d-Color**MF257**

Multifunction Digital Copier

SERVICE MANUAL - VERSION 2.2

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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 OLIVETTI 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 d-Color MF257 ..... C-1
     - 1.1.1 Basic specifications C-1
     - 1.1.2 Paper C-2
     - 1.1.3 Print volume C-2
     - 1.1.4 Machine specifications 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-633 ..... C-5
   - 1.3 FS-539/FS-539SD C-7
   - 1.4 PK-524 ..... C-12
   - 1.5 FS-533 ..... C-12
   - 1.6 PK-519 ..... C-14
   - 1.7 JS-506 ..... C-15
   - 1.8 PC-118/PC-218 ..... C-16
   - 1.9 PC-418 ..... C-17
   - 1.10 CU-101 ..... C-17
   - 1.11 FK-513 ..... C-18
     - 1.11.1 Basic specifications C-18

1.12 i-Option C-18
1.12.1 Available function for i-Option C-18
2. OVERALL COMPOSITION C-20
2.1 SYSTEM CONFIGURATION C-20
2.1.1 System configuration C-20
2.1.2 Optional configuration C-20
2.2 SECTION CONFIGURATION C-21
2.3 PAPER PATH C-22
2.4 CONTROL BLOCK DIAGRAM C-22
2.5 IMAGE CREATION PROCESS C-23
2.6 IMAGE FORMING CONTROL C-24
D SERVICE TOOL D-1
1. Main unit tool 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
E MAINTENANCE E-1
1. Concept of maintenance E-1
2. Periodical replacement parts list E-2
2.1 d-Color MF257 ..... E-2
2.2 Reverse automatic document feeder (DF-633) E-2
2.3 PC-118 ..... E-3
2.4 PC-218 ..... E-3
2.5 PC-418 ..... E-3
2.6 FS-539/FS-539SD E-3
2.7 FS-533 ..... E-3
3. Periodical replacement procedure E-4
3.1 d-Color MF257 ..... 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 feed roller, manual bypass tray separation roller assy E-4
3.1.4 Replacing the toner cartridge E-5
3.1.5 Replacing the drum unit/K E-6
3.1.6 Replacing the developing unit/K E-8
3.1.7 Replacing the imaging unit/Y, M, C E-9
3.1.8 Replacing the waste toner box E-9
3.1.9 Replacing the transfer belt unit E-10
3.1.10 Replacing the transfer roller unit E-11
3.1.11 Replacing the fusing unit E-12
3.2 Reverse automatic document feeder (DF-633) E-13
3.2.1 Replacing the pick-up roller/feed roller E-13
3.2.2 Replacing the separation roller assy E-14
3.3 PC-118/PC-218 ..... E-15
3.3.1 Replacing the tray 3 feed roller, tray 3 pick-up roller, tray 3 separation roller E-15
3.3.2 Replacing the tray 4 feed roller, tray 4 pick-up roller, tray 4 separation roller E-15
3.4 PC-418 ..... E-16
3.4.1 Replacing the feed roller, pick-up roller, separation roller E-16
3.5 FS-539/FS-539SD E-16
3.5.1 Replacing the paddle E-16
3.5.2 Replacing the upper paddle (saddle section) E-17
3.5.3 Replacing the lower paddle (saddle section) E-19
3.6 FS-533 ..... E-19
3.6.1 Replacing the alignment roller assy F/R E-19
4. Cleaning parts list E-21
4.1 d-Color MF257 ..... E-21
4.2 Reverse automatic document feeder (DF-633) E-21
4.3 PC-118/PC-218 ..... E-21
4.4 PC-418 ..... E-22
4.5 FS-539/FS-539SD E-22
4.6 FS-533 ..... E-22
5. Cleaning/Lubrication procedure E-23

5.1 d-Color MF257 ..... E-23
5.1.1 Cleaning of the image transfer entrance guide E-23
5.1.2 Cleaning of the IDC sensor window E-23
5.1.3 Cleaning of the area around the waste toner collecting port E-23
5.1.4 Cleaning of the registration roller E-23
5.1.5 Cleaning of the duplex transport rollers E-24
5.1.6 Transfer belt unit E-24
5.1.7 PH window E-24
5.1.8 Tray 1 feed roller, tray 1 pick-up roller, tray 1 separation roller E-24
5.1.9 Tray 2 feed roller, tray 2 pick-up roller, tray 2 separation roller E-25
5.1.10 Tray 2 transport roller E-25
5.1.11 Manual bypass tray feed roller E-25
5.1.12 Manual bypass tray separation roller E-26
5.1.13 Original glass E-26
5.1.14 Rod lens array E-26
5.1.15 Slide rail E-27
5.2 Reverse automatic document feeder (DF-633) E-27
5.2.1 Cleaning of the pick-up roller/feed roller E-27
5.2.2 Cleaning of the separation roller E-28
5.2.3 Cleaning of the miscellaneous rollers E-28
5.2.4 Cleaning of the miscellaneous rolls E-29
5.2.5 Cleaning of the scanning guide E-29
5.2.6 Cleaning of the reflective sensor section E-30
5.3 PC-118/PC-218 ..... E-30
5.3.1 Tray 3 feed roller, tray 3 pick-up roller, tray 3 separation roller E-30
5.3.2 Tray 4 feed roller, tray 4 pick-up roller, tray 4 separation roller E-30
5.3.3 Tray 3 vertical transport roller, tray 4 vertical transport roller E-31
5.4 PC-418 ..... E-31
5.4.1 Feed roller, Pick-up roller, Separation roller E-31
5.4.2 Vertical transport roller E-31
5.5 FS-539/FS-539SD E-31
5.5.1 Cleaning roller and rolls E-32
5.5.2 Cleaning the paddle E-32
5.5.3 Cleaning the upper paddle (saddle section) E-32
5.5.4 Cleaning the lower paddles (saddle section) E-33
5.5.5 Cleaning the FNS entrance sensor (PS4) E-33
5.5.6 Cleaning the main tray exit sensor (PS16) E-34
5.6 FS-533 ..... E-35
5.6.1 Cleaning procedure for each parts E-35
5.6.2 Cleaning the paper exit paddles E-35

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-3
2.1 PH unit F-3
2.1.1 Reason for prohibition F-3
2.2 Fusing unit F-3
2.2.1 Reason for prohibition F-3

3. Disassembly/assembly warning/caution items F-4
3.1 Removal/installing of PWBs F-4

4. Notes when transporting the machine F-5
4.1 Protective materials F-5
4.1.1 Protective materials for the photoconductors F-5
4.1.2 Transfer roller locking materials F-5

5. d-Color MF257 ..... F-6
5.1 Exterior parts F-6
5.1.1 Control panel left cover F-6
5.1.2 Control panel unit F-6
5.1.3 Original glass assy F-7
5.1.4 Front door F-8

5.1.5 Front lower cover F-8
5.1.6 Front cover F-8
5.1.7 Left cover F-9
5.1.8 Exit tray F-9
5.1.9 Exit cover F-9
5.1.10 Upper right cover F-10
5.1.11 Rear right cover F-10
5.1.12 Upper rear cover F-10
5.1.13 Lower rear cover F-11
5.1.14 Tray 1 ..... F-11
5.1.15 Tray 2 ..... F-11
5.2 Units F-11
5.2.1 Paper feed unit F-11
5.2.2 PH unit F-12
5.2.3 Sub hopper unit F-13
5.2.4 Right door unit F-14
5.2.5 Manual bypass tray unit F-15
5.2.6 Inner door unit F-16
5.2.7 Main drive unit F-17
5.2.8 Transport unit F-19
5.2.9 Fusing drive unit F-20
5.2.10 Contact image sensor (CIS) F-20
5.2.11 Toner cartridge drive assy F-21
5.2.12 Exit/reverse unit F-22
5.3 Boards F-23
5.3.1 Base board (BASEB) F-23
5.3.2 Storage board (STRGB) F-25
5.3.3 CPU board (CPUB) F-26
5.3.4 Backup board(ERB) F-28
5.3.5 TPM board (TPMB) F-29
5.3.6 DC power supply (DCPU) F-30
5.3.7 High voltage unit (HV) F-31
5.3.8 microSD card F-31
5.4 Motors F-33
5.4.1 Transport motor (M1) F-33
5.4.2 IU motor (M2) F-33
5.4.3 Fusing motor (M3) F-33
5.4.4 Paper exit/reverse motor (M4) F-34
5.4.5 ADU transport motor (M5) F-35
5.4.6 Toner supply motor/C, K (M7) F-36
5.4.7 Toner supply motor/Y, M (M9) F-36
5.4.8 Toner cartridge motor (M10) F-37
5.4.9 Tray 1 lift-up motor (M12) F-37
5.4.10 Tray 2 lift-up motor (M13) F-37
5.4.11 Scanner motor (M201) F-38
5.5 Clutches F-39
5.5.1 Tray 2 paper feed clutch (CL1) F-39
5.5.2 Tray 2 vertical transport clutch (CL2) F-39
5.5.3 Tray 1 paper feed clutch (CL3) F-40
5.5.4 Registration clutch (CL4) F-40
5.5.5 1st transfer pressure clutch (CL5) F-41
5.5.6 Bypass paper feed clutch (CL7) F-41
5.6 Fans F-42
5.6.1 Power supply cooling fan (FM1) F-42
5.6.2 Transfer belt cleaner cooling fan (FM2) F-42
5.6.3 Rear side cooling fan (FM3) F-43
5.6.4 Paper cooling fan (FM8) F-44
5.7 Others F-44
5.7.1 Bypass pick-up solenoid (SD1) F-44
5.7.2 Bypass CD paper size VR (VR1) F-45
5.7.3 FAX speaker (SP1) F-47
5.7.4 UFP filter/ Deodorant filter F-47
5.7.5 Harness guide F-49
5.7.6 Board box F-49
5.7.7 IDC sensor F-50

6. Commercially available parts F-52
6.1 Installing the original size sensor/2 (Option) F-52

7. Reverse automatic document feeder (DF-633) F-53
7.1 Front cover (DF-633) F-53
7.2 Rear cover (DF-633) F-53
7.3 Document feed tray (DF-633) F-53
7.4 Reverse automatic document feeder (DF-633) F-54
7.5 Document feed unit (DF-633) F-55
7.6 Document feed motor assy (DF-633) F-56
7.7 DF control board (DFCB) (DF-633) F-57
7.8 Document feed motor (M1) (DF-633) F-57
7.9 Document feed clutch (CL1) (DF-633) F-58
7.10 Document registration clutch (CL2) (DF-633) F-58
8. PC-118/PC-218 ..... F-59
8.1 Rear right cover (PC-118/PC-218) F-59
8.2 Rear cover (PC-118/PC-218) F-59
8.3 Tray 3, Tray 4 (PC-118/PC-218) F-59
8.4 Paper feed cabinet (PC-118/PC-218) F-60
8.5 Tray 3 paper feed unit (PC-118/PC-218) F-61
8.6 Tray 4 paper feed unit (PC-218) F-62
8.7 PC control board (PCCB) (PC-118/PC-218) F-63
8.8 Tray 3 FD paper size board (FDPSB/3), tray 4 FD paper size board (FDPSB/4) (PC-118/PC-218) F-63
8.9 Tray 3 CD paper size board (CDPSB/3) (PC-118/PC-218) F-64
8.10 Tray 4 CD paper size board (CDPSB/4) (PC-218) F-64
8.11 Tray 3 paper feed motor (M111), tray 4 paper feed motor (M121) (PC-118/PC-218) F-65
8.12 Tray 3 vertical transport motor (M112), tray 4 vertical transport motor (M122) (PC-118/PC-218) F-65
8.13 Tray 3 lift-up motor (M113), tray 4 lift-up motor (M123) (PC-118/PC-218) F-66
9. PC-418 ..... F-67
9.1 Rear right cover (PC-418) F-67
9.2 Rear cover (PC-418) F-67
9.3 Paper feed tray (PC-418) F-67
9.4 Paper feed cabinet (PC-418) F-68
9.5 Paper feed unit (PC-418) F-69
9.6 PC control board (PCCB) (PC-418) F-70
9.7 Paper feed motor (M131) (PC-418) F-70
9.8 Vertical transport motor (M132) (PC-418) F-70
9.9 Elevator motor (M134) (PC-418) F-71
9.10 Shifter motor (M133) (PC-418) F-71
9.11 Wire (PC-418) F-71
10. JS-506 ..... F-75
10.1 Exit tray 1 (JS-506) F-75
10.2 Exit tray 2 (JS-506) F-75
10.3 Job separator (JS-506) F-76
10.4 Sensor unit (JS-506) F-76
10.5 JS control board (JSCB) (JS-506) F-76
10.6 Tray shift motor (M1) (JS-506) F-77
11. FS-539/FS-539SD F-78
11.1 Finisher (FS-539/FS-539SD) F-78
11.2 Rear cover (FS-539/FS-539SD) F-79
11.3 Front door (FS-539/FS-539SD) F-79
11.4 Front upper cover (FS-539/FS-539SD) F-80
11.5 Left lower cover (FS-539/FS-539SD) F-80
11.6 Front lower cover (FS-539/FS-539SD) F-81
11.7 Left cover (FS-539/FS-539SD) F-81
11.8 Stapler unit (FS-539/FS-539SD) F-82
11.9 FS control board (FSCB) (FS-539/FS-539SD) F-85
11.10 FNS entry transport motor (M2) (FS-539/FS-539SD) F-85
11.11 FNS discharge motor (M3) (FS-539/FS-539SD) F-86
11.12 Receiving roller retraction motor (M4) (FS-539/FS-539SD) F-86
11.13 FNS paddle motor (M5) (FS-539/FS-539SD) F-86
11.14 Trail edge stopper motor (M6) (FS-539/FS-539SD) F-87
11.15 Alignment motor/Fr (M7) (FS-539/FS-539SD) F-87
11.16 Alignment motor/Rr (M8) (FS-539/FS-539SD) F-88
11.17 Pre-eject drive motor (M9) (FS-539/FS-539SD) F-88
11.18 Bundle eject motor (M10) (FS-539/FS-539SD) F-89
11.19 Main tray up/down motor (M11) (FS-539/FS-539SD) F-89
11.20 Paper delivery control motor (M12) (FS-539/FS-539SD) F-90
11.21 Stapler movement motor (M13) (FS-539/FS-539SD) F-90

