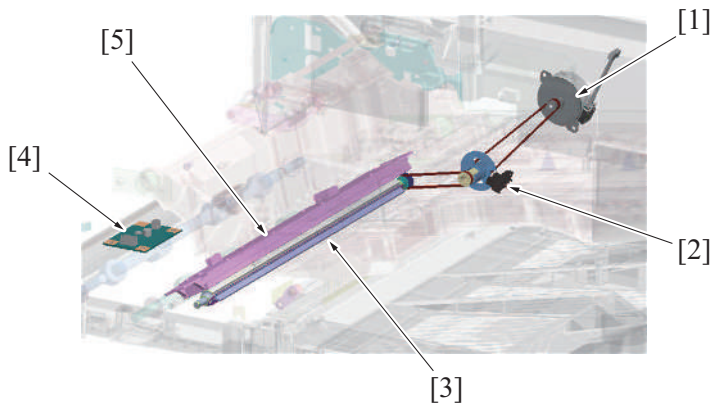
- The document reading rollers 1, 2, and 3 are driven by the document reading motor.
- When the leading edge of the original moves past the document reading roller 1, the document reading sensor (reflector type) disposed downstream of the roller detects the original. The length of the original is also detected based on the period of time during which the sensor remains activated.
- The scanner starts reading the front side of the original at a predetermined time after the document reading sensor detects the leading edge of the original.
- When the leading edge of the original moves past the document reading roller 2, reading of the back side of the original is started by the CIS module. (For double-sided originals)



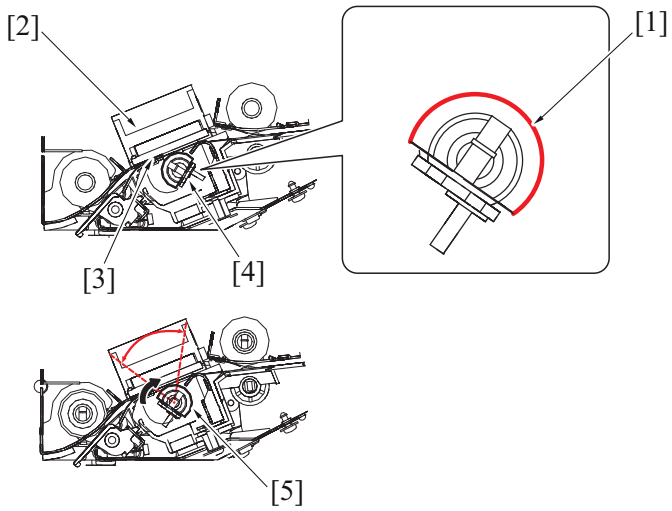
[1]	Document reading motor (M3)	[2]	Document reading roller 3
[3]	CIS module (CIS)	[4]	Document reading roller 2
[5]	Document reading sensor (PS6)	[6]	Document reading roller 1

2.5.3 CIS document reading control

- The back side of the original is read by the CIS (contact image sensor) module. The image data read by the CIS is transferred to the main body.
- The CIS document reading section consists of the CIS module, CIS power supply and CIS cleaning mechanism.
- LEDs are used as the light source of CIS module.
- A CIS cleaning brush to which a white plate is affixed is disposed on the side opposite the CIS module.



[1]	CIS cleaning motor (M7)	[2]	CIS cleaning sensor (PS9)
[3]	CIS cleaning brush	[4]	CIS power supply (CISPU)
[5]	CIS module (CIS)	-	-



[1]	White plate affixed	[2]	CIS module (CIS)
[3]	CIS glass	[4]	CIS cleaning brush (home position)
[5]	CIS cleaning brush (shading correction position)	-	-

CIS control when power turns ON or awakes from sleep mode

1. The LEDs of CIS module turn ON.
2. The CIS cleaning brush is detected at the home position.
3. The CIS cleaning brush is rotated and brought to a stop at the shading correction position.
4. Shading correction is performed twice.
5. After the adjustments, the LEDs turn OFF.
6. The CIS cleaning brush is rotated and brought to a stop at the home position.

CIS control when the original is loaded

1. The CIS cleaning brush is detected at the home position.
2. The LEDs of CIS module turn ON.
3. The CIS cleaning brush is rotated four rounds.
   - The cleaning brush cleans the CIS glass during the first turn.
   - The cleaning brush uses the shading correction surface to perform the shading correction during the second and third turn.
   - The cleaning brush uses the shading correction surface to perform “ADF Scan Glass Contamin. Sensitivity” during the fourth turn.
4. The LEDs turn OFF.
5. The CIS cleaning brush is rotated and brought to a stop at the home position.

CIS control when the Start key is pressed

- This control is performed only in the 2-sided original reading mode.

1. The CIS cleaning brush is detected at the home position.
2. The LEDs of CIS module turn ON.
3. The CIS cleaning brush is rotated three rounds.
   - The cleaning brush cleans the CIS glass during the first turn.
   - The cleaning brush uses the shading correction surface to perform the shading correction during the second and third turn.
4. With the LEDs ON, the CIS cleaning brush is brought to a stop at the home position (waiting for the original).
5. The back side of the original is read as the original moves over the CIS.
6. During printing, CIS cleaning operation is performed each time that an original is read.

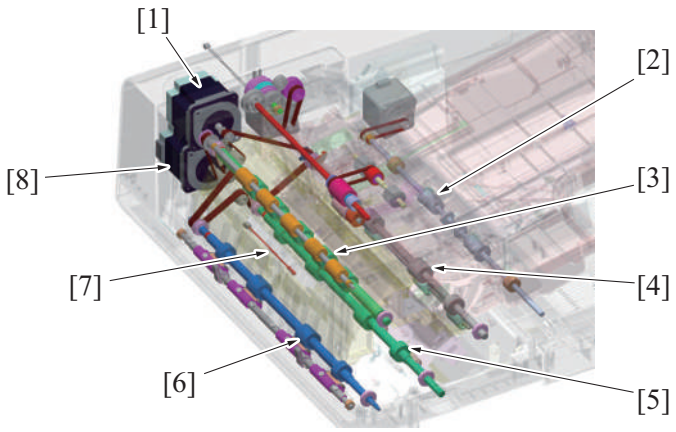
NOTE
- **If a print cycle produces a large number of printed pages continuously, either the CIS cleaning operation or the shading correction is performed.**
- **The shading correction is performed at a predetermined interval during a multiprint cycle in order to maintain an appropriate correction value.**

<Cleaning operation>
1. The cleaning brush is rotated one complete turn.
   (The cleaning brush normally makes one turn, but makes three turns in the despeckle mode.)
2. With the LEDs ON, the cleaning brush is brought to a stop at the home position (waiting for the original).

<Shading correction operation>
1. The cleaning brush is rotated three complete turns.
   - The cleaning brush cleans the CIS glass during the first turn.
   - The cleaning brush uses the shading correction surface to perform the shading correction during the second and third turn. The shading correction is performed (a total of twice).
2. With the LEDs ON, the cleaning brush is brought to a stop at the home position (waiting for the original).

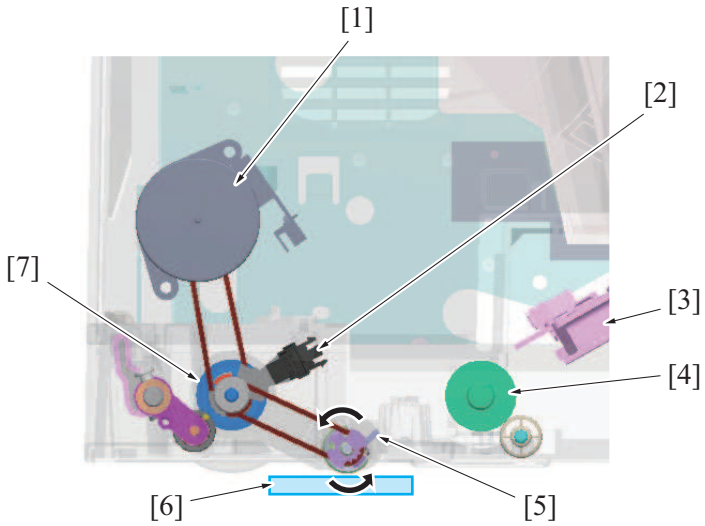
After the print cycle
1. The LED will turn OFF when the reading is complete.
2. The cleaning brush is turned backward (to tame the brush).
3. The cleaning brush is brought to a stop when the home position is detected.
4. The LEDs turn ON.
5. The cleaning brush is rotated four complete turns.
   - The cleaning brush cleans the CIS glass during the first turn.
   - The cleaning brush uses the shading correction surface to perform the shading correction during the second and third turn.
   - The cleaning brush uses the shading correction surface to perform “ADF Scan Glass Contamin. Sensitivity” during the fourth turn.
6. The cleaning brush is brought to a stop at the home position.
7. The LEDs turn OFF.

2.5.4 Reading speed correction control
- Depending on the environmental temperature, the roller diameter and the original reading speed may change.
- When the temperature is low, the roller diameter shrinks, and when the temperature is high, the roller diameter expands.
- Changes in the reading speed affect the magnification factor in the paper feeding direction.
- Depending on the temperature that the DF temperature sensor detects, the reading speed is corrected. So that the magnification factor in the paper feeding direction is controlled at a constant level.



[1]	Document reading motor (M3)	[2]	Document exit roller
[3]	Document registration roller	[4]	Document reading roller 3
[5]	Document reading roller 2	[6]	Document reading roller 1
[7]	DF temperature sensor (TH)	[8]	Document registration motor (M2)

2.5.5 Document reading glass contamination prevention control
- A reading line can occur if the document reading glass is contaminated with dust or dirt. The document reading glass cleaning mechanism prevents this fault from occurring.
- The document reading glass cleaning brush rotates to remove dust sticking to the document reading glass.
- The document reading glass cleaning brush is rotated by the document reading glass cleaning motor.
- The document reading glass cleaning sensor detects the home position of the document reading glass cleaning brush.



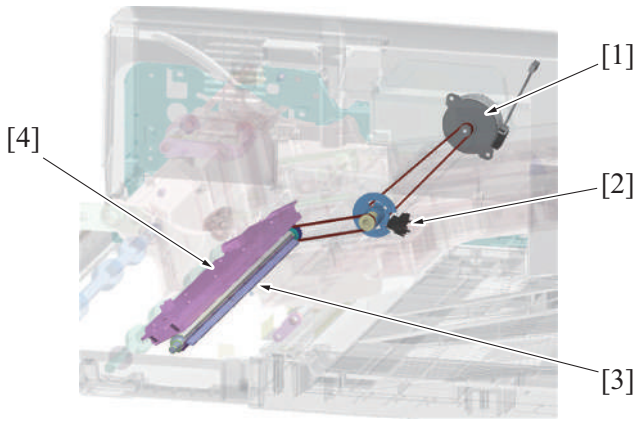
[1]	Document reading glass cleaning motor (M8)	[2]	Document reading glass cleaning sensor (PS18)
[3]	CIS module (CIS)	[4]	Document reading roller 2
[5]	Document reading glass cleaning brush	[6]	Document reading glass
[7]	Document reading roller 1	-	-

Overview of cleaning operation

Condition		Cleaning operation
Predrive operation	Power ON	Rotates the cleaning brush one complete turn to check for its correct operation.
	Awaking from sleep mode	
Start key ON	Before starting reading	Rotates the cleaning brush one complete turn to perform cleaning.
	During reading (not performed in black mode)	Rotates the cleaning brush one complete turn to perform cleaning for every two originals during continuous reading of originals.
		Rotates the cleaning brush three complete turns to perform cleaning for each original during continuous reading of originals, if the despeckle mode is selected.
	After completing reading last original	The cleaning brush tends to curl if repeatedly operated in one direction only, resulting in poor cleaning performance. To straighten the brush, it is rotated one complete turn in the backward direction when reading of the last original is completed.

2.5.6 CIS glass contamination prevention control

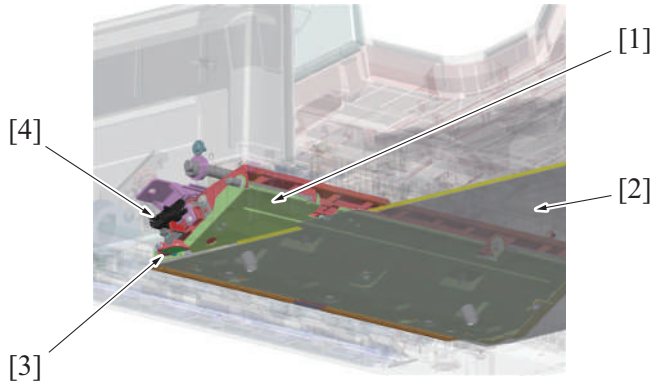
- The CIS glass is cleaned only when two sides of the original are to be read.
- When the back side cleaning motor is energized, the CIS cleaning brush is rotated to remove dust and dirt from the surface of the CIS glass.
- Cleaning of the document reading glass (front side) takes place at a different timing from that of the CIS glass (back side), so cleaning of the back side is driven differently from the front side.
- The CIS cleaning brush at its home position is detected by the CIS cleaning sensor.



[1]	CIS cleaning motor (M7)	[2]	CIS cleaning sensor (PS9)
[3]	CIS cleaning brush	[4]	CIS module (CIS)

2.5.7 Opening and closing guide set detection

- The opening and closing guide is provided to facilitate the paper jam removal procedures performed near the back side reading section.
- The CIS cover sensor detects opening/closing guide set.

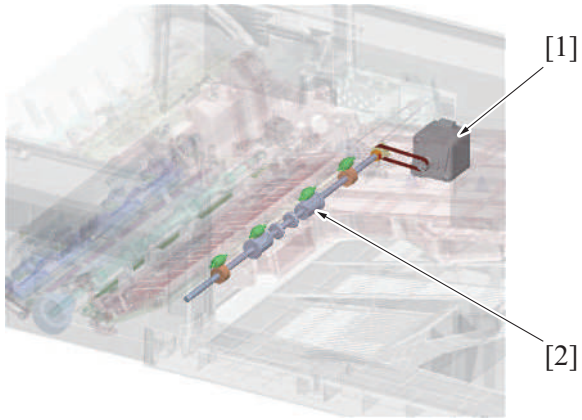


[1]	Opening and closing guide	[2]	Original cover sheet
[3]	Lever	[4]	CIS cover sensor (PS20)

2.6 Document exit section

2.6.1 Drive

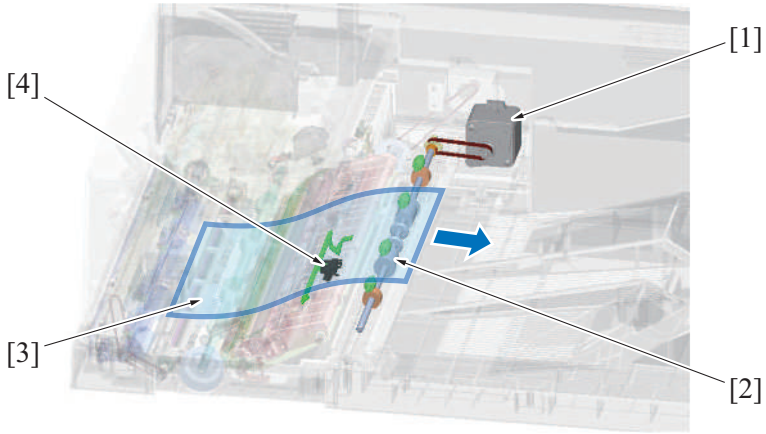
- The document exit motor drives the document exit roller.



[1]	Document exit motor (M4)	[2]	Document exit roller

2.6.2 Document exit mechanism

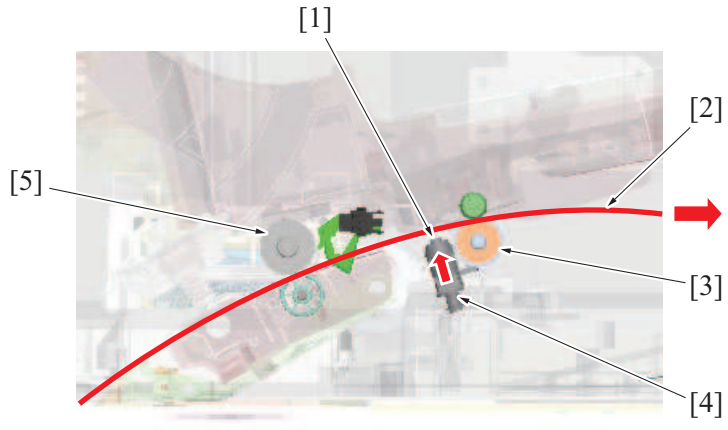
- In the document exit section, the document exit roller discharges the originals that are transported from the document reading section to the exit tray.
- The document exit motor drives the document exit roller.
- The document exit motor is stopped at a predetermined time after the trailing edge of the original deactivates the document exit sensor.



[1]	Document exit motor (M4)	[2]	Document exit roller
[3]	Original	[4]	Document exit sensor (PS7)

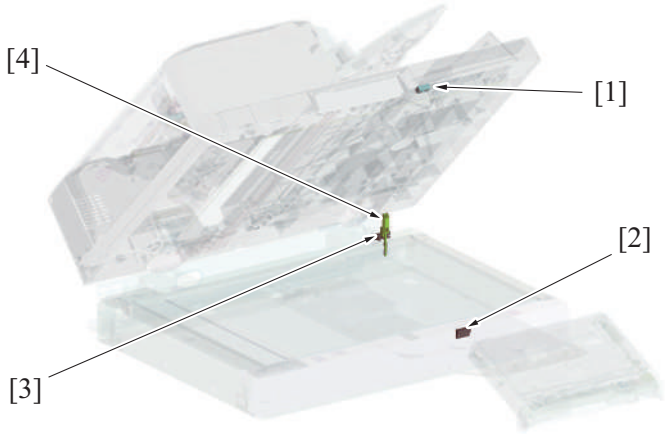
2.6.3 Faxed document stamp function (SP-501)

- Mounting optional “Stamp unit SP-501” allows a stamp to be placed on a faxed document.
- The stamp solenoid located upstream of the document exit roller is energized when the original is about to be fed out and the stamp mounted on the solenoid plunger is pressed against the surface of the original. This places a faxed mark (+) on the surface of the original.
- This function is enabled when [Service Mode] -> [System 2] -> [Stamp] -> [Set] (default setting: Unset) is configured and the user selects [Application] -> [Stamp/Composition] -> [TX Stamp] (default setting: OFF)” on the “Scan/Fax” screen.
- This function is not used for “Copy” or “Scan”.



[1]	Stamp unit (SP-501)	[2]	Original
[3]	Document exit roller	[4]	Stamp solenoid (SD1)
[5]	Document reading roller 3	-	-

2.7 DF open/close detection mechanism



[1]	Magnet	[2]	Original cover sensor (RS201) (Main body scanner section)
[3]	Angle sensor (PS202) (Main body scanner section)	[4]	Detection lever

DF open/close detection

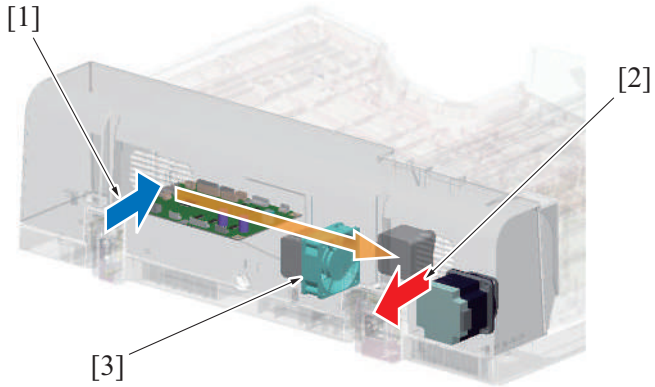
- The magnet is installed to detect the open/close status of the DF on the main body side.
- The original cover sensor on the main body will turn ON by the magnet when lowering the DF.

Original exchange detection

- An angle detection mechanism is provided to detect the operation of exchanging originals when the DF is used as the original cover of the main body.
- When the DF is raised to a predetermined angle or more, the detection lever is pushed up by a spring. The angle sensor that has been blocked by the detection lever is now unblocked. It is, as a result, detected that the DF “is raised to a predetermined angle or more”.
- When, on the other hand, the DF is lowered to a predetermined angle or less, the detection lever is pushed down. Then, the angle sensor, which has been unblocked, is blocked, so that it is detected that the DF “is lowered to a predetermined angle or less”.
- When the DF state undergoes changes from a condition of being fully lowered to a condition of “being raised to a predetermined angle or more” and then to a condition of “being lowered to a predetermined angle or less”, it is determined that “an original is placed manually on the original glass”. Then the original size detection control will be started.

2.8 Cooling inside the unit mechanism

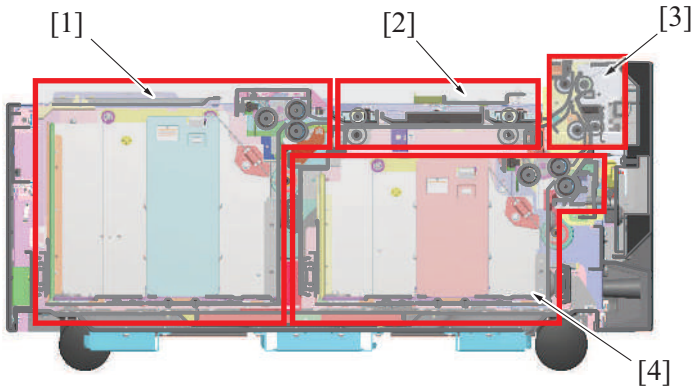
- The DF cooling fan prevents the temperature of the DF control board and drive motor inside the document feeder from rising.
- The DF cooling fan drives during reading originals and blows the external air that is drawn in from the rear side to cool the originals.



[1]	Drawing in external air	[2]	Discharging air out of the machine
[3]	DF cooling fan (FM)	-	-

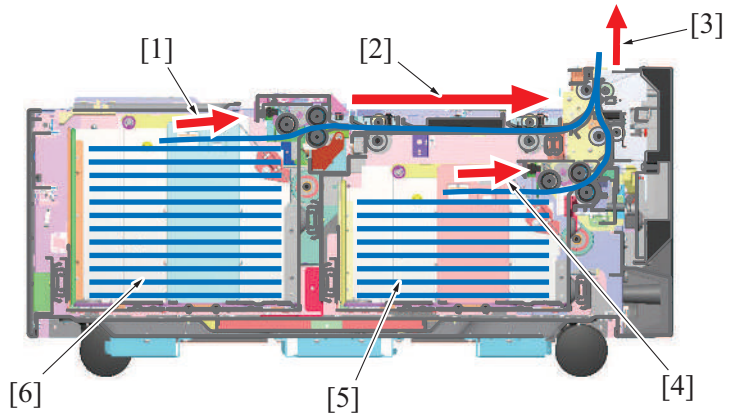
3. PC-417

3.1 Configuration



[1]	Tray 3	[2]	Horizontal transport section
[3]	Vertical transport section	[4]	Tray 4

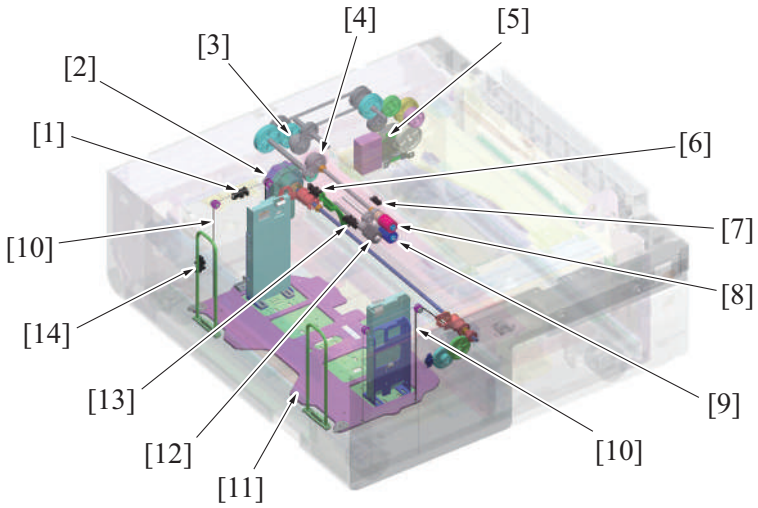
3.2 Paper path



[1]	Paper feed from tray 3	[2]	Feeding paper through the horizontal transport section
[3]	Transportation to main body	[4]	Paper feed from tray 4
[5]	Tray 4	[6]	Tray 3

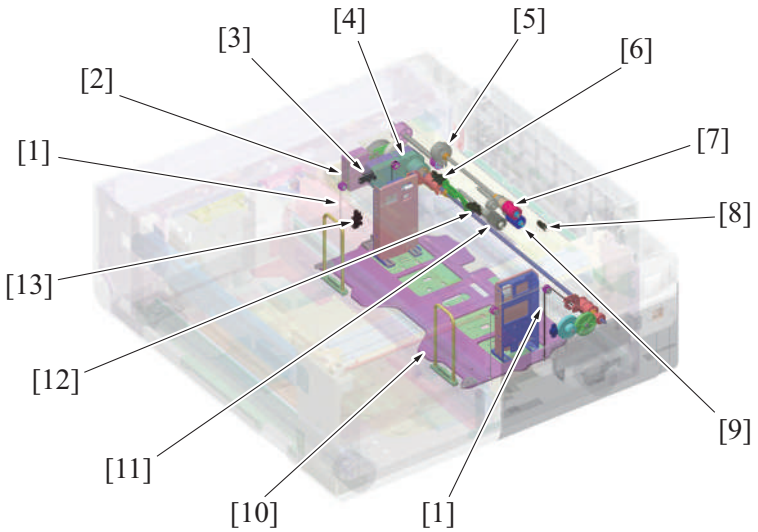
3.3 Drive

3.3.1 Tray 3



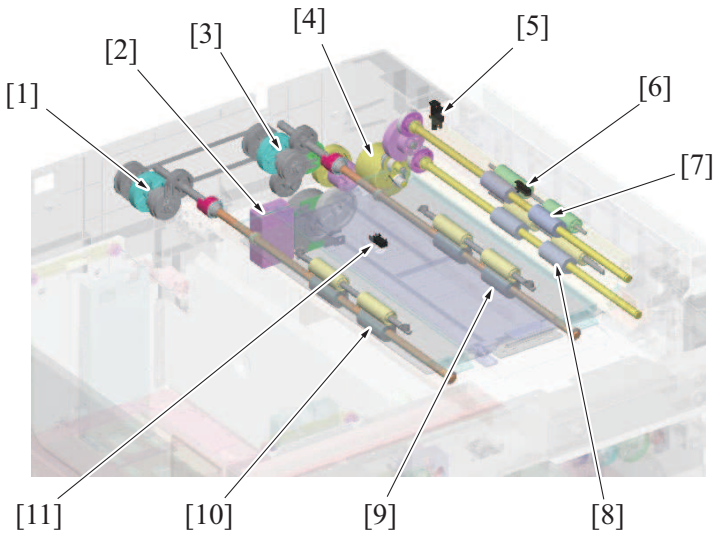
[1]	Tray 3 paper near empty sensor (PS155)	[2]	Tray 3 lift-up motor (M143)
[3]	Tray 3 transport clutch (CL152)	[4]	Tray 3 paper feed clutch (CL151)
[5]	Transport motor (M152)	[6]	Tray 3 paper empty sensor (PS154)
[7]	Tray 3 paper feed sensor (PS152)	[8]	Tray 3 feed roller
[9]	Tray 3 separation roller	[10]	Lift wire
[11]	Paper lift-up plate	[12]	Tray 3 pick-up roller
[13]	Tray 3 upper limit sensor (PS156)	[14]	Tray 3 set sensor (PS157)

3.3.2 Tray 4



[1]	Lift wire	[2]	Transport motor (M152)
[3]	Tray 4 paper near empty sensor (PS165)	[4]	Tray 4 lift-up motor (M144)
[5]	Tray 4 paper feed clutch (CL161)	[6]	Tray 4 paper empty sensor (PS164)
[7]	Tray 4 feed roller	[8]	Tray 4 paper feed sensor (PS162)
[9]	Tray 4 separation roller	[10]	Paper lift-up plate
[11]	Tray 4 pick-up roller	[12]	Tray 4 upper limit sensor (PS166)
[13]	Tray 4 set sensor (PS167)	-	-

3.3.3 Horizontal transport/Vertical transport



[1]	Tray 3 transport clutch (CL152)	[2]	Transport motor (M152)
[3]	Horizontal transport clutch (CL153)	[4]	Intermediate motor (M151)
[5]	Right bottom door sensor (PS151)	[6]	Vertical transport sensor (PS153)
[7]	Vertical transport roller	[8]	Tray 4 vertical transport roller

[9]	Horizontal transport roller 2	[10]	Horizontal transport roller 1
[11]	Horizontal transport sensor (PS158)	-	-

3.4 Up down control

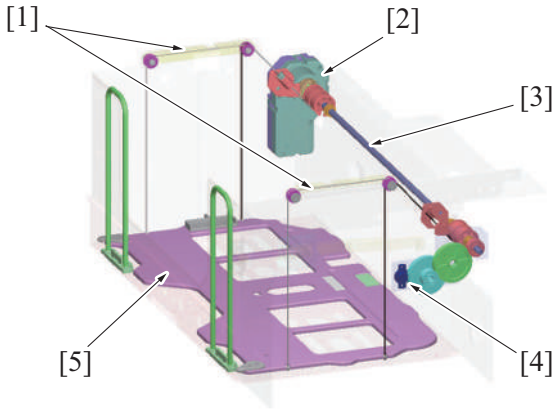
- Tray 3 and tray 4 are controlled in the same control procedure.

3.4.1 Up operation

- A lift wire is connected to the paper lift-up plate and the paper lift-up plate is held in the horizontal position.
- When the tray 3 or tray 4 lift-up motor is energized, the take-up axis takes up the wire to thereby raise the paper lift-up plate.

3.4.2 Down operation

- When the paper feed tray is slid out of the machine, the coupling and the lift-up plate drive shaft of the tray 3 or tray 4 lift-up motor are disconnected from each other.
- When the driving force of the tray 3 or tray 4 lift-up motor is released from the take-up axis, the paper lift-up plate starts lowering by its own weight.
- At this time, an effect of the damper connected to the gear prevents the main tray from lowering swiftly and ensures a slow descent motion.

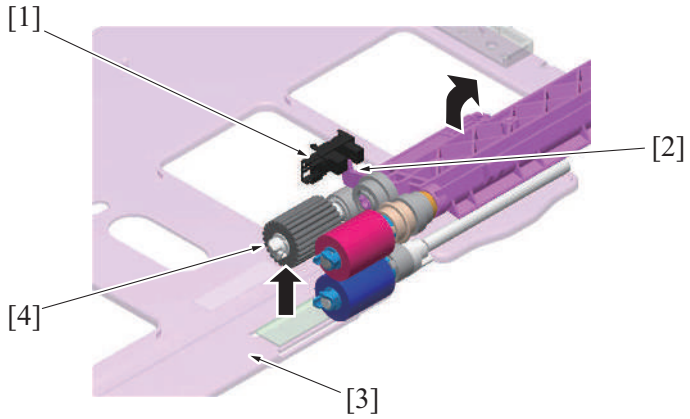


[1]	Lift wire	[2]	Tray 3 lift-up motor (M143) Tray 4 lift-up motor (M144)
[3]	Lift-up plate drive shaft	[4]	Damper
[5]	Paper lift-up plate	-	-

3.4.3 Operation timing

(1) When the tray is slid in

- When the tray is slid into the machine, the tray 3 or tray 4 set sensor is blocked. The machine then determines that the tray is slid into position.
- When the tray 3 or tray 4 upper limit sensor is unblocked, the machine lets the tray 3 or tray 4 lift-up motor rotate to start the up operation of the paper lift-up plate.
- Determining that the tray 3 or tray 4 upper limit sensor is blocked, the machine stops the tray 3 or tray 4 lift-up motor to complete the up operation of the paper lift-up plate.
- Control is provided to make sure that do not perform the up operation on all trays at the same time.
- If the tray is pulled out when the paper lift-up plate is being lifted and the tray 3 or tray 4 set sensor is unblocked, the machine determines that the tray has been pulled out. Thus, the up operation of the paper lift-up plate is terminated.



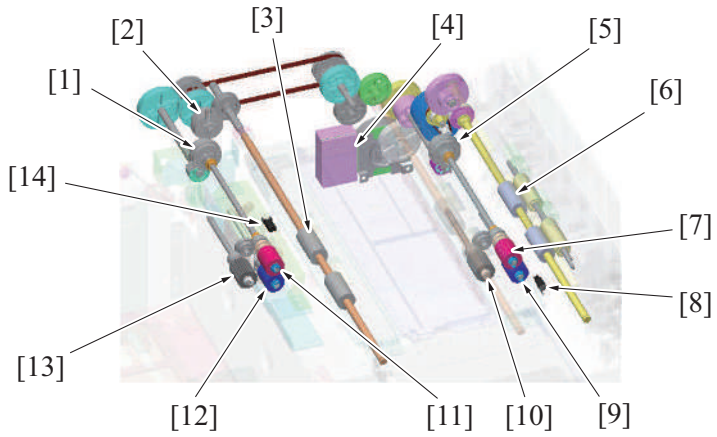
[1]	Tray 3 upper limit sensor (PS156) Tray 4 upper limit sensor (PS166)	[2]	Light blocking plate of upper limit sensor
[3]	Paper lift-up plate	[4]	Pick-up roller

(2) During a print cycle

- When the amount of paper decreases as the unit keeps printing, the pick-up roller will gradually come down to unblock the tray 3/4 upper limit sensor.
- When the tray 3/4 upper limit sensor is unblocked, the tray 3/4 lift-up motor will rotate again to lift up the paper lift-up plate.
- When the tray 3/4 upper limit sensor is blocked, the tray 3/4 lift-up motor will stop to stop lift-up the paper lift-up plate.
- The sequence of these operations is repeated to keep constant the pressure between the pick-up roller and paper stack (paper take up pressure) regardless of the amount of paper still available for use.

3.5 Paper feed control

- The pick-up roller and feed roller rotate to feed the paper in the tray into the machine.
- The pick-up roller takes up sheets of paper and the feed roller and separation roller ensure that only one sheet of paper is separated and fed into the main body.
- The transport motor and paper feed clutch control the tray paper feed operation.



[1]	Tray 3 paper feed clutch (CL151)	[2]	Tray 3 transport clutch (CL152)
[3]	Horizontal transport roller 1	[4]	Transport motor (M152)
[5]	Tray 4 paper feed clutch (CL161)	[6]	Tray 4 vertical transport roller
[7]	Tray 4 feed roller	[8]	Tray 4 paper feed sensor (PS162)
[9]	Tray 4 separation roller	[10]	Tray 4 pick-up roller
[11]	Tray 3 feed roller	[12]	Tray 3 separation roller
[13]	Tray 3 pick-up roller	[14]	Tray 3 paper feed sensor (PS152)

3.5.1 Pick-up control

Tray 3

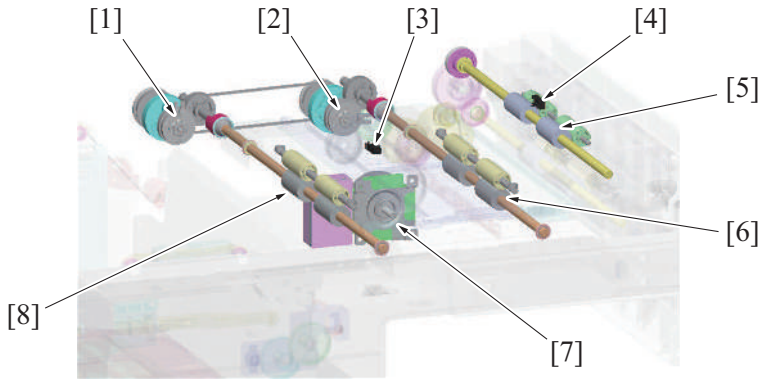
- The transfer motor starts rotating in response to the print start signal.
- The tray 3 paper feed clutch is energized after the lapse of a predetermined period of time after the print start signal.
- The driving force of the transport motor is transmitted to the pick-up roller and paper feed roller when the tray 3/4 paper feed clutch is energized. These rollers rotate to pick up and feed a sheet of paper into the machine.
- The feed roller transports the paper onto the horizontal transport roller 1.
- The tray 3 transport clutch is energized after the lapse of a predetermined period of time after the print start signal.
- The driving force of the transport motor transfers to the horizontal transport roller 1 when the tray 3 transport clutch is energized. The roller rotates to transport the paper onto the horizontal transport roller 2.
- The tray 3 paper feed clutch and tray 3 transport clutch is deenergized after the lapse of a predetermined period of time after the tray 3 paper feed sensor detects the leading edge of the paper.
- The pick-up roller, the feed roller, and the horizontal transport roller 1 are driven by the moving paper, continuing to rotate.
- The pick-up roller and feed roller stop rotating after the paper moves past them.

Tray 4

- The transfer motor starts rotating in response to the print start signal.
- The tray 4 paper feed clutch is energized after the lapse of a predetermined period of time after the print start signal.
- The driving force of the transport motor transfers to the pick-up roller and the feed roller when the tray 4 paper feed clutch is energized. These rollers rotate to pick up the paper and transport the paper onto the feed roller.
- The feed roller transports the paper onto the tray 4 vertical transport roller.
- The tray 4 paper feed clutch is deenergized after the lapse of a predetermined period of time after the tray 4 paper feed sensor detects the leading edge of the paper.
- The pick-up roller and feed roller follow the movement of the paper, continuing rotating.
- The pick-up roller and feed roller stop rotating after the paper moves past them.

3.6 Horizontal transport control

- Paper that is fed from the tray 3 is transported to the machine by the horizontal transport section.
- The transfer motor and the horizontal transport clutch control the horizontal transport operation.



[1]	Tray 3 transport clutch (CL152)	[2]	Horizontal transport clutch (CL153)
[3]	Horizontal transport sensor (PS158)	[4]	Vertical transport sensor (PS153)
[5]	Vertical transport roller	[6]	Horizontal transport roller 2
[7]	Transport motor (M152)	[8]	Horizontal transport roller 1

Horizontal transport operation

- The transport motor is energized after the lapse of a predetermined period of time after the print start signal.
- The horizontal transport clutch is energized after the lapse of a predetermined period of time after the transport motor starts rotating.
- The driving force of the transport motor transfers to the horizontal transport roller 1 and horizontal transport roller 2 when the horizontal transport clutch is energized. These rollers rotate to transport the paper onto the vertical transport roller.
- The horizontal transport sensor on the paper path detects the leading edge of the paper that is fed from the horizontal transport roller 1.
- The vertical transport sensor on the paper path detects the leading edge of the paper that is fed from the horizontal transport roller 2.
- The vertical transport sensor detects the leading edge of the paper. After the lapse of a predetermined period of time the horizontal transport clutch is deenergized.
- If the horizontal transport sensor does not detect the leading edge of the paper even after the lapse of a predetermined period of time, the machine determines that a paper jam occurs at the horizontal transport section.
- If the vertical transport sensor does not detect the leading edge of the paper even after the lapse of a predetermined period of time, the machine determines that a paper jam occurs at the tray 3 or tray 4 intermediate transport roller section.

3.7 Paper feed retry control

- If the sensor for the paper feed port does not detect any paper even after a predetermined period of time after the start of paper feeding, the machine determines that a paper misfeed occurs.
- The feed roller stops when a paper misfeed is detected. Afterwards, the paper feed operation starts again.
- If the corresponding sensor does not detect the paper after the paper feed operation starts again, the machine determines that a paper jam occurs in the paper feed section.
- The paper feed retry is performed only once.

Paper port	Paper feed retry control	Sensor name
Tray 3	Enable	Tray 3 paper feed sensor
Tray 4	Enable	Tray 4 paper feed sensor

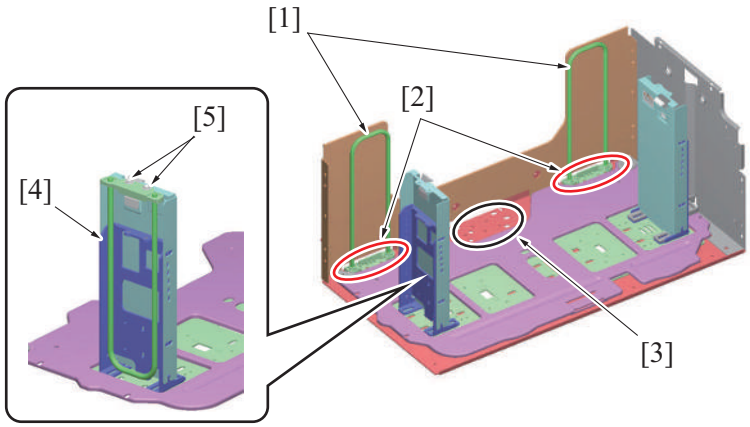
3.8 Paper feed temporary stop control

- If the preceding sheet of paper is exists, when the current one reaches the tray4 vertical transport roller, the intermediate motor is temporarily deenergized to achieve an adequate spacing between the two sheets of paper.

3.9 Paper size detection control

3.9.1 Paper guide position regulation

- The paper length guides and front and rear paper width guides regulate the position at which paper is loaded.
- The paper is loaded (center alignment), and the guides are secured with screws.
- To change the paper size, change the position of the guides in accordance with the size of the paper.
- To load A4-size paper in the tray, move the two paper length guides to the paper regulation position 1.
- To load paper smaller than A4 size in the tray, move the paper length guide to the paper regulation position 2. The unused paper length guide is retracted to the back of the paper width guide.
- To load Letter or $5^1/_2$ x $8^1/_2$ S size-paper in the tray, retract the two paper length guides to the back of the paper width guide.



[1]	Paper length guide	[2]	Paper regulation position 1
[3]	Paper regulation position 2	[4]	Paper width guide
[5]	Securing screws (2 pieces)	-	-

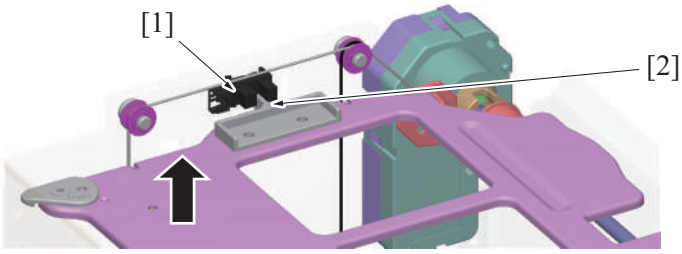
3.9.2 Paper size settings

- The tray 3/4 does not have a function to detect the paper size.
- To change the paper size, set the paper size in [Service Mode] -> [System 2]-> [LCT (Built-in) Size Setting].

3.10 Remaining paper detection control

3.10.1 Paper near-empty detection

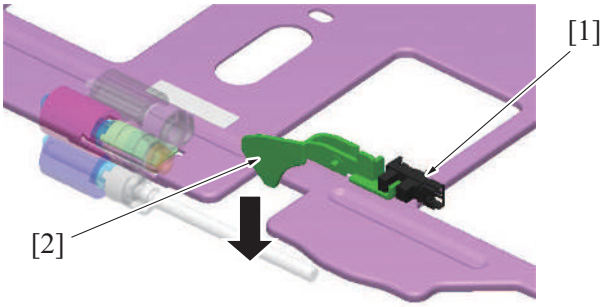
- The tray 3/4 near empty sensor detects a paper near-empty condition of the tray.
- As the amount of paper becomes small during printing, the paper lift-up plate is raised.
- As the paper push-up plate rises, the near empty detection actuator on the paper lift-up plate rises.
- When the near empty detection actuator is raised to a position at which the near empty sensor is blocked, the machine detects a near-empty condition.



[1]	Tray 3 paper near empty sensor (PS155) Tray 4 paper near empty sensor (PS165)	[2]	Actuator

3.10.2 Paper empty detection

- The tray 3/4 empty sensor detects a paper empty condition of the tray.
- The actuator goes down after all the paper in the tray is fed.
- The actuator detects an empty condition when the paper empty sensor is blocked.



[1]	Tray 3 paper empty sensor (PS154) Tray 4 paper empty sensor (PS164)	[2]	Actuator

3.10.3 Remaining paper level detection

- The amount of paper remaining is detected depending on the sensor status and tray lift-up time.
- When the paper empty sensor and the paper near empty sensor are unblocked, the amount of paper remaining is detected depending on the tray lift-up time.
- The lift-up time is measured at the time like the power turns ON, the machine awakes from the power save mode, or a tray is inserted.
- Paper near empty is detected when the amount of paper remaining is about 50 sheets (plain paper).

Tray status	Detection means		
	Paper empty sensor	Paper near empty sensor	Lift-up time
Paper empty	Blocked	Blocked	-
Paper Near Empty	Unblocked	Blocked	-
Paper present	Unblocked	Unblocked	Measurement

3.10.4 Remaining paper level display

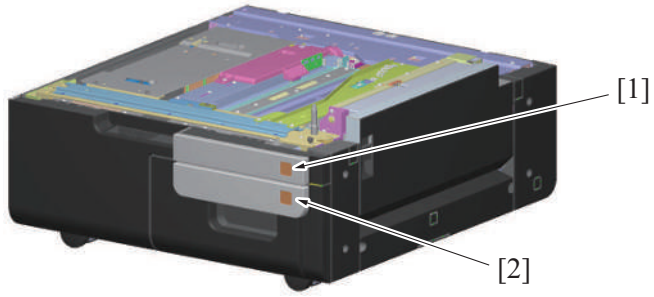
- The amount of remaining paper is indicated by the LED on the right side of each tray and by the screen of the control panel.
- The following table shows display statuses.

Tray status	Empty	Near empty	Other statuses (During lifting-up and with tray not being set included)
LED indicator	Lit	OFF (default)/Blinking (*)	Light out

- *: The near empty display may be OFF or Blink as set from [Machine State LED Setting] in [Service Mode] -> [System 1].

NOTICE

- The LED is OFF regardless of the amount of paper left in the tray in the energy save mode.



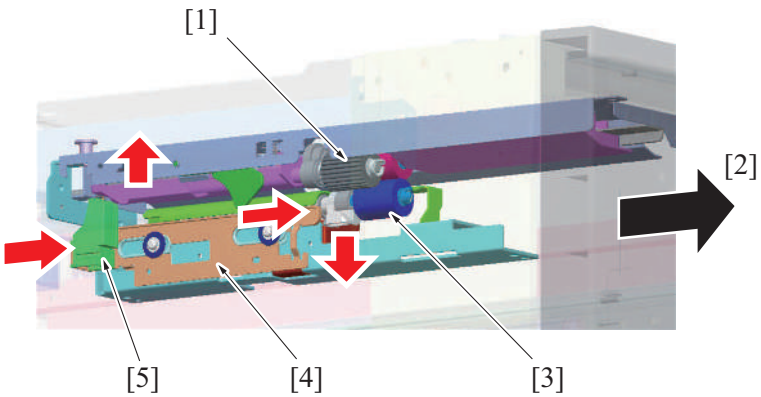
[1]	Tray 3 paper empty indicator board (PEIB/3)	[2]	Tray 4 paper empty indicator board (PEIB/4)

3.11 Roller retract mechanism

- A mechanism to retract the pick-up roller is provided, in order to avoid damaging stacked paper when the paper feed tray is inserted.
- A mechanism to pressure/release the separation roller is provided. It prevents the paper that is remained in the machine from being damaged or spilling out into the machine.

3.11.1 Tray 3

- When the tray 3 is pulled out, the retraction lever and slide plate at the back of the machine are moved to the front by a spring.
- The pick-up roller is pushed up to the retracted position by the slope on the upper surface of the retraction lever.
- When the pick-up roller is in the retract position, paper cannot be damaged as the pick-up roller does not make contact with the stacked paper.
- The slide plate pushes down the separation roller holder to separate the separation roller from the paper feed roller.
- Paper that is caught between the rollers is released through releasing separation roller and feed roller. It helps prevent paper from accumulating inside the machine.



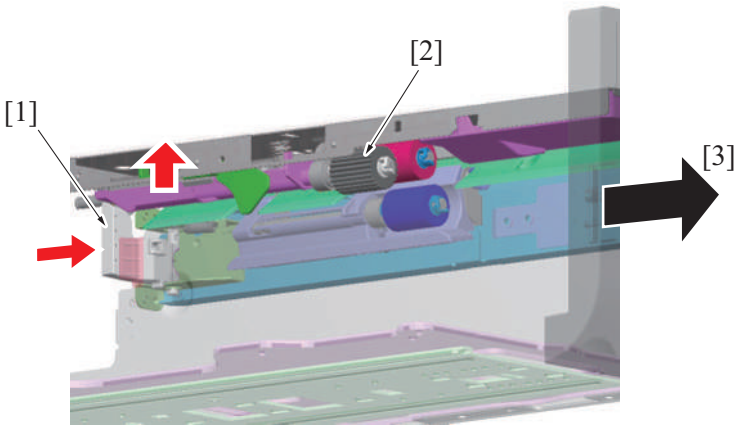
[1]	Pick-up roller	[2]	Pulling out paper tray

[3]	Separation roller	[4]	Slide plate
[5]	Retraction lever	-	-

3.11.2 Tray 4

Pick-up roller retract mechanism

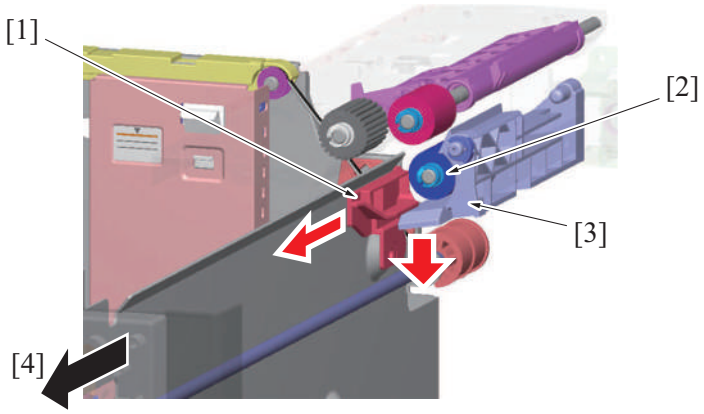
- When the paper feed tray is open, the retraction lever in the back of the machine presses the pick-up roller up to the retract position.
- When the pick-up roller is in the retract position, paper cannot be damaged as the pick-up roller does not make contact with the stacked paper.
- Closing the paper feed tray presses the retraction lever to move the pick-up roller to the a position such that it can supply paper.



[1]	Retraction lever	[2]	Pick-up roller
[3]	Pulling out paper tray	-	-

Separation roller retract mechanism

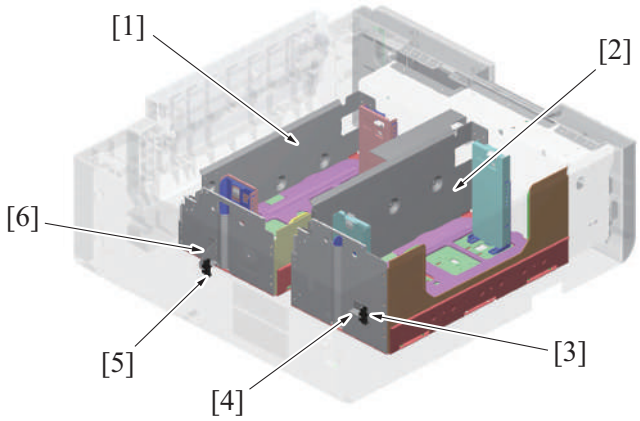
- Ribs on the paper feed tray pass over the top of the separation roller holder protrusion when the tray is opened or closed. It releases the separation roller and feed roller.
- Paper that is caught between the rollers is released through releasing separation roller and feed roller. It helps prevent paper from accumulating inside the machine.
- When the feed tray is closed completely, the tray ribs and separation roller holder protrusion do not interfere with each other. This design pressures the separation roller and feed roller to supply paper.



[1]	Rib	[2]	Separation roller
[3]	Separation roller holder	[4]	Pulling out paper tray

3.12 Tray open/close detection mechanism

- The open/close detection of the tray 3 and tray 4 is performed with the same mechanism.
- The tray set sensor is provided at the rear of the machine.
- When the tray is closed, a set detection sheet metal on the tray blocks the tray set sensor. Thus, the machine detects that the tray is closed.
- When the tray is pulled out, the tray set sensor becomes transparent and detects that the tray has been pulled out.

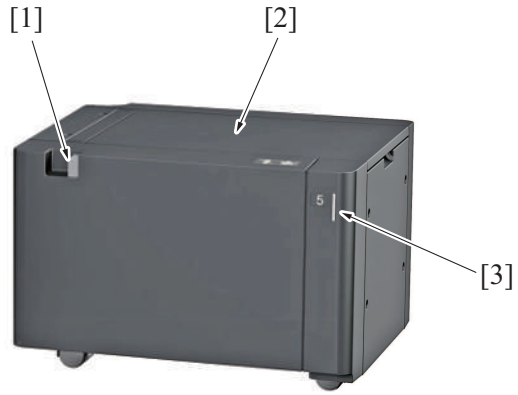


[1]	Tray 4	[2]	Tray 3
[3]	Tray 3 set sensor (PS157)	[4]	Tray 3 set detection sheet metal
[5]	Tray 4 set sensor (PS167)	[6]	Tray 4 set detection sheet metal

4. LU-205

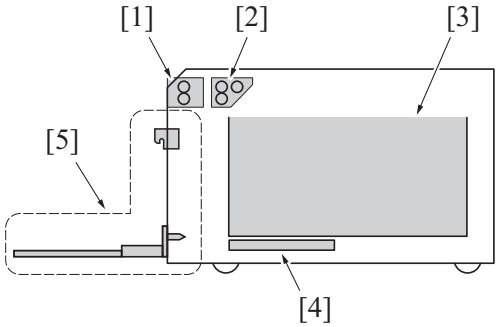
4.1 CONFIGURATION

4.1.1 Exterior view



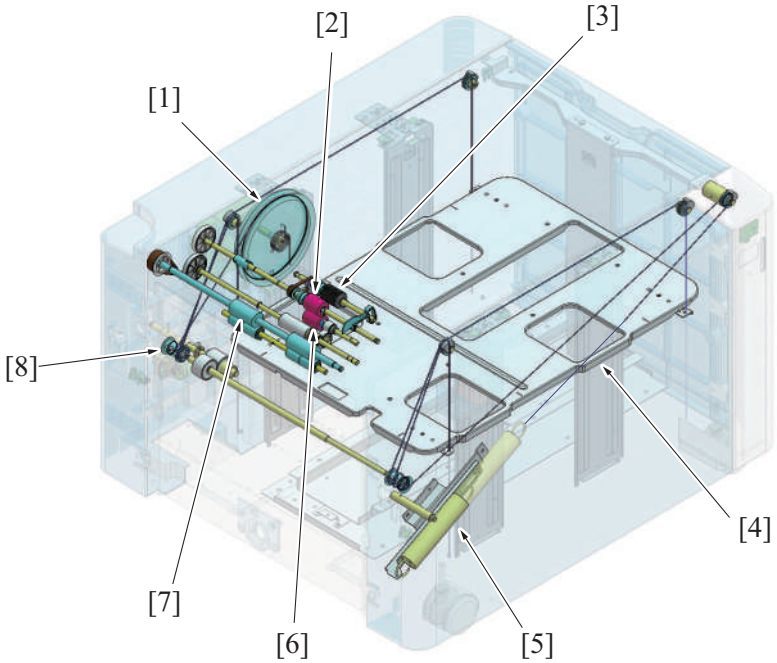
[1]	Unit release lever	[2]	LU door
[3]	Tray LED	-	-

4.1.2 SECTION CONFIGURATION



[1]	Paper transport section	[2]	Paper feed section
[3]	Paper storage section	[4]	Dehumidification heater
[5]	Unit open/close section	-	-

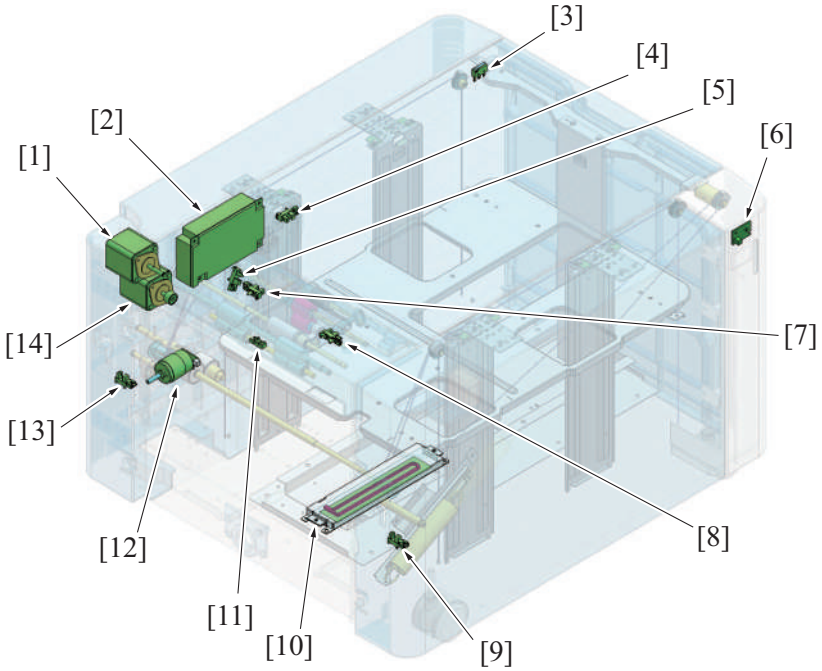
4.1.3 Main part



[1]	Remaining paper detection plate	[2]	Feed roller
[3]	Pick-up roller	[4]	Paper tray
[5]	Drive assist spring	[6]	Separation roller

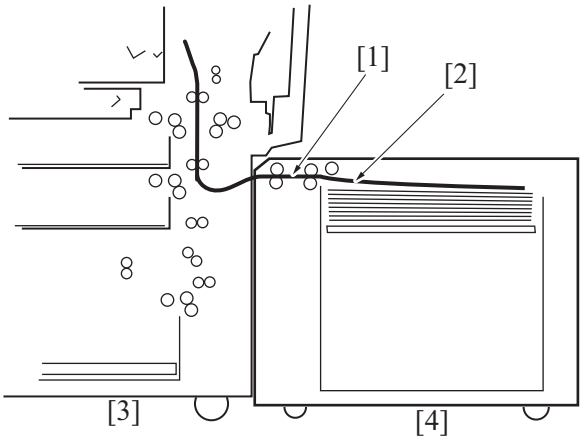
[7]	Transport roller	[8]	Lift-up axis

4.1.4 Electrical part



[1]	LU transport motor (M3)	[2]	LU drive board (LUDB)
[3]	LU door switch (MS1)	[4]	LU near empty sensor /1 (PS5)
[5]	LU near empty sensor /2 (PS6)	[6]	Tray LED (LED)
[7]	LU upper limit sensor (PS2)	[8]	LU paper empty sensor (PS4)
[9]	LU set sensor/Fr (PS7)	[10]	Dehumidification heater (DH)
[11]	LU paper feed sensor (PS3)	[12]	LU lift-up motor (M1)
[13]	LU set sensor/Rr (PS1)	[14]	LU paper feed motor (M2)

4.2 PAPER PATH

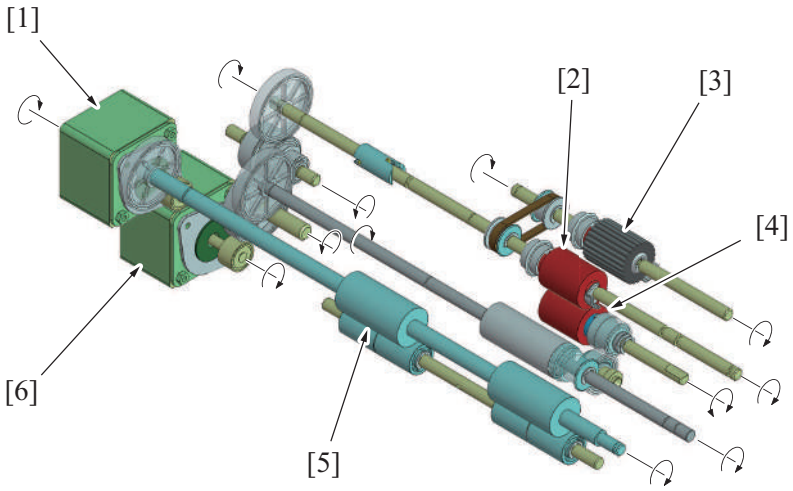


[1]	Transportation to main body	[2]	Paper feed from the tray
[3]	Main body	[4]	LU-205

4.3 DRIVE

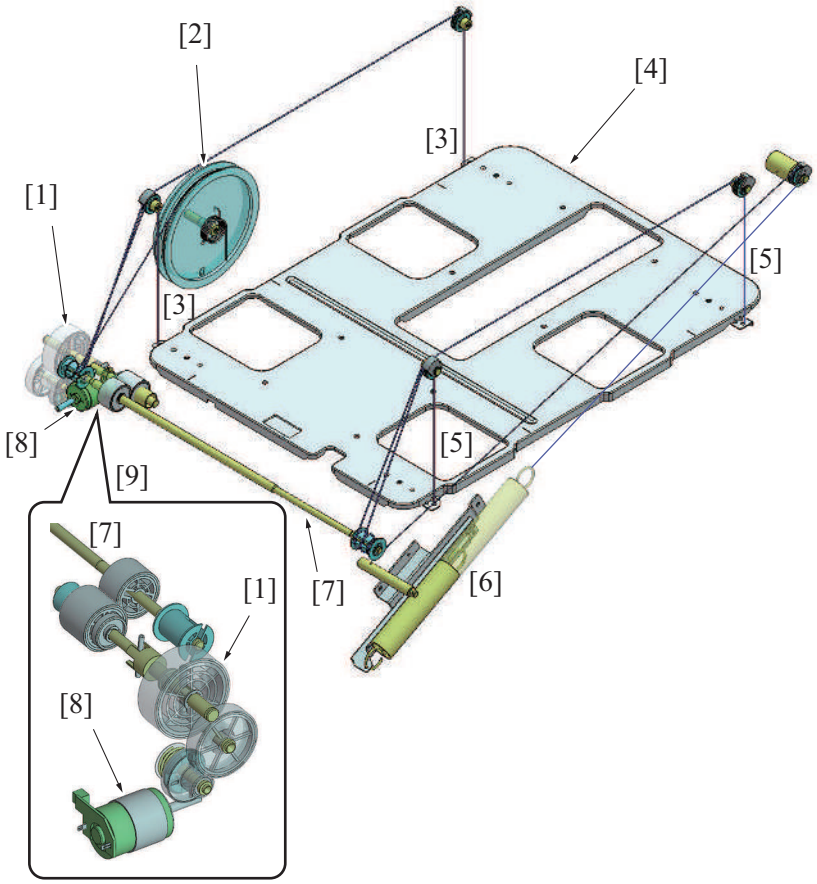
- The drive mechanism is equipped with a paper feed transport drive mechanism and a paper lift-up drive mechanism.

4.3.1 Paper feed transport drive



[1]	LU transport motor (M3)	[2]	Feed roller
[3]	Pick-up roller	[4]	Separation roller
[5]	Transport roller	[6]	LU paper feed motor (M2)

4.3.2 Paper lift-up drive

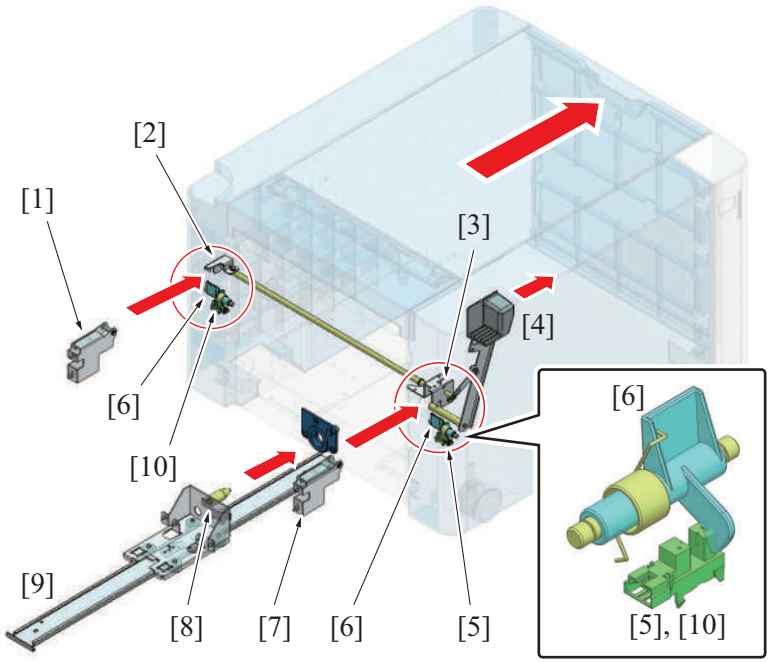


[1]	Lift-up drive section	[2]	Remaining paper detection plate
[3]	Wire (rear side)	[4]	Paper tray
[5]	Wire (front side)	[6]	Drive assist spring
[7]	Lift-up axis	[8]	LU lift-up motor (M1)
[9]	Lift-up motor around (rear view)	-	-

4.4 Unit open/close section

4.4.1 Unit lock mechanism

- The link between the large capacity unit and main body can be released.
- If the LU set sensor determines that the large capacity unit is released, printing from the large capacity unit is prohibited.



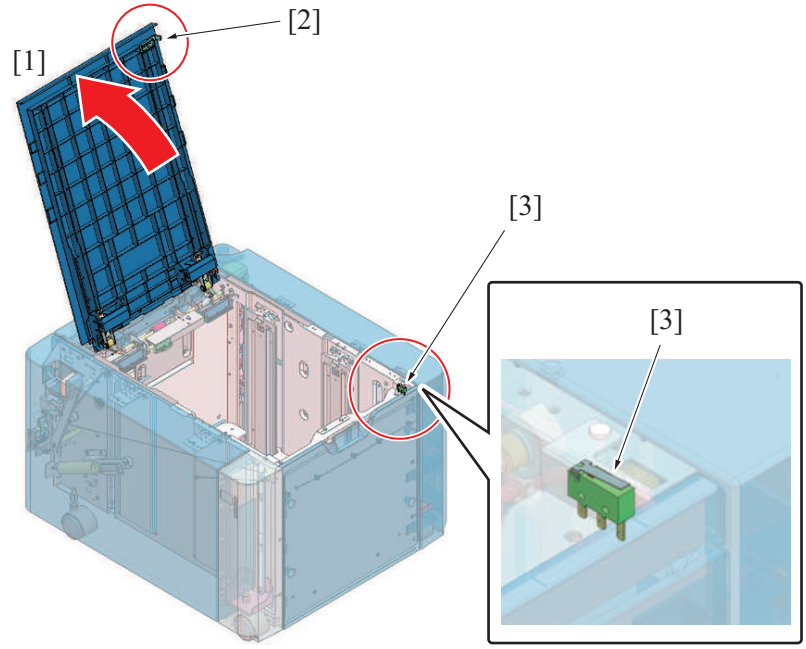
[1]	Mounting plate (rear): On the main body	[2]	Lock (rear)
[3]	Lock (front)	[4]	Unit release lever
[5]	LU set sensor/Fr (PS7)	[6]	Actuator
[7]	Mounting plate (front): On the main body	[8]	Lock pin (on the main body)
[9]	Coupling rail	[10]	LU set sensor/Rr (PS1)

(1) Description

- Operate the unit release lever in the front side of the large capacity unit, the locks (on both sides of front and back) attached to the left side of the large capacity unit will be released. It releases the link between the large capacity unit and the main body, which makes it possible to slide the large capacity unit to the right.
- The large capacity unit is connected to the main body via the coupling rail. The unit slides to the right side along the rail.
- When the large capacity unit link is released, the LU set sensor/Fr and the LU set sensor/Rr will be unblocked. As a result, the sensor determines that large capacity unit has been released.
- The LU set sensor is installed in the front and rear sides. These sensors are used to prevent the large capacity unit from being linked to the main body at an angle.
- If the LU set sensor determines that the large capacity unit is released, printing from the large capacity unit is prohibited. (printing from other paper feed ports is still possible).
- The large capacity unit is linked to the main body through sliding the unit to the left. The home position when the large capacity unit is linked is fixed with the lock pin on the main body.
- Link the large capacity unit, printing from the large capacity unit will be enabled.

4.4.2 LU door open/close detection mechanism

- The LU door is equipped with a door switch.
- Open the LU door, the paper tray lift-up drive section link will be released.



[1]	LU door	[2]	LU door open/close detection lever
[3]	LU door switch (MS1)	-	-

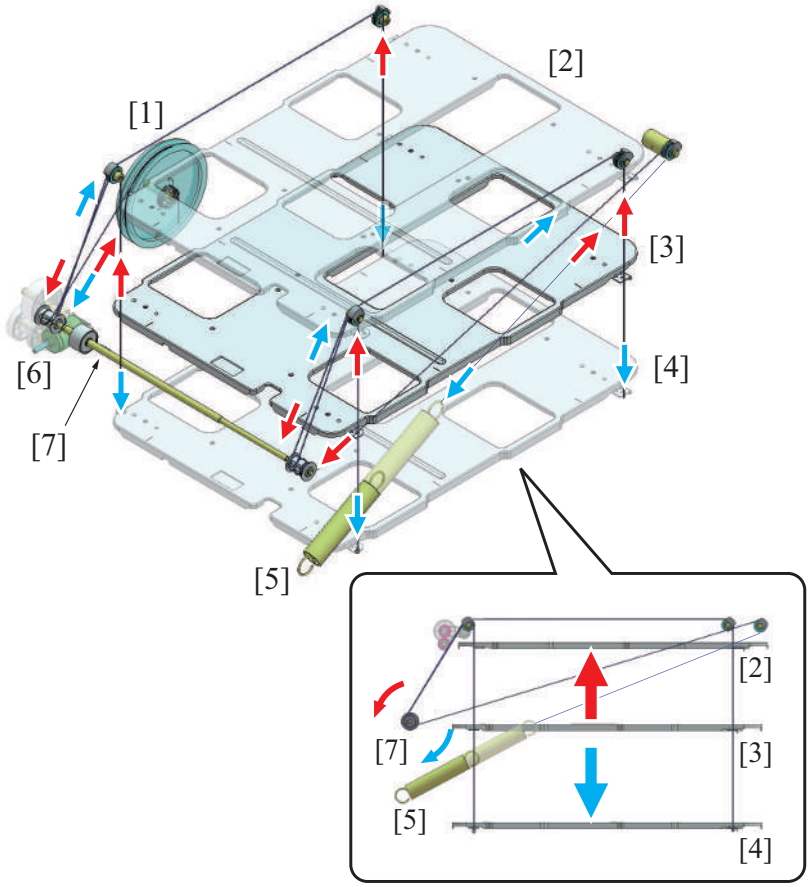
(1) Description

- An LU door switch is provided at the top-right-rear side of the large capacity unit and detects the opening and closing of the LU door.
- When the LU door is closed, the open/close detection lever on the LU door pushes down the LU door switch. (ON)
- If the LU door switch determines that the LU door is open, printing from the large capacity unit is prohibited. (printing from other paper feed ports is still possible).
- Open the LU door, the paper tray lift-up drive section link will be released. For details, see "Paper tray lift-up drive release mechanism".
- Close the LU door, the paper tray lift-up drive section will be connected and printing from the large capacity unit will be enabled.

4.5 Paper storage section

4.5.1 Paper tray lifting mechanism

- When the LU door is closed, the wire is wound around the lift-up axis, which raises the paper tray.
- Detection of the upper limit of paper stops the wire winding process to complete the paper tray lifting operation.



[1]	Remaining paper detection plate	[2]	Paper tray (upper limit position)
[3]	Paper tray (home position)	[4]	Paper tray (lower limit position)
[5]	Drive assist spring	[6]	LU lift-up motor (M1)
[7]	Lift-up axis	-	-

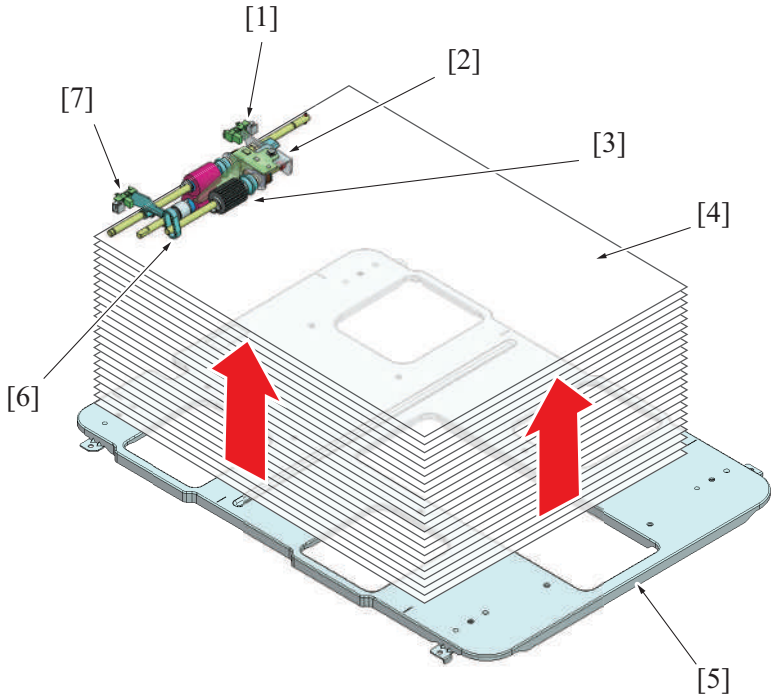
(1) Description

- Four wires are connected to the paper tray which lifts up the tray into its home position.
- Each wire is wound around the lift-up axis. Roll up a lift-up axis, the paper tray will be lifted up.
- The wire in the lift-up axis which is connected to the drive assist spring is also wound in the same direction. By the force of the drive assist spring, the unloaded paper tray (with no paper placed) is lifted up into the home position. (It does not go down to the lowest position)
- With the weight of the paper that is placed on the paper tray, the paper tray will be lowered down. The amount of lowering of the paper tray varies by paper weight. (Maximum load capacity: 3,000 sheets of plain paper)
- When the paper tray is lowered from the home position, upward force is applied to the paper tray by the drive assist spring. It decreases the load on the lift-up axis when paper is lifted up.
- This unit does not have a mechanism to detect the home position and lower limit position of the paper tray.
- Close the LU door, so that the LU lift-up motor and paper tray lifting mechanism are linked together.
- The LU lift-up motor rotates to wind the wires around the lift-up axis and lift up the paper tray. Thus, the surface of the paper is pressed against the pick-up roller.
- Open the LU door, the coupling of the LU lift-up motor and paper tray lifting mechanism will be disconnected. Thus, the paper tray will fall down with its own weight, which releases the pressure between the pick-up roller and the paper. For details on the linking/release mechanism, see "Paper tray lift-up drive release mechanism".
- The remaining paper detection plate also rotates together with the vertical movement of the paper tray. (The wire in the lift-up axis which is connected to the remaining paper detection plate is wound in the opposite direction) For details on the remaining paper detection mechanism, see "Remaining paper detection".

(2) Operation timing

(a) When paper is placed

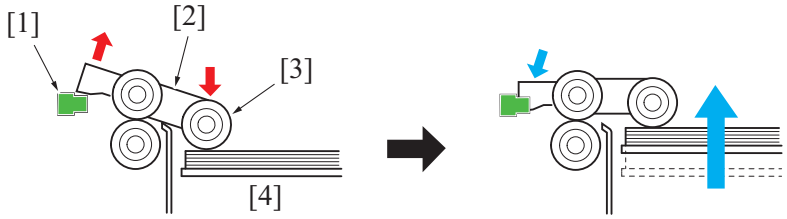
1. The LU door is opened and paper is placed. (The LU door switch detects whether the LU door is closed or not)
2. With the LU door closed, the LU upper limit sensor signal is checked. When the paper tray is being lowered (LU upper limit sensor is unblocked), the LU lift-up motor is rotated and the paper tray lift-up is started.
3. The pick-up roller is pushed up by paper surface that was lifted up. The pick-up roller holder blocks the LU upper limit sensor, which detects the paper raising up to the upper limit position.
4. If the LU upper limit sensor detects the paper raising up to the upper limit position, the LU lift-up motor stops to end the lift-up operation of the paper tray.
5. The paper tray is lifted up to the upper limit. However, if the LU paper empty sensor cannot detect the presence of paper, it determines that the tray is empty. The paper tray remains on standby at the upper limit position. (Lowering operation is not performed. The tray is returned to the home position when the LU door is opened.) Refer to "Paper empty detection" for details on the paper-empty detection mechanism.



[1]	LU upper limit sensor (PS2)	[2]	Pick-up roller holder
[3]	Pick-up roller	[4]	Paper
[5]	Paper tray	[6]	LU paper empty sensor actuator
[7]	LU paper empty sensor (PS4)	-	-

(b) During a print cycle

1. When the amount of paper decreases during a print cycle, the pick-up roller will gradually come down. Thus, the LU upper limit sensor that was blocked by the pick-up roller holder becomes unblocked.
2. The LU lift-up motor will rotate again to start lifting up the paper tray.
3. The pick-up roller is pushed up by paper surface that was lifted up. Thus, the pick-up roller holder will block the LU upper limit sensor.
4. If the LU upper limit sensor gets blocked, the LU lift-up motor stops to end the lift-up operation of the paper tray.
5. Repeat above operations, the pressure (paper feed pressure) between the pick-up roller and the paper stack is kept constant regardless of the amount of remaining paper.

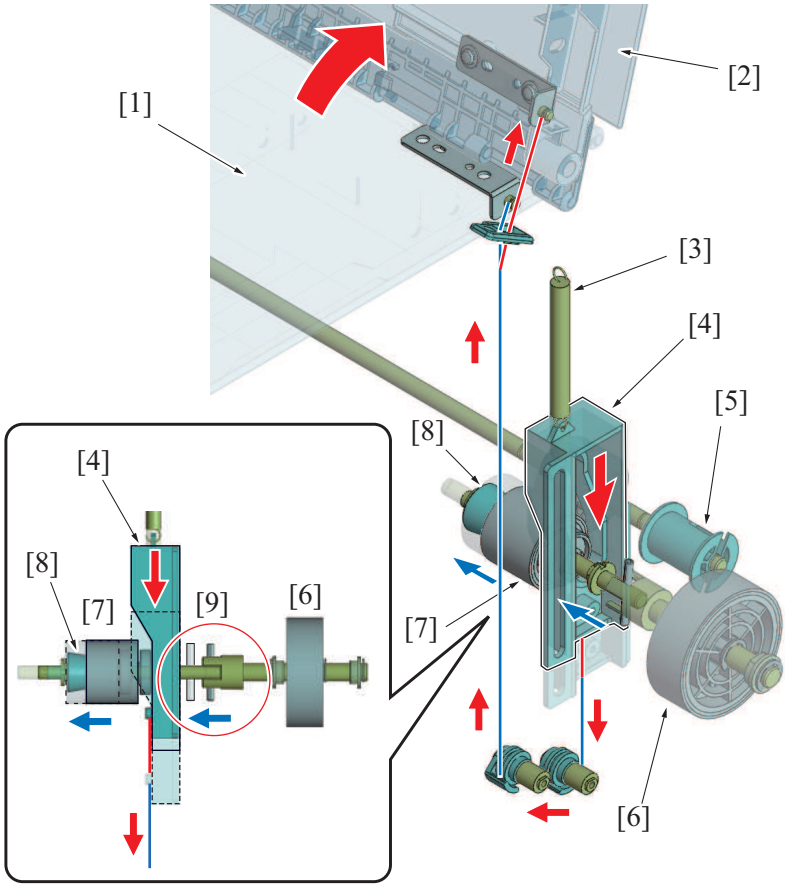


[1]	LU upper limit sensor (PS2)	[2]	Pick-up roller holder
[3]	Pick-up roller	[4]	Paper tray

4.5.2 Paper tray lift-up drive release mechanism

- The paper tray lift-up drive section is equipped with a drive release mechanism.
- Release the drive, the paper tray will come down.
- The contact of the pick-up roller on the paper is released when the paper tray comes down.

Rear view



[1]	LU door (close)	[2]	LU door (open)
[3]	Link release plate spring	[4]	Link release plate
[5]	Lift-up axis	[6]	Drive gear
[7]	Connecting gear	[8]	Spring
[9]	Coupling	-	-

(1) Drive release operation

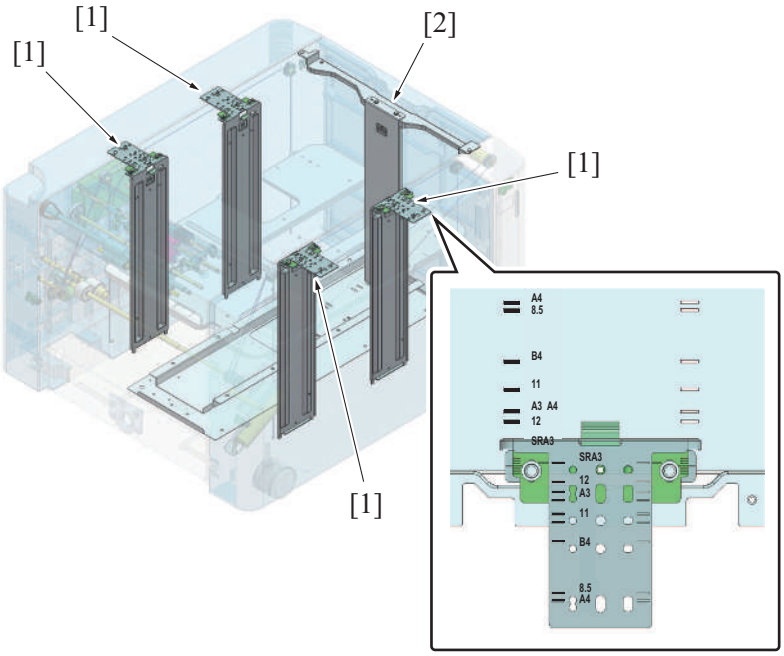
1. The wire linked to the LU door pulls down the link release plate when the door is opened.
2. The link release plate pushes out the link gear towards the front of the main body. It releases the link to the drive gear coupling.
3. Release the LU lift-up motor driving force, the weight of the load on the paper tray will pull out the wire wound in the lift-up axis. (The lift-up axis rotates on the opposite direction). This movement lowers the paper tray.

(2) Drive link operation

1. Close the LU door, the spring that is linked to the link release plate will pull up the link release plate.
2. The link gear pushes it back inside the machine through the spring force. It completes the link to the drive gear coupling.
3. For details on the operation after drive link operation, see "Paper tray lifting mechanism".

4.5.3 Paper guide plate

- Change of the installation position of the paper guide plate allows the size of actual paper to be changed.
- The large capacity unit is not equipped with a mechanism to automatically detect paper size.



[1]	Paper guide plate (width)	[2]	Paper guide plate (length)

(1) Description

- Change of the installation position of the paper guide plate allows the size of actual paper to be changed.
- If the installation position of the paper guide plate has been changed, configure the paper size from [Service Mode] -> [System 2] -> [LCT Paper Size Setting].
- Available paper sizes: A3, B4, A4/A4S, A3 Wide (12 1/4 x 18), SRA3, Ledger, Letter/LetterS, Legal

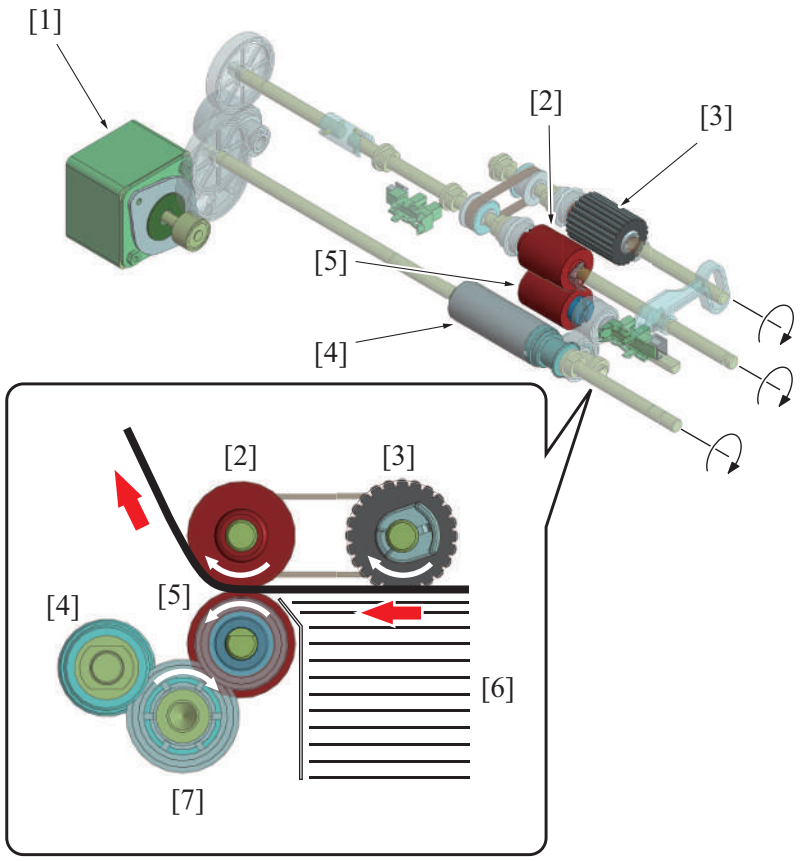
NOTE

- **If the LCT installation change settings under [Service Mode] -> [System 2] is changed, the LCT size is restored to the default value.**
- **If the LCT installation change settings are changed, you should confirm the paper size settings from [Service Mode] -> [System 2] -> [LCT Paper Size Setting].**
- **Change the settings when the paper size settings are different from the size of the actual paper.**

4.6 Paper feed/transport section

4.6.1 Paper feed control

- The LU paper feed motor drives the rollers to feed paper.

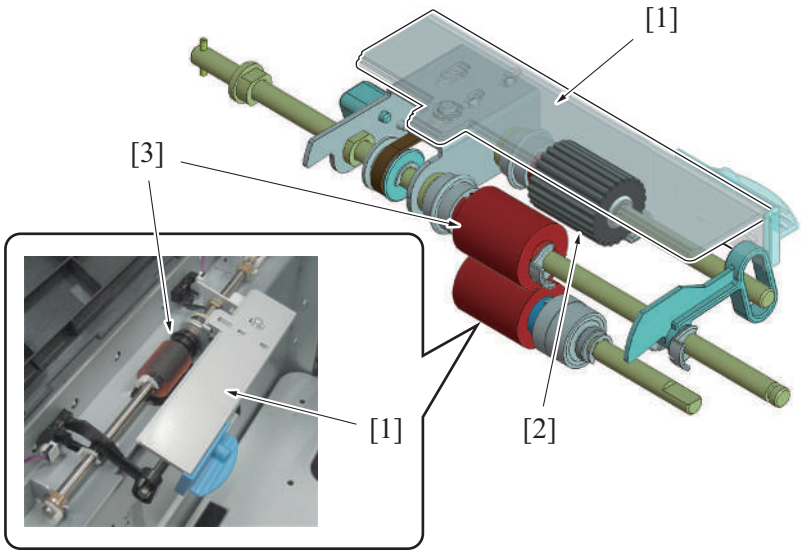


[1]	LU paper feed motor (M2)	[2]	Feed roller
[3]	Pick-up roller	[4]	Torque limiter
[5]	Separation roller (Only one sheet of paper in the sample illustration so it is in driven rotation)	[6]	Paper
[7]	Drive relay gear	-	-

(1) Description

- The LU paper feed motor drives the pick-up roller, feed roller and separation roller to take up and feed a sheet of paper into the main body.
- The weight is applied to the pick-up roller holder. The pick-up roller is pressed against the paper by the weight.
- Sheets of paper are separated and fed individually into the main body by the feed roller and separation roller.
- A torque limiter is connected to the separation roller which controls the driving force of the LU paper feed motor.
- When there is no sheet of paper or only one sheet of paper between the separation roller and feed roller, the limit torque is exceeded and the separation roller follows the rotation of the feed roller.
- If multiple sheets of paper are fed between the separation roller and feed roller, the limit torque gets greater than the frictional force of the paper. Thus, the separation roller rotates reversely. The lower sheets of paper which are in contact with the separation roller are pushed back to the paper tray and separated.

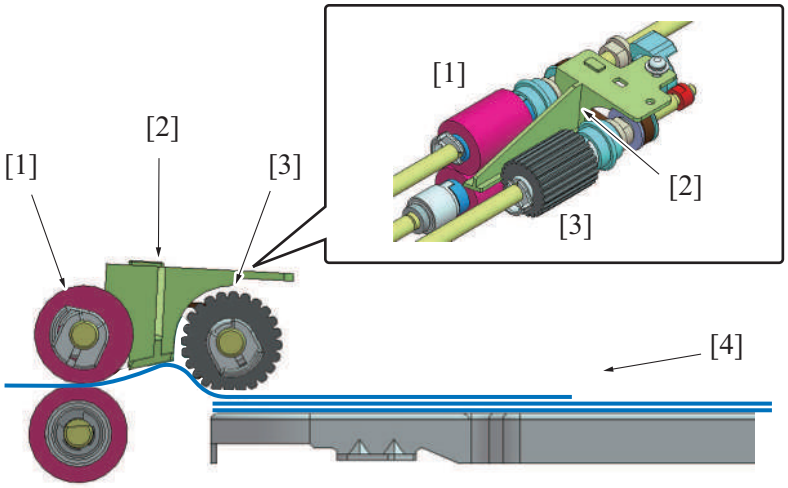
(a) Feed roller pressure mechanism



[1]	Weight	[2]	Pick-up roller
[3]	Feed roller	-	-

(b) Paper feed front guide mechanism

- A paper feed front guide is installed between the pick-up roller and feed roller.
- The paper feed front guide guides paper to the feed path and prevents paper folds and jams due to collisions with the feed roller.

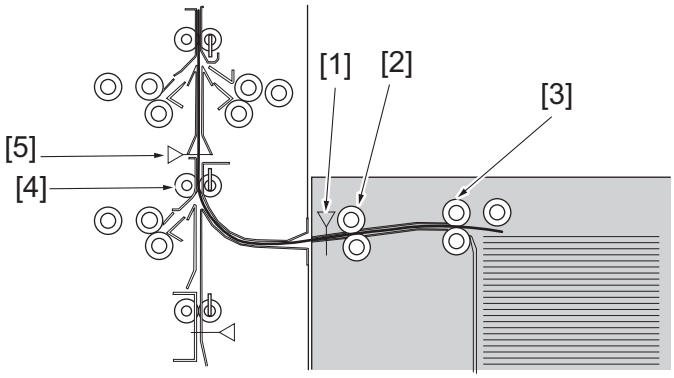


[1]	Feed roller	[2]	Paper feed front guide
[3]	Pick-up roller	[4]	Paper

4.6.2 Paper transport control

- The transport roller is driven following the rotation of the LU transport motor to transport paper to the paper feed section of the main body.

Layout of sensors and rollers



[1]	LU paper feed sensor (PS3)	[2]	Transport roller
[3]	Feed roller	[4]	Tray 2 vertical transport roller
[5]	Tray 2 vertical transport sensor	-	-

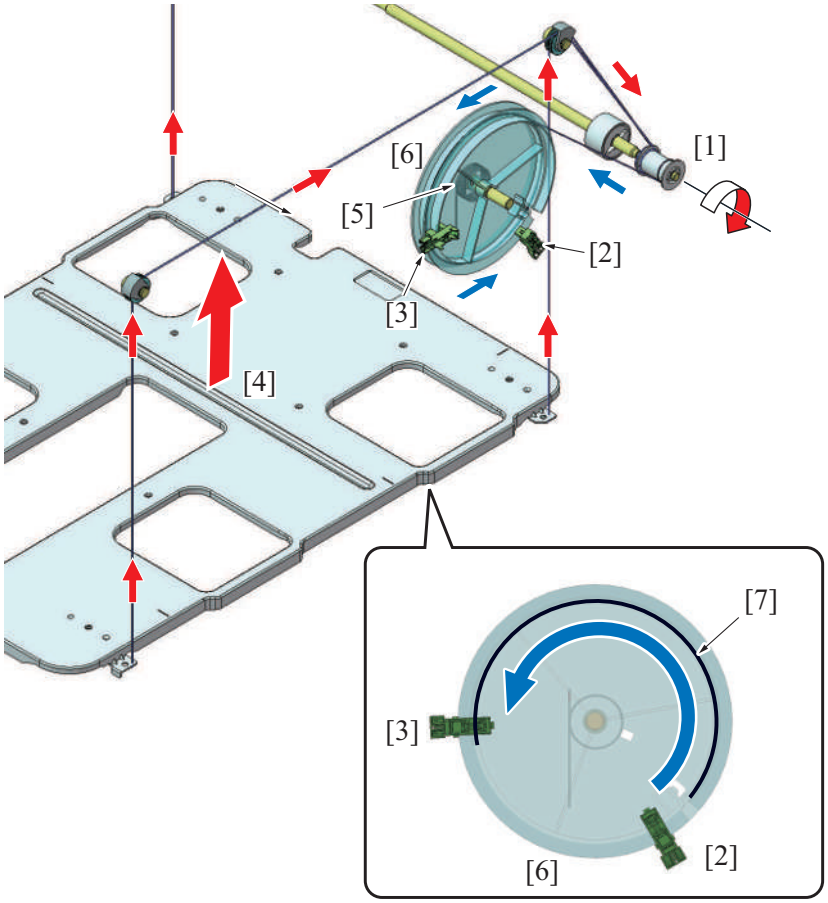
(1) Description

- In consecutive print, when the interval between the preceding and following sheets is below the specified value, the LCT transport rollers temporarily stop to ensure a predetermined interval.
- The paper transport speed is faster than the system speed.

4.6.3 Remaining paper level detection

- Detection of remaining paper is determined depending on the status of LU near empty sensors/1 and 2.

Rear view of the large capacity unit (paper full state)



[1]	Lift-up axis	[2]	LU near empty sensor /2 (PS6)
[3]	LU near empty sensor /1 (PS5)	[4]	Paper tray
[5]	Spring	[6]	Remaining paper detection plate
[7]	Sensor blocking plate	-	-

(1) Description

- The paper tray is equipped with a mechanism which detects the amount of remaining paper.
- The wire in the lift-up axis which is connected to the remaining paper detection plate is wound reversely against the paper tray wire. (If the paper tray wire is wound up the lift-up axis, the same amount of wire is pulled out.)
- A spring is attached to the rotation axis of the remaining paper detection plate. Rotational force is applied in the direction of winding of the wire into the remaining paper detection plate.
- Detection of remaining paper is determined depending on the status of LU near empty sensors/1 and 2.

(2) Remaining paper detection operation

1. If paper on the paper tray is consumed, the lift-up axis is rotated and the paper tray is lifted up. For details on the paper tray lift-up control when you are printing, refer to the section describing the paper tray lifting mechanism.
2. If the lift-up axis is rotated in the lift direction of the paper tray, the wire that is connected to the remaining paper detection plate is pulled out from the lift-up axis.
3. The remaining paper detection plate rotates for an amount that the wire is pulled out, and winds up the wire.
4. The remaining paper detection plate is equipped with a blocking plate. The position of the blocking plate changes depending on the rotation amount of the remaining paper detection plate.
5. The amount of remaining paper is determined depending on the detection status of LU near empty sensors/1 and 2.
   For details on the remaining paper amount display, see "PB.5.3.4 Remaining paper display".

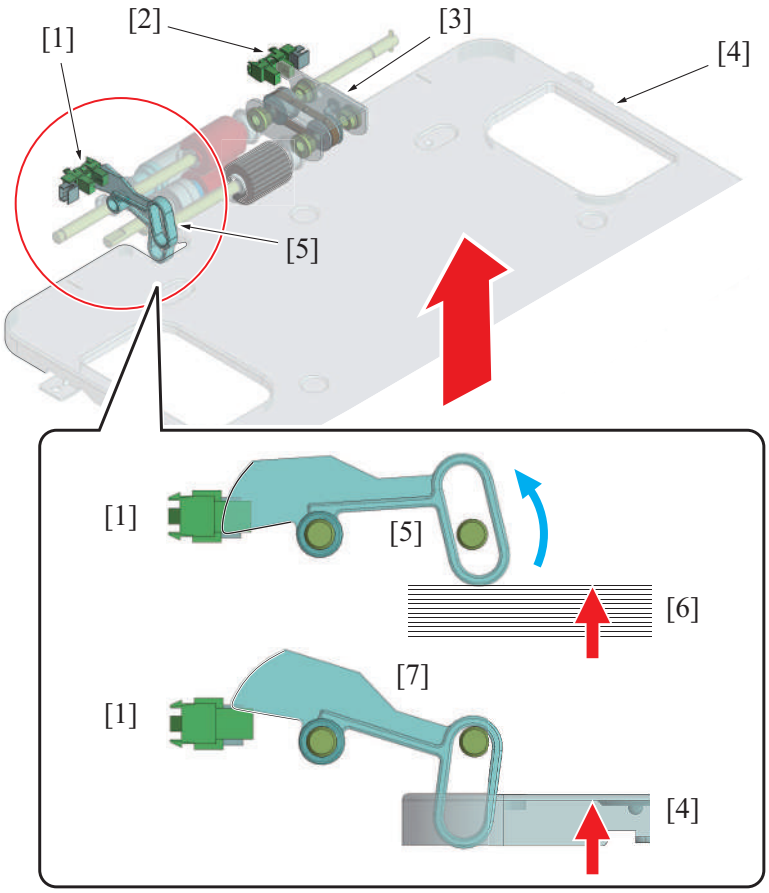
(3) Criteria for determining the amount of remaining paper

Condition	Paper full	Paper near full	Paper present	Paper near-empty
Remaining paper level *1	3000 to 2000 sheets	2000 to 1000 sheets	1000 to 51 sheets	50 to 1 sheets
LU near empty sensor /1 (PS5)	Blocked	Blocked	Unblocked	Unblocked
LU near empty sensor /2 (PS6)	Unblocked	Blocked	Blocked	Unblocked

- *1: Reference value when plain paper is placed

4.6.4 Paper empty detection

- The LU paper empty sensor detects the paper empty states.



[1]	LU paper empty sensor (PS4)	[2]	LU upper limit sensor (PS2)
[3]	Pick-up roller holder	[4]	Paper tray
[5]	Actuator (paper present)	[6]	Paper
[7]	Actuator (paper tray empty)	-	-

(1) Description

- The LU paper empty sensor detects the paper empty states.
- The absence of paper is determined when the paper tray is raised up to the upper limit position. (The LU upper limit sensor detects the upper limit position of the paper tray.) For details on the paper tray upper limit position, see "Paper tray lifting mechanism".

(a) When paper is left on the paper tray

1. If the paper tray is raised up to the upper limit position, the actuator is pushed up by the top of the paper.
2. If the actuator blocks the LU paper empty sensor, the sensor determines that paper is remaining on the tray.

(b) When no paper is left on the paper tray

1. Since the paper tray has a notch, the actuator does not move from the paper empty position even if the paper tray is raised up to the upper limit position.
2. If the LU paper empty sensor remains unblocked, it determines that there is no paper left (paper empty).
3. When paper empty is detected, the paper tray stays at the upper limit position. (The tray does not fall down. Open the LU door, the tray will fall down automatically to the home position under its own weight.)

4.6.5 Remaining paper display

- An LED on the front right side displays the amount of remaining paper.



[1]	Tray LED display	-	-

(1) Status indicator list

Paper feed port status	LED status
• Empty	Lit
• Near empty	Blinking
• Paper present • Other than near empty • Being lifted up	Unlit

5. LU-303

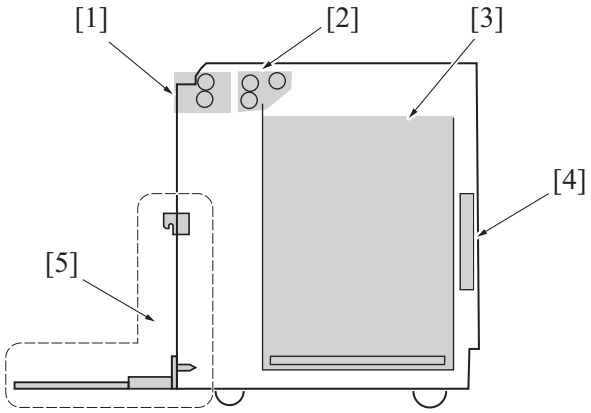
5.1 CONFIGURATION

5.1.1 Exterior view



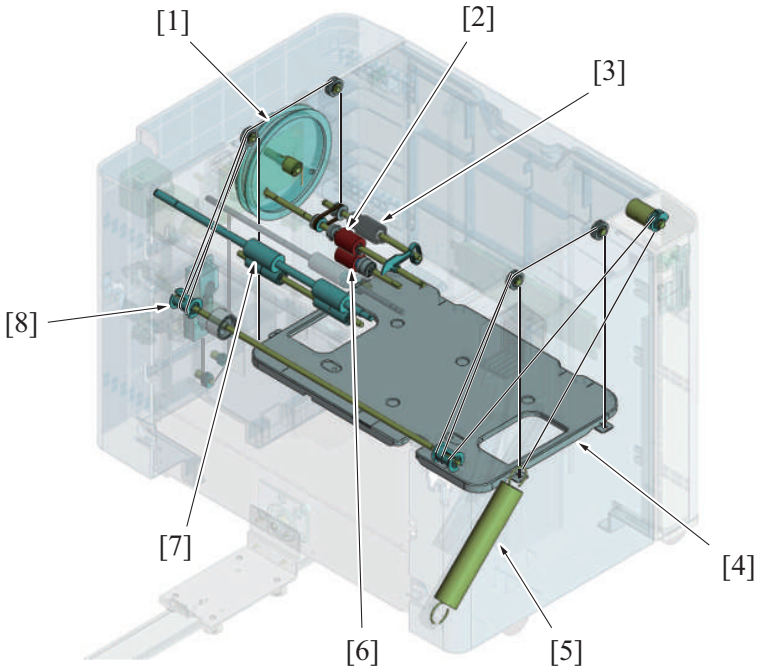
[1]	Unit release lever	[2]	LU door
[3]	Tray LED	-	-

5.1.2 SECTION CONFIGURATION



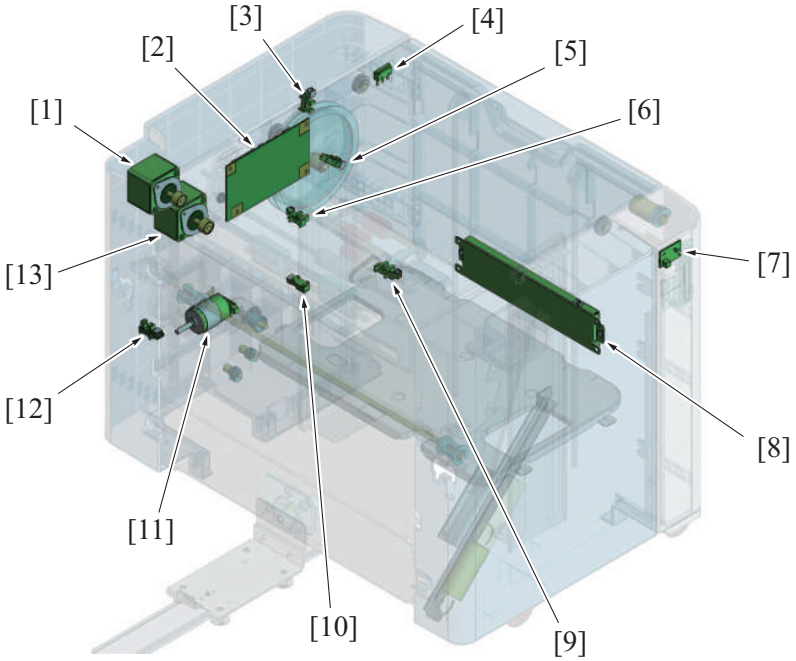
[1]	Paper transport section	[2]	Paper feed section
[3]	Paper storage section	[4]	Dehumidification heater
[5]	Unit open/close section	-	-

5.1.3 Main part



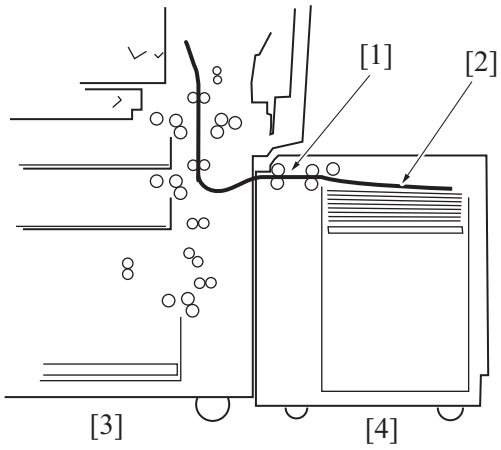
[1]	Remaining paper detection plate	[2]	Feed roller
[3]	Pick-up roller	[4]	Paper tray
[5]	Drive assist spring	[6]	Separation roller
[7]	Transport roller	[8]	Lift-up axis

5.1.4 Electrical part



[1]	LU transport motor (M3)	[2]	LU drive board (LUDB)
[3]	LU near empty sensor /1 (PS5)	[4]	LU door switch (MS1)
[5]	LU near empty sensor /2 (PS6)	[6]	LU upper limit sensor (PS2)
[7]	Tray LED (LED)	[8]	Dehumidification heater (DH)
[9]	LU paper empty sensor (PS4)	[10]	LU paper feed sensor (PS3)
[11]	LU lift-up motor (M1)	[12]	LU set sensor (PS1)
[13]	LU paper feed motor (M2)	-	-

5.2 PAPER PATH

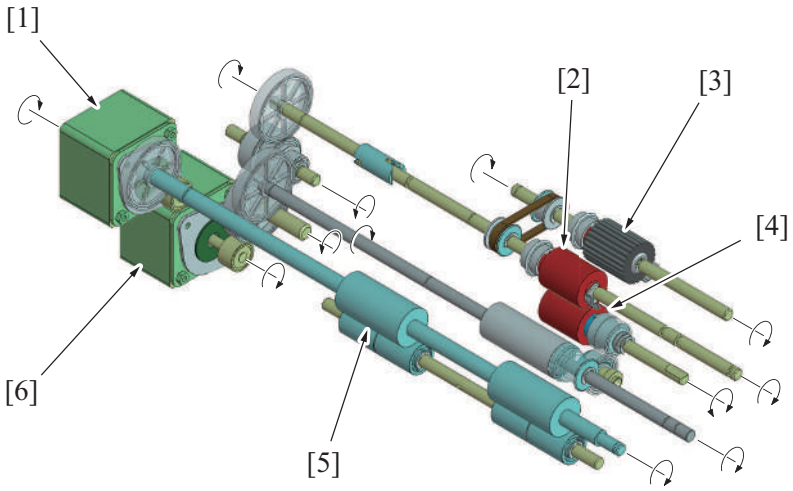


[1]	Transportation to main body	[2]	Paper feed from the tray
[3]	Main body	[4]	LU-303

5.3 DRIVE

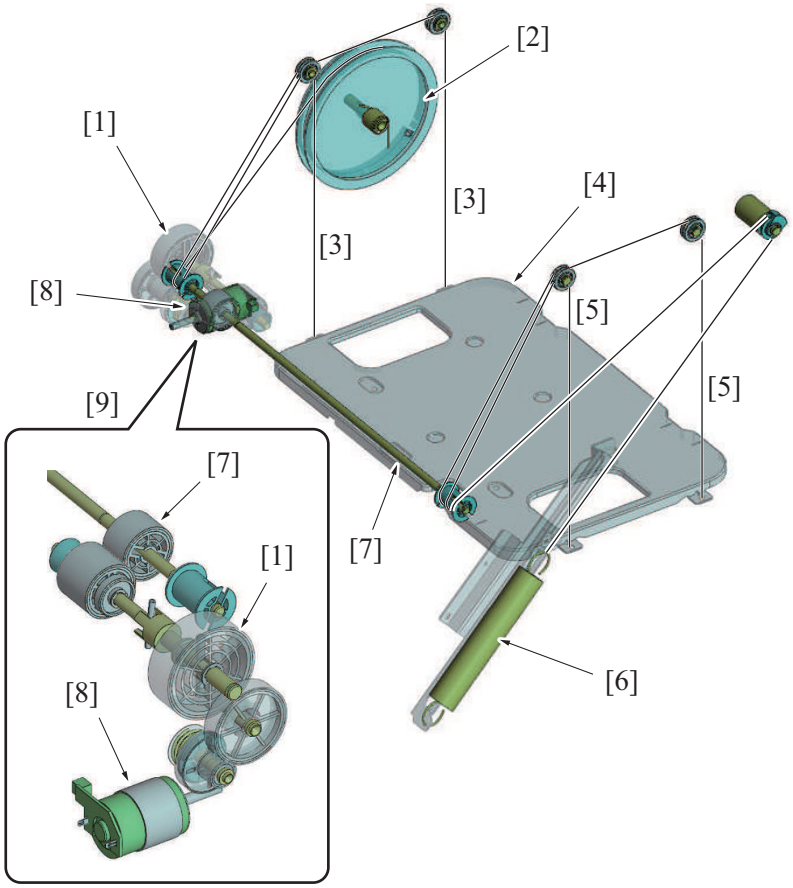
- The drive mechanism is equipped with a paper feed transport drive mechanism and a paper lift-up drive mechanism.

5.3.1 Paper feed transport drive



[1]	LU transport motor (M3)	[2]	Feed roller
[3]	Pick-up roller	[4]	Separation roller
[5]	Transport roller	[6]	LU paper feed motor (M2)

5.3.2 Paper lift-up drive

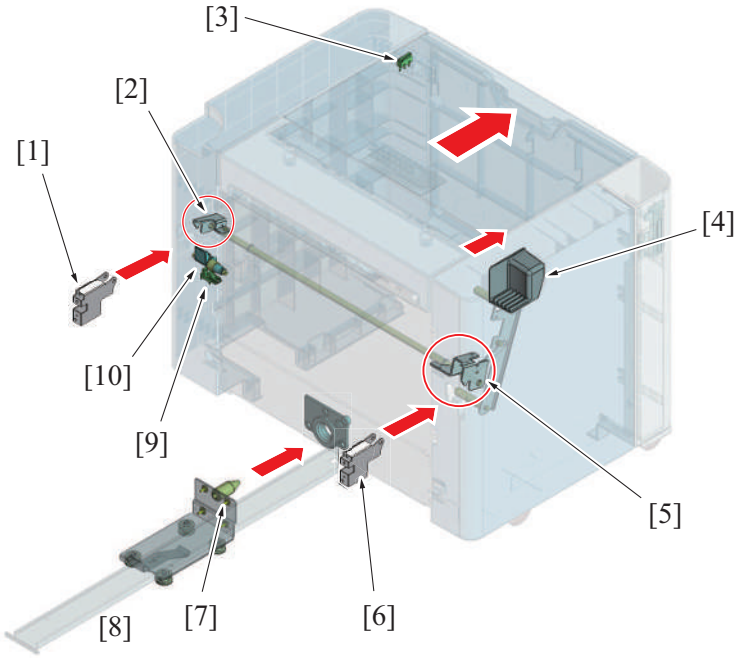


[1]	Lift-up drive section	[2]	Remaining paper detection plate
[3]	Wire (rear side)	[4]	Paper tray
[5]	Wire (front side)	[6]	Drive assist spring
[7]	Lift-up axis	[8]	LU lift-up motor (M1)
[9]	Lift-up motor around (rear view)	-	-

5.4 Unit open/close section

5.4.1 Unit lock mechanism

- The link between the large capacity unit and main body can be released.
- If the LU set sensor determines that the large capacity unit is released, printing from the large capacity unit is prohibited.



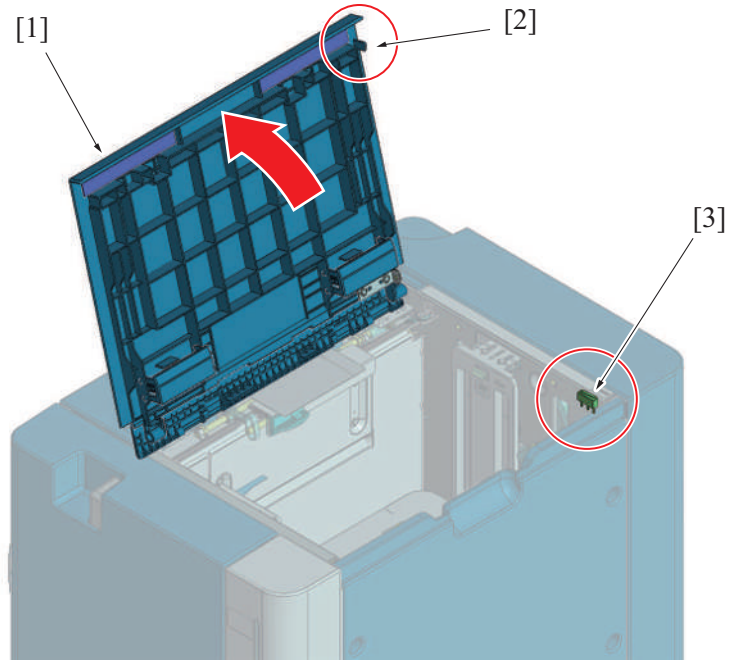
[1]	Mounting plate (rear): On the main body	[2]	Lock (rear)
[3]	LU door switch (MS1)	[4]	Unit release lever
[5]	Lock (front)	[6]	Mounting plate (front): On the main body
[7]	Lock pin (on the main body)	[8]	Coupling rail
[9]	LU set sensor (PS1)	[10]	Actuator

(1) Description

- Operate the unit release lever in the front side of the large capacity unit the locks (on both sides of front and back) attached to the left side of the large capacity unit will be released. It releases the link between the large capacity unit and the main body, which makes it possible to slide the large capacity unit to the right.
- The large capacity unit is connected to the main body via the coupling rail. The unit slides to the right side along the rail.
- Release the large capacity unit link, the LU set sensor gets unblocked and the sensor determines that the large capacity unit is released.
- If the LU set sensor determines that the large capacity unit is released, printing from the large capacity unit is prohibited. (printing from other paper feed ports is still possible).
- The large capacity unit is linked to the main body through sliding the unit to the left. The home position when the large capacity unit is linked is fixed with the lock pin on the main body.
- Link the large capacity unit, printing from the large capacity unit will be enabled.

5.4.2 LU door open/close detection mechanism

- The LU door is equipped with a door switch.
- Open the LU door, the paper tray lift-up drive section link will be released.



[1]	LU door	[2]	LU door open/close detection lever
[3]	LU door switch (MS1)	-	-

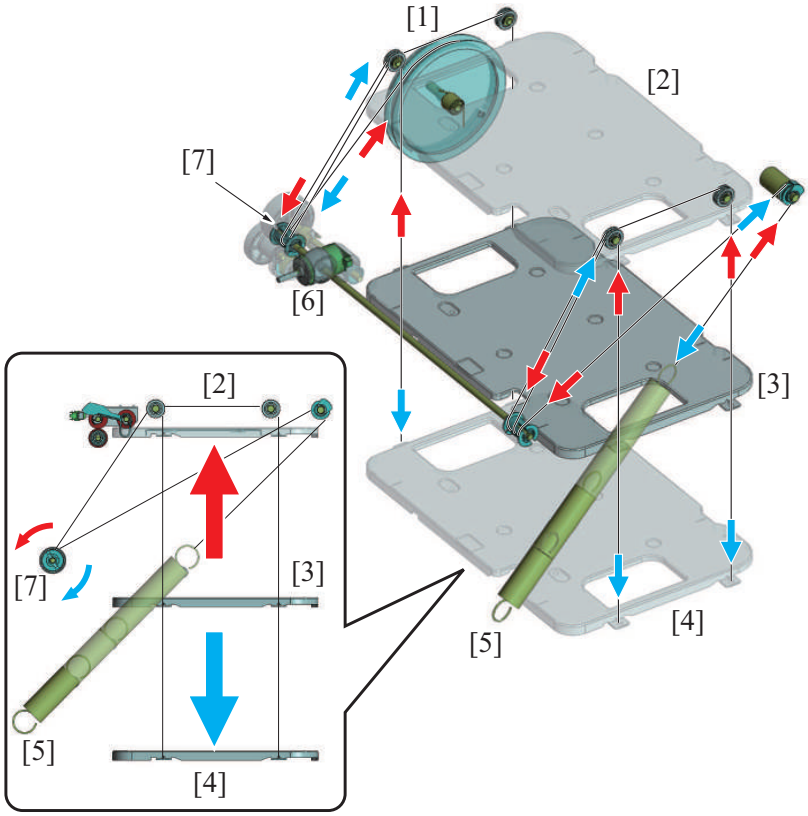
(1) Description

- An LU door switch is provided at the top-right-rear side of the large capacity unit and detects the opening and closing of the LU door.
- When the LU door is closed, the open/close detection lever on the LU door pushes down the LU door switch. (ON)
- If the LU door switch determines that the LU door is open, printing from the large capacity unit is prohibited. (printing from other paper feed ports is still possible).
- Open the LU door, the paper tray lift-up drive section link will be released. For details, see "Paper tray lift-up drive release mechanism".
- Close the LU door, the paper tray lift-up drive section will be connected and printing from the large capacity unit will be enabled.

5.5 Paper storage section

5.5.1 Paper tray lifting mechanism

- When the LU door is closed, the wire is wound around the lift-up axis, which raises the paper tray.
- Detection of the upper limit of paper stops the wire winding process to complete the paper tray lifting operation.



[1]	Remaining paper detection plate	[2]	Paper tray (upper limit position)
[3]	Paper tray (home position)	[4]	Paper tray (lower limit position)
[5]	Drive assist spring	[6]	LU lift-up motor (M1)
[7]	Lift-up axis	-	-

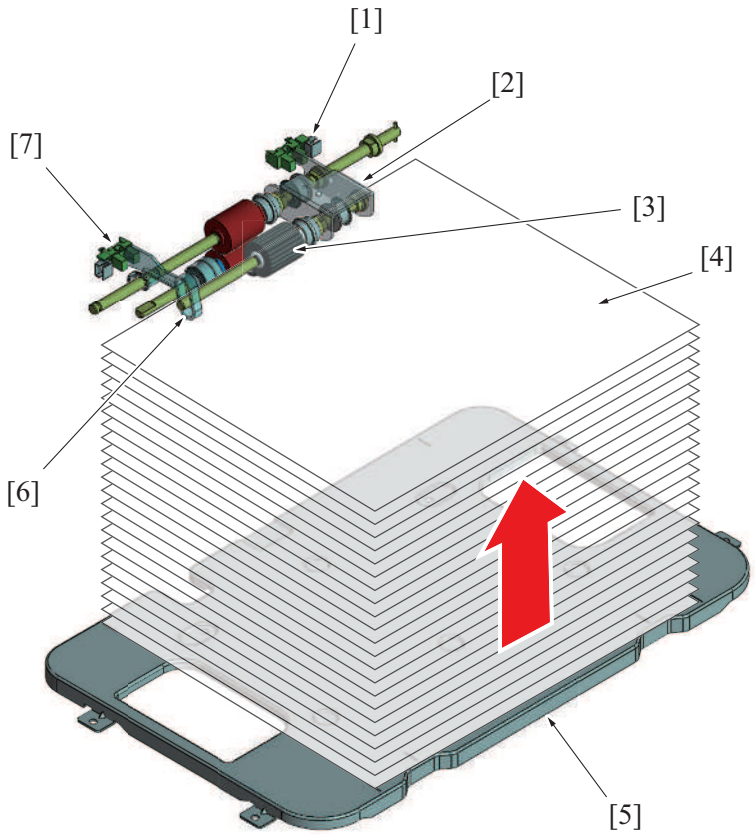
(1) Description

- Four wires are connected to the paper tray which lifts up the tray into its home position.
- Each wire is wound around the lift-up axis. Roll up a lift-up axis, the paper tray will be lifted up.
- The wire in the lift-up axis which is connected to the drive assist spring is also wound in the same direction. By the force of the drive assist spring, the unloaded paper tray (with no paper placed) is lifted up into the home position. (It does not go down to the lowest position)
- With the weight of the paper that is placed on the paper tray, the paper tray will be lowered down. The amount of lowering of the paper tray varies by paper weight. (Maximum load capacity: 3,000 sheets of plain paper)
- When the paper tray is lowered from the home position, upward force is applied to the paper tray by the drive assist spring. It decreases the load on the lift-up axis when paper is lifted up.
- This unit does not have a mechanism to detect the home position and lower limit position of the paper tray.
- Close the LU door, so that the LU lift-up motor and paper tray lifting mechanism are linked together.
- The LU lift-up motor rotates to wind the wires around the lift-up axis and lift up the paper tray. Thus, the surface of the paper is pressed against the pick-up roller.
- Open the LU door, the coupling of the LU lift-up motor and paper tray lifting mechanism will be disconnected. Thus, the paper tray will fall down with its own weight, which releases the pressure between the pick-up roller and the paper. For details on the linking/release mechanism, see "Paper tray lift-up drive release mechanism".
- The remaining paper detection plate also rotates together with the vertical movement of the paper tray. (The wire in the lift-up axis which is connected to the remaining paper detection plate is wound in the opposite direction) For details on the remaining paper detection mechanism, see "Remaining paper detection".

(2) Operation timing

(a) When paper is placed

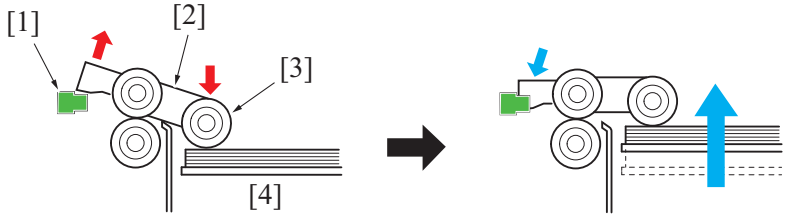
1. The LU door is opened and paper is placed. (The LU door switch detects whether the LU door is closed or not)
2. With the LU door closed, the LU upper limit sensor signal is checked. When the paper tray is being lowered (LU upper limit sensor is unblocked), the LU lift-up motor is rotated and the paper tray lift-up is started.
3. The pick-up roller is pushed up by paper surface that was lifted up. The pick-up roller holder blocks the LU upper limit sensor, which detects the paper raising up to the upper limit position.
4. If the LU upper limit sensor detects the paper raising up to the upper limit position, the LU lift-up motor stops to end the lift-up operation of the paper tray.
5. The paper tray is lifted up to the upper limit. However, if the LU paper empty sensor cannot detect the presence of paper, it determines that the tray is empty. The paper tray remains on standby at the upper limit position. (Lowering operation is not performed. The tray is returned to the home position when the LU door is opened.) Refer to "Paper empty detection" for details on the paper-empty detection mechanism.



[1]	LU upper limit sensor (PS2)	[2]	Pick-up roller holder
[3]	Pick-up roller	[4]	Paper
[5]	Paper tray	[6]	LU paper empty sensor actuator
[7]	LU paper empty sensor (PS4)	-	-

(b) During a print cycle

1. When the amount of paper decreases during a print cycle, the pick-up roller will gradually come down. Thus, the LU upper limit sensor that was blocked by the pick-up roller holder becomes unblocked.
2. The LU lift-up motor will rotate again to start lifting up the paper tray.
3. The pick-up roller is pushed up by paper surface that was lifted up. Thus, the pick-up roller holder will block the LU upper limit sensor.
4. If the LU upper limit sensor gets blocked, the LU lift-up motor stops to end the lift-up operation of the paper tray.
5. Repeat above operations, the pressure (paper feed pressure) between the pick-up roller and the paper stack is kept constant regardless of the amount of remaining paper.

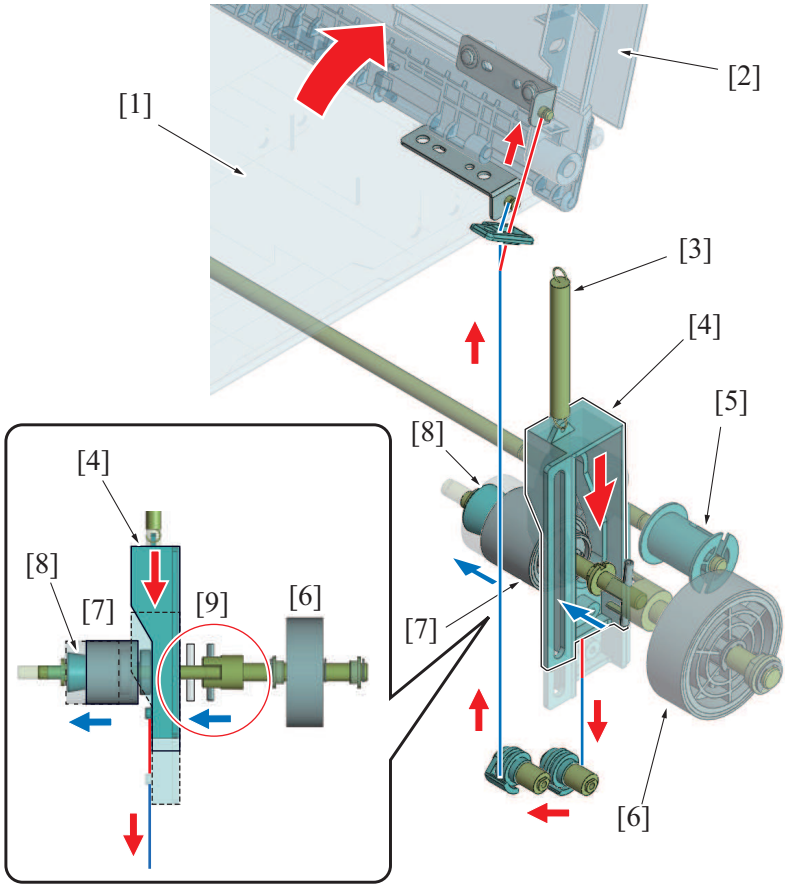


[1]	LU upper limit sensor (PS2)	[2]	Pick-up roller holder
[3]	Pick-up roller	[4]	Paper tray

5.5.2 Paper tray lift-up drive release mechanism

- The paper tray lift-up drive section is equipped with a drive release mechanism.
- Release the drive, the paper tray will come down.
- The contact of the pick-up roller on the paper is released when the paper tray comes down.

Rear view



[1]	LU door (close)	[2]	LU door (open)
[3]	Link release plate spring	[4]	Link release plate
[5]	Lift-up axis	[6]	Drive gear
[7]	Connecting gear	[8]	Spring
[9]	Coupling	-	-

(1) Drive release operation

1. The wire linked to the LU door pulls down the link release plate when the door is opened.
2. The link release plate pushes out the link gear towards the front of the main body. It releases the link to the drive gear coupling.
3. Release the LU lift-up motor driving force, the weight of the load on the paper tray will pull out the wire wound in the lift-up axis. (The lift-up axis rotates on the opposite direction). This movement lowers the paper tray.

(2) Drive link operation

1. Close the LU door, the spring that is linked to the link release plate will pull up the link release plate.
2. The link gear pushes it back inside the machine through the spring force. It completes the link to the drive gear coupling.
3. For details on the operation after drive link operation, see "Paper tray lifting mechanism".

5.5.3 Paper size detection mechanism

- The large capacity unit is not equipped with a mechanism to automatically detect paper size.

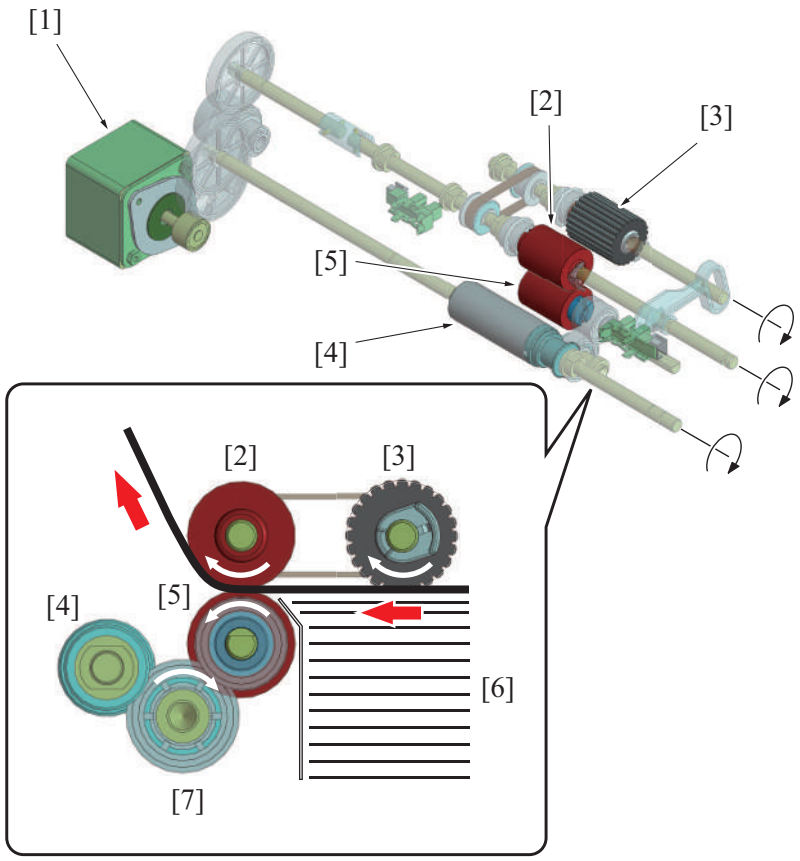
NOTE

- **If the LCT installation change settings under [Service Mode] -> [System 2] is changed, the LCT size is restored to the default value.**
- **If the LCT installation change settings are changed, you should confirm the paper size settings from [Service Mode] -> [System 2] -> [LCT Paper Size Setting].**
- **Modify the settings when the paper size settings are different from the size of the paper used.**

5.6 Paper feed/transport section

5.6.1 Paper feed control

- The LU paper feed motor drives the rollers to feed paper.

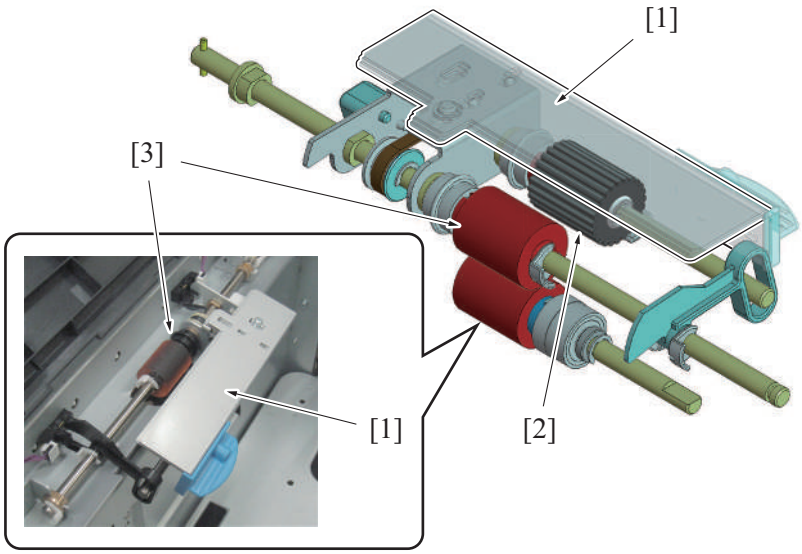


[1]	LU paper feed motor (M2)	[2]	Feed roller
[3]	Pick-up roller	[4]	Torque limiter
[5]	Separation roller (Only one sheet of paper in the sample illustration so it is in driven rotation)	[6]	Paper
[7]	Drive relay gear	-	-

(1) Description

- The LU paper feed motor drives the pick-up roller, feed roller and separation roller to take up and feed a sheet of paper into the main body.
- The weight is applied to the pick-up roller holder. The pick-up roller is pressed against the paper by the weight.
- Sheets of paper are separated and fed individually into the main body by the feed roller and separation roller.
- A torque limiter is connected to the separation roller which controls the driving force of the LU paper feed motor.
- When there is no sheet of paper or only one sheet of paper between the separation roller and feed roller, the limit torque is exceeded and the separation roller follows the rotation of the feed roller.
- If multiple sheets of paper are fed between the separation roller and feed roller, the limit torque gets greater than the frictional force of the paper. Thus, the separation roller rotates reversely. The lower sheets of paper which are in contact with the separation roller are pushed back to the paper tray and separated.

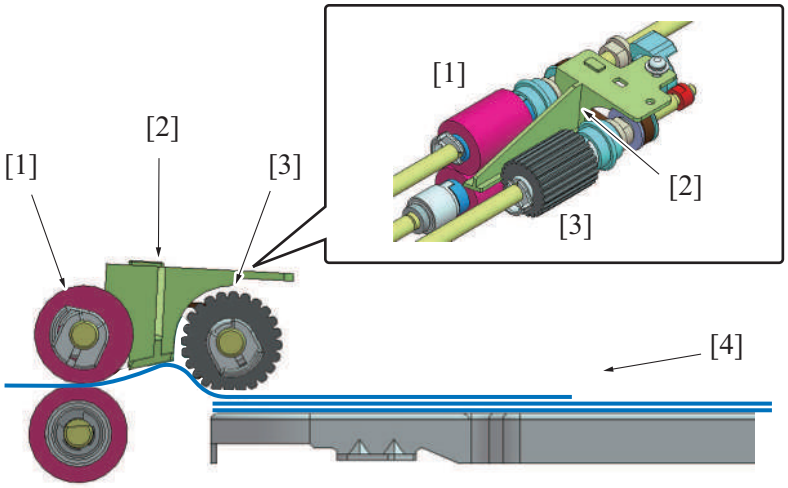
(a) Feed roller pressure mechanism



[1]	Weight	[2]	Pick-up roller
[3]	Feed roller	-	-

(b) Paper feed front guide mechanism

- A paper feed front guide is installed between the pick-up roller and feed roller.
- The paper feed front guide guides paper to the feed path and prevents paper folds and jams due to collisions with the feed roller.

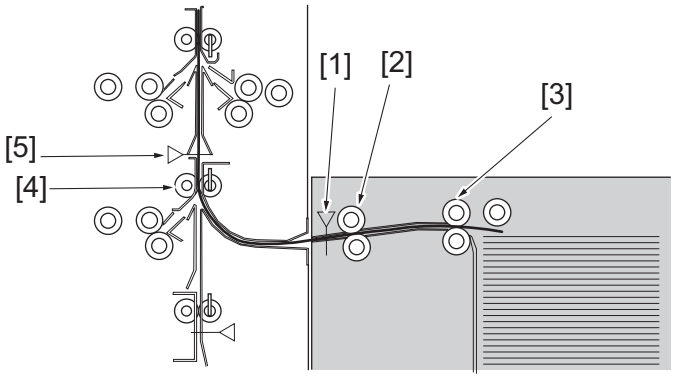


[1]	Feed roller	[2]	Paper feed front guide
[3]	Pick-up roller	[4]	Paper

5.6.2 Paper transport control

- The transport roller is driven following the rotation of the LU transport motor to transport paper to the paper feed section of the main body.

Layout of sensors and rollers



[1]	LU paper feed sensor (PS3)	[2]	Transport roller
[3]	Feed roller	[4]	Tray 2 vertical transport roller
[5]	Tray 2 vertical transport sensor	-	-

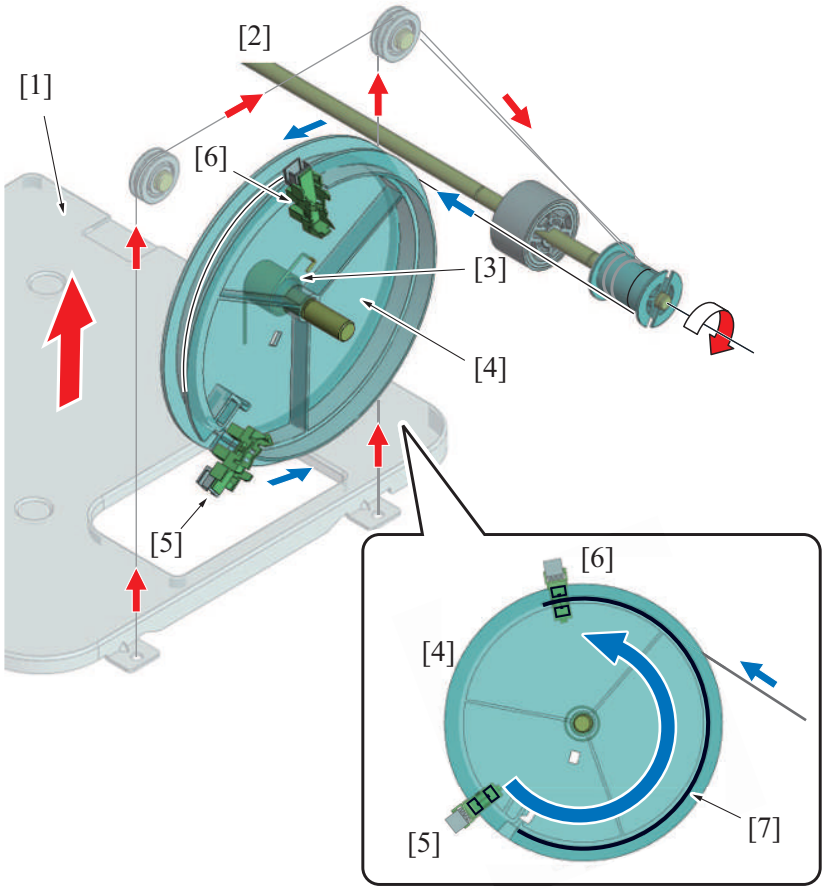
(1) Description

- In consecutive print, when the interval between the preceding and following sheets is below the specified value, the LCT transport rollers temporarily stop to ensure a predetermined interval.
- The paper transport speed is faster than the system speed.

5.6.3 Remaining paper level detection

- Detection of remaining paper is determined depending on the status of LU near empty sensors/1 and 2.

Back view of the large capacity unit (paper full state)



[1]	Paper tray	[2]	Lift-up axis
[3]	Spring	[4]	Remaining paper detection plate
[5]	LU near empty sensor /2 (PS6)	[6]	LU near empty sensor /1 (PS5)
[7]	Sensor blocking plate	-	-

(1) Description

- The paper tray is equipped with a mechanism which detects the amount of remaining paper.
- The wire in the lift-up axis which is connected to the remaining paper detection plate is wound reversely against the paper tray wire. (If the paper tray wire is wound up the lift-up axis, the same amount of wire is pulled out.)
- A spring is attached to the rotation axis of the remaining paper detection plate. Rotational force is applied in the direction of winding of the wire into the remaining paper detection plate.
- Detection of remaining paper is determined depending on the status of LU near empty sensors/1 and 2.

(2) Remaining paper detection operation

1. If paper on the paper tray is consumed, the lift-up axis is rotated and the paper tray is lifted up. For details on the paper tray lift-up control when you are printing, refer to the section describing the paper tray lifting mechanism.
2. If the lift-up axis is rotated in the lift direction of the paper tray, the wire that is connected to the remaining paper detection plate is pulled out from the lift-up axis.
3. The remaining paper detection plate rotates for an amount that the wire is pulled out, and winds up the wire.
4. The remaining paper detection plate is equipped with a blocking plate. The position of the blocking plate changes depending on the rotation amount of the remaining paper detection plate.
5. The amount of remaining paper is determined depending on the detection status of LU near empty sensors/1 and 2.
   For details on the remaining paper amount display, see "PC.5.3.6 Remaining paper display".

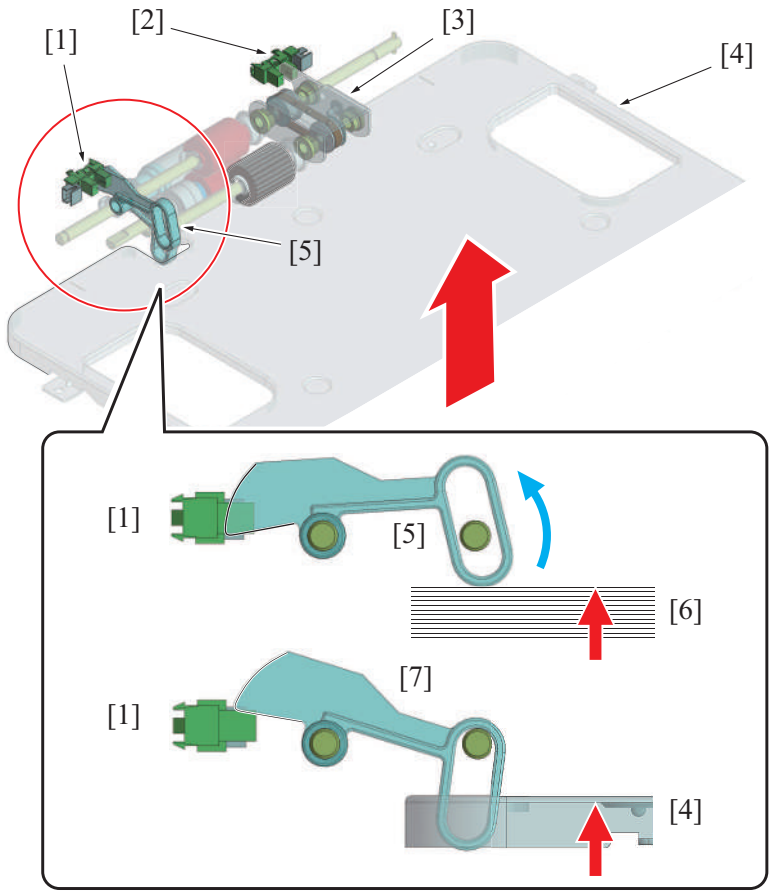
(3) Criteria for determining the amount of remaining paper

Condition	Paper full	Paper near full	Paper present	Paper near-empty
Remaining paper level *1	3000 to 2000 sheets	2000 to 1000 sheets	1000 to 51 sheets	50 to 1 sheets *2
LU near empty sensor /1 (PS5)	Blocked	Blocked	Unblocked	Unblocked
LU near empty sensor /2 (PS6)	Unblocked	Blocked	Blocked	Unblocked

- *1: Reference value when plain paper is placed
- *2: The accuracy of the determination of the near empty number is 50 sheets ± 20 sheets.

5.6.4 Paper empty detection

- The LU paper empty sensor detects the paper empty states.



[1]	LU paper empty sensor (PS4)	[2]	LU upper limit sensor (PS2)
[3]	Pick-up roller holder	[4]	Paper tray
[5]	Actuator (paper present)	[6]	Paper
[7]	Actuator (paper tray empty)	-	-

(1) Description

- The LU paper empty sensor detects the paper empty states.
- The absence of paper is determined when the paper tray is raised up to the upper limit position. (The LU upper limit sensor detects the upper limit position of the paper tray.) For details on the paper tray upper limit position, see "Paper tray lifting mechanism".

(a) When paper is left on the paper tray

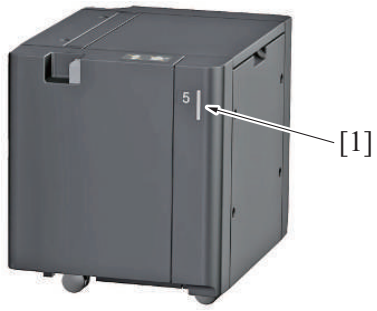
1. If the paper tray is raised up to the upper limit position, the actuator is pushed up by the top of the paper.
2. If the actuator blocks the LU paper empty sensor, the sensor determines that paper is remaining on the tray.

(b) When no paper is left on the paper tray

1. Since the paper tray has a notch, the actuator does not move from the paper empty position even if the paper tray is raised up to the upper limit position.
2. If the LU paper empty sensor remains unblocked, it determines that there is no paper left (paper empty).
3. When paper empty is detected, the paper tray stays at the upper limit position. (The tray does not fall down. Open the LU door, the tray will fall down automatically to the home position under its own weight.)

5.6.5 Remaining paper display

- An LED on the front right side displays the amount of remaining paper.



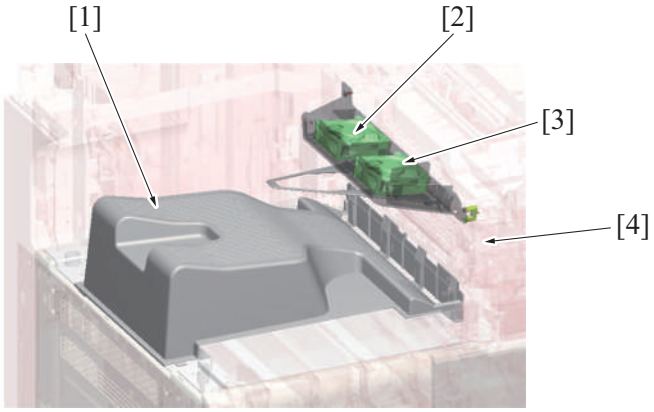
[1]	Tray LED display	-	-

(1) Status indicator list

Paper feed port status	LED status
• Empty	Lit
• Near empty	Blinking
• Paper present • Other than near empty • Being lifted up	Unlit

6. OT-514

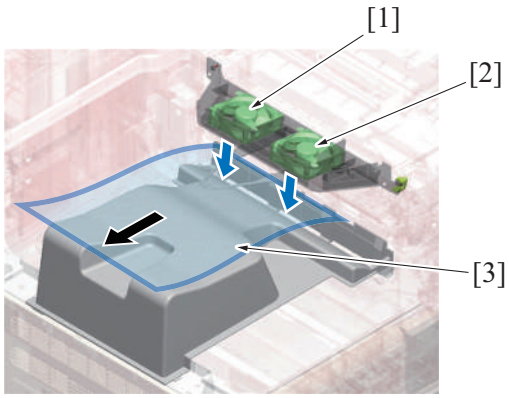
6.1 Configuration



[1]	Output Tray	[2]	Tacking fan /Rr (FM24)
[3]	Tacking fan /Fr (FM23)	[4]	Main body exit section

6.2 Paper cooling mechanism

- The tacking fan/Fr and tacking fan/Rr are installed to cool the paper after the image fusing process.
- The external air is drawn in from the fan. This air is blown onto and cools the paper that has exited from the paper exit section.
- It prevents the discharged paper on the exit tray from sticking. (Toner on different sheets of paper may stick if the output tray also contains a mixture of paper that has not been cooled.)



[1]	Tacking fan/Rr (FM24)	[2]	Tacking fan/Fr (FM23)
[3]	Discharged paper	-	-

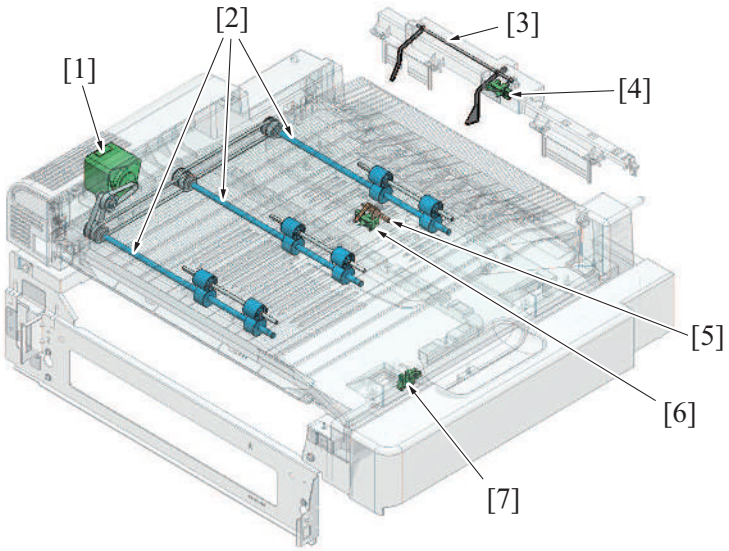
Fan control

Fan name	Control	Control conditions (outline)
Tacking fan/Fr (FM23) Tacking fan/Rr (FM24)	Stop	• In standby • At warm-up • At paper-jam, in trouble • 1-sided printing • At two-sided printing: Paper weight of 60 g/m^2 or more (paper width of 148 mm or less), paper weight of less than 60 g/m^2 (paper width of 209 mm or less)
	Full speed	At two-sided printing: Paper weight of 60 g/m^2 or more (paper width greater than 148 mm), paper weight of 60 g/m^2 (paper width greater than 209 mm)

7. RU-519

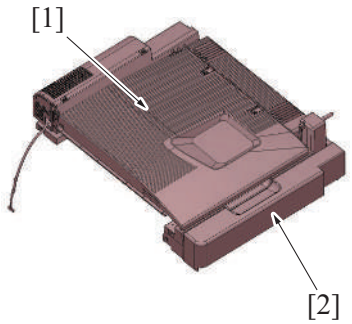
7.1 Configuration

- The RU section (horizontal transport section) transfers paper that is fed out from the MFP paper exit section to an optional finisher paper feed section.
- The RU door is installed at the upper part of the RU section. Access to the horizontal transport roller is enabled by opening the door upward. To be used for periodical cleaning of the roller and dealing with the paper misfeed at the RU section and other necessary operations.



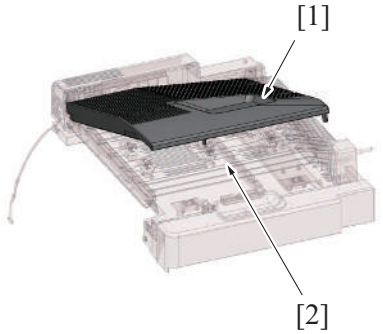
[1]	RU transport motor (M1)	[2]	RU section horizontal transport roller
[3]	3rd exit tray full sensor actuator: Exit section of MFP	[4]	3rd exit tray full sensor (PS1): Exit section of MFP
[5]	RU entrance sensor actuator	[6]	RU entrance sensor (PS2)
[7]	RU cover open/close detection sensor (PS3)	-	-

3rd tray on the RU section



[1]	3rd tray	[2]	Relay Unit RU-519

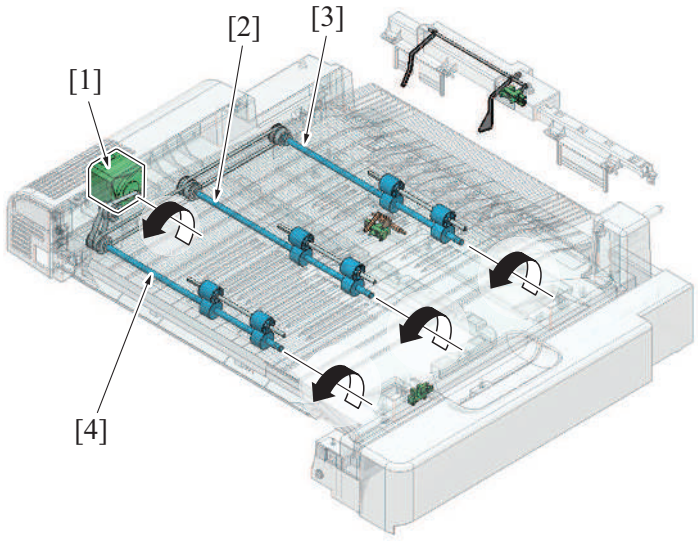
RU section door is opened



[1]	RU section door	[2]	Horizontal transport section

7.2 Drive

- The RU transport motor drives the RU section. It drives three RU section horizontal transport roller.
- The RU section horizontal transport roller is driven using the drive belt.

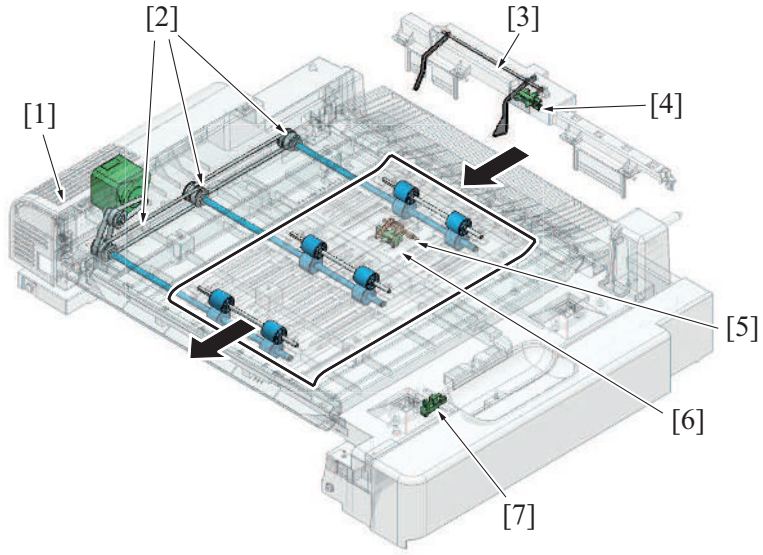


[1]	RU transport motor (M1)	[2]	RU section horizontal transport roller1
[3]	RU section horizontal transport roller2	[4]	RU section horizontal transport roller3

7.3 Paper transport control

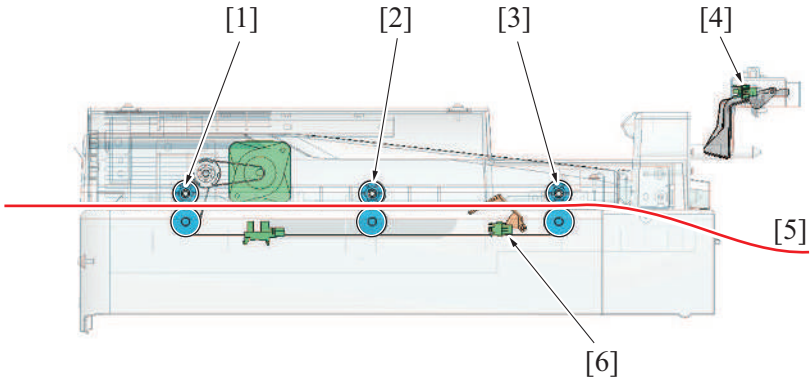
- It transports the paper that is discharged from the lower exit of the MFP paper exit section, to the RU section with the feed guide.
- It transports the paper to the FNS section, using three RU section horizontal transport rollers.
- The RU entrance sensor actuator is installed downstream of the paper path of the RU section horizontal transport roller 1, and the RU entrance sensor detects the paper transportation status.

Perspective view



[1]	3rd exit tray full sensor (PS1)	[2]	3rd exit tray full sensor actuator
[3]	RU section horizontal transport roller	[4]	RU transport motor (M1)
[5]	RU cover open/close detection sensor (PS3)	[6]	RU entrance sensor (PS2)
[7]	RU entrance sensor actuator	-	-

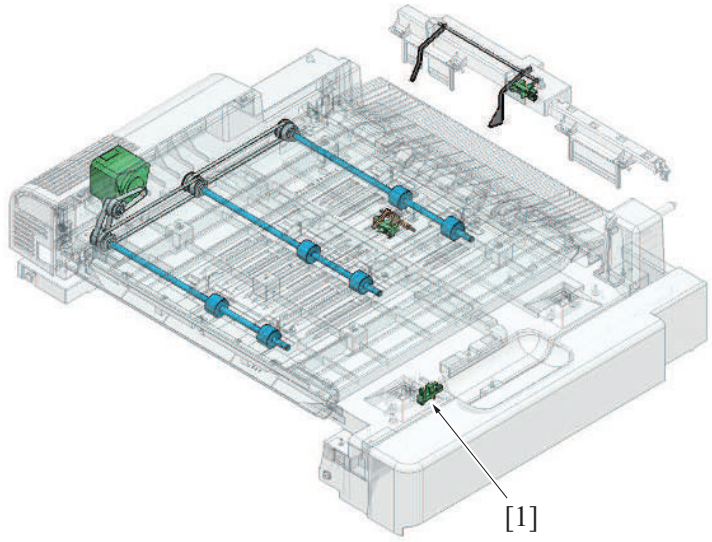
Front view



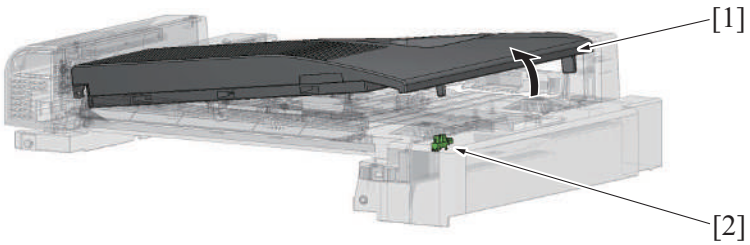
[1]	Paper	[2]	3rd exit tray full sensor (PS1)
[3]	RU section horizontal transport roller 1	[4]	RU section horizontal transport roller 2
[5]	RU section horizontal transport roller 3	[6]	RU entrance sensor (PS2)

7.4 RU section door open/close detection mechanism

- The RU door open/close detection sensor installed at the front left of the RU section, detects open/close of the RU door.
- Opening the RU door, the warning screen will display on the control panel. All the setting operations and jobs are disabled while the warning screen is displayed. The printing job is interrupted, and the paper being transported causes paper misfeed. The warning screen can be cancelled by closing the door.



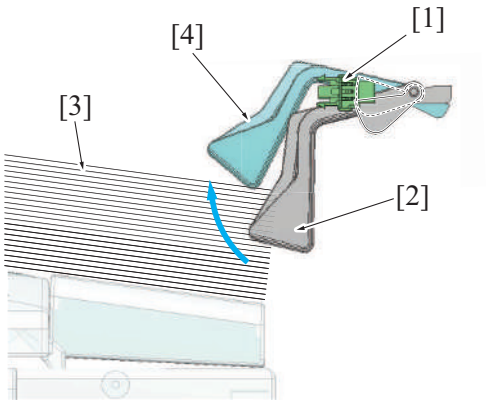
[1]	RU cover open/close detection sensor (PS3)	-	-



[1]	RU door	[2]	RU cover open/close detection sensor (PS3)

7.5 3rd exit tray full detection mechanism

- When a predetermined quantity of paper is discharged to the 3rd exit tray, the 3rd exit tray full sensor actuator will be pushed up by the discharged paper. When the actuator is pushed up to the predetermined position, the 3rd exit tray full sensor will be unblocked by the actuator to detect the exit tray full.
- The 3rd tray full is detected, the warning screen will display on the control panel. All setting operations and jobs will be disabled when the warning screen is displayed on the screen. The warning message will be released by removing the paper on the 3rd tray.