12. FS-539SD saddle section F-92
12.1 Saddle unit (FS-539SD saddle section) F-92
12.2 Front cover (FS-539SD saddle section) F-94
12.3 Exit tray (FS-539SD saddle section) F-95
12.4 Stapler unit (FS-539SD saddle section) F-95
12.5 SD control board (SDCB) (FS-539SD saddle section) F-97
12.6 SD transport motor (M101) (FS-539SD saddle section) F-98
12.7 Paper discharge control motor (M102) (FS-539SD saddle section) F-98
12.8 Alignment motor (M103) (FS-539SD saddle section) F-98
12.9 Stopper drive motor (M104) (FS-539SD saddle section) F-99
12.10 Center fold roller motor (M105) (FS-539SD saddle section) F-100
12.11 Center fold guide motor (M106) (FS-539SD saddle section) F-100
12.12 SD paddle motor (M107) (FS-539SD saddle section) F-100
12.13 Tri-folding guide motor (M108) (FS-539SD saddle section) F-101
12.14 Center fold knife motor (M109) (FS-539SD saddle section) F-101
12.15 Stopper solenoid (SD101) (FS-539SD saddle section) F-102
13. RU-514 ..... F-106
13.1 RU transport unit (RU-514) F-106
13.2 Sensor unit (RU-514) F-106
13.3 RU transport motor (M1) (RU-514) F-106
14. PK-524 ..... F-108
14.1 Punch Kit (PK-524) F-108
15. FS-533 ..... F-109
15.1 Front cover (FS-533) F-109
15.2 Rear cover (FS-533) F-109
15.3 Upper cover (FS-533) F-109
15.4 Finisher (FS-533) F-110
15.5 Stapler unit (FS-533) F-111
15.6 Paper exit tray unit (FS-533) F-112
15.7 FS control board (FSCB) (FS-533) F-112
15.8 Stapler relay board (STRYB) (FS-533) F-112
15.9 Paper conveyance motor (M101) (FS-533) F-113
15.10 Paper exit motor (M102) (FS-533) F-113
15.11 Alignment roller motor (M103) (FS-533) F-114
15.12 Exit roller lift up motor (M104) (FS-533) F-114
15.13 Alignment motor/Fr (M105), Alignment motor/Rr (M106) (FS-533) F-114
15.14 Stapler movement motor (M107) (FS-533) F-115
15.15 Tray lift up motor (M109) (FS-533) F-116
15.16 Paper surface detect solenoid (SD101) (FS-533) F-117
15.17 Batch solenoid (SD102) (FS-533) F-118
15.18 Paper exit roller solenoid (SD103) (FS-533) F-118
15.19 Paper exit paddle (FS-533) F-119
16. PK-519 ..... F-120
16.1 Punch kit (PK-519) F-120
16.2 PK control board (PKCB) (PK-519) F-120
16.3 Punch motor (M201) (PK-519) F-121
17. FK-513 ..... F-122
17.1 Fax kit F-122
17.2 FAX board (FAXB) F-122
18. UK-221 ..... F-123
18.1 Upgrade kit (UK-221) F-123
19. CU-101 ..... F-124
19.1 Clean unit cover F-124
19.2 Clean unit (CU-101) F-124
19.3 Clean unit drive board (CUDB) F-124
19.4 Exhaust fan/1 (FM14) F-125
19.5 Exhaust fan/2 (FM15) F-125
19.6 Suction fan (FM16) F-126
19.7 Deodorant filter/UFP filter F-127
20. KP-101 ..... F-129
20.1 Keypad F-129
21. MK-603 ..... F-130
21.1 Upper paper exit motor (M6) (MK-603) F-130

21.2 Mount Kit (MK-603) F-130
21.3 Gate switch solenoid (SD3) (MK-603) F-131
22. EM-907 ..... F-133
22.1 Storage board (STRGB) F-133
G MECHANICAL ADJUSTMENT G-1
1. d-Color MF257 ..... G-1
1.1 Paper feed section G-1
1.1.1 Centering adjustment of the tray 1/2 ..... G-1
1.2 Fusing section G-2
1.2.1 Adjusting the parallelism of the fusing unit path G-2
1.3 Scanner section G-3
1.3.1 Adjusting the scanner skew G-3
1.4 Write section G-4
1.4.1 PH skew adjustment G-4
2. Reverse automatic document feeder (DF-633) G-7
2.1 ADF skew adjustment G-7
3. PC-118/PC-218 ..... G-9
3.1 Paper reference position G-9
3.1.1 Purpose G-9
3.1.2 Procedure G-9
4. PC-418 ..... G-10
4.1 Paper reference position G-10
4.1.1 Purpose G-10
4.1.2 Procedure G-10
4.2 Shifter movement timing belt adjustment G-10
4.2.1 Procedure G-10
5. FS-539SD G-12
5.1 Half-fold skew adjustment G-12
6. PK-524 ..... G-14
6.1 Punch hole deviation correction G-14
7. PK-519 ..... G-16
7.1 Punch hole deviation correction G-16
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-14
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 Display 10 Keypad when entering Number of Sets H-15
6.3.29 Print end notification lamp ON time settings H-15
6.3.30 Universal Print Settings H-15
6.3.31 Widget Function Settings H-16
6.3.32 Output Settings H-16
6.3.33 Bypass Tray Overwrite Settings for Print PC H-16
6.3.34 Network Selection Settings H-16
6.3.35 Job History Display Setting H-16
6.3.36 Paper Size/Type Settings Screen Display H-16
6.3.37 Default Bypass Paper Type Setting H-16
6.3.38 Page Number Print Position H-16
6.3.39 Voice Guidance Settings H-16
6.3.40 ADF Settings H-16
6.3.41 ADF original skew adj.setting H-17
6.3.42 Def. operation mode set. H-17
6.3.43 Change Permission for Default Value Setting H-17
6.3.44 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-23
6.8 Printer Settings H-24
6.9 Store Address H-24
6.10 Fax Settings H-24
6.10.1 Header/Footer Position H-24
6.10.2 Line Parameter Setting H-25
6.10.3 TX/RX Settings H-25
6.10.4 Function Setting H-25
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-27
6.10.10 Fax Setting List H-27
6.11 Copier Settings H-28
7. Expert Adjustment H-29
8. Storage Management H-30
9. Banner Printing H-31
10. Device Information H-32
11. Remote Panel H-33
12. Card Authentication H-34
13. Supplementary explanation of utility mode H-35
13.1 Maintenance H-35
13.1.1 License Settings H-35
13.1.2 USB flash drive backup H-35

13.1.3 Remote Access Setting H-36
13.2 System Settings H-36
13.2.1 Voice Guidance Settings H-36
13.3 Security H-36
13.3.1 ProhibitFunctions H-36
13.3.2 Enhanced Security Mode H-37
13.3.3 Image Log Transfer Settings H-39
13.3.4 Driver Password Encryption Setting H-39
13.3.5 Quick Security Setting H-40
13.4 User Authentication/Account Track H-41
13.4.1 Authentication Device Settings H-41
13.5 Network H-42
13.5.1 Network Fax Setting H-42
13.5.2 IWS Settings H-43
13.5.3 Remote Panel Settings H-43
13.5.4 Network I/F Configuration H-44
13.5.5 Wireless Network Setting H-45
13.6 Machine Update Settings H-46
13.6.1 Internet ISW Settings H-46
13.6.2 Machine Auto Update Settings H-46
13.6.3 HTTP Proxy Settings H-49
13.7 Storage Management H-49
13.7.1 Encryption Settings H-49
13.7.2 Debug Log Encryption Settings H-49

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. Method to cancel the envelope print mode I-5
6. Machine I-6
6.1 Fusing Temperature I-6
6.2 Fusing Transport Speed I-6
6.3 Heater Control Level I-6
6.4 Printer Area I-6
6.4.1 Leading Edge Adjustment I-6
6.4.2 Printer Image Centering Side 1 ..... I-7
6.4.3 Leading Edge Adj. Side 2 (Duplex) I-7
6.4.4 Prt. Image Center. Side 2 (Dup) I-8
6.4.5 Paper Feed Direction Adj. I-8
6.4.6 Tray Printing Position: Tip I-9
6.5 Scan Area I-9
6.5.1 Test chart I-9
6.5.2 Image Position: Leading Edge I-10
6.5.3 Scanner Image Side Edge I-10
6.5.4 Main Scan Zoom Adj. I-11
6.5.5 Sub Scan Zoom Adj. I-11
6.6 Printer Reg. Loop Adj. I-11
6.7 Color Registration Adjustment I-12
6.8 Print Head Skew Adj. I-12
6.9 LD adjustment I-13
6.9.1 LD Light Width Adjustment I-13
6.10 Manual Bypass Tray Width Adj I-13
6.11 Lead Edge Erase Adjustment I-13
6.12 Non-Image Area Erase Check I-14
6.13 PPM Control Choice I-14
6.14 Move Scanner to Home I-14
7. Firmware Version I-15
8. Imaging Process Adjustment I-16
8.1 Gradation Adjust I-16
8.2 Stabilizer I-17
8.3 Max Image Density Adj I-17
8.4 Image Background Adj I-17

8.5 Paper Separation Adjustment I-17
8.6 Monochrome Density Adjustment I-18
8.7 TCR Level Setting I-18
8.8 Transfer Voltage Fine Adj I-18
8.8.1 Primary transfer adj. I-18
8.8.2 2nd Transfer Adj I-18
8.9 Charging voltage adjustment I-19
8.10 Thick Paper Density Adjustment I-19
8.11 Grad/Dev AC Bias V Selection I-19
8.12 Manual Toner Add I-19
9. CS Remote I-20
9.1 Remote Care I-20
9.1.1 Outline I-20
9.1.2 Setting up I-20
9.1.3 Setup confirmation I-21
9.1.4 Calling the maintenance I-21
9.1.5 Calling the center from the administrator I-21
9.1.6 Checking the transmission log I-22
9.1.7 Maintenance/Default Settings I-22
9.1.8 Server Setting I-25
9.1.9 Product Auth. Settings I-27
9.1.10 Import/Export Settings I-27
9.1.11 Auto Initial Dial Setting I-27
9.2 Software SW setting for Remote Care I-28
9.2.1 List of software SW for CS Remote Care I-28
9.2.2 SW No. 01 ..... I-28
9.2.3 SW No. 02 ..... I-29
9.2.4 SW No. 03 ..... I-29
9.2.5 SW No. 04 ..... I-30
9.2.6 SW No. 05 ..... I-30
9.2.7 SW No. 06 ..... I-30
9.2.8 SW No. 07 ..... I-31
9.2.9 SW No. 08 ..... I-31
9.2.10 SW No. 09 ..... I-31
9.2.11 SW No. 10 ..... I-32
9.2.12 SW No. 11 ..... I-32
9.2.13 SW No. 12 ..... I-32
9.2.14 SW No. 14 ..... I-33
9.2.15 SW No. 15 ..... I-33
9.2.16 SW No. 18 ..... I-33
9.2.17 SW No. 21 ..... I-34
9.2.18 SW No. 22 ..... I-34
9.2.19 SW No. 23 ..... I-35
9.2.20 SW No. 24 ..... I-35
10. System 1 ..... I-36
10.1 Marketing Area I-36
10.1.1 List of functions affected by marketing area setting I-36
10.2 Tel/Fax Number I-37
10.3 Serial Number I-37
10.4 Sleep ON/OFF Choice Setting I-37
10.5 Foolscap Size Setting I-37
10.6 Original Size Detection I-37
10.7 Minimum Paper Size Setting I-38
10.8 Install Date I-38
10.9 Initialization I-38
10.9.1 List of Clear Item I-39
10.10 Problem Unit Isolation Set. I-39
10.11 Post card transfer table I-40
10.12 Warm-up I-40
10.12.1 Change Warm Up Time I-40
10.13 Machine State LED Setting I-40
10.14 Burn Prevention Settings I-41
11. System 2 ..... I-42
11.1 Set storage type I-42
11.2 Option Board Status I-42
11.3 Consumable Life Reminder I-42

11.4 Unit Change I-42
11.4.1 Unit Change I-42
11.4.2 Warning display I-42
11.5 Software Switch Setting I-43
11.5.1 SW No.012 ..... I-44
11.5.2 SW No.025 ..... I-44
11.5.3 SW No.033 ..... I-44
11.5.4 SW No.049 ..... I-44
11.5.5 SW No.051 ..... I-45
11.5.6 SW No.069 ..... I-45
11.5.7 SW No.070 ..... I-45
11.5.8 SW No.072 ..... I-45
11.5.9 SW No.124 ..... I-45
11.5.10 SW No.135 ..... I-45
11.5.11 SW No.143 ..... I-46
11.5.12 SW No.145 ..... I-46
11.5.13 SW No.146 ..... I-46
11.5.14 SW No.147 ..... I-47
11.5.15 SW No.151 ..... I-47
11.5.16 SW No.152 ..... I-47
11.5.17 SW No.155 ..... I-47
11.5.18 SW No.157 ..... I-47
11.5.19 SW No.163 ..... I-47
11.5.20 SW No.172 ..... I-47
11.5.21 SW No.188 ..... I-47
11.5.22 SW No.203 ..... I-48
11.5.23 SW No.206 ..... I-48
11.5.24 SW No.226 ..... I-48
11.5.25 SW No.227 ..... I-48
11.5.26 SW No.230 ..... I-48
11.5.27 SW No.237 ..... I-48
11.6 CCD Calibration I-49
11.7 LCT (Built-in) Size Settings I-49
11.8 Line Mag Setting I-49
11.9 Data Capture I-49
11.10 Stamp I-51
11.11 Network Fax Settings I-51
11.12 RX File Change Page Name I-51
11.13 ADF Settings I-51
11.14 Image Stabilization Setting I-51
11.15 User Paper Settings I-52
11.16 Coverage Rate Screen I-52
11.17 JAM Code Display Setting I-52
11.18 Import Config. Data I-53
11.18.1 BootUp Screen I-53
11.18.2 Machine Image I-53
11.18.3 Custom Auth. Setting I-53
11.19 Install Data I-54
11.20 Local Interface Kit Setting I-54
11.21 Display Eco Index I-54
11.22 Internal Error. Auto Cancel I-55
11.23 Acquiring Settings I-55
11.24 Driver Install I-55
11.25 Application Change Setting I-55
11.26 Custom Pattern I-55
11.27 Maintenance Mode I-56
11.28 Smart Fusing Control I-56
11.29 Cleaning Unit Setting I-57
11.30 Fuser roll deform I-57
11.31 Auth. Function Enable I-57

12. Counter I-58
12.1 Outline I-58
12.2 Life I-58
12.3 Service Call I-59
12.4 Section Service Call I-59
12.5 Warning I-59
12.6 Maintenance I-60

12.7 Service Total I-60
12.8 Counter Of Each Mode I-60
12.9 Service Call History (Data) I-60
12.10 ADF Paper Pages I-60
12.11 Paper Jam History I-60
12.12 Fax Connection Error I-60
12.13 Parts Counter (Fixed) I-60
12.13.1 Fixed parts to be counted I-60
12.14 Jam I-61
12.15 Section JAM I-61
12.16 Instantaneous Power Failure I-61
12.17 Detail code history I-62
13. List Output I-63
13.1 Individual list print output I-63
13.2 Batch list CSV output I-63
14. State Confirmation I-65
14.1 Sensor Check I-65
14.1.1 28ppm No Olivetti I-65
14.2 Table Number I-66
14.3 Level History 1 ..... I-66
14.4 Level History 2 ..... I-66
14.5 Temp. & Humidity I-67
14.6 CCD Check I-67
14.7 Memory/Storage Adjustment I-67
14.7.1 Memory Check I-67
14.7.2 Compress / Decompression Check I-68
14.7.3 Memory Bus Check I-68
14.7.4 Storage R/W Check I-68
14.7.5 Format I-68
14.8 Memory/Storage Status I-69
14.9 Color Regist I-69
14.10 Load Check I-69
14.10.1 Load check list I-69
14.11 Adjustment Data List I-72
14.12 Self-diag. (Full/Individual) I-72
14.12.1 Overview of self-diagnostic function I-72
14.12.2 Self-diag. (Full) I-73
14.12.3 Self-diag. (Individual) I-75
15. Test Mode I-78
15.1 Test Pattern I-78
15.1.1 Gradation Pattern I-78
15.1.2 Halftone Pattern I-78
15.1.3 Lattice Pattern I-78
15.1.4 Solid Pattern I-79
15.1.5 Color Sample I-79
15.1.6 8 Color Solid Pattern I-80
15.1.7 CMM pattern I-80
15.2 Paper Passage Test I-80
15.3 Fax Test I-81
16. ADF I-83
16.1 Original Stop Position I-83
16.2 Registration Loop Adj. I-84
16.3 Auto Stop Position Adjustment I-84
16.4 Paper Passage I-85
16.5 Sensor Check I-85
16.6 Read Pos Adj I-85
16.7 Feed Zoom I-86
16.8 Scanning Light Adjustment I-86
16.9 FD-Mag. Adj. (B) I-87
16.10 Skew Measurement I-87
16.11 ADF automatic Adjustment I-87
17. FAX I-89
17.1 Outline I-89
17.1.1 PBX operating environment I-90
17.2 Modem/NCU I-90

17.3 Network I-92
17.4 System I-93
17.5 Fax File Format I-94
17.6 Communication I-95
17.7 List Output I-96
17.8 Function Parameter I-96
17.9 Initialization I-97
17.10 Fax Line Std. Setting I-97
17.11 Function parameter list (for all fax lines) I-97
17.11.1 Job setting I-97
17.11.2 Function setting I-101
17.11.3 Report setting I-105
17.11.4 Panel settings I-107
17.12 Function parameter list (for separate line) I-110
17.12.1 Function setting 1 ..... I-110
17.12.2 Function setting 2 ..... I-113
17.12.3 Function setting 3 ..... I-115
17.12.4 Function setting 4 ..... I-117
17.12.5 Function setting 5 ..... I-120
17.12.6 Fax capacity setting I-123
17.12.7 HP setting I-125
17.13 Recommended Settings for IP Line I-127

18. Finisher I-130
18.1 FS-FN adjustment I-130
18.1.1 Center Staple Position I-130
18.1.2 Half-Fold Position I-130
18.1.3 Punch Edge Adj I-131
18.1.4 Punch Regist Loop Size I-131
18.1.5 1st Tri-Fold Adjustment/2nd Tri-Fold Adjustment I-132
18.1.6 Finisher Components Test Mode I-132
18.1.7 Alignment Plate Position I-133
18.1.8 Paper Alignment Guides W. Adj. I-133
18.2 Punch Option Setting I-133

19. Network Settings I-134
19.1 2nd Network Setting I-134
19.2 Remote Service Setting I-134
19.2.1 Function Setting I-134
19.2.2 Proxy Server Setting I-134
19.2.3 Maintenance Setting I-135
19.2.4 XMPP Settings I-135
19.2.5 Always Connection Setting I-135
19.3 Port Settings I-136
19.4 MTU Param. set. I-136

20. Machine Update Setting I-137
20.1 Internet ISW I-137
20.1.1 Internet ISW Set I-137
20.1.2 HTTP Setting I-137
20.1.3 FTP Setting I-137
20.1.4 Forwarding Access Setting I-137
20.1.5 Download I-137
20.1.6 Update Start Time Settings I-138
20.2 Machine Auto Update setting I-138
20.2.1 Auto Update setting I-138
20.2.2 Relay server setting I-143
20.2.3 Transmission log Update I-144
20.2.4 Transmission Server Log I-145
20.2.5 Update Log Display I-145
20.2.6 Relay Server Log Confirmation I-145
20.2.7 Manually Update I-146
20.2.8 Machine Import setting I-146
20.2.9 Machine Export setting I-146
20.2.10 Machine Update Password I-147
20.3 Firmware Update I-147
20.4 Firmware Rollback I-147
20.5 Copy Network Settings I-148
20.5.1 Outline I-148

20.5.2 Environmental preparations I-148
20.5.3 Deliver/setting procedure I-149
20.6 OSS Update I-149

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 Vendor 2 ..... J-4
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-7
1.5.3 When the management device 2 is mounted J-8
1.5.4 When the authentication device 2 is mounted J-8
1.6 Coverage Rate Clear J-8
1.7 License Management J-8
1.7.1 Activation J-8
1.7.2 Deactivation J-12
1.7.3 Repair J-15
1.7.4 Initialize J-19
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-23

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-28
2.11 Engine Data Backup J-33
2.12 Storage Data Backup J-33
2.13 Migration data backup J-33
2.14 Data Backup J-34
2.14.1 Client Function J-34
2.14.2 Server Function J-36
2.15 ADF Data Backup J-36
2.16 Customer Type J-37
2.17 TPM Setting J-37
2.18 FWCert. Settings J-37

3. DEBUG SETTINGS J-38
3.1 Outline J-38
3.2 Debug Log Output J-38
3.3 Acquiring Mode J-38
3.4 TX Debug Log Settings J-39
3.5 Remote Log Retrieval J-40
3.6 Remote Log Server Settings J-40

3.7 Enable Core Dump J-41
3.8 USB Password J-41
3.9 Other J-41
3.9.1 Screen Capture J-41
3.9.2 Panel Operation Playback J-42
3.10 Operation of the debug log function J-42
3.10.1 Advance preparation J-42
3.10.2 Basic mode J-43
3.10.3 Enhance mode J-43

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-5
3.1 Service environment K-5
3.2 Preparation K-5
3.2.1 Making the firmware data K-5
3.2.2 Internet ISW Set K-5
3.3 Rewriting of Firmware K-5
4. Auto Update setting K-7
4.1 Service environment K-7
4.2 Preparation K-7
4.3 Rewriting of Firmware K-7
5. How to install the i-Option data K-8
5.1 Available function for i-Option K-8
5.2 LK-107/LK-108 font data installation procedure K-8
6. Creating back up files when updating firmware K-9

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-5
1.5.1 10-01, 10-02, 10-40 ..... L-5
1.5.2 11-01, 11-02, 11-05, 11-40 ..... L-6
1.5.3 12-01, 12-05, 12-40 ..... L-6
1.5.4 13-01, 13-05, 13-40 ..... L-7
1.5.5 14-01, 14-05, 14-40 ..... L-8
1.5.6 16-01, 16-05, 16-40 ..... L-8
1.6 2#-##..... L-9
1.6.1 20-01, 20-02 ..... L-9
1.6.2 20-21 ..... L-9
1.6.3 20-22 ..... L-10
1.7 3#-##..... L-11
1.7.1 30-03 ..... L-11
1.7.2 32-01, 32-05, 32-06 ..... L-12
1.8 6#-##..... L-12
1.8.1 66-01, 66-11 ..... L-12
1.8.2 66-02, 66-12 ..... L-13
1.8.3 66-03, 66-13, 66-23, 66-33 ..... L-13
1.8.4 66-04, 66-14 ..... L-14
1.8.5 66-05, 66-06 ..... L-14
1.8.6 66-07 ..... L-15
1.8.7 66-54 ..... L-15
1.9 7#-##..... L-16
1.9.1 72-14 ..... L-16
1.9.2 72-15 ..... L-16
1.9.3 72-16 ..... L-17
1.9.4 72-17 ..... L-17

1.9.5 72-18 ..... L-18
1.9.6 72-19 ..... L-18
1.9.7 72-21 ..... L-19
1.9.8 72-22 ..... L-19
1.9.9 72-23 ..... L-20
1.9.10 72-25 ..... L-20
1.9.11 72-26 ..... L-20
1.9.12 72-43 ..... L-21
1.9.13 72-70 ..... L-22
1.9.14 72-75 ..... L-22
1.9.15 72-76 ..... L-22
1.9.16 72-77 ..... L-23
1.9.17 72-81 ..... L-23
1.9.18 72-84 ..... L-24
1.9.19 72-85 ..... L-24
1.9.20 72-86 ..... L-24
1.9.21 72-87 ..... L-25
1.9.22 75-42 ..... L-25
1.9.23 75-43 ..... L-25
1.10 9#-## L-26
1.10.1 92-01, 92-02, 92-40 ..... L-26
1.10.2 99-01 ..... L-26
1.10.3 99-02 ..... L-27
1.10.4 99-03 ..... L-27
1.10.5 99-04 ..... L-27
1.10.6 99-05 ..... L-27
1.10.7 99-06 ..... L-28
1.10.8 99-07 ..... L-28
1.10.9 99-08 ..... L-28
1.10.10 99-09 ..... L-28
1.11 Misfeed at duplex transport section L-29
1.12 Sensor layout L-29
1.12.1 Main body L-29
1.12.2 DF-633 ..... L-30
1.12.3 PC-118/PC-218 ..... L-30
1.12.4 PC-418 ..... L-30
1.12.5 FS-539/FS-539SD/PK-524/RU-514 ..... L-31
2. MALFUNCTION CODE L-32
2.1 Display procedure L-32
2.2 List of the malfunction code L-32
2.3 S-1 ..... L-32
2.4 S-2 ..... L-33
2.5 P-5, P-28 ..... L-33
2.6 P-6, P-7, P-8, P-9 ..... L-33
2.7 P-14 ..... L-34
2.8 P-21 ..... L-34
2.9 P-22 ..... L-34
2.10 P-27 ..... L-35
2.11 P-33 ..... L-35
3. TROUBLE CODE L-36
3.1 Overview of trouble code L-36
3.2 Overview of troubleshooting procedure L-36
3.2.1 Troubleshooting procedure L-37
3.3 Trouble resetting procedure L-37
3.3.1 Trouble resetting procedure by Trouble Reset key L-37
3.3.2 Trouble resetting procedure by the auto cancel function L-37
3.3.3 Trouble resetting procedure by remote operation L-37
3.4 Nonvolatile memory clear function L-38
3.4.1 Data to be cleared by the nonvolatile memory clear function L-38
3.4.2 Start and execution procedure L-39
3.5 Trouble isolation function L-39
3.6 List of the trouble code L-40
3.7 C0### L-47
3.7.1 C0002 ..... L-47
3.7.2 C0106 ..... L-47
3.7.3 C0107 ..... L-48
3.7.4 C0108 ..... L-49

3.7.5 C0109 ..... L-49
3.7.6 C0202 ..... L-49
3.7.7 C0204 ..... L-50
3.7.8 C0206 ..... L-50
3.7.9 C0208 ..... L-50
3.7.10 C0210 ..... L-51
3.7.11 C0211 ..... L-51
3.7.12 C0214 ..... L-52
3.8 C1### L-53
3.8.1 C1004, C1014 ..... L-53
3.8.2 C1081, C1082 ..... L-53
3.8.3 C1102 ..... L-54
3.8.4 C1103 ..... L-55
3.8.5 C1105 ..... L-55
3.8.6 C1106 ..... L-56
3.8.7 C1109 ..... L-57
3.8.8 C1112 ..... L-57
3.8.9 C1113 ..... L-58
3.8.10 C1114 ..... L-58
3.8.11 C1115 ..... L-58
3.8.12 C1132 ..... L-59
3.8.13 C1140 ..... L-60
3.8.14 C1141 ..... L-60
3.8.15 C1144 ..... L-61
3.8.16 C1145 ..... L-61
3.8.17 C1156 ..... L-62
3.8.18 C1182 ..... L-62
3.8.19 C1184 ..... L-62
3.8.20 C1195 ..... L-63
3.8.21 C1196 ..... L-63
3.8.22 C1197 ..... L-64
3.8.23 C11A1 ..... L-64
3.8.24 C11A2 ..... L-64
3.8.25 C11E1 ..... L-65
3.8.26 C1402 ..... L-65
3.9 C2### L-65
3.9.1 C2152, C2153, C2154, C2155, C2156 ..... L-65
3.9.2 C2253, C2254 ..... L-66
3.9.3 C2355 ..... L-66
3.9.4 C2414 ..... L-67
3.9.5 C2551, C2553, C2555, C2557 ..... L-67
3.9.6 C2552, C2554, C2556, C2558 ..... L-68
3.9.7 C2559, C255A, C255B, C255C L-68
3.9.8 C2561, C2562, C2563, C2564 ..... L-68
3.9.9 C2650 ..... L-69
3.9.10 C2A11, C2A12, C2A13, C2A14 ..... L-69
3.10 C3### L-70
3.10.1 C3201, C3202 ..... L-70
3.10.2 C3302 ..... L-70
3.10.3 C3425 ..... L-70
3.10.4 C3722, C3725, C3726 ..... L-71
3.10.5 C3736, C3739 ..... L-71
3.10.6 C3825, C3826 ..... L-71
3.10.7 C3922, C3925, C3926 ..... L-72
3.10.8 C392B, C392C, C392D, C392E L-72
3.11 C4### L-73
3.11.1 C40A2, C40A3, C40A4, C40A5, C40A6, C40C3, C40C5 ..... L-73
3.11.2 C4101 ..... L-73
3.11.3 C4501 ..... L-73
3.12 C5### L-74
3.12.1 C5102, C5103 ..... L-74
3.12.2 C5351 ..... L-74
3.12.3 C5360 ..... L-74
3.12.4 C5370 ..... L-75
3.12.5 C5372 ..... L-75
3.12.6 C5501 ..... L-75
3.12.7 C5601 ..... L-76
3.12.8 C5605, C5606 ..... L-76