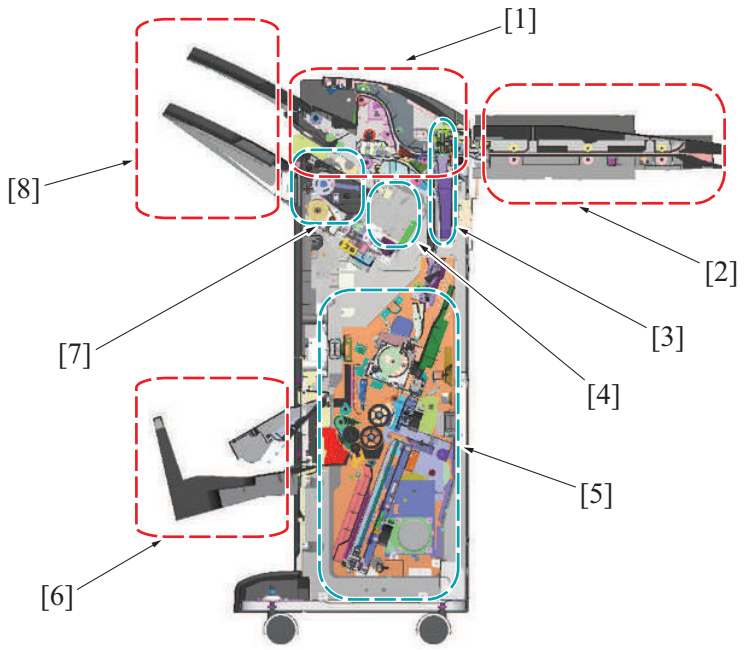


[1]	3rd exit tray full sensor (PS1)	[2]	3rd exit tray full sensor actuator (no paper)
[3]	Paper	[4]	3rd exit tray full sensor actuator (exit tray full)

8. FS-539/FS-539SD/PK-524

8.1 Configuration

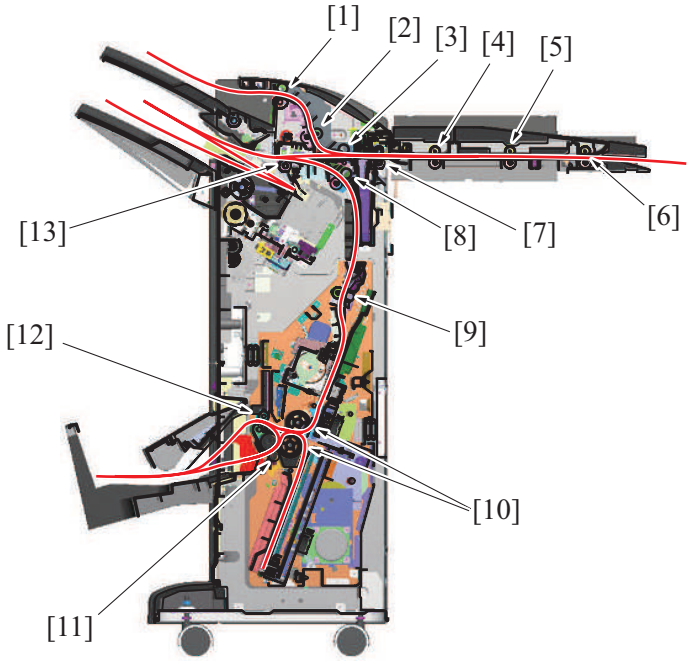
- FS-539 is composed of the horizontal transport section, transport section, alignment section, output tray section and stapler section.
- The FS-537SD is the model of a finisher that the saddle section is added to FS-539.
- Installation of the optional PK-524 enables you to add punch function.



[1]	Transport section	[2]	Horizontal transport section
[3]	Punch section (when PK-524 is installed)	[4]	Stapler section
[5]	Saddle section (FS-539SD only)	[6]	Saddle tray section (FS-539SD only)
[7]	Alignment section	[8]	Output tray section

8.2 Paper path

FS-539SD/PK-524 installed



[1]	Sub tray exit roller, roll	[2]	Sub tray transport roller, roll
[3]	Transport roller, roll	[4]	RU transport roller 3, transport roll 3 (horizontal transport section) *
[5]	RU transport roller 2, transport roll 2 (horizontal transport section) *	[6]	RU transport roller 1, transport roll 1 (horizontal transport section) *

[7]	FNS entry roller, roll	[8]	Saddle section exit roller, roll
[9]	Saddle section paper feed roller, roll	[10]	Center folding roller
[11]	Tri-folding roller, roll	[12]	Sub tray exit roller, roll
[13]	Receiving roller, Receiving roll	-	-

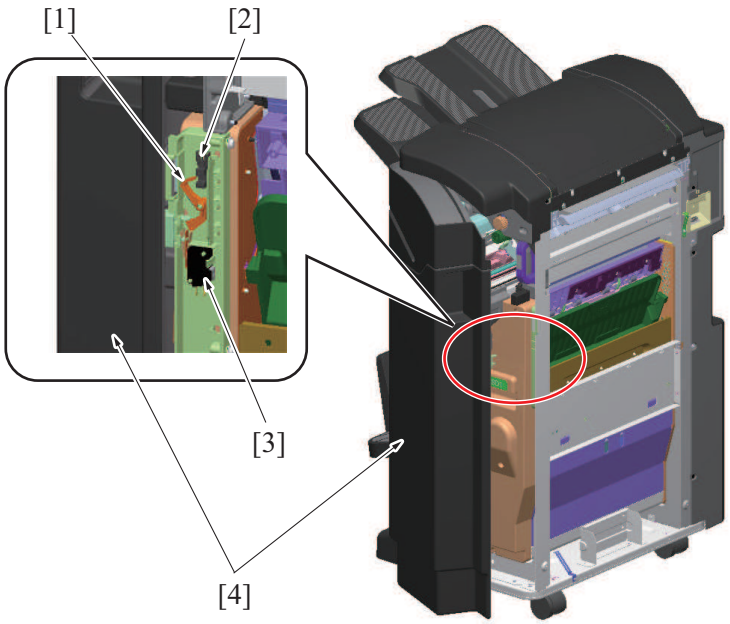
- *: Option

8.3 FINISHER SECTION

8.3.1 Door open/close detection mechanism

(1) Front door open/close detection mechanism

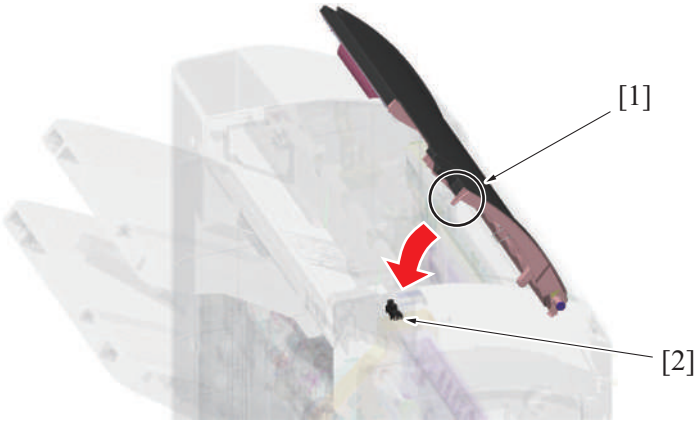
- The front door open detect switch is installed on the right front side of the finisher section. The front door open/close detection sensor is installed on the top of the front door open detect switch.
- The front door open detect switch and the front door open/close detection sensor detect the open/close of the front door.
- Open the front door, the warning screen will display on the control panel. All the setting operations and jobs are disabled while the warning screen is displayed. The printing job is interrupted, and the paper being transported causes paper misfeed. The warning screen can be cancelled by closing the door.



[1]	Actuator	[2]	Front door open/close detection sensor (PS37)
[3]	Front door open detect switch (SW1)	[4]	Front door

(2) Upper door open/close detection mechanism

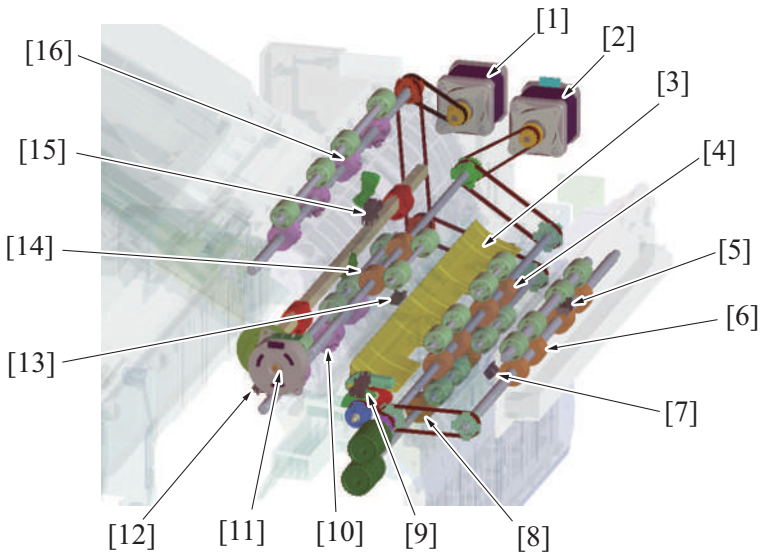
- The upper door open/close detection sensor is installed at the front left of the finisher section to detect the open/close of the upper door.
- Open the upper door, the warning screen will display on the control panel. All the setting operations and jobs are disabled while the warning screen is displayed. The printing job is interrupted, and the paper being transported causes paper misfeed. The warning screen can be cancelled by closing the door.



[1]	Upper door open/close detection lever	[2]	Upper cover door open/close detection sensor (PS32)

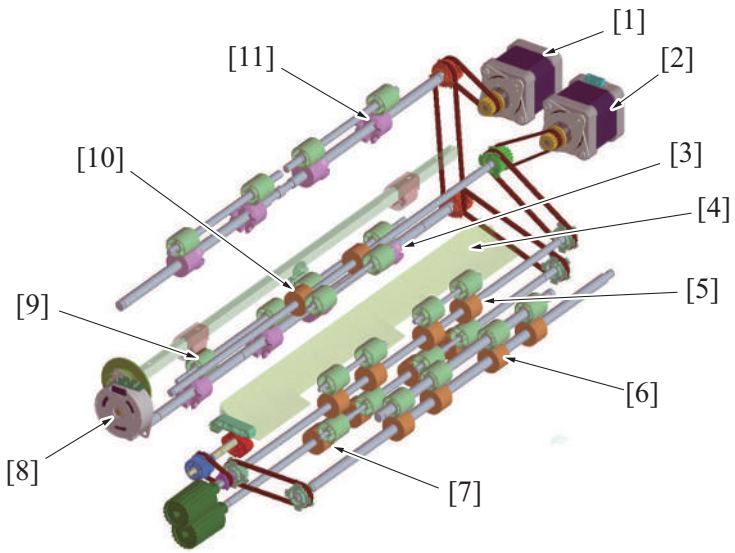
8.4 TRANSPORT SECTION

8.4.1 Configuration



[1]	FNS discharge motor (M3)	[2]	FNS entry transport motor (M2)
[3]	Paper path switching gate	[4]	Transport roller
[5]	FNS entrance sensor (PS4)	[6]	FNS entrance roller
[7]	Saddle exit sensor (PS5)	[8]	Saddle section exit roller
[9]	Route change gate home sensor (PS30)	[10]	Receiving roller
[11]	Receiving roller retraction motor (M4)	[12]	Receiving roller retraction sensor (PS11)
[13]	Main tray exit sensor (PS16)	[14]	Sub tray transport roller
[15]	Sub tray exit sensor (PS8)	[16]	Sub tray exit roller

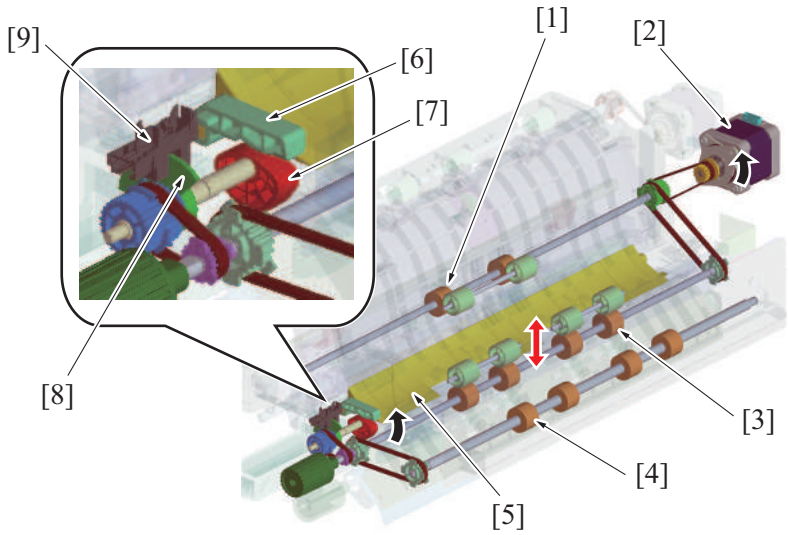
8.4.2 Drive



[1]	FNS discharge motor (M3)	[2]	FNS entry transport motor (M2)
[3]	Receiving roller	[4]	Paper path switching gate
[5]	Transport roller	[6]	FNS entrance roller
[7]	Saddle section exit roller	[8]	Receiving roller retraction motor (M4)
[9]	Receiving roll	[10]	Sub tray transport roller
[11]	Sub tray exit roller	-	-

8.4.3 Paper path switching mechanism

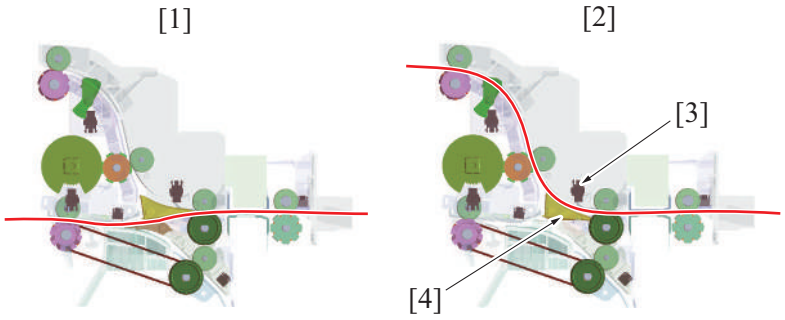
- Paper path is switched by the up/down operations of the paper path switching gate to transport paper to the main tray or the sub tray.
- The FNS entry transport motor drives the paper path switching gate to move up and down.
- The route change gate home sensor detects the position of the paper path switching gate.



[1]	Sub tray transport roller	[2]	FNS entry transport motor (M2)
[3]	Transport roller	[4]	FNS entrance roller
[5]	Paper path switching gate	[6]	Lever
[7]	Cam	[8]	Detection plate
[9]	Route change gate home sensor (PS30)	-	-

(1) Paper path switching gate up/down operation

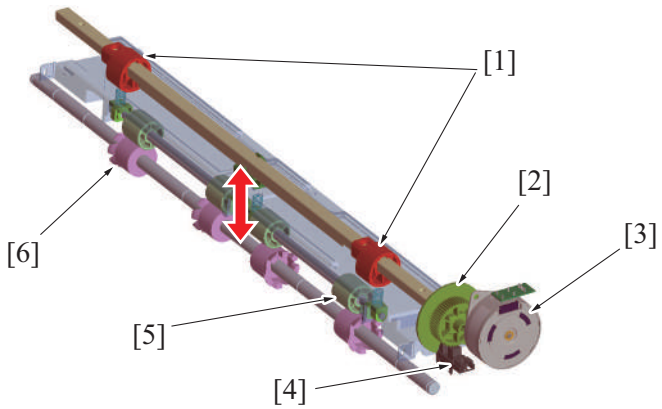
- Rotation of the cam raises or lowers the lever to change the position of the paper path switching gate.
- When the paper path switching gate is in the bottom position, paper is transported to the sub tray. When the gate is in the top position, paper is transported to the main tray.
- The detection board on the same shaft as the cam rotates, changing the state of the route change gate home sensor. Thus, the position of the paper path switching gate can be determined.
- The paper path switching gate in the lower position is detected when the route change gate home sensor is unblocked. The paper path switching gate in the upper position is detected when the sensor is blocked.



[1]	Paper exit to the main tray	[2]	Paper exit to the sub tray
[3]	Route change gate home sensor (PS30)	[4]	Paper path switching gate

8.4.4 Receiving roller section up/down function

- The up/down movement of the receiving roll, switches the timing of transporting the paper to the alignment section.
- The receiving roller retraction motor drives the receiving roll to move up and down.
- The receiving roller retraction sensor detects the position of the receiving roll.



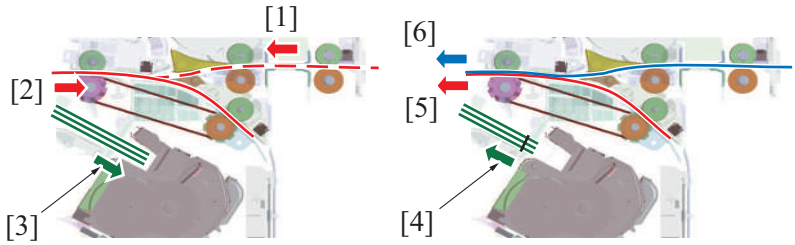
[1]	Cam	[2]	Detection plate
[3]	Receiving roller retraction motor (M4)	[4]	Receiving roller retraction sensor (PS11)
[5]	Receiving roll	[6]	Receiving roller

(1) Receiving roller pressure and release

- Rotation of the cam raises or lowers the receiving roll to pressure and release the receiving roller.
- When the receiving roll is pressed against the receiving roller, paper is transported to the alignment section by the receiving roller.
- When the receiving roll is released from the receiving roller, paper is in a standby state along the transport path.
- The detection board that is installed on the same shaft as the cam rotates, which changes the state of the receiving roller retraction sensor. Thus, the position of the receiving roll can be determined.
- The receiving roll is determined to be pressing against the receiving roller when the receiving roller retraction sensor is unblocked. The receiving roll is determined to be in the release state when the sensor is blocked.

8.4.5 Buffer control

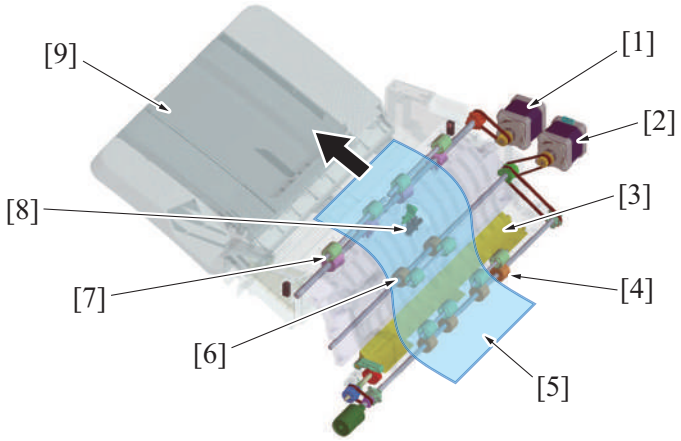
- The receiving roller section up/down mechanism is provided to eliminate the time loss for the next sheet of paper and achieve high productivity during the offset and staple operations.
- This allows handling a print job without reducing the paper transport speed even under the condition where the preceding paper batch is being aligned and stapled.
- The first sheet of paper that is transported during the paper batch alignment is switched back toward the saddle exit direction temporarily.
- After paper sheets are aligned and discharged, the first sheet of paper is transported together with the arrived second sheet to the alignment section.



[1]	First sheet	[2]	First sheet (switchback)
[3]	Paper batch (transported to the alignment tray)	[4]	Paper batch after alignment
[5]	First sheet	[6]	Second sheet

8.4.6 Sub tray exit mechanism

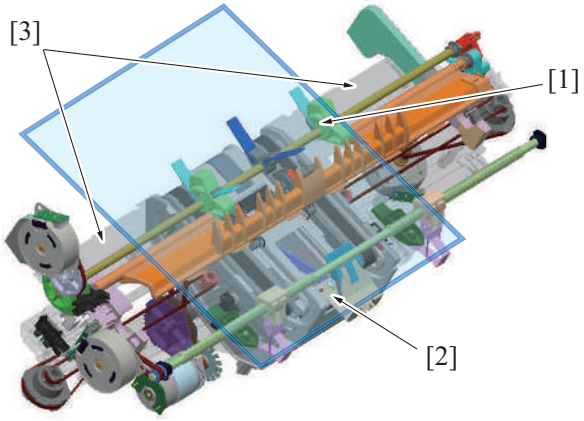
- The sub tray exit roller discharges paper from the horizontal transport section to the sub tray passing through the FNS entry roller, transport roller and sub tray transport roller.
- To transport the paper to the sub tray, the paper path switching gate also operates.
- The sub tray exit roller is driven by the FNS discharge motor.



[1]	FNS discharge motor (M3)	[2]	FNS entry transport motor (M2)
[3]	Paper path switching gate	[4]	Transport roller
[5]	Paper	[6]	Sub tray transport roller
[7]	Sub tray exit roller	[8]	Sub tray exit sensor (PS8)
[9]	Sub tray	-	-

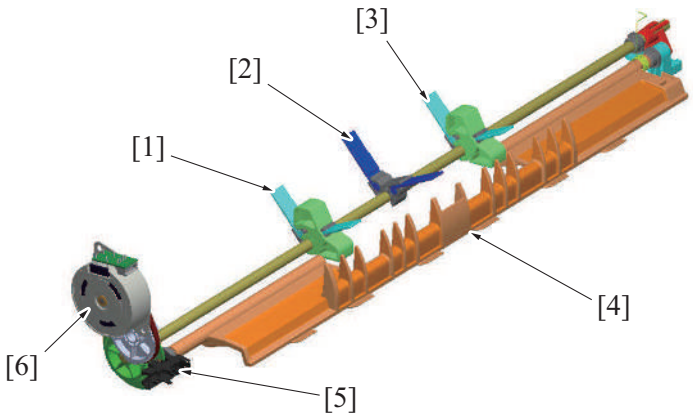
8.5 ALIGNMENT SECTION

8.5.1 Configuration



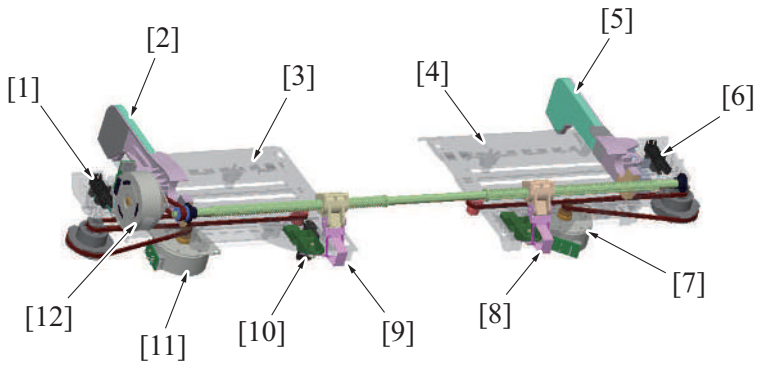
[1]	Upper paddle section	[2]	Document exit section
[3]	Alignment tray section	-	-

(1) Upper paddle section



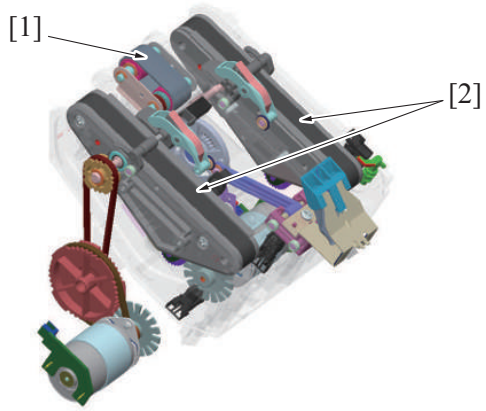
[1]	Upper paddle/Fr	[2]	Upper paddle/Ctr
[3]	Upper paddle/Rr	[4]	Paper guide
[5]	Upper paddle home sensor (PS14)	[6]	FNS paddle motor (M5)

(2) Alignment tray section



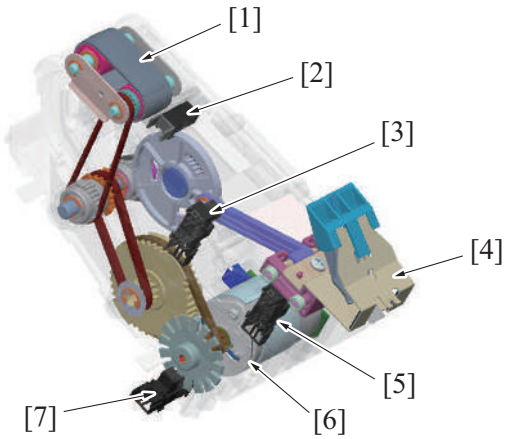
[1]	Alignment plate home sensor/Fr (PS12)	[2]	Alignment plate/Fr
[3]	Alignment tray/Fr	[4]	Alignment tray/Rr
[5]	Alignment plate/Rr	[6]	Alignment plate home sensor/Rr (PS13)
[7]	Alignment motor/Rr (M8)	[8]	Trailing edge stopper /Rr
[9]	Trailing edge stopper /Fr	[10]	Trailing edge stopper home sensor (PS20)
[11]	Alignment motor/Fr (M7)	[12]	Trailing edge stopper motor (M6)

(3) Exit section



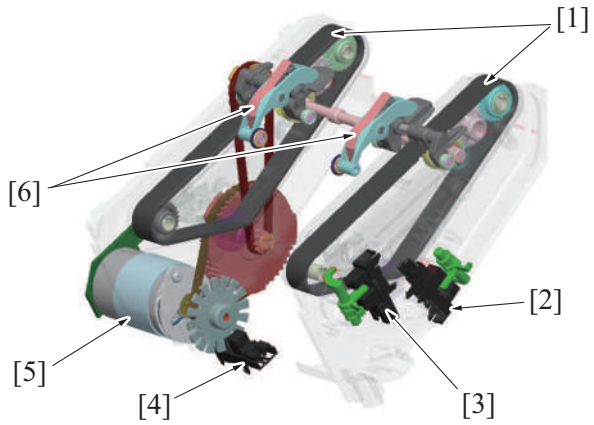
[1]	Lower paddle section	[2]	Gripper section

(a) Lower paddle section



[1]	Lower paddle	[2]	Alignment tray paper detection sensor (PS31)
[3]	Pre-eject away sensor (PS22)	[4]	Trailing edge stopper/C
[5]	Pre-eject home sensor (PS21)	[6]	Pre-eject drive motor (M9)
[7]	Pre-eject encoder sensor (PS15)	-	-

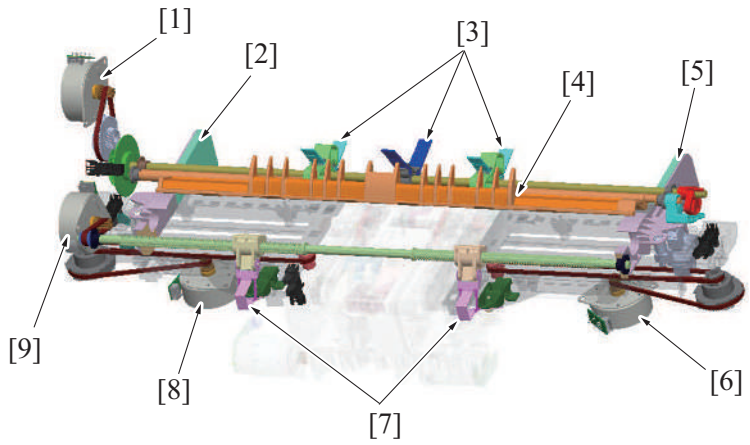
(b) Gripper section



[1]	Paper transport belt	[2]	Gripper home sensor (PS18)
[3]	Gripper position sensor (PS19)	[4]	Gripper motor sensor (PS17)
[5]	Bundle eject motor (M10)	[6]	Gripper

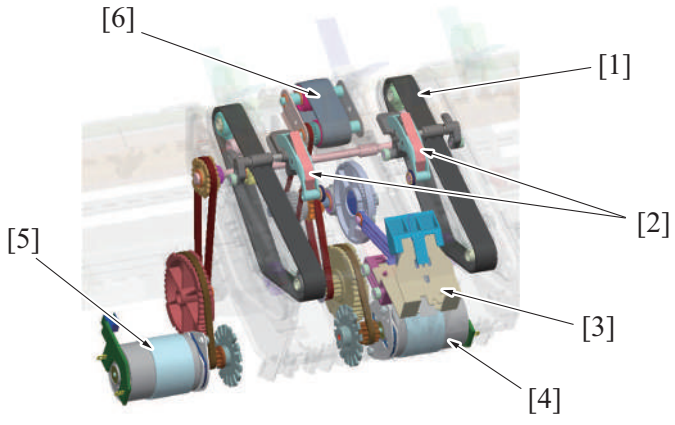
8.5.2 Drive

(1) Upper paddle section/Alignment tray section



[1]	FNS paddle motor (M5)	[2]	Alignment plate/Fr
[3]	Upper paddle	[4]	Paper guide
[5]	Alignment plate/Rr	[6]	Alignment motor/Rr (M8)
[7]	Trailing edge stopper	[8]	Alignment motor/Fr (M7)
[9]	Trailing edge stopper motor (M6)	-	-

(2) Exit section

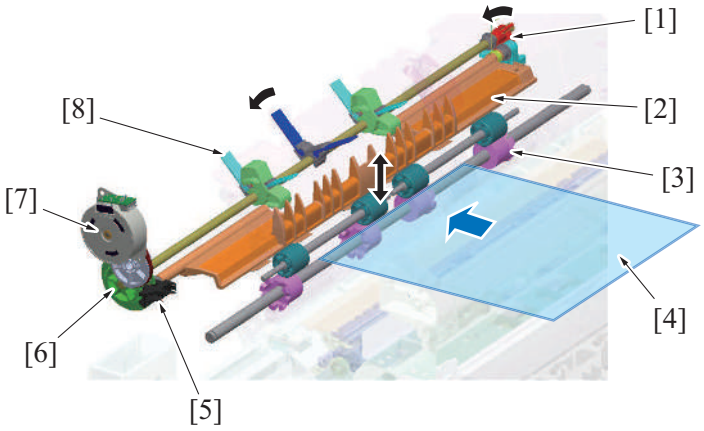


[1]	Paper transport belt	[2]	Gripper
[3]	Trailing edge stopper/C	[4]	Pre-eject drive motor (M9)

[5]	Bundle eject motor (M10)	[6]	Lower paddle

8.5.3 Paper transport control to alignment section

- When the FNS paddle motor rotates, the upper paddles (3 pieces) located on the upper paddle shaft, rotates to draw and drop the paper to the alignment tray.
- The upper paddle returns to standby at the home position (upper position) after one rotation.
- The cam located on the upper paddle shaft rotates to move the paper guide up and down.
- The lowering of the paper guide ensures that paper is transported to the alignment tray.

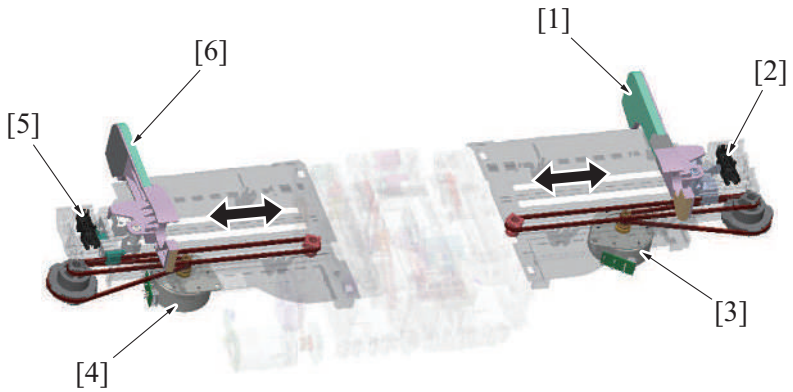


[1]	Cam	[2]	Paper guide
[3]	Receiving roller	[4]	Paper
[5]	Upper paddle home sensor (PS14)	[6]	Detection plate
[7]	FNS paddle motor (M5)	[8]	Upper paddle

8.5.4 Paper alignment control

(1) Alignment plate

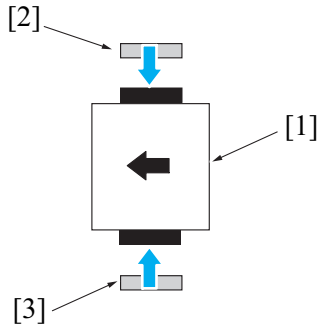
- The alignment plate/Fr and alignment plate/Rr align the paper in the width orientation and shift paper sheets.
- The alignment motor and drive belt drives the alignment plates.
- The alignment plates move forward and backward by the forward and reverse rotation of the alignment motor.
- Alignment plate/Fr and alignment plate//Rr are each equipped with a drive motor, which allows them to operate independently.



[1]	Alignment plate/Rr: Home position	[2]	Alignment plate home sensor/Rr (PS13)
[3]	Alignment motor/Rr (M8)	[4]	Alignment motor/Fr (M7)
[5]	Alignment plate home sensor/Fr (PS12)	[6]	Alignment plate/Fr: Home position

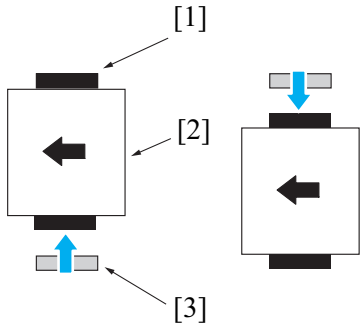
(a) Alignment operation

- The alignment motor/Fr rotates to move the alignment plate/Fr via the drive belt.
- The alignment plate home sensor/Fr detects the home position of the alignment plate/F.
- The alignment motor/Rr rotates to move the alignment plate/Rr via the drive belt.
- The alignment plate home sensor/Rr detects the home position of the alignment plate/Rr.
- The sheets are placed between the alignment plates/Fr and /Rr corresponding to the paper width so that their both ends are aligned.



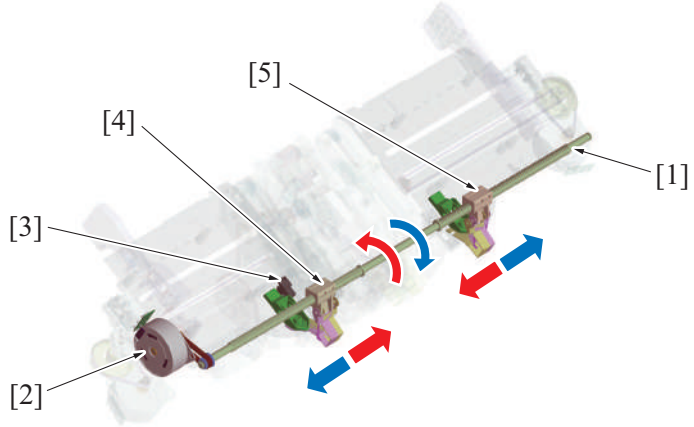
(b) Shift operation

- When offset is selected as finishing option, the alignment plates are moved to shift the sets of paper. Paper is discharged to the center of the main tray at normal printing and stapling.
- Depending on the width of paper, the alignment plate Fr (alignment plate Rr) pushes the sets of paper to the rear side (front side) from one side so that the sets of the paper are shifted.
- The sheets are shifted by alternatively repeating the above operation.



(2) Trailing edge stopper

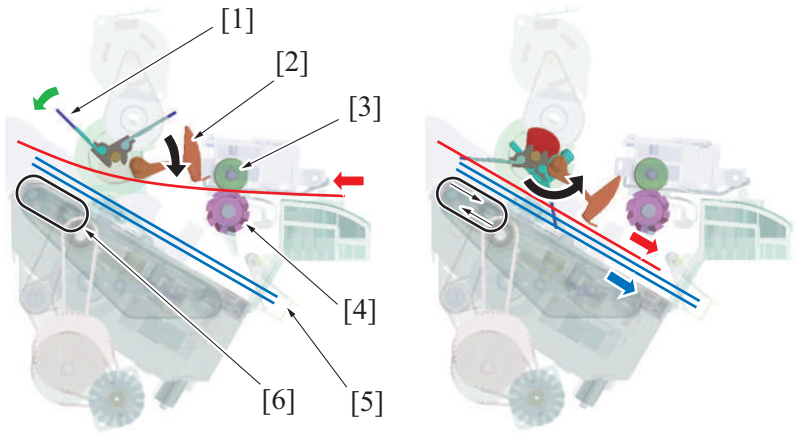
- The trailing edge stopper/Fr and trailing edge stopper/Rr align paper in the feed orientation.
- The trailing edge stopper motor drives the trailing edge stoppers.



[1]	Stopper moving shaft	[2]	Trailing edge stopper motor (M6)
[3]	Trailing edge stopper home sensor (PS20)	[4]	Trailing edge stopper/Fr: Home position
[5]	Trailing edge stopper/Rr: Home position	-	-

(a) Alignment operation

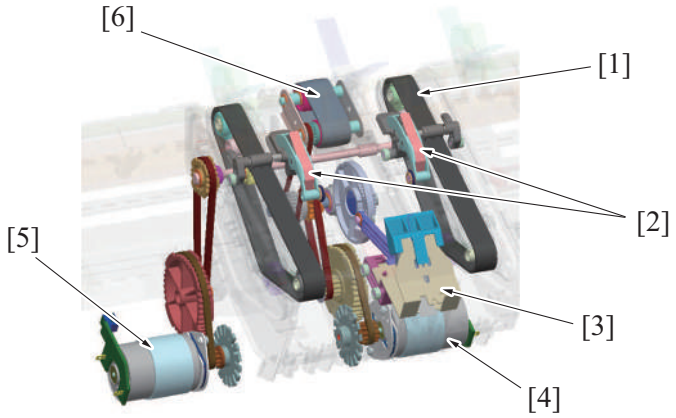
- The shaft for stopper movement has a different spiral between the front and rear sides.
- The trailing edge stopper/Fr to move forward and the trailing edge stopper/Rr to move backward when the trailing edge stopper motor rotates in the normal direction.
- Trailing edge stopper/Fr and the trailing edge stopper/Rr shift according to the paper width before starting a job, to hold the trailing edge of the paper.
- Paper is sandwiched between the upper paddle and lower paddle, and pressed against the trailing edge stoppers.
- The trailing edge stoppers hold the trailing edge of the paper, to align the trailing edge of paper in the feed orientation.
- For 2-point staple jobs, the trailing edge stoppers/Fr and /Rr are retracted to the position where they do not interfere with the stapler.
- After the job is completed, the trailing edge stopper motor reverses the rotation to return the trailing edge stopper to the home position.



[1]	Upper paddle	[2]	Paper guide
[3]	Receiving roll	[4]	Receiving roller
[5]	Trailing edge stopper	[6]	Lower paddle

8.5.5 Paper exit control

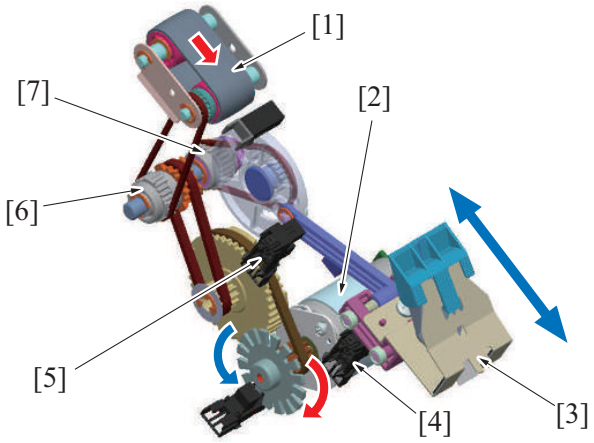
- When the pre-eject drive motor rotates counterclockwise, the bottom edge stopper/C pushes paper to the position at which it can be gripped by the gripper.
- The gripper grips the trailing edges of the sets of paper in the alignment tray and transports them to the paper exit position.
- The gripper releases the sets of paper to discharge them to the main tray. The gripper is moved to the home position and brought into a standby state.



[1]	Paper transport belt	[2]	Gripper
[3]	Trailing edge stopper/C	[4]	Pre-eject drive motor (M9)
[5]	Bundle eject motor (M10)	[6]	Lower paddle

(1) Lower paddle operation

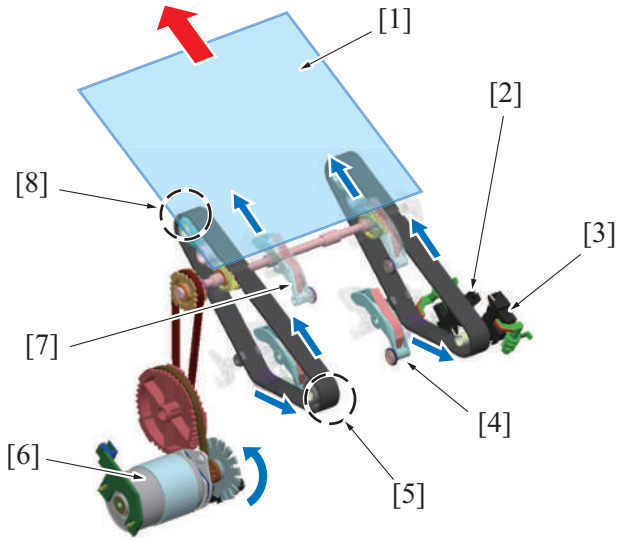
- When the pre-eject drive motor rotates clockwise, the lower paddle rotates to press the paper against the trailing edge stopper.
- When the pre-eject drive motor rotates counterclockwise, the trailing edge stopper moves from the home position to the paper exit position to discharge paper to the main tray.
- When the drive gear makes one turn, the stopper moves from the paper exit position to the home position and is brought into a standby state.



[1]	Lower paddle	[2]	Pre-eject drive motor (M9)
[3]	Trailing edge stopper/C	[4]	Pre-eject home sensor (PS21)
[5]	Pre-eject away sensor (PS22)	[6]	One-way clutch (for lower paddle driving)
[7]	One-way clutch (for trailing edge stopper/C driving)	-	-

(2) Gripper operation

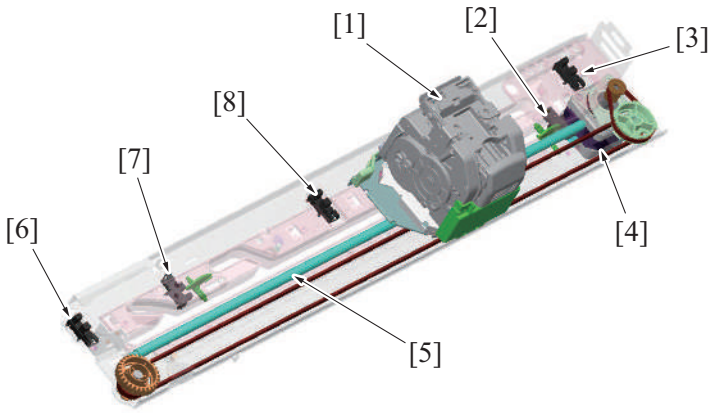
- The bundle eject motor rotates to turn the paper transport belt. It rotates the gripper that has been fixed to the paper transport belt.
- The gripper stays at the home position (inside the exit section) and rotates at the position [5] shown in the illustration to grip the trailing edge of paper. Paper is transported with the gripper griping the trailing edge of the paper. The gripper rotates at the position [8] in the illustration to release the paper. After the paper transport belt makes one turn, the gripper returns to the home position and is brought into the standby state.



[1]	Paper	[2]	Gripper home sensor (PS18)
[3]	Gripper position sensor (PS19)	[4]	Gripper (home position)
[5]	Gripper position (gripping the paper)	[6]	Bundle eject motor (M10)
[7]	Gripper position (transporting the paper)	[8]	Gripper position (release the paper)

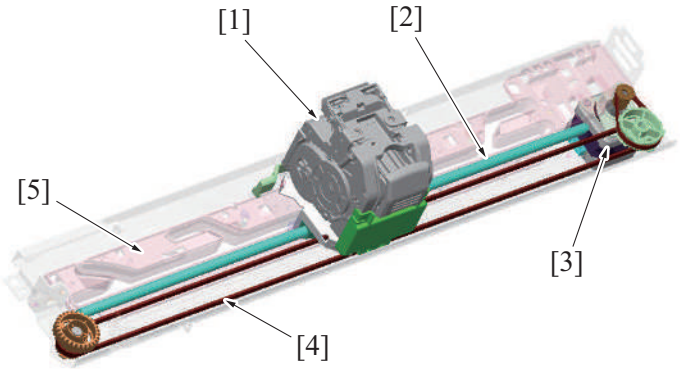
8.6 STAPLER SECTION

8.6.1 Configuration



[1]	Stapler unit	[2]	Flat staple position sensor/Rr (PS33)
[3]	Wide flat limit sensor/Rr (PS23)	[4]	Stapler movement motor (M13)
[5]	Shaft	[6]	Stapler home sensor (PS35)
[7]	Wide flat limit sensor/Fr (PS34)	[8]	Stapler center position sensor (PS24)

8.6.2 Drive

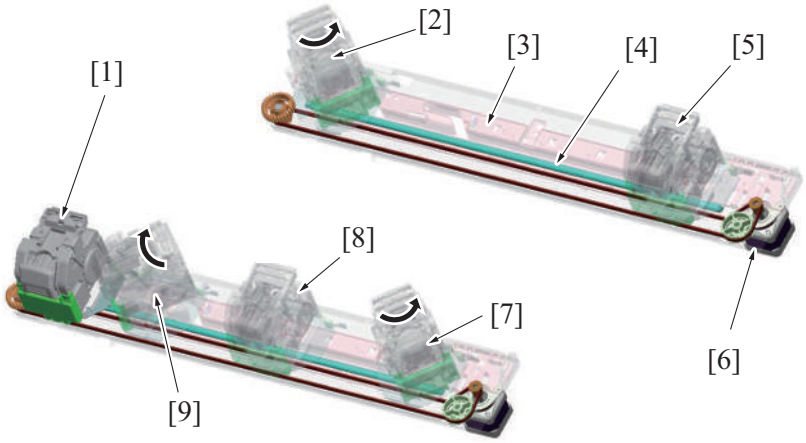


[1]	Stapler unit	[2]	Shaft
[3]	Stapler movement motor (M13)	[4]	Drive belt
[5]	Slide guide plate	-	-

8.6.3 Stapler movement control

(1) Stapler movement

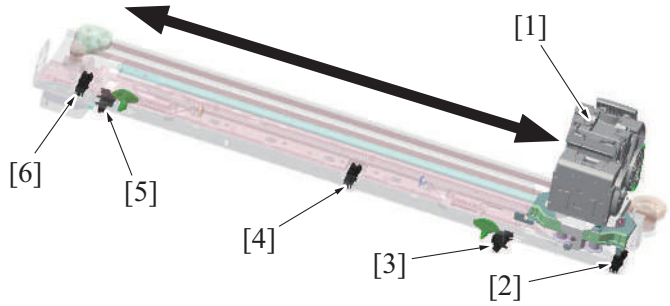
- When the stapler movement motor rotates, the belt is driven. So, the stapler holder that is attached to the belt moves back and forth along the shaft.
- When the stapler unit moves to the manual staple position, the corner rear staple position, and the staple cartridge replacement position, the staple unit rotates according to the shape of the slide guide plate.



[1]	Stapler unit (home position)	[2]	Stapler unit (manual staple position)
[3]	Slide guide plate	[4]	Shaft
[5]	Stapler unit (corner rear staple (parallel) position)	[6]	Stapler movement motor (M13)
[7]	Stapler unit (corner rear staple position)	[8]	Stapler unit (center position)
[9]	Stapler unit (staple cartridge replacement position)	-	-

(2) Stapler position detection

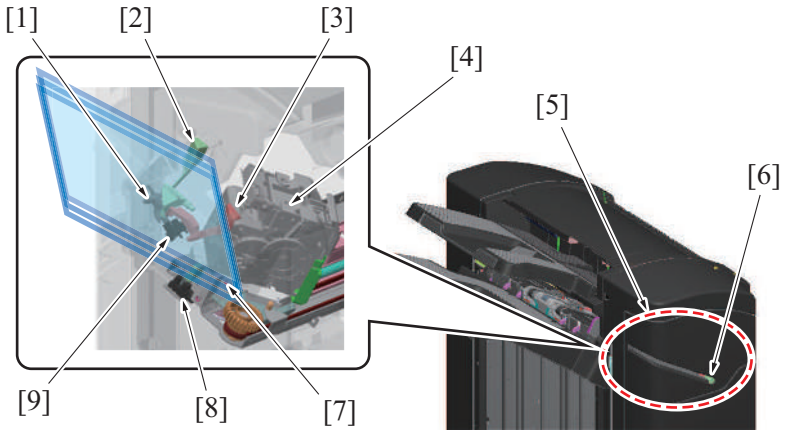
- The stapler home sensor detects the home position/manual staple position of the stapler.
- The flat staple position sensor/Rr detects the corner rear (parallel) staple position of the stapler.
- The corner staple position sensor/Rr detects the corner rear staple position of the stapler.
- The corner staple position sensor/Fr detects the corner front stapler position of the stapler/replacement position of the staple cartridge.
- The staple position of the stapler is detected by the rotation amount of the stapler movement motor with reference to the stapler home sensor and the stapler center position sensor.



[1]	Stapler unit (home position)	[2]	Stapler home sensor (PS35)
[3]	Wide flat limit sensor/Fr (PS34)	[4]	Stapler center position sensor (PS24)
[5]	Flat staple position sensor/Rr (PS33)	[6]	Wide flat limit sensor/Rr (PS23)

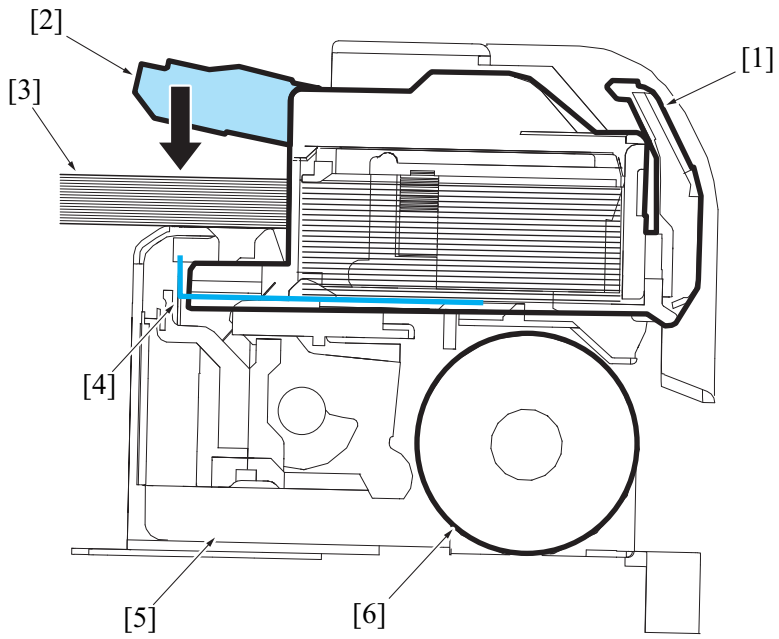
8.6.4 Manual staple mechanism

- When no paper batch has been inserted into the slit, the paper set detection levers 1 and 2 suppress the actuator. The manual staple sensor remains in a position where it is blocked.
- When the paper batch is correctly inserted into the slit, the paper batch pushes the paper set detection levers 1 and 2. Thus, the actuator becomes operable.
- The spring force activates the actuator, and the manual staple sensor is unblocked.
- If the paper batch is not inserted correctly into the slit, either the paper set detection lever 1 or 2 suppresses the actuator. The manual staple sensor remains blocked.
- When the manual staple sensor is unblocked, the machine determines that the paper batch has been set. Thus, the manual stapling is executed after a predetermined time.
- Specify the time from the moment the paper batch is set until the stapling is executed in [Administrator] -> [System Settings] -> [Manual staple setting].



[1]	Actuator	[2]	Paper set detection lever 1
[3]	Paper set detection lever 2	[4]	Stapler unit
[5]	Paper batch insertion slit	[6]	Status LED
[7]	Paper batch	[8]	Stapler home sensor (PS35)
[9]	Manual staple sensor (PS36)	-	-

8.6.5 Staple control



[1]	Staple cartridge	[2]	Clincher staple arm
[3]	Paper batch	[4]	Staple sheet (staple)
[5]	Stapler	[6]	Stapler motor

(1) Stapling operation

- The stapling operation is driven by the stapler motor.
- The clincher staple arm is lowered by the stapler motor. The clincher staple arm presses the sheets.
- Afterwards, a staple is pushed up the staple arm from the staple side. The staple is pressed through the sheets and bent from the clincher staple arm to fasten the sheets together.
- The staple operation completes when the staple arm returns to the home position.

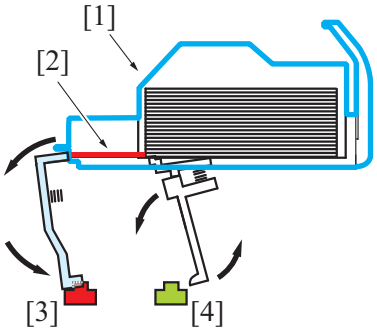
(2) Clogged staple detection

- The staple arm position is detected by the stapler home sensor located in the stapler.
- The stapler home sensor is off during the staple operation.
- A staple jam is determined when the stapler home sensor does not turn on again after a specified amount of time elapses since it turned off.

8.6.6 Staple empty detection control

(1) Staple empty detection

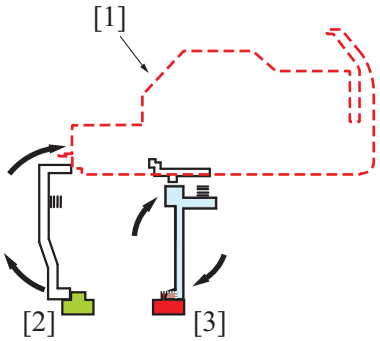
- The stapler includes the self-priming sensor and staple empty sensor to detect the status of the staple cartridge and staples.
- If the trailing edge of the last staple sheet in the cartridge passes the actuator of the staple empty sensor, the staple empty sensor is blocked. The machine determines that the cartridge is empty.
- Even when staple empty is detected, printing is not disabled. Paper is discharged without being stapled.
- If staple empty occurs, the stapler stays at the staple cartridge replacement position.



[1]	Staple cartridge	[2]	Staple sheet
[3]	Self-priming sensor	[4]	Staple empty sensor

(2) Cartridge installation detection

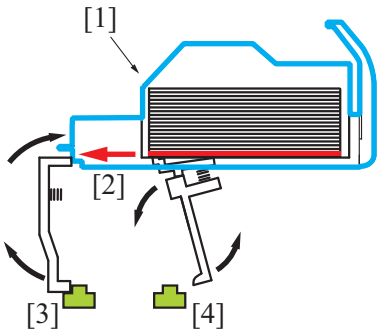
- When a cartridge is not installed, the staple empty sensor is blocked and the self-priming sensor is unblocked.
- The control panel displays a message to warn of the staple empty.



[1]	Staple cartridge (unset)	[2]	Self-priming sensor (unblocked)
[3]	Staple empty sensor (blocked)	-	-

(3) Staple sheet setting errors

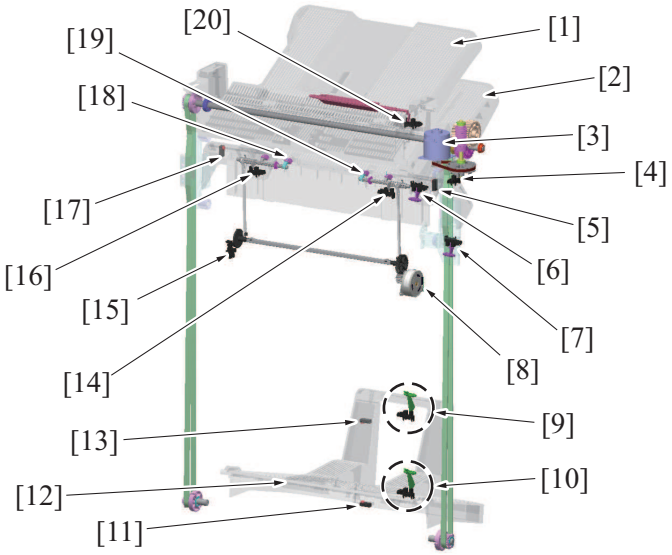
- When a staple sheet is placed, the staple empty sensor is unblocked, and the empty-staple status clears.
- The staple empty sensor detects (unblocked) a staple sheet. When the self-priming sensor does not detect (unblocked) the leading edge of the staple sheet, a clinch operation is performed.
- If the self-priming sensor cannot detect the leading edge of the staple sheet after clinch operations, machine determines that the staple sheet is not properly fed and the control panel displays the staple empty message.



[1]	Staple cartridge (loaded with staple sheets)	[2]	Staple sheet is fed by clinch operation
[3]	Self-priming sensor (unblocked)	[4]	Staple empty sensor (unblocked)

8.7 OUTPUT TRAY SECTION

8.7.1 Configuration

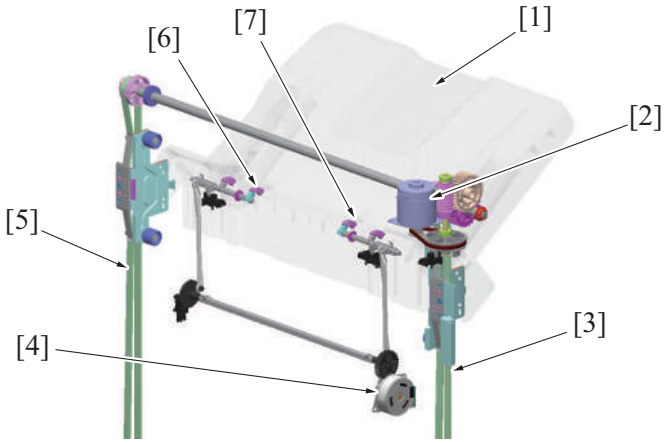


[1]	Sub tray	[2]	Main tray
[3]	Main tray up/down motor (M11)	[4]	Main tray up/down motor sensor (PS25)
[5]	Main tray upper sensor/out (PS6)	[6]	Main tray empty sensor (PS39)
[7]	Main tray middle position sensor (PS10)	[8]	Paper delivery control motor (M12)
[9]	Main tray full detection sensor (PS29) (*1) (*3)	[10]	Main tray full detection sensor (PS29) (*2)
[11]	Booklet tray empty detection sensor/out (PS14) (*3)	[12]	Saddle tray (*3)
[13]	Booklet tray empty detection sensor/in (PS13) (*3)	[14]	Main tray upper position sensor/Rr (PS26)

[15]	Paper delivery control home sensor (PS28)	[16]	Main tray upper position sensor/Fr (PS27)
[17]	Main tray upper sensor/in (PS7)	[18]	Paper detection lever/Fr
[19]	Paper detection lever/Rr	[20]	Sub tray full sensor (PS38)

- *1: Installation position for the FS-539SD sensor
- *2: Installation position for the FS-539 sensor
- *3: FS-539SD only

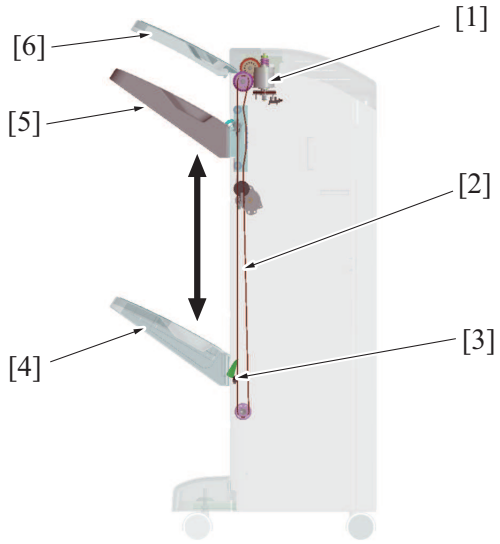
8.7.2 Drive



[1]	Main tray	[2]	Main tray up/down motor (M11)
[3]	Main tray drive belt/Rr	[4]	Paper delivery control motor (M12)
[5]	Main tray drive belt/Fr	[6]	Paper detection lever/Fr
[7]	Paper detection lever/Rr	-	-

8.7.3 Main tray up/down mechanism

- Rotation of the main tray up/down motor drives the main tray drive belt to lift and lower the main tray.



[1]	Main tray up/down motor (M11)	[2]	Main tray drive belt
[3]	Main tray full detection sensor (PS29)	[4]	Main tray (main tray full position)
[5]	Main tray (home position)	[6]	Sub tray

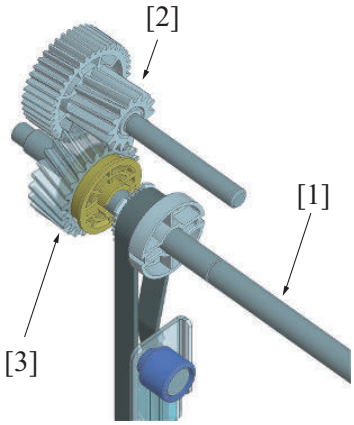
(1) Mechanism for protecting main tray drive section

⚠CAUTION

- When the drive connection in the torque limiter is released, the main tray moves down under its own weight.
- To avoid finisher breakage and your injury, before releasing the drive connection in the torque limiter, be sure to support the main tray with your hand.

- The drive connection section of the main tray up/down drive mechanism has a torque limiter to prevent breakage.
- There may be an obstacle below the main tray when it moves down. If the tray touches the obstacle and the force for stopping the lowering operation exceeds the specified value, the teeth of the drive gear rotate reversely. The driving force cannot be transmitted to the main tray. The torque limiter is used to prevent this situation from causing the breakage of the main tray drive mechanism and the main tray up/down motor.
- The main tray can be moved only upward with your hands. By manually pushing it upward with the force exceeding the specified value, the main tray can be raised. In contrast, as the torque limiter is not provided for the downward movement, the main tray cannot be lowered by pushing it down. If the tray is forcibly pushed downward, the main tray drive mechanism can be damaged.
- If the main tray needs to be manually lowered for maintenance and repair, it can be lowered by releasing the drive connection in the torque limiter.

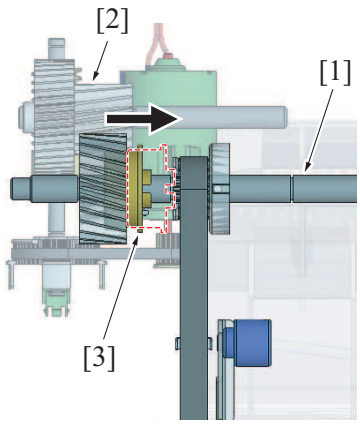
Front perspective view



[1]	Main tray driving shaft	[2]	Main tray up/down motor drive connecting gear
[3]	Torque limiter	-	-

Method for releasing the drive connection

1. Remove the rear cover.
2. Support the main tray with your hand so that it does not fall down.
3. Slide the area of the torque limiter, located on the main tray driving shaft, as shown to the front side of the main body. The connection of the drive gears is released and the main tray is lowered.
   Side view



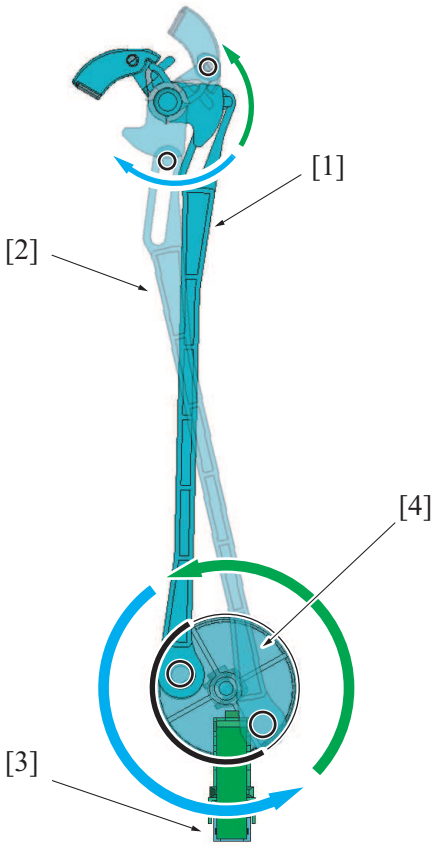
[1]	Main tray driving shaft	[2]	Main tray up/down motor drive connecting gear
[3]	Torque limiter	-	-

8.7.4 Main tray paper level detection control

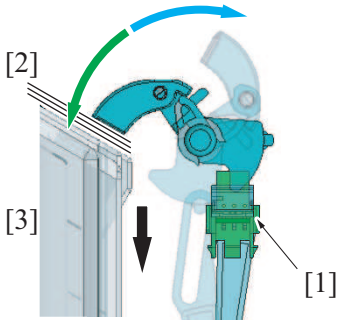
- To eliminate irregularity of the discharged paper, distance between the top surface of the discharged paper and the exit port is controlled to be consistent.
- The main tray upper position sensor detects the level of the discharged paper in the main tray.
- The top surface of the discharged paper is controlled to be at specified position by raising/lowering the main tray depending on the detected paper level.
- The paper level is detected every time that the paper is discharged to check the paper height.

(1) Main tray upper position sensor control

- The paper level detect lever is installed on the main tray and operates with the paper receiving control motor and paper level detect lever drive gear.
- The leading of the paper level detect lever will rise when the paper level detect lever drive gear is rotated half turn. If the paper level detect lever drive gear rotates another half turn, the paper level detect lever will be lowered. This operation will hold down the top surface at the trailing edge of the paper in the main tray.
- The paper delivery control sensor detects the position of the paper level detect lever drive gear. The paper receiving control motor stops when the paper level detect lever drive gear is rotated one turn.
- The main tray upper position sensor detects the position of the leading of the paper level detect lever.
- The position of the main tray upper position sensor changes depending on the paper level detect lever position. Position of the paper level detect lever changes depending on the height of the output tray.
- When the main tray upper position sensor is blocked, the main tray top surface of the paper sheets is determined as exceeding the specified height.
- The main tray up/down motor is rotated and the main tray is lowered until the main tray upper position sensor is unblocked.



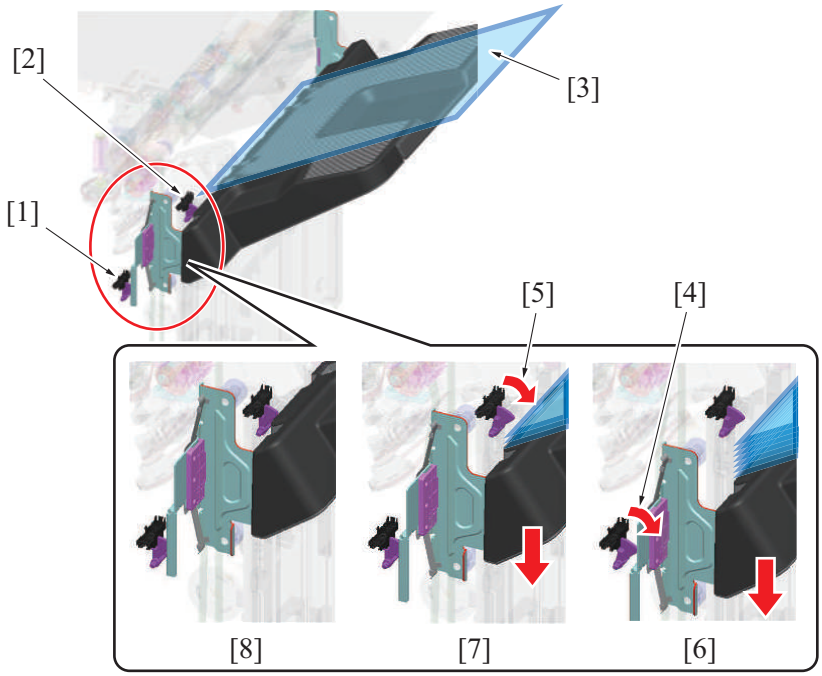
[1]	Paper detection lever (home position)	[2]	Paper detection lever (upper position)
[3]	Paper delivery control sensor (PS28)	[4]	Paper detection lever drive gear



[1]	Main tray upper position sensor/Fr (PS27) Main tray upper position sensor/Rr (PS26)	[2]	Paper
[3]	Main tray	-	-

8.7.5 Main tray position detection mechanism

- The main tray empty sensor and main tray intermediate position sensor are provided. These sensors detect the loading status of the main tray when the main power turns ON or the machine awakes from the sleep mode.
- When the main tray is at the upper limit position, the main tray empty sensor is blocked, thereby detecting that the main tray is empty.
- When the main tray is near the upper limit, the main tray empty sensor is unblocked and the main tray intermediate position sensor is blocked. The machine detects that a small amount of paper is loaded. In this case, the main tray paper removal warning will not be displayed on the control panel.
- When paper is loaded in the main tray, the main tray empty sensor and the main tray middle position sensor are unblocked. In this case, the main tray paper removal warning will be displayed on the control panel.

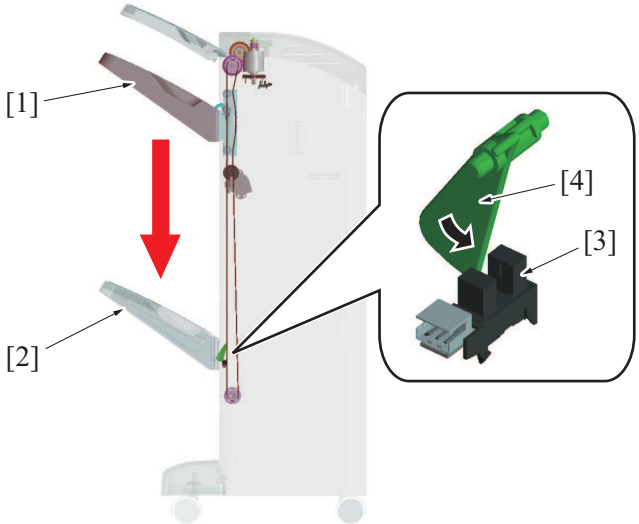


[1]	Main tray middle position sensor (PS10)	[2]	Main tray empty sensor (PS39)
[3]	Paper	[4]	Main tray middle position sensor: Blocked -> Unblocked
[5]	Main tray empty sensor: Blocked -> Unblocked	[6]	Paper present: Main tray paper removal warning is displayed
[7]	Paper present: Main tray paper removal warning is not displayed	[8]	Paper not present

8.7.6 Tray full detection mechanism

(1) Main tray

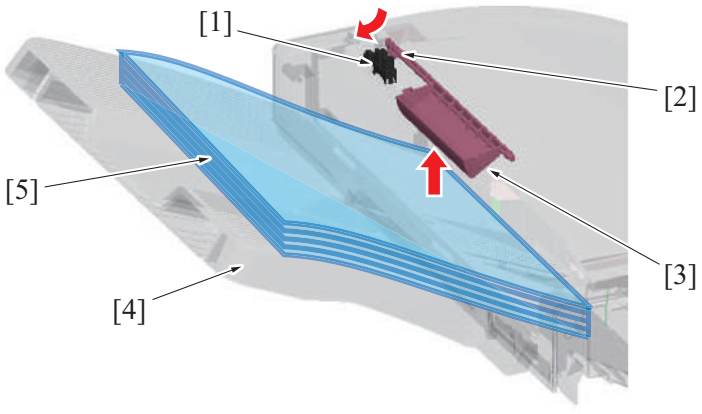
- The main tray is lowered to maintain the paper top surface to specified position when the paper is discharged to the main tray.
- Once the main tray is lowered to the specified position, the actuator is activated to block the main tray full detection sensor.
- When the main tray full detection sensor is blocked, main tray is determined as full and the warning screen is displayed.
- When the main tray full is detected, all configurations and jobs that use the main tray cannot be performed.
- By removing the paper from the main tray, the paper detection lever is lowered. This causes machine to determine that the paper is removed and the “main tray full” message disappears.



[1]	Main tray (home position)	[2]	Main tray (main tray full position)
[3]	Main tray full detection sensor (PS29)	[4]	Actuator

(2) Sub tray

- When the paper is ejected to the sub tray, the upper surface of the paper pushes up the lever.
- When the lever is pressed, the actuator on the back side of the lever rotates.
- The actuator blocks the sub tray full sensor, and detects that the sub tray is full.
- When the sub tray full is detected, the warning message appears on the control panel.
- In this state, any sub tray configurations and jobs that use the sub tray cannot be performed.



[1]	Sub tray full sensor (PS38)	[2]	Actuator
[3]	Lever	[4]	Sub tray
[5]	Paper	-	-

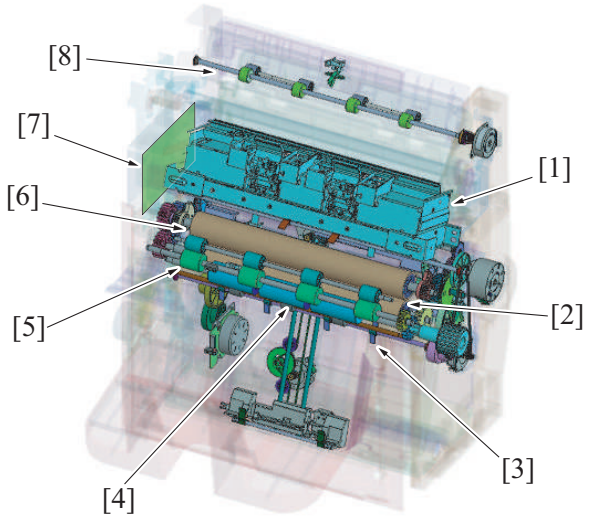
8.8 Saddle section

8.8.1 Configuration

NOTE

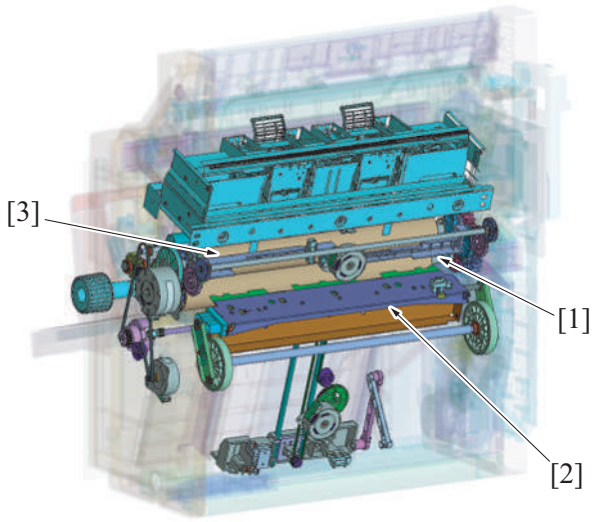
- **FS-539SD only**

Front left side perspective view



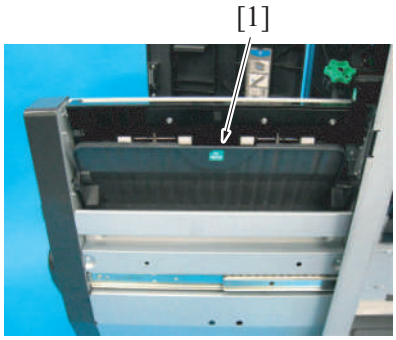
[1]	Staple unit	[2]	Center folding roller 2
[3]	Center folding section lower paddle	[4]	Tri-folding roller
[5]	Saddle tray exit roller	[6]	Center folding roller 1
[7]	SD drive board (SDDB)	[8]	Saddle section paper feed roller

Front right side perspective view



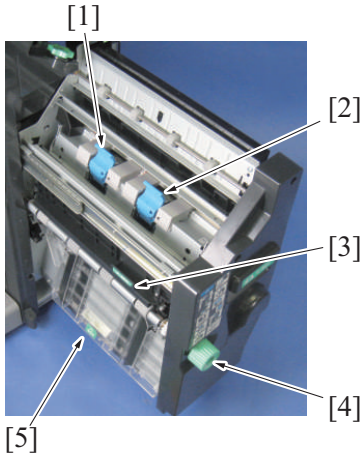
[1]	Center staple alignment plate drive gear/Rr	[2]	Center fold knife
[3]	Center staple alignment plate drive gear/Fr	-	-

Right side view



[1]	Jam removal cover (transport section)	-	-

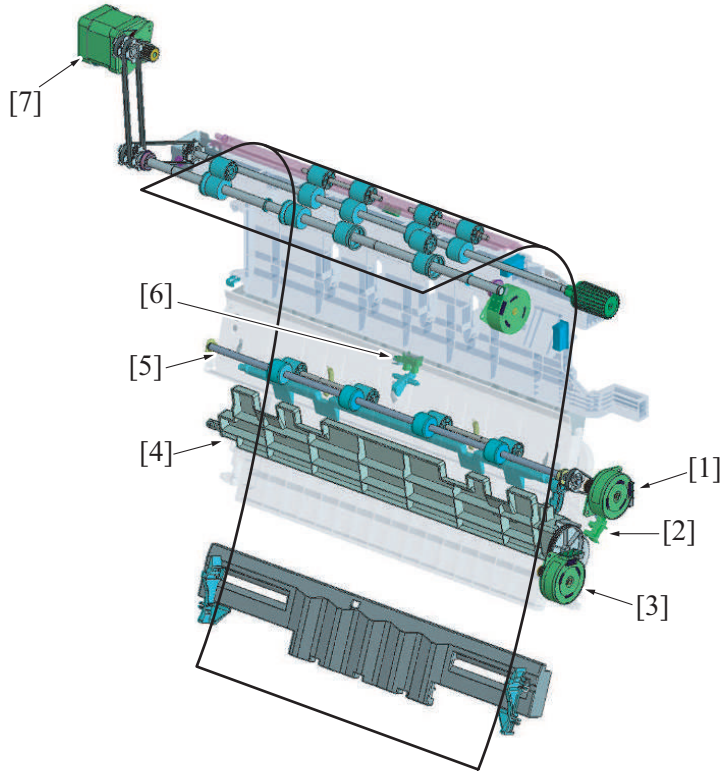
Front left side perspective view



[1]	Staple cartridge/Rr	[2]	Staple cartridge/Fr
[3]	Jam removal cover (paper exit section)	[4]	Jam removal dial (folding section)
[5]	Jam removal cover (alignment section)	-	-

8.8.2 Transport section

(1) Drive



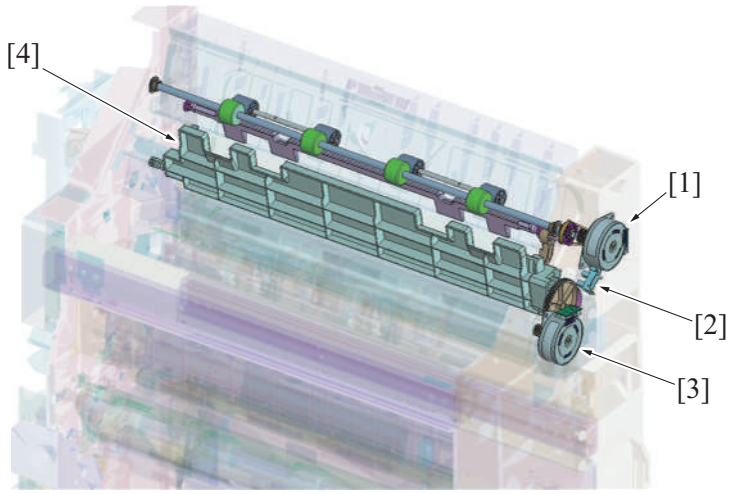
[1]	SD transport motor (M101)	[2]	Curl cover detection sensor (PS102)
[3]	Paper discharge control motor (M102)	[4]	Curl cover
[5]	SD transport roller	[6]	SD entrance sensor (PS101)
[7]	FNS discharge motor (M3) (finisher section)	-	-

(2) Paper transport

- The FNS discharge motor rotates reversely to transport the paper from the finisher transport section into the saddle unit.
- The paper then is transported to the alignment section by SD transport roller.
- The SD transport roller rotates when the SD transport motor is driven.