3.12.9 C5610 ..... L-76
3.12.10 C5620 ..... L-76
3.13 C6### L-77
3.13.1 C6001 ..... L-77
3.13.2 C6002 ..... L-77
3.13.3 C6102, C6103 ..... L-77
3.13.4 C6704 ..... L-78
3.13.5 C6751 ..... L-78
3.13.6 C6752 ..... L-78
3.13.7 C6756 ..... L-79
3.13.8 C6F01, C6F02, C6F03, C6F04, C6F05, C6F06, C6F07, C6F08, C6F09, C6F0A, C6FDC, C6FDD L-79
3.14 C7### L-79
3.14.1 C7111 ..... L-79
3.14.2 C7112 ..... L-80
3.14.3 C7151, C7152, C7153 ..... L-80
3.14.4 C7201 ..... L-80
3.14.5 C7202 ..... L-80
3.14.6 C7205 ..... L-81
3.14.7 C7206 ..... L-81
3.14.8 C720A L-81
3.14.9 C720B L-82
3.14.10 C7241 ..... L-82
3.14.11 C7243 ..... L-82
3.14.12 C7260 ..... L-83
3.14.13 C7301 ..... L-83
3.14.14 C7302 ..... L-83
3.14.15 C7305 ..... L-83
3.14.16 C7501 ..... L-84
3.14.17 C7502 ..... L-84
3.14.18 C7601 ..... L-84
3.14.19 C7602 ..... L-84
3.14.20 C7603 ..... L-85
3.14.21 C7604 ..... L-85
3.14.22 C7605 ..... L-85
3.14.23 C7606 ..... L-85
3.14.24 C7607 ..... L-86
3.14.25 C760A L-86
3.14.26 C760B L-86
3.14.27 C760E L-86
3.14.28 C760F L-87
3.14.29 C7631 ..... L-87
3.14.30 C7633 ..... L-87
3.15 C9### L-87
3.15.1 C9401, C9402 ..... L-87
3.15.2 C9701 ..... L-88
3.15.3 C9702 ..... L-88
3.16 CA### L-88
3.16.1 CA051, CA052, CA053 ..... L-88
3.17 CB### L-89
3.18 CC### L-89
3.18.1 CC002 ..... L-89
3.18.2 CC140 ..... L-89
3.18.3 CC151, CC152 ..... L-89
3.18.4 CC155 ..... L-89
3.18.5 CC156 ..... L-90
3.18.6 CC15B L-90
3.18.7 CC163 ..... L-90
3.18.8 CC164 ..... L-91
3.18.9 CC170, CC171, CC172, CC173, CC174, CC180, CC181, CC182, CC183, CC184, CC185, CC186 ..... L-91
3.18.10 CC190 ..... L-91
3.18.11 CC191 ..... L-92
3.18.12 CC211 ..... L-92
3.18.13 CC212 ..... L-92
3.18.14 CC213 ..... L-92
3.18.15 CC214 ..... L-93
3.18.16 CC216 ..... L-93
3.18.17 CC301 ..... L-93
3.18.18 CC302 ..... L-94

3.18.19 CCC00 ..... L-94
3.19 CD### L-94
3.19.1 CD002 ..... L-94
3.19.2 CD004, CD00F, CD020 ..... L-94
3.19.3 CD010 ..... L-95
3.19.4 CD011 ..... L-95
3.19.5 CD012 ..... L-95
3.19.6 CD030 ..... L-95
3.19.7 CD041, CD042, CD043, CD044, CD045, CD046 ..... L-95
3.19.8 CD047, CD048, CD049, CD04A, CD04B L-96
3.19.9 CD050 ..... L-96
3.19.10 CD070 ..... L-96
3.19.11 CD071 ..... L-96
3.19.12 CD072 ..... L-97
3.19.13 CD073 ..... L-97
3.19.14 CD110 ..... L-97
3.19.15 CD201, CD202, CD203 ..... L-97
3.19.16 CD211, CD212 ..... L-98
3.19.17 CD241, CD242 ..... L-98
3.19.18 CD261 ..... L-98
3.19.19 CD262 ..... L-98
3.19.20 CD2D1 ..... L-99
3.19.21 CD3## L-99
3.19.22 CD313 ..... L-99
3.19.23 CD38E L-100
3.19.24 CD390 ..... L-100
3.19.25 CD391 ..... L-100
3.19.26 CD392 ..... L-100
3.19.27 CD3B1, CD3B3, CD3B4, CD3B5 ..... L-101
3.19.28 CD3C0 ..... L-101
3.19.29 CD401, CD402, CD403, CD404, CD405, CD406, CD407, CD411, CD412, CD413 ..... L-101
3.19.30 CD601, CD602, CD603 ..... L-102
3.19.31 CD701, CD702, CD703 ..... L-102
3.19.32 CD704 ..... L-102
3.19.33 CD705, CD706 ..... L-103
3.19.34 CDC## L-103
3.19.35 CDF50, CDF70, CDFA0 ..... L-103
3.20 CE### L-103
3.20.1 CE001, CE003, CE004, CE005, CE006, CE007, CE009 ..... L-103
3.20.2 CE002 ..... L-104
3.20.3 CE012 ..... L-104
3.20.4 CE013 ..... L-104
3.20.5 CE014 ..... L-104
3.20.6 CE015 ..... L-104
3.20.7 CE101 ..... L-105
3.20.8 CE201 ..... L-105
3.20.9 CE202 ..... L-105
3.20.10 CE203 ..... L-105
3.20.11 CE204 ..... L-106
3.20.12 CE301, CE302, CE303, CE304, CE305 ..... L-106
3.20.13 CE401 ..... L-106
3.20.14 CED01 ..... L-106
3.20.15 CEEE1, CEEE3 ..... L-107
3.20.16 CEEE2 ..... L-107
3.21 CF### (Abort code) L-107
3.21.1 CFA## L-107
3.21.2 CFB## L-107
3.21.3 CFC## L-108
3.21.4 CFD## L-108
3.21.5 CFE## L-108
3.21.6 CFF## L-108
4. Troubleshooting using Self-diag. (Full) L-110
4.1 Overview of Self-diag. (Full) function L-110
4.2 Self-diag. (Full) Procedure L-110
4.2.1 Auto Execution of Self-diag. (Full) L-110
4.2.2 Error code resetting procedures L-110
4.3 Error Code List L-111

4.4 E1-1 ..... L-112
4.5 E1-2 ..... L-112
4.6 E1-3 ..... L-112
4.7 E1-4 ..... L-112
4.8 E1-5 ..... L-112
4.9 E2-1 ..... L-113
4.10 E2-2 ..... L-113
4.11 E2-3 ..... L-113
4.12 E2-4 ..... L-113
4.13 E2-5 ..... L-114
4.14 E3-1 ..... L-114
4.15 E3-3 ..... L-114
4.16 E4-1, E4-2 ..... L-114
4.17 E5-1 ..... L-115
4.18 E5-2 ..... L-115
4.19 E5-3 ..... L-115
4.20 E5-4 ..... L-115
4.21 E5-5 ..... L-116
4.22 E5-7 ..... L-116
4.23 E5-11 ..... L-116
4.24 E5-12 ..... L-116
4.25 E6-1, E6-2 ..... L-117
4.26 E8-1 ..... L-117
4.27 E11-1, E11-2 ..... L-118
4.28 E12-1, E12-2, E12-3 ..... L-118

5. Troubleshooting when NG is displayed on the Self-diag. (Individual) L-119
5.1 Various USB Check L-119
5.1.1 Troubleshooting when NG is displayed for Keyboard L-119
5.1.2 Troubleshooting when NG is displayed for USB Memory L-119
5.2 CPU board check L-119
5.2.1 Troubleshooting when NG is displayed for Ping Test L-119

6. ERROR CODE FOR THE INTERNET ISW L-120
6.1 Error code list for the Internet ISW L-120
6.2 0x0# L-120
6.3 0x1# L-121
6.4 0x2# L-121

7. CS REMOTE CARE ERROR CODE L-122
7.1 Troubleshooting for CS Remote Care L-122
7.2 CS Remote Care Operation under Enhanced Security Mode L-122
7.3 List of the CS Remote Care error code L-122
7.3.1 When connecting by modem L-122
7.3.2 When connecting by e-mails L-123
7.3.3 When connecting by http L-125
7.3.4 When connecting by Fax modem L-127

8. CS REMOTE ANALYSIS ERROR CODE L-128
8.1 When connecting by SOAP L-128
8.1.1 1### L-128
8.1.2 2### L-128
8.1.3 3### L-129
8.1.4 4### L-129
8.2 When connecting by http L-129
8.2.1 0### L-129
8.2.2 1### L-129
8.2.3 2### L-129
8.2.4 3### L-130
8.2.5 4### L-130
8.2.6 5### L-130
8.2.7 6### L-130
8.2.8 7### L-130

9. FAX TROUBLE CODE L-131
9.1 The error in the transmission/reception system L-131
9.2 B0## L-131
9.3 B11# L-131
9.4 B12# L-132
9.5 B13# L-132

9.6 B14# L-132
9.7 B15# L-132
9.8 B16# L-133
9.9 B17# L-133
9.10 B18# L-133
9.11 B19# L-133
9.12 T0# L-134
9.13 T1# L-135
9.14 T2# L-136
9.15 T3# L-136
9.16 T4# L-136
9.17 T5# L-137
9.18 T6# L-138
9.19 T7# L-138
9.20 T8# L-139
9.21 T9# L-140
9.22 R0# L-141
9.23 R1# L-142
9.24 R2# L-143
9.25 R3# L-144
9.26 R4# L-144
9.27 R5# L-145
9.28 R6# L-145
9.29 R7# L-146
9.30 R8# L-147
9.31 R9# L-147
9.32 Other L-147

10. DIAGNOSTIC CODES L-148
10.1 Outline L-148
10.2 Explanation L-148
10.2.1 The diagnostic code L-148
10.2.2 Information of communication results and conditions L-148

11. NETWORK FAX ERROR CODE L-150
11.1 Error code list of the transmission system L-150
11.2 Error code list of the reception system L-150
11.3 Other L-151

12. OPEN API RELATED TROUBLE L-152
12.1 Outline L-152
12.2 Types of Trouble L-152
12.3 Solution L-152
12.3.1 When using an application L-152
12.3.2 After rewriting the firmware of the machine L-153

13. PANEL BLACKOUT TROUBLE (BOOT DIAGNOSIS FUNCTION) L-154
13.1 Boot diagnosis function L-154
13.1.1 Boot diagnosis sequence L-154
13.1.2 Manual boot diagnosis procedure L-155
13.1.3 Boot diagnosis result list L-155
13.1.4 How to reset the boot diagnosis result L-155

14. TROUBLES THAT DO NOT DISPLAY THE TROUBLE CODE L-156
14.1 Machine is not energized at all (DCPU operation check) L-156
14.2 Fusing heaters do not operate L-156
14.3 DF-633 ..... L-156
14.4 Power is not supplied to option L-157
14.4.1 PC-118/PC-218/PC-418 ..... L-157
14.4.2 FS-533/FS-539/FS-539SD L-157

15. OTHER TROUBLE L-158
15.1 Firmware error warning L-158
15.2 Storage lock password error warning L-158
15.3 Progress bar stops halfway when the main power switch is turned on L-158

16. TROUBLESHOOTING OF i-Option L-159
16.1 Structure of license management L-159
16.2 License management information L-159
16.3 Error message L-159
16.3.1 License management error L-159

17. IMAGE QUALITY PROBLEM L-160
17.1 How to read element data L-160
17.1.1 Table Number L-160
17.1.2 Level History 1 ..... L-161
17.1.3 Level History 2 ..... L-162
17.2 Troubleshooting procedure overview L-162
17.2.1 Test pattern printing L-162
17.3 Corrective action procedure L-163
17.3.1 Skewed image/Image deviation L-163
17.3.2 White line 1, White band 1, Color line 1, Color band 1 ..... L-165
17.3.3 White line 2, White band 2, Color line 2, Color band 2 ..... L-168
17.3.4 Uneven density 1 ..... L-170
17.3.5 Uneven density 2 ..... L-171
17.3.6 Faint image, low image density (ID lowering) L-172
17.3.7 Gradation reproduction failure L-174
17.3.8 Color reproducibility error L-175
17.3.9 Incorrect color image registration L-176
17.3.10 Foggy background L-177
17.3.11 Void areas, White spots L-179
17.3.12 Color spot L-180
17.3.13 Blurred image L-182
17.3.14 Back marking L-183
17.3.15 Blank copy, Black copy L-183
17.3.16 Uneven pitch L-185
17.3.17 Uneven gloss, Rough gloss L-186
17.3.18 Poor fusing performance, Offset L-186
17.3.19 Brush effect, Image bleeding L-187
17.3.20 Blurred fine lines L-188
17.3.21 Moire L-189
17.3.22 ACS malfunction L-190
17.3.23 Abnormal image L-190

18. IC PROTECTOR L-191
18.1 Outline L-191
18.2 d-Color MF257 ..... L-191
18.2.1 Base board L-191
18.3 JS-506 ..... L-191
18.3.1 JS control board L-191
18.4 FS-539/FS-539SD L-192
18.4.1 FS control board L-192
18.4.2 SD control board L-193
18.5 FS-533 ..... L-193
18.5.1 FS control board L-193
18.6 PK-519 ..... L-193
18.6.1 PK control board L-193

M PARTS/CONNECTOR LAYOUT DRAWING M-1

1. PARTS LAYOUT DRAWING M-1
1.1 d-Color MF257 ..... M-1
1.1.1 Scanner section M-1
1.1.2 Front side M-1
1.1.3 Back side M-2
1.1.4 Left side M-3
1.1.5 Right side M-4
1.1.6 Manual bypass tray M-4
1.1.7 Tray 1 ..... M-5
1.1.8 Tray 2 ..... M-5
1.1.9 Fusing/paper exit section M-6
1.1.10 Duplex section M-6
1.2 DF-633 ..... M-7
1.3 PC-118/PC-218 ..... M-7
1.3.1 Board/switch/sensor/others M-7
1.3.2 Load M-8
1.4 PC-418 ..... M-8
1.4.1 Board/switch/sensor/others M-8
1.4.2 Load M-9
1.5 JS-506 ..... M-9
1.6 FS-539/FS-539SD M-10

1.7 FS-539SD saddle section M-11
1.8 PK-524 ..... M-12
1.9 FS-533 (Option) M-12
1.10 PK-519 (Option) M-13
1.11 CU-101 (Option) M-14
1.12 MK-603 (Option) M-14
2. CONNECTOR LAYOUT DRAWING M-15
2.1 BOARD CONNECTOR LAYOUT DRAWING M-15
2.1.1 d-Color MF257 ..... M-15
2.1.2 Reverse automatic document feeder (DF-633) M-18
2.1.3 PC-118 ..... M-18
2.1.4 PC-218 ..... M-19
2.1.5 PC-418 ..... M-20
2.1.6 JS-506 ..... M-20
2.1.7 FS-539/FS-539SD M-21
2.1.8 FS-539SD saddle section M-21
2.1.9 FS-533 ..... M-22
2.1.10 PK-519 ..... M-23
2.1.11 CU-101 ..... M-23
2.1.12 EM-907 ..... M-23
2.2 RELAY CONNECTOR LAYOUT DRAWING M-24
2.2.1 d-Color MF257 ..... M-24
N TIMING CHART N-1
1. 28ppm No Olivetti N-1
1.1 Timing chart when color printing N-1
O WIRING DIAGRAM O-1
1. d-Color MF257 ..... O-1
1.1 Main body O-1
2. DF-633 ..... O-2
3. PC-118 ..... O-3
4. PC-218 ..... O-4
5. PC-418 ..... O-5
6. JS-506 ..... O-6
7. FS-539/FS-539SD O-7
8. FS-533 ..... O-8
P THEORY OF OPERATION P-1
1. 28ppm No Olivetti P-1
1.1 INTERFACE SECTION P-1
1.1.1 Configuration (d-Color MF257) P-1
1.2 SCANNER SECTION P-2
1.2.1 Configuration P-2
1.2.2 Drive P-3
1.2.3 When the power turns ON P-3
1.2.4 Control when the Start key is pressed P-3
1.2.5 Original scanning area P-4
1.3 WRITE SECTION (PH SECTION) P-5
1.3.1 Configuration P-5
1.3.2 Outline P-5
1.3.3 Laser exposure process P-6
1.3.4 Laser emission timing P-7
1.3.5 Laser emission stop P-8
1.3.6 Laser emission area P-8
1.3.7 Color registration control (color shift correction) system P-8
1.3.8 Color skew correction control P-11
1.3.9 Skew adjustment/skew adjustment reset P-12
1.3.10 PH unit temperature detection control P-12
1.3.11 PH window cleaning P-12
1.4 PHOTO CONDUCTOR SECTION P-13
1.4.1 Configuration P-13

1.4.2 Drive P-14
1.4.3 Photo conductor drive mechanism P-14
1.4.4 Erase LED control P-15
1.4.5 Photo conductor cleaning P-16
1.4.6 Electrostatic charger control P-16
1.4.7 Charging roller cleaning P-17
1.4.8 Unit detection P-17
1.5 DEVELOPING SECTION P-19
1.5.1 Configuration P-19
1.5.2 Drive P-19
1.5.3 Developing unit/K pressure/releases mechanism P-20
1.5.4 Developer flow P-20
1.5.5 Auto refining developing system P-22
1.5.6 Developing bias P-22
1.5.7 Toner scattering prevention P-23
1.5.8 Developing cooling P-23
1.5.9 Toner density control P-23
1.5.10 Unit detection P-24
1.6 TONER SUPPLY SECTION P-25
1.6.1 Configuration P-25
1.6.2 Drive P-25
1.6.3 Toner replenishing overview P-26
1.6.4 Toner replenishing from toner cartridge to toner hopper P-27
1.6.5 Toner replenishing from toner hopper to developing unit P-28
1.6.6 Auxiliary toner replenishing control for toner hopper P-29
1.6.7 Auxiliary toner replenishing control for developing unit P-29
1.6.8 Toner spillage prevention shutter P-30
1.6.9 Toner cartridge cooling mechanism P-31
1.6.10 Front door mechanism P-31
1.6.11 Toner cartridge life detection P-32
1.7 1ST TRANSFER SECTION P-34
1.7.1 Configuration P-34
1.7.2 Drive P-35
1.7.3 Transfer belt drive P-35
1.7.4 1st transfer roller control P-35
1.7.5 Pressure/retraction control by print mode P-36
1.7.6 1st transfer control P-38
1.7.7 Transfer belt cleaning P-38
1.7.8 Waste toner spillage prevention shutter P-40
1.7.9 Transfer belt cooling P-41
1.7.10 Cleaning blade foreign matter removal control P-42
1.7.11 Transfer belt new article detection P-42
1.8 2ND TRANSFER SECTION P-43
1.8.1 Configuration P-43
1.8.2 Drive P-43
1.8.3 2nd transfer control P-43
1.8.4 Control of toner application to transfer roller P-44
1.8.5 Transfer roller cleaning P-44
1.8.6 Charge neutralization and separation of paper P-44
1.8.7 Paper winding prevention guide P-45
1.8.8 Transfer roller new article detection P-46
1.9 TONER COLLECTING SECTION P-46
1.9.1 Configuration P-46
1.9.2 Drive P-47
1.9.3 Control of waste toner conveyance through waste toner box P-47
1.9.4 Waste toner box-in-position detection P-48
1.9.5 Waste toner box full detection P-49
1.9.6 Waste toner box new article detection P-50
1.9.7 Waste toner spillage prevention shutter P-50
1.10 PAPER FEED SECTION (MANUAL BYPASS TRAY) P-51
1.10.1 Configuration P-51
1.10.2 Drive P-51
1.10.3 Up/down control P-51
1.10.4 Paper feed control P-53
1.10.5 Paper size detection control P-54
1.10.6 Paper empty detection control P-56
1.11 PAPER FEED SECTION_28ppm No Olivetti P-56
1.11.1 Configuration P-56

1.11.2 Drive P-57
1.11.3 Up/down control P-58
1.11.4 Paper feed control P-59
1.11.5 Paper size detection control P-63
1.11.6 Paper empty detection control P-66
1.11.7 Paper feed tray locking mechanism P-67
1.11.8 Pick-up roller retract mechanism P-67
1.11.9 Separation roller retract mechanism P-67
1.11.10 Tray detachment mechanism P-68
1.11.11 Heater HT-509 ..... P-68
1.12 VERTICAL TRANSPORT SECTION P-69
1.12.1 Configuration P-69
1.12.2 Drive P-70
1.12.3 Vertical transport control P-70
1.12.4 Right door mechanism P-70
1.13 REGISTRATION SECTION P-72
1.13.1 Configuration P-72
1.13.2 Drive P-73
1.13.3 Registration control P-73
1.14 FUSING SECTION P-75
1.14.1 Configuration P-75
1.14.2 Drive P-76
1.14.3 Fusing speed correction P-76
1.14.4 Fusing pressure/retraction mechanism P-76
1.14.5 Paper separation mechanism P-77
1.14.6 Fusing belt deformation prevention control P-77
1.14.7 Fusing temperature control P-78
1.14.8 Smart fusing control P-80
1.14.9 Protection from abnormal temperatures P-81
1.14.10 Fusing PPM control P-81
1.15 PAPER EXIT/REVERSE SECTION P-82
1.15.1 Configuration P-82
1.15.2 Drive P-83
1.15.3 Operation P-84
1.16 DUPLEX SECTION P-89
1.16.1 Configuration P-89
1.16.2 Drive P-89
1.16.3 Operation P-89
1.17 IMAGE STABILIZATION CONTROL P-94
1.17.1 Overview P-94
1.17.2 Description of control P-94
1.17.3 Control contents P-95
1.17.4 Operation timing P-96
1.18 POWER SUPPLY SECTION P-99
1.18.1 Main power switch P-99
1.18.2 Power key P-101
1.19 FAN CONTROL P-102
1.19.1 Configuration P-102
1.19.2 Function P-103
1.19.3 Control P-103
1.20 COUNTER CONTROL P-104
1.21 INDICATOR FUNCTION P-104
1.21.1 Control panel section P-104
2. DF-633 ..... P-106
2.1 CONFIGURATION P-106
2.1.1 Section configuration P-106
2.1.2 Main part configuration P-106
2.2 OVERVIEW P-107
2.2.1 Paper path P-107
2.2.2 Paper path operation P-107
2.3 DOCUMENT FEED SECTION P-108
2.3.1 Document feed drive P-108
2.3.2 Document set/empty detection P-108
2.3.3 Document size detection mechanism P-109
2.3.4 Document size detection table P-110
2.3.5 Mixed original detection P-110
2.3.6 Pick-up roller up/down control P-111

2.3.7 Document feed/separation control....P-111
2.4 DOCUMENT REGISTRATION SECTION....P-112
2.4.1 Document registration drive....P-112
2.4.2 Document registration loop formation process....P-113
2.5 DOCUMENT READING SECTION....P-113
2.5.1 Document reading drive....P-113
2.5.2 Transport mechanism....P-114
2.6 DOCUMENT SWITCHBACK/EXIT SECTION....P-114
2.6.1 Document switchback/exit drive....P-114
2.6.2 Switching mechanism for document switchback/exit....P-115
3. FS-533/PK-519....P-116
3.1 CONFIGURATION....P-116
3.1.1 Section configuration....P-116
3.2 PAPER PATH....P-116
3.2.1 No offset/No staple/Punch mode....P-116
3.2.2 Sort/staple/punch mode....P-117
3.3 Finisher section....P-117
3.3.1 Unit lock mechanism....P-117
3.4 TRANSPORT SECTION....P-118
3.4.1 Configuration....P-118
3.4.2 Drive....P-118
3.4.3 Paper conveyance/receiving roller section paper transport control....P-119
3.4.4 Paper exit roller section paper transport control....P-120
3.4.5 Paper exit roller up/down control....P-121
3.4.6 Paper exit roller/lower drive connecting control....P-122
3.4.7 Paper exit paddle control....P-123
3.5 ALIGNMENT SECTION....P-124
3.5.1 Configuration....P-124
3.5.2 Drive....P-125
3.5.3 Paper FD alignment control....P-126
3.5.4 Paper CD alignment control....P-127
3.5.5 Alignment tray paper detect control....P-129
3.6 STAPLER SECTION....P-129
3.6.1 Configuration/Drive....P-129
3.6.2 Stapler positioning control....P-130
3.6.3 Staple control....P-130
3.6.4 Staple empty detection control....P-131
3.7 PAPER EXIT TRAY SECTION....P-132
3.7.1 Configuration....P-132
3.7.2 Drive....P-132
3.7.3 Paper exit tray lift up control....P-133
3.7.4 Paper level detect control....P-133
3.8 PK-519....P-134
3.8.1 Configuration....P-134
3.8.2 Drive....P-135
3.8.3 Skew correction mechanism....P-136
3.8.4 Punch control....P-137
3.8.5 Punch holes switch control....P-138
3.8.6 Punch dust full detection control....P-139
4. FS-539/FS-539SD/PK-524....P-142
4.1 Configuration....P-142
4.2 Paper path....P-142
4.3 FINISHER SECTION....P-143
4.3.1 Door open/close detection mechanism....P-143
4.4 TRANSPORT SECTION....P-144
4.4.1 Configuration....P-144
4.4.2 Drive....P-144
4.4.3 Paper path switching mechanism....P-144
4.4.4 Receiving roller section up/down function....P-145
4.4.5 Buffer control....P-146
4.4.6 Sub tray exit mechanism....P-146
4.5 ALIGNMENT SECTION....P-147
4.5.1 Configuration....P-147
4.5.2 Drive....P-149
4.5.3 Paper transport control to alignment section....P-150
4.5.4 Paper alignment control....P-150
4.5.5 Paper exit control....P-152

4.6 STAPLER SECTION P-154
4.6.1 Configuration P-154
4.6.2 Drive P-154
4.6.3 Stapler movement control P-154
4.6.4 Manual staple mechanism P-155
4.6.5 Staple control P-156
4.6.6 Staple empty detection control P-156
4.7 OUTPUT TRAY SECTION P-157
4.7.1 Configuration P-157
4.7.2 Drive P-158
4.7.3 Main tray up/down mechanism P-158
4.7.4 Main tray paper level detection control P-160
4.7.5 Main tray position detection mechanism P-161
4.7.6 Tray full detection mechanism P-161
4.8 Saddle section P-162
4.8.1 Configuration P-162
4.8.2 Transport section P-164
4.8.3 Alignment section P-165
4.8.4 Stapler P-168
4.8.5 Folding/Saddle stitching P-169
4.8.6 Tri-folding P-171
4.8.7 Exit section P-172
4.9 PK-524 ..... P-174
4.9.1 Configuration P-174
4.9.2 Drive P-175
4.9.3 Skew correction control P-175
4.9.4 Punch control P-175
4.9.5 Puncher up/down status detection configuration P-177
4.9.6 Punch dust box full detection mechanism P-177
4.9.7 Punch dust box installation detection mechanism P-178
5. JS-506 ..... P-179
5.1 CONFIGURATION P-179
5.1.1 Section configuration P-179
5.1.2 Main part configuration P-179
5.2 PAPER PATH P-180
5.2.1 Paper feed to the exit tray P-180
5.3 DRIVE P-180
5.3.1 Paper transport drive mechanism for exit tray 1 ..... P-180
5.3.2 Paper transport drive mechanism for exit tray 2 ..... P-180
5.3.3 Exit tray 2 shift drive mechanism P-180
5.4 Exit tray 1 ..... P-181
5.4.1 Paper transport P-181
5.4.2 Paper full detection P-181
5.5 Exit tray 2 ..... P-182
5.5.1 Paper transport P-182
5.5.2 Paper shift mechanism P-183
5.5.3 Paper full detection P-184
6. PC-118/PC-218/HT-509 ..... P-185
6.1 CONFIGURATION P-185
6.1.1 Section configuration P-185
6.1.2 Main electrical part configuration P-185
6.2 PAPER PATH P-186
6.2.1 PC-118 ..... P-186
6.2.2 PC-218 ..... P-186
6.3 DRIVE P-187
6.3.1 PC-118 ..... P-187
6.3.2 PC-218 ..... P-187
6.4 OPERATION P-187
6.4.1 Paper feed section P-187
6.4.2 Cassette section P-189
7. PC-418/HT-509 ..... P-192
7.1 CONFIGURATION P-192
7.1.1 Section configuration P-192
7.1.2 Main electrical part configuration P-192
7.2 PAPER PATH P-193
7.3 DRIVE P-193