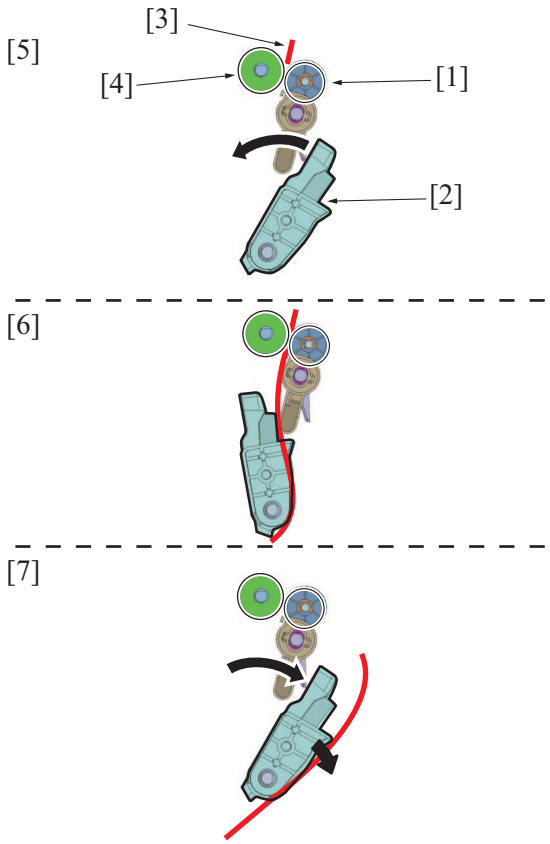
(3) Curl cover

- The paper is transported to the alignment section one–by-one. A paper which is curled may cause paper misfeed at the entrance of the saddle stitcher.
- In order to prevent this paper misfeed, the curl cover is installed so that each paper is transported to the alignment section without fail.
- The curl cover is operated by the paper discharge control motor. Paper receiving opens/closes the feeding port inside the saddle unit entrance when the paper discharge control motor rotates in forward/reverse direction.



[1]	SD transport motor (M101)	[2]	Curl cover detection sensor (PS102)

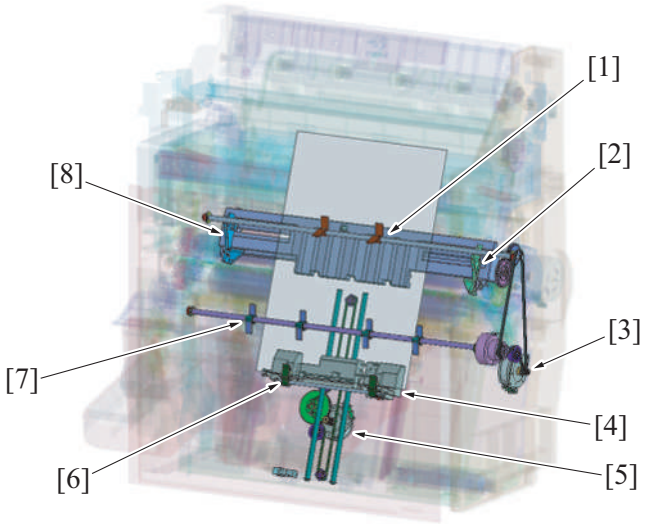
[3]	Paper discharge control motor (M102)	[4]	Curl cover



[1]	SD transport roll	[2]	Curl cover
[3]	Paper	[4]	SD transport roller
[5]	Paper transportation from within the finisher	[6]	Curl cover operation
[7]	Next paper standby (moves curl cover to the home position)	-	-

8.8.3 Alignment section

(1) Drive

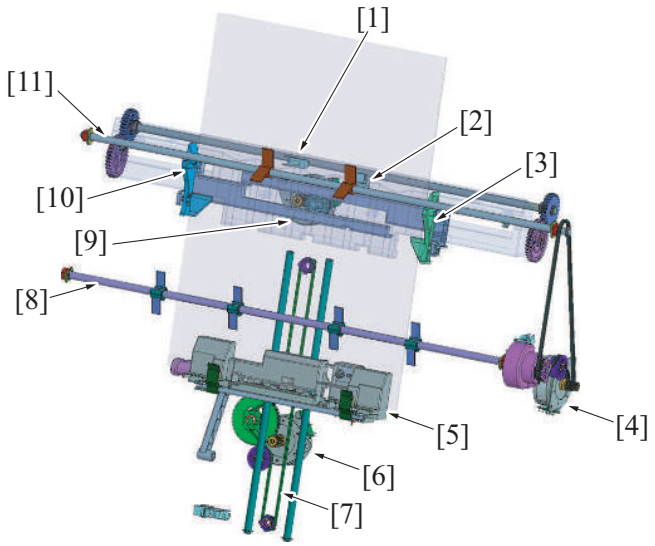


[1]	Center folding section upper paddle	[2]	Alignment plate/Fr
[3]	SD paddle motor (M107)	[4]	Stopper guide
[5]	Stopper drive motor (M104)	[6]	Paper grip
[7]	Center folding section lower paddle	[8]	Alignment plate/Rr

(2) Alignment

- It aligns the paper transported to the alignment section.

- The paper CD alignment is conducted by the alignment plate/Fr and the alignment plate/Rr.
- The paper FD alignment is conducted by the stopper guide, center folding section upper paddle and center folding section lower paddle.



[1]	Center staple/fold stacker paper detect sensor (PS103)	[2]	Alignment home sensor (PS104)
[3]	Alignment plate/Fr	[4]	SD paddle motor (M107)
[5]	Stopper guide	[6]	Stopper drive motor (M104)
[7]	Stopper guide drive belt	[8]	Center folding section lower paddle
[9]	Alignment motor (M103)	[10]	Alignment plate/Rr
[11]	Center folding section upper paddle	-	-

(a) Alignment operation

- Alignment plates follow the forward and reverse rotation of alignment motor.
- When the saddle exit sensor of the finisher detects the leading edge of the paper, the alignment motor starts rotating in the direction to close the alignment plate, and the alignment plate/Fr and the alignment plate/Rr stop at the position where it is slightly wider than the paper width.
- When the specified period of time has passed after the SD entrance sensor detects the trailing edge of the paper, the alignment motor rotates in forward/reverse direction to do oscillation of the alignment plate to align paper.
- The oscillation of the alignment plate is conducted each time a sheet of paper is transported, and the alignment plate is shifted to the standby position after the alignment operation is finished.
- The home position of the alignment plate is detected by the alignment home sensor.

(b) Stopper guide operation

- The stopper drive motor rotates in forward/reverse direction to operate the stopper guide drive belt, and moves the stopper guide up/down.
- The stopper guide moves up after the leading edge of the paper passes the main tray exit sensor.
- The stopper guide stops at a position where the length of paper that has been transported.
- The stopper guide stops the paper to align paper edges.

(c) Paddle operation

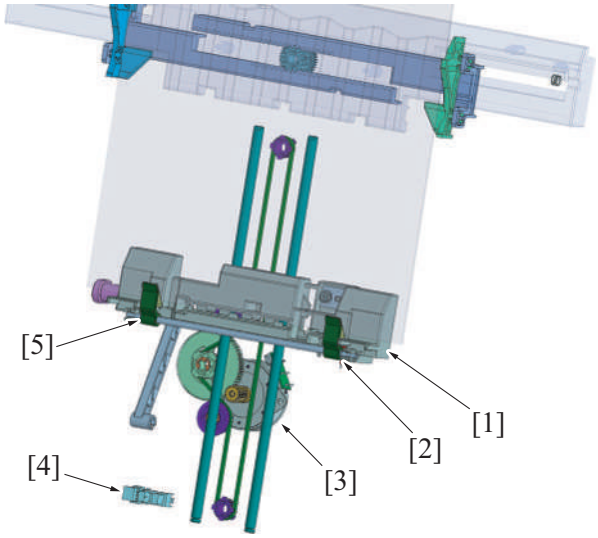
- The center folding section upper paddle and the center folding section lower paddle are installed in order to receive the transported paper to the alignment section without fail.
- The up/down paddle is driven by the SD paddle motor. The up/down paddle is driven when the specified period of time has passed after the leading edge of the paper passed the saddle exit sensor of the finisher.
- The up/down paddle stops after the paper trailing edge passes the finisher's main tray exit sensor and the paddle rotates for the specified number of times.

(3) Stopper guide

- At the stopper guide, paper is aligned in the FD direction. Paper conveyed to the aligning section is conveyed to the specified position.
- The exit grip holds the paper when shifting it to the specified position and when stapling papers.
- The alignment section, staple position and other positions (center folding, center staple, tri-folding) have their own up/down stop positions. They are controlled by the pulse number of the stopper drive motor.

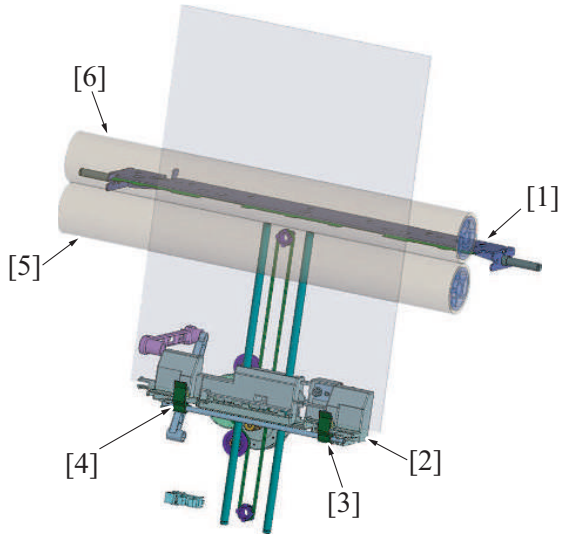
(a) Stopper operation

- The stopper drive motor moves the stopper guide up and down in accordance with the paper size.
- The stopper home sensor detects the home position of stopper guide.



[1]	Stopper guide	[2]	Exit grip/Fr
[3]	Stopper drive motor (M104)	[4]	Stopper home sensor (PS106)
[5]	Exit grip/Rr	-	-

(b) Stopper control



[1]	Center folding knife assy	[2]	Stopper guide
[3]	Exit grip/Fr	[4]	Exit grip/Rr
[5]	Center folding roller 2	[6]	Center folding roller 1

Folding mode

- After a specified period of time since the last sheet of paper was aligned, the stopper solenoid is turned ON and the sheets of paper are held in place.
- After the sheets are held in place, the stopper drive motor rotates to move the stopper guide down and lower the sheets to the folding position.

Saddle stitching mode

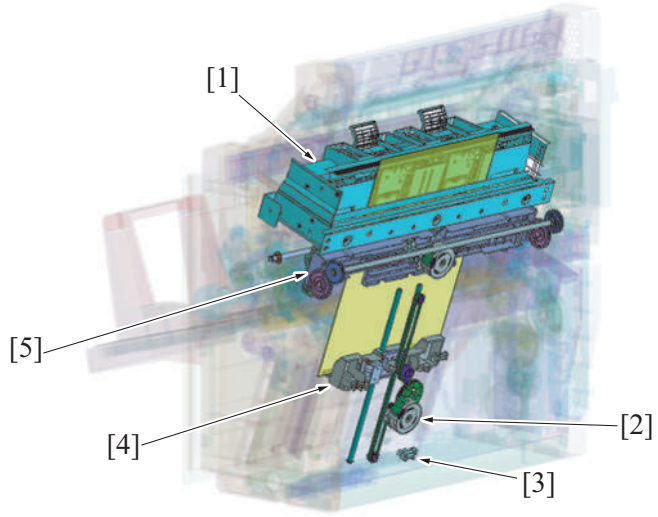
- After a specified period of time since the last sheet of paper was aligned, the stopper solenoid is turned ON and the sheets of paper are held in place.
- After the sheets are held in place, the stopper drive motor rotates to move the stopper guide down and lower the sheets to the center staple position.
- After a specified period of time since stapling operation was completed, the alignment motor opens the alignment plates and the stopper drive motor starts rotating to move the stopper guide further down and lower the paper to the folding position.

Tri-folding mode

- After a specified period of time since the last sheet of paper was aligned, the stopper solenoid is turned ON and the sheets of paper are held in place.
- After the sheets are held in place, the stopper drive motor rotates to move the stopper guide down and lower the sheets to the 1st folding position in the tri-folding.

8.8.4 Stapler

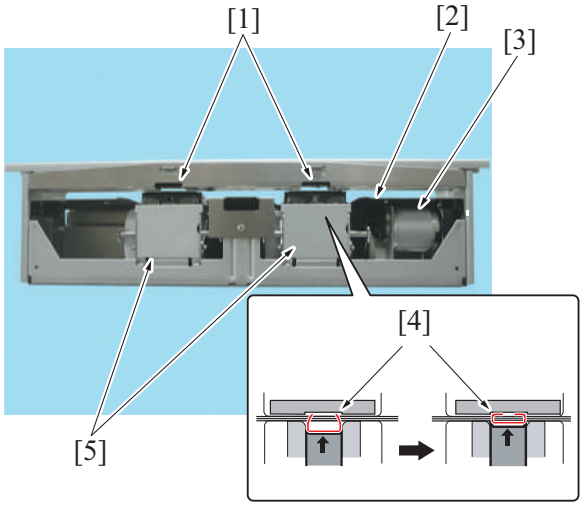
(1) Drive



[1]	Stapler unit	[2]	Stopper drive motor (M104)
[3]	Stopper home sensor (PS106)	[4]	Stopper guide
[5]	Alignment tray	-	-

(2) Stapling operation

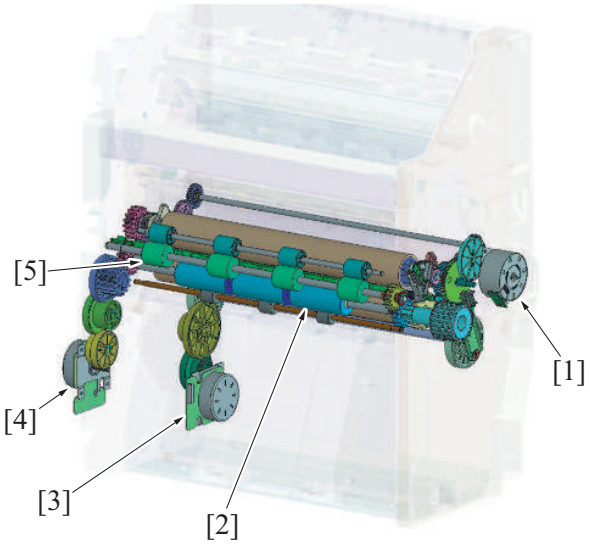
- The stapling operation is performed by the staple motor in the stapler.
- The drive gear pushes out the pressed portion of the paper toward the clincher to hold the paper, and then the pin will be pushed out.
- When the pin penetrates the paper batch, the pin will be bent to staple the paper batch at the clincher section.



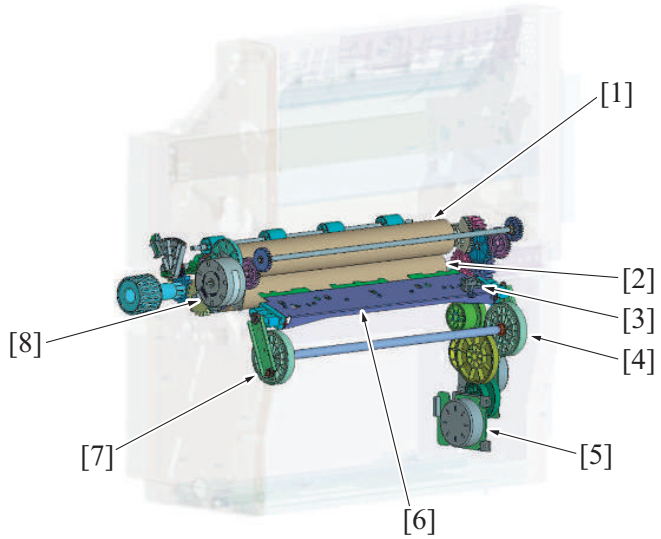
[1]	Clincher	[2]	Drive gear
[3]	Stapler motor	[4]	Staple
[5]	Stapler	-	-

8.8.5 Folding/Saddle stitching

(1) Drive



[1]	Center fold guide motor (M106)	[2]	Tri-folding roller
[3]	Center fold knife motor (M109)	[4]	Center fold roller motor (M105)
[5]	Saddle tray exit roller	-	-



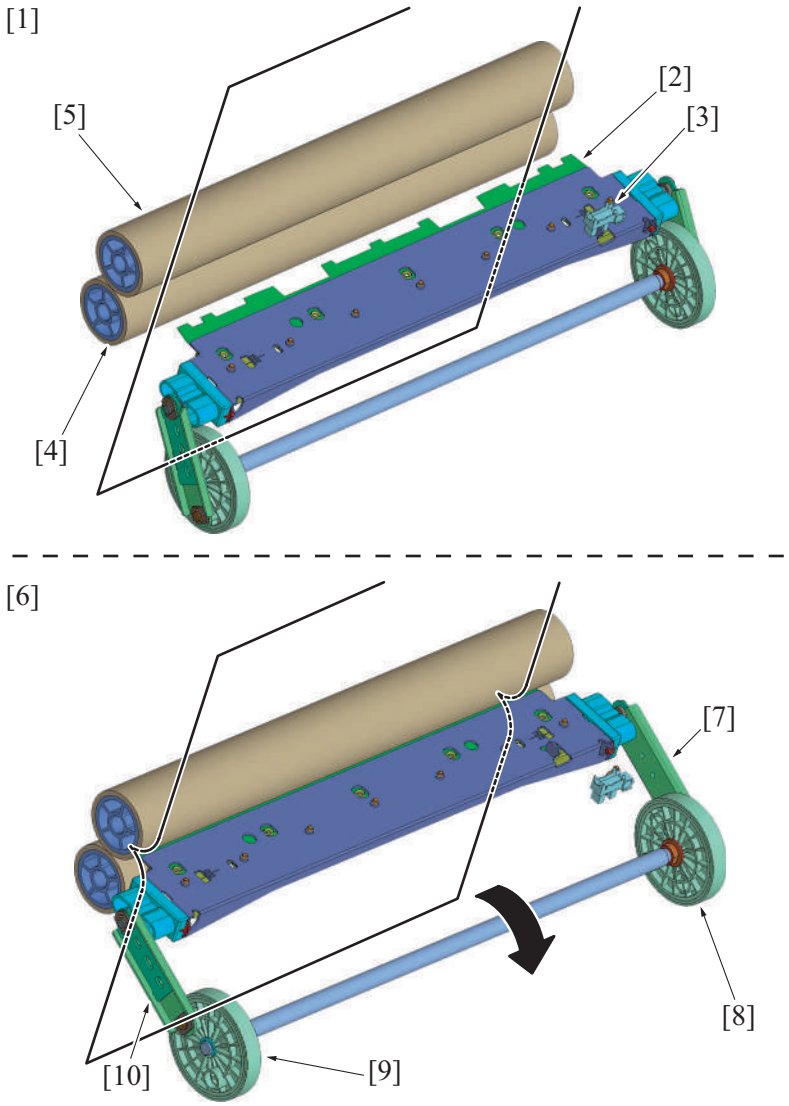
[1]	Center folding roller 1	[2]	Center folding roller 2
[3]	Center fold knife home sensor (PS108)	[4]	Fold drive gear/Rr
[5]	Center fold knife motor (M109)	[6]	Center folding knife assy
[7]	Fold drive gear/Fr	[8]	Center fold guide motor (M106)

(2) Folding knife

- The center fold knife motor drives the folding knife.
- The folding knife is used for the 1st folding in the center folding/center staple/tri-folding mode.

(a) Folding knife operation

- The center fold knife motor rotates the crank shaft a half turn via the gear, and pushes the paper to the nip section with the folding knife.
- The folding rollers draw and fold the paper.
- The position of the stopper guide controls the folding position.



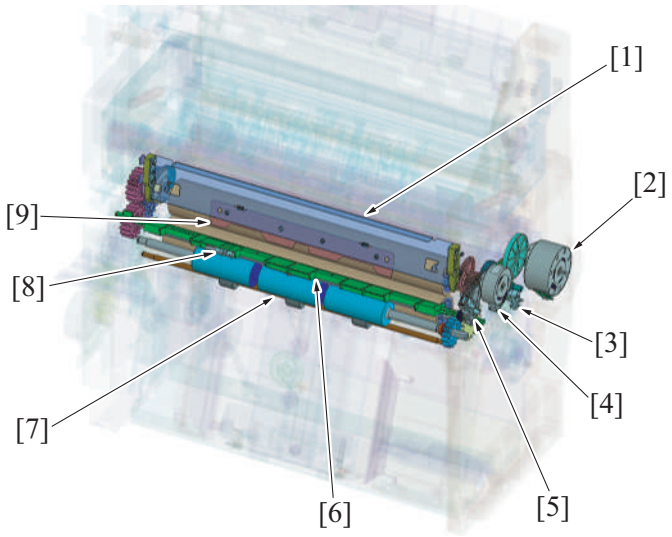
[1]	Before folding	[2]	Folding knife
[3]	Center fold knife home sensor (PS108)	[4]	Center folding roller 2
[5]	Center folding roller 1	[6]	Folding operation
[7]	Crank shaft/Rr	[8]	Fold knife assy drive gear/Rr
[9]	Fold knife assy drive gear/Fr	[10]	Crank shaft/Fr

(b) Folding knife control

- The center fold knife motor turns ON and sticks out the folding knife to the paper after a specified period of time since the stopper guide stops at the folding position.
- The center fold knife motor stops when the folding knife reciprocates after fold operation is completed and the center fold knife home sensor turns OFF.

8.8.6 Tri-folding

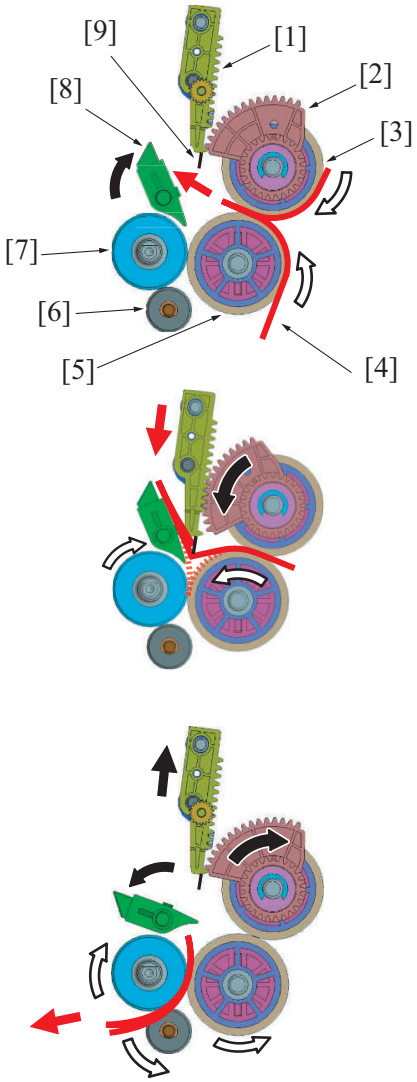
(1) Drive



[1]	Tri-folding knife assy	[2]	Center fold guide motor (M106)
[3]	Guide home sensor (PS107)	[4]	Tri-folding guide motor (M108)
[5]	Tri-folding gate home sensor (PS111)	[6]	Tri-folding gate
[7]	Tri-folding roller	[8]	Fold exit sensor (PS112)
[9]	Tri-folding knife	-	-

(2) Tri-folding operation

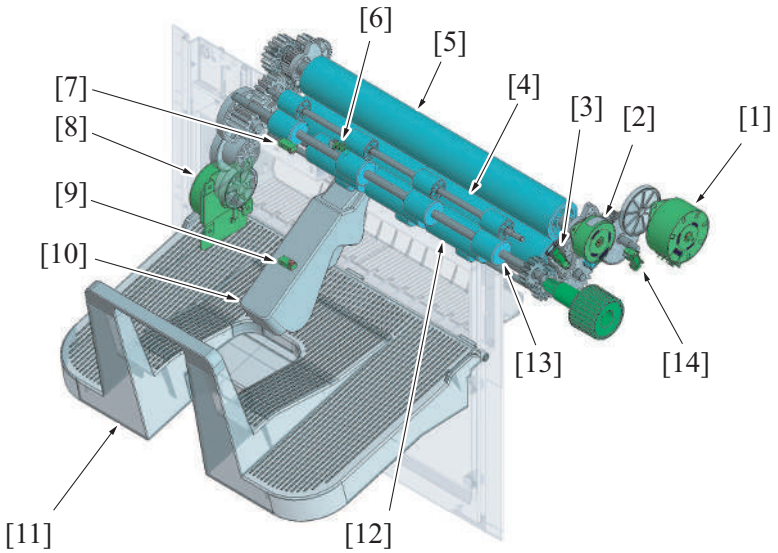
1. When the center fold guide motor drives, the tri-folding gate rotates. The leading edge of the paper to which the first fold was applied at the center folding section, will be transported to the tri-folding path.
2. When the tri-folding guide motor drives, the tri-folding knife assy drive gear rotates to move down the tri-folding knife assy. The paper to which the first fold is applied at the center folding section will be pushed out to the tri-folding roller.
3. The paper is pulled into the tri-folding roller to tri-fold the paper.
4. When tri-folding is finished, the tri-folding gate will return to the home position. The home position of the tri-folding gate is detected by the tri-folding gate home sensor.



[1]	Tri-folding knife assy	[2]	Tri-folding knife assy drive gear
[3]	Center folding roller 1	[4]	Paper
[5]	Center folding roller 2	[6]	Tri-folding roll
[7]	Tri-folding roller	[8]	Tri-folding gate
[9]	Tri-folding knife	-	-

8.8.7 Exit section

(1) Drive



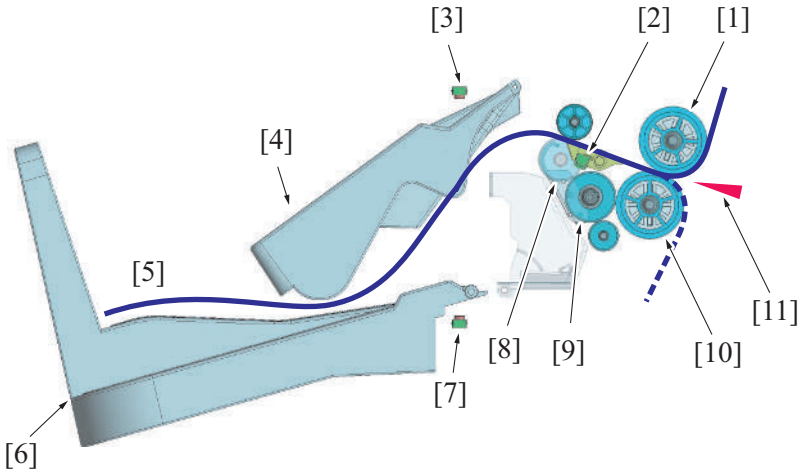
[1]	Center fold guide motor (M106)	[2]	Tri-folding guide motor (M108)
[3]	Tri-folding gate home sensor (PS111)	[4]	Center folding roller 2
[5]	Center folding roller 1	[6]	Fold exit sensor (PS112)
[7]	Booklet tray empty detection sensor/in (PS113)	[8]	Center fold roller motor (M105)
[9]	Booklet tray empty detection sensor/out (PS114)	[10]	Paper press
[11]	Saddle tray	[12]	Tri-folding roller
[13]	Saddle tray exit roller	[14]	Guide home sensor (PS107)

(2) Paper exit

- Center folded, center stapled, or tri-folded paper is discharged to the saddle tray.
- The paper that is center folded and center stapled is sent though the upper route, and the tri-folded paper is sent through the lower route to be discharged.
- The paper is discharged by driving the saddle tray exit roller and the tri-fold roller. Both rollers are driven by the center fold roller motor.

(a) Paper exit for center fold / saddle stitch

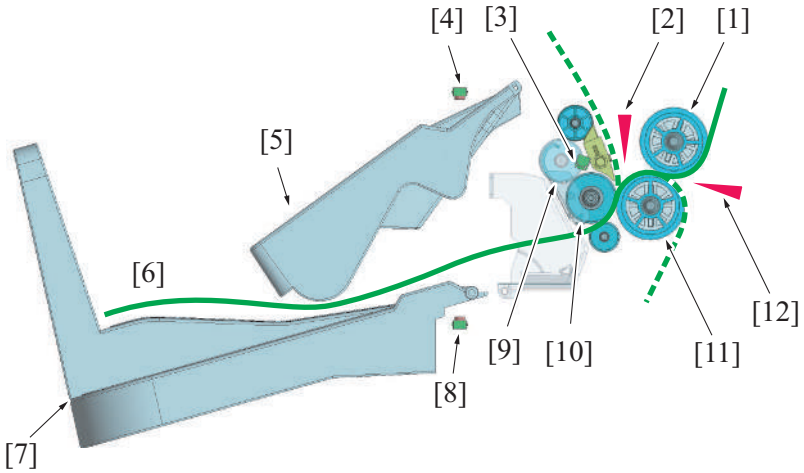
- The center fold roller motor is driven after the center folding or the center staple, and discharges the paper to the saddle tray by the saddle tray exit roller.



[1]	Center folding roller 1	[2]	Fold exit sensor (PS112)
[3]	Booklet tray empty detection sensor/in (PS113)	[4]	Paper press
[5]	Paper transport route	[6]	Saddle tray
[7]	Booklet tray empty detection sensor/out (PS114)	[8]	Saddle tray exit roller
[9]	Tri-folding roller	[10]	Center folding roller 2
[11]	Folding knife	-	-

(b) Paper exit for tri-folding

- Since the paper is tri-folded by the tri-folding roller, the paper is transported through the lower route.

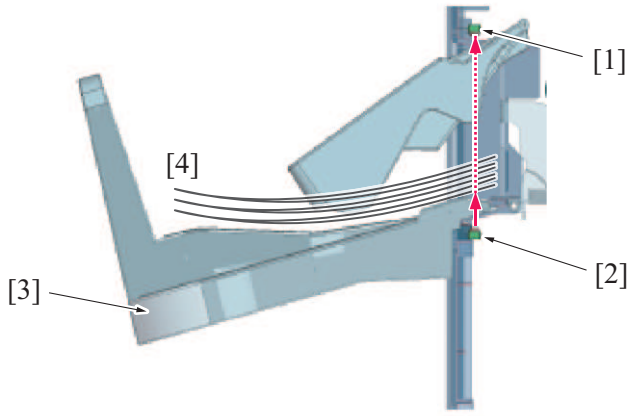


[1]	Center folding roller 1	[2]	Tri-folding knife
[3]	Fold exit sensor (PS112)	[4]	Booklet tray empty detection sensor/in (PS113)
[5]	Paper press	[6]	Paper transport route
[7]	Saddle tray	[8]	Booklet tray empty detection sensor/out (PS114)

[9]	Saddle tray exit roller	[10]	Tri-folding roller
[11]	Center folding roller 2	[12]	Folding knife

(3) Tray full detection mechanism

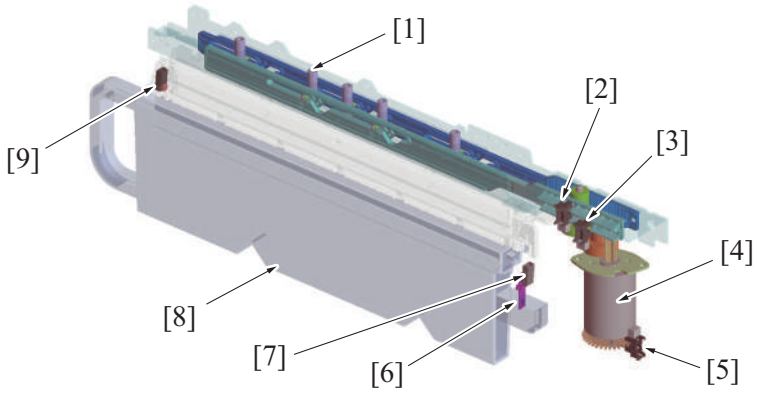
- When paper sheets are discharged to the saddle tray, the light from the saddle tray no paper detection sensor is blocked. When the stacked sheets are removed, the sensor light is unblocked.
- When a predetermined amount of paper is discharged into the saddle tray, the stacked paper blocks the saddle tray no paper detection sensor. The blocked state is determined as a detection of a full saddle tray.
  NOTE
  - **For a tri-fold job, if paper is present in the saddle tray when the job is started, the saddle tray full is detected. (A tray full detection is made even when only one group of sheets remains.)**
- When the saddle tray full is detected, the warning message appears on the control panel.
- In this state, any saddle unit related configurations and jobs that use the saddle unit cannot be performed.



[1]	Booklet tray empty detection sensor/in (PS113)	[2]	Booklet tray empty detection sensor/out (PS114)
[3]	Saddle tray	[4]	Paper

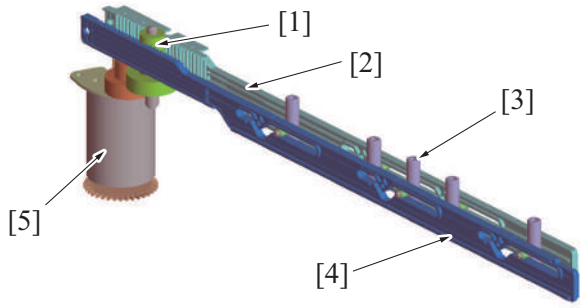
8.9 PK-524

8.9.1 Configuration



[1]	Puncher	[2]	Punch home sensor (PS1)
[3]	Punch position sensor (PS2)	[4]	Punch drive motor (M1)
[5]	Punch motor sensor (PS3)	[6]	Actuator
[7]	Punch dust full sensor/in (PS5)	[8]	Punch dust box
[9]	Punch dust full sensor/out (PS4)	-	-

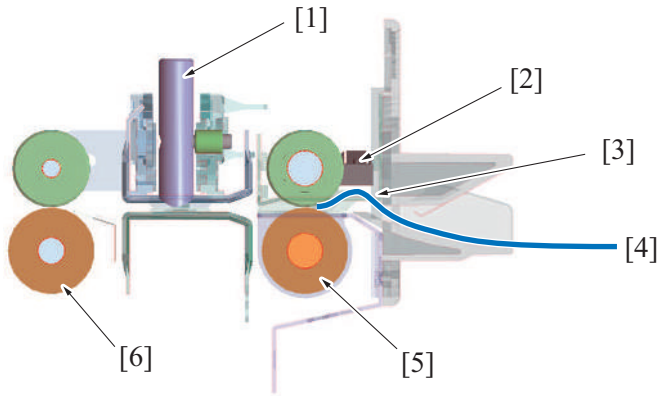
8.9.2 Drive



[1]	Puncher drive gear	[2]	Puncher frame 1
[3]	Puncher	[4]	Puncher frame 2
[5]	Punch drive motor (M1)	-	-

8.9.3 Skew correction control

- Skew in paper is corrected to reduce skew in punch holes when the punch operation is performed.
- A loop at the end of paper is created before the FNS entry roller during transporting paper, by which the paper skew is corrected.



[1]	Puncher	[2]	FNS entrance sensor (PS4) (finisher)
[3]	Loop formation	[4]	Paper
[5]	FNS entry roller (finisher)	[6]	Transport roller (finisher)

(1) Skew correction process

1. The FNS entrance sensor detects that paper has reached the FNS entry roller.
2. The stopped FNS entry roller presses the paper, by which a loop is created at the end of paper.
3. Rotation of the FNS entry roller and transport roller starts when a predetermined amount of time elapses after the FNS entrance sensor detects paper. The paper that has been corrected for skew is then transported.
4. The holes are punched by the puncher.

(2) Punch Regist Loop Size Adjustment function

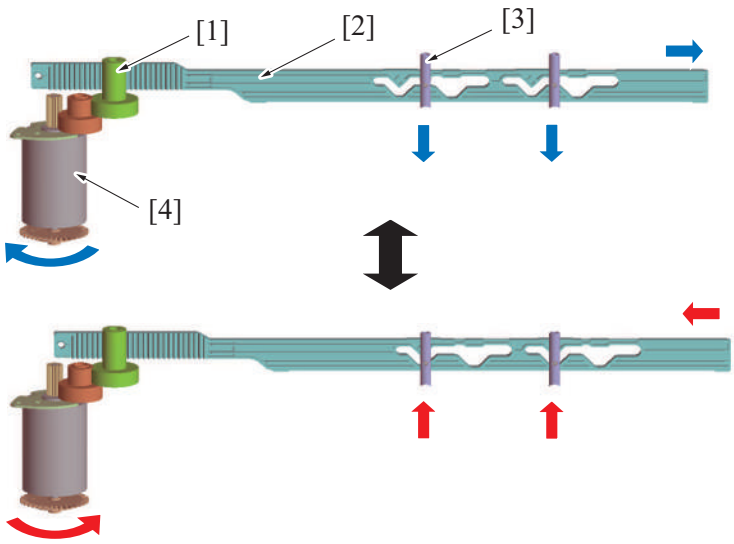
- Punch resists values that are accessed in Service Mode can be adjusted to adjust the punch holes if the punch holes are tilted.
- Punch resists values (resist loop value) are changed when the timing at which the FNS entry roller starts rotating is changed.

8.9.4 Punch control

- At the punch section, the holes are punched at the trailing edge of the paper transported from the horizontal transport section when the paper is fed into the finisher section. Punching is conducted paper by paper.
- The punch drive motor drives to move the puncher up and down, thus to make punch holes in the paper.
- Punch dust generated by punching is received in the punch dust box.
- The punch kits for 2/3 holes or 2/4 holes areas have the configuration to switch the number of punch holes.

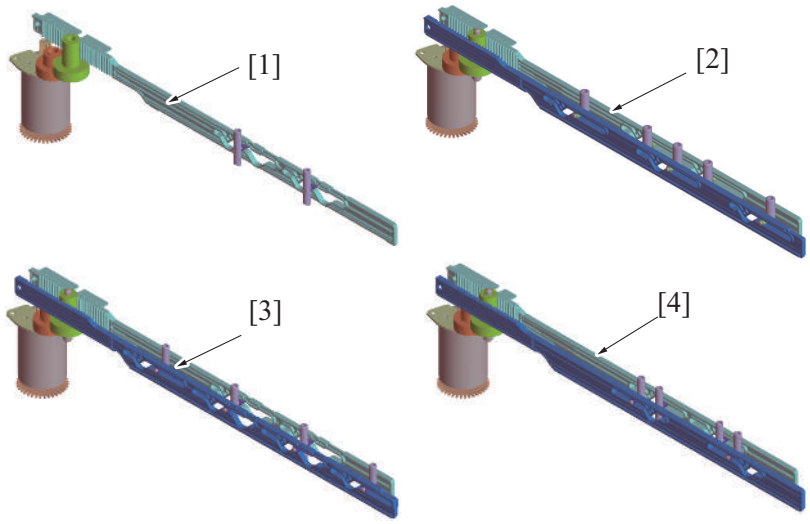
(1) Punching operation

- The paper is transported to the finisher section by the RU transport motor driving the RU section horizontal transport roller/3.
- The paper which skew is removed is transported to the punch section by the FNS entry roller, and then stop the specified position.
- The drive source for the punch section is the punch drive motor.
- The puncher frame is driven in forward/reverse direction by rotating the punch drive motor in forward/reverse direction.
- When the puncher frame moves in forward or reverse, the puncher moves vertically in accordance with the shape of the puncher frame cam to punch the holes in paper.
- The transport roller in the finisher section transports the punched paper from the punch section to the finisher transport section.



[1]	Puncher drive gear	[2]	Puncher frame
[3]	Puncher	[4]	Punch drive motor (M1)

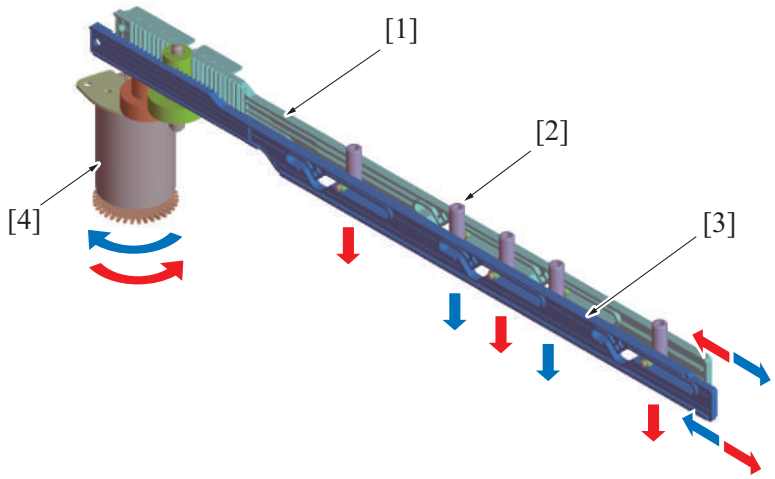
(2) Punch kit type



[1]	2 holes punch kit	[2]	2 holes/3 holes punch kit (Switchable the hole number)
[3]	2 holes/4 holes punch kit (Switchable the hole number)	[4]	4 holes punch kit

(3) Changing the number of punch holes

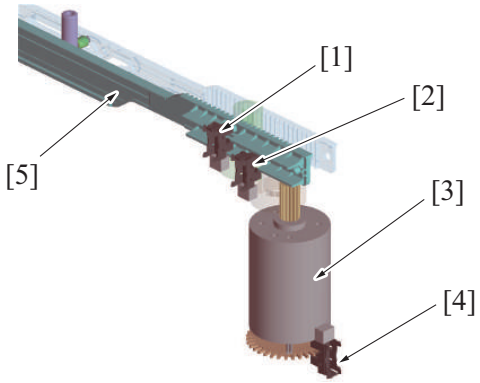
- Puncher frame 1 and the puncher frame 2 have cams with different shapes.
- When the puncher drive gear rotates clockwise, the puncher frame 1 shifts to the front side, and the puncher frame 2 shifts to the back side.
- When the puncher drive gear rotates counter-clockwise, the puncher frame 1 shifts to the back side, and the puncher frame 2 shifts to the front side.
- The puncher connected to the puncher frame then moves up/down with the cam.
- Switching the forward and reverse direction of the punch drive motor switches the number of punch holes.



[1]	Puncher frame 1	[2]	Puncher
[3]	Puncher frame 2	[4]	Punch drive motor (M1)

8.9.5 Puncher up/down status detection configuration

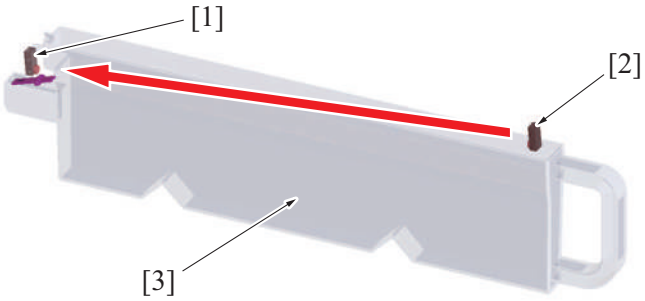
- The puncher frame 1 has two light-blocking plates to detect the position of the puncher frame.
- The punch drive motor has a round light-blocking plate and the puncher motor sensor on the same shaft to detect the rotation value (pulse) of the punch drive motor.
- The up/down status of the puncher is detected by the coordination input from the puncher position sensor, punch home sensor, and the punch motor sensor.



[1]	Punch home sensor (PS1)	[2]	Punch position sensor (PS2)
[3]	Punch drive motor (M1)	[4]	Punch motor sensor (PS3)
[5]	Puncher frame 1	-	-

8.9.6 Punch dust box full detection mechanism

- The punch unit has the sensor to detect the punch dust full at the front side (emission) and the back side (receiving). The sensor detects the status of the punch dust.
- A state that the punch dust box is full is determined when enough punch dust accumulates in the punch dust box to block the sensor light.
- A message is displayed on the control panel to indicate a “punch dust full” condition when a punch dust box full is detected.

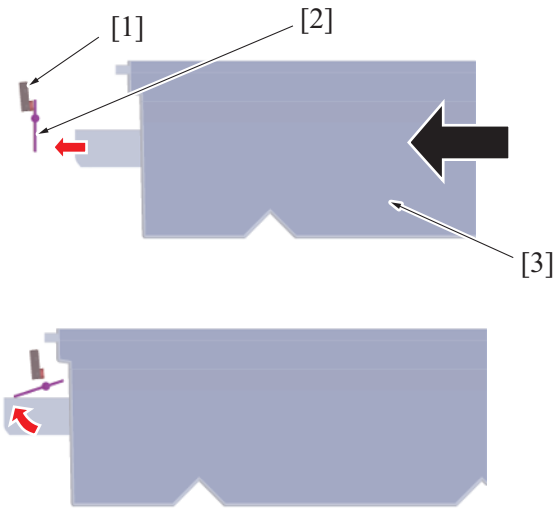


[1]	Punch dust full sensor/in (PS5)	[2]	Punch dust full sensor/out (PS4)

[3]	Punch dust box	-	-

8.9.7 Punch dust box installation detection mechanism

- The actuator blocks the sensor light on the punch dust full sensor/in side when the punch dust box is not installed.
- The “Punch dust box full” warning appears on the control panel when the punch function is configured while the punch dust box is not installed.
- With the punch dust box being installed, the actuator is pressed and moved to a position where the sensor light is not blocked.
- This operation is used to determine the installation state of the punch dust box.

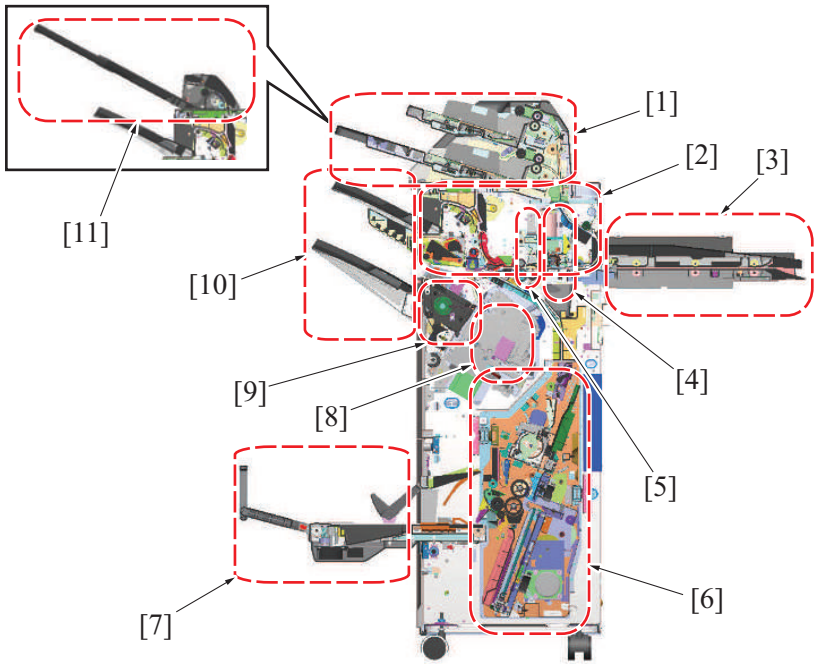


[1]	Punch dust full sensor/in (PS5)	[2]	Actuator
[3]	Punch dust box	-	-

9. FS-540/FS-540SD/PK-526/JS-602/PI-507/ZU-609

9.1 CONFIGURATION

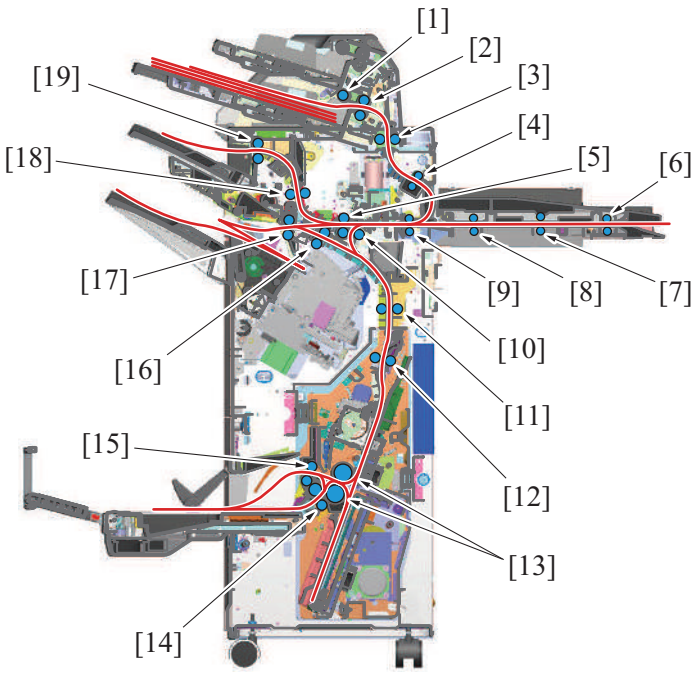
- For the FS-540 model, the horizontal transport section, transport section, alignment section, output tray (main tray/sub tray), and stapler section are all integrated.
- The FS-540SD is the model of a finisher that the saddle section is added to FS-540.



[1]	Post inserter section (when PI-507 is installed)	[2]	Transport section
[3]	Horizontal transport section	[4]	Punch section (When PK-526 installed)
[5]	Z folding section (when ZU-609 is installed)	[6]	Saddle section (FS-540SD only)
[7]	Saddle tray section (FS-540SD only)	[8]	Stapler section
[9]	Alignment section	[10]	Exit tray section
[11]	Job separator section (when JS-602 is installed)	-	-

9.2 PAPER PATH

FS-540SD, PK-526, ZU-609, PI-507 installed

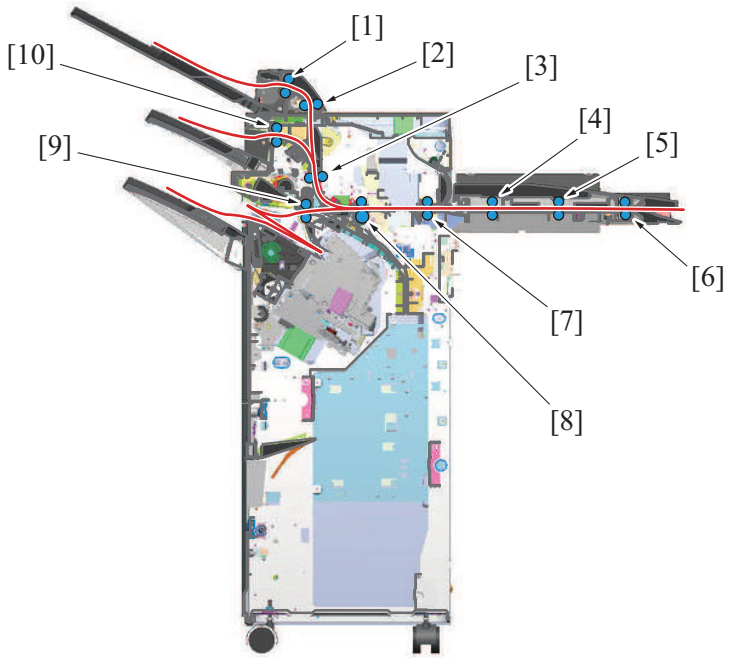


[1]	Pick-up roller/Lw (post inserter) (*)	[2]	Feed roller/Lw, separation roller/Lw (post inserter) (*)
[3]	Transport roller, transport roll (post inserter) (*)	[4]	PI transport roller, PI transport roll

[5]	Transport roller 1/transport roll 2	[6]	RU transport roller 1, transport roll 1 (relay unit) (*)
[7]	RU transport roller 2, transport roll 2 (relay unit) (*)	[8]	RU transport roller 3, transport roll 3 (relay unit) (*)
[9]	FNS entry roller, roll	[10]	Z-fold roller (Z-fold unit) (*)
[11]	Saddle section exit roller 2, roll	[12]	Saddle section paper feed roller, roll
[13]	Center folding roller	[14]	Tri-folding roller, roll
[15]	Sub tray exit roller, roll	[16]	Saddle section exit roller 1, roll
[17]	Receiving roller, Receiving roll	[18]	Sub tray transport roller, roll
[19]	Sub tray exit roller, roll	-	-

- *: Option

FS-540/JS-602 installed



[1]	Job separator exit roller, roll (separator) (*)	[2]	Job separator transport roller, roll (separator) (*)
[3]	Sub tray transport roller, roll	[4]	RU transport roller 3, transport roll 3 (relay unit) (*)
[5]	RU transport roller 2, transport roll 2 (relay unit) (*)	[6]	RU transport roller 1, transport roll 1 (relay unit) (*)
[7]	FNS entry roller, roll	[8]	Transport roller 1/transport roll 2
[9]	Receiving roller, Receiving roll	[10]	Sub tray exit roller, roll

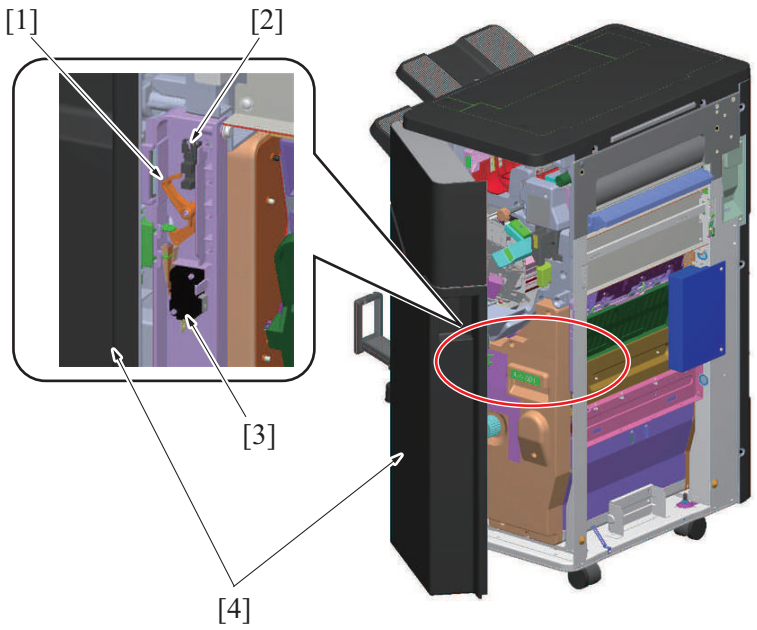
- *: Option

9.3 FINISHER SECTION

9.3.1 Door open/close detection mechanism

(1) Front door open/close detection mechanism

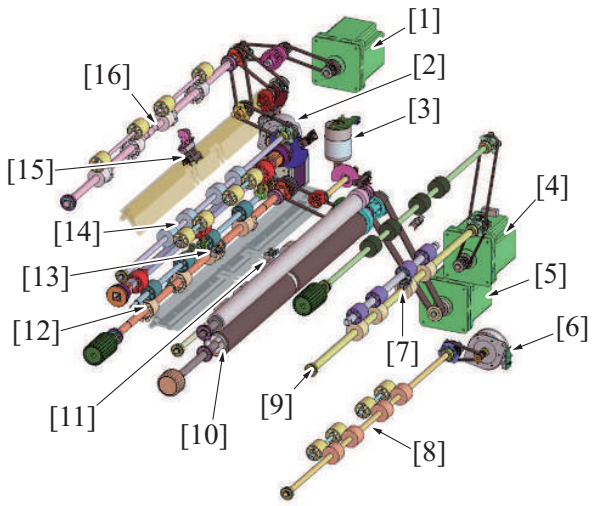
- The front door open detect switch is installed on the right front side of the finisher section. The front door open/close detection sensor is installed on the top of the front door open detect switch.
- The front door open detect switch and the front door open/close detection sensor detect the open/close of the front door.
- Open the front door, the warning screen will display on the control panel. All the setting operations and jobs are disabled while the warning screen is displayed. The printing job is interrupted, and the paper being transported causes paper misfeed. The warning screen can be cancelled by closing the door.



[1]	Actuator	[2]	Front door open/close detection sensor (PS55)
[3]	Front door open detect switch (SW1)	[4]	Front door

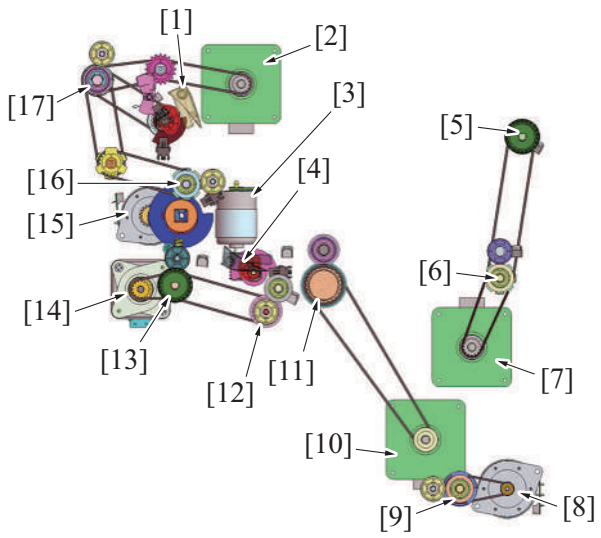
9.4 TRANSPORT SECTION

9.4.1 Configuration



[1]	Sub tray discharge motor (M18)	[2]	Receiving roller retraction motor (M10)
[3]	Route change gate motor (M4)	[4]	FNS entry transport motor (M20)
[5]	ZU discharge motor (M21)	[6]	SD discharge motor (M16)
[7]	FNS entrance sensor (PS34)	[8]	Saddle section exit roller 2
[9]	FNS entry roller	[10]	Transport roller 2
[11]	FNS middle sensor (PS36)	[12]	Receiving roller
[13]	Main tray exit sensor (PS37)	[14]	Saddle section exit roller 1
[15]	Sub tray exit sensor (PS24)	[16]	Sub tray exit roller

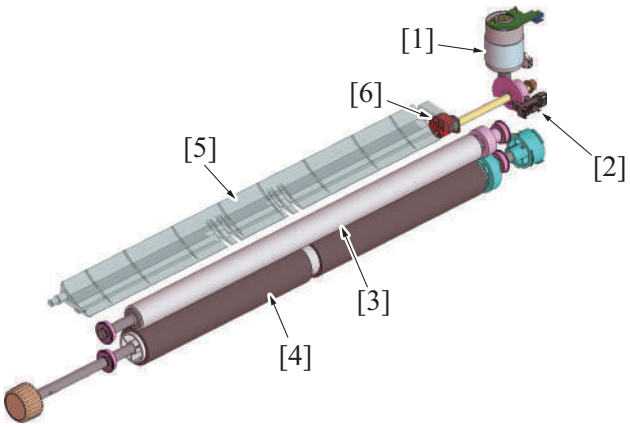
9.4.2 Drive



[1]	Sub tray/JS route change gate	[2]	Sub tray discharge motor (M18)
[3]	Route change gate motor (M4)	[4]	Route change gate
[5]	PI transport roller	[6]	FNS entry roller
[7]	FNS entry transport motor (M20)	[8]	SD discharge motor (M16)
[9]	Saddle section exit roller 2	[10]	ZU discharge motor (M21)
[11]	Transport roller 2	[12]	Saddle section exit roller 1
[13]	Receiving roller	[14]	FNS discharge motor (M17)
[15]	Receiving roller retraction motor (M10)	[16]	Sub tray transport roller
[17]	Sub tray exit roller	-	-

9.4.3 Route change gate

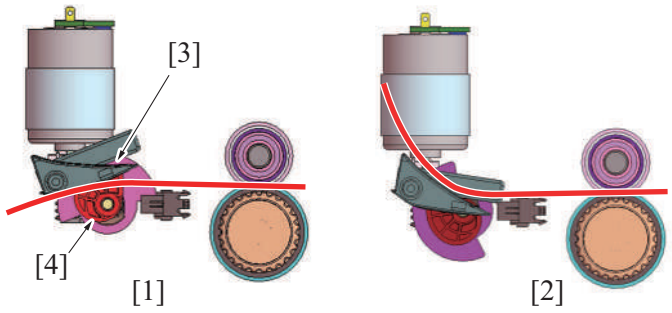
- The route change gate switches the paper transport path between the main tray and the sub tray.
- The route change gate motor drives to move the route change gate vertically to switch between the paper paths.
- The route change gate home sensor detects the vertical position of the route change gate.



[1]	Route change gate motor (M4)	[2]	Route change gate home sensor (PS21)
[3]	Transport roller 1	[4]	Transport roller 2
[5]	Route change gate	[6]	Cam

(1) Route change gate operation

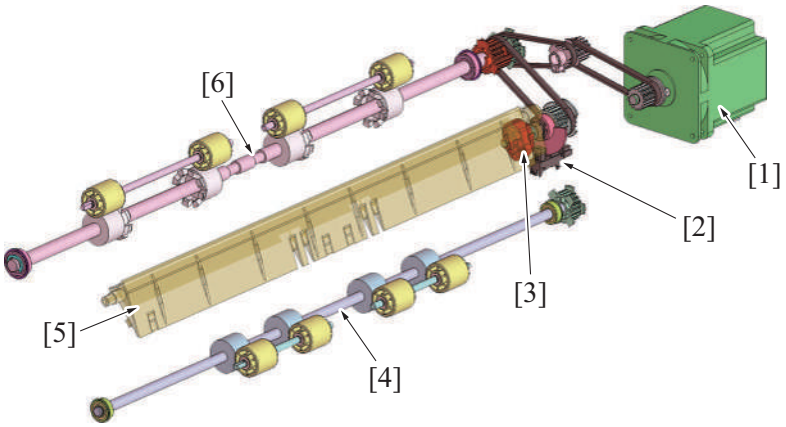
- The cam rotates when the route change gate motor is driving.
- Rotation of the cam moves the route change gate vertically to switch the paper path between the main tray and sub tray.



[1]	Main tray output	[2]	Sub tray output
[3]	Route change gate	[4]	Cam

9.4.4 Sub tray/JS route change gate

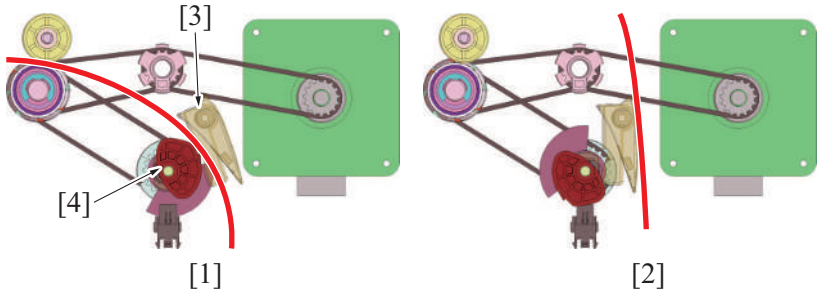
- The sub tray/JS route change gate switches the path for transporting paper to either the sub tray or the optional job separator (JS-602).
- The sub tray discharge motor drives to move the sub tray/JS route change gate horizontally to switch between the paper paths.
- The sub tray/JS route change gate home sensor detects the horizontal position of the sub tray/JS route change gate.



[1]	Sub tray discharge motor (M18)	[2]	Sub tray/JS route change gate home sensor (PS23)
[3]	Cam	[4]	Sub tray transport roller
[5]	Sub tray/JS route change gate	[6]	Sub tray exit roller

(1) Sub tray/JS route change gate operation

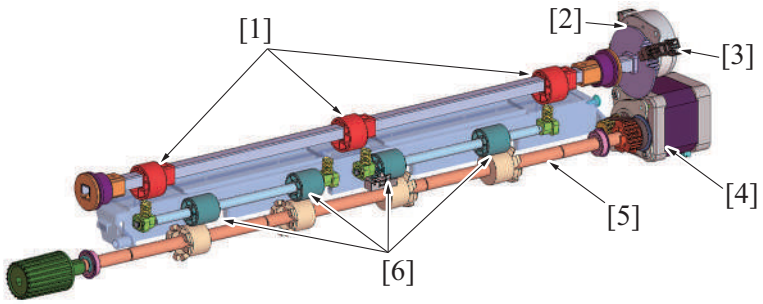
- The cam rotates when the sub tray discharge motor is driving.
- The cam rotates to move the sub tray/JS route change gate horizontally to switch the paper paths between the sub tray and the job separator.
- The sub tray discharge motor drives the sub tray section exit roller. The normal and reverse rotation of the sub tray discharge motor switches between discharging to the sub tray and driving the sub tray/JS route changing gate.



[1]	Sub tray output	[2]	Job separator output
[3]	Sub tray/JS route change gate	[4]	Cam

9.4.5 Receiving roller section up/down function

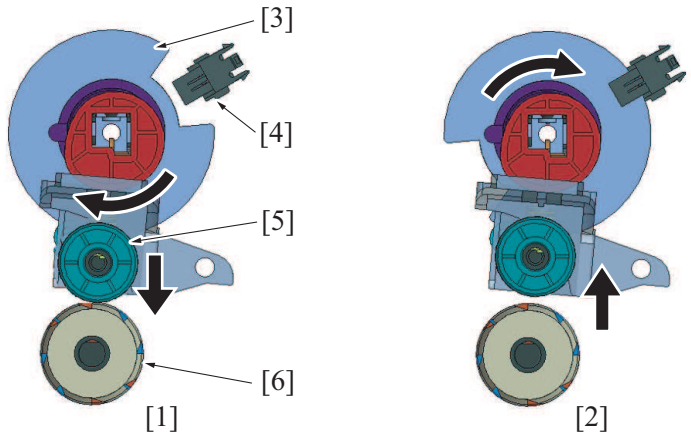
- The up/down movement of the receiving cam switches the timing of transporting the paper to the alignment section.
- The up/down operations of the receiving cam are driven by the receiving roller retraction motor.
- The position of the receiving cam is detected by the receiving roller retraction sensor.
- The cam rotates to raise or lower the receiving roll to pressure and release the receiving roller.



[1]	Receiving com	[2]	Receiving roller retraction motor (M10)
[3]	Receiving roller retraction sensor (PS22)	[4]	FNS discharge motor (M17)
[5]	Receiving roller	[6]	Receiving roll

(1) Receiving roller pressure and release

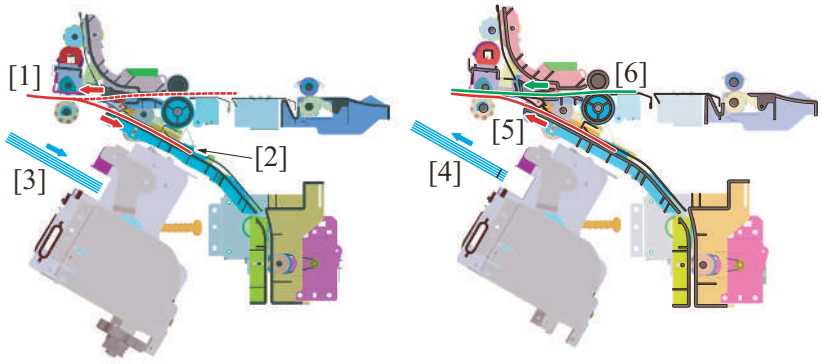
- When the receiving roll is pressed against the receiving roller, the paper is transported to the alignment section by the receiving roller.
- When the receiving roll is released from the receiving roller, the paper is in a standby state along the transport path.
- The detection board that is installed on the same shaft as the cam rotates, which changes the state of the receiving roller retraction sensor. Thus, the position of the receiving roll can be determined.
- The receiving roll is determined to be pressing against the receiving roller when the receiving roller retraction sensor is unblocked. The receiving roll is determined to be in the release state when the sensor is blocked.



[1]	Receiving roller pressure	[2]	Receiving roller release
[3]	Cam (detection plate)	[4]	Receiving roller retraction sensor (PS22)
[5]	Receiving roll	[6]	Receiving roller

9.4.6 Buffer control

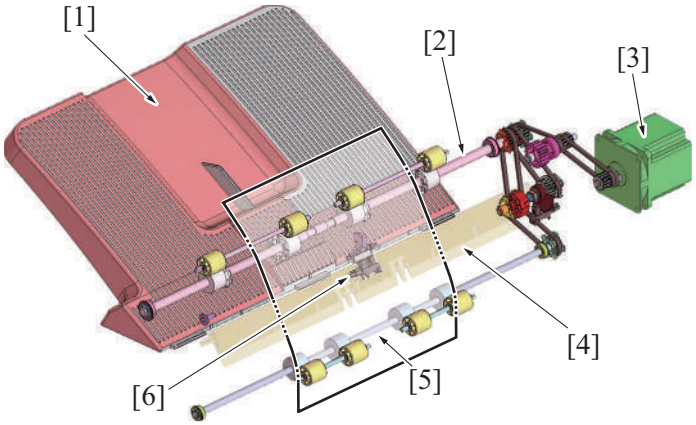
- The receiving roller section up/down mechanism is provided to eliminate the time loss for the next sheet of paper and achieve high productivity during the offset and staple operations.
- This allows handling a print job without reducing the paper transport speed even under the condition where the preceding sets of sheets are being aligned and stapled.
- The first sheet of paper that is transported during the paper batch alignment is switched back toward the saddle exit direction temporarily.
- After paper sheets are aligned and discharged, the first sheet of paper is transported together with the arrived second sheet to the alignment section.



[1]	First sheet	[2]	First sheet (switchback)
[3]	Paper batch (transported to the alignment tray)	[4]	Aligned paper sheets
[5]	First sheet	[6]	Second sheet

9.4.7 Sub tray output

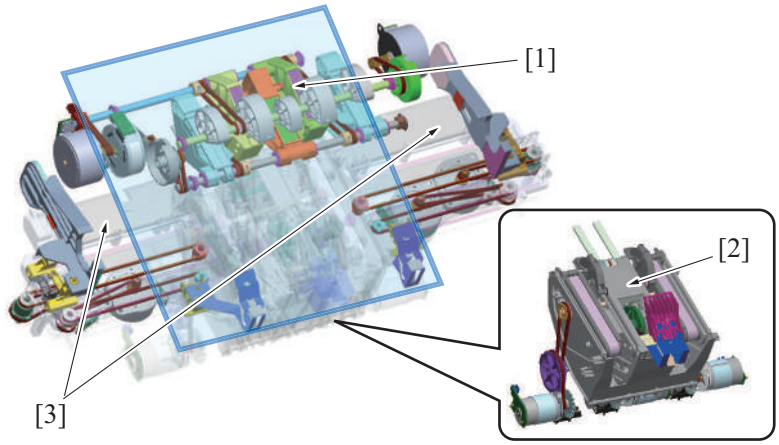
- The sub tray by the sub tray section exit roller and sub tray transport roller drive to discharge paper that is transported with the sub tray/JS route changing gate to the sub tray.
- The sub tray discharge motor drives the sub tray section roller and sub tray transport roller.



[1]	Sub tray	[2]	Sub tray exit roller
[3]	Sub tray discharge motor (M18)	[4]	Sub tray/JS route change gate
[5]	Sub tray transport roller	[6]	Sub tray exit sensor (PS24)

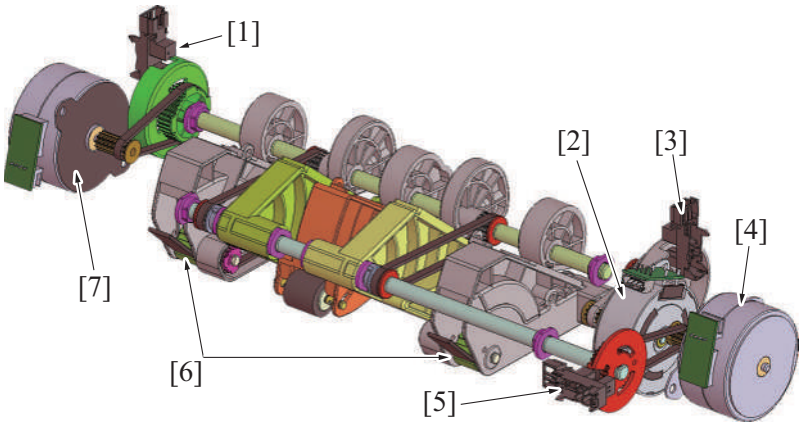
9.5 ALIGNMENT SECTION

9.5.1 Configuration



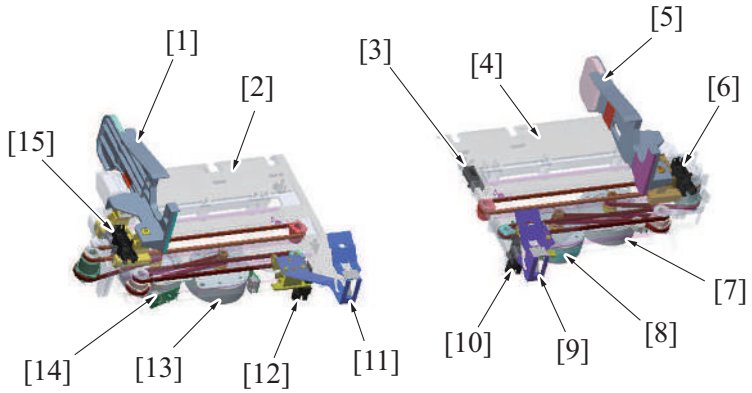
[1]	Upper paddle section	[2]	Exit section
[3]	Alignment tray section	-	-

(1) Upper paddle section



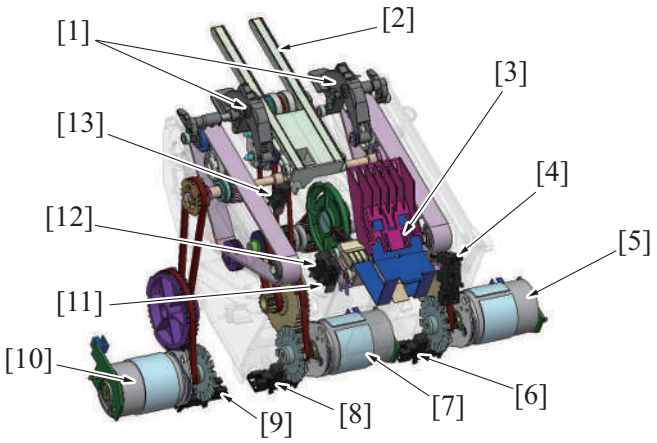
[1]	Paddle up/down home sensor (PS27)	[2]	FNS paddle motor (M9)
[3]	Upper paddle home sensor (PS25)	[4]	Arm drive motor (M8)
[5]	Arm home sensor (PS26)	[6]	Upper paddle
[7]	Paddle up/down motor (M7)	-	-

(2) Alignment tray section



[1]	Alignment plate/Fr	[2]	Alignment tray/Fr
[3]	Alignment tray paper detection sensor (PS32)	[4]	Alignment tray/Rr
[5]	Alignment plate/Rr	[6]	Alignment plate home sensor/Rr (PS6)
[7]	Alignment motor/Rr (M13)	[8]	Side stopper guide motor/Rr (M11)
[9]	Trailing edge stopper /Rr	[10]	Trailing edge stopper sensor/Rr (PS7)
[11]	Trailing edge stopper /Fr	[12]	Trailing edge stopper sensor/Fr (PS10)
[13]	Trailing edge stopper motor/Fr (M12)	[14]	Alignment motor/Fr (M14)
[15]	Alignment plate home sensor/Fr (PS9)	-	-

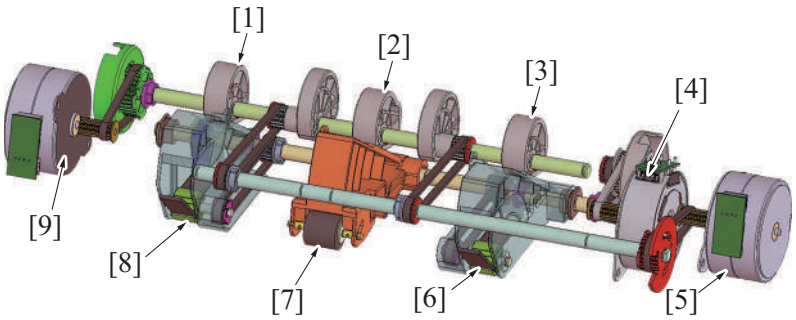
(3) Exit section



[1]	Gripper	[2]	Stack support plate
[3]	Trailing edge stopper/C	[4]	Gripper home sensor (PS3)
[5]	Pre-eject drive motor (M2)	[6]	Pre-eject encoder sensor (PS2)
[7]	Stacker plate drive motor (M3)	[8]	Stacker plate encoder sensor (PS4)
[9]	Gripper motor sensor (PS1)	[10]	Bundle eject motor (M1)
[11]	Trailing edge stopper home sensor (PS31)	[12]	Stacker plate home sensor (PS30)
[13]	Stacker plate position sensor (PS29)	-	-

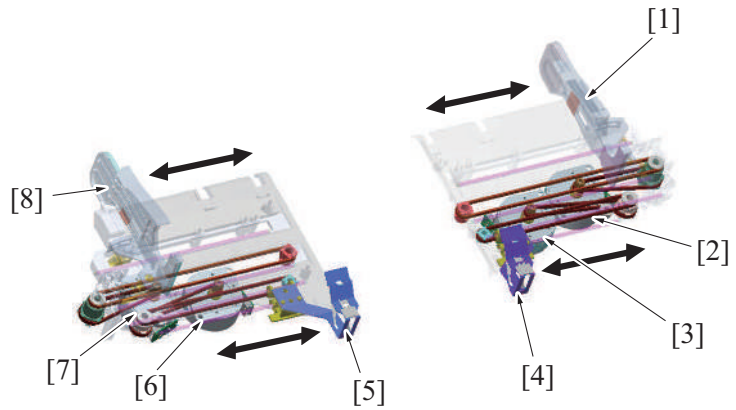
9.5.2 Drive

(1) Upper paddle



[1]	Paddle press cam	[2]	Paper press cam
[3]	Paddle press cam	[4]	FNS paddle motor (M9)
[5]	Arm drive motor (M8)	[6]	Upper paddle
[7]	Paper press roll	[8]	Upper paddle
[9]	Paddle up/down motor (M7)	-	-

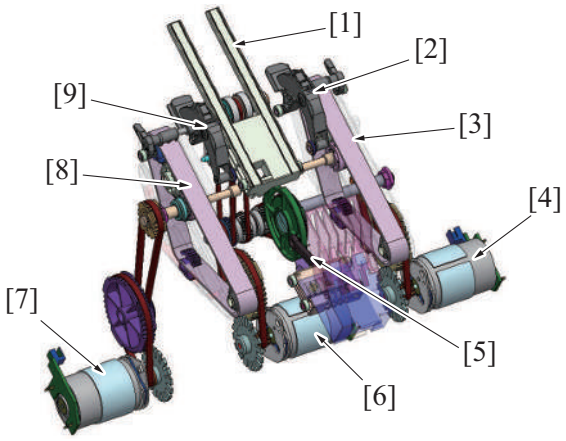
(2) Alignment tray section



[1]	Alignment plate/Rr	[2]	Alignment motor/Rr (M13)

[3]	Side stopper guide motor/Rr (M11)	[4]	Trailing edge stopper /Rr
[5]	Trailing edge stopper /Fr	[6]	Trailing edge stopper motor/Fr (M12)
[7]	Alignment motor/Fr (M14)	[8]	Alignment plate/Fr

(3) Exit section

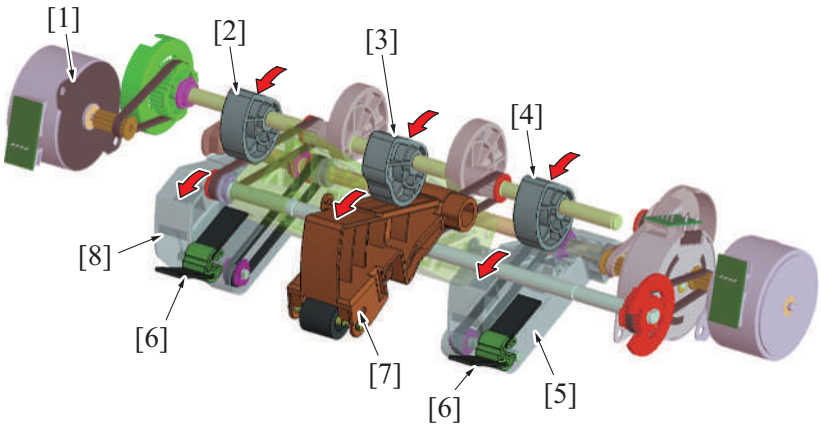


[1]	Stack support plate	[2]	Gripper
[3]	Gripper drive belt	[4]	Pre-eject drive motor (M2)
[5]	Trailing edge stopper/C drive arm	[6]	Stacker plate drive motor (M3)
[7]	Bundle eject motor (M1)	[8]	Gripper drive belt
[9]	Gripper	-	-

9.5.3 Paper transport control

(1) Upper paddle control

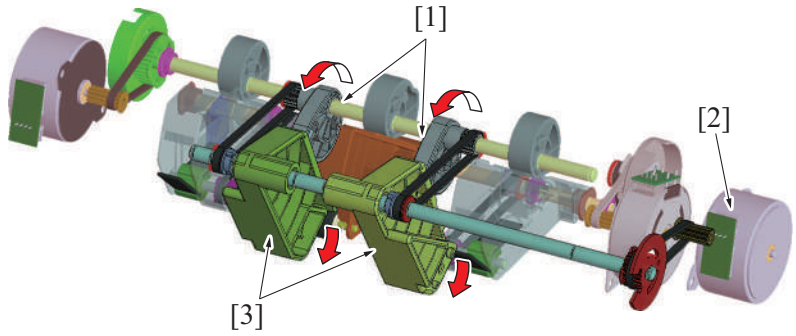
- Paper that has been transported from the finisher is transported to the alignment section.
- The transported paper is temporarily stored in the alignment section due to gravity-induced dropping. However, the paper press guide and upper paddle are driven to reliably transport the paper to the alignment section.
- Paddle up/down motor drives and rotates the paper press cam and paddle press cam to lower the paper press guide and the upper paddle assy.
- After the upper paddle assy is lowered, the FNS paddle motor is driven to rotate the upper paddle.
- The vertical operation is repeated for each sheet of paper to transport paper to the alignment section.



[1]	Paddle up/down motor (M7)	[2]	Paddle press cam
[3]	Paper press cam	[4]	Paddle press cam
[5]	Upper paddle assy	[6]	Upper paddle
[7]	Paper press guide	[8]	Upper paddle assy

(2) Trailing edge paper press control

- A trailing edge paper press guide is also provided in addition to the paper press guide and the upper paddle assy.
- This component is used to reliably lower the trailing edge of transported paper to the alignment section.
- The arm drive motor drives to rotate the belt and the trailing edge paper press cam.
- Cam rotation lowers the trailing edge paper press guide.

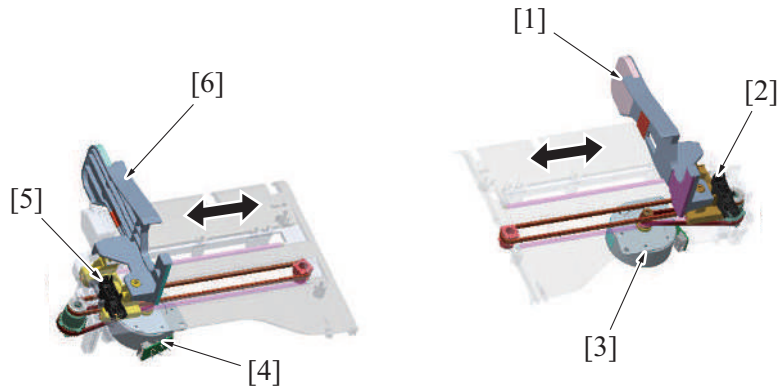


[1]	Trailing edge paper press cam	[2]	Arm drive motor (M8)
[3]	Trailing edge paper press guide	-	-

9.5.4 Paper alignment control

(1) Alignment plate

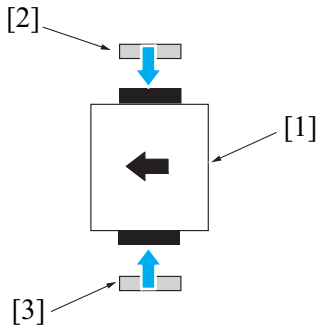
- The alignment plate/Fr and alignment plate/Rr align the paper in the width orientation and shift paper sheets.
- The alignment motor and drive belt drives the alignment plates.
- The alignment plates move by the forward and reverse rotation of the alignment motor.
- Alignment plate/Fr and alignment plate//Rr are each equipped with a drive motor, which allows them to operate independently.



[1]	Alignment plate/Rr	[2]	Alignment plate home sensor/Rr (PS6)
[3]	Alignment motor/Rr (M13)	[4]	Alignment motor/Fr (M14)
[5]	Alignment plate home sensor/Fr (PS9)	[6]	Alignment plate/Fr

(a) Alignment operation

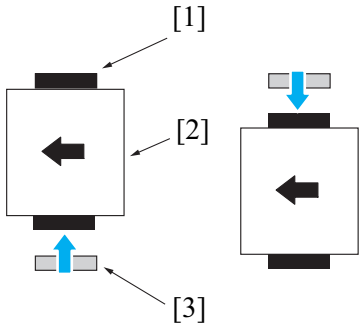
- The alignment motor/Fr rotates to move the alignment plate/Fr via the drive belt.
- The alignment plate home sensor/Fr detects the home position of the alignment plate/F.
- The alignment motor/Rr rotates to move the alignment plate/Rr via the drive belt.
- The alignment plate home sensor/Rr detects the home position of the alignment plate/Rr.
- The sheets are placed between the alignment plates/Fr and /Rr corresponding to the paper width so that their both ends are aligned.



(b) Shift operation

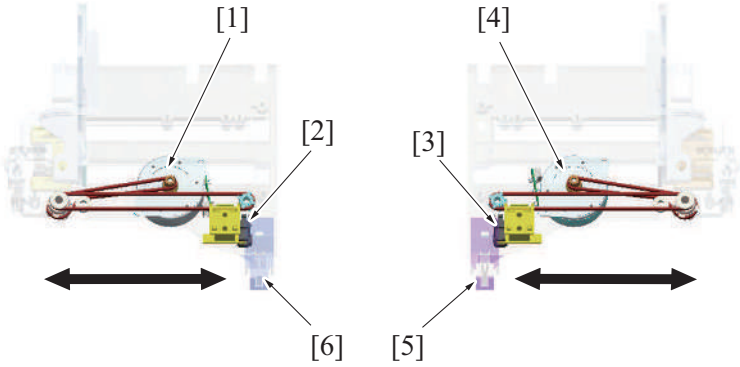
- When offset is selected as finishing option, the alignment plates are moved to shift the sets of paper. Paper is discharged to the center of the main tray at normal printing and stapling.

- Depending on the width of paper, the alignment plate Fr (alignment plate Rr) pushes the sets of paper to the rear side (front side) from one side so that the sets of the paper are shifted.
- The sheets are shifted by alternatively repeating the above operation.



(2) Trailing edge stopper

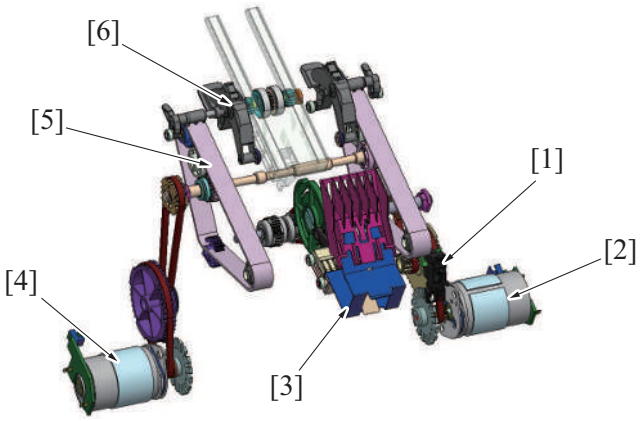
- The trailing edge stopper/Fr and trailing edge stopper/Rr align paper in the feed orientation.
- The trailing edge stopper motor drives the trailing edge stoppers.
- Trailing edge stopper/Fr and the trailing edge stopper/Rr shift according to the paper width before starting a job, to hold the trailing edge of the paper.
- For 2-point staple jobs, the trailing edge stoppers/Fr and /Rr are retracted to the position where they do not interfere with the stapler.
- After the job is completed, the trailing edge stopper motor reverses the rotation to return the trailing edge stopper to the home position.



[1]	Trailing edge stopper motor/Fr (M12)	[2]	Trailing edge stopper sensor/Fr (PS10)
[3]	Trailing edge stopper sensor/Rr (PS7)	[4]	Side stopper guide motor/Rr (M11)
[5]	Trailing edge stopper /Rr	[6]	Trailing edge stopper /Fr

9.5.5 Paper exit control

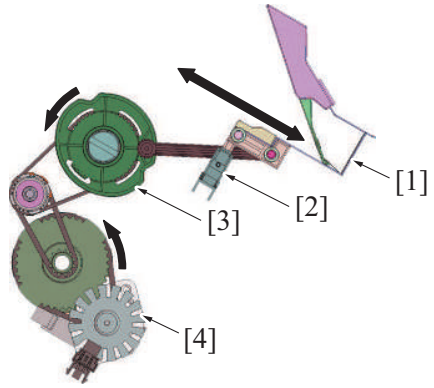
- The trailing edge stopper/C and gripper discharge paper that is processed with the alignment plates, to the output tray.
- The gripper grips the trailing edges of the sets of paper in the alignment tray and transports them to the paper exit position.
- The gripper releases the sets of paper to discharge them to the main tray. The gripper is moved to the home position and brought into a standby state.
- At the same time, the trailing edge stopper/C presses the trailing edge of paper in the alignment tray.



[1]	Gripper home sensor (PS3)	[2]	Pre-eject drive motor (M2)
[3]	Trailing edge stopper/C	[4]	Bundle eject motor (M1)
[5]	Paper transport belt	[6]	Gripper

(1) Trailing edge stopper/C operation

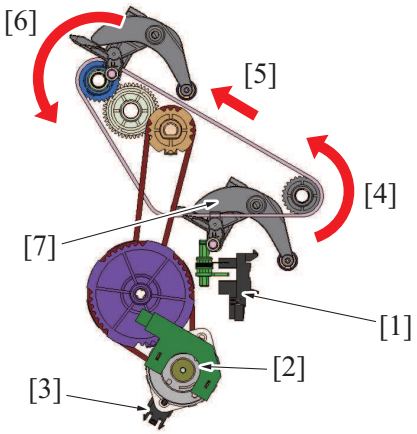
- When the pre-eject drive motor rotates, the trailing edge stopper moves from the home position to the paper exit position to discharge paper to the main tray.
- When the drive gear makes one turn, the stopper moves from the paper exit position to the home position and is brought into a standby state.
- The trailing edge stopper home sensor detects the home position.



[1]	Trailing edge stopper/C	[2]	Trailing edge stopper home sensor (PS31)
[3]	Drive gear	[4]	Pre-eject drive motor (M2)

(2) Gripper operation

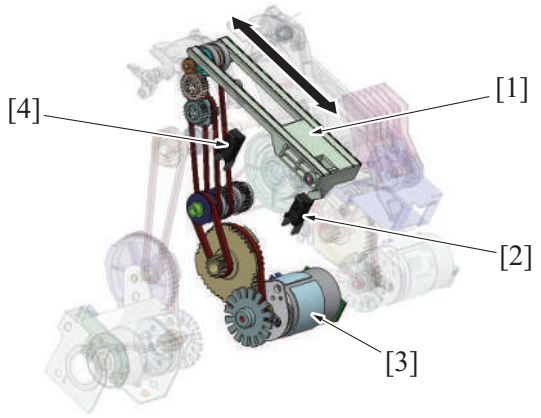
- The bundle eject motor rotates to turn the paper transport belt. It rotates the gripper that has been fixed to the paper transport belt.
- The gripper home position is detected by the gripper home sensor.
- The gripper stays at the home position and rotates at the position [4] shown in the illustration to grip the trailing edge of paper. Paper is transported with the gripper griping the trailing edge of the paper [5]. The gripper rotates at the position [6] in the illustration to release the paper. After the paper transport belt makes one turn, the gripper returns to the home position [7] and is brought into the standby state.



[1]	Gripper home sensor (PS3)	[2]	Bundle eject motor (M1)
[3]	Gripper motor sensor (PS1)	[4]	Gripper position (gripping the paper)
[5]	Gripper position (transporting the paper)	[6]	Gripper position (release the paper)
[7]	Gripper home position	-	-

9.5.6 Stack support plate control

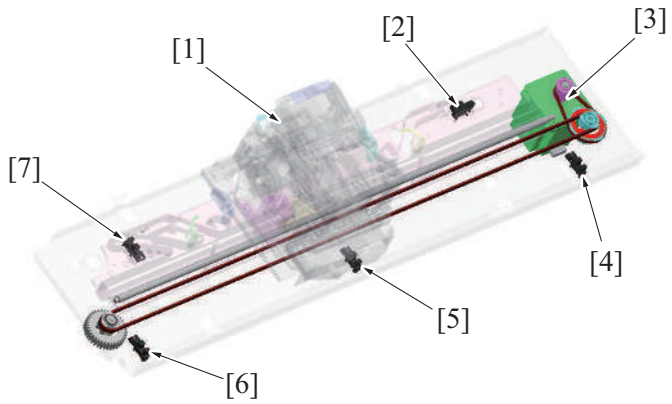
- When the paper is transported to the alignment section, the paper may go off the alignment tray depending on the paper size or the printing direction which may cause the paper to be misaligned.
- In order to prevent the paper from being off the alignment tray, the stacker support plate is installed.
- The stacker plate drive motor drives to protract the stacker plate via a gear.
- When the specified period of time has passed after the process above is finished, the stacker plate drive motor is driven to retract the stacker support plate.
- The stacker plate home sensor detects the home position of the stacker plate. The stacker plate position sensor detects the upper limit position of the stacker support plate.



[1]	Stack support plate	[2]	Stacker plate home sensor (PS30)
[3]	Stacker plate drive motor (M3)	[4]	Stacker plate position sensor (PS29)

9.6 STAPLER SECTION

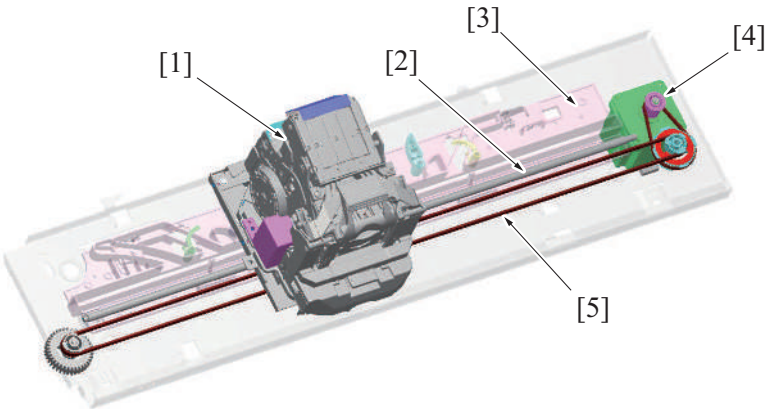
9.6.1 Configuration



[1]	Stapler unit	[2]	Wide flat limit sensor/Rr (PS19)
[3]	Stapler movement motor (M19)	[4]	Flat staple position sensor/Rr (PS18)
[5]	Stapler center position sensor (PS20)	[6]	Flat staple position sensor/Fr (PS52)
[7]	Wide flat limit sensor/Fr (PS53)	-	-

9.6.2 Drive

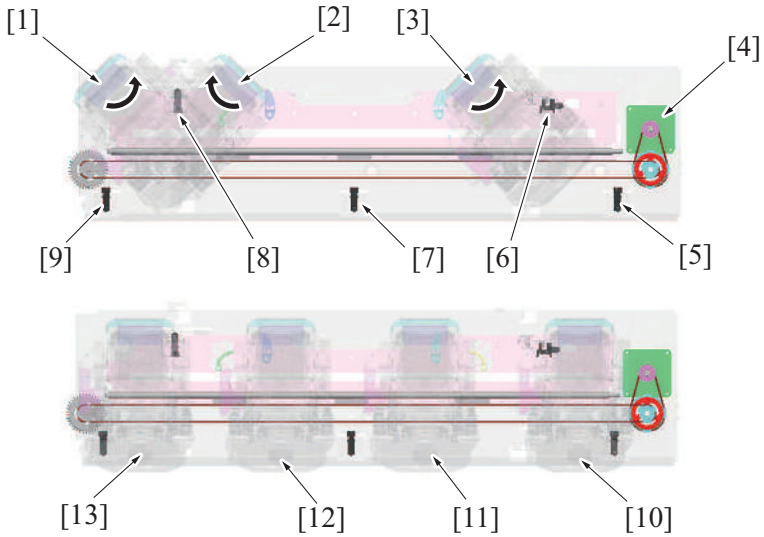
- Rotation of the stapler movement motor drives the belt, and moves the stapler unit that is attached to the belt back and forth along the shaft.



[1]	Stapler unit	[2]	Shaft
[3]	Slide guide plate	[4]	Stapler movement motor (M19)
[5]	Drive belt	-	-

9.6.3 Stapler position detection

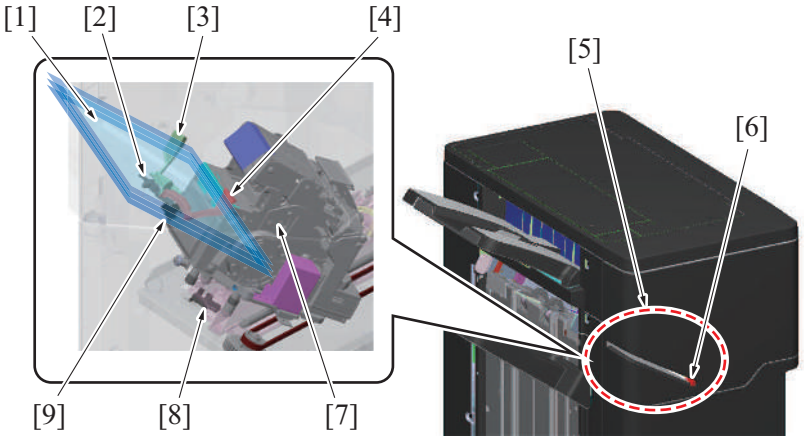
- The flat staple position sensor/Fr detects the home position/manual staple position of the stapler.
- The flat staple position sensor/Rr detects the corner rear (parallel) staple position of the stapler.
- The corner staple position sensor/Rr detects the corner rear staple position of the stapler.
- The corner staple position sensor/Fr detects the corner front stapler position of the stapler/replacement position of the staple cartridge.
- The staple position of the stapler is detected by the rotation amount of the stapler movement motor with reference to the stapler home sensor and the stapler center position sensor.



[1]	Stapler unit (manual staple position)	[2]	Stapler unit (staple cartridge replacement position)
[3]	Stapler unit (corner rear staple position)	[4]	Stapler movement motor (M19)
[5]	Flat staple position sensor/Rr (PS18)	[6]	Wide flat limit sensor/Rr (PS19)
[7]	Stapler center position sensor (PS20)	[8]	Wide flat limit sensor/Fr (PS53)
[9]	Flat staple position sensor/Fr (PS52)	[10]	Stapler unit (corner rear (parallel) staple position)
[11]	Stapler unit (2-staple position)	[12]	Stapler unit (2-staple position)
[13]	Stapler unit (home position)	-	-

9.6.4 Manual staple mechanism

- When no paper batch has been inserted into the slit, the paper set detection levers 1 and 2 suppress the actuator. The manual staple sensor remains in a position where it is blocked.
- When the paper batch is correctly inserted into the slit, the paper batch pushes the paper set detection levers 1 and 2. Thus, the actuator becomes operable.
- The spring force activates the actuator, and the manual staple sensor is unblocked.
- If the paper batch is not inserted correctly into the slit, either the paper set detection lever 1 or 2 suppresses the actuator. The manual staple sensor remains blocked.
- When the manual staple sensor is unblocked, the machine determines that the paper batch has been set. Thus, the manual stapling is executed after a predetermined time.
- Specify the time from the moment the paper batch is set until the stapling is executed in [Administrator]-> [System Settings]-> [Manual staple setting].

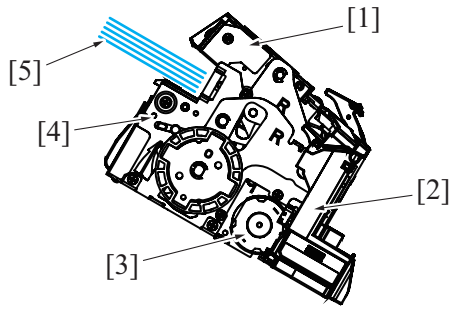


[1]	Paper batch	[2]	Actuator
[3]	Paper set detection lever 1	[4]	Paper set detection lever 2
[5]	Paper batch insertion slit	[6]	Status LED

[7]	Stapler unit	[8]	Flat staple position sensor/Fr (PS52)
[9]	Manual staple sensor (PS54)	-	-

9.6.5 Staple control

- The stapling operation is performed by the side stapler motor.
- In the stapling operation, the stapler motor drives the clincher side to press the paper. Then, the staple is pushed out from the stapler side and bent at the clincher side.
- A staple cut mechanism is provided to the clincher side, by which the excessive part of the staple will be cut off. The cut off parts of the staple are accumulated in the staple waste box.



[1]	Stapler (clincher side)	[2]	Staple waste box
[3]	Stapler motor (M5)	[4]	Stapler (stapler side)
[5]	Paper	-	-

(1) Stapling operation

- After completing the alignment operation of the alignment plate, the stapler motor performs the stapling operation.
- The stapling operation is completed when the stapler position sensor in the stapler detects the home position and turn ON.

(2) Clogged staple detection

- During stapling operation, staple clogging is determined if the stapler position sensor does not turn ON after a specified period of time since it turns OFF. Thus, the stapler motor stops.

(3) Cartridge detection

- The staple empty detect sensor in the staple detects the presence of a cartridge or the incorrect setting of a cartridge.
- When no cartridge is set or it is set incorrectly, the main body displays the error message on its display panel.

(4) Staple detection control

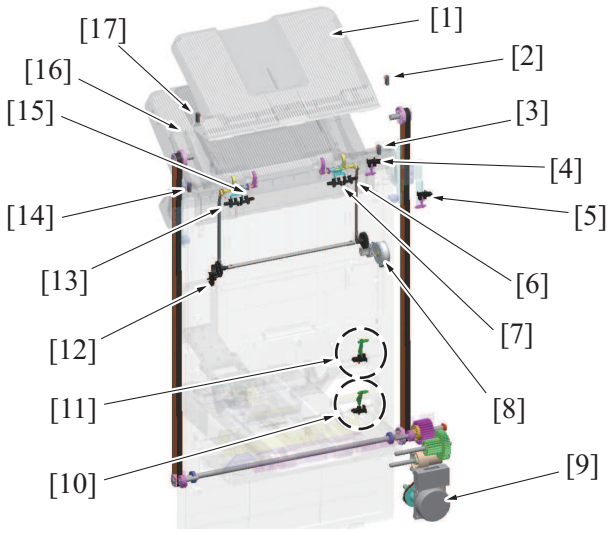
- When the amount of staples decreases to 16% or less, a staple near empty warning is detected and a message appears on the machine control panel.
- When the staples run out, the staple empty sensor turns ON. An error message appears on the machine control panel.
- When both of the self-priming sensor and the staple empty sensor turn OFF, the staples are fed until the self-priming sensor turns ON again. If the self-priming sensor does not turn ON even after the staple feeding exceeds the predetermined number of times, the machine determines that no staple is remained. A message appears on the panel.

(5) Staple waste box full detection

- When the staple waste box goes full, the machine detects a staple waste full state, and a message appears on the machine control panel.
- Discard the staple waste from the staple waste box, and open and close the front door of the finisher. So that, the warning is cleared.

9.7 OUTPUT TRAY SECTION

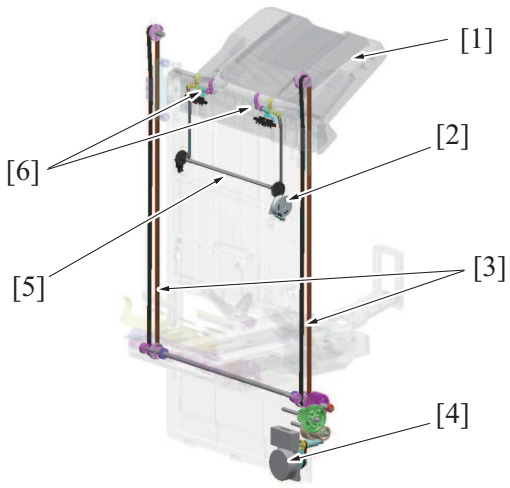
9.7.1 Configuration



[1]	Sub tray	[2]	Sub tray full sensor/out (PS39)
[3]	Main tray upper sensor/in (PS40)	[4]	Main tray empty sensor (PS13)
[5]	Main tray middle position sensor (PS51)	[6]	Main tray lift up detection sensor/Rr (PS17)
[7]	Main tray lift down detection sensor/Rr (PS15)	[8]	Paper delivery control motor (M15)
[9]	Main tray up/down motor (M6)	[10]	Main tray full detection sensor (PS12) (*1)
[11]	Main tray full detection sensor (PS12) (*2)	[12]	Paper delivery control home sensor (PS11)
[13]	Main tray lift up detection sensor/Fr (PS16)	[14]	Main tray upper sensor/out (PS38)
[15]	Main tray lift down detection sensor/Fr (PS14)	[16]	Main tray
[17]	Sub tray full sensor/in (PS41)	-	-

- *1: Installation position for the FS-540 sensor
- *2: Installation position for the FS-540SD sensor

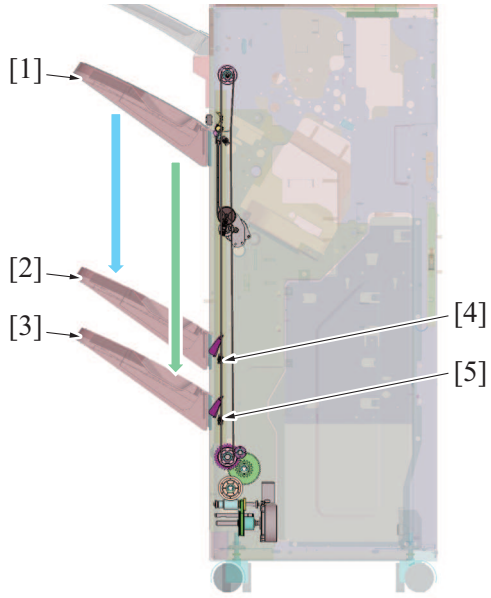
9.7.2 Drive



[1]	Main tray	[2]	Paper delivery control motor (M15)
[3]	Main tray drive belt	[4]	Main tray up/down motor (M6)
[5]	Paper detection lever drive shaft	[6]	Paper surface detect lever

9.7.3 Main tray up/down mechanism

- Rotation of the main tray up/down motor drives the main tray drive belt to lift and lower the main tray.
- The lower limit position of the main tray (full detection position) is different between the FS-540 and FS-540SD models.

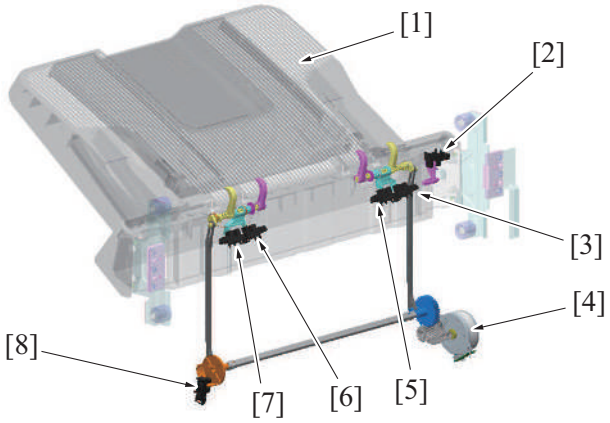


[1]	Main tray: Home position	[2]	Main tray: Main tray full position (*1)
[3]	Main tray: Main tray full position (*2)	[4]	Main tray full detection sensor (PS12) (*1)
[5]	Main tray full detection sensor (PS12) (*2)	-	-

- *1: FS-540SD
- *2: FS-540

9.7.4 Main tray paper detection

- The main tray empty sensor, the main tray lift up detection sensor, and the main tray lift down detection sensor keep the distance between the upper surface of the paper ejected to the main tray and the exit port constant, thereby eliminating any unevenness in the paper ejected.
- The main tray empty sensor detects the upper limit position of the main tray.
- The main tray lift up detection sensors (Fr and Rr) indicate the lifting of the main tray.
- The main tray lift down detection sensors (Fr and Rr) indicate the lowering of the main tray.
- Depending on the operation of the paper detection lever, the machine detects that the main tray life up/down sensor turns ON/OFF.
- The paper delivery control motor drives the paper detection lever. The paper delivery control home sensor detects the home position of the paper detection lever.
- The paper detection lever is operated each time a sheet of paper is discharged. This operation is used to confirm the alignment of discharged paper and the discharge state of the main tray.

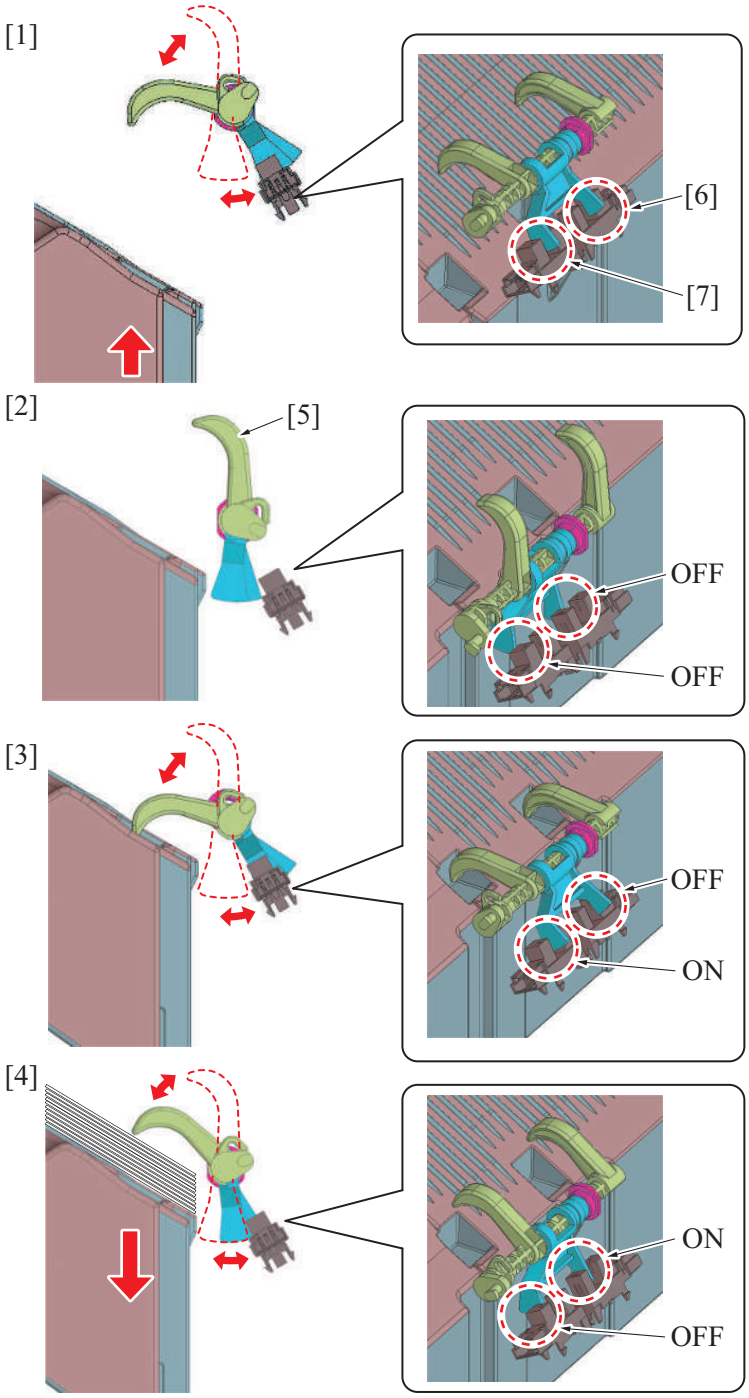


[1]	Main tray	[2]	Main tray empty sensor (PS13)
[3]	Main tray lift up detection sensor/Rr (PS17)	[4]	Paper delivery control motor (M15)
[5]	Main tray lift down detection sensor/Rr (PS15)	[6]	Main tray lift down detection sensor/Fr (PS14)
[7]	Main tray lift up detection sensor/Fr (PS16)	[8]	Paper delivery control home sensor (PS11)

(1) Main tray operation

- The paper detection lever and main tray empty sensor confirm the paper load status of the main tray and main tray position (height) when the printing starts.
- The paper detection lever is operated to confirm the state of the main tray lift detection sensor.

- When the main tray lift up detection sensor turns ON and the main tray empty sensor turns OFF, the main tray is lift up until the main tray paper detection sensor turns ON.
- The paper detection lever returns to the home position. The machine waits for the discharged paper.
- After the paper is discharged into the main tray, the paper detection lever is operated to confirm the load status of the main tray. At this time, if the main tray lift down detection sensor turns ON, the main tray is lowered to a predetermined height. If this sensor is off, the lower operation is not performed.
- This paper detection lever is driven for each sheet of discharged paper to confirm the load status of the main tray.
- After the printing completes the paper detection lever returns to the home position.
- The main tray operation (lifting) is not performed as long as there is a subsequent print instruction even if the discharged paper is removed.

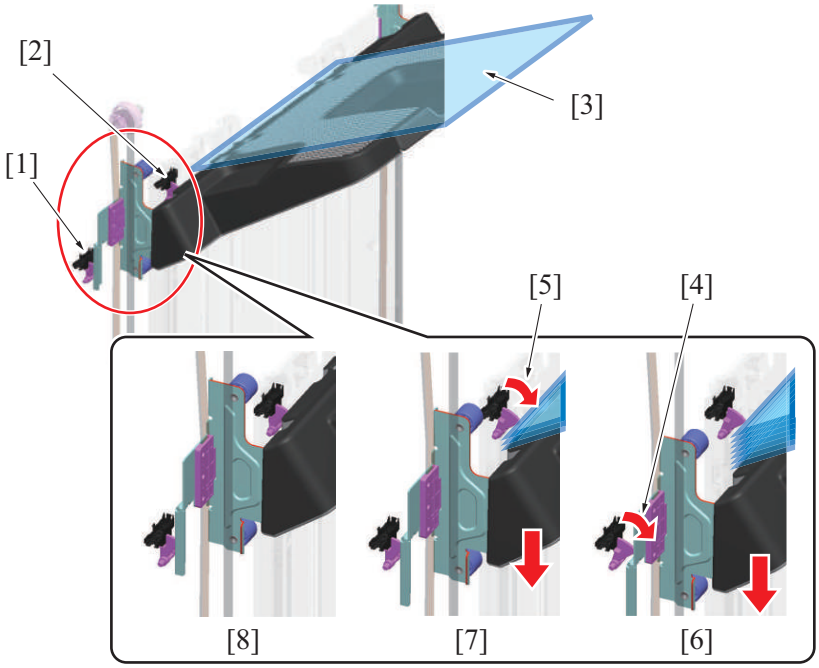


[1]	Main tray lift up state	[2]	Finisher stop state
[3]	Check of main tray paper load status (no discharged paper)	[4]	Main tray paper load status (with discharged paper)
[5]	Paper detection lever (home position)	[6]	Main tray lift down detection sensor/Fr (OFF state)
[7]	Main tray lift up detection sensor/Fr (ON state)	-	-

9.7.5 Main tray position detection mechanism

- The main tray empty sensor and main tray intermediate position sensor are provided. These sensors detect the loading status of the main tray when the main power turns ON or the machine awakes from the sleep mode.

- When the main tray is at the upper limit position, the main tray empty sensor is blocked, thereby detecting that the main tray is empty.
- When the main tray is near the upper limit, the main tray empty sensor is unblocked and the main tray intermediate position sensor is blocked. The machine detects that a small amount of paper is loaded. In this case, the main tray paper removal warning will not be displayed on the control panel.
- When paper is loaded in the main tray, the main tray empty sensor and the main tray middle position sensor are unblocked. In this case, the main tray paper removal warning will be displayed on the control panel.



[1]	Main tray middle position sensor (PS51)	[2]	Main tray empty sensor (PS13)
[3]	Paper	[4]	Main tray middle position sensor: Blocked -> Unblocked
[5]	Main tray empty sensor: Blocked -> Unblocked	[6]	Paper present: Main tray paper removal warning is displayed
[7]	Paper present: Main tray paper removal warning is not displayed	[8]	Paper not present

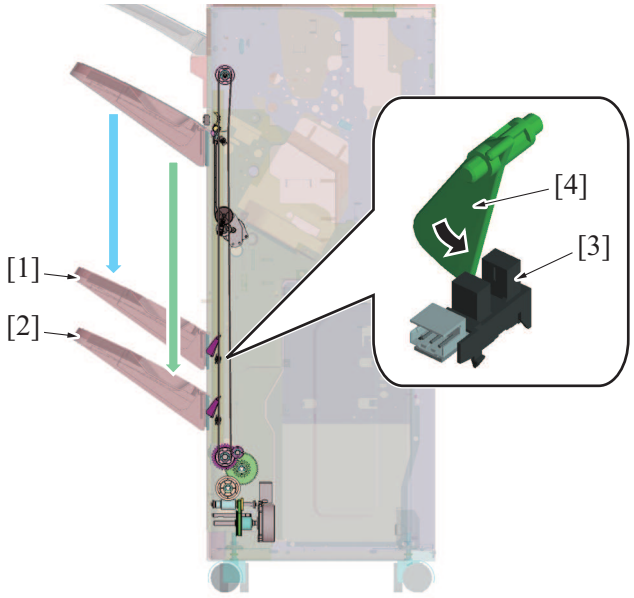
9.7.6 Tray full detection mechanism

(1) Main tray

- The main tray has the paper full detection mechanism.
- When paper full is detected, the warning message appears on the control panel.
- In this state, any main tray related configurations and jobs that use the main tray cannot be performed.

(a) Paper full detection mechanism

- When the machine determines that the paper stack in the main tray exceeds the specified height, the paper detection lever rotates the main tray up/down motor. The main tray is lowered to the specified position.
- When the main tray is lowered to the position of the main tray full detection sensor, the main tray full is determined.

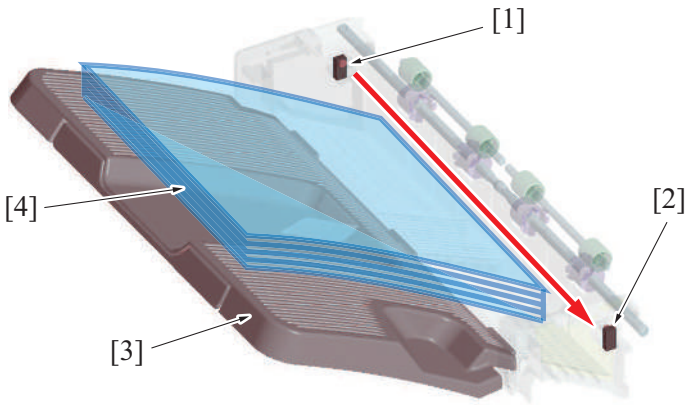


[1]	Main tray (main tray full position) (*1)	[2]	Main tray (main tray full position) (*2)
[3]	Main tray full detection sensor (PS12)	[4]	Actuator

- *1: FS-540SD
- *2: FS-540

(2) Sub tray

- When paper is discharged into the sub tray, the stacked paper blocks the sub tray full detection sensor. This blocked state is interpreted as a detection of a full exit tray.
- When the sub tray full is detected, the warning message appears on the control panel.
- In this state, any sub tray configurations and jobs that use the sub tray cannot be performed.



[1]	Sub tray full sensor/out (PS39)	[2]	Sub tray full sensor/in (PS41)
[3]	Sub tray	[4]	Paper

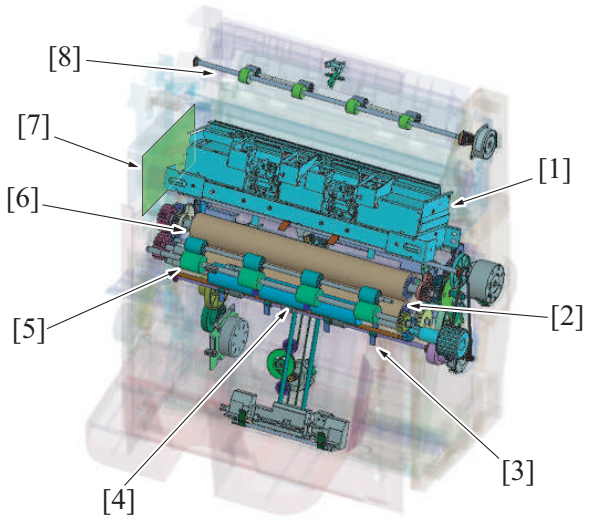
9.8 SADDLE SECTION

9.8.1 Configuration

NOTE

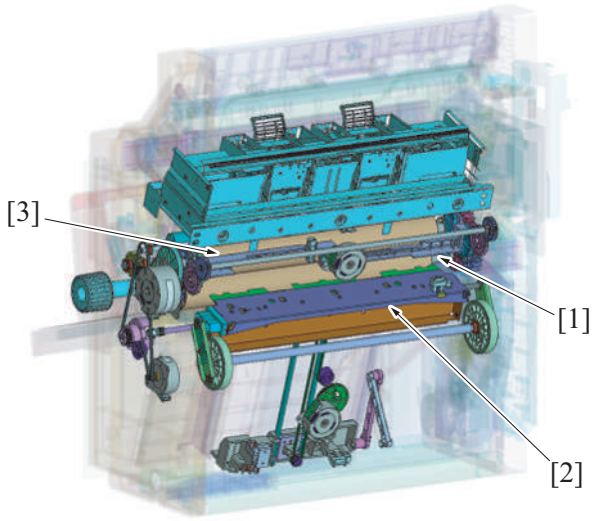
- **FS-540SD only**

Front left side perspective view



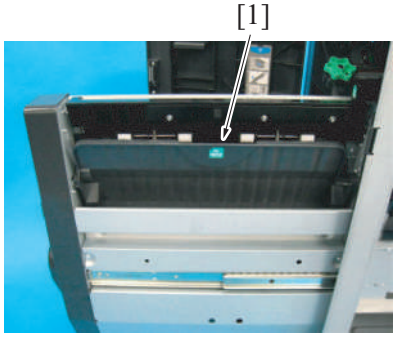
[1]	Staple unit	[2]	Center folding roller 2
[3]	Center folding section lower paddle	[4]	Tri-folding roller
[5]	Saddle tray exit roller	[6]	Center folding roller 1
[7]	SD drive board (SDDB)	[8]	Saddle section paper feed roller

Front right side perspective view



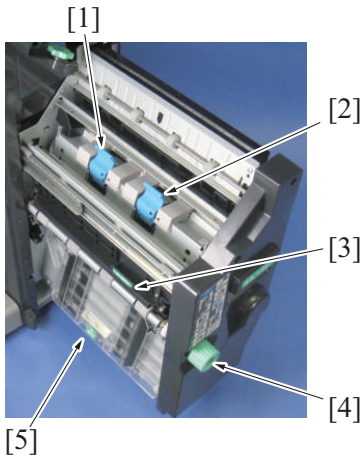
[1]	Center staple alignment plate drive gear/Rr	[2]	Center fold knife
[3]	Center staple alignment plate drive gear/Fr	-	-

Right side view



[1]	Jam removal cover (transport section)	-	-

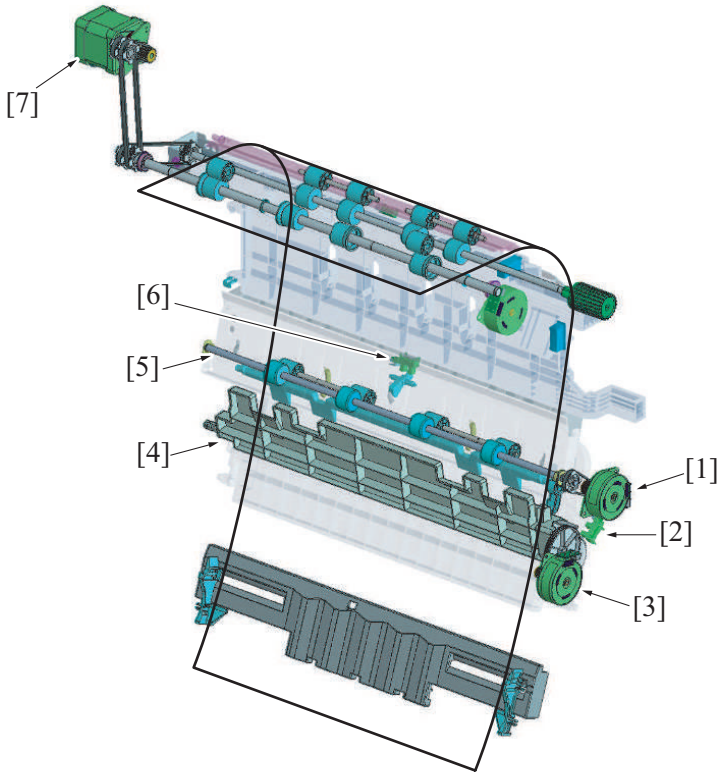
Front left side perspective view



[1]	Staple cartridge/Rr	[2]	Staple cartridge/Fr
[3]	Jam removal cover (exit section)	[4]	Jam removal dial (folding section)
[5]	Jam removal cover (alignment section)	-	-

9.8.2 Transport section

(1) Drive



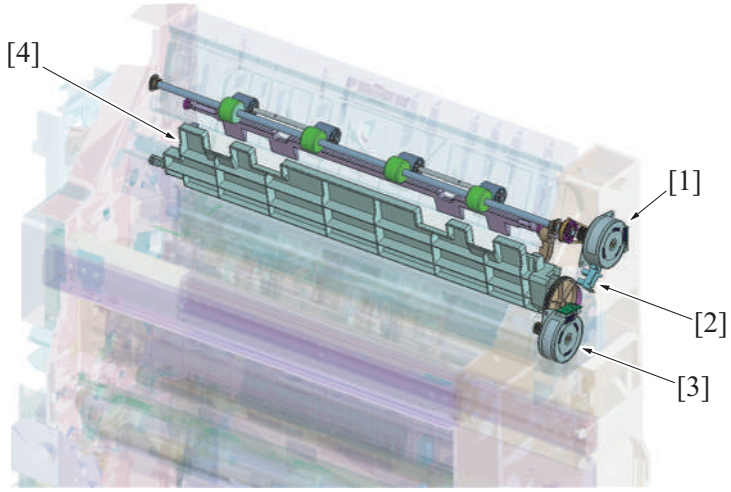
[1]	SD transport motor (M101)	[2]	Curl cover detection sensor (PS102)
[3]	Paper discharge control motor (M102)	[4]	Curl cover
[5]	SD transport roller	[6]	SD entrance sensor (PS101)
[7]	FNS discharge motor (M3) (finisher section)	-	-

(2) Paper transport

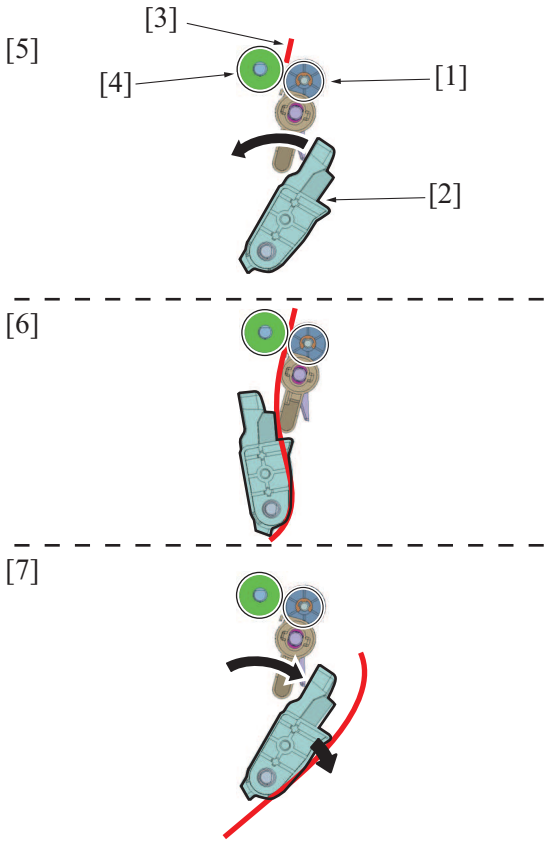
- The FNS discharge motor rotates reversely to transport the paper from the finisher transport section into the saddle unit.
- The paper then is transported to the alignment section by SD transport roller.
- The SD transport roller rotates when the SD transport motor is driven.

(3) Curl cover

- The paper is transported to the alignment section one–by-one. A paper which is curled may cause paper misfeed at the entrance of the saddle stitcher.
- In order to prevent this paper misfeed, the curl cover is installed so that each paper is transported to the alignment section without fail.
- The curl cover is operated by the paper discharge control motor. Paper receiving opens/closes the feeding port inside the saddle unit entrance when the paper discharge control motor rotates in forward/reverse direction.



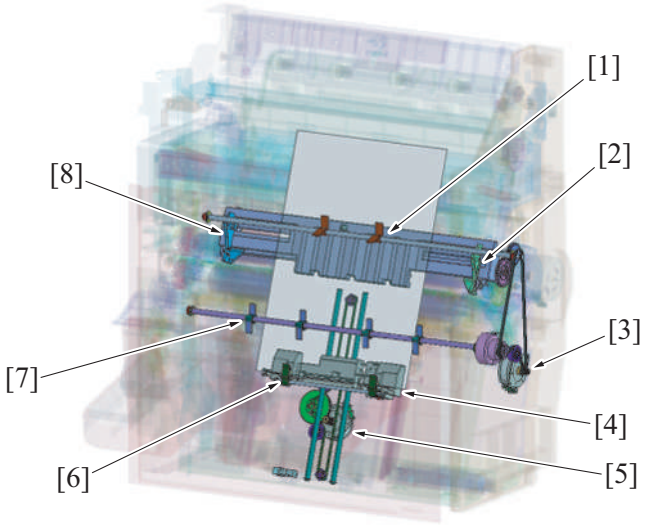
[1]	SD transport motor (M101)	[2]	Curl cover detection sensor (PS102)
[3]	Paper discharge control motor (M102)	[4]	Curl cover



[1]	SD transport roll	[2]	Curl cover
[3]	Paper	[4]	SD transport roller
[5]	Paper transportation from within the finisher	[6]	Curl cover operation
[7]	Next paper standby (moves curl cover to the home position)	-	-

9.8.3 Alignment section

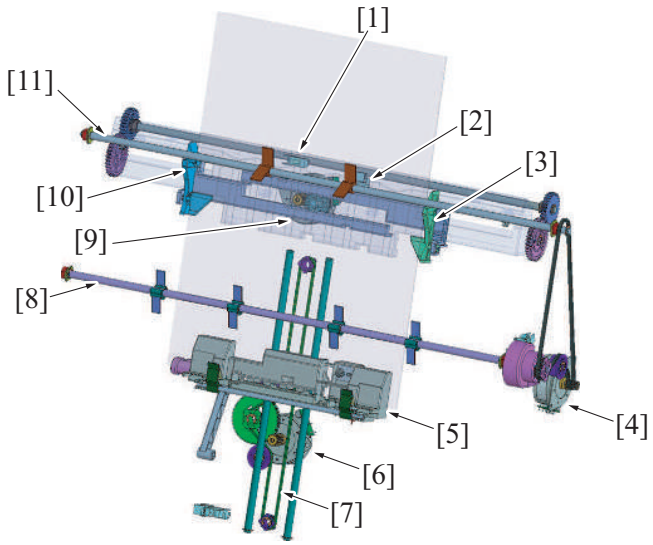
(1) Drive



[1]	Center folding section upper paddle	[2]	Alignment plate/Fr
[3]	SD paddle motor (M107)	[4]	Stopper guide
[5]	Stopper drive motor (M104)	[6]	Paper grip
[7]	Center folding section lower paddle	[8]	Alignment plate/Rr

(2) Alignment

- It aligns the paper transported to the alignment section.
- The paper CD alignment is conducted by the alignment plate/Fr and the alignment plate/Rr.
- The paper FD alignment is conducted by the stopper guide, center folding section upper paddle and center folding section lower paddle.



[1]	Center staple/fold stacker paper detect sensor (PS103)	[2]	Alignment home sensor (PS104)
[3]	Alignment plate/Fr	[4]	SD paddle motor (M107)
[5]	Stopper guide	[6]	Stopper drive motor (M104)
[7]	Stopper guide drive belt	[8]	Center folding section lower paddle
[9]	Alignment motor (M103)	[10]	Alignment plate/Rr
[11]	Center folding section upper paddle	-	-

(a) Alignment operation

- Alignment plates follow the forward and reverse rotation of alignment motor.
- When the saddle exit sensor of the finisher detects the leading edge of the paper, the alignment motor starts rotating in the direction to close the alignment plate, and the alignment plate/Fr and the alignment plate/Rr stop at the position where it is slightly wider than the paper width.
- When the specified period of time has passed after the SD entrance sensor detects the trailing edge of the paper, the alignment motor rotates in forward/reverse direction to do oscillation of the alignment plate to align paper.

- The oscillation of the alignment plate is conducted each time a sheet of paper is transported, and the alignment plate is shifted to the standby position after the alignment operation is finished.
- The home position of the alignment plate is detected by the alignment home sensor.

(b) Stopper guide operation

- The stopper drive motor rotates in forward/reverse direction to operate the stopper guide drive belt, and moves the stopper guide up/down.
- The stopper guide moves up after the leading edge of the paper passes the main tray exit sensor.
- The stopper guide stops at a position where the length of paper that has been transported.
- The stopper guide stops the paper to align paper edges.

(c) Paddle operation

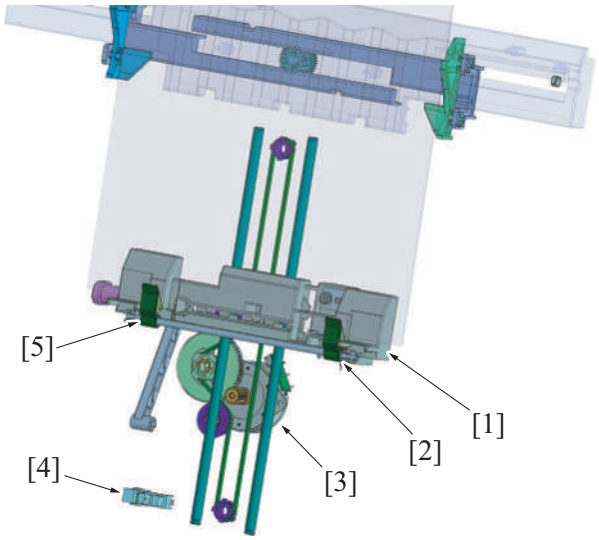
- The center folding section upper paddle and the center folding section lower paddle are installed in order to receive the transported paper to the alignment section without fail.
- The up/down paddle is driven by the SD paddle motor. The up/down paddle is driven when the specified period of time has passed after the leading edge of the paper passed the saddle exit sensor of the finisher.
- The up/down paddle stops after the paper trailing edge passes the finisher's main tray exit sensor and the paddle rotates for the specified number of times.

(3) Stopper guide

- At the stopper guide, paper is aligned in the FD direction. Paper conveyed to the aligning section is conveyed to the specified position.
- The exit grip holds the paper when shifting it to the specified position and when stapling papers.
- The alignment section, staple position and other positions (center folding, center staple, tri-folding) have their own up/down stop positions. They are controlled by the pulse number of the stopper drive motor.

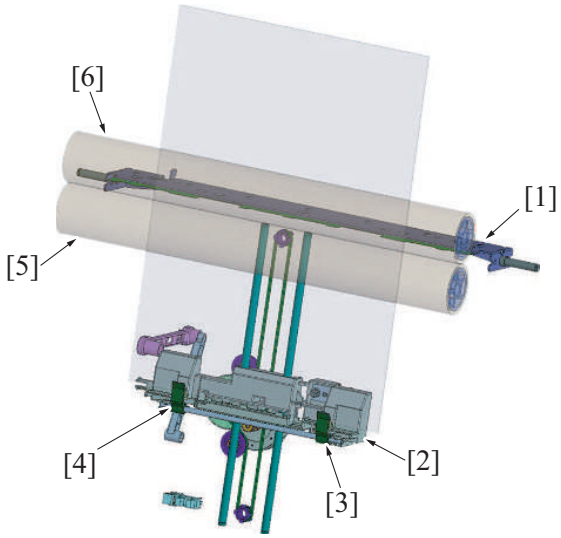
(a) Stopper operation

- The stopper drive motor moves the stopper guide up and down in accordance with the paper size.
- The stopper home sensor detects the home position of stopper guide.



[1]	Stopper guide	[2]	Exit grip/Fr
[3]	Stopper drive motor (M104)	[4]	Stopper home sensor (PS106)
[5]	Exit grip/Rr	-	-

(b) Stopper control



[1]	Center folding knife assy	[2]	Stopper guide
[3]	Exit grip/Fr	[4]	Exit grip/Rr
[5]	Center folding roller 2	[6]	Center folding roller 1

Folding mode

- After a specified period of time since the last sheet of paper was aligned, the stopper solenoid is turned ON and the sheets of paper are held in place.
- After the sheets are held in place, the stopper drive motor rotates to move the stopper guide down and lower the sheets to the folding position.

Saddle stitching mode

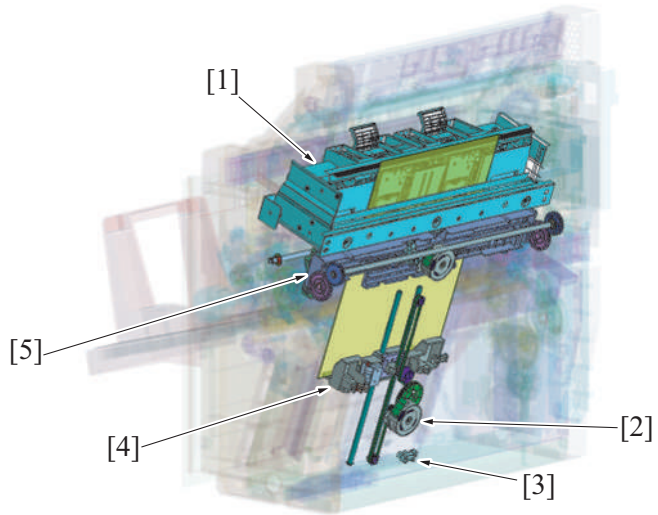
- After a specified period of time since the last sheet of paper was aligned, the stopper solenoid is turned ON and the sheets of paper are held in place.
- After the sheets are held in place, the stopper drive motor rotates to move the stopper guide down and lower the sheets to the center staple position.
- After a specified period of time since stapling operation was completed, the alignment motor opens the alignment plates and the stopper drive motor starts rotating to move the stopper guide further down and lower the paper to the folding position.

Tri-folding mode

- After a specified period of time since the last sheet of paper was aligned, the stopper solenoid is turned ON and the sheets of paper are held in place.
- After the sheets are held in place, the stopper drive motor rotates to move the stopper guide down and lower the sheets to the 1st folding position in the tri-folding.

9.8.4 Stapler

(1) Drive

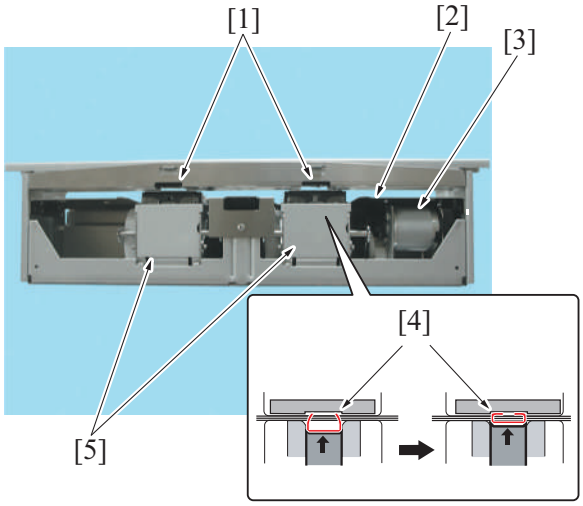


[1]	Stapler unit	[2]	Stopper drive motor (M104)
[3]	Stopper home sensor (PS106)	[4]	Stopper guide

[5]	Alignment tray	-	-

(2) Stapling operation

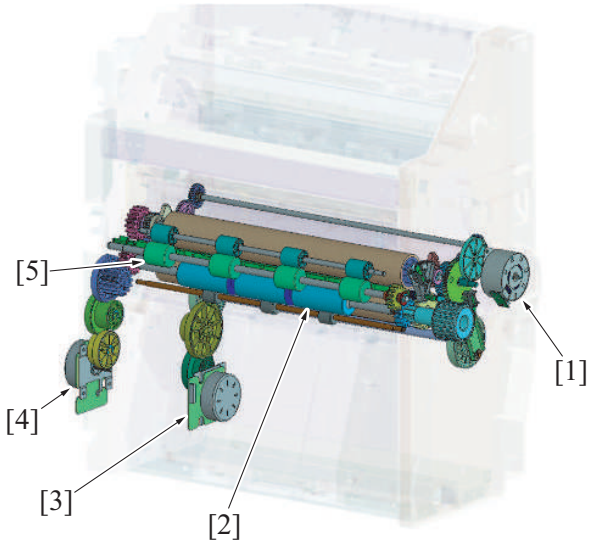
- The stapling operation is performed by the staple motor in the stapler.
- The drive gear pushes out the pressed portion of the paper toward the clincher to hold the paper, and then the pin will be pushed out.
- When the pin penetrates the paper batch, the pin will be bent to staple the paper batch at the clincher section.



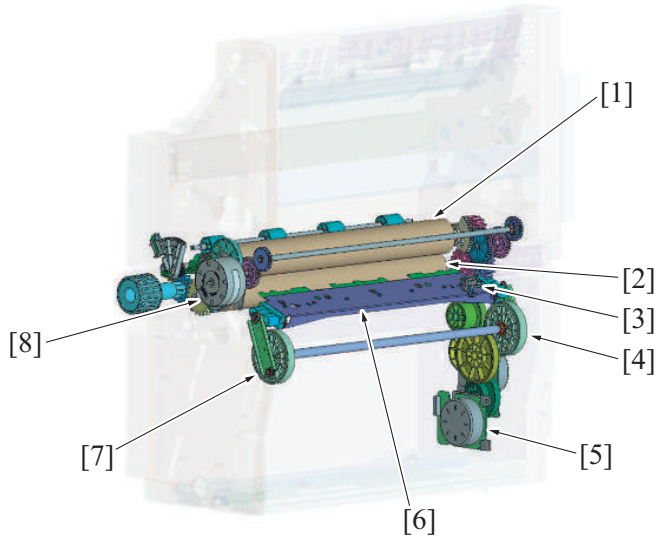
[1]	Clincher	[2]	Drive gear
[3]	Stapler motor	[4]	Staple
[5]	Stapler	-	-

9.8.5 Folding/Saddle stitching

(1) Drive



[1]	Center fold guide motor (M106)	[2]	Tri-folding roller
[3]	Center fold knife motor (M109)	[4]	Center fold roller motor (M105)
[5]	Saddle tray exit roller	-	-



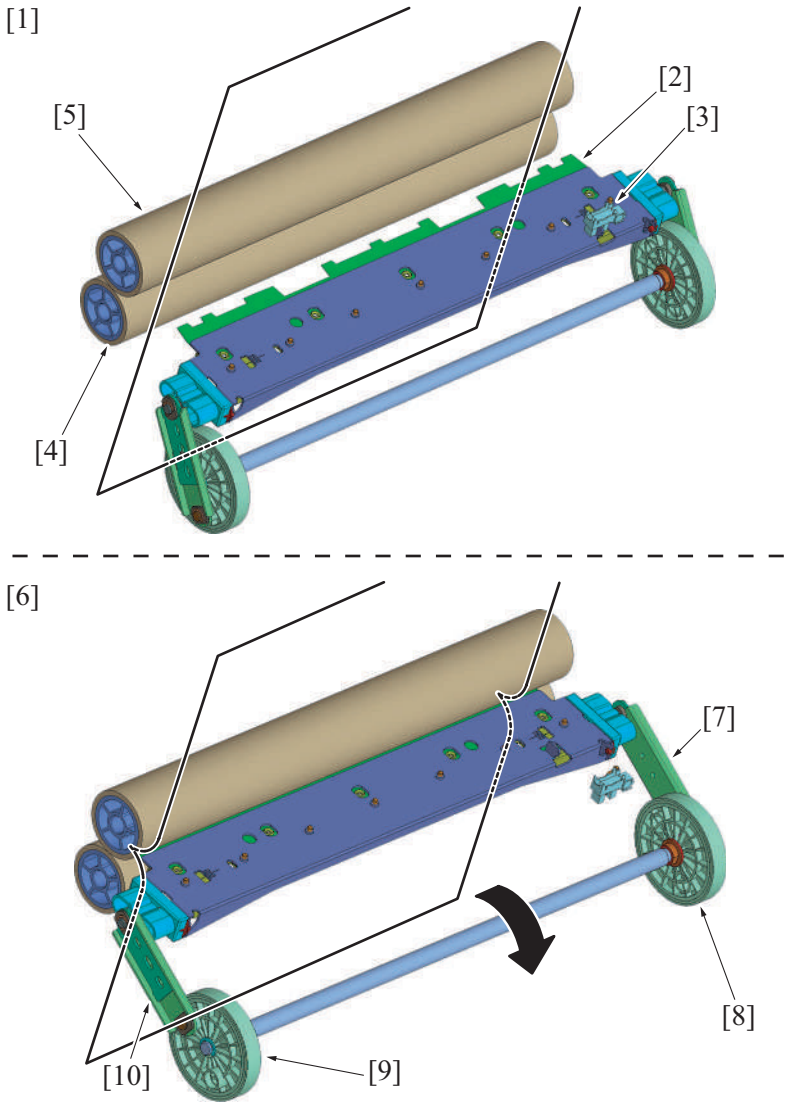
[1]	Center folding roller 1	[2]	Center folding roller 2
[3]	Center fold knife home sensor (PS108)	[4]	Fold drive gear/Rr
[5]	Center fold knife motor (M109)	[6]	Center folding knife assy
[7]	Fold drive gear/Fr	[8]	Center fold guide motor (M106)

(2) Folding knife

- The center fold knife motor drives the folding knife.
- The folding knife is used for the 1st folding in the center folding/center staple/tri-folding mode.

(a) Folding knife operation

- The center fold knife motor rotates the crank shaft a half turn via the gear, and pushes the paper to the nip section with the folding knife.
- The folding rollers draw and fold the paper.
- The position of the stopper guide controls the folding position.



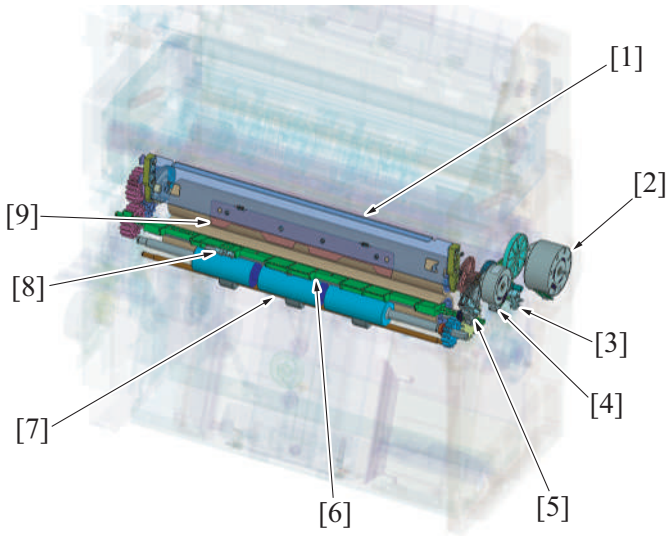
[1]	Before folding	[2]	Folding knife
[3]	Center fold knife home sensor (PS108)	[4]	Center folding roller 2
[5]	Center folding roller 1	[6]	Folding operation
[7]	Crank shaft/Rr	[8]	Fold knife assy drive gear/Rr
[9]	Fold knife assy drive gear/Fr	[10]	Crank shaft/Fr

(b) Folding knife control

- The center fold knife motor turns ON and sticks out the folding knife to the paper after a specified period of time since the stopper guide stops at the folding position.
- The center fold knife motor stops when the folding knife reciprocates after fold operation is completed and the center fold knife home sensor turns OFF.

9.8.6 Tri-folding

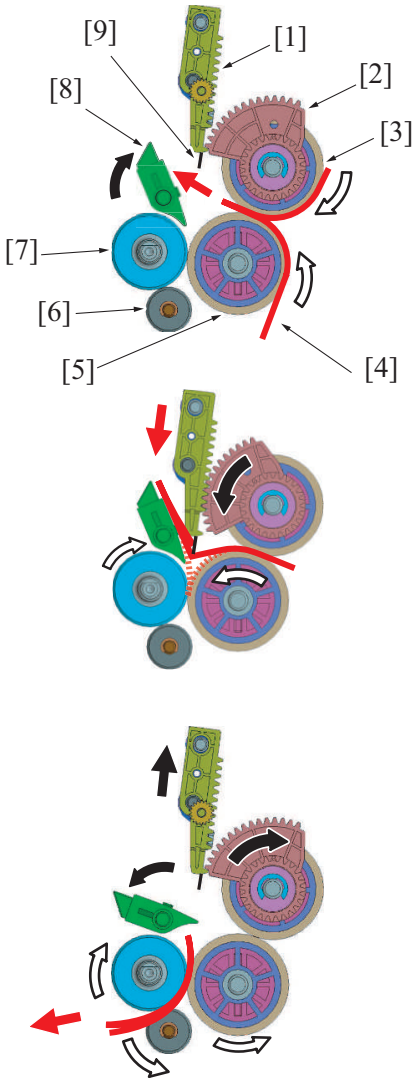
(1) Drive



[1]	Tri-folding knife assy	[2]	Center fold guide motor (M106)
[3]	Guide home sensor (PS107)	[4]	Tri-folding guide motor (M108)
[5]	Tri-folding gate home sensor (PS111)	[6]	Tri-folding gate
[7]	Tri-folding roller	[8]	Fold exit sensor (PS112)
[9]	Tri-folding knife	-	-

(2) Tri-folding operation

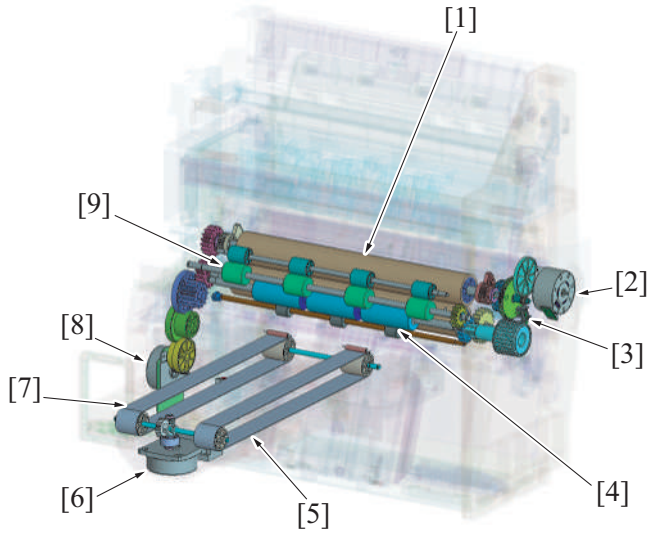
1. When the center fold guide motor drives, the tri-folding gate rotates. The leading edge of the paper to which the first fold was applied at the center folding section, will be transported to the tri-folding path.
2. When the tri-folding guide motor drives, the tri-folding knife assy drive gear rotates to move down the tri-folding knife assy. The paper to which the first fold is applied at the center folding section will be pushed out to the tri-folding roller.
3. The paper is pulled into the tri-folding roller to tri-fold the paper.
4. When tri-folding is finished, the tri-folding gate will return to the home position. The home position of the tri-folding gate is detected by the tri-folding gate home sensor.



[1]	Tri-folding knife assy	[2]	Tri-folding knife assy drive gear
[3]	Center folding roller 1	[4]	Paper
[5]	Center folding roller 2	[6]	Tri-folding roll
[7]	Tri-folding roller	[8]	Tri-folding gate
[9]	Tri-folding knife	-	-

9.8.7 Exit section

(1) Drive



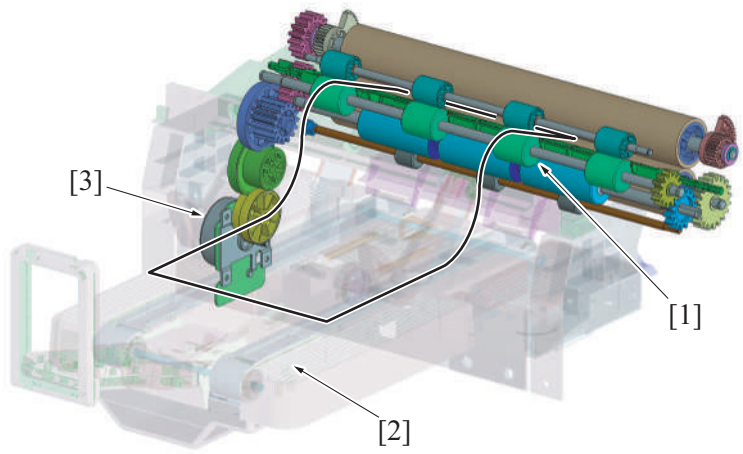
[1]	Center folding roller 1	[2]	Center fold guide motor (M106)
[3]	Tri-folding gate home sensor (PS111)	[4]	Tri-folding roller
[5]	Paper transport belt/Fr	[6]	Paper transport belt motor (M134)
[7]	Paper transport belt/Rr	[8]	Center fold roller motor (M105)
[9]	Saddle tray exit roller	-	-

(2) Paper exit

- Center folded, center stapled, or tri-folded paper is discharged to the saddle tray.
- The paper that is center folded and center stapled is sent though the upper route, and the tri-folded paper is sent through the lower route to be discharged.
- The paper is discharged by driving the saddle tray exit roller and the tri-fold roller. Both rollers are driven by the center fold roller motor.

(a) Paper exit for center folding/center staple

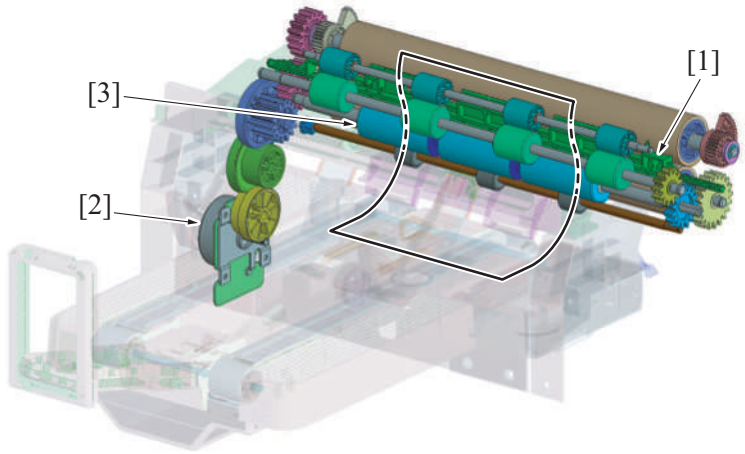
- The center fold roller motor is driven after the center folding or the center staple, and discharges the paper to the saddle tray by the saddle tray exit roller.



[1]	Saddle tray exit roller	[2]	Saddle tray
[3]	Center fold roller motor (M105)	-	-

(b) Paper exit for tri-folding

- Since the paper is tri-folded by the tri-folding roller, the paper is transported through the lower route.



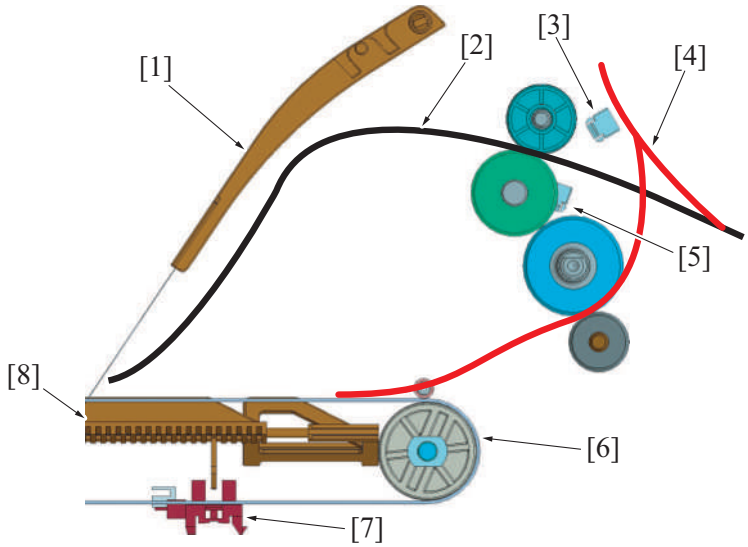
[1]	Tri-folding gate	[2]	Center fold roller motor (M105)
[3]	Tri-folding roller	-	-

(3) Paper transport belt

- The paper transport belt transports the processed paper to the leading edge of the tray. Besides, the paper transport belt drives to prevent paper jams at the trailing edge of the tray.

(a) Transport operation

- After the leading edge of paper passes the fold exit sensor for a predetermined amount of time, the paper transport belt motor rotates to drive the paper transport drive belt. As the paper exit path is different for center folding and tri-folding, the start and stop timings of the belt differ.
- The exit tray is equipped with an SD exit full sensor to detect paper at the exit port. When there is no paper at the exit port, the belt is driven until the leading edge of paper reaches the exit port. When there is any paper at the exit port, the belt is driven after the leading edge of paper reaches the port.



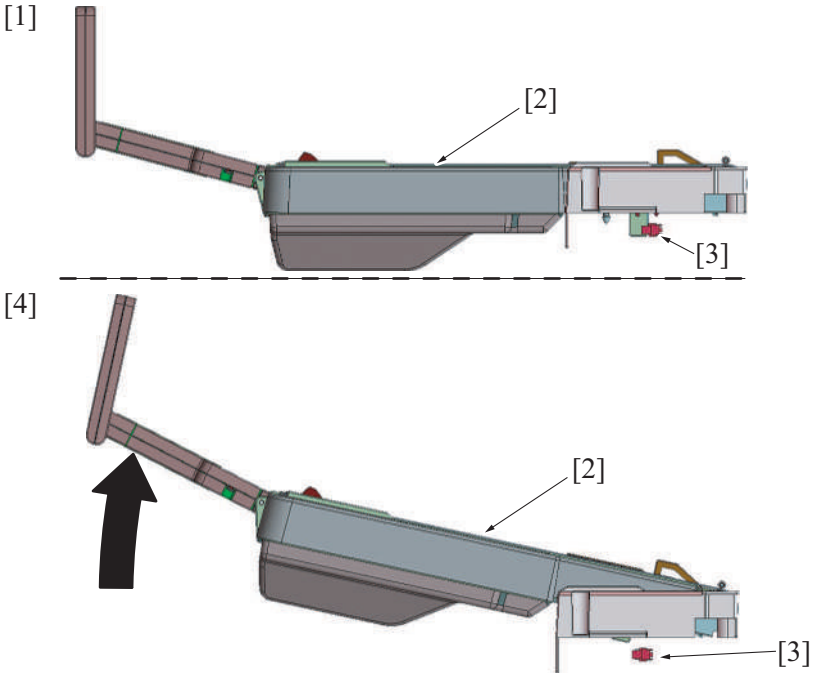
[1]	Paper press	[2]	Paper path for center folding and center staple
[3]	Fold exit sensor (center folding/center staple position)	[4]	Paper path for tri-folding
[5]	Fold exit sensor (tri-folding position)	[6]	Paper transport drive belt
[7]	SD exit full sensor (PS135)	[8]	Exit tray full detection actuator

(b) Exit tray upper limit detection

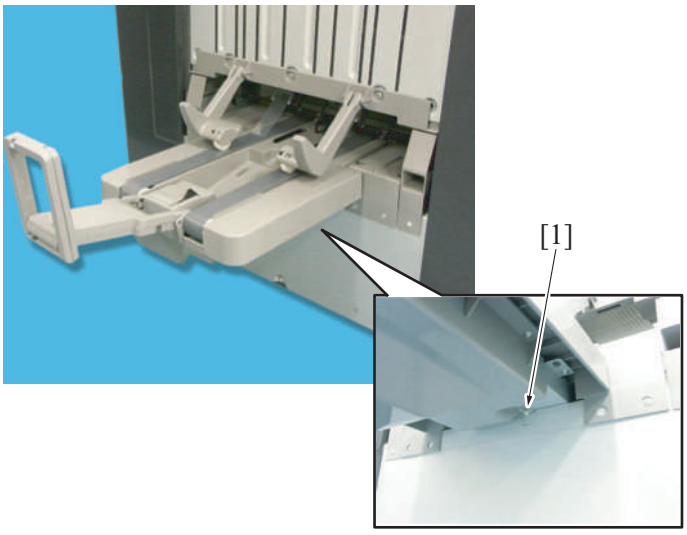
- The exit tray is equipped with an SD exit tray limit sensor to detect the load of paper in the exit tray.
- The counter starts after the SD exit tray limit sensor turns on. The finisher is stopped after the counter reaches a predetermined number, which functions as the exit tray upper limit.
- When the printing in different modes continues for some time, the mode that produces the smallest load amount is used to detect the upper limit.