7.4 OPERATION....P-193
7.4.1 Paper feed section....P-193
7.4.2 Main tray section....P-194
7.4.3 Sub tray section....P-195
7.4.4 Paper empty detection control....P-196
8. THEORY OF OPERATION FK-513....P-198
8.1 COMMUNICATION CONTROL....P-198
8.1.1 FIF bits of DIS, DTC and DCS....P-198
8.1.2 Modem fallback sequence....P-206
8.1.3 V8/V34 sequence....P-206
8.2 FUNCTION....P-214
8.2.1 Telephone function....P-214
8.2.2 F-code....P-215
8.2.3 Transmission function....P-219
8.2.4 Reception function....P-219
9. AU-102....P-222
9.1 Configuration....P-222
9.2 Operation....P-222
10. AU-201S....P-223
10.1 AU-201S....P-223
10.1.1 Configuration....P-223
10.1.2 Operation....P-223
10.1.3 Specifications....P-223
11. EK-608/EK-609....P-224
11.1 EK-608....P-224
11.1.1 Configuration....P-224
11.1.2 Operation....P-224
11.2 EK-609....P-224
11.2.1 Configuration....P-224
11.2.2 Operation....P-224
12. EM-907....P-226
12.1 CONFIGURATION....P-226
12.2 INSTALLATION PROCEDURE....P-226
12.2.1 Advance preparation....P-226
12.2.2 Release encryption setting....P-226
12.2.3 Mounting procedure....P-227
12.2.4 Transition procedure....P-227
12.3 Function....P-228
13. UK-221....P-230
13.1 CONFIGURATION....P-230
13.1.1 Mounting position....P-230
13.2 OPERATION....P-230
13.2.1 Outline....P-230
13.2.2 2nd network interface structure....P-231
13.2.3 Operation on ErP Auto Power Off mode....P-233

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, OLIVETTI (hereafter called OLI) strongly recommends that all servicing be performed only by OLI-trained service technicians.
- Changes may have been made to this product to improve its performance after this Service Manual was printed. Accordingly, OLI 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 OLI 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.	General precaution	Electric hazard	High temperature
: Prohibition when servicing the product.	General prohibition	Do not touch with wet hand	Do not disassemble
: Direction when servicing the product.	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

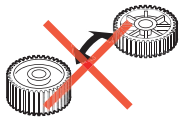
3.1 MODIFICATIONS NOT AUTHORIZED BY OLIVETTI

OLIVETTI 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

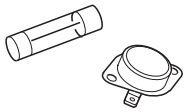
⚠WARNING

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

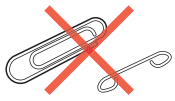


- Do not use any power cord or power plug not specified by OLI.

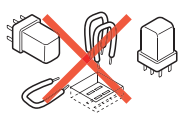
- Use only the protective fuses specified by OLI.
  Use of any type of fuse or related part not specified by OLI makes safety devices inoperative which may result in a fire from high heat.



- 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.

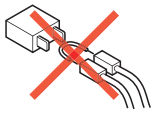


- Do not disable relay functions (for example, inserting a piece of paper between relay contacts to hamper circuit action.)
  Fire may result from high heat.



⚠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

OLIVETTI 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

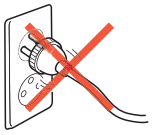
- Do not use any conversion plug adapter even if the power plug shape does not match your wall outlet.

  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.



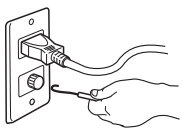
(2) Ground Connection

⚠WARNING

- Check whether the product is grounded properly.

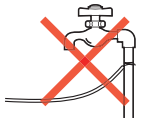
  If current leakage occurs in an ungrounded product, you may suffer electric shock while operating the product.

  Connect power plug to grounded wall outlet.



⚠WARNING

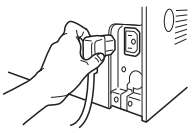
- Make sure of correct ground connection.
  If the grounding wire is connected to an inappropriate part, there is a risk of explosion or electric shock. Do not connect the grounding wire to any of the following parts:
  a. Gas pipe: Gas explosion or fire may result.
  b. Lightning rod: Risk of electric 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.

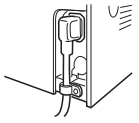


(3) Power Plug and Cord

⚠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.

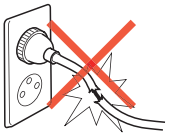




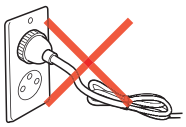
⚠WARNING

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

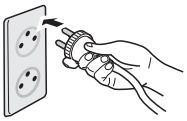
- Check whether the power cord is damaged. Check whether the sheath is damaged.
  If the power plug, cord, or sheath is damaged, replace with a new power cord (with plug and connector on each end) specified by OLI. Using the damaged power cord may result in fire or electric shock.



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

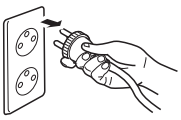


- Check whether dust is collected around the power plug and wall outlet.
  Using the power plug and wall outlet without removing dust may result in fire.



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

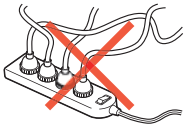
- When unplugging the power cord, grasp the plug, not the cable.
  The cable may be broken, leading to a risk of fire and electric shock.



(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.

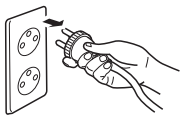
  A risk of fire and electric shock exists.

(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.

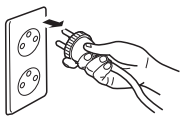
  Do not make any adjustment not described in the documentation.

  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.

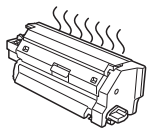
  A risk of electric shock exists.



⚠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.

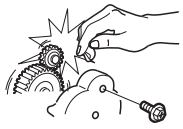
  If the machine is left unattended, face protrusions toward the wall or take other necessary precautions to prevent a user or other person in the area from stumbling over a protrusion of the machine or being caught by a cable, possibly causing a fall to the floor or other personal injury.

(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.

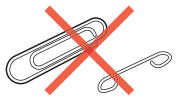
- When removing a part that secures a motor, gear, or other moving part, disassembling a unit, or reinstalling any of such parts and units, be careful about moving parts and use care not to drop any part or unit. During the service procedure, give sufficient support for any heavy unit.
  You may be injured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



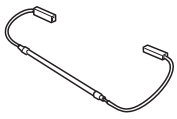
- Check wiring for pinched and any other damage.
  Current can leak, leading to a risk of electric shock or fire.

- 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.

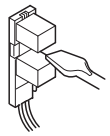
- After replacing a part to which AC voltage is applied (e.g., optical lamp and fixing lamp), be sure to check the installation state.
  A risk of fire exists.



⚠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.

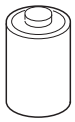
  Fire or explosion may result.

⚠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	20mW
Maximum average radiation power (*)	5.7 µW
Wavelength	770 to 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	20 mW
Wavelength	770 to 800 nm

(2) All Areas

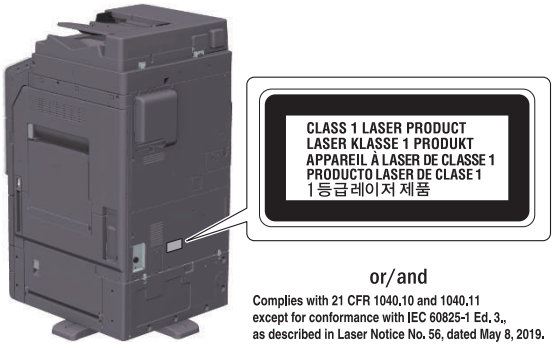
⚠WARNING

⚠ 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	20 mW
Wavelength	770 to 800 nm

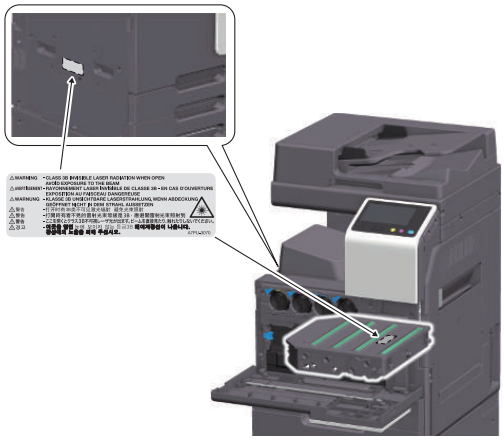
3.5.3 Laser Safety Label

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.

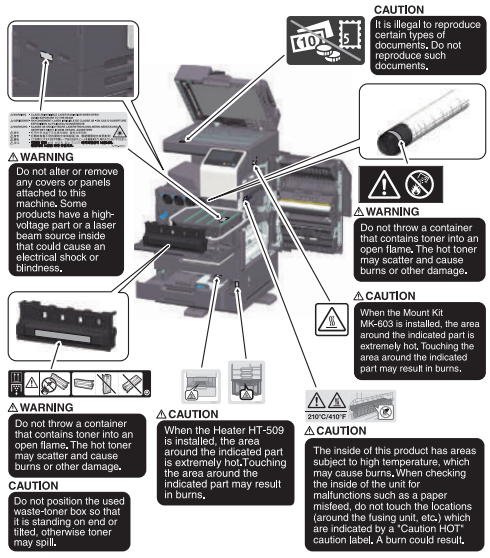
4. WARNING INDICATIONS ON THE MACHINE

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

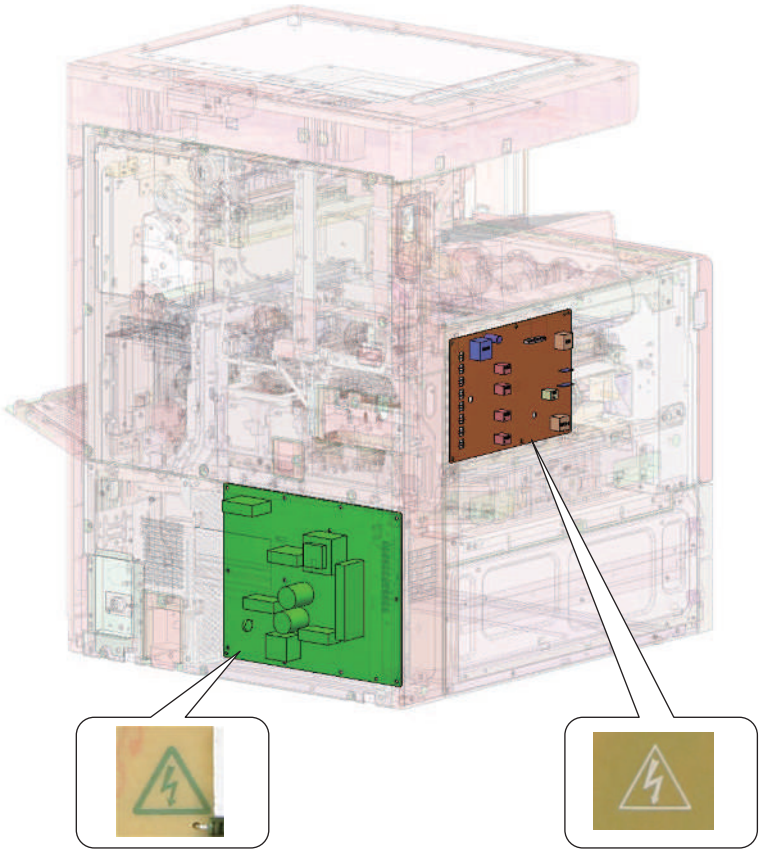
⚠CAUTION

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.



<FS-539 /FS-539 SD >

4.2 Warning indications on the boards



⚠ High voltage

This area generates high voltage.
Be careful not to touch here when the power is turned ON to avoid getting an electric shock.

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 OLI 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 OLI.
4. For reports and measures concerning serious accidents, follow the regulations specified by every distributor.

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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	d-Color MF257	Main body
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.
- Some models within the product series listed in this manual may not be available in some countries and regions.