(c) Paper transport belt forced drive mechanism

- Lift the leading edge of the exit tray, and thus the paper transport drive belt can be manually driven. This operation will cause the paper in the exit port to move to the leading edge of the exit tray.
- The normal exit tray is secured with screws. Remove the single exit tray lock screw at the rear of the exit tray to lift this exit tray.



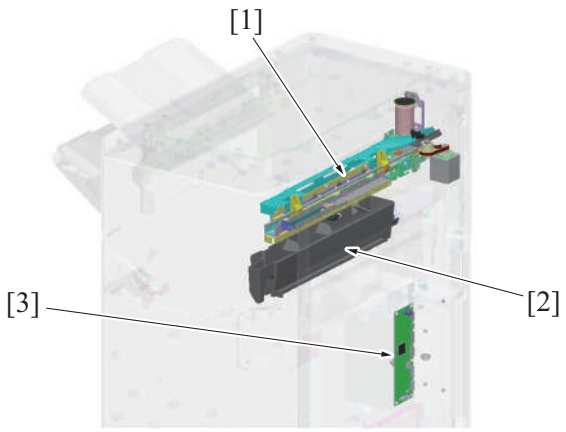
[1]	Exit tray normal position	[2]	Exit tray
[3]	SD exit tray lift sensor (PS143)	[4]	Exit tray lifting state



[1]	Exit tray lock screw	-	-

9.9 PK-526

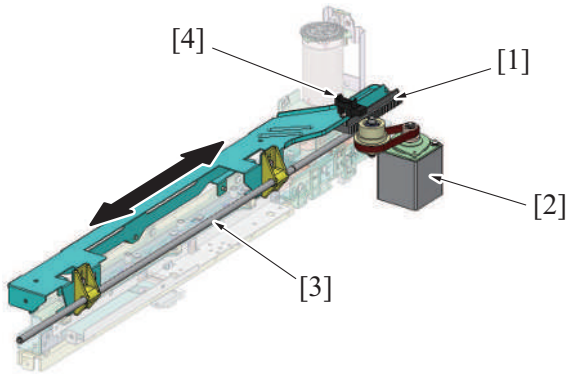
9.9.1 Configuration



[1]	Punch unit	[2]	Punch dust box
[3]	Punch control board (PKCB)	-	-

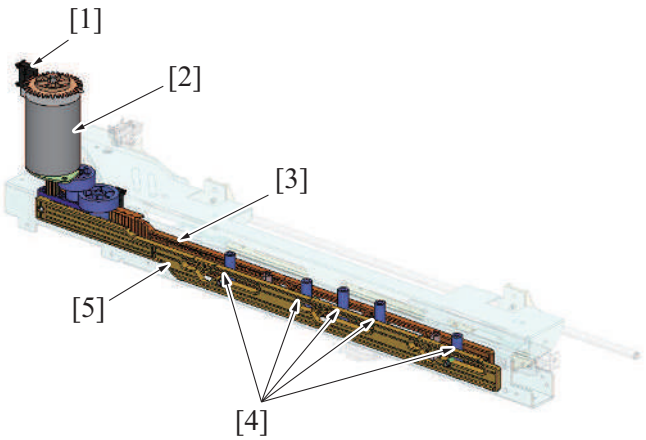
9.9.2 Drive

(1) Punch shift section



[1]	Punch oscillating assy gear	[2]	Punch oscillating motor (M302)
[3]	Punch oscillating assy moving shaft	[4]	Punch oscillating home sensor (PS303)

(2) Punch section

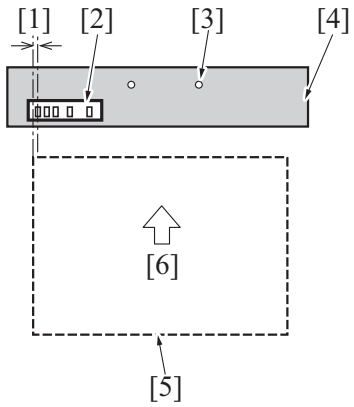


[1]	Punch motor sensor (PS306)	[2]	Punch drive motor (M301)
[3]	Punch blade drive guide 1	[4]	Punch blade
[5]	Punch blade drive guide 2	-	-

9.9.3 Punch standby position movement control

- When the power turns ON, the punch oscillating motor rotates until the punch oscillating home sensor turns ON to move the punch unit to the home position.
- When the punch mode is selected, one of the five sensors corresponding to the paper size detects the paper and moves the punch unit. After the job completes, the punch unit returns to the home position.
- If not use the punch mode, the punch oscillation section is driven to a predetermined position that will not cause a paper jam.

<Example: A4 size>

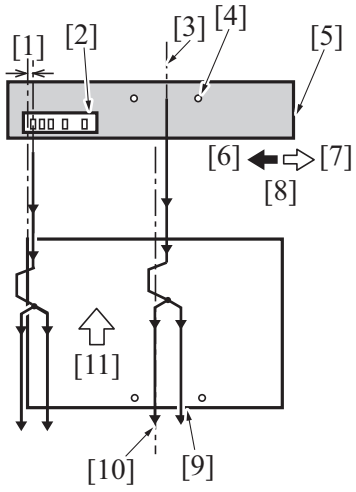


[1]	Distance of movement from the paper edge	[2]	Paper size detect board (PSDTB)
[3]	Punch blade	[4]	Punch unit
[5]	Paper	[6]	Direction of the paper transport

9.9.4 Punch position correction control

- The following procedure is used to correct the position of the punch unit that is positioned internally from the side edge of paper. So that, the center of paper can be punched at any time. By oscillation of the punch unit back and forth while paper is transported, the punch position correction is performed.
  - When a predetermined period of time has lapsed after the FNS entrance sensor detects the paper leading edge, the punch drive motor starts running. The punch unit moves from the front to the rear.
  - When the paper size detect board detects the side edge of paper and moves a predetermined distance, it will stop at the center of the paper. Thus the punch unit moves to the position.
  - After the punching operation, the punch unit moves to the standby position.

<Example: A4 size>

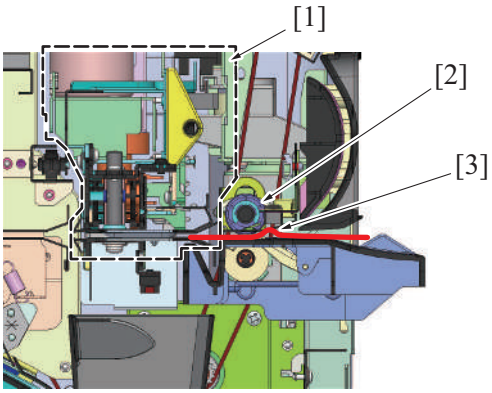


[1]	Side edge position	[2]	Paper size detect board (PSDTB)
[3]	Punch blade center	[4]	Punch blade
[5]	Punch unit	[6]	Front side
[7]	Rear side	[8]	Direction of punch unit movement
[9]	Paper	[10]	Center of paper
[11]	Paper transfer direction	-	-

9.9.5 Punch control

(1) Registration loop control

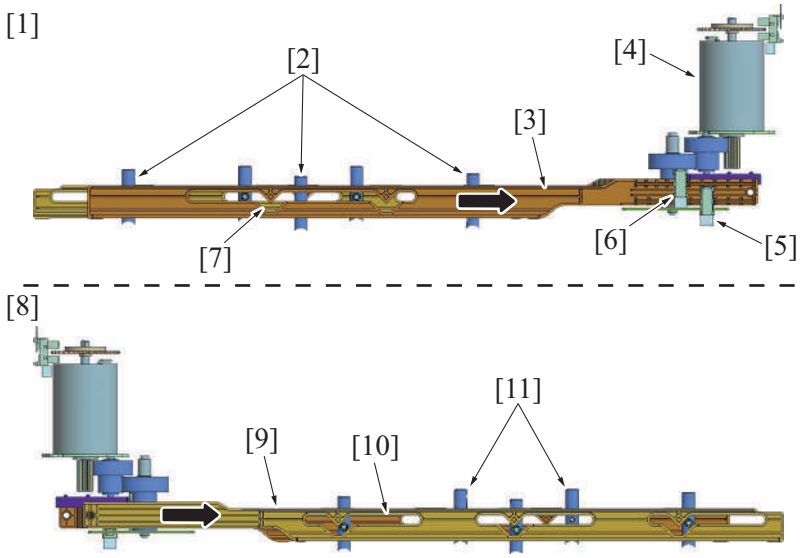
- The FNS entry transport motor (finisher section) is temporarily stopped at a predetermined time after the exit sensor of the main body detects the leading edge of the paper. Thus the paper is pressed against the FNS entry roller (finisher section) forming a loop to correct the bend. When the specified time has passed, the FNS entry transport motor turns ON to restart conveying the paper.



[1]	Punch kit	[2]	FNS entrance roller (finisher section)
[3]	Loop formation	-	-

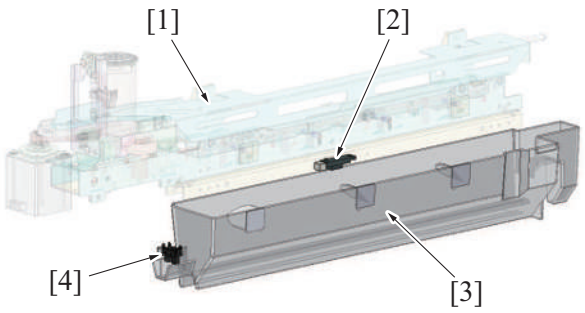
(2) Punch control

- Transmitting the start signal from the main body, the FNS entry transport motor (finisher section) rotates.
- In the punch mode, the FNS entry transport motor stops temporarily at a predetermined time after the FNS entrance sensor (finisher section) detects the trailing edge of the paper.
- At the same time, the punch drive motor is driven to move the punch blade drive guide 1 and 2 horizontally. The punch blade drive guide has slots to shift punch blades up and down. Punch blades moving down conduct the punch operation. The punch motor is stopped and the punch operation is completed when the punch position sensor turns ON.
- The FNS entry transport motor rotates again to convey the paper a specified period of time after it stops temporarily.



[1]	Right side view	[2]	Punch blade (for 3 holes)
[3]	Punch blade drive guide 1	[4]	Punch drive motor (M301)
[5]	Punch position sensor (PS307)	[6]	Punch home sensor (PS301)
[7]	Punch drive plate (for 2 holes)	[8]	Left side view
[9]	Punch blade drive guide 2	[10]	Punch drive plate (for 3 holes)
[11]	Punch blade (for 2 holes)	-	-

9.9.6 Punch dust box control



[1]	Punch kit	[2]	Punch hole scraps box full sensor (PS302)
[3]	Punch dust box	[4]	Punch scraps box set sensor (PS28: finisher section)

(1) Punch scraps box full sensor

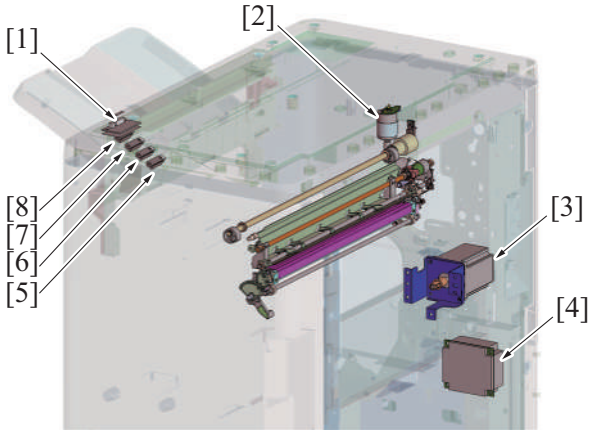
- Punch dust produced by the punch operation drops into the punch dust box. When the punch dust box becomes full of punch dust, the punch hole scraps box full sensor turns on. So, the punch dust box full information is sent to the main body.

(2) Punch scraps box detection

- The punch scraps box set sensor detects the punch dust box set state. When the punch dust box is not located, the punch scraps box set sensor turns on and sends the no punch dust box information to the main body.

9.10 ZU-609

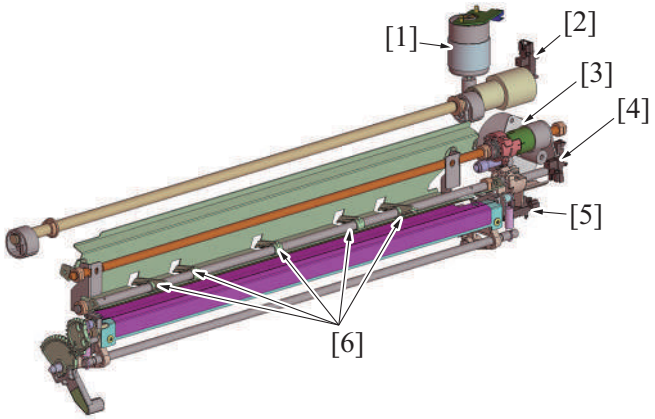
9.10.1 Configuration



[1]	ZU relay board (ZURB)	[2]	Pressure motor (M502)
[3]	ZU transport motor (M500)	[4]	ZU drive board (ZUDB)
[5]	Upper limit sensor/4 (PS506)	[6]	Upper limit sensor/3 (PS505)
[7]	Upper limit sensor/2 (PS504)	[8]	Upper limit sensor/1 (PS503)

9.10.2 Drive

(1) 1st folding

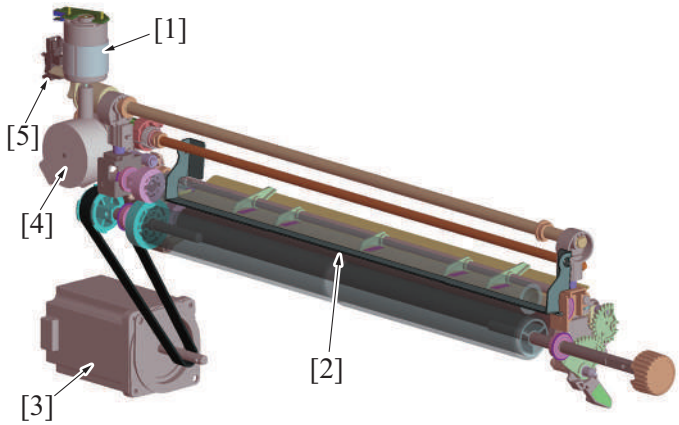


[1]	Pressure motor (M502)	[2]	Pressure cam home sensor (PS502)
[3]	Folding guide motor (M501)	[4]	Guide home sensor (PS500)
[5]	Chopper home sensor (PS501)	[6]	Folding claw

(2) 2nd folding/transport

NOTE

- **The dedicated ZU transport motor is required for the finisher when the Z-folding unit is installed.**
- **At time of set-up, make sure to replace the ZU discharge motor that is attached to the finisher with the supplied ZU transport motor. However, it is not necessary to install the ZU transport motor if the post inserter is already installed.**

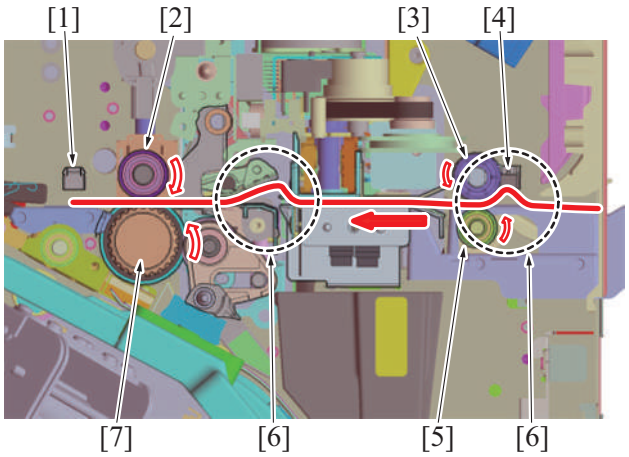


[1]	Pressure motor (M502)	[2]	Folding guide
[3]	ZU transport motor (M500)	[4]	Folding guide motor (M501)
[5]	Pressure cam home sensor (PS502)	-	-

9.10.3 1st folding mechanism

(1) FNS middle sensor downstream from paper transport

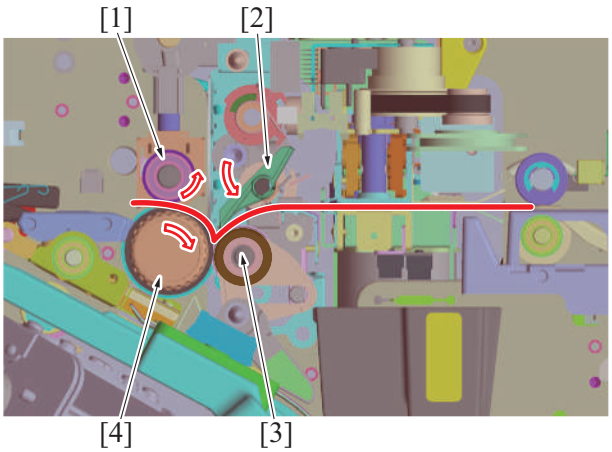
- To correct the skew of the transported paper, a loop is formed at the FNS entry roller and front of the transport roller. When a predetermined amount of time elapses after the paper passes the FNS entrance sensor, the transport roller is driven to transport paper.
- Paper that is transported to the finisher passes through the transport roller in the finisher and until it reaches the FNS middle sensor.
- The transport roller is temporarily stopped after the transport roller is rotated for specified times.



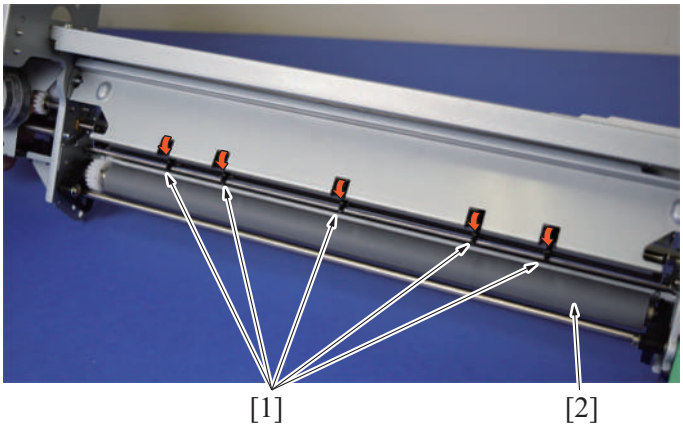
[1]	FNS middle sensor (PS36: finisher section)	[2]	Transport roller 1 (finisher section)
[3]	FNS entrance roller 1 (finisher section)	[4]	FNS entrance sensor (PS34) (finisher section)
[5]	FNS entrance roller 2 (finisher section)	[6]	Location of loop creation
[7]	Transport roller 2 (finisher section)	-	-

(2) 1st folding downstream from the FNS middle sensor

- The folding guide motor drives to lower the folding clip and transport the paper downward.
- At the same time, the transport roller rotates in reverse to transport paper downward.
- The transport roller 2 and the Z-fold roller drive to fold paper that has been transported downward.



[1]	Transport roller 1 (finisher section)	[2]	Folding claw
[3]	Z-fold roller	[4]	Transport roller 2 (finisher section)

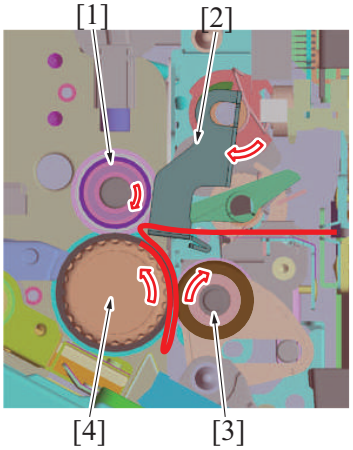


[1]	Folding claw	[2]	Z-fold roller

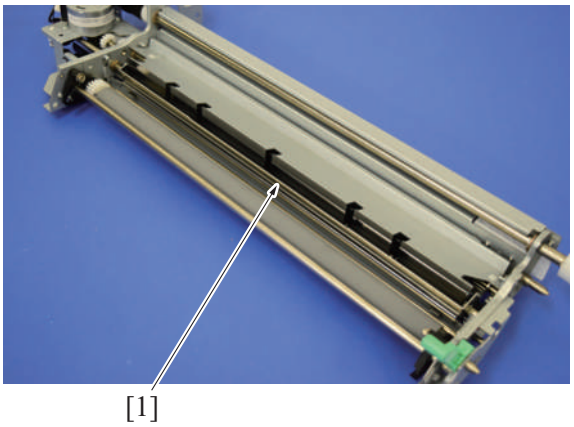
9.10.4 2nd folding mechanism

(1) 2nd folding

- 2nd folds are performed with the transport roller and folding guide.
- The folding guide drives to support the 2nd folding process. The 2nd folding is performed with the transport roller.



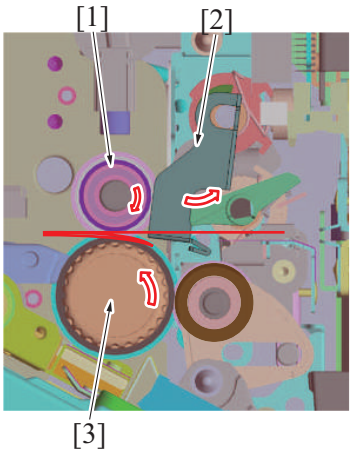
[1]	Transport roller 1 (finisher section)	[2]	Folding guide
[3]	Z-fold roller	[4]	Transport roller 2 (finisher section)



[1]	Folding guide	-	-

(2) Transport

- The Z-folded paper is transported to the finisher.
- When the Z-folded paper is transported, the folding guide returns to the home position at the same time.



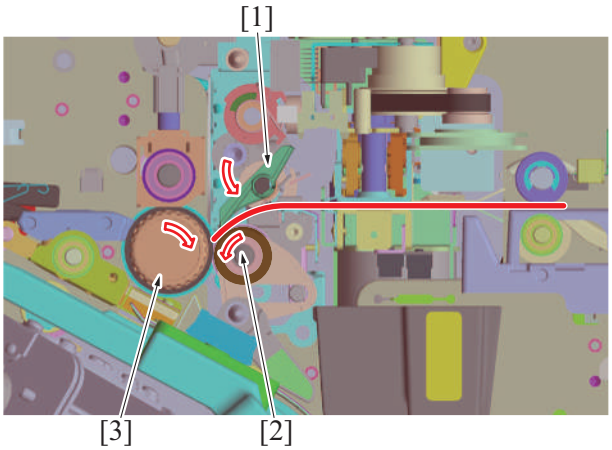
[1]	Transport roller 1 (finisher section)	[2]	Folding guide
[3]	Transport roller 2 (finisher section)	-	-

9.10.5 Double-folding mechanism

- A mechanism to double-fold paper for which a Z-fold cannot be performed is provided.
- When the paper has a size of $8^1/_2$x14, selecting Z-fold on the control panel will result in paper being double-folded instead of Z-folded.

(1) Transport roller downstream from the paper transport (Z-fold roller)

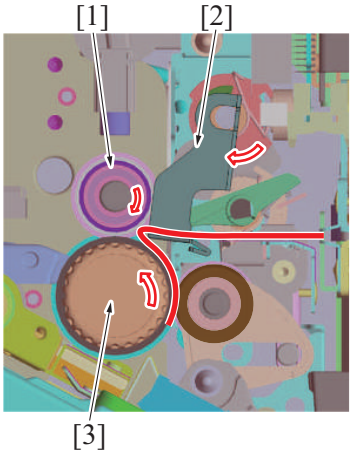
- When the double-fold operation starts, the folding guide motor is driven to lower the folding claw.
- Paper that is transported to the finisher is transported to the transport roller and Z-fold roller by the lowered folding claw.



[1]	Folding claw	[2]	Z-fold roller
[3]	Transport roller 2 (finisher section)	-	-

(2) Paper transport downstream from the double-fold section

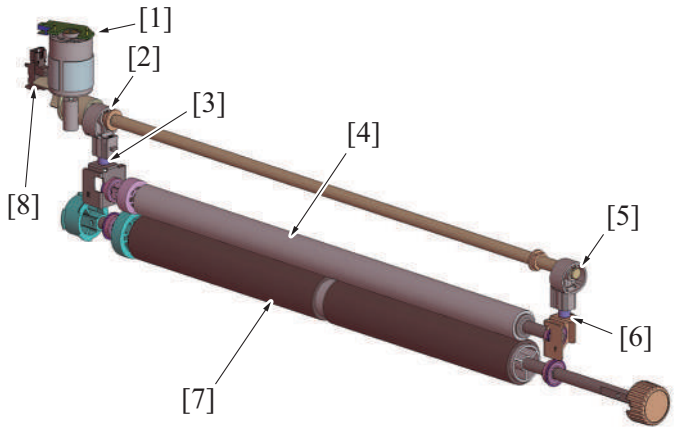
- Double-folding is performed with the transport roller and folding guide.
- The folding guide drives to support the double-folding process. The double-folding is performed with the transport roller.
- Control equivalent to that for the double-folding mechanism is performed.



[1]	Transport roller 1 (finisher section)	[2]	Folding guide
[3]	Transport roller 2 (finisher section)	-	-

9.10.6 Transport roller pressure change

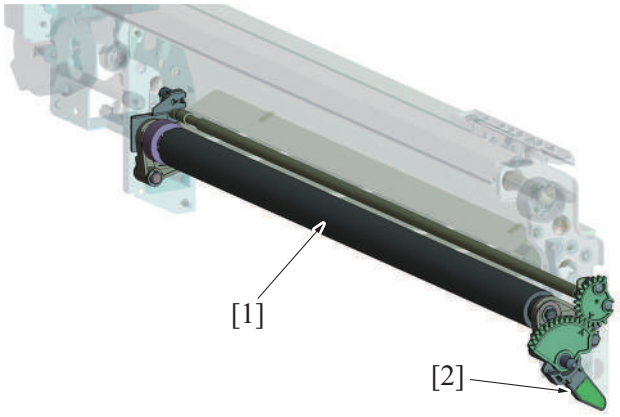
- The transport roller in the finisher transports paper during the Z-fold process. In this scenario, the normal transport roller pressure may be too weak to produce folds reliably.
- The transport roller pressure can be changed to enable reliable production of folds.
- Rotation of the pressure cam that is installed in the Z-fold unit moves the transport roller 1 vertically. This movement changes the transport roller pressure via the pressure spring.
- The pressure motor drives the pressure cam. The press home sensor controls the position of the pressure cam.



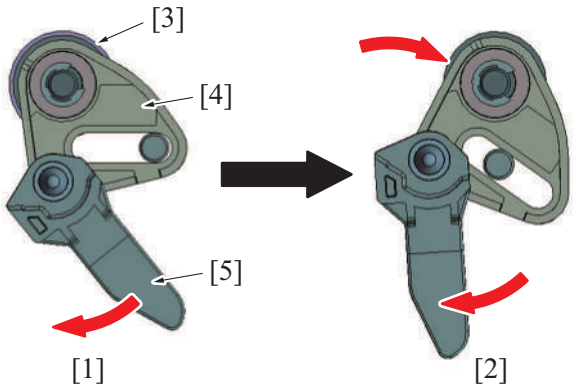
[1]	Pressure motor (M502)	[2]	Pressure cam/Rr
[3]	Pressure spring/Rr	[4]	Transport roller 1 (finisher section)
[5]	Pressure cam/Fr	[6]	Pressure spring/Fr
[7]	Transport roller 2 (finisher)	[8]	Pressure cam home sensor (PS502)

9.10.7 Z-fold pressure release mechanism

- A Z-fold roller pressure release mechanism is provided to enable the removal of jams in the Z-fold unit.
- Operation of the pressure release lever rotates the cam is rotated, and thus releases the Z-fold roller from the transport roller 2 in the finisher.



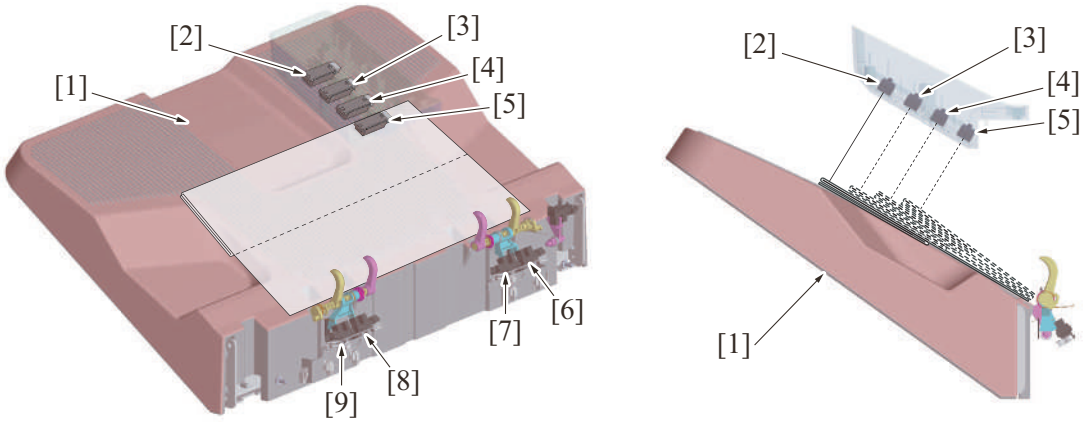
[1]	Z-fold roller	[2]	Pressure release lever



[1]	Before release	[2]	After release
[3]	Z-fold roller	[4]	Pressure release cam
[5]	Pressure release lever	-	-

9.10.8 Z-fold paper detection

- The upper limit sensor detects the Z-folded paper.
- When paper is discharged from the Z-fold section, the thickness of paper is different at the leading edge and trailing edge. The main tray upper sensor in the finisher cannot detect the Z-folded area. For this reason, the Z-folding upper limit sensor detects paper thickness (height).
- The main tray is lowered in accordance with the paper thickness (height).
- The upper limit sensor only makes detections for paper that is discharged from the Z-fold section. For normal paper discharge scenarios (including staple and punch operations), the finisher main tray upper sensor detects paper for the main tray.
- Four sensors are installed in the upper limit sensor, and the thickness (height) of the paper can be detected depending on the paper size.



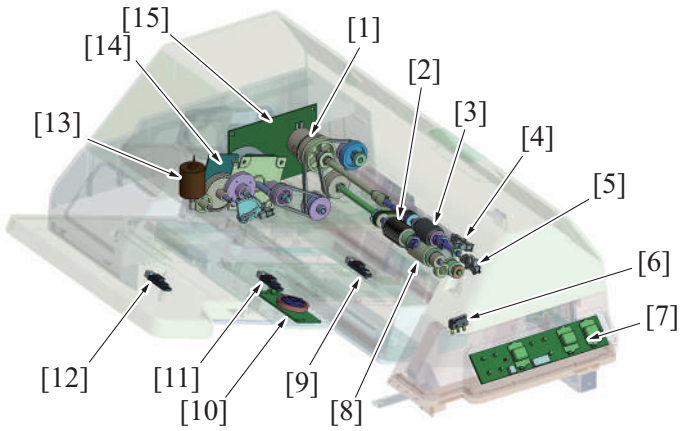
[1]	Main tray	[2]	Upper limit sensor/1 (PS503)
[3]	Upper limit sensor/2 (PS504)	[4]	Upper limit sensor/3 (PS505)
[5]	Upper limit sensor/4 (PS506)	[6]	Main tray lift up detection sensor/Rr (PS17: finisher section)

[7]	Main tray lift down detection sensor/Rr (PS15: finisher section)	[8]	Main tray lift down detection sensor/Fr (PS14: finisher section)
[9]	Main tray lift up detection sensor/Fr (PS16: finisher section)	-	-

9.11 PI-507

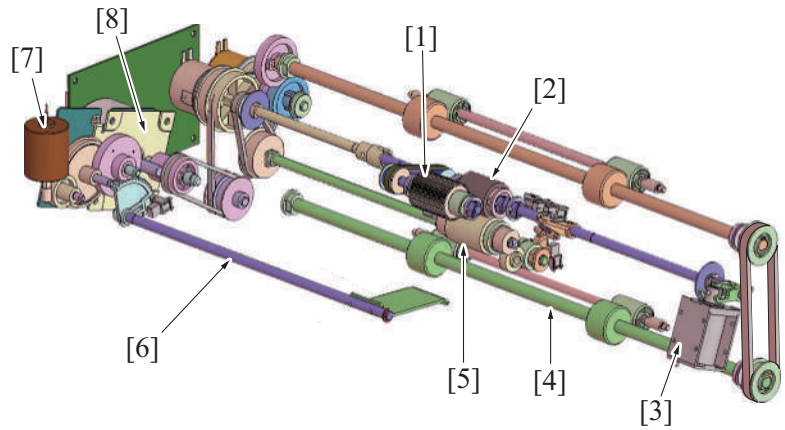
9.11.1 Configuration

- The detail of the post inserter section is explained with lower tray.



[1]	Transport clutch/Lw (CL202)	[2]	Pick-up roller/Lw
[3]	Feed roller/Lw	[4]	Tray upper limit sensor /Lw (PS209)
[5]	Paper entrance sensor /Lw (PS206)	[6]	Upper door open/close switch (MS205)
[7]	PI operation board (PIOB)	[8]	Separation roller/Lw
[9]	Paper empty sensor /Lw (PS207)	[10]	Paper size VR /Lw (VR202)
[11]	Paper set sensor /Lw (PS208)	[12]	L size sensor /Lw (PS212)
[13]	Tray lift motor /Lw (M202)	[14]	Paper conveyance motor (M203)
[15]	PI drive board (PIDB)	-	-

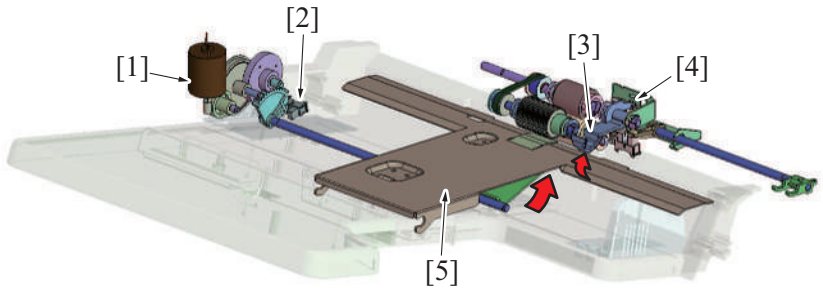
9.11.2 Drive



[1]	Pick-up roller/Lw	[2]	Feed roller/Lw
[3]	Pick-up solenoid /Lw (SD202)	[4]	Transport roller
[5]	Separation roller/Lw	[6]	Tray lift shaft/Lw
[7]	Tray lift motor /Lw (M202)	[8]	Paper conveyance motor (M203)

9.11.3 Tray lift mechanism

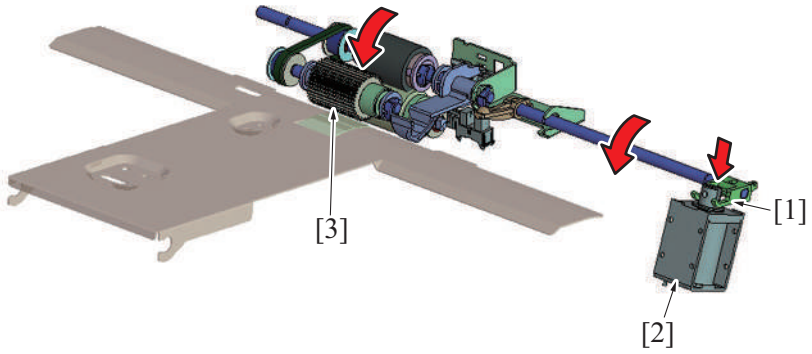
- The tray lift motors /up and /Lw move up and down the trays /Lw by rotating in the forward and reverse direction to drive the lift arms /Lw and move up and down the lift plates /Lw, respectively.
- At the upper limit position of the tray, the tray upper limit sensor /Lw detects the actuator lifted up by the lift plate.
- At the lower limit position of the tray, the tray lower limit sensor /Lw detects the actuator coupled with the lift arm /Lw.



[1]	Tray lift motor /Lw (M202)	[2]	Paper exit tray home sensor/Lw (PS210)
[3]	Actuator/Lw	[4]	Tray upper limit sensor /Lw (PS209)
[5]	Tray lift plate /Lw	-	-

9.11.4 Pick-up mechanism

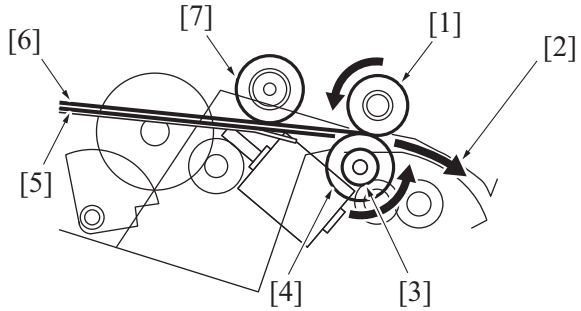
- The pick-up solenoid /Lw turns ON to pick up the paper.
- The release arm held upward by the spring lifts up the pick-up roller mounting plate to release the pick-up roller.
- When the pick-up solenoid /Lw turns ON, the release arm moves backward, and then the pick-up roller mounting plate and the pick-up roller fall down by their own weight.
- The pick-up roller driven by the transfer motor presses the paper and picks it up to transfer it to the separation section.



[1]	Release arm/Lw	[2]	Pick-up solenoid /Lw (SD202)
[3]	Pick-up roller/Lw	-	-

9.11.5 Separation mechanism

- The separation roller is driven to rotate in the opposite direction from the paper transfer direction. When transferring no or one sheet of paper, the separation roller rotates in the paper transfer direction to transfer the paper to the paper transfer section because the frictional force between the paper feed roller or the paper and the separation roller is stronger than the frictional force of the torque limiter.
- When transferring two or more sheets of paper, the separation roller rotates in the reverse direction to prevent the bottom sheet from being transferred because the frictional force between the sheets is smaller than the frictional force of the torque limiter.



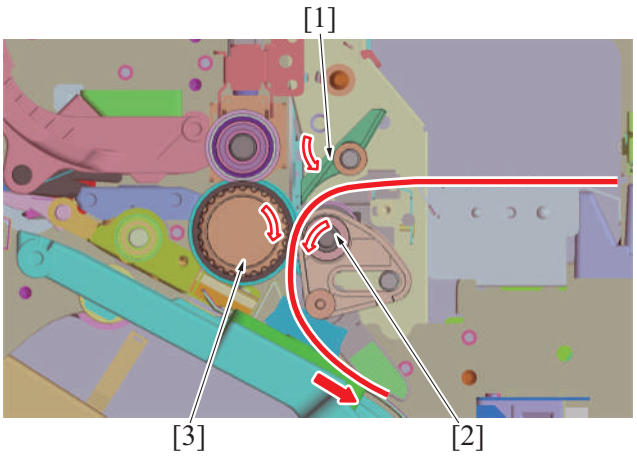
[1]	Feed roller	[2]	Direction of the paper transport
[3]	Torque limiter	[4]	Separation roller
[5]	Second sheet	[6]	First sheet
[7]	Pick-up roller	-	-

9.11.6 Path switching mechanism

- A path switching mechanism is provided to transport paper to the saddle unit when tri-folding or booklet is selected from the post inserter section.
- When the normal switchback operation is performed, pages can become misaligned. For this reason, a transport path mechanism is provided to transport paper to the saddle unit.
- The transport path is changed with the Z-folding unit if the Z-folding unit is installed as option. If the Z-folding unit is not installed, the path switching assy that is supplied with the post inserter is required.
- When the tri-folding or the booklet function is selected from the post inserter, the folding guide motor is driven to lower the folding clip.
- Paper that is transported to the finisher is transported to the transport roller and Z-fold roller by the lowered folding clip. Paper is then transported to the saddle unit.

NOTE

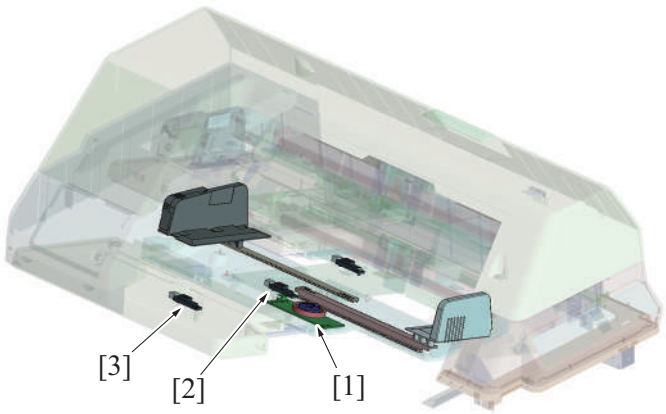
- **The dedicated transport roller drive motor is required for the finisher when the post inserter is installed.**
- **At time of set-up, make sure to replace the ZU discharge motor that is attached to the finisher with the supplied transport roller drive motor. However, it is not necessary to install the transport roller drive motor if the Z-folding unit is already installed.**



[1]	Folding claw	[2]	Z-fold roller
[3]	Transport roller 2 (finisher section)	-	-

9.11.7 Paper size detection control

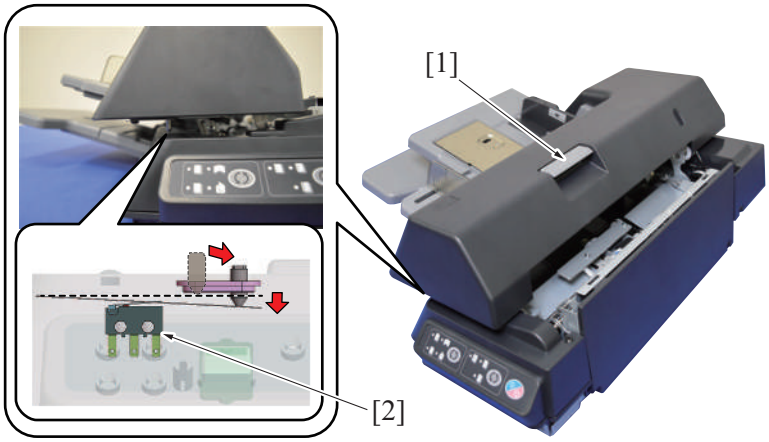
- The paper size VR /Lw coupled with the side guide detects the paper size in the main scan direction.
- The paper set sensor /Lw and the L size sensor /Lw detect the paper size in the sub scan direction.



[1]	Paper size VR /Lw (VR202)	[2]	Paper set sensor /Lw (PS208)
[3]	L size sensor /Lw (PS212)	-	-

9.11.8 Door open/close detection mechanism

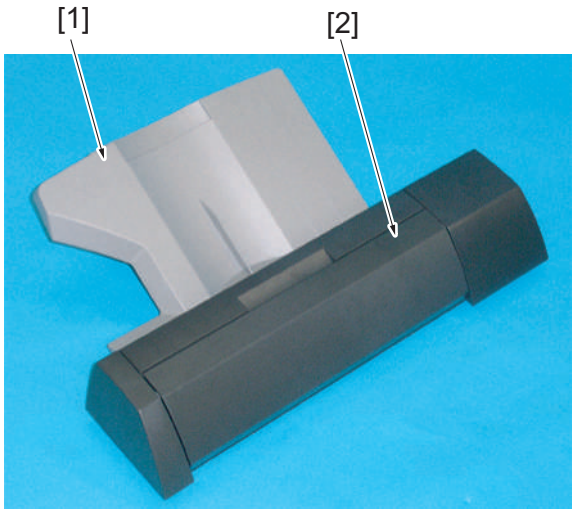
- The upper door open/close switch is installed in the lower-front of the post inserter to detect open/close states of the door.
- Open the door, the warning screen will display on the control panel. All the setting operations and jobs are disabled while the warning screen is displayed. The printing job is interrupted, and the paper being transported causes paper misfeed. The warning screen can be cancelled by closing the door.



[1]	Upper door open/close lever	[2]	Upper door open/close switch (MS205)

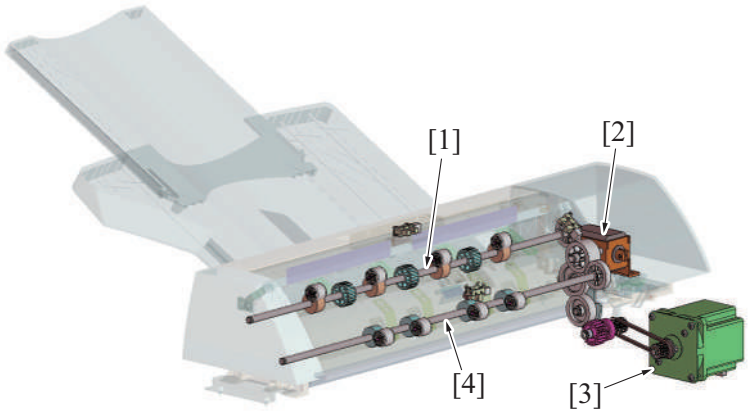
9.12 JS-602

9.12.1 Configuration



[1]	Job tray	[2]	Job separator cover

9.12.2 Drive

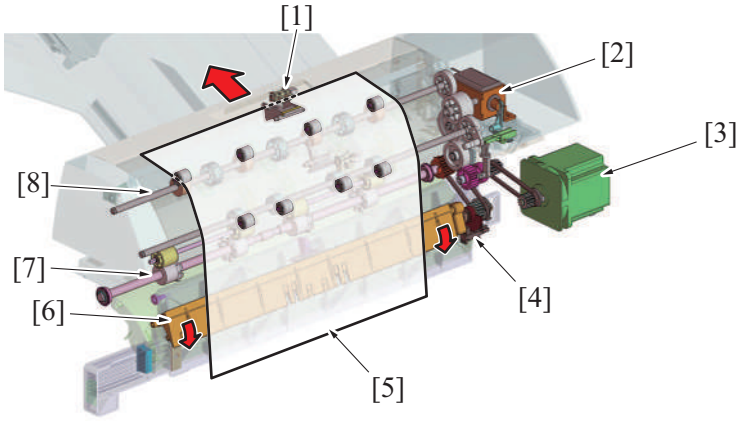


[1]	Job separator exit roller	[2]	Entrance switching solenoid (SD401)
[3]	Sub tray discharge motor (M18: finisher section)	[4]	Job separator transport roller

9.12.3 Job tray transport mechanism

- The sub tray discharge motor in the finisher drives to rotate the job separator transport roller and job separator exit roller to transport paper to the tray.
- At the sub tray/JS route change gate, change of the transport path to the job tray is performed.

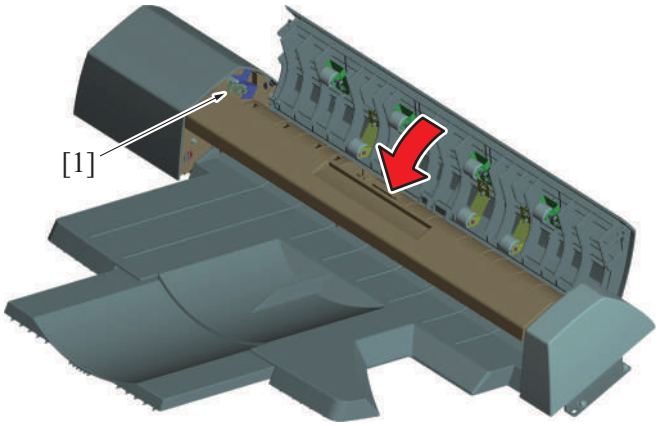
- The sub tray discharge motor of finisher drives to move the sub tray/JS route change gate horizontally to switch between the paper paths. Therefore the entrance switching solenoid is not used.



[1]	Job tray paper exit sensor (PS402)	[2]	Entrance switching solenoid (SD401)
[3]	Sub tray discharge motor (M18: finisher section)	[4]	Sub tray/JS route change gate home sensor (PS23: finisher section)
[5]	Paper	[6]	Route change gate
[7]	Job separator transport roller	[8]	Job separator exit roller

9.12.4 Door open/close detection mechanism

- The job tray door sensor is installed in the rear of the job separator section to detect open/close states of the door.
- Open the job tray door, the warning screen will display on the control panel. All the setting operations and jobs are disabled while the warning screen is displayed. The printing job is interrupted, and the paper being transported causes paper misfeed. The warning screen can be cancelled by closing the door.



[1]	Job tray door sensor (PS401)	-	-

10. FK-514/FK-515/MK-742

10.1 COMMUNICATION CONTROL

10.1.1 FIF bits of DIS, DTC and DCS

NOTE

- **Considered to be A4 width when the DIS recording paper width is invalid (1, 1).**
  Becomes a FIF error when the DCS recording paper width is invalid (1, 1).
- **Considered to be unlimited when the DIS recording paper length is invalid (1, 1).**
  Considered to be unlimited when the DCS recording paper length is invalid (1, 1).
  The DCS recording paper length in a machine is made to be of the same length as that in a remote station and is sent.
- **Considered to be 2400 bps when the DIS transmission speed is an undefined value.**
  Becomes a FIF error when the DCS transmission speed is an undefined value.
- **Considered to be 40ms instruction when the MSLT of DCS is an undefined value.**
- **Considered to have mm ability when DIS inch ability and mm ability are both set to OFF.**
  Considered to be 200x100 pels/inch when the DCS resolution receives the inch instruction at 3.85 l/mm.
  Becomes a FIF error when more than one of bit41, 42 and 43 are set to on in the resolution of DCS.
- **Becomes a FIF error when DCS receives the MMR instruction without ECM.**
- **Becomes a FIF error when DCS receives the file transfer (BFT) instruction without ECM.**
- **Becomes a FIF error when DCS shows an instruction which exceeds the ability of the machine.**
- **FIF of DIS/DTC is not sent if last octet is 0.**
  DCS sends FIF whose length is the same as that of the machine.
- **When undefined signals are received, they are received and ignored in consideration of the future expansion. (not an error)**

(1) FIF data configuration list (DIS/DTC)

(a) Octet 4

bit	Function	Contents	Default
1	T.37 Internet fax (Simple mode)		0
2	Reserved		0
3	T.38 real time Internet fax		0
4	Third generation mobile network		0
5	Reserved		0
6	V.8 ability		0
7	ECM frame	1: 64 octet 0: 256 octet	0
8	Reserved		0

(b) Octet 5

bit	Function	Contents	Default
9	Ready for polled transmission	1: polled transmission documents exist 0: no polled transmission documents	@
10	Receiver ability	1: Reception is possible. 0: Reception is impossible.	@
11	Transmission speed ability	Refer to *1.	1
12			1
13			0
14			1
15	R8×7.7 l/mm and/or 200×200 pels/25.4 mm		1
16	Two-dimensional coding ability	1: MR 0: MH	1

- @: Changes to 0 or 1 according to a status of devices.
- *1: Transmission speed ability (bit 11, 12, 13 and 14)

11	12	13	14	Contents	Transmission speed
0	0	0	0	V27 ter fall back mode	24
0	1	0	0	V27 ter	48, 24
1	0	0	0	V29	96, 72
1	1	0	0	V27 ter & V29	96, 72, 48, 24
1	1	0	1	V27 ter & V29 & V17	144, 120, 96, 72, 48, 24

(c) Octet 6

bit	Function	Contents	Default
17	Recording paper width ability	bit 17, 18 0,0=A4 0,1=A3 1,0=B4 1,1=Invalid	0
18			1

bit	Function	Contents	Default
19	Recording paper length ability	bit 19, 20 0,0=A4 0,1=Unlimited 1,0=B4 1,1=Invalid	0
20			1
21	Minimum scan line time ability	Refer to *2.	1
22			0
23			0
24	Expansion field		1

- *2: Minimum scan line time ability (bit 21, 22 and 23)

21	22	23	Contents	
0	0	0	3.85 l/mm --- 20 ms	7.7 l/mm --- 20 ms
0	0	1	3.85 l/mm --- 40 ms	7.7 l/mm --- 40 ms
0	1	0	3.85 l/mm --- 10 ms	7.7 l/mm --- 10 ms
0	1	1	3.85 l/mm --- 10 ms	7.7 l/mm --- 5 ms
1	0	0	3.85 l/mm --- 5 ms	7.7 l/mm --- 5 ms
1	0	1	3.85 l/mm --- 40 ms	7.7 l/mm --- 20 ms
1	1	0	3.85 l/mm --- 20 ms	7.7 l/mm --- 10 ms
1	1	1	3.85 l/mm --- 0 ms	7.7 l/mm --- 0 ms

(d) Octet 7

bit	Function	Contents	Default
25	Reserved		0
26	Non-compression mode		0
27	Error correction mode (ECM) ability	1: with ECM 0: without ECM	1
28		0: fixed	0
29	Reserved		0
30	Reserved		0
31	T.6 coding (MMR) ability	1: with MMR 0: without MMR	1
32	Expansion field		1

(e) Octet 8

bit	Function	Contents	Default
33	Field not valid		0
34	Multi-selective polling	1: Ability 0: No ability	0
35	Polled sub-address		0
36	T.43 coding ability		0
37	Plain Interleave		0
38	32K ADPCM voice coding		0
39	Reserved		0
40	Expansion field		1

(f) Octet 9

bit	Function	Contents	Default
41	R8×15.4 l/mm		1
42	300×300 pels/25.4 mm		0
43	R16×15.4 l/mm and/or 400×400 pels/25.4 mm		1
44	inch ability		1
45	mm ability		1
46	Minimum scan line time ability of high resolution	0: T15.4=T7.7 1: T15.4=1/2T7.7	0
47	Selective polling		1
48	Expansion field		1

(g) Octet 10

bit	Function	Contents	Default
49	Sub address ability		1
50	Password		1
51	Ready for data file transmission (polling)		0
52	Reserved		0
53	BFT transfer ability		0
54	DTM transfer ability		0
55	EDI transfer ability		0
56	Expansion field		0

(h) Octet 11

bit	Function	Contents	Default
57	BTM transfer ability		0
58	Reserved		0
59	Character or mixed mode documents ready for Tx (polling)		0
60	Character mode ability		0
61	Reserved		0
62	Mixed mode ability		0
63	Reserved		0
64	Expansion field		0

(i) Octet 12

bit	Function	Contents	Default
65	Processible mode (T.505)		0
66	Digital network ability		0
67	Full-duplex communication ability	1: Full-duplex 0: Half-duplex	0
68	JPEG coding ability		0
69	Full color mode		0
70		0: Fixed	0
71	12 bits / pixel component		0
72	Expansion field		1

(j) Octet 13

bit	Function	Contents	Default
73	No sub sampling (1:1:1)		0
74	Custom illuminance		0
75	Custom gamut range		0
76	North America Letter (215.9*279.4) ability		0
77	North America Legal (215.9*355.6) ability		0
78	Single progression sequential coding (T.85) basic ability		1
79	Single progression sequential coding (T.85) optional LO ability		@
80	Expansion field		0

- @: Changes to 0 or 1 according to a status of devices.

(k) Octet 14

bit	Function	Contents	Default
81	HKM key management capability		0
82	RSA key management capability		0
83	Override capability		0
84	HFX40 cipher capability		0
85	Alternative cipher number 2 capability		0
86	Alternative cipher number 3 capability		0
87	HFX40-I hashing capability		0
88	Expansion field		1

(l) Octet 15

bit	Function	Contents	Default
89	Alternative hashing system number 2 capability		0
90	Alternative hashing system number 3 capability		0
91	Reserved		0
92	T.44 (Mixed raster content)		0
93	T.44 (Mixed raster content)		0
94	T.44 (Mixed raster content)		0
95	Page length maximum strip size for T.44 (Mixed raster content)		0
96	Expansion field		1

(m) Octet 16

bit	Function	Contents	Default
97	Color/gray-scale 300 pels/25.4 mm x 300 lines/25.4 mm or 400 pels/25.4 mm x 400 lines/25.4 mm resolution		0
98	100 pels/25.4 mm x 100 lines/25.4 mm for color/gray scale		0
99	Simple phase C BFT negotiations capability		0
100	Extended BFT negotiations capability		0
101	Internet selective polling address (ISP)		0
102	Internet routing address (IRA)		0
103	Reserved		0
104	Expansion field		1

(n) Octet 17

bit	Function	Contents	Default
105	600 pels/25.4 mm x 600 lines/25.4 mm		1
106	1200 pels/25.4 mm x 1200 lines/25.4 mm		0
107	300 pels/25.4 mm x 600 lines/25.4 mm		0
108	400 pels/25.4 mm x 800 lines/25.4 mm		0
109	600 pels/25.4 mm x 1200 lines/25.4 mm		0
110	Color/gray-scale 600 pels/25.4 mm x 600/25.4 mm resolution		0
111	Color/gray-scale 1200 pels/25.4 mm x 1200/25.4 mm resolution		0
112	Expansion field		0

(o) Octet 18

bit	Function	Contents	Default
113	Double sided printing capability (alternate mode)		0
114	Double sided printing capability (continuous mode)		0
115	Black and white mixed raster content profile (MRCbw)		0
116	T.45 (run length color encoding)		0
117	Shared date memory capacity	bit 117, 118 0,0=Disable 0,1= Level 1=1.0 Mbytes 1,0= Level 2=2.0 Mbytes 1,1= Level 3=unlimited (i.e. 32 Mbytes or more)	0
118			0
119	Reserved		0
120	Expansion field		0

(p) Octet 19

bit	Function	Contents	Default
121	Flow control capability for T.38 communication		0
122	K > 4		0
123	Internet aware T.38 mode fax device		0
124	T.89 (Application profiles for ITU-T T.88)	Refer to *3.	0
125			0

bit	Function	Contents	Default
126			0
127	sYCC-JPEG coding		0

- *3: T.89 (Application profile for ITU-T T.88)

124	125	126	Contents
0	0	0	Not used
0	0	1	Profile 1
0	1	0	Profile 2
0	1	1	Profile 3
1	0	0	Profile 2 and 3
1	0	1	Reserved
1	1	0	Reserved
1	1	1	Reserved

(2) FIF data configuration list (DCS)

(a) Octet 4

bit	Function	Contents	Default
1	T.37 Internet fax (Simple mode)		0
2	Reserved		0
3	T.38 real time Internet fax		0
4	Third generation mobile network		0
5	Reserved		0
6	Invalid		0
7	Invalid		0
8	Reserved		0

(b) Octet 5

bit	Function	Contents	Default
9		0: fixed	0
10	Reception command		1
11	Transmission speed instruction	Refer to *1.	@
12			@
13			@
14			@
15	R8×7.7 l/mm or 200×200 pels/25.4 mm	1: 7.7 l/mm 0: 3.85 l/mm	@
16	Two-dimensional coding instruction	1: MR 0: MH	@

- @: Changes to 0 or 1 according to a status of devices.
- *1: Transmission speed appointment (bit 11, 12, 13 and 14)

11	12	13	14	Contents
0	0	0	0	24/V27 ter
0	1	0	0	48/V27 ter
1	0	0	0	96/V29
1	1	0	0	72/V29
0	0	0	1	144/V17
0	1	0	1	120/V17
1	0	0	1	96/V17
1	1	0	1	72/V17

(c) Octet 6

bit	Function	Contents	Default
17	Recording paper width instruction	bit 17, 18 0,0=A4 0,1=A3 1,0=B4 1,1=Invalid	@
18			@
19	Recording paper length instruction	bit 19, 20 0,0=A4 0,1=Unlimited	@
20			@

bit	Function	Contents	Default
		1,0=B4 1,1=Invalid	
21	Minimum scan line time instruction	Refer to *2.	@
22			@
23			@
24	Expansion field		@

- @: Changes to 0 or 1 according to a status of devices.
- *2: Minimum scan line time instruction (bit 21, 22 and 23)

21	22	23	Contents
0	0	0	20 ms
0	0	1	40 ms
0	1	0	10 ms
1	0	0	5 ms
1	1	1	0 ms

(d) Octet 7

bit	Function	Contents	Default
25	Reserved		0
26	Non-compression mode		0
27	Error correction mode (ECM) instruction	1: with ECM 0: without ECM	@
28	Frame size instruction	1: 64 octet 0: 256 octet	@
29	Reserved		0
30	Reserved		0
31	T.6 coding (MMR) instruction	1: with MMR 0: without MMR	@
32	Expansion field		@

- @: Changes to 0 or 1 according to a status of devices.

(e) Octet 8

bit	Function	Contents	Default
33	Field not valid capability		0
34		0: fixed	0
35		0: fixed	0
36	T.43 Coding		0
37	Plain Interleave		0
38	32K ADPCM voice coding		0
39	Reserved		0
40	Expansion field		@

- @: Changes to 0 or 1 according to a status of devices.

(f) Octet 9

bit	Function	Contents	Default
41	R8×15.4 l/mm		@
42	300×300 pels/25.4 mm		@
43	R16×15.4 l/mm or 400×400 pels/25.4 mm		@
44	inch/mm instruction	1: mm setting 0: inch setting	@
45	Arbitrary		0
46	Arbitrary		0
47		0: fixed	0
48	Expansion field		@

- @: Changes to 0 or 1 according to a status of devices.

(g) Octet 10

bit	Function	Contents	Default
49	Sub address transmission		@

bit	Function	Contents	Default
50	Password (SID) transmission		@
51		0: fixed	0
52	Reserved		0
53	BFT transfer		@
54	DTM transfer		0
55	EDI transfer		0
56	Expansion field		@

- @: Changes to 0 or 1 according to a status of devices.

(h) Octet 11

bit	Function	Contents	Default
57	BTM transfer		0
58	Reserved		0
59		0: fixed	0
60	Character mode		0
61	Reserved		0
62	Mixed mode		0
63	Reserved		0
64	Expansion field		@

- @: Changes to 0 or 1 according to a status of devices.

(i) Octet 12

bit	Function	Contents	Default
65	Processible mode (T.505)		0
66	Digital network ability		0
67	Full-duplex communication instruction	1: Full-duplex 0: Half-duplex	0
68	JPEG coding		0
69	Full color mode		0
70	Default Huffman table use		0
71	12 bits / pixel component		0
72	Expansion field		@

- @: Changes to 0 or 1 according to a status of devices.

(j) Octet 13

bit	Function	Contents	Default
73	No sub sampling (1:1:1)		0
74	Custom illuminance		0
75	Custom gamut range		0
76	North America Letter (215.9 x 279.4)		0
77	North America Legal (215.9 x 355.6)		0
78	Single progression sequential coding (T.85) basic		@
79	Single progression sequential coding (T.85) optional LO		@
80	Expansion field		@

- @: Changes to 0 or 1 according to a status of devices.

(k) Octet 14

bit	Function	Contents	Default
81	HKM key management selected		0
82	RSA key management selected		0
83	Override mode selected		0
84	HFX40 cipher selected		0
85	Alternative cipher number 2 selected		0
86	Alternative cipher number 3 selected		0
87	HFX40-I hashing selected		0
88	Expansion field		@

- @: Changes to 0 or 1 according to a status of devices.

(l) Octet 15

bit	Function	Contents	Default
89	Alternative hashing system number 2 selected		0
90	Alternative hashing system number 3 selected		0
91	Reserved		0
92	T.44 (Mixed raster content)		0
93	T.44 (Mixed raster content)		0
94	T.44 (Mixed raster content)		0
95	Page length maximum strip size for T.44 (Mixed raster content)		0
96	Expansion field		@

- @: Changes to 0 or 1 according to a status of devices.

(m) Octet 16

bit	Function	Contents	Default
97	Color/gray-scale 300 pels/25.4 mm x 300 lines/25.4 mm or 400 pels/25.4 mm x 400 lines/25.4 mm resolution		0
98	100 pels/25.4 mm x 100 lines/25.4 mm for color/gray scale		0
99	Simple phase C BFT negotiations capability		0
100		0: Fixed	0
101		0: Fixed	0
102	Internet routing address (IRA) Transmission		0
103	Reserved		0
104	Expansion field		@

- @: Changes to 0 or 1 according to a status of devices.

(n) Octet 17

bit	Function	Contents	Default
105	600 pels/25.4 mm x 600 lines/25.4 mm		@
106	1200 pels/25.4 mm x 1200 lines/25.4 mm		0
107	300 pels/25.4 mm x 600 lines/25.4 mm		0
108	400 pels/25.4 mm x 800 lines/25.4 mm		0
109	600 pels/25.4 mm x 1200 lines/25.4 mm		0
110	Color/gray-scale 600 pels/25.4 mm x 600/25.4 mm resolution		0
111	Color/gray-scale 1200 pels/25.4 mm x 1200/25.4 mm resolution		0
112	Expansion field		0

- @: Changes to 0 or 1 according to a status of devices.

(o) Octet 18

bit	Function	Contents	Default
113	Double sided printing selected (alternate mode)		0
114	Double sided printing selected (continuous mode)		0
115		0: Fixed	0
116	T.45 (run length color encoding)		0
117	Shared date memory required	bit 117, 118 0,0= not used 0,1= Level 1=1.0 Mbytes 1,0= Level 2=2.0 Mbytes 1,1= Level 3=unlimited (i.e. 32 Mbytes or more)	0
118			0
119	Reserved		0
120	Expansion field		0

(p) Octet 19

bit	Function	Contents	Default
121	Flow control capability for T.38 communication		0
122	K > 4		0

bit	Function	Contents	Default
123	Internet aware fax device operating in T.38 mode		0
124	T.89 (Application profiles for ITU-T T.88)	Refer to *3.	0
125			0
126			0
127	sYCC-JPEG coding		0

- *3: T.89 (Application profile for ITU-T T.88)

124	125	126	Contents
0	0	0	Not used
0	0	1	Profile 1
0	1	0	Profile 2
0	1	1	Profile 3
1	0	0	Invalid
1	0	1	Reserved
1	1	0	Reserved
1	1	1	Reserved

10.1.2 Modem fallback sequence

- Fallback sequences of TCF and CTC are shown as follows:

(1) V17, V29, and V27 ter

Ability of a remote station	TCF fallback sequence
V27 ter/V29	96/V.29 -> 72/V.29 -> 48/V.27 ter -> 24/V27 ter
V27 ter/V29/V33 V17	144/V.17 -> 120/V.17 -> 96/V.17 -> 72/V.17 -> 48/V.27 ter -> 24/V27 ter

- On the transmission side: If PPR is received four times, a modem is set in the fallback state.
- On the reception side: In case of sending PPR, when the number of error frames exceeds the FP value, a modem is set in the fallback state.

(2) V34 fallback

- Line quality is always water by modem. Optimum speed is automatically selected on-the-fly.

10.1.3 V8/V34 sequence

(1) V34

(a) Outline

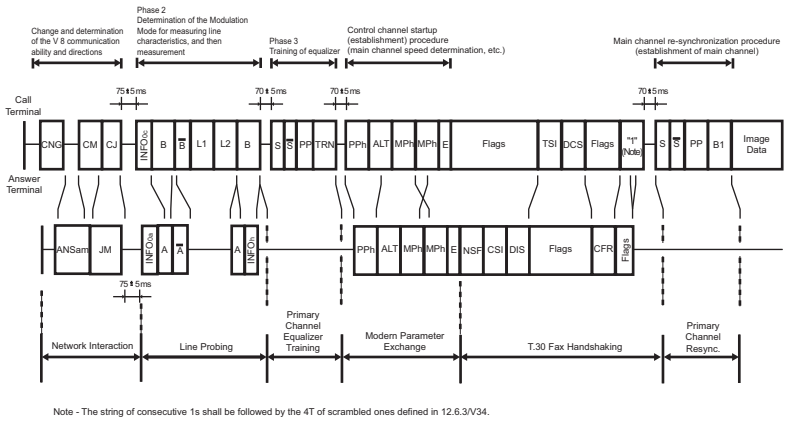
- The 33.6kbps data transmission method and protocol including the V8 protocol. As for each of full-duplex and half-duplex, startup handshake until data transmission starts is divided into four phases, phase1 to 4, and signals used in each phase are regulated.

(b) Features

- Full-duplex (echo canceler method) / Half-duplex method are regulated (for data / FAX respectively)
- 2400, 3000 and 3200 symbols / sec (mandatory) and 2743, 2800 and 3429 symbols / sec (option) QAM synchronous transmission at each symbol rate
- Communication at each signal rate of 33600, 31200, 28800, 26400, 24000, 21600, 19200, 16800, 14400, 12000, 9600, 7200, 4800 and 2400 bps
- Four-dimensional-symbol trellis coding
- A 200bps sub channel which can be used as an asynchronous second channel (option)
- Negotiation in which characteristics of a line is measured before transmission starts and the maximum communication speed is achieved by finely adjusting the transmission parameter, based on the result of measurement (carrier / frequency / equalizer / symbol rate / level, etc.)
- Data transmission in the super frame with the hierarchical structure

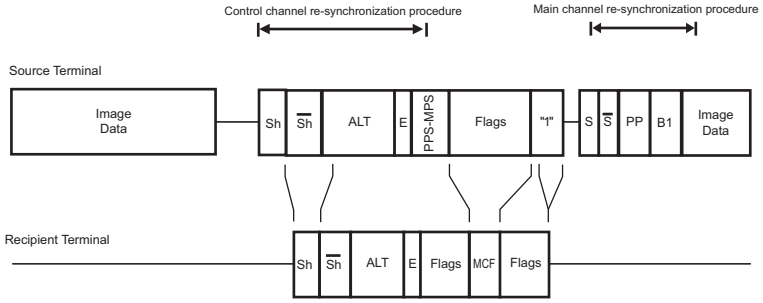
(2) Sample of a signal procedure at sending two pages

(a) Beginning of communications to beginning of 1st page transmission

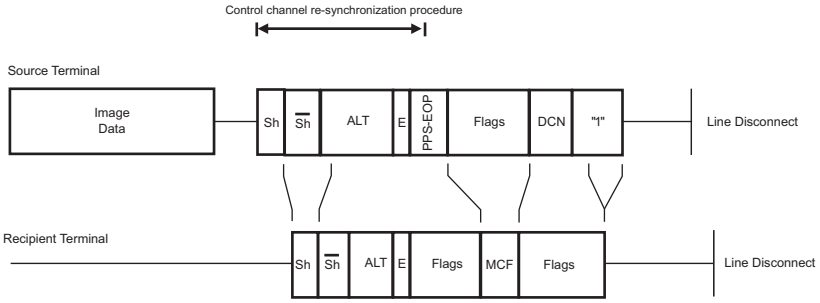


Note - The string of consecutive 1s shall be followed by the 4T of scrambled ones defined in 12.6.3/V34.

(b) Signals between pages



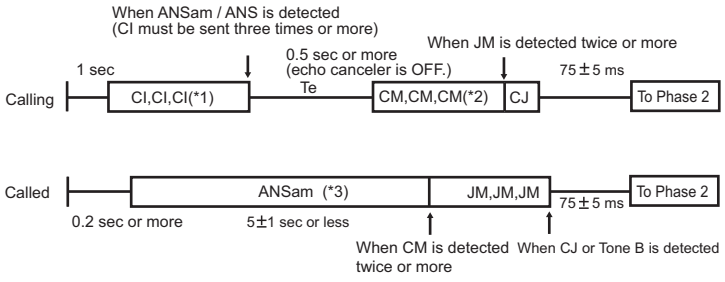
(c) 2nd page transmission termination to communication termination



Note - Some terminals may disconnect the line immediately after sending DCN without sending consecutive 1s.

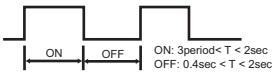
(3) Procedure details

(a) Phase 1 (V8) ....Beginning of connection between a calling modem and a called modem



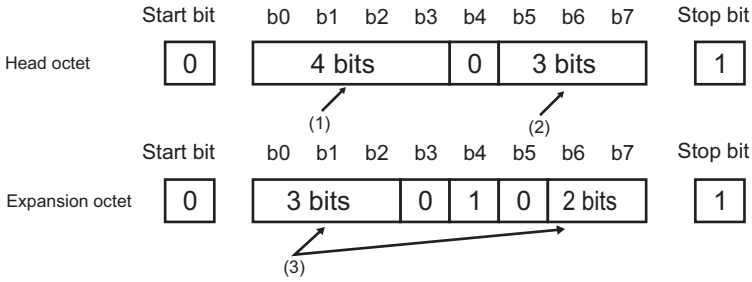
- *1: One of no signals / C1 / CNG (T.30) / CT (V.25)
- *2: V.34 full-duplex ability in the modulation mode bit is ON.
- *3: ANSam of phase inversion is sent. Phase inversion is an option in case of supporting only half-duplex. When CM or valid signal from the calling side is not detected, the procedure is moved to T.30, etc. after 75 ± 5 ms interval.

Signal Definition

Signal type	Meaning	Signal direction Call Called	Signal speed	Timing of transmission
CI (Call Indicator)	Function display on the calling side	->	V.21 (L) (300 bps)	• Start: after 0.4 seconds after line connection from ON condition (in the following format) • Stop: when 3 period or more has passed after ANSam/ ANS is detected 
	[Comments] • CI is a signal to carry call function. • The calling side send CI, CT (Call Tone - V25) or CNG. • CI transmission and detection are optional. • The ON minimum time (=3 Period) is of duration of three CI signals in the following format.			
ANSam (Modified Answer Tone)	V.8 procedure on the called side Support display	<-	-	When 0.2 seconds or more has passed after reception
	[Comments] • Essential for a called machine which supports the V8 procedure. • 2100 Hz sine wave is phase-inverted by 400 +/-25 ms periods, then amplitude modulated by 15 +/-0.1 Hz sine wave • Average value of modulation factor (x) 0.8 +/- 0.01 < x < 1.2 +/- 0.01 • Average transmission power compliant to V2 • 2100 +/- 200 Hz external power is smaller than the average power by 24 dB or more.			
CM (Call Menu)	Modulation mode etc. on the calling side	-> (300 bps)	V.21 (L)	• Start: Te (0.5 sec. ≤ Te ≤ 1 sec.) has passed after CI transmission stops • Stop: When two or more JM are detected
	[Comments] • CM is a signal which carries call function, modulation modes, protocols and GSTN access. • The first information category is call function. • Protocols and GSTN access category are added when the calling side has ability and when needed to inform to a remote station.			
CJ	CM termination	-> (300 bps)	V.21 (L)	When CM is completed
	[Comments] • START bit (0) and STOP bit (1) are added to 1 octet of all bit 0. • Signal format Start bit b0 b1 b2 b3 b4 b5 b6 b7 Stop bit 0 0 0 0 0 0 0 0 0 1			
JM (Joint Menu)	Display of common ability on both calling and called sides	<- (300 bps)	V.21 (H)	• Start: When two or more same CM are received • Stop: When CJ is received or receives a signal matching the selected Modulation Mode from the calling side
	[Comments] • JM is a response signal to CM and of the same format as the received CM. • The fist information category is Call Function as same as CM. • Modulation mode sets the common bit on calling and called sides and sends by the same octet as received CM. • When there is no common ability, all bits are set to 0 and send by the same octet as received CM. • The minimum item No. is selected from the common bits to determine the actual Modulation Mode. • Protocol is added when it is included in received CM and needed to instruct. • GSTN access is added when it is included in received CM and needed to instruct. • Bit 6 is set to ON when needed to show ability. Bit 5 is set to the same one as received CM.			

Signal format

1. Preamble: a signal added before each signal when CI, CM and JM signals are sent.
   - Format: 1111111111 +0000000001 (for CI)
   - Format: 1111111111 +0000001111 (for CM and JM)
2. Common format among each signal CI, CM and JM
   - Start Bit (=0) is put at the top and Stop Bit (=1) is put at the end of each octet.



- (1): Category tag (tags which represent information types)

Bit assignment					Meaning (information type)	Included signal
b0	b1	b2	b3			
1	0	0	0	...	Call Func	Top of CM, JM / CI
1	0	1	0	...	Modulation Mode	CM/JM
0	1	0	1	...	Protocols	CM/JM
1	0	1	1	...	GSTN access	CM/JM
0	1	1	0	...	PCM modem ability	CM/JM

- (2): Option bit (Differs depending on category tags. See “Common signal bit definition”.)
- (3): Additional option bit (Differs depending on category tags. See “Common signal bit definition”.)

(4) Common signal bit definition

(a) Call function (1 octet)

Top octet

b0	b1	b2	b3	b4	b5	b6	b7	Meaning
1	0	0	0	0				(Call Function category tag)
					0	0	0	Defined by ITU-T
					1	0	0	PSTN multi-media terminal
					0	1	0	V18 text phone
					1	1	0	Video tex
					0	0	1	FAX transmission from the calling terminal
					1	0	1	FAX reception in the calling terminal
					0	1	1	Data transmission / reception
					1	1	1	Expansion octet = with call function represented by next octet

- (Other than the above = Reserved)

(b) Modulation mode (3 octets)

1st octet

b0	b1	b2	b3	b4	b5	b6	b7	Meaning	Item No.
1	0	1	0	0				(Modulation mode category tag, b4 = 0 is first octet)	
					0/1			PCM modem ability disabled/enabled	
						0/1		V34 full-duplex ability disabled/enabled	1
							0/1	V34 half-duplex ability disabled/enabled	2

2nd octet

b0	b1	b2	b3	b4	b5	b6	b7	Meaning	Item No.
			0	1	0			(b3, 4 and 5=0, 1, 0 means expanded oct.)	
0/1								V32 bis / V32 ability disabled / enabled	3
	0/1							V22 bis / V22 ability disabled / enabled	4
		0/1						V17 ability disabled / enabled	5
						0/1		V29 half-duplex ability disabled / enabled (used in T.30)	6
							0/1	V27 ter ability disabled / enabled	7

3rd octet

b0	b1	b2	b3	b4	b5	b6	b7	Meaning	Item No.
			0	1	0			(b3, 4 and 5=0, 1, 0 means expanded oct.)	
0/1								V26 ter ability disabled / enabled	8
	0/1							V26 bis ability disabled / enabled	9
		0/1						V23 full-duplex ability disabled / enabled	10

b0	b1	b2	b3	b4	b5	b6	b7	Meaning	Item No.
						0/1		V23 half-duplex ability disabled / enabled	11
							0/1	V21 ability disabled / enabled	12

(c) Protocols (1 octet)

b0	b1	b2	b3	b4	b5	b6	b7	Meaning
0	1	0	1	0				(Protocols category tag)
					1	0	0	V42 LAPM protocol
					1	1	1	Protocol represented by expanding octet

- (Other than the above = Reserved)

(d) GSTN access (1 octet)

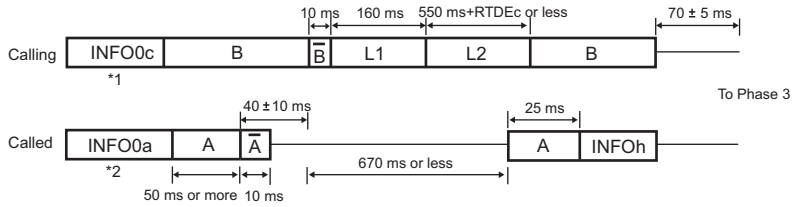
b0	b1	b2	b3	b4	b5	b6	b7	Meaning
1	0	1	1	0				(GSTN access category tag)
					0/1			Cellular connection in the calling side
						0/1		Cellular connection in the called side
							0/1	0: Analog network connection 1: Digital network connection

(e) PCM modem capability (1 octet)

b0	b1	b2	b3	b4	b5	b6	b7	Meaning
1	1	1	0	0				(PCM modem category tag)
					0/1			V.90 analog modem capability
						0/1		V.90 digital modem capability
							0/1	V.91 capability

(5) Phase 2 (Probing) ..... V.34 basic setting

- Exchange of modulation ability
- Measurement of line characteristics (bi-direction)
- Determination and exchange of compensation values to line characteristics (compensation values of maximum data rate, transmission level, pre-emphasis (*))
  - *: linear equalizer for compensating amplitude distortion



A	• 2400 Hz tone signal output from the called side (Level is a set value -1 dB). • 1800 Hz guard tone (Level is a set value -7 dB) is output simultaneously from the called side.	
$\bar{A}$	• 2400 Hz tone signal output from the called side (Phase inversion of A). • 1800 Hz guard tone.	
B	1200 Hz tone signal output from the called side.	
$\bar{B}$	1200 Hz tone signal output from the calling side (Phase inversion of B).	
INFO 0x	Binary signal for indicating auto modulation option signal (x=a/c: a: called side, c: calling side)	
L1, L2	Signal for conditioning line characteristics (tone synthesis at the interval of 150 Hz from 150 to 3750 Hz (except for 900, 1200, 1800 and 2400 Hz))	• L1: 160 ms, Level= Set value+6dB • L2: Maximum 550 ms+TRDEx, Level = Set value
INFO h	Binary signal for indicating parameters used in Phase 3 (training of main channel equalizer). This signal is sent from a modem receiving main channel data to a transmitting modem.	

- *1: INFO 0c Bit 28 OFF
- *2: INFO 0a Bit 28 OFF

(a) <INFO 0x Bit Assignment>

Bits (LSB-MSB)	Value	Meaning	
0-3	1111	Fill Bits	
4-11	01110010	Bit string for frame synchronization	
12	0/1	2743 symbol / sec support	• 0: No • 1: Yes
13	0/1	2800 symbol / sec support	• 0: No

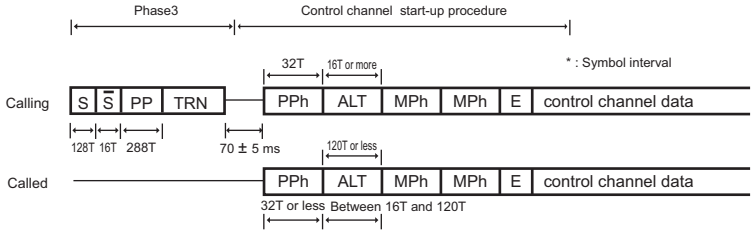
Bits (LSB-MSB)	Value	Meaning	
			• 1: Yes
14	0/1	3429 symbol / sec support	• 0: No • 1: Yes
15	0/1	Ability to transmit at low carrier frequency at 3000 symbol / sec	• 0: No • 1: Yes
16	0/1	Ability to transmit at high carrier frequency at 3000 symbol / sec	• 0: No • 1: Yes
17	0/1	Ability to transmit at low carrier frequency at 3200 symbol / sec	• 0: No • 1: Yes
18	0/1	Ability to transmit at high carrier frequency at 3200 symbol / sec	• 0: No • 1: Yes
19	0/1	3429 symbol / sec transmission	• 0: Disable • 1: OK
20	0/1	Ability to lower the transmission level than a preset value	• 0: No • 1: Yes
21-23	0 to 5	Maximum tolerance of symbol rates between transmission and reception	• 0: 2400 symbol/sec • 1: 2743 symbol/sec • 2: 2800 symbol/sec • 3: 3000 symbol/sec • 4: 3200 symbol/sec • 5: 3429 symbol/sec
24	0/1	1=INFO 0 is sent from the CME modem	
25	0/1	1664 signal point (33.6 K) ability	• 0: No • 1: Yes
26-27	0 to 3	Clock source transmission	• 0: Internal • 1: External • 2: Synchronous to the reception clock • 3: Reserved
28	0/1	1=Correct INFO 0 frame is received during error recovery	
29-44		CRC	
45-48	1111	Fill Bits	

(b) <INFO h Bit Assignment>

Bits (LSB-MSB)	Value	Meaning	
0-3	1111	Fill Bits	
4-11	01110010	Bit string for frame synchronization (transmitted from the left side)	
12-14	0 to 7	• Output reduction width demanded by the reception modem (dB) • When *the modem on the transmitting side can not reduce output* at INFO 0, the value is set to 0.	
15-21	0 to 127	The length of TRN which the modem of the transmitting side send in the Phase 3 (x 35 ms)	
22	0/1	High carrier is user for data mode Tx.	
23-26	0 to 10	Pre-emphasis filer index No.which is used for data transmission	
27-29	0 to 5	Symbol rate of data transmission	0: 2400 ... 5: 3429 (symbol / sec)
30	0/1	Selection of parameters used for TRN.	• 0: 4 points • 1: 16 points
31-46		CRC	
47-50	1111	Fill Bits	

(6) Phase 3 .....Training of the main channel equalizer

- Band division full-duplex method
- Transmission and reception of Phase 3 signals (S, $\overline{S}$PP, TRN) are executed by using parameter values which are determined by exchanging INF Oh. (symbol rate, carrier frequency, pre-emphasis filter and transmission level)



- The speed of the following signals (Phase 3) are determined by INFOh. (The following signals are used in the main channel in the half-duplex procedure.)

S	Signal which sends alternately 0 point and a point which rotated 0 point counterclockwise by 90 degrees

$\overline{S}$	Signal which sends alternately a point which rotated 0 point counterclockwise by 180 degrees and a point which rotated 0 point counterclockwise by 270 degrees
PP	Special signal which is sent from a remote station for adjusting an equalizer
TRN	Training signal. (Symbol rate and duration are determined in INFOh.)

(a) Control channel signal

- The following signals are used for establishing the control channel or re-synchronization and retrain. (peculiar to half-duplex procedure)

Modulation method	1200 / 2400 bps QAM modulation (600 ± 0.01 symbols / sec). However, training and synchronous signals are 1200 bps.	• Calling modem: Carrier (=1200 Hz ± 0.01 % (level = set value)) • Called modem: Carrier (=2400 Hz ± 0.01 % (level = set value-1 dB)) + Guard tone (=1800 Hz ± 0.01 % (level = set value-7 dB))
Sh	Signal which sends alternately 0 point and a point which rotated 0 point counterclockwise by 90 degrees (the same as S)	
$\overline{Sh}$	Signal which sends alternately a point which rotated 0 point counterclockwise by 180 degrees and a point which rotated 0 point counterclockwise by 270 degrees (the same as S)	
AC	Signal which send alternately 0 point and a point which rotated 0 point by 180 degrees	
PPh	Special signal which is sent from a remote station for adjusting an equalizer (used when the initial of the control channel and re-synchronization are executed)	
ALT	Signal which scrambled alternate signals of 0 and 1 (1200 bps)	
MPh	Binary signal used for exchanging parameters of the modulation method when data is actually sent and received by using the main channel (1200 bps)	• Both type 0 and type 1 (type 0+pre-recording coefficient) must be received. • When type 0 is received, pre-recording coefficient is considered to be 0 and never functions.
E	“1”, binary of 20 bit, which represents the beginning of user data transmission on the control channel	

(b) MPh (type 0) bit assignment

Bits (LSB-MSB)	Value	Meaning	
0-16	All bit 1	Bit string for frame synchronization	
17	0	Start bit	
18	0	MP signal type	
19	0	Reserved	
20-23	1 to 14	Maximum transmission rate from the calling modem to the called modem (x 2400) *1	
24-26	0,0,0	Reserved	
27	0/1	Control channel data transmission rate which is selected by the opposed transmitter	• 0: 1200 bps • 1: 2400 bps
28	0	Reserved	
29-30		Trellis coding device selection *2	• 00: 16 state • 10: 32 state • 01: 64 state • 11: Reserved
31	0/1	Non-linear encoder parameter selection for the terminal transmitter of a remote station *2	• 0: φ=0 • 1: φ=0.3125
32	0/1	Parameter (shaping) selection when the data rate is determined within each symbol rate *2	• 0: Minimum • 1: Expanded
33	0	Reserved	
34	0	Start bit	
35-49		Communication speed mask (Bit 35=2400 bps ... Bit 46=28.8 kbps, Bit 47=31.2 kbps, Bit 48=33.6 kbps and Bit 49=Reserved)	• 0: Ability of both modems disabled • 1: Enabled
50	0/1	Use of control channel imbalance data rate	• 0: No • 1: Yes
51	0	Start bit	
52-67	0	Reserved	
68	0	Start bit	
69-84		CRC	
85-87	0,0,0	Fill Bits	

- *1: 13 and 14 are used when the opposed modem supports up to 1664 points.
- *2: Set to 0 on the transmitting modem.

(c) MPh (type 1) bit assignment

Bits (LSB-MSB)	Value	Meaning
0-16	All bit 1	Bit string for frame synchronization

Bits (LSB-MSB)	Value	Meaning	
17	0	Start bit	
18	1	MP signal type	
19	0	Reserved	
20-23	1 to 14	Maximum transmission rate from the calling modem to the called modem (x 2400) *1	
24-26	0,0,0	Reserved	
27	0/1	Control channel data transmission rate which is selected by the opposed transmitter	• 0: 1200 bps • 1: 2400 bps
28	0	Reserved	
29-30		Trellis coding device selection *2	• 00: 16 state • 10: 32 state • 01: 64 state • 11: Reserved
31	0/1	Non-linear encoder parameter selection for the terminal transmitter of a remote station *2	• 0: φ=0 • 1: φ=0.3125
32	0/1	Parameter (shaping) selection when the data rate is determined within each symbol rate *2	• 0: Minimum • 1: Expanded
33	0	Reserved	
34	0	Start bit	
35-49		Communication speed mask (Bit 35=2400 bps ... Bit 46=28.8 kbps, Bit 47=31.2 kbps, Bit 48=33.6 kbps and Bit 49=Reserved)	• 0: Ability of both modems disabled • 1: Enabled
50	0/1	Use of control channel imbalance data rate	• 0: No • 1: Yes
51	0	Start bit	
52-67		Pre-coding coefficient h (1) Real	
68	0	Start bit	
69-84		Pre-coding coefficient h (1) Imaginary	
85	0	Start bit	
86-101		Pre-coding coefficient h (2) Real	
102	0	Start bit	
103-118		Pre-coding coefficient h (2) Imaginary	
119	0	Start bit	
120-135		Pre-coding coefficient h (3) Real	
136	0	Start bit	
137-152		Pre-coding coefficient h (3) Imaginary	
153	0	Start bit	
154-169		Reserve	
170	0	Start bit	
171-186		CRC	
187	0	Fill Bits	

- *1: 13 and 14 are used when the opposed modem supports up to 1664 points.
- *2: Set to 0 on the transmitting modem.

(7) Re-synchronization procedure / Startup procedure

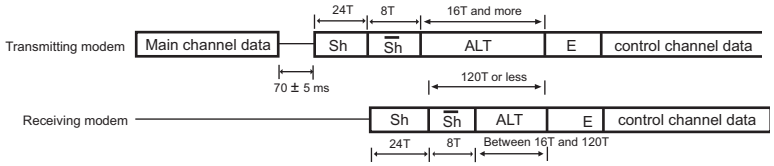
- A procedure required to switch control channel and main channel in the half-duplex procedure
- A procedure which includes another modulation parameter exchanging is especially called the startup procedure. (used for changing the communication speed)

(a) Startup procedure

- Control channel startup procedure (By exchanging MPh, the communication speed is changed.)
- “Control channel re-synchronization procedure” is not used.

(b) Re-synchronization procedure

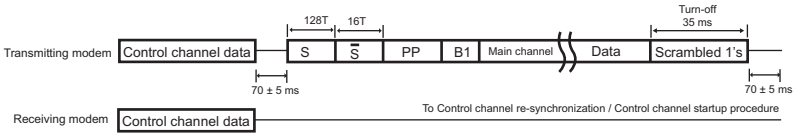
- Control channel re-synchronization.
- See signals related to control channels for signal names and change method.



Main channel re-synchronization procedure and Turn-off

- The receiving modem re-synchronizes the main channel by using the PP signal. After B1, starts receiving Primary Data.
- The transmitting modem sends the scrambled 1's for 35 ms after Primary Data transmission has been completed.
- Both modems move to the control channel re-synchronization procedure or the control channel startup procedure.

S	Signal which sends alternately 0 point and a point which rotated 0 point counterclockwise by 90 degrees
$\bar{S}$	Signal which sends alternately a point which rotated 0 point counterclockwise by 180 degrees and a point which rotated 0 point counterclockwise by 270 degrees
PP	Special for adjusting an equalizer
B1	High-speed signal of one frame length which is sent at the end of a series of startup sequence in the selected modulation parameter.



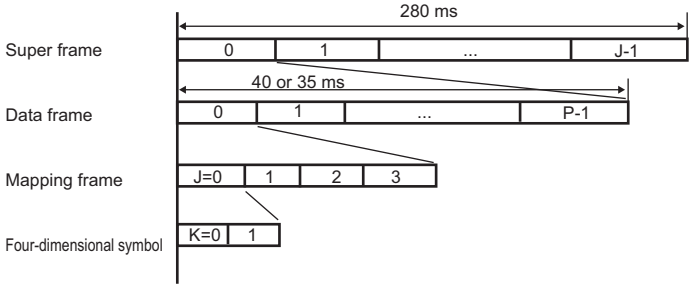
(8) Other

(a) Minimum reception signal level (RLSD) (half-duplex mode only)

- The reception circuit is turned to ON when the signal becomes 43 dBm or more.
- When the signal becomes 48 dBm or less, the reception circuit is turned OFF within 20 to 25 ms after it has exceeded the thresh old.

(b) Data frame structure

- All data transmitted in V.34 (after the Phase 4) is treated in the following frame format.
  - J: The number of data frames within one super frame
  - P: The number of mapping frames within one data frame



Modulation Speed	J	P
2400 baud	7	12
2743 baud	8	12
2800 baud	7	14
3000 baud	7	15
3200 baud	7	16
3429 baud	8	15

10.2 FUNCTION

10.2.1 Telephone function

(1) TEL/FAX switching

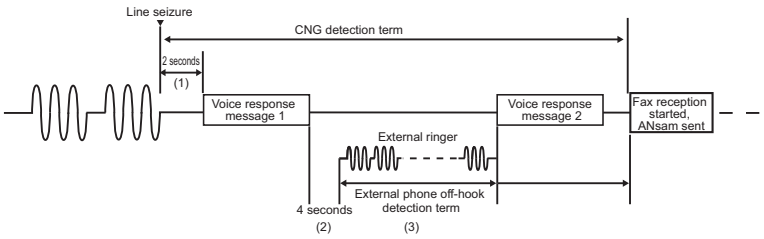
(a) Outline

- A function to switch telephone and FAX automatically after reception. (Depends on Country spec.)

(b) Operation

1. When CNG is not detected for 2 seconds (or 4 seconds, following address parameter) after line seizure, this function sends voice response message 1 and continues CNG detection.
2. If voice response 1 is sent and CNG detection is continued for 4 seconds but could not be detected, external ringer is sent to the externally installed phone.

3. When CNG is not detected for a given period (Default is 20 seconds. Changeable by address parameters), this function stops external ringer transmission and becomes fax reception after the voice response message 2 is sent.
4. This function detects OFF-HOOK of the external telephone during external ringer transmission only.
5. When OFF-HOOK of the external telephone is detected during external ringer transmission, the line is connected to the external telephone. Even if you use the telephone, you can manually switch to the fax reception after that.
6. When CNG is detected during the above-mentioned external ringer transmission, External ringer transmission is stopped and the fax reception starts.



(c) Related FP

No.	FP	Meaning and purpose	Address	Value	Default	Note
1	Tel-Fax switching	TEL/FAX switching mode	0x0e0095 bit5	0: Disabled 1: Enabled	0	Those with a Administrator Settings
2	RBT transmission time	RingBackTone signal transmission time	0x0e00fc	unit: 1000 ms, HEX	0x14 (20 sec.)	• A serviceman setting by address setting • Those with a Administrator Settings 30 sec. or less: 5 seconds 30 sec. or more: 30 seconds
3	Tel-Fax switching parameter	Time from vocal response to RBT transmission (CNG detection waiting time 2)	0x0e0095 bit7	0: 4 sec. 1: 2 sec.	0	A serviceman setting by address setting
4	Tel-Fax switching parameter	Time from reception to voice response transmission (CNG detection waiting time 1)	0x0e0095 bit6	0: 2 sec. 1: 4 sec.	0	
5	Tel-Fax switching parameter	TEL/FAX switching ON response details	0x0e0095 bit3	0: Voice response + RBT transmission 1: RBT transmission only	0	Those with a Administrator Settings

10.2.2 F-code

- F-code is a function to realize confidential transmission / bulletin board polling / relay transmission by using SUB, SEP and SID signals.
- To be more specific, a machine which can open “a box” on the memory is called “a F code compliant center machine” and a machine which can access to a center machine by using the F code function is called “a F-code compliant machine.” The center machine can have plural “boxes” and they are used as the confidential box, bulletin board box and relay box respectively.
- Function outline is as follows.

Function	Outline	Signals to be used			Use (Meaning)	Required function	Remark
		SUB	SEP	SID			
Confidential transmission	Sent to the center machine which opens a confidential box by appointing the confidential box No. (The center machine has memory reception to the confidential box.)	○	×	△	• SUB = Appointment of a confidential box • SID = Password	Registration = Message adding	Each box No. = Contents of a signal (20 digits or less)
Bulletin board polling	By appointing a box No. in the center machine which opens a bulletin board, contents are polled.	×	○	×	SEP = Appointment of a bulletin board box	• Registration = Message overwriting • With a mode which is not deleted by polling.	
Relay transmission	Requesting relay to the relay machine which opens a relay box (No.) in which a broadcasting transmission remote station is registered.	○	×	○	• SUB = Appointment of a relay box (No.) • SID = Password		

- ○ = interact is required
- △ = selectable
- × = do not use

(1) Signal format

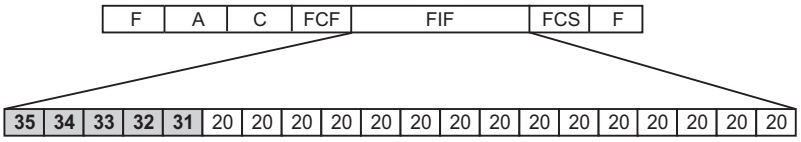
(a) Contents of signals

Item / Signal Name	SUB/SEP	SID
Characters	0 to 9 only (* and # must not be used.)	• 0 to 9 • * • #
Contents	Box No.	Password
No. of digits	Arbitrary between 1 and 20	
Space between digits	Prohibited	
Others	Impossible to designate more than one box	

(b) FIF (SUB/SEP/SID) common

- The last digit is left-justified. The remaining are filled with space (0x20)

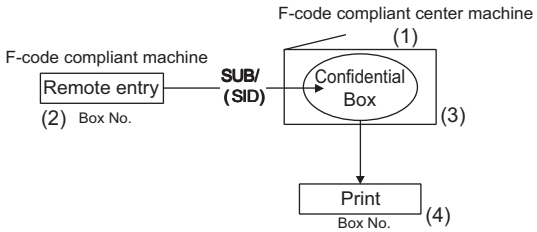
eg.) 12345



(c) DIS/DTC/DCS bit condition

Bit No.	Meaning	DIS/DTC	DCS
47	Selective polling ability	• DIS = ON when SEP reception is possible • DTC = ON when SEP is transmitted	0: fixed
49	Sub address ability / function	ON when SUB reception is possible	ON when SUB transmission is possible
50	Password / sender ID	• DIS = ON when SID reception is possible • DTC = ON when SID is transmitted	ON when SID is transmitted

(2) F-code confidential transmission

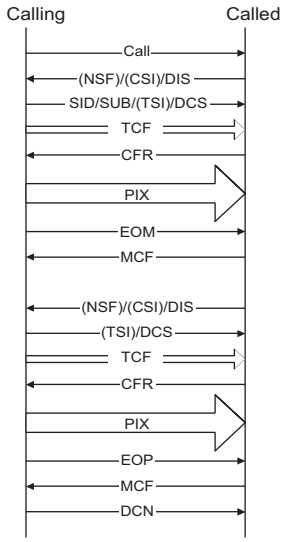


1. The confidential box is registered in the center machine.
   - Registration of confidential box No. and name
   - Registration of communication password
   - Registration of box password
2. Transmission operation on the transmitting side
   - Specification of confidential box No.
3. Reception in the center machine
   - Automatic output of confidential communication report
4. Printing in the center machine
   - Output by entering an access protect No.

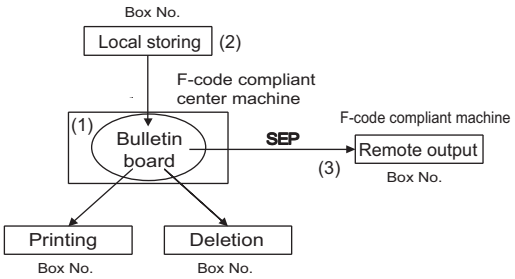
(a) BOX specifications

Confidential box No.	• Represented by a nine digit number. Operationally between 1 and 999999999. • You can not open the same box number as the bulletin board No. which has been already opened.
Communication password	Possible to use.
Confidential BOX name	Possible to resister up to 20 characters.
Erased at printing	Erased on every page after output.
Box password	Represented by eight digit number between 00000000 and 99999999.
No. of files in confidential box	100 files at the maximum including bulletin board.

(b) Example of the protocol sequence



(3) F-code bulletin board polling

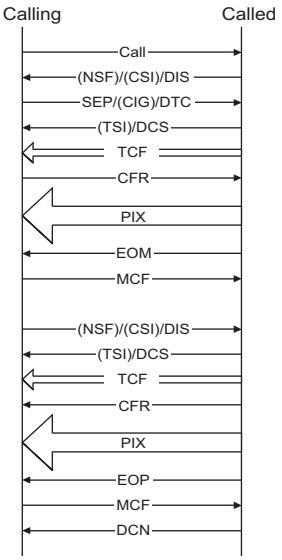


1. Registration of the bulletin board box in the center machine
   - Registration of the bulletin board No. and name
2. Storing documents in the bulletin board
3. Operations for polling reception on the compliant machine
   - Appointment of bulletin board No.

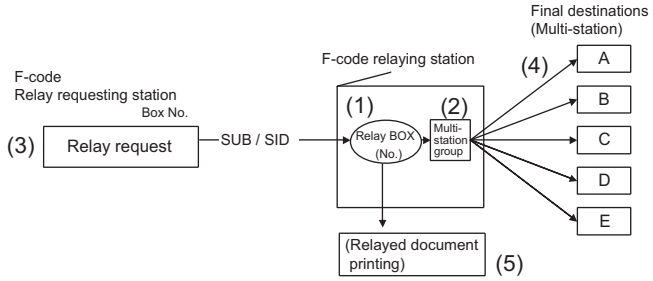
(a) BOX specifications

Bulletin board box No.	• Represented by a nine digit number. Operationally between 1 and 999999999. • You can not open the same box number as the confidential box which has been already opened.
Bulletin board password	No
Bulletin board box name	• Yes • Same number of characters as the confidential box
Erased at printing	Not erased when printed.
Erased at polling	Not erased when polled.
Access protect No.	No
No. of document registration to the bulletin board box	Only once. If already exist, it is overwritten.

(b) Example of protocol sequence



(4) F-code relay transmission



NOTE

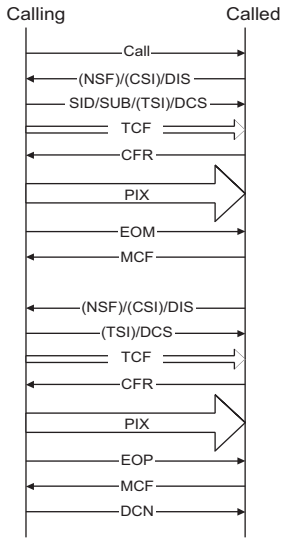
- **This machine is only relay requests and do not function as a relaying station.**

1. The relay box is registered in the relaying station.
   - Registering relay box No., relay password and relay group No.
2. Registration of group
   - Registering final destinations in the group No.
3. Transmission operation in the relay requesting station
   - Instructs relay box no. and relay password.
4. Transmission to the final remote stations registered in the group
5. Possible to printed relayed documents on the relaying station (depends on the parameter setting)

(a) BOX specifications

Relay box	Possible to register up to 5.
Relay box No.	Any box number that can range between 1 and 999999999
Relay password	Any 8-digit number
Relay BOX name	To be assignable
Access protect No.	No
Final destination designation	Possible only to register in the relay box by appointing the group.
File erasure after transfer	Always erased
Conditions to erase box by operations	Only when there are no files of received messages in the relay box, box can be erased.

(b) Protocol sequence example



10.2.3 Transmission function

(1) Original scan mode

- The original scan mode is roughly classified by the regular original scan and the irregular original scan.

Regular original	Irregular original	Mode selection
Normal mode	Irregular mode	Default setting
Mixed original mode		Scan setting

(a) Scan mode default setting

- The scan mode can be set by [Service Mode] -> [FAX] -> [System] -> [Scan Setting]. The default is the irregular mode.

	Paper size detection	Default	Frame erasure
Irregular mode	Trailing edge detection	Yes	Trailing edge erasure may not be done.
Normal mode	DF paper size sensor	Automatically selected when using the page related application function (book transmission, etc.).	Frame erasure of all sides

10.2.4 Reception function

(1) Reduction / division of reception

- Parameters related to reduction / division are set on the [Administrator] -> [Fax Settings] -> [TX/RX Settings]. There are two parameters as follows:
  - [Min. Reduction for RX Print]: 96, 95, 94, ..., 87: a
  - [Print Separate Fax Pages]: ON, OFF: b
- The reception recording mode is determined by the above-mentioned parameters, a and b.

(a) Auto reduction reception mode

- a = Don't care (except 100)
- b = OFF
- The received documents are automatically reduced in the range of 35 to 96 %.

(b) Page division recording reception mode

- a = 96, 95, ..., 87
- b = ON
- Documents are reduced to three reduction rate (90 %, 86 %, or 82 %) determined by the width of received documents and the selected recording paper. When they are still larger than a paper size, they are reduced to a value in "a" for the division recording.
  - 90% = Fixed value
  - 86%, 82% = Reduction rate determined by the main scanning direction
- The paper selection and division are determined in accordance with the following figure.

(c) Paper selected for division printing, magnification

A4S width at reception

Original length=Received original size*(1/a)	Optimum paper	Selected paper size / Division operation							
		Priority 1	Priority 2	Priority 3	Priority 4	Priority 5	Priority 6	Priority 7	Priority 8
152 mm or less	A5	A5/a %	A5S/69 %	A4S/a %	A4/a %	B5S/84 %	B5/a %	B4/a %	A3/a %
153 to 311 mm	A4S	A4S/a %	A4/a %	B4/a %	A3/a %	-	-	-	-

Original length=Received original size*(1/a)	Optimum paper	Selected paper size / Division operation							
		Priority 1	Priority 2	Priority 3	Priority 4	Priority 5	Priority 6	Priority 7	Priority 8
312 to 384 mm	B4	B4/a %	B5/a %	B5S/84 %	A3/a %	A4/a %	A4S/a %	-	-
Over 384 mm	A3	A3/a %	A4/a %	B5S/84 %	-	-	-	-	-

- a : Set magnification

B4 width at reception

Original length=Received original size*(1/a)	Optimum paper	Selected paper size / Division operation							
		Priority 1	Priority 2	Priority 3	Priority 4	Priority 5	Priority 6	Priority 7	Priority 8
189 mm or less	B5	B5/a %	B5S/71 %	B4/a %	A4S/82 %	A4/a %	A3/a %	-	-
189 to 384 mm	B4	B4/a %	B5/a %	B5S/71 %	A3/a %	A4/a %	A4S/82 %	-	-
Over 384 mm	A3	A3/a %	A4/a %	A4S/82 %	-	-	-	-	-

- a : Set magnification

A3 width at reception

Original length=Received original size*(1/a)	Optimum paper	Selected paper size / Division operation							
		Priority 1	Priority 2	Priority 3	Priority 4	Priority 5	Priority 6	Priority 7	Priority 8
219 mm or less	A4	A4/a %	A4S/69 %	B4/85 %	A3/a %	-	-	-	-
Over 219 mm	A3	A3/a %	A4/a %	A4S/69 %	-	-	-	-	-

- a : Set magnification

(2) Cassette / paper selection

- The cassette and paper selection is performed by using two parameters of the [Administrator] -> [Fax Settings] -> [TX/RX Settings].
  - [Print Paper Selection]: Auto Select, Fixed Size, Priority Size: a
  - [Paper Tray Setting]: Auto, Tray 1, Tray 2, Tray 3 and Tray 4: b

NOTE

- **When “b” is fixed to tray 1, 2, 3 or 4, “a” becomes invalid.**
- **Only when “b” is set to Auto, “a” becomes valid.**
- **Only A3, B4 and A4 sizes can be selected for the fixed size and preferential size modes.**
- **Bypass cannot be specified as fix-tray.**
- **Page dividing function becomes invalid when the tray is fixed.**

(3) Compulsory memory reception

- The function to enable to print out by operations without printing out documents at reception in the FAX communications.

(a) Related settings

Compulsory memory reception function

- Set in the [Service Mode] -> [FAX] > [System] -> [Display Setting].
- When this setting is set to “OFF”, display and actions related to the Compulsory memory reception are not performed. In addition, you can not perform operations. If this setting is not set, the following Compulsory memory reception function used is also set to disabled.

Compulsory memory reception function use

- Set in the [Administrator] -> [Fax Settings] -> [Function Setting] -> [RX Data Operation Setting] -> [Memory RX Setting].
- When this setting is set to “NO”, the compulsory memory reception actions are not performed at reception. In addition, you can not display, erase and print the compulsory memory reception documents. The compulsory memory reception documents are displayed on the main menu irrelevant to this setting.

Compulsory memory reception password

- Within eight digits (0 to 9)
- Set in the [Administrator] -> [Fax Settings] -> [Function Setting] -> [RX Data Operation Setting] -> [Memory RX Setting].
- This setting is required to display, delete or print the compulsory memory reception documents.

(b) Operation

Necessary conditions for this function

- When there is the compulsory memory reception function, and it is used, the compulsory memory reception action is performed.

Line seizure

- It is possible to receive up to 500 compulsory memory reception jobs including the normal reception and the substitute reception. When 500 compulsory memory reception jobs are received, machine will not catch the line. (Except the case that the polled transmission documents and bulletin board documents are registered.)

Reception

- When the reception is performed in the compulsory memory reception mode, printing is not performed even with recording paper and the reception is performed in memory as the compulsory memory reception documents.
- The same as in the polled reception and manual reception.
- The auto forwarding setting is neglected in this mode, and the compulsory memory reception is performed.

- When SUB is received, related applications will start.

Setting change

- When there are received compulsory memory reception documents, even if the compulsory memory reception setting is set to invalid in the utility mode, the compulsory memory reception file is not printed.
- For printing, the compulsory memory reception setting is required to be set to “ON.”

(4) Closed reception (Junk FAX)

- The closed reception function used only at the time of the reception by using the F-code SID signal.

NOTE

- **You can not use this function with the F-code communications.**

(a) Closed reception function

- Set in the [Service Mode] -> [FAX] > [System] -> [Display Setting].

(b) Closed reception function use

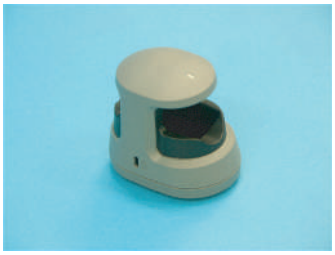
- Set in the [Administrator] -> [Fax Settings] -> [Function Setting] -> [Closed Network RX].
- When this setting is set to “No”, the closed reception actions are not performed at reception.

(c) Closed reception password

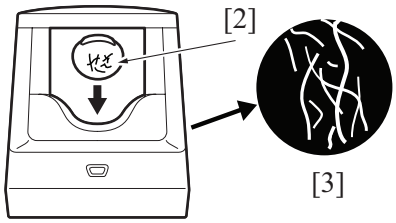
- Four digits (0 to 9)
- Set in the [Administrator] -> [Fax Settings] -> [Function] -> [Closed Network RX].

11. AU-102

11.1 Configuration



[1]



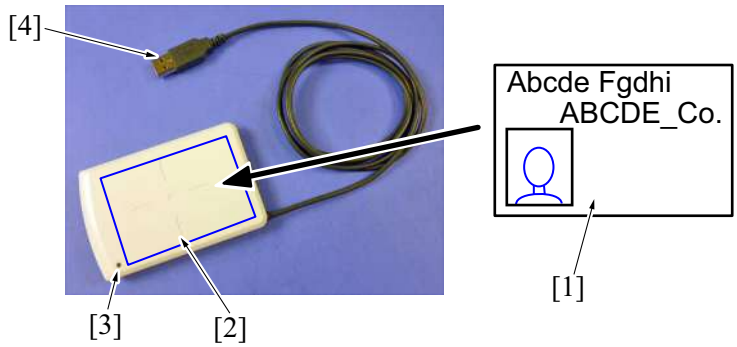
[1]	Authentication unit (AU-102)	[2]	Finger
[3]	Vein image	-	-

11.2 Operation

- A finger vein pattern is used for personal identification.
- Vein patterns are inside the body and cannot be visually recognized. This makes vein patterns extremely difficult to forge or falsify. The vein pattern authentication system can provide high security.
- With ultra-red LED radiation, a finger vein pattern is captured by camera and its image is created. The vein pattern image is registered and a person can be identified if the person's vein pattern matches the registered one at the time of user authentication.

12. AU-201S

12.1 Configuration



[1]	Non-contact IC card	[2]	Read-write area
[3]	Status LED	[4]	USB connector (Type-A)

12.2 Operation

- Place the non-contact IC card on the authentication device to read and write data.
- Displays the operational status via LEDs on the unit.
  - Yellow-green light glows: Normal operation.
  - Red light or orange light is on: Unit is experiencing an issue.

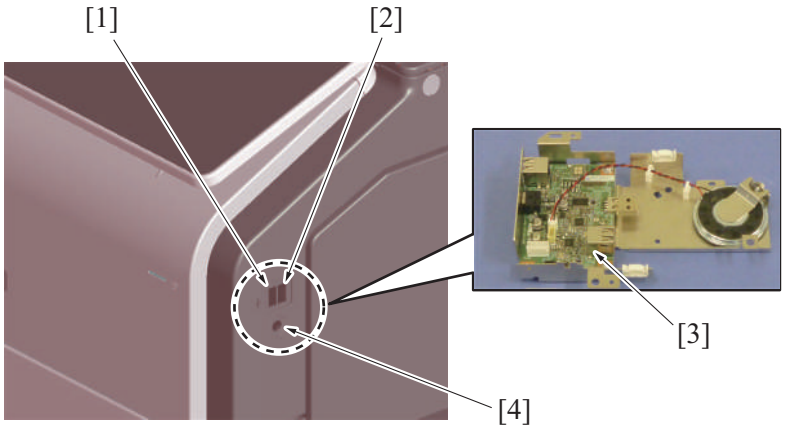
12.3 Specifications

Communication Type	TypeA/Mifare	TypeB	FeliCa
Communication Speed	106 Kbps	106 kbps, 212 kbps, 424 kbps	212 kbps, 424 kbps
Authentication Function	Mifare Crypt	-	DES, AES
Compatible IC cards	• Non-contact IC cards compliant with ISO14443 Type A • Non-contact IC cards compliant with TN2 (SEE55R)	Non-contact IC cards compliant with ISO14443 Type B	FeliCa card
Inter-terminal Communication	Inter-terminal communication compliant with ISO18092 (communication speed: 106, 212, and 424 kbps)		

13. EK-608/EK-609

13.1 EK-608

13.1.1 Configuration



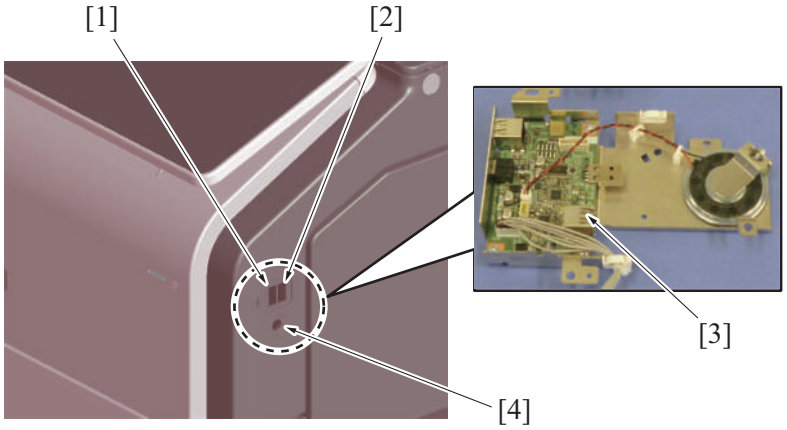
[1]	USB terminal (extension)	[2]	USB terminal (standard)
[3]	Local Interface Kit EK-608	[4]	Voice guidance output terminal

13.1.2 Operation

- The document can be printed directly from, or saved in, the USB memory.
- Connecting the USB keyboard (dealer option: overseas market only) will permit keyboard input.
- To use the voice guidance function, i-Option LK-104 is required.

13.2 EK-609

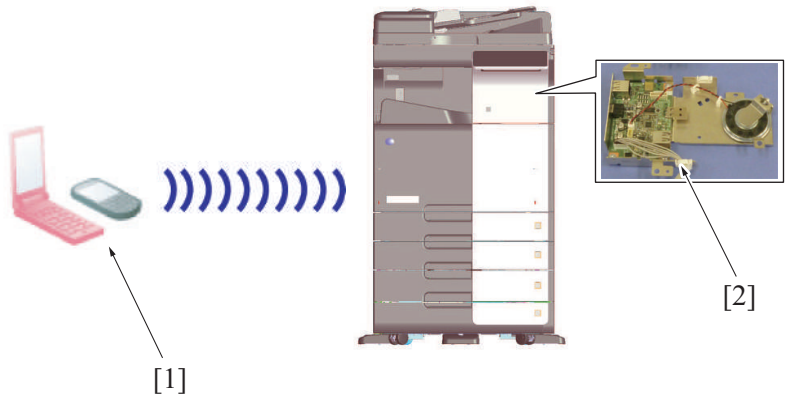
13.2.1 Configuration



[1]	USB terminal (extension)	[2]	USB terminal (standard)
[3]	Local Interface Kit EK-609	[4]	Voice guidance output terminal

13.2.2 Operation

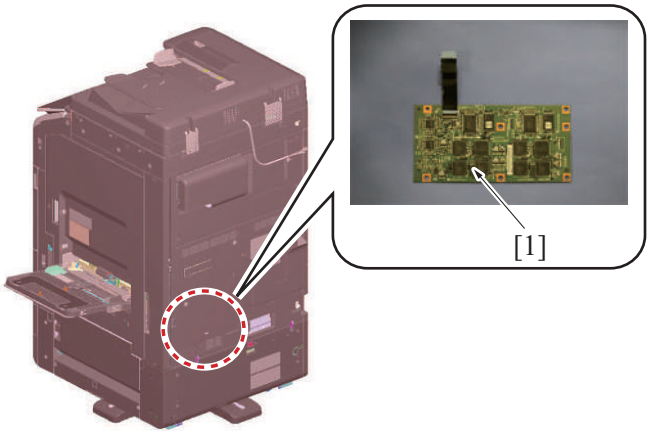
- The document can be printed directly from, or saved in, the USB memory.
- Connecting the USB keyboard (dealer option: overseas market only) will permit keyboard input.
- The local interface kit is mounted when the voice guidance function, and functions interacting with the portable phone or PDA (Personal Digital Assistant), compatible with Bluetooth, are to be used. It has a built-in speaker and Bluetooth communication receiver.
- To use the voice guidance function, i-Option LK-104 is required.



[1]	Portable phone, PDA	[2]	Local Interface Kit EK-609

14. SC-509

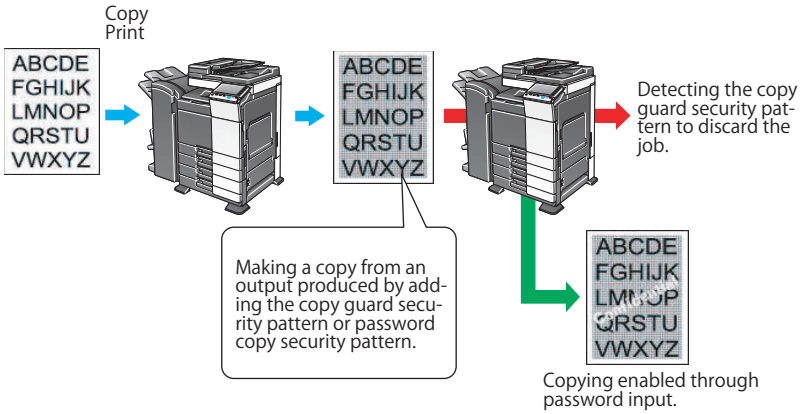
14.1 Configuration



[1]	Security Kit SC-509	-	-

14.2 Operation

- The security kit offers the copy guard (copy prohibited) and password copy functions in addition to the copy protect function. The copy guard security pattern or password copy security pattern printed on the original, is detected to thereby prevent unauthorized copies from being produced.
- The copy guard security pattern and password copy security pattern can be detected only by the Konica Minolta machine mounted with the copy guard and password copy functions.



15. UK-221

15.1 CONFIGURATION

15.1.1 Mounting position

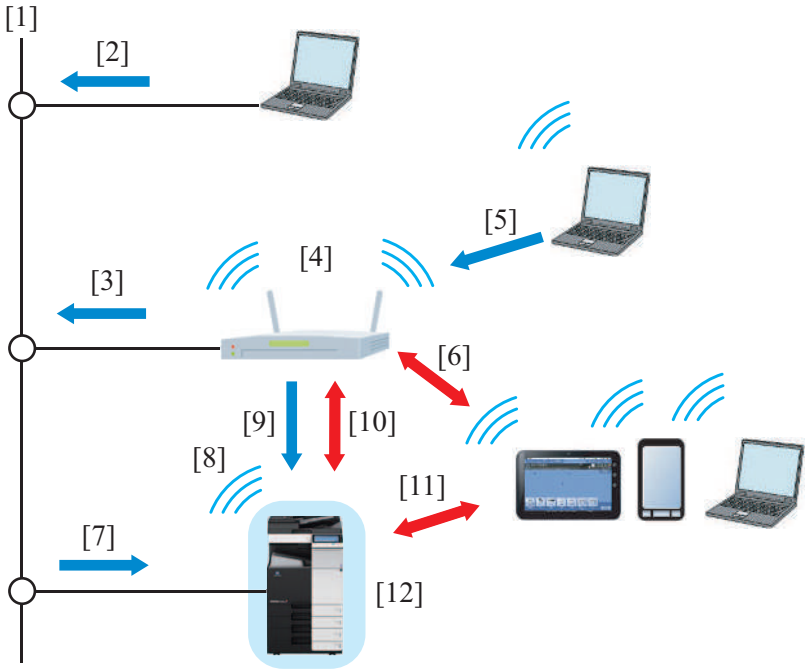
15.2 OPERATION

15.2.1 Outline

When the upgrade kit is installed, the following functions can be added.

- By connecting the main body as a wireless LAN adapter to a wireless LAN access point connected to the LAN environment, a job can be executed. The main body can be connected to both a wireless LAN environment and a LAN environment. (Wireless Only, Wired+Wireless (Secondary Mode))
- Direct communication between the main body and the mobile device (Android device, iOS device or Wi-Fi support devices) will be enabled. (Wired+Wireless (Primary Mode), Wired+Wireless (Wi-Fi Direct))
- Even when the main body is on standby state in "ErP Auto Power Off mode", the main body can be started from a client to execute a job.

Basic concept of connection



[1]	LAN environment	[2]	Job received from a PC connected to the LAN environment
[3]	Job received via the wireless LAN access point	[4]	Wireless LAN access point connected to the LAN environment
[5]	Job received from a PC connected to the wireless LAN environment	[6]	Communication with a mobile device connected to the wireless LAN environment*1
[7]	Job received from the main body via the LAN	[8]	• Communication with the wireless LAN access point (Wireless Only, Wired+Wireless (Secondary Mode)) • Enabled communication with a mobile device (Wired + Wireless (Primary Mode), Wired + Wireless (Wi-Fi Direct))
[9]	Job received from the main body via the wireless LAN	[10]	Communication via the wireless LAN access point connected to a mobile device (Android device, iOS device, or Wi-Fi support devices)
[11]	Direct communication with a mobile device (Wired + Wireless (Primary Mode), Wired + Wireless (Wi-Fi Direct))	[12]	Main body (on startup)

NOTE

- **To use the upgrade kit, the following settings are required.**
  [Service Mode] -> [Network Settings] -> [2nd Network Setting]
- **The “Interface structure” includes the following five patterns. These patterns can be selected depending on the connection environment of the main body.**
  [Service Mode] -> [Network Settings] -> [2nd Network Setting]- > [Network Interface Settings]

No.	Network Interface Settings	Connection environment of main body
1	**Wired Only**	**Use when the main body is connected only to a LAN environment.**
2	**Wireless Only**	**Use when the main body is connected only to a wireless LAN environment.**
3	**Wired+Wireless (Secondary Mode)**	**Use when the main body is connected to both a LAN environment and a wireless LAN environment.**
4	**Wired+Wireless (Primary Mode)**	• **Use when the main body is connected to both a LAN environment and a wireless LAN environment.**

No.	Network Interface Settings	Connection environment of main body
		• **The main body is used as a wireless LAN access point (Primary Mode).**
5	**Wired+Wireless (Wi-Fi Direct)**	• **Use when the main body is connected to both a LAN environment and a wireless LAN environment.** • **The main body is used as a wireless LAN access point.** • **With this mode, a mobile device (excluding iOS) can be connected to Wi-Fi Direct authentication devices easily.**

15.2.2 2nd network interface structure

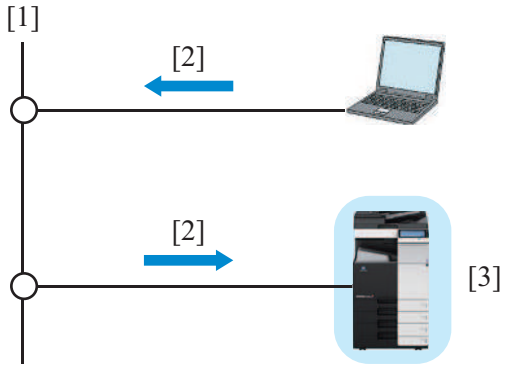
(1) Wired Only

- Use when the machine is connected only to a LAN environment. (Initial setting)
- The LAN line is the main line.

(a) Operation

- To execute a job received from a client via the LAN.

Basic concept of connection



[1]	LAN environment	[2]	Job
[3]	Main unit (on startup)	-	-

(2) Wireless Only

- Use when the machine is connected only to a wireless LAN environment.
- The wireless LAN line is the main line.

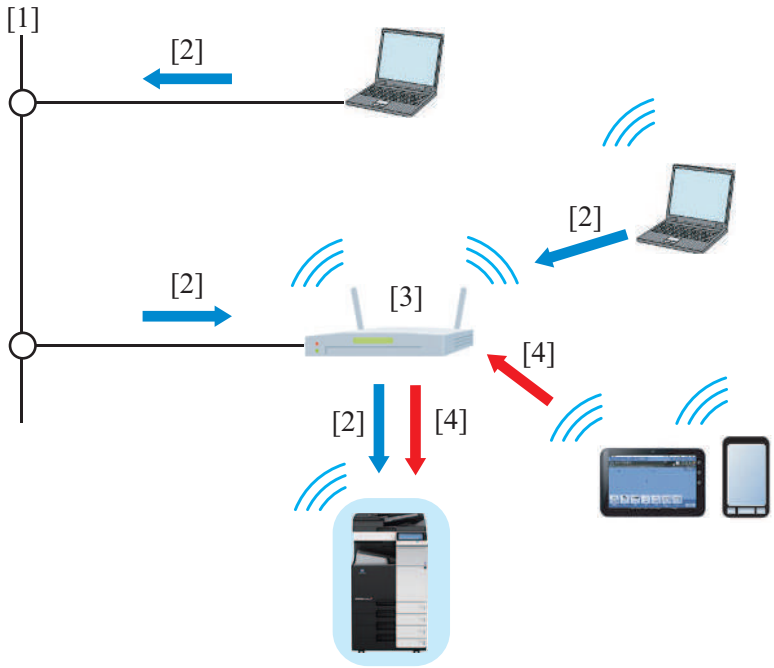
(a) Operation

- To execute a job received from a client via the wireless LAN access point.
  - To execute a job received from a PC connected to the LAN.
  - To execute a job received from a PC connected to the wireless LAN.
  - To execute a job received from an Android device or iOS device (called mobile device hereafter) connected to the wireless LAN.

NOTE

- **A wireless communication is performed between the machine and a client via the wireless LAN access point.**

Basic concept of connection



[1]	LAN environment	[2]	Job received from a PC
[3]	Wireless LAN access point	[4]	Job received from a mobile device

(3) Wired+Wireless (Secondary Mode)

- Use when the machine is connected to both a LAN environment and a wireless LAN environment.
- The LAN line is the main line, and the wireless LAN line is the sub line.

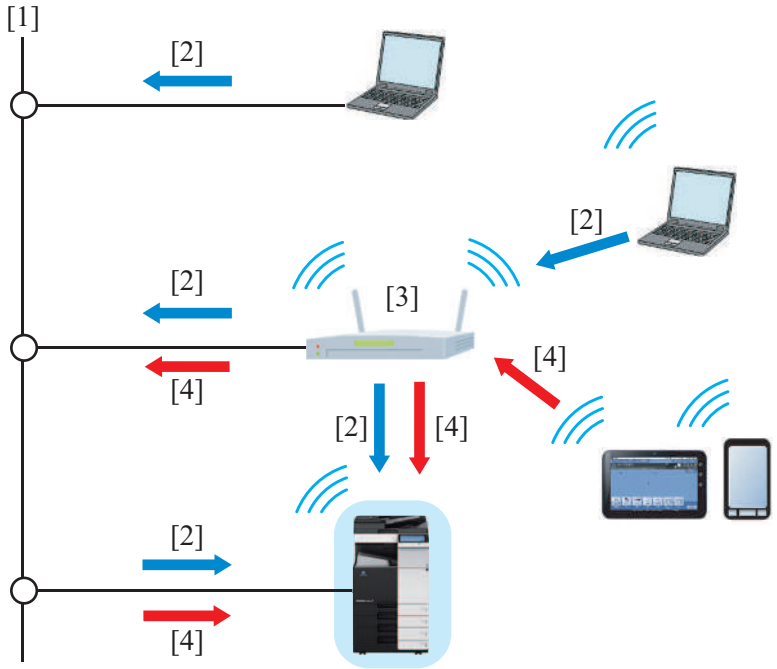
(a) Operation

- To execute a job received from a client via the LAN.
  - To execute a job received from a PC connected to the LAN.
  - To execute a job received from a PC connected to the wireless LAN.
  - To execute a job received from an Android device or iOS device (called mobile device hereafter) connected to the wireless LAN.
- To execute a job from a client via the wireless LAN access point.
  - To execute a job received from a PC connected to the LAN.
  - To execute a job received from a PC connected to the wireless LAN.
  - To execute a job received from an Android device or iOS device (called mobile device hereafter) connected to the wireless LAN.

NOTE

- **A communication is performed between the machine and the mobile device via the LAN and wireless LAN access point.**

Basic concept of connection



[1]	LAN environment	[2]	Job received from a PC
[3]	Wireless LAN access point	[4]	Job received from a mobile device

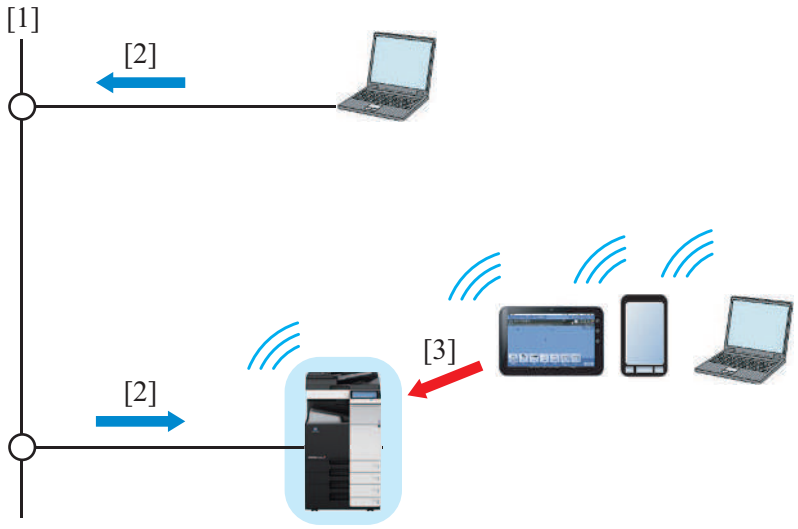
(4) Wired+Wireless (Primary Mode)

- Use when the machine is connected to both a LAN environment and a wireless LAN environment.
- The LAN line is the main line, and the wireless LAN line is the sub line.
- The machine is used as a wireless LAN access point.
- During startup of the machine, perform wireless LAN communication between the machine and the mobile device (Android device, iOS device, or devices supporting Wi-Fi) without via wireless LAN access point.

(a) Operation

- To execute a job received from a client via the LAN.
  - To execute a job received from a PC connected to the LAN.
  - To execute a job received from a PC connected to the wireless LAN.
- To execute a job received from a mobile device through a wireless communication.

Basic concept of connection



[1]	LAN environment	[2]	Job received from a PC
[3]	Job received from a mobile device	-	-

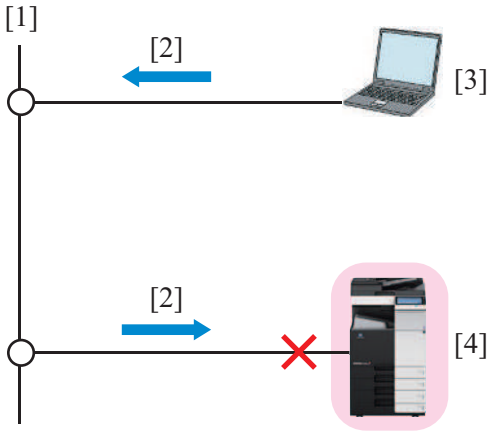
(5) Wired+Wireless (Wi-Fi Direct)

- This mode performs same control as that with Wired+Wireless (Primary Mode).
- When connected to devices supporting Wi-Fi Direct authentication, connection without settings of SSID and password is enabled.

15.2.3 Operation on ErP Auto Power Off mode

- On ErP Auto Power Off mode, the sub power supply turns off, so that the power consumption is controlled. Touching the power key to start the main body.
- When the main unit on which the upgrade kit is not installed, is switched to ErP Auto Power Off mode, the operations such as receiving data, receiving fax, reading original, printing and so on cannot be executed.
- When the upgrade kit is installed, ErP Auto Power Off mode can be released remotely (by starting up the main body).
  [Administrator] -> [Network] -> [Wireless Network Setting]

Diagram of standby state in "ErP Auto Off mode" of the main body



[1]	LAN environment	[2]	Print job
[3]	Client (PC)	[4]	Main body (on standby in ErP Auto Power Off mode)

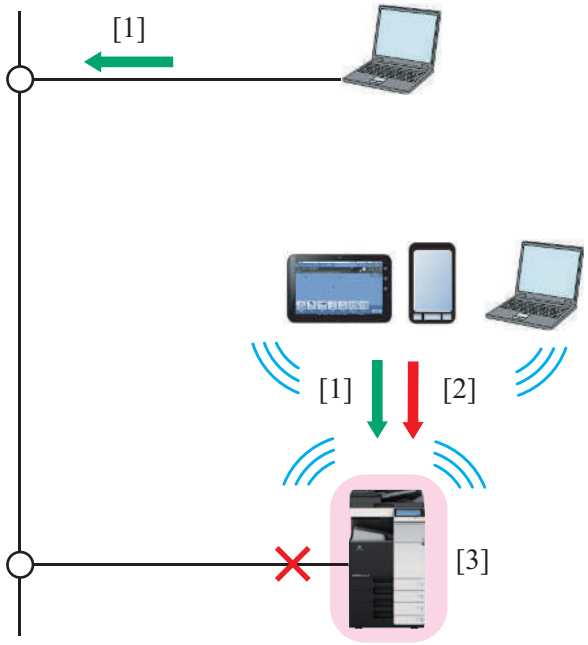
(1) Wired+Wireless (Secondary Mode)

NOTE

- **To awake from the ErP Auto Power Off mode, select [Awake with ARP + Unicast Communication].**

1. The machine waits for a startup indication that is sent via the wireless LAN communication.
2. Receive a startup command from a client via the wireless LAN communication without via the wireless LAN access point to start up the machine.
   - Receiving a startup indication from a PC to start up the main unit.
   - Receiving a communication from a mobile device to start up the main unit.

   Diagram of startup operation

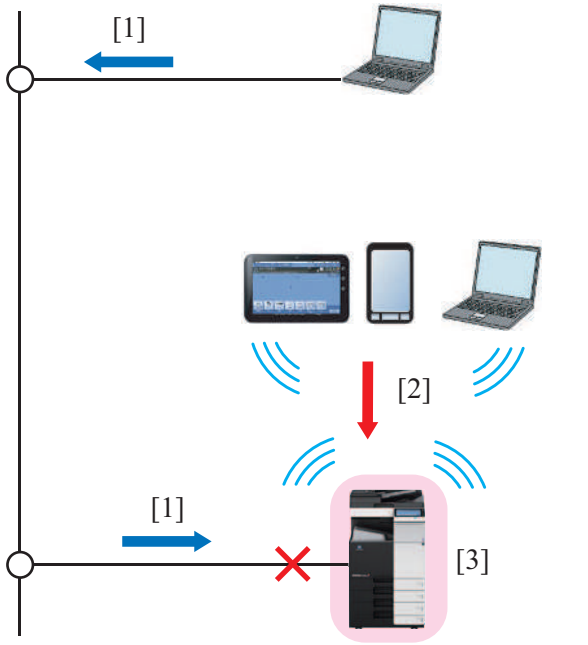


[1] Startup indication *1
[2] Job received from a mobile device
[3] Machine (on startup)

- *1: To execute a print job, [Wake-On-Lan setting] is required to configure at [Initial settings] of a printer driver.

3. After the machine starts up, execute a job that is received from a client.
   - Execute a job received from a PC via the LAN.
   - Execute a job received from a PC via the wireless LAN communication.
   - Execute a job received from a mobile device via the wireless LAN communication.

Diagram of operation after startup



[1] Job received from a PC
[2] Job received from a mobile device
[3] Machine (after startup)

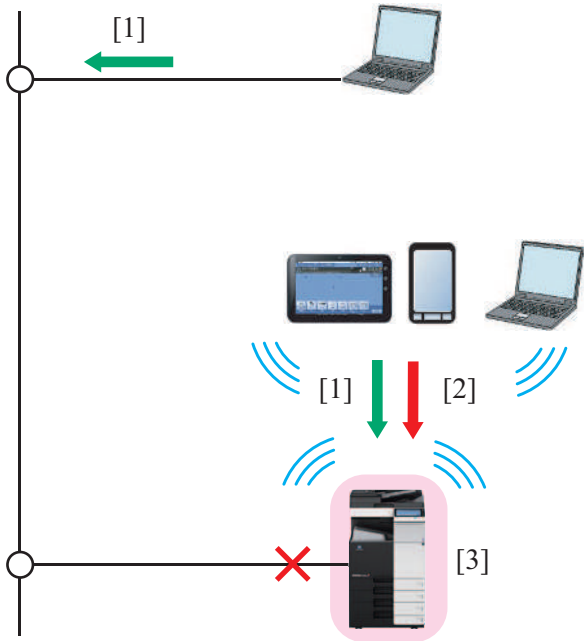
(2) Wired+Wireless (Primary Mode), Wired+Wireless (Wi-Fi Direct)

NOTE

- **To awake from the ErP Auto Power Off mode, select [Awake with ARP + Unicast Communication].**

1. The main body waits for a startup indication sent via the wireless LAN communication.
2. Receiving a startup indication from a client via the wireless LAN communication without via the wireless LAN access point to start up the main body.
   - Receiving a startup indication from a PC to start up the main body.
   - Receiving a communication from a mobile device to start up the main body.

Diagram of startup operation

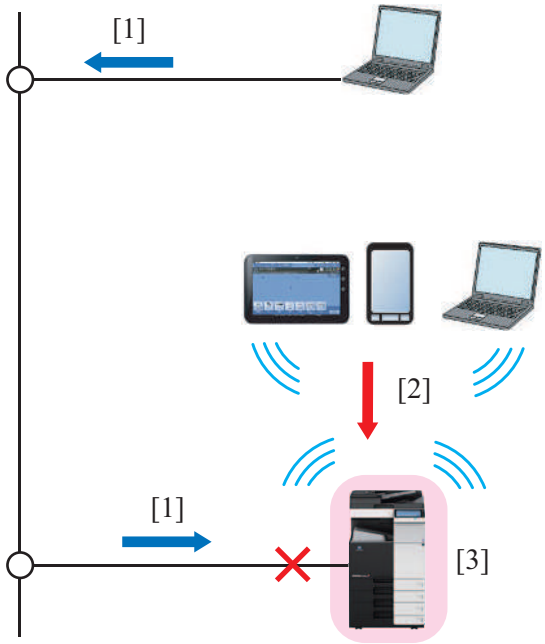


[1] Startup indication (*1)
[2] Job received from a mobile device
[3] Main body (on startup)

- *1: To execute a print job, [Wake-On-Lan Settings] is required to be configured at [Settings] of a printer driver.

3. After starting up the main body, execute a job received from a client.
   - Execute a job received from a PC via the LAN.
   - Execute a job received from a mobile device through a direct wireless LAN communication.

Diagram of operation after starting up the main body



[1] Job received from a PC
[2] Job received from a mobile device
[3] Main body (on startup)

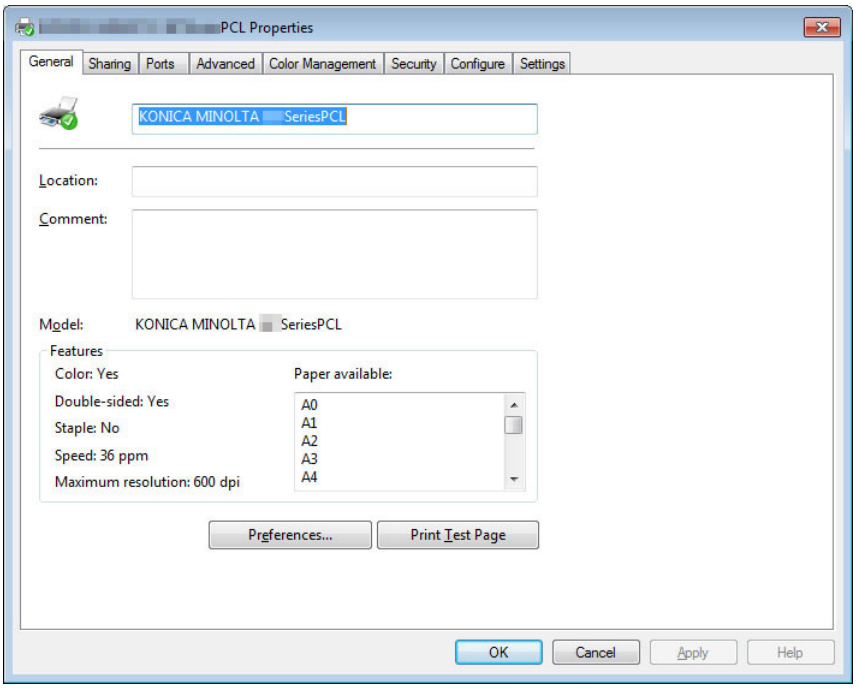
- After starting up the main body, the wireless LAN communication between the main body and the wireless LAN access point will be completed.

(3) Setting for printer driver

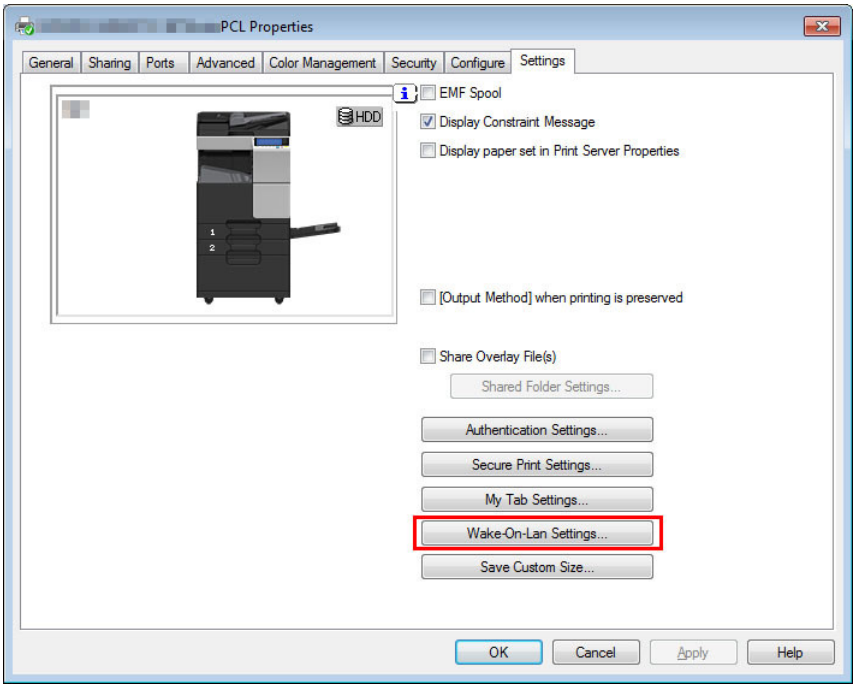
- To execute a print job, property settings are required for the printer driver to start up the main unit from ErP Auto Power Off mode.

(a) Setting procedure

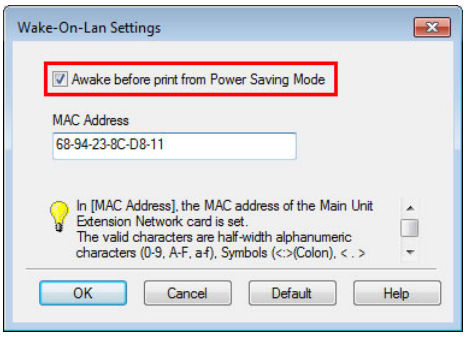
1. Open the property window of the printer.



2. Select the [Initial settings] tab, and select [Wake-On-Lan setting].



3. Select the [Awake before print from Power Saving Mode] check box.

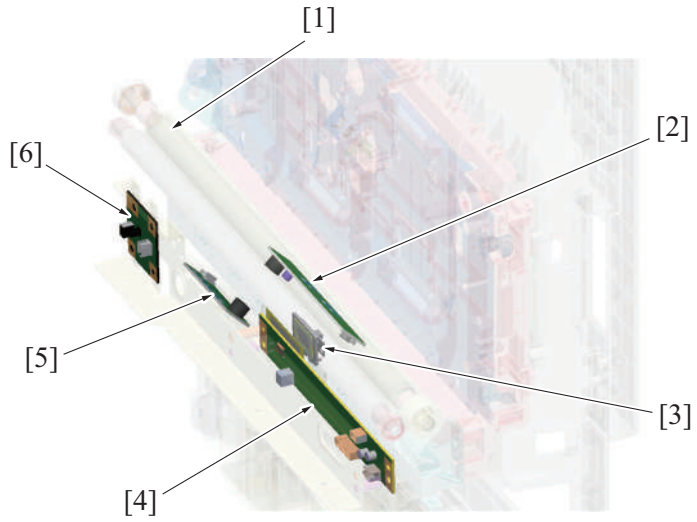


16. IM-102

16.1 Intelligent media sensor

- With the intelligent media sensor (IM-102) being installed, it is possible to detect the paper kind of the feeding paper.
- The intelligent media sensor is equipped with the sensor for detecting the envelope and the sensor for detecting the basis weight.

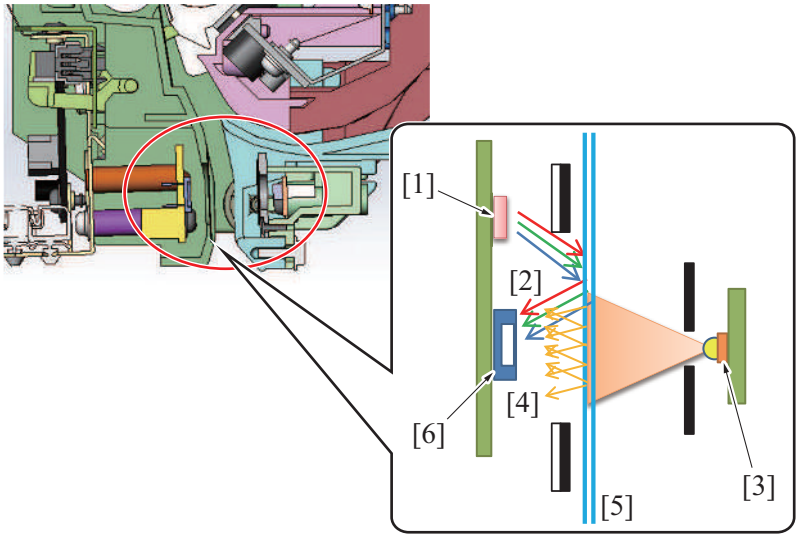
Configuration



[1]	Registration roller	[2]	Envelope detection board/RX (ENVDB/RX)
[3]	Paper basis weight detection board/TX (PBWDB/TX)	[4]	Paper basis weight detection board/RX (PBWDB/RX)
[5]	Envelope detection board/TX (ENVDB/TX)	[6]	Envelope detection relay board (ENVDRB)

Basis weight detection mechanism

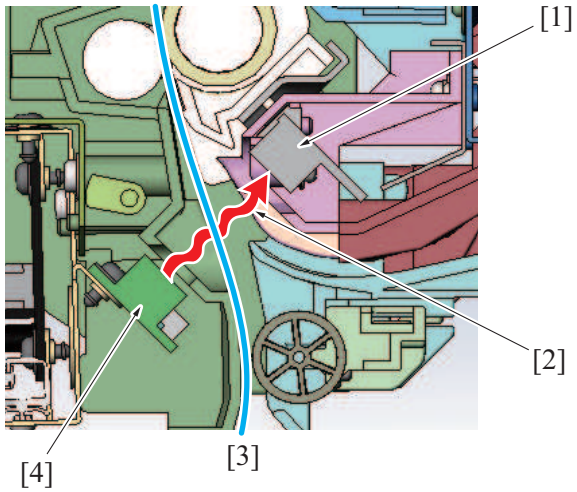
- There is a source of light on the paper basis weight detection board/TX, and white light is irradiated to the paper.
- The white light is penetrated the paper by part, and reaches the photodiode installed on the paper basis weight detection board/RX.
- There is a source of RGB light on the paper basis weight detection board/RX, and RGB light is irradiated to the paper.
- The RGB light reflects the paper, and reaches the photodiode installed on the paper basis weight detection board/RX.
- The basic weight of the feeding paper is decided according to the value of white light and RGB light that the photodiode detected.



[1]	Source of RGB light	[2]	Reflected RGB light
[3]	Source of white light	[4]	Penetrated white light
[5]	Feeding paper	[6]	Photodiode

Envelope detection mechanism

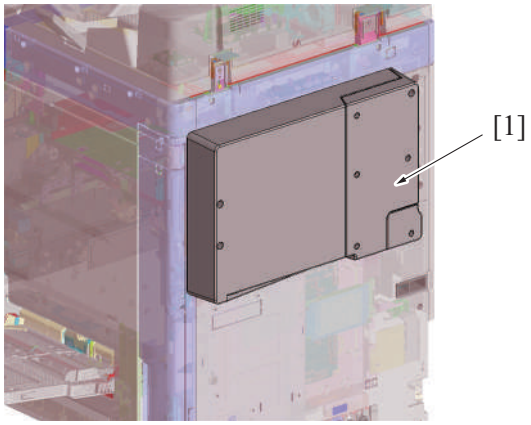
- Papers come into contact with ultrasonic waves that are transmitted from the envelope detection board/TX. The ultrasonic waves are received on the envelope detection board/RX.
- The ultrasonic waves attenuate due to the air layer between papers when the paper kind is envelope.
- The voltage at the receiver is checked. A determination of envelope is made if the voltage is the same as or less than a predetermined value.



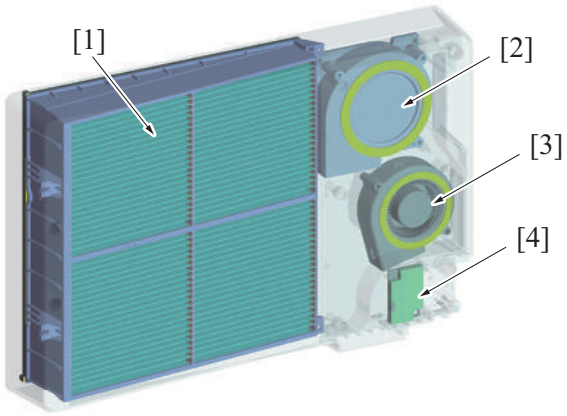
[1]	Envelope detection board/RX (ENVDB/RX)	[2]	Ultrasonic waves
[3]	Feeding paper	[4]	Envelope detection board/TX (ENVDB/TX)

17. CU-102

17.1 CONFIGURATION



[1]	Clean unit (CU-102)	-	-



[1]	UFP filter	[2]	Exhaust fan/1 (FM14)
[3]	Exhaust fan/2 (FM15)	[4]	Clean unit drive board (CUDB)

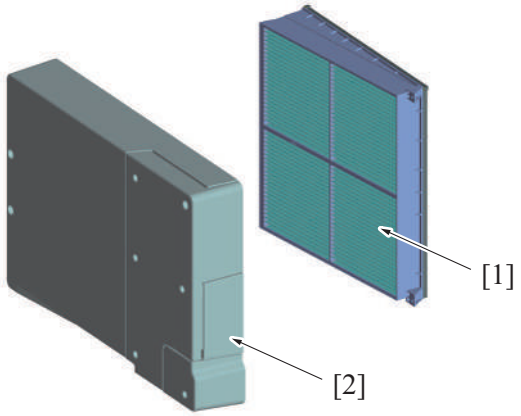
17.2 OPERATION

17.2.1 Exhaust control

- Ultrafine particles (UFP) and odor that is discharged from the machine are collected in the clean unit. UFP is purified through the UFP filter before being discharged from the machine.
  NOTE
  - **The UFP filter does not require a periodic replacement.**

17.2.2 Filter configuration

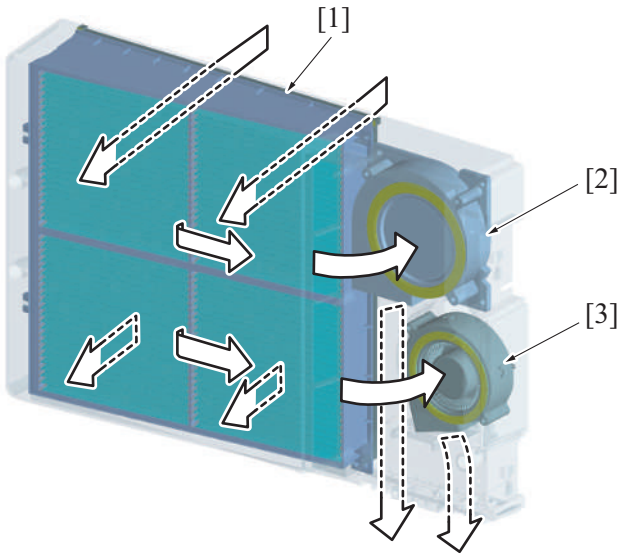
- The UFP filter is located in the clean unit.
- The UFP filter removes ultrafine particles (UFP) while the deodorant filter removes odor.



[1]	UFP filter	[2]	Exterior cover

17.2.3 Airflow

- Air from the main body is drawn into the clean unit.
- The exhaust fan/1 and exhaust fan/2 exhaust the drawn air outside the machine via the UFP filter.



[1]	UFP filter	[2]	Exhaust fan/1 (FM14)
[3]	Exhaust fan/2 (FM15)	-	-

17.2.4 Operation timing

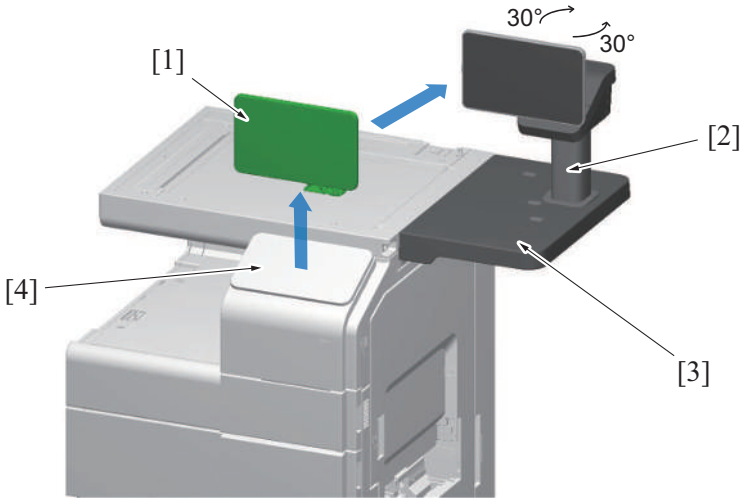
- The exhaust fan/1 and exhaust fan/2 are driven at the same time that the paper cooling fan of the machine is driven.
- If a clean unit is installed, perform the installation settings. [Service Mode] -> [System 2] -> [Cleaning Unit Setting]

	At warm-up	Standby	PC print
Paper cooling fan (FM8)	Full speed	Stop	Full speed
Exhaust fan/1 (FM14)			
Exhaust fan/2 (FM15)			

18. WT-519

18.1 CONFIGURATION

- Location of the MFP control panel is changed to the support column of the working table. Thus, higher work efficiency is realized in standing work for such as frequent scanning.
- The rotation angle of the control panel is 30 degrees in each of the left and right directions.
- Attach the cover that is supplied with the WT-519 to the MFP control panel.