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C PRODUCT OUTLINE

1. PRODUCT SPECIFICATIONS

1.1 d-Color MF257

1.1.1 Basic specifications

Items	Specifications	
Type	Desktop/console * scanner/printer (When paper feed cabinet/desk is installed)	
Control panel	7-inch TFT color LCD WVGA (resistive touch panel)	
Printing process	Laser electrostatic process copying system	
Photoconductor	OPC drum	
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	Belt fusing	
Heating system	Halogen lamp	
Original scanning	CIS module scanning optical system (Sheet through system when DF is used)	
Exposure lamp	LED light (5 W or under)	
Scanning resolution	Main scan direction: 600 dpi, Sub scan direction: 600 dpi	
Original glass	Stationary	
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	1 beam LD exposure system x4, and polygon mirror scan system	
Exposure resolution	Main scan direction: 600 dpi, Sub scan direction: 600 dpi	
Image loss	Copy	Leading edge: 4.2 mm (3/16 inch) Trailing edge: 3 mm (1/8 inch) Rear edge: 3 mm (1/8 inch) Front edge: 3 mm (1/8 inch)
	PC print	Leading edge: 4.2 mm (3/16 inch) Trailing edge: 4.2 mm (3/16 inch) Rear edge: 4.2 mm (3/16 inch) Front edge: 4.2 mm (3/16 inch)
Warm-up time (at an ambient temperature of 23 °C/73.4 °F and rated source voltage) (Period from the time main power switch was turned on to the time this machine is ready for printing.)	28cpm No Olivetti	20 sec. or less
	d-Color MF257	20 sec. or less
	22cpm No Olivetti	20 sec. or less
First copy time (Tray 1, A4 or 8 1/2 x 11, full size)	28cpm No Olivetti	Color: 8.4 sec. or less Black: 6.8 sec. or less
	d-Color MF257	Color: 8.4 sec. or less Black: 6.8 sec. or less
	22cpm No Olivetti	Color: 8.4 sec. or less Black: 6.8 sec. or less
Copying speed for multi-copy cycle (A4 or 8 1/2 x 11, plain paper)	28cpm No Olivetti	Color: 28 sheets/min. (1-sided), 25 sheets/min. (2-sided) Black: 28 sheets/min. (1-sided), 25 sheets/min. (2-sided)
	d-Color MF257	Color: 25 sheets/min. (1-sided), 25 sheets/min. (2-sided) Black: 25 sheets/min. (1-sided), 25 sheets/min. (2-sided)
	22cpm No Olivetti	Color: 22 sheets/min. (1-sided), 22 sheets/min. (2-sided) Black: 22 sheets/min. (1-sided), 22 sheets/min. (2-sided)
Processing speed	28cpm No Olivetti	126.12 mm/s: Plain paper, Recycled paper, OHP film 63.05 mm/s: Thick 1/1+/2/3, Envelope, Postcard
	d-Color MF257	126.12 mm/s: Plain paper, Recycled paper, OHP film 63.05 mm/s: Thick 1/1+/2/3, Envelope, Postcard
	22cpm No Olivetti	126.12 mm/s: Plain paper, Recycled paper, OHP film 63.05 mm/s: Thick 1/1+/2/3, Envelope, Postcard
Fixed zoom ratios	Full size	x1.000
	Reduction	x0.500, x0.612, x0.707, x0.816, x0.866 (Japan, Europe)

Items	Specifications	
		x0.500, x0.647, x0.733, x0.785 (US)
	Enlargement	x1.154, x1.224, x1.414, x1.632, x2.000 (Japan, Europe) x1.214, x1.294, x1.545, x2.000 (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	Small roller separation system with torque limiter
	Tray 1	Roller separation system with pick-up mechanism
Copy exit tray capacity	Plain paper	250 sheets
Memory capacity	Japan, Europe	Main memory: 6 GB Standard storage (storage board): 256 GB
	Except for Japan/Europe	Main memory: 6 GB Standard storage (microSD): 8 GB
External memory function	Supported external memory devices	USB flash memory compatible with the USB (1.1/2.0) interface FAT32-formatted memory device Not including security features (Possible to turn OFF security features) Memory capacity of 32GB or less recommended. A USB flash memory that appears as multiple drives on a computer cannot be used.
Material	Toner cartridge, drum unit, developing unit, imaging 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	Manual bypass tray
Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))		500 sheets	500 sheets	100 sheets
Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))				
Thick 1 (91 to 120 g/m^2 (24 3/16 to 31 15/16 lb))		150 sheets	150 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)				
OHP film (*2) (*3)		-	-	
Index paper				
Label sheet				
Postcard				
Envelope				10 sheets
Long size paper (127 to 210 g/m^2 (33 13/16 to 55 7/8 lb))				1 sheet
Regular paper size		B4, A4, A4S, B5, B5S, A5S $8^1/_2$ x 14, $8^1/_2$ x 11, $8^1/_2$ x 11 S, Foolscap (*4), 16K	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 (*4), 8K, 16K	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 (*5), 8K, 16K, 16KS
Custom paper size	Width	139.7 to 297 mm (5 1/2 to 11 11/16 inches)	139.7 to 297 mm (5 1/2 to 11 11/16 inches)	90 to 297 mm (3 9/16 to 11 11/16 inches)
	Length	182 to 364 mm (7 3/16 to 14 5/16 inches)	182 to 431.8 mm (7 3/16 to 17 inches)	139.7 to 1200 mm (5 1/2 to 47 1/4 inches)

- *1: Images are out of guarantee.
- *2: Only for feeding landscape oriented.
- *3: Black print only.
- *4: 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 $13^1/_2$.
- *5: 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, envelope, label sheet, index paper and long size paper cannot be fed for duplex printing.**

1.1.3 Print volume

28cpm No Olivetti

Items		Japan	North America	Europe	China
Average print volume (prints/month)	Color	600	1,200	-	1,200

Items		Japan	North America	Europe	China
	Black	2,400	2,600	-	2,600
Maximum print volume (prints/ month)	Color	27,000	42,600	-	42,600
	Black	108,000	92,400	-	92,400

d-Color MF257

Items		Japan	North America	Europe	China
Average print volume (prints/ month)	Color	-	1,000	1,300	1,000
	Black	-	2,500	2,900	2,500
Maximum print volume (prints/ month)	Color	-	35,700	38,700	35,700
	Black	-	89,300	86,300	89,300

22cpm No Olivetti

Items		Japan	North America	Europe	China
Average print volume (prints/ month)	Color	-	800	-	800
	Black	-	1,900	-	2,500
Maximum print volume (prints/ month)	Color	-	31,100	-	25,500
	Black	-	73,900	-	79,500

1.1.4 Machine specifications

Items		Specifications			
Power requirement	Voltage	AC 100 V	AC 110 V	AC 120 V	AC 220 V to 240 V
	Current	15 A	15 A	12 A	8 A
	Frequency	50/60 Hz	60 Hz	60 Hz	50/60 Hz
Max. power consumption		1,500 W or less			1,580 W or less
Power consumption in each mode	Standby	255 W or less (*3)			
	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			
Dimensions		571 mm *4 (W) x 661.5 mm (D) x 786 mm *5 (H) (22 1/2 inches *4 (W) x 26 7/16 inches (D) x 30 15/16 inches *5 (H))			
Space requirements (*6)		1,064 mm *6 (W) x 1,130 mm *7 (D) x 786 mm (H) (46 7/8 inches *6 (W) x 44 1/2 inches *7 (D) x 30 15/16 inches (H))			
Weight		Approx. 70 kg (154 5/16 lb) (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 original glass
- *6: Space for opening and closing the right door is included.
- *7: Paper tray is pulled out

1.1.5 Print function

Items	Specifications	
First print time (A4 or 8 1/2 x 11, plain paper, standard tray, full size)	28cpm No Olivetti	Color: 6.8 sec. or less Black: 8.4 sec. or less
	d-Color MF257	Color: 6.8 sec. or less Black: 8.4 sec. or less
	22cpm No Olivetti	Color: 6.8 sec. or less Black: 8.4 sec. or less
Printing speed for multi-print cycle (A4 or 8 1/2 x 11, plain paper, except for the manual bypass tray)	28cpm No Olivetti	Color: 28 sheets/min. (1-sided), 25 sheets/min. (2-sided) Black: 28 sheets/min. (1-sided), 25 sheets/min. (2-sided)
	d-Color MF257	Color: 25 sheets/min. (1-sided), 25 sheets/min. (2-sided) Black: 25 sheets/min. (1-sided), 25 sheets/min. (2-sided)
	22cpm No Olivetti	Color: 22 sheets/min. (1-sided), 22 sheets/min. (2-sided)

Items	Specifications	
		Black: 22 sheets/min. (1-sided), 22 sheets/min. (2-sided)
Print resolution	Multi-valued: 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	PCL5e/c Emulation, PCL 6 (XL Version 3.0) Emulation PostScript 3 (3016) Emulation XPS ver.1.0	
Printer driver (PCL/FAX/XPS)	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 (x86/x64) Windows 8.1 (x86/x64) Windows 10 (x86/x64)
Printer driver (PS)	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 (x86/x64) Windows 8.1 (x86/x64) Windows 10 (x86/x64) Mac OS (10.10, 10.11, 10.12, 10.13, 10.14, 10.15) Red Hat Enterprise Linux
Work memory	6 GB	
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: 30 sheets/min., 2-sided: 14 sheets/min. (using DF, A4, scanning resolution of 600 dpi) 1-sided: 55 sheets/min., 2-sided: 20 sheets/min. (using DF, A4, scanning resolution of 300 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*1 Real Time Mode Twain Driver
	Supported operating system	Windows 7 (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]*1, 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: Except for Japan/Europe : Optional EM-907 is required.

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
File type	JPEG BMP PNG GIF Animation GIF PDF
Supported SSL/TLS version	SSL3.0 TLS1.0 TLS1.1 TLS1.2 TLS1.3
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. Olivetti 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-633

Type

Name	Reverse automatic document feeder	
Type	Document feed section	Paper feed from top of stack
	Document reading section	Sheet-through system
	Document switchback section	Switchback system
	Document exit section	Straight exit system
Installation	Screw clamp to the main body	
Original alignment	Center	
Original loading	Face up	

Function

Mode		Standard mode, Mixed original detection mode, Scan mode/FAX mode	
Original feeding speed (A4 or 8 $^1/_2$ x 11)	Copy	1-sided (600 dpi)	30 pages/min.
		2-sided (600 dpi)	15 pages/min.
	Scan/FAX mode	1-sided (300 dpi)	55 pages/min.

		2-sided (300 dpi)	22 pages/min.

Type of original

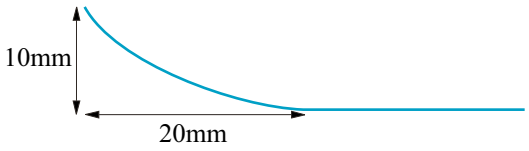
Type	Standard mode (Plain paper)	1-sided mode: 35 to 128 g/m^2 (9 5/16 to 34 1/16 lb)
		2-sided mode: 50 to 128 g/m^2 (13 5/16 to 34 1/16 lb)
	Mixed original detection mode (Plain paper)	1-sided mode: 35 to 128 g/m^2 (9 5/16 to 34 1/16 lb)
		2-sided mode: 50 to 128 g/m^2 (13 5/16 to 34 1/16 lb)
	Scan/FAX mode (Plain paper)	1-sided mode: 35 to 128 g/m^2 (9 5/16 to 34 1/16 lb)
		2-sided mode: 50 to 128 g/m^2 (13 5/16 to 34 1/16 lb)
Document size	Standard mode	Metric: A5 to A3 Inch: 5 $^1/_2$ x 8 $^1/_2$ to 11 x 17
	Mixed original detection mode	Refer to the mixed original feed chart.
	Scan/FAX mode	Metric: A5 to A3 Inch: 5 $^1/_2$ x 8 $^1/_2$ to 11 x 17 Width: 139.7 to 297 mm (5 1/2 to 11 11/16 inches) Length: 139.7 to 431.8 mm (5 1/2 to 17 inches) (FAX transmission mode: 139.7 to 1,000 mm (5 1/2 to 39 3/8 inches))
Capacity	Standard mode Mixed original detection mode Scan/FAX mode	130 sheets (80 g/m^2 (21 1/4 lb)) or stack of 16 mm (5/8 inch) and below (including paper curl)

Particular original

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

Type of document	Possible trouble
Sheets lightly curled (Curled amount: 10 to 15 mm (3/8 to 9/16 inches)) (*1)	Dog-eared, exit failure, transport failure
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 inch) in vertical and 20 mm (13/16 inch) in horizontal direction and the amount of float of the folded original is less than 10 mm (3/8 inch), 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 inch) 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 128 g/m^2 (34 1/16 lb) or more
Significantly curled original (amount of curl exceeding 15 mm (9/16 inch))
OHP film
Label sheet
Offset master paper
Glossy photographic paper or glossy enamel paper

Mixed original feed chart

○	Mixed original feed available (same size)
×	No. mixed original feed
-	Can not set original

For metric area

			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	×	×	×	×	×	×	×	○

For inch area

			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 11S	8 1/2 x 5 1/2	8 1/2 x 5 1/2S
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 11S	×	×	○	○	○	-
		8 1/2 x 5 1/2	×	×	○	○	○	-
	5 1/2 inches	8 1/2 x 5 1/2S	×	×	×	×	×	○

Machine specification

Power requirement	Power supply: DC 24 V, DC 3.3 V (for recovering from the sleep mode)
	Supplying method: Supplied from the MFP main body
Max. power consumption	25 W or less
Dimension	565 mm (W) x 461 mm (D) x 121.6 mm (H) (22 1/4 inches (W) x 18 1/8 inches (D) x 4 13/16 inches (H))
Weight	Approx. 6.1 kg (13 7/16 lb)

Operating environment

- Conforms to the operating environment of the main body.

1.3 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))		

1.4 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

1.5 FS-533

Basic specifications

Items	Specifications
Name	Finishing device with staple functionality
Type	Multi staple finisher built into the main body
Document alignment	Center
Consumable	Staples (5,000 staples / cartridge)
Mode	Sort, Group Sort offset, Group offset

Items	Specifications
	Sort staple
Power requirement	DC 24 V ± 10% (supplied from the main body)
Max. power consumption	40 W or less
Dimension	472.5 mm (W) (*) x 583.5 mm (D) (*) x 194.7 mm (H) ($18^{5}/_{8}$ inches (W) (*) x 23 inches (D) (*) x $7^{11}/_{16}$ inches (H))
Weight	Approx. 12.0 kg ($26^{7}/_{16}$ lb)
Operating environment	Conforms to the operating environment of the main body.
Option	Punch kit (PK-519)

- *: Includes mounting part

Sort/Group

<Number of stacked sheets>

Paper type	Maximum number of stacked sheets	
	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))	500 sheets	250 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	10 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))		
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))		
Postcard		
Envelope		
OHP film		
Label sheet		
Letterhead		
Tab paper		

<Height of stacked sheets>

Paper length	Maximum height of stacked sheets
A4S, $8^{1}/_{2}$ x 11 S or less	73 mm
B4, $8^{1}/_{2}$ x 14 or greater	36 mm

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	SRA3, A3W, A3, B4, A4S, A4, B5S, B5, A5S, A5, B6S, A6S, Postcard S 11 x 17, $8^{1}/_{2}$ x 14, $8^{1}/_{2}$ x 11 S, $8^{1}/_{2}$ x 11, $5^{1}/_{2}$ x $8^{1}/_{2}$ S, $5^{1}/_{2}$ x $8^{1}/_{2}$ $7^{1}/_{4}$ x $10^{1}/_{2}$ S, $7^{1}/_{4}$ x $10^{1}/_{2}$, 8K, 16KS, 16K
Custom size paper	Width: 90 to 320 mm ($3^{9}/_{16}$ to $12^{5}/_{8}$ inches) Length: 139.7 to 1,200 mm ($5^{1}/_{2}$ to $47^{1}/_{4}$ inches)

Sort offset/Group offset

<Number of stacked sheets>

Paper type	Maximum number of stacked sheets	
	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))	500 sheets	250 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	10 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))		
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
A4S, $8^1/_2$ x 11 S or less	73 mm
B4, $8^1/_2$ x 14 or greater	36 mm

NOTE

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

<Paper size>

Type	Type
Regular size paper	A3, B4, A4S, A4, B5 11 x 17, $8^1/_2$ x 14, $8^1/_2$ x 11 S, $8^1/_2$ x 11 $7^1/_4$ x $10^1/_2$, 8K, 16K
Custom size paper	Width: 210 to 297 mm ($8^1/_4$ to $11^{11}/_{16}$ inches) Length: 182 to 431.8 mm ($7^3/_{16}$ inches to 17 inches)

Sort staple

<Number of stacked sheets>

Paper type	Maximum number of stacked sheets	
	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))	500 sheets or 50 sets	250 sheets or 30 sets
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))	Not specified (*)	Not specified (*)
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))		

- *: Plain paper+ and thick papers can be used only in "Front Cover/ Back Cover" in Cover sheet mode.