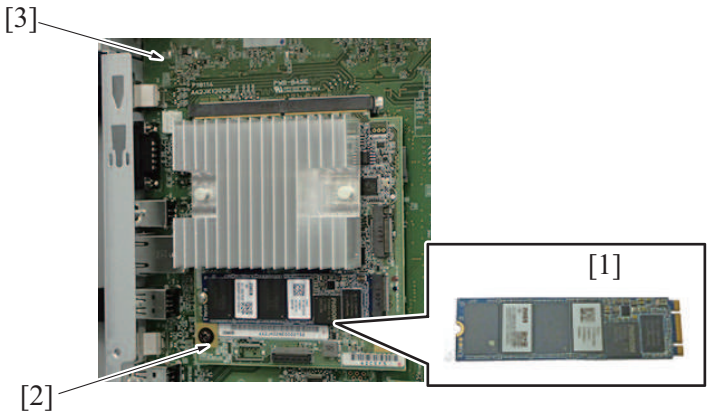


[1]	Control panel	[2]	Support column
[3]	Working table	[4]	Cover

19. EM-908

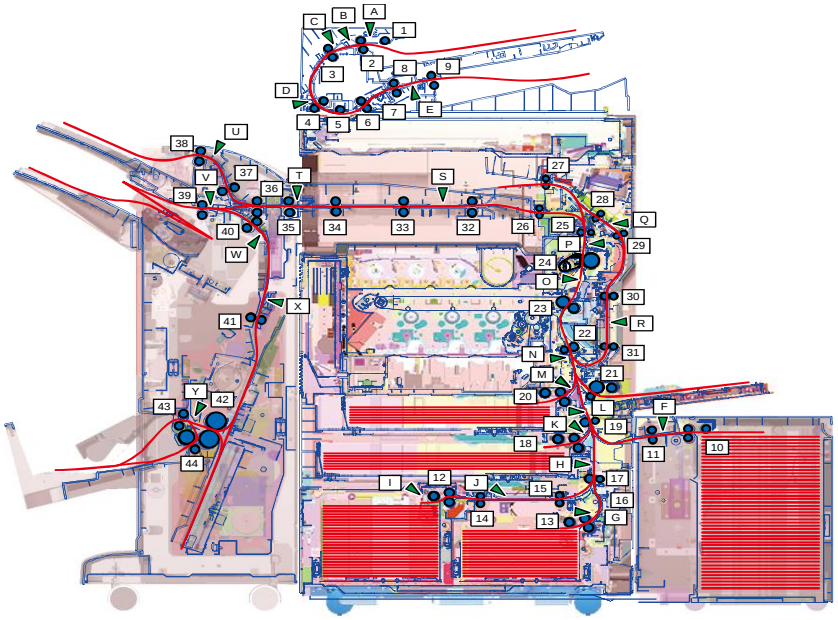
19.1 CONFIGURATION

- The Expanded Memory Unit EM-908 is mounted on the CPU board.
- By mounting the EM-908, it can be used as an internal storage of 1 TB.



[1]	Expanded Memory Unit (EM-908): 1 TB	[2]	CPU board (CPUB)
[3]	Base board (BASEB)	-	-

List of drive rollers and sensors (paper path)

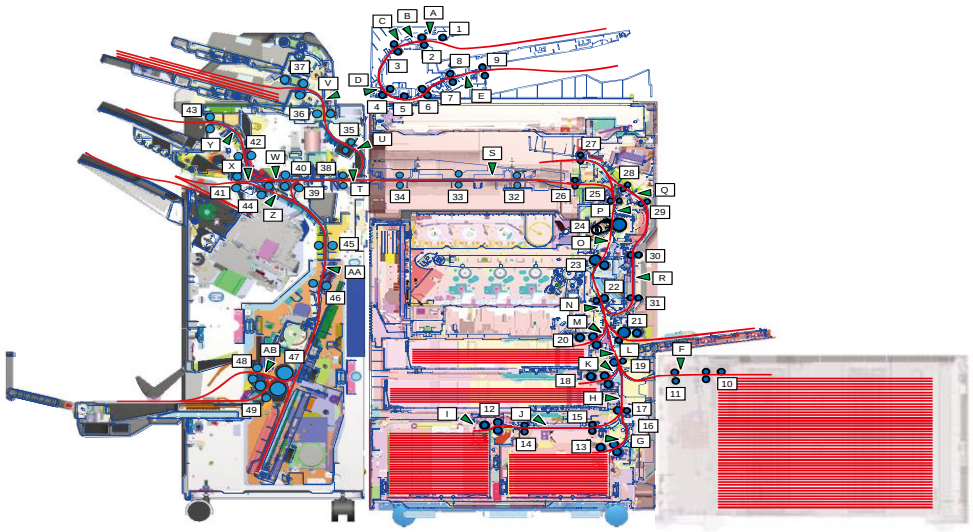


Code	Section	Sensor name
A	DF	document feed sensor (PS21)
B		after separate sensor (PS4)
C		document registration sensor (PS5)
D		document reading sensor (PS6)
E		document exit sensor (PS7)
F	LU	LU paper feed sensor (PS3)
G	Main body	tray4 paper feed sensor (PS122)
H		tray4 vertical transport sensor (PS123)
I		tray3 paper feed sensor (PS112)
J		tray3 vertical transport sensor (PS113)
K		tray2 paper feed sensor (PS20)
L		tray2 vertical transport sensor (PS19)
M		tray1 paper feed sensor (PS23)

Code	Section	Sensor name
N	Main body	registration sensor/1 (PS1)
O		registration sensor/2 (PS72)
P		fusing loop sensor (PS2)
Q		paper exit sensor (PS3)
R		ADU paper passage sensor/1 (PS40)
S	RU	ADU paper passage sensor/2 (PS41)
T	FS	RU entrance sensor (PS2)
U		FNS entrance sensor (PS4)
V		sub tray exit sensor (PS8)
W		main tray exit sensor (PS16)
X		saddle exit sensor (PS5)
Y		SD entrance sensor (PS101)
		fold exit sensor (PS112)

No.	Section	Roller name	Drive power source
1	DF	Document pick-up roller	document feed motor (M1), document feed clutch (CL1)
2		Document feed roller, Document separation roller	document feed motor (M1), document feed clutch (CL1)
3		Document registration roller, roll	document registration motor (M2)
4		Document reading roller 1, roll	document reading motor (M3)
5		Document reading glass cleaning brush	document reading glass cleaning motor (M8)
6		Document reading roller 2, roll	document reading motor (M3)
7		CIS cleaning brush	CIS cleaning motor (M7)
8		Document reading roller 3, roll	document reading motor (M3)
9		Document exit roller, roll	document exit motor (M4)
10	LU	Pick-up roller, Feed roller, Separation roller	LU paper feed motor (M2)
11		Transport roller	LU transport motor (M3)
12	Main body	Tray3 pick-up roller, paper feed roller, separation roller	transport motor (M152), tray3 paper feed clutch (CL151)
13		Tray4 pick-up roller, paper feed roller, separation roller	transport motor (M152), tray4 paper feed clutch (CL161)
14		Horizontal transport roller 1, roll	transport motor (M152), tray3 transport clutch (CL152)
15		Horizontal transport roller 2, roll	transport motor (M152), horizontal transport clutch (CL153)
16		Tray4 vertical transport roller, roll	intermediate motor (M151)
17		Vertical transport roller, roll	intermediate motor (M151)
18		Tray2 pick-up roller, paper feed roller, separation roller	paper feed motor (M22), tray2 paper feed clutch (CL1)
19		Tray2 vertical transport roller, roll	tray2 vertical transport motor (M23)
20		Tray1 pick-up roller, paper feed roller, separation roller	paper feed motor (M22)
21		Manual bypass tray pick-up roller, paper feed roller, separation roller	paper feed motor (M22), bypass tray paper feed clutch (CL7)
22		Registration roller	registration motor (M24)
23		2nd transfer roller	transport motor (M1)
24		Fusing pad, Fusing belt, Pressure roller	fusing motor (M3)
25		Exit tray front roller , roll	fusing motor (M3)
26		Paper exit roller, roll	fusing motor (M3)
27		Reverse roller, roll	paper exit/reverse motor (M4)
28		ADU transport roller 1, roll	ADU transport motor/1 (M5)
29		ADU transport roller 2, roll	ADU transport motor/1 (M5)
30		ADU transport roller 3, roll	ADU transport motor/2 (M26)
31		ADU transport roller 4, roll	ADU transport motor/2 (M26)
32	RU	RU section horizontal transport roller 1, transport roll 1	RU transport motor (M1)
33		RU section horizontal transport roller 2, transport roll 2	RU transport motor (M1)
34		RU section horizontal transport roller 3, transport roll 3	RU transport motor (M1)
35	FS	FNS entrance roller, roll	FNS entry transport motor (M2)
36		Transport roller, roll	FNS entry transport motor (M2)
37		Sub tray transport roller, roll	FNS discharge motor (M3)
38		Sub tray exit roller, roll	FNS discharge motor (M3)
39		Receiving roller, Receiving roll	FNS discharge motor (M3)
40		Saddle section exit roller, roll	FNS discharge motor (M3)
41		SD transport roller, roll	SD transport motor (M101)
42		Center folding roller 1, Center folding roller 2	center fold roller motor (M105)
43		Saddle section exit roller, roll	center fold roller motor (M105)
44		Tri-folding roller, roll	center fold roller motor (M105)

List of drive rollers and sensors (paper path)

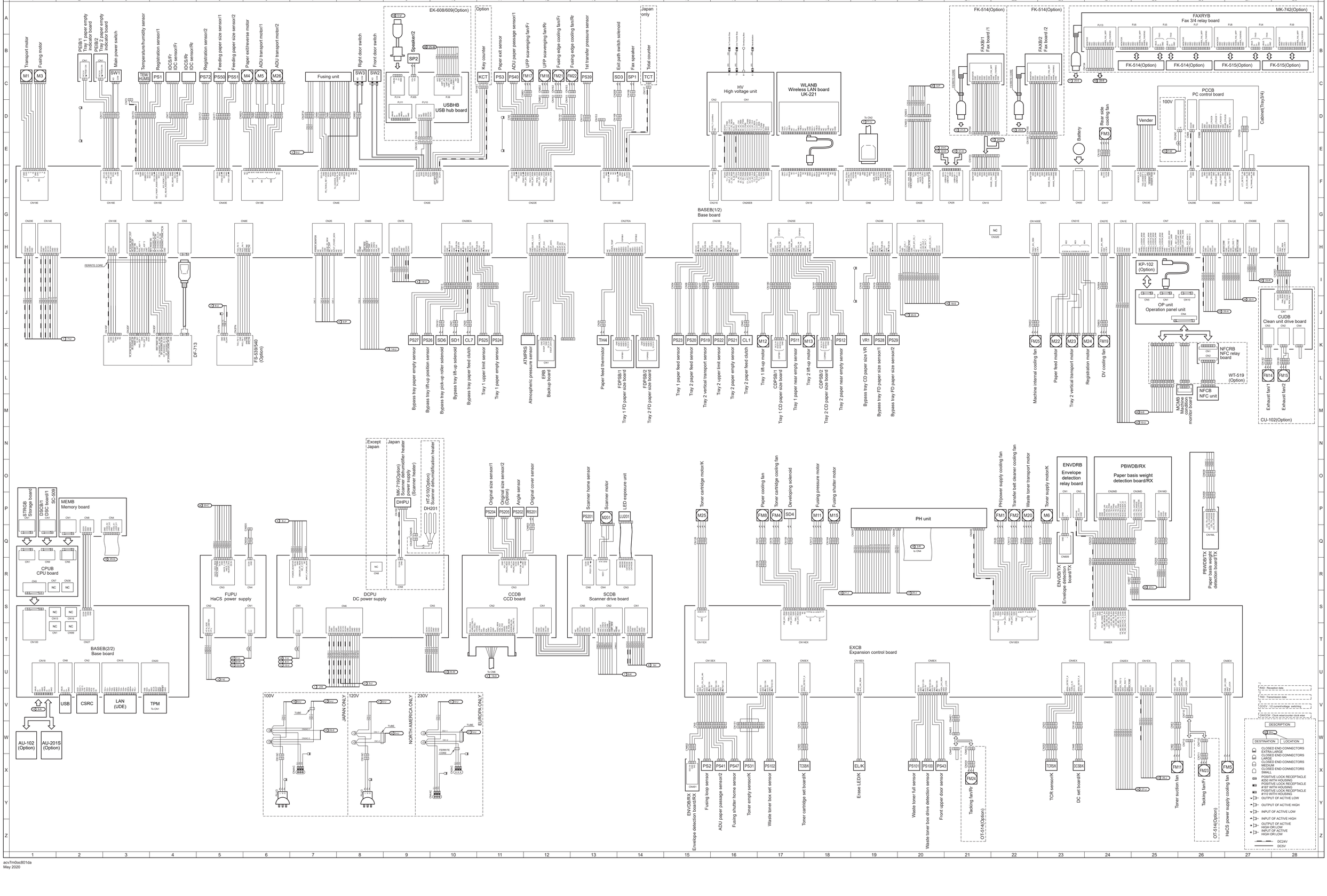


Code	Section	Sensor name
A	DF	document feed sensor (PS21)
B		after separate sensor (PS4)
C		document registration sensor (PS5)
D		document reading sensor (PS6)
E		document exit sensor (PS7)
F	LU	LU paper feed sensor (PS3)
G	Main body	tray4 paper feed sensor (PS122)
H		tray4 vertical transport sensor (PS123)
I		tray3 paper feed sensor (PS112)
J		tray3 vertical transport sensor (PS113)
K		tray2 paper feed sensor (PS20)
L		tray2 vertical transport sensor (PS19)
M		tray1 paper feed sensor (PS23)
N		registration sensor/1 (PS1)
		registration sensor/2 (PS72)

Code	Section	Sensor name
O	Main body	fusing loop sensor (PS2)
P		paper exit sensor (PS3)
Q		ADU paper passage sensor/1 (PS40)
R		ADU paper passage sensor/2 (PS41)
S	RU	RU entrance sensor (PS2)
T	FS	FNS entrance sensor (PS34)
U		PI discharge sensor (PS33)
V	PI	Paper entrance sensor /Lw (PS206)
W	FS	FNS middle sensor (PS36)
X		Main tray exit sensor (PS37)
Y		Sub tray exit sensor (PS24)
Z		SD discharge sensor (PS35)
AA		SD entrance sensor (PS101)
AB		Fold exit sensor (PS112)

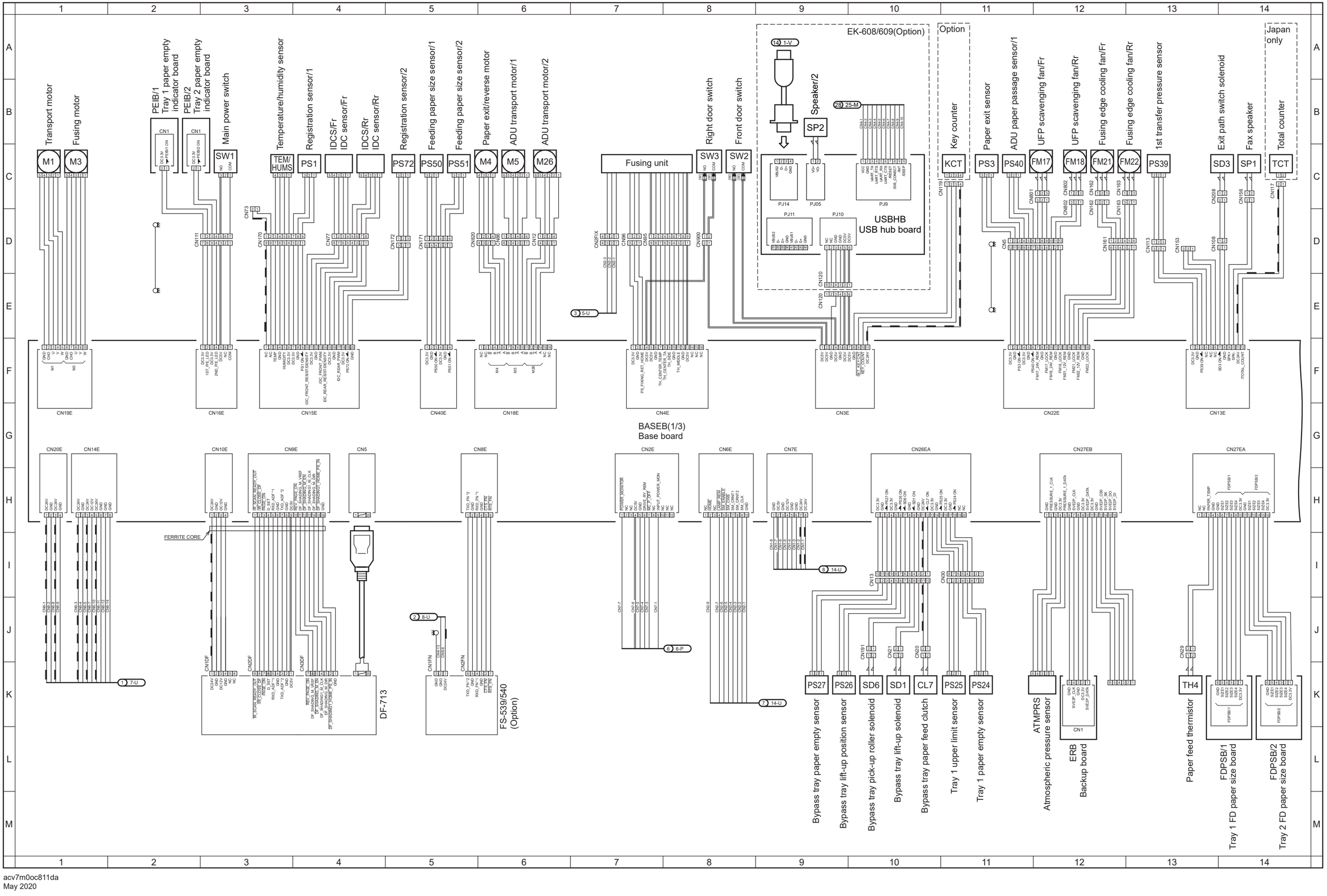
No.	Section	Roller name	Drive power source
1	DF	Document pick-up roller	document feed motor (M1), document feed clutch (CL1)
2		Document feed roller, Document separation roller	document feed motor (M1), document feed clutch (CL1)
3		Document registration roller, roll	document registration motor (M2)
4		Document reading roller 1, roll	document reading motor (M3)
5		Document reading glass cleaning brush	document reading glass cleaning motor (M8)
6		Document reading roller 2, roll	document reading motor (M3)
7		CIS cleaning brush	CIS cleaning motor (M7)
8		Document reading roller 3, roll	document reading motor (M3)
9		Document exit roller, roll	document exit motor (M4)
10	LU	Pick-up roller, Feed roller, Separation roller	LU paper feed motor (M2)
11		Transport roller	LU transport motor (M3)
12	Main body	Tray3 pick-up roller, paper feed roller, separation roller	transport motor (M152), tray3 paper feed clutch (CL151)
13		Tray4 pick-up roller, paper feed roller, separation roller	transport motor (M152), tray4 paper feed clutch (CL161)
14		Horizontal transport roller 1, roll	transport motor (M152), tray3 transport clutch (CL152)
15		Horizontal transport roller 2, roll	transport motor (M152), horizontal transport clutch (CL153)
16		Tray4 vertical transport roller, roll	intermediate motor (M151)
17		Vertical transport roller, roll	intermediate motor (M151)
18		Tray2 pick-up roller, paper feed roller, separation roller	paper feed motor (M22)、tray2 paper feed clutch (CL1)
19		Tray2 vertical transport roller, roll	tray2 vertical transport motor (M23)
20		Tray1 pick-up roller, paper feed roller, separation roller	paper feed motor (M22)
21		Manual bypass tray pick-up roller, paper feed roller,separation roller	paper feed motor (M22)、bypass tray paper feed clutch (CL7)
22		Registration roller	registration motor (M24)
23		2nd transfer roller	transport motor (M1)
24		Fusing pad, Fusing belt, Pressure roller	fusing motor (M3)
25		Exit tray front roller , roll	fusing motor (M3)
26		Paper exit roller, roll	fusing motor (M3)
27		Reverse roller, roll	paper exit/reverse motor (M4)
28		ADU transport roller 1, roll	ADU transport motor/1 (M5)
29		ADU transport roller 2, roll	ADU transport motor/1 (M5)
30		ADU transport roller 3, roll	ADU transport motor/2 (M26)
31		ADU transport roller 4, roll	ADU transport motor/2 (M26)
32	RU	RU section horizontal transport roller 1, transport roll 1	RU transport motor (M1)
33		RU section horizontal transport roller 2, transport roll 2	RU transport motor (M1)
34		RU section horizontal transport roller 3, transport roll 3	RU transport motor (M1)
35	FS	PI transport roller, PI transport roll	FNS Entry Transport Motor (M20)
36	PI	Transport roller /Lw, roll	Transfer motor (M203)
37		Pick-up roller/Lw, Paper feed roller/Lw, Separationroller/Lw	Transfer motor (M203), Transfer clutch /Lw (CL202)
38	FS	FNS entry roller, roll	FNS Entry Transport Motor (M20)
39		Z-fold roller (Z folding unit)	ZU transport motor (M500)
40		Transport roller 1/transport roller 2	ZU Discharge Motor (M21)、ZU transport motor (M500)
41		Receiving roller, Receiving roll	FNS Discharge Motor (M17)
42		Sub tray transport roller, roll	Sub tray discharge motor (M18)
43		Sub tray exit roller, roll	Sub tray discharge motor (M18)
44		Saddle section exit roller 1, roll	FNS Discharge Motor (M17)
45		Saddle section exit roller 2, roll	SD Discharge Motor (M16)
46		SD transport roller, roll	SD transport motor (M101)
47		Center folding roller 1, Center folding roller 2	Center fold roller motor (M105)
48		Saddle tray exit roller, roll	Center fold roller motor (M105)
49		Tri-folding roller, roll	Center fold roller motor (M105)

bizhub 750i Overall wiring diagram



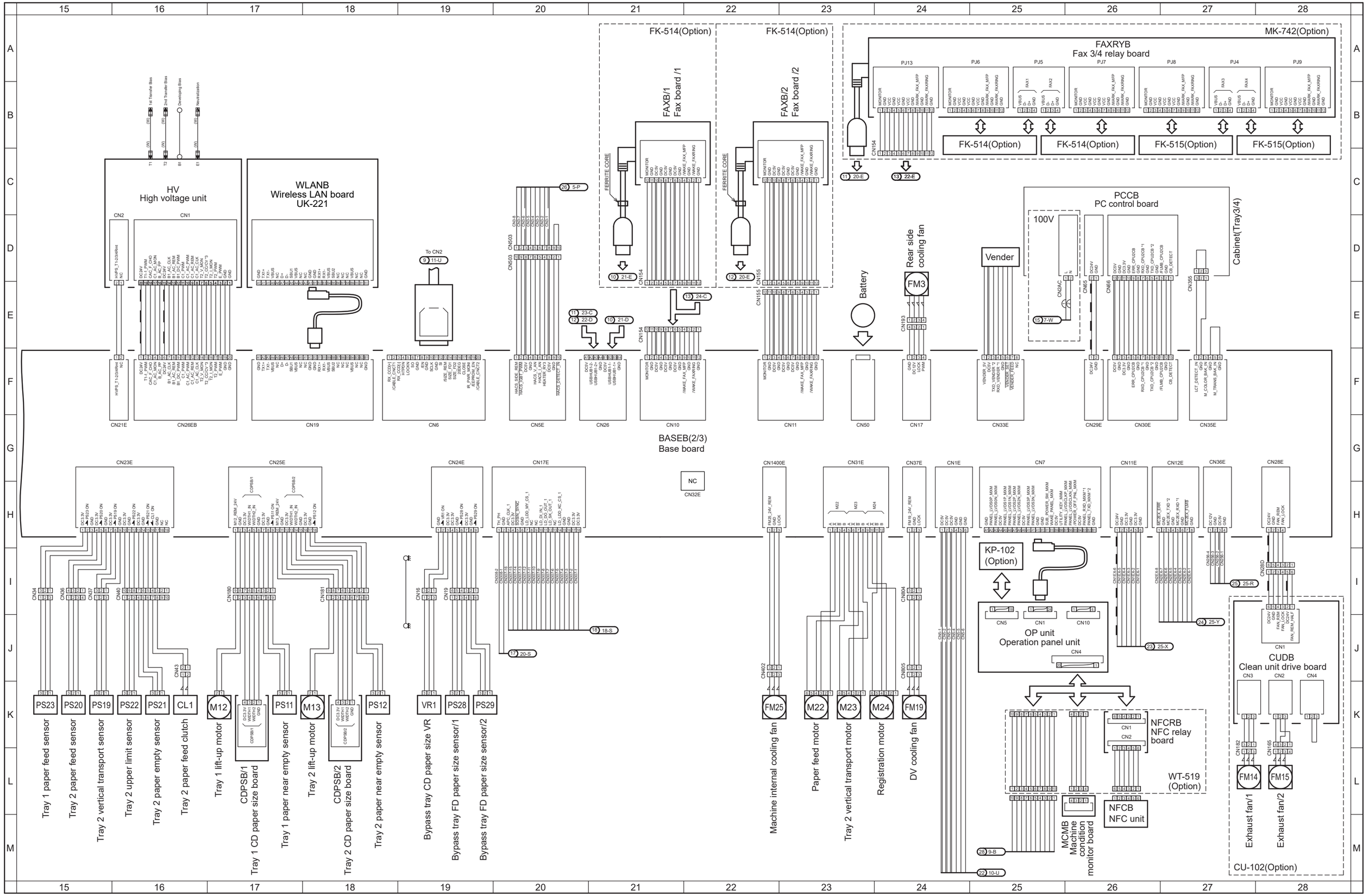
acv7m0oc801da
May 2020

bizhub 750i Overall wiring diagram 1/4



acv7m0oc811da
May 2020

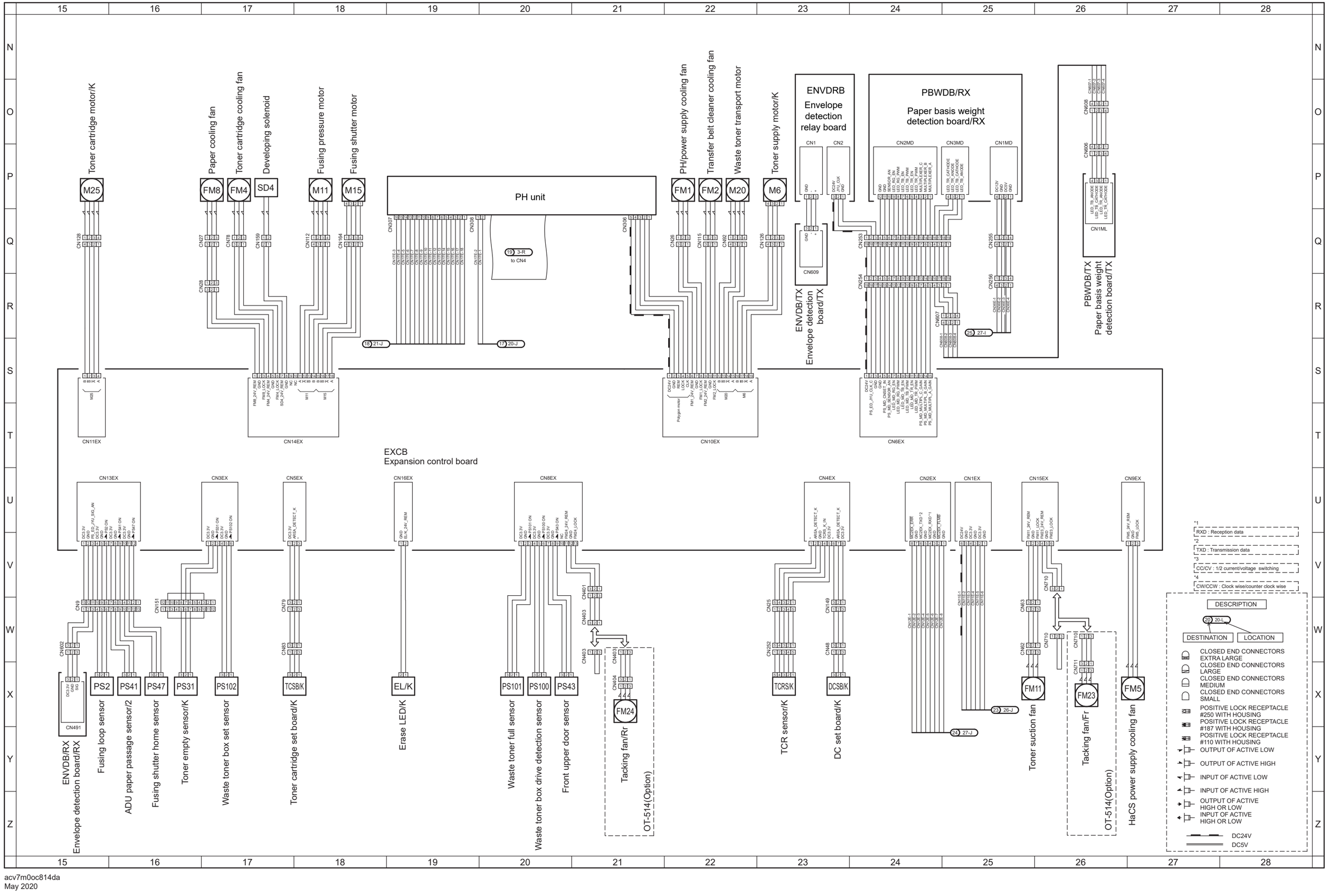
bizhub 750i Overall wiring diagram 2/4



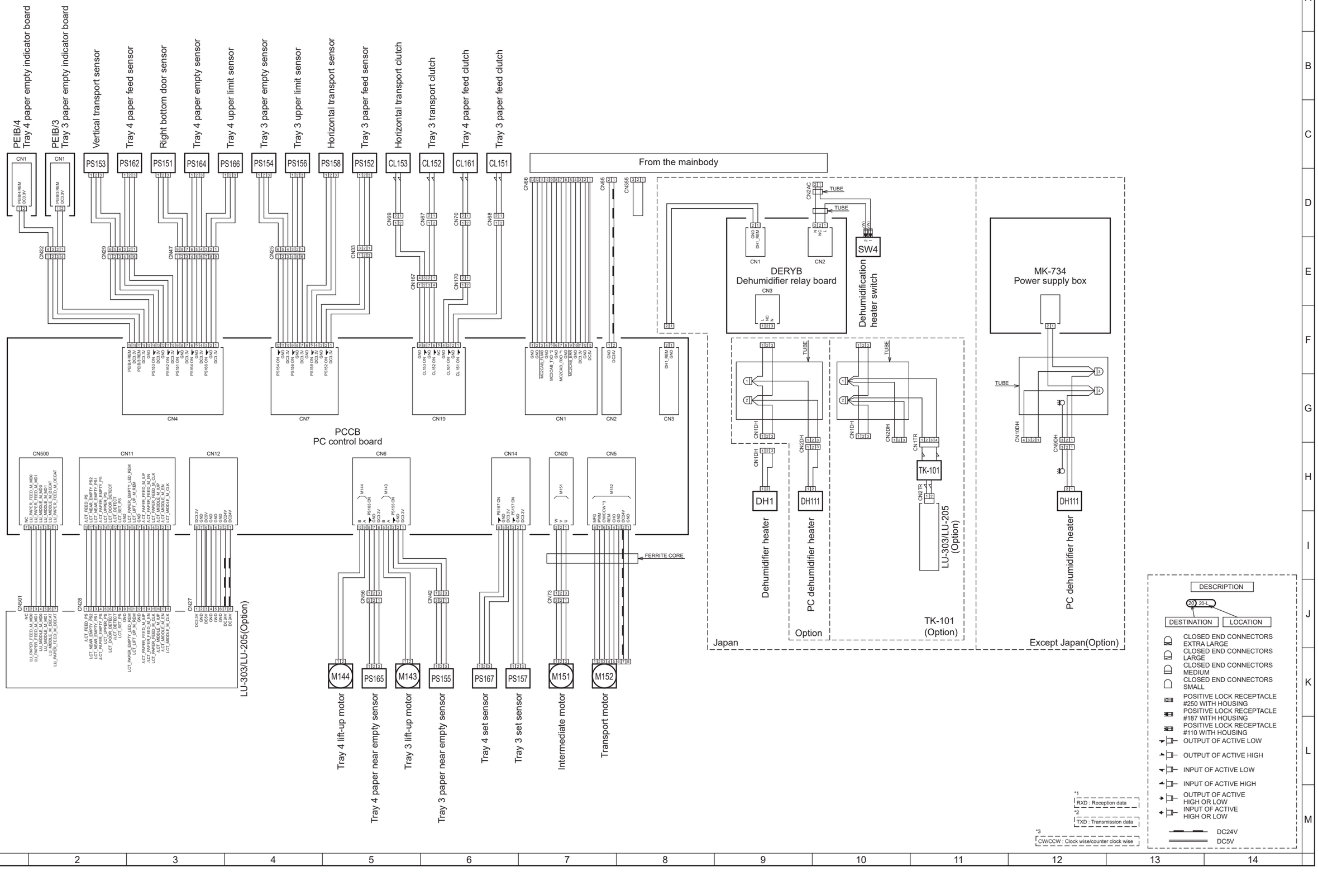
bizhub 750i Overall wiring diagram 3/4

STRGB Storage board
DSCB/1 DSC board/1 SC-509
MEMB Memory board
CPUB CPU board
BASEB(3/3) Base board
FUPU HaCS power supply
DCPU DC power supply
CCDB CCD board
SCDB Scanner drive board
Except Japan
Japan
MK-719(Option) Scanner dehumidifier heater power supply (Scanner heater)
HT-510(Option) Scanner dehumidification heater
Original size sensor/1
Original size sensor/2 (Option)
Angle sensor
Original cover sensor
Scanner home sensor
Scanner motor
LED exposure unit
100V
120V
230V
JAPAN ONLY
NORTH AMERICA ONLY
EUROPA ONLY
AU-102 (Option)
AU-201S (Option)
USB
CSRC
LAN (UDE)
TPM
To CN1

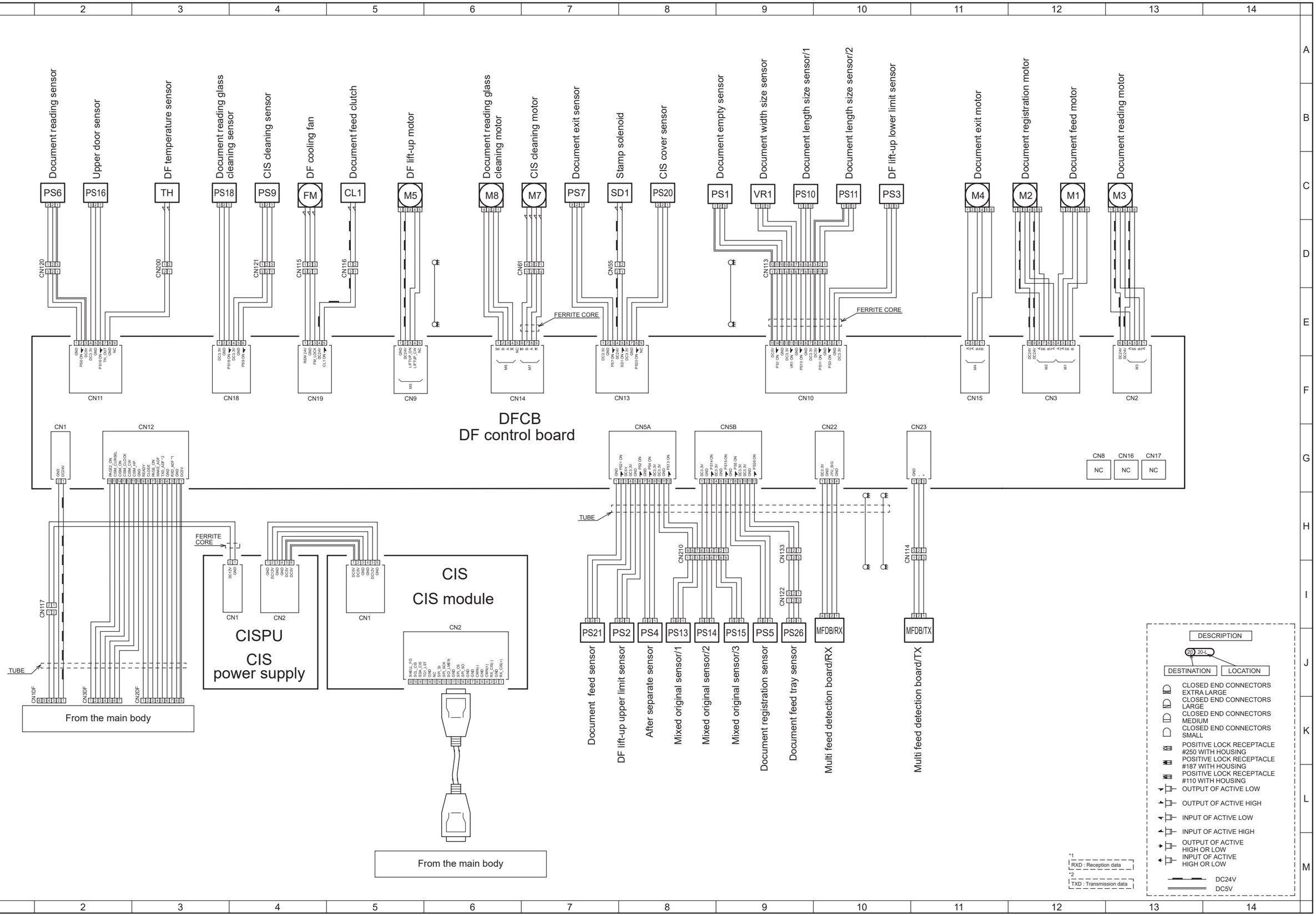
bizhub 750i Overall wiring diagram 4/4



Cabinet(Tray3/4) Overall wiring diagram

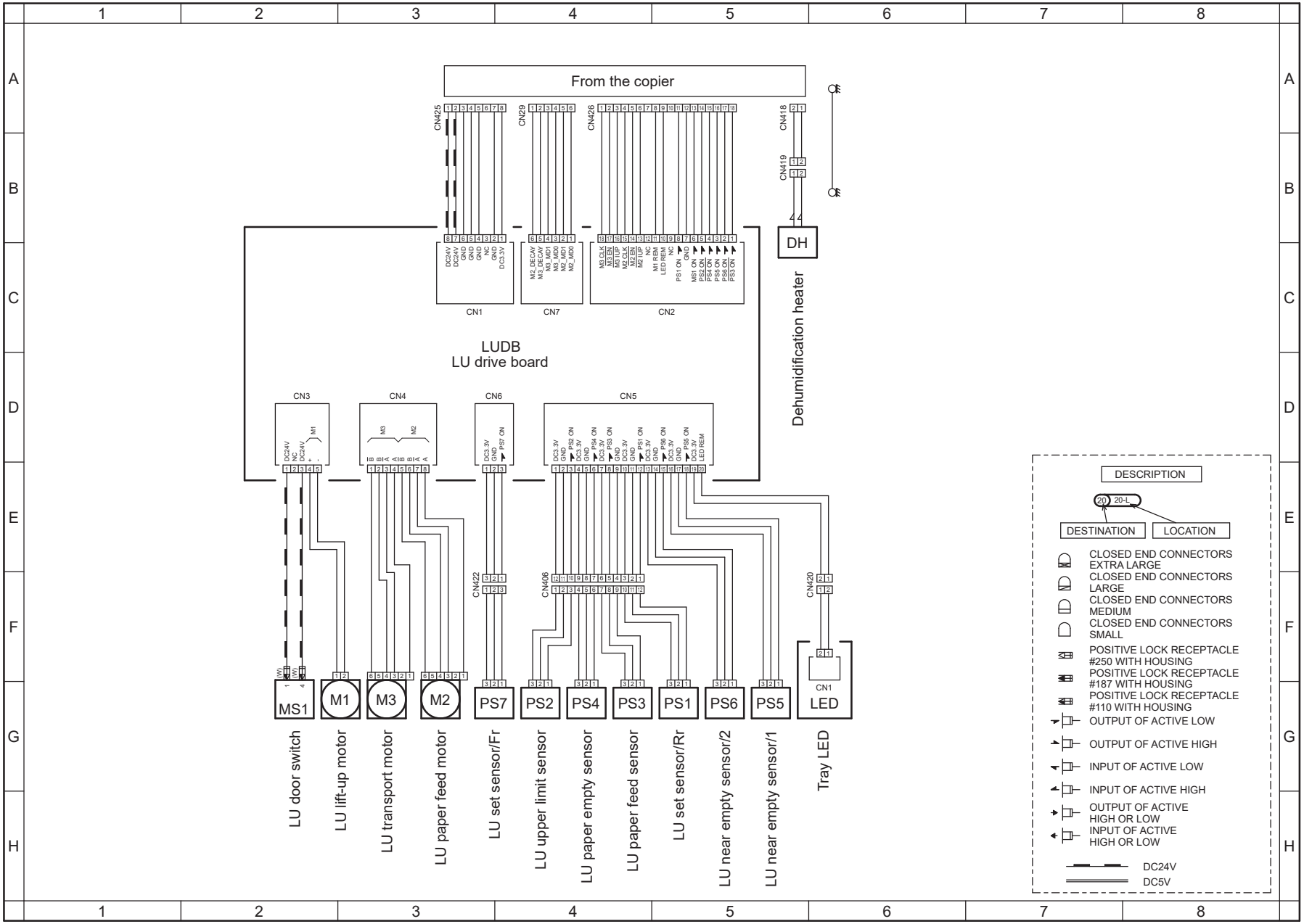


DF-713 Overall wiring diagram



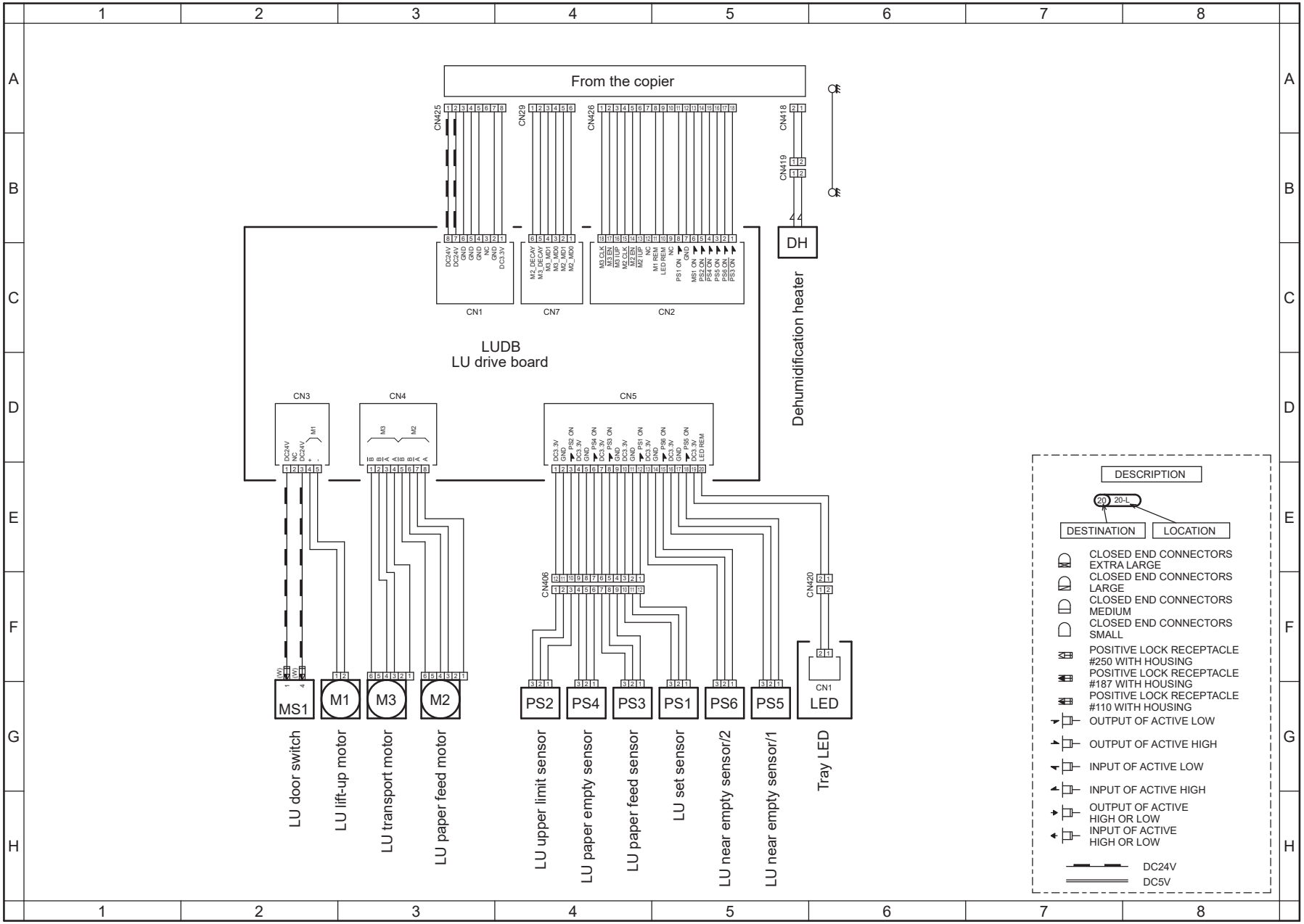
aampm0oc801da
Nov. 2019

LU-205 Overall wiring diagram



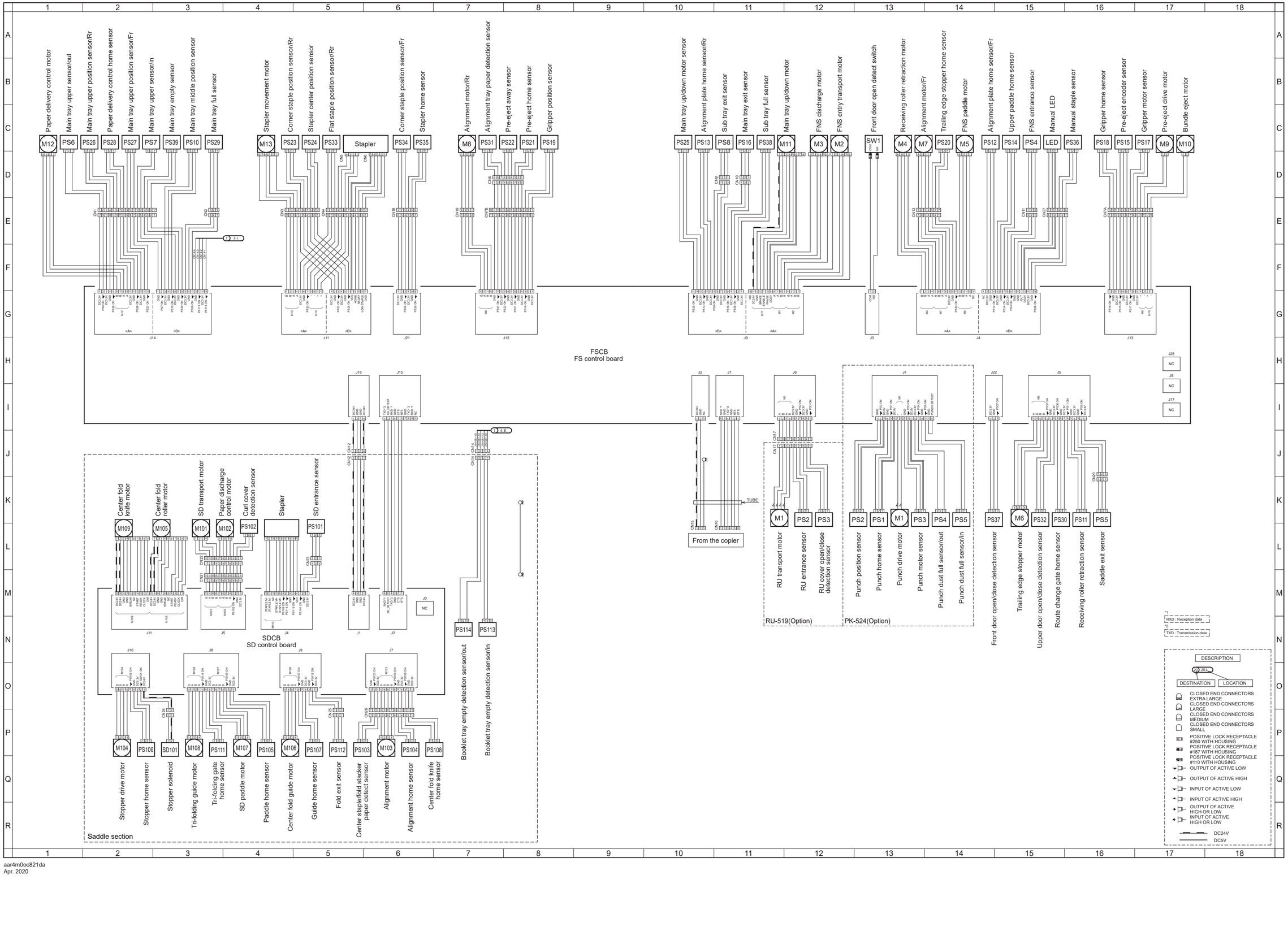
a8h7m0nc801db
Apr. 2020

LU-303 Overall wiring diagram

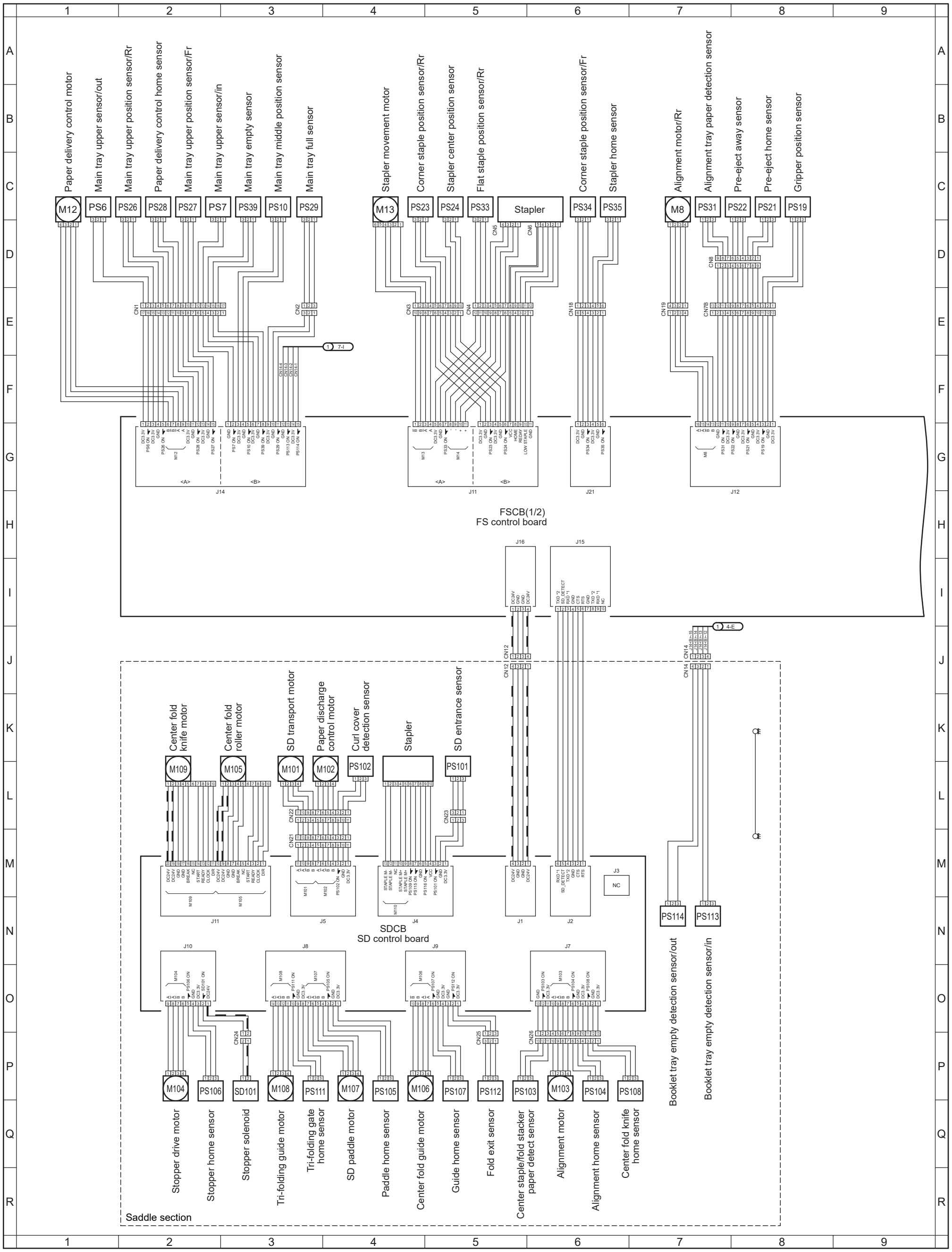


a8h6m0nc801db
Apr. 2020

FS-539/FS-539SD Overall wiring diagram

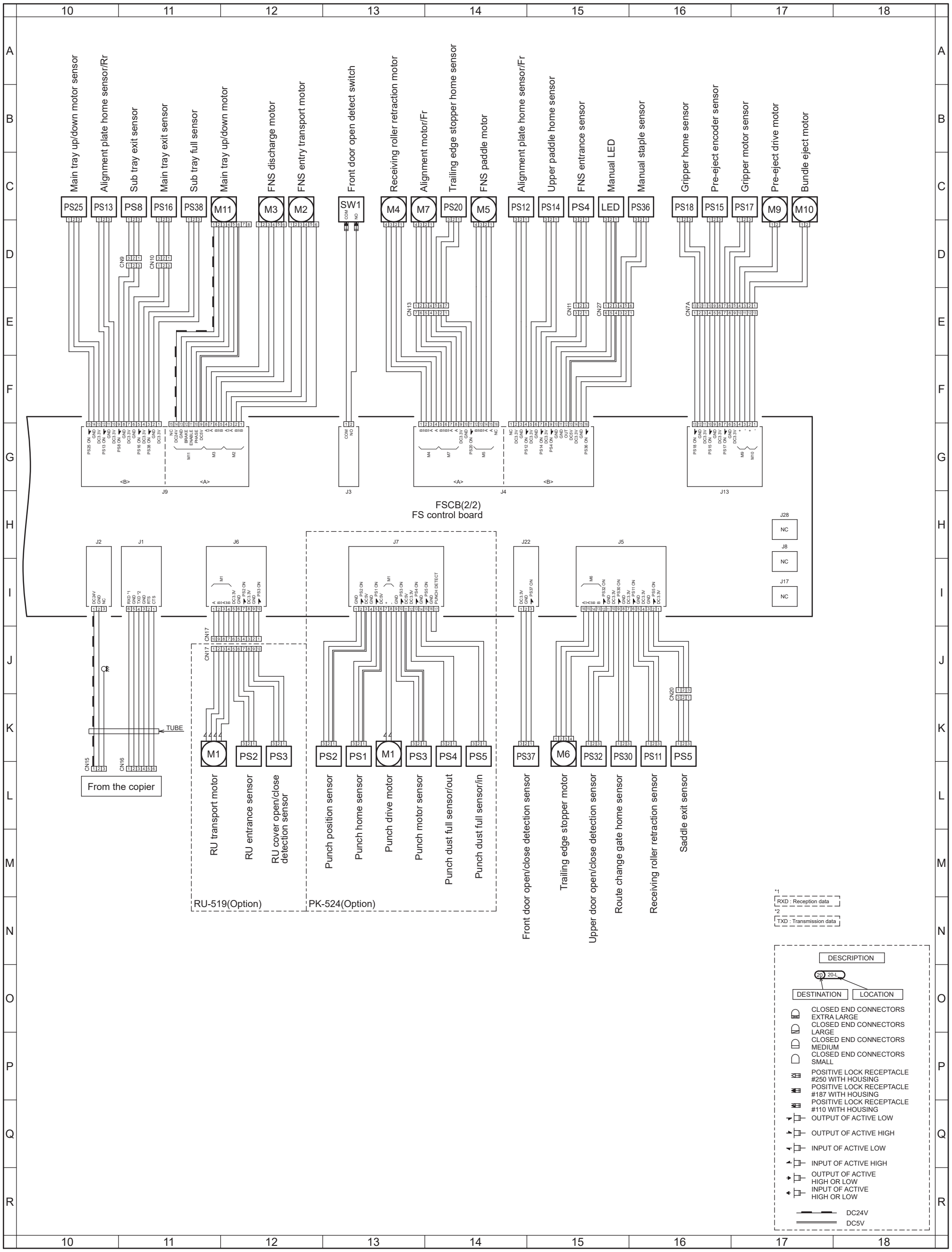


FS-539/FS-539SD Overall wiring diagram 1/2



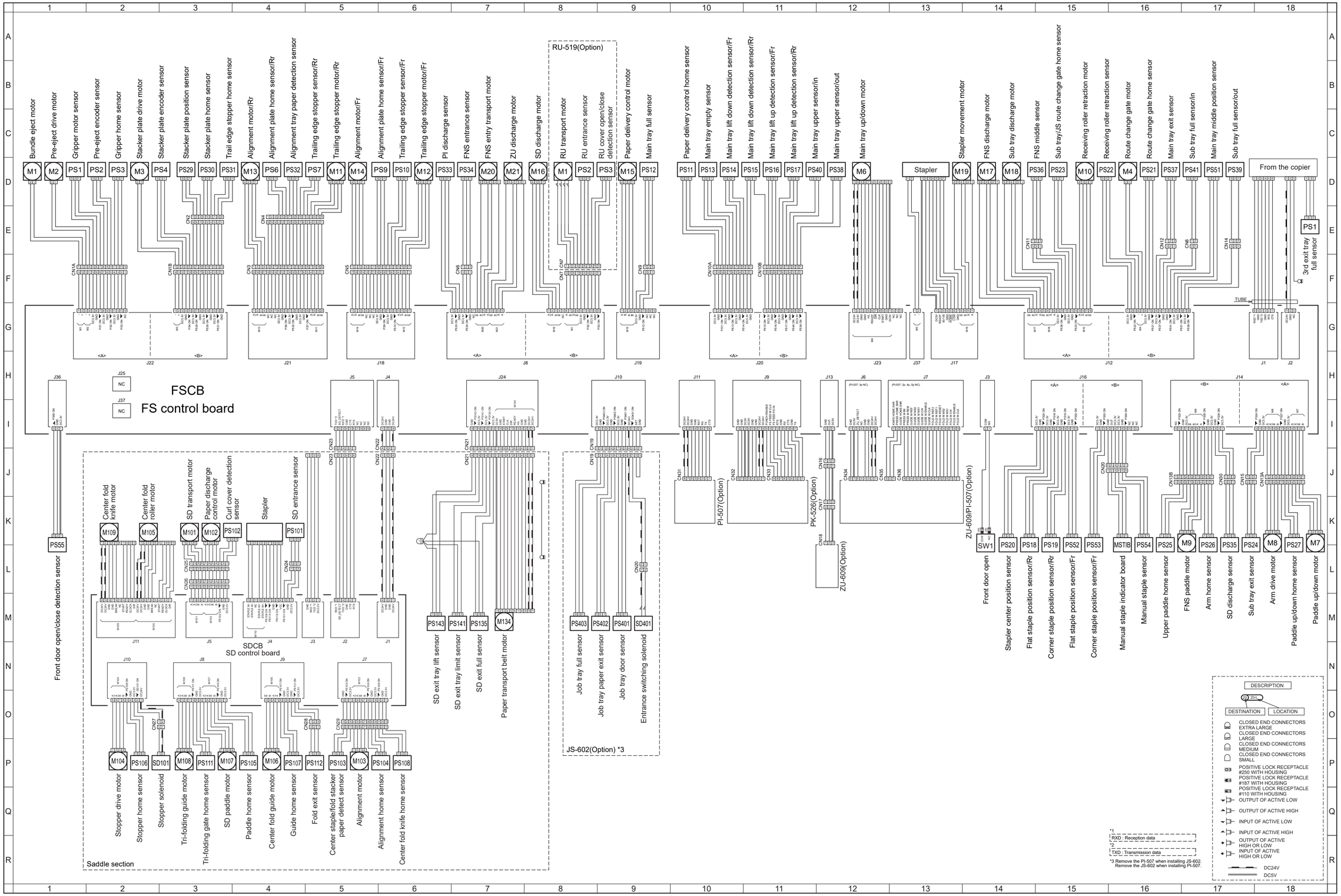
aar4m0oc822da
Apr. 2020

FS-539/FS-539SD Overall wiring diagram 2/2

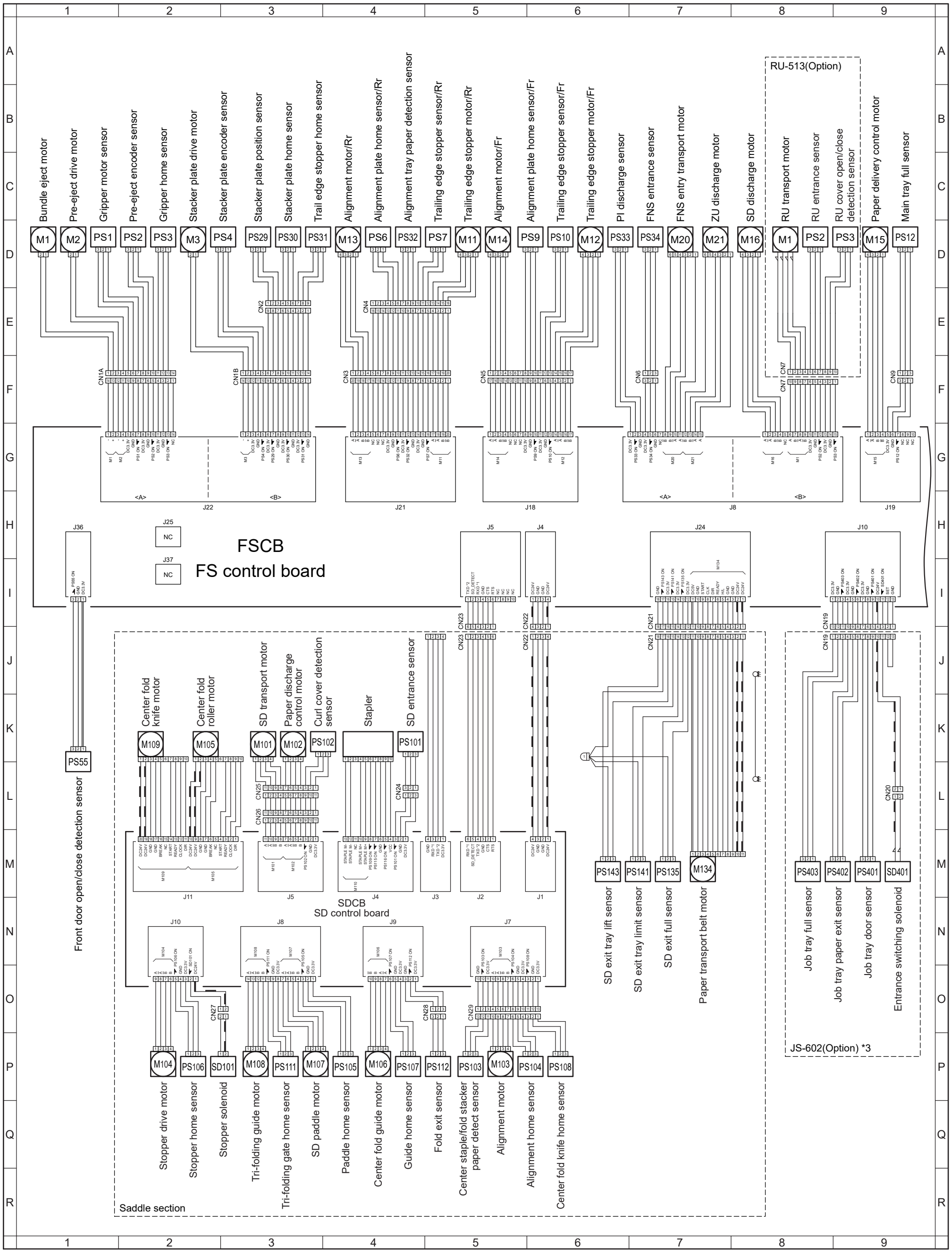


aar4m0oc823da
Apr. 2020

FS-540/FS-540SD Overall wiring diagram

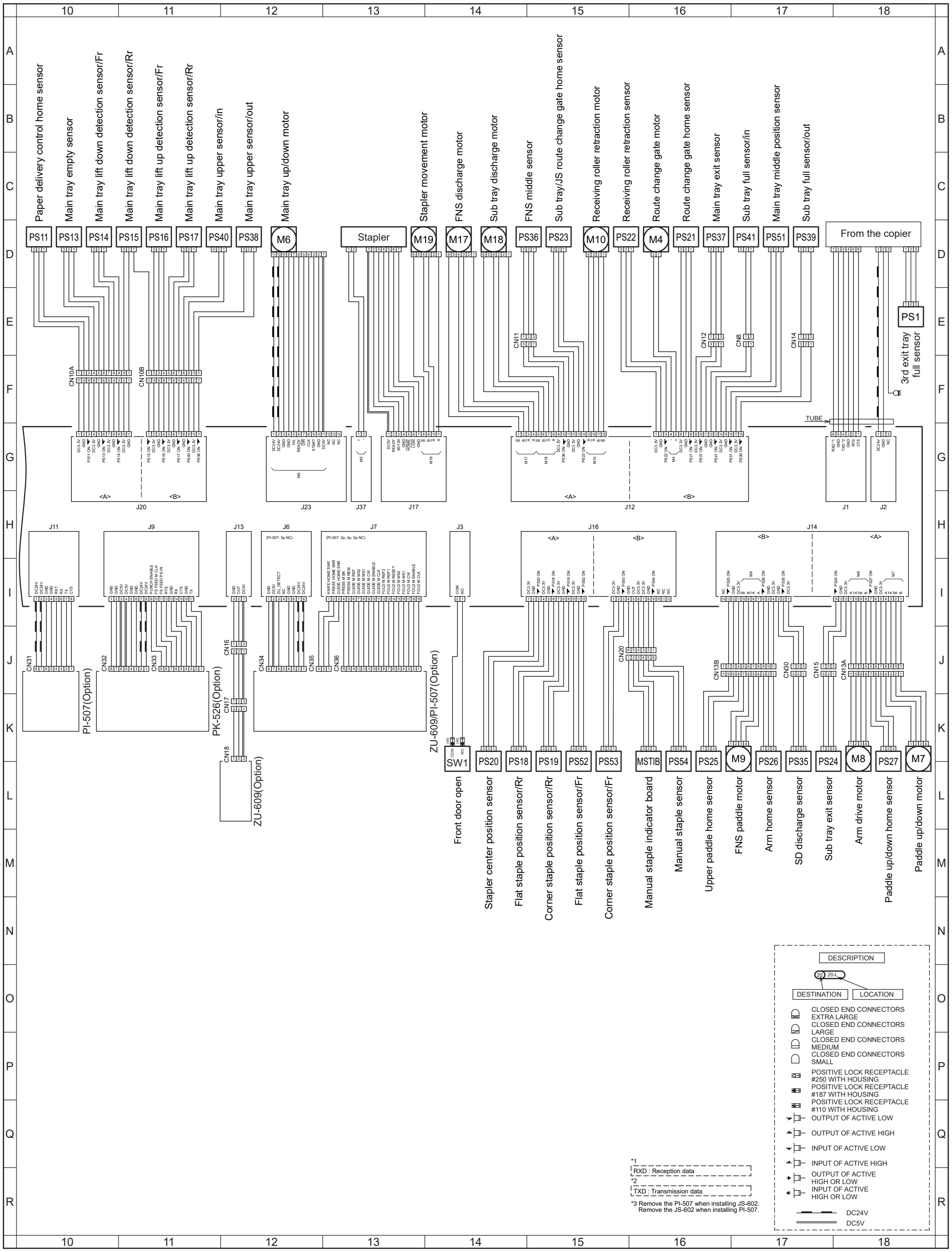


FS-540/FS-540SD Overall wiring diagram 1/2



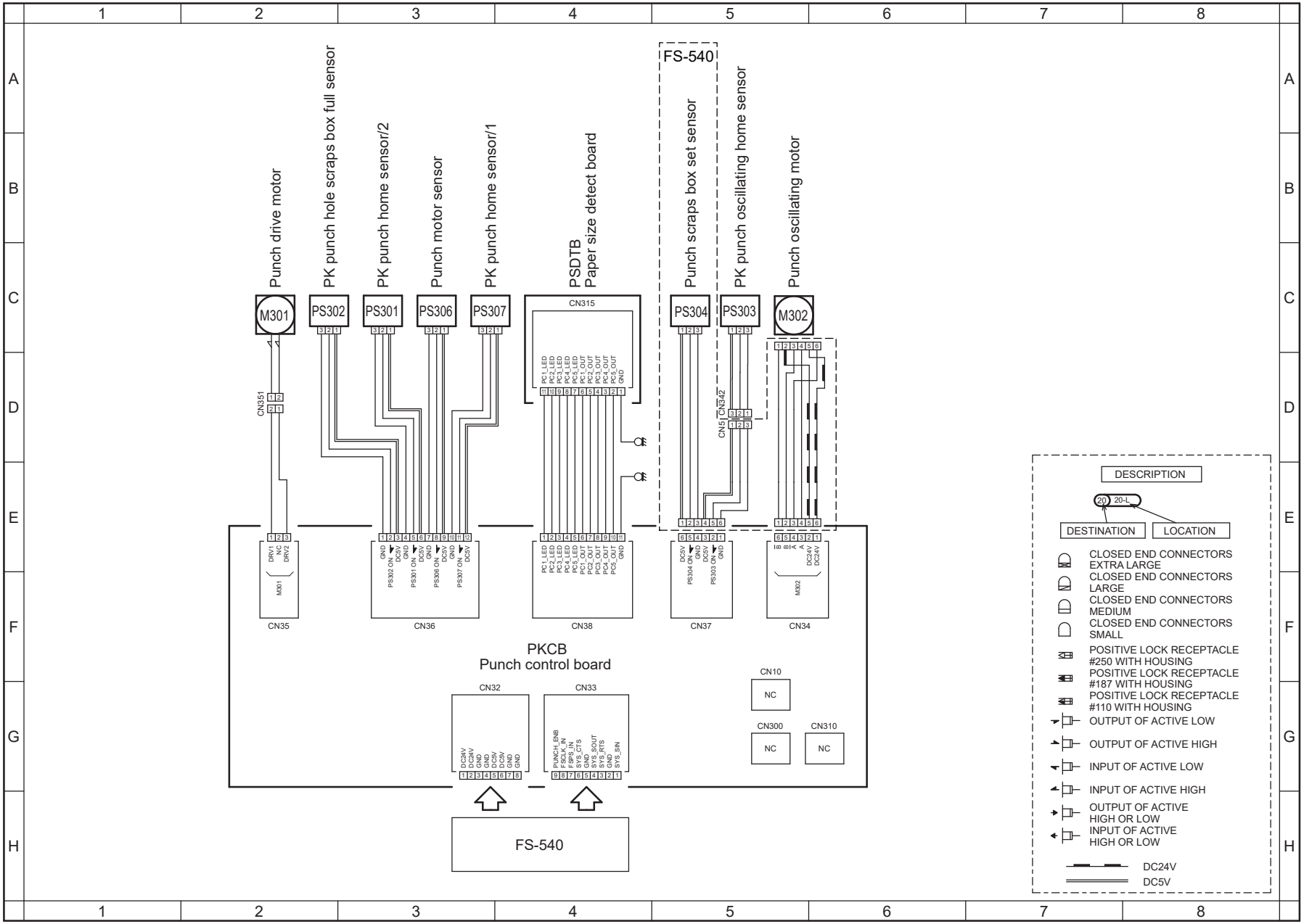
aar5m0oc822da
Apr. 2020

FS-540/FS-540SD Overall wiring diagram 2/2



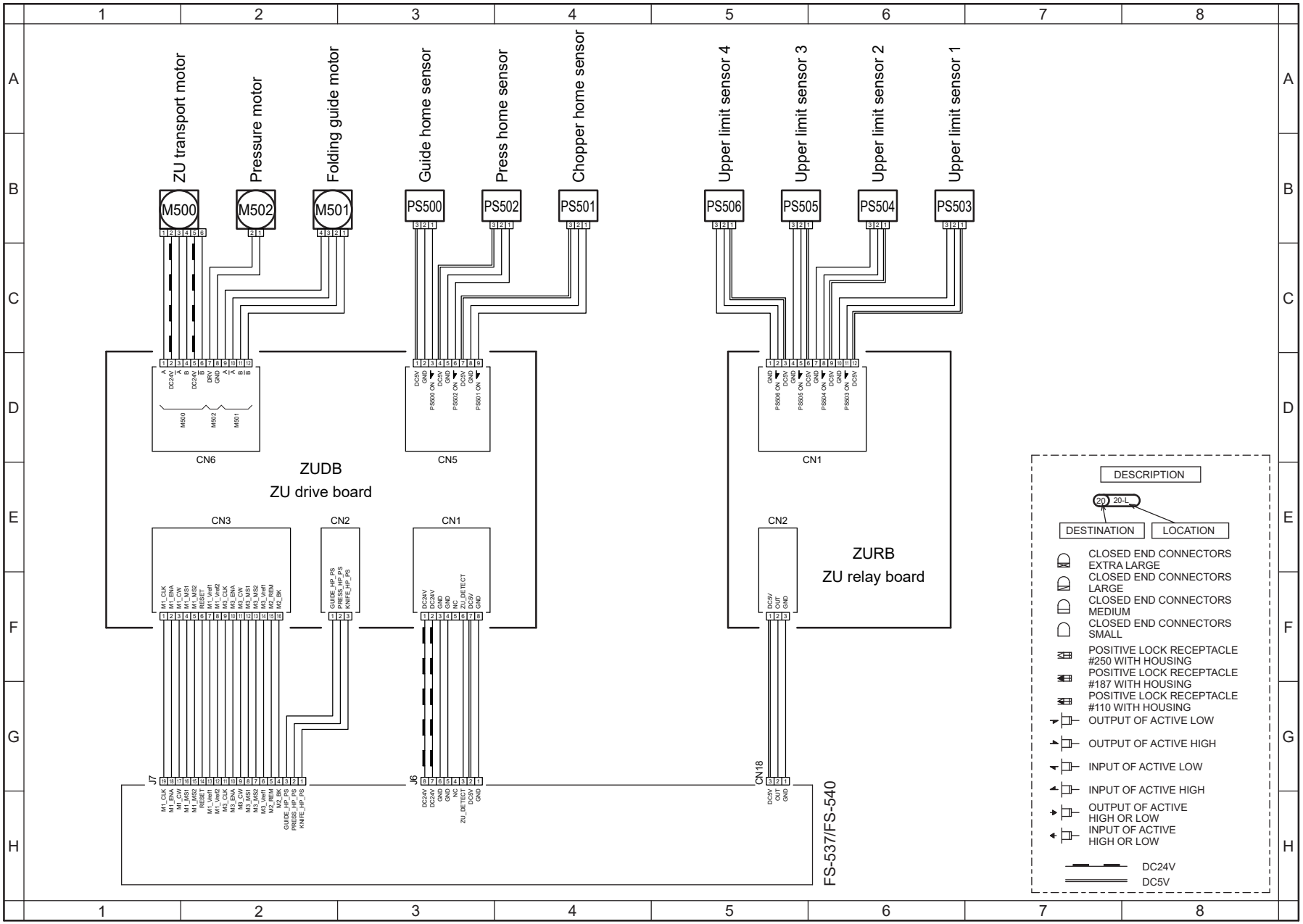
aar5m0oc823da
Apr. 2020

PK-526 Overall wiring diagram



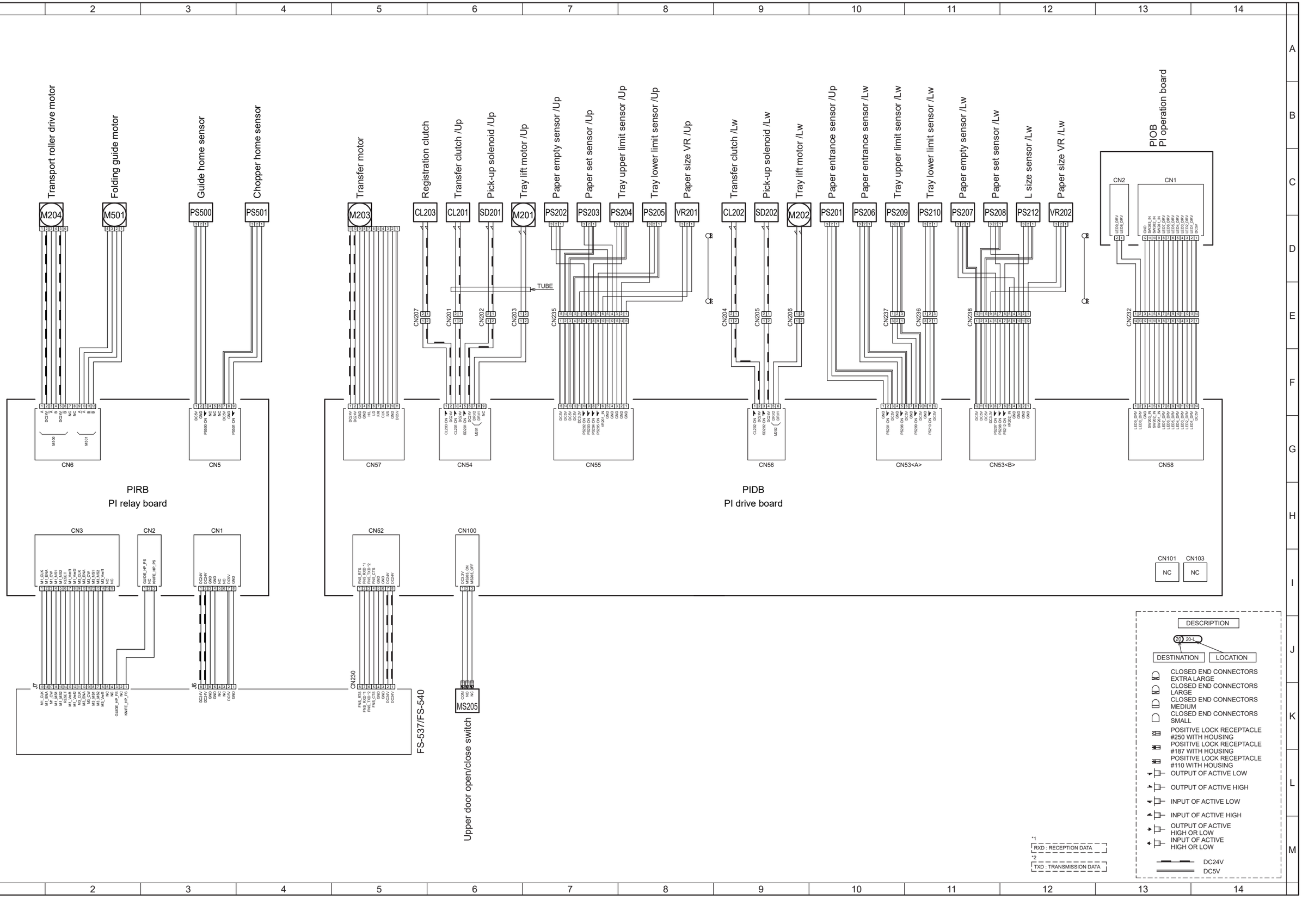
a99km0oc801da
Nov. 2019

ZU-609 Overall wiring diagram



a63gm0nc801db
Nov.2019

PI-507 Overall wiring diagram



a8c6m0nc801db
Nov.2019



© 2020 KONICA MINOLTA, INC.

Use of this manual should be strictly supervised to avoid disclosure of confidential information.