<Height of stacked sheets>

Paper length	Maximum height of stacked sheets
A4S, $8^1/_2$ x 11 S or less	73 mm
B4, $8^1/_2$ x 14 or greater	36 mm

NOTE

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

<Paper size>

Type	Type
Regular size paper	A3, B4, A4S, A4, B5 11 x 17, $8^1/_2$ x 14, $8^1/_2$ x 11 S, $8^1/_2$ x 11 $7^1/_4$ x $10^1/_2$, 8K, 16K
Custom size paper	Width: 210 to 297 mm ($8^1/_4$ to $11^{11}/_{16}$ inches) Length: 182 to 431.8 mm ($7^3/_{16}$ inches to 17 inches)

<No. of sheets to be stapled, Stapling position>

Mode	Basis weight	Max. No. of sheets to be stapled		Stapling position
		A4S, $8^1/_2$ x 11 S or less	B4, $8^1/_2$ x 14 or greater	
Normal mode	52 to 90 g/m^2 ($13^{13}/_{16}$ to $23^{15}/_{16}$ lb)	50 sets	30 sheets	Back of the corner (Parallel) Front of the corner (Parallel) Side: Parallel 2 point
Cover sheet mode (*)	52 to 209 g/m^2 ($13^{13}/_{16}$ to $55^5/_8$ lb) (2 sheets or under for thick paper)	48 sheets (Plain paper / Recycled paper) + 2 sheets (Thick paper)	28 sheets (Plain paper / Recycled paper) + 2 sheets (Thick paper)	

- *: Plain paper+ and thick papers can be used only in "Front Cover/ Back Cover".

1.6 PK-519

Basic specifications

Items	Specifications
Name	Punch kit
Type	FS-integrated type punching operation device
Punching method	Stops and punches every paper
No. of holes	Japan: 2 holes North America: 2-3 holes switching Europe: 2-4 holes switching Sweden: 4 holes
Supported mode	Punch mode

Items	Specifications
Applicable post processing mode	Sort, Group, Staple
Power requirement	DC 24 V (supplied from the finisher)
	DC 5 V (supplied from the finisher)
Max. power consumption	Included in the max. power consumption of finisher
Dimension	110.2 mm (W) x 483.5 mm (D) x 203.2 mm (H) ($4^{5}/_{16}$ inches (W) x $19^{1}/_{16}$ inches (D) x 8 inches (H))
Weight	Approx. 3.2 kg ($7^{1}/_{16}$ 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))
Paper size	A3, B4, A4, A4S (*), B5, B5S (*) 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 (*), 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

- *: North America 3 holes and Europe 4 holes are not supported.

1.7 JS-506

Basic specifications

Items	Specifications	
Type	Job separator with movable tray	
Installation	Fixed at the paper exit section of the main body	
Document alignment	Center	
Mode	• Sort, group • Sort offset, group offset	
Offset function	Exit tray	Tray 2
	Shift amount	30 mm ($1^{3}/_{16}$ inches)
Power requirement	DC 24 V ±10 % (supplied from the main body)	
Max. power consumption	24 W or less	
Dimension	Tray 1: 412.0 mm (W) x 469.0 mm (D) x 130.0 mm (H) ($16^{1}/_{4}$ inches (W) x $18^{7}/_{16}$ inches (D) x $5^{1}/_{8}$ inches (H))	
	Tray 2: 451.0 mm (W) x 386.0 mm (D) x 127.0 mm (H) ($17^{3}/_{4}$ inches (W) x $15^{3}/_{16}$ inches (D) x 5 inches (H))	
Weight	Approx. 1.5 kg (3.3 lb)	
Operating environment	Conforms to the operating environment of the main body.	

Capacity

Exit tray	Mode	Paper size	Paper type		Capacity
Tray 1 (*1) (*3)	• Sort • Group	• A3, B4, A4, A4S, B5, B5S, A5, A5S, B6S, A6S • 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 • 16KS, 16K, 8K • Postcard S • Custom size paper (Width: 90 to 320 mm ($3^{9}/_{16}$ to $12^{5}/_{8}$ inches), Length: 139.7 to 457.2 mm ($5^{1}/_{5}$ to 18 inches))	Thin paper (52 to 59 g/m^2 ($13^{13}/_{16}$ to $15^{11}/_{16}$ lb))		100 sheets
			Plain paper/Recycled paper (60 to 90 g/m^2 ($15^{15}/_{16}$ to $23^{15}/_{16}$ lb))		100 sheets
			Plain paper+ (91 to 105 g/m^2, $24^{3}/_{16}$ to $27^{15}/_{16}$ lb)		10 sheets
			Thick paper (106 to 300 g/m^2, $28^{3}/_{16}$ to $79^{13}/_{16}$ lb)		
			Special paper	Postcard	
				Label sheet	
				OHP film	
				Index paper	
				Envelope	
Tray 2 (*2)	• Sort • Group	• A3, B4, A4, A4S, B5, B5S, A5, A5S, B6S, A6S • 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 • 16KS, 16K, 8K • Postcard S	Thin paper (52 to 59 g/m^2 ($13^{13}/_{16}$ to $15^{11}/_{16}$ lb))		150 sheets
			Plain paper/Recycled paper (60 to 90 g/m^2 ($15^{15}/_{16}$ to $23^{15}/_{16}$ lb))		

Exit tray	Mode	Paper size	Paper type		Capacity
		• Custom size paper (Width: 90 to 320 mm ($3^{9}/_{16}$ to $12^{5}/_{8}$ inches), Length: 139.7 to 1,200 mm ($5^{1}/_{2}$ to $47^{1}/_{4}$ inches))	Plain paper+ (91 to 105 g/m^2 ($24^{3}/_{16}$ to $27^{15}/_{16}$ lb)		20 sheets
			Thick paper (106 to 300 g/m^2 ($28^{3}/_{16}$ to $79^{13}/_{16}$ lb)		
			Special paper	Postcard	
				Label sheet	
				OHP film	
				Index paper	
				Envelope	10 sheets
				Long size paper (127 to 210 g/m^2 ($33^{13}/_{16}$ to $55^{7}/_{8}$ lb)	Not specified
	• Sort offset • Group offset	• A3, B4, A4, A4S, B5, B5S • 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, 16KS, 16K, 8K • Custom size paper (Width: 182 to 297 mm ($7^{3}/_{16}$ to $11^{11}/_{16}$ inches)/Length: 182 to 431.8 mm ($7^{3}/_{16}$ to 17 inches))	Thin paper (52 to 59 g/m^2 ($13^{13}/_{16}$ to $15^{11}/_{16}$ lb))		150 sheets
			Plain paper/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)		20 sheets
			Thick paper (106 to 300 g/m^2 ($28^{3}/_{16}$ to $79^{13}/_{16}$ lb)		

- *1: 22.5 mm ($^{7}/_{8}$ inches) in stack height (stacked height is determined by a sensor)
- *2: 49.9 mm ($1^{15}/_{16}$ inches) in stack height (no sensor detection mechanism for stacked height)
- *3: If either the number or height of stacked sheets reaches the specified value, “Tray paper full” is determined.

1.8 PC-118/PC-218

Basic specifications

Items	Specifications	
Name	PC-118	1 way paper feed cabinet
	PC-218	2 way paper feed cabinet
Type	PC-118	1 way paper feed device, front loading type
	PC-218	2 way paper feed device, front loading type
Installation	Desk type	
Document alignment	Center	
Power requirement	Supplied from the main body	
Max. power consumption	15 W or less	
Dimension	571 mm (W) x 640 mm (D) x 254 mm (H) (22 1/2 inches (W) x 25 3/16 inches (D) x 10 inches (H))	
Weight	PC-118	Approx. 22 kg (48 1/2 lb)
	PC-218	Approx. 24 kg (52 15/16 lb)
Operating environment	Conforms to the operating environment of the main body.	

Paper capacity

Paper type	Capacity	
	Tray 3	Tray 4
Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	500 sheets	500 sheets
Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))		
Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb))	150 sheets	150 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)) (*)		

- *: Images are out of guarantee.

Paper size

Type	Size
Regular size paper	A3, B4, A4S, B5S, A4, B5, A5S

Type	Size
	11 x 17, 8 1/2 x 14, 8 1/2 x 11 S, 8 1/2 x 11, 5 1/2 x 8 1/2 S Foolscap (*), 16K, 8K
Custom size paper	Width: 139.7 mm to 297.0 mm (5 1/2 inches to 11 11/16 inches) Length: 182.0 mm to 431.8 mm (7 3/16 inches to 17 inches)

- *: 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.

1.9 PC-418

Basic specifications

Items	Specifications
Name	Large capacity cabinet
Type	Front loading type LCC
Installation	Desk type
Document alignment	Center
Power requirement	Supplied from the main body
Max. power consumption	44 W or less
Dimension	571 mm (W) x 640 mm (D) x 254 mm (H) (22 1/2 inches (W) x 25 3/16 inches (D) x 10 inches (H))
Weight	Approx. 23 kg (50 11/16 lb)
Operating environment	Conforms to the operating environment of the main body.

Paper capacity

Paper type	Capacity
Plain paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	2,500 sheets
Recycled paper (60 to 90 g/m^2 (15 15/16 to 23 15/16 lb))	
Thick 1 (106 to 120 g/m^2 (28 3/16 to 31 15/16 lb))	1,000 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)) (*)	

- *: Images are out of guarantee.

Paper size

Type	Size
Regular size paper	A4 or 8 1/2 x 11

1.10 CU-101

Type

Name	Clean unit	
Type	Exhaust scrubber	
Suction system	Dual inline fan	
Trapping system	UFP trap	UFP filter
	Deodorant trap	Deodorant filter
UFP collection efficiency	UFP filter collection capacity: More than 99 %	
Maximum suction air volume	0.8 m^3/min (Avg. flow velocity: 0.1 m/sec)	
Exhaust direction	Exhaust downflow	

Machine specification

Power requirement	DC 24 V (supplied from the main body)
Max. power consumption	12 W or less (CU-101)
Dimension	450 mm (W) x 106 mm (D) x 320 mm (H) 17 11/16 inch (W) x 4 3/16 inch (D) x 12 5/8 inch (H)
Weight	Approx. 2.0 kg (4 7/16 lb)

Operating environment

- Conforms to the operating environment of the main body.

1.11 FK-513

1.11.1 Basic specifications

(1) General specifications

Applicable lines	PSTN, PBX	
Protocol	Group 3 (compliant to ITU-T T.30) • ECM • F-code communication • Olivetti 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
	• Fixed to mm at transmission (except 600 dpi) • mm and inch are available at reception. • Selection by using the [Resolution] key. • You can not change settings on every page.	
Fax memory size	• 256 GB (256 GB in the main body storage is used as a memory.) • 10,000 pages can be stored including all Scan/Box/Printer/Fax documents.	
FAX memory backup	Image data is saved in main body storage.	
Communication time	Level of 2 seconds (Olivetti standard A4 chart, 33,600 bps)	
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

(2) Line connecting section

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

1.12 i-Option

1.12.1 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

Function	Overview	Required option
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
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.

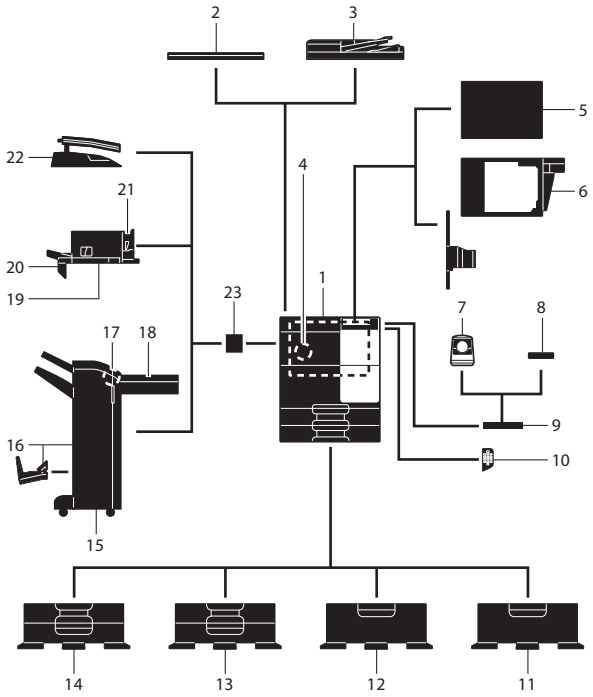
- Activation via Administrator Settings: License Settings.
- Activation via Service Mode: License Management - Activation

2. OVERALL COMPOSITION

2.1 SYSTEM CONFIGURATION

2.1.1 System configuration

(1) System front view



[1]	d-Color MF257	[2]	Original Cover OC-513
[3]	Reverse Automatic Document Feeder DF-633	[4]	Fax Kit FK-513
[5]	Clean Unit CU-101	[6]	Mount Kit MK-748
[7]	Authentication Unit AU-102	[8]	Authentication Unit AU-201S
[9]	Working Table WT-515	[10]	Keypad KP-101
[11]	Desk DK-518	[12]	Paper Feed Cabinet PC-418
[13]	Paper Feed Cabinet PC-218	[14]	Paper Feed Cabinet PC-118
[15]	Finisher FS-539	[16]	Finisher FS-539SD
[17]	Punch Kit PK-524	[18]	Relay Unit RU-514
[19]	Finisher FS-533	[20]	Mount Kit MK-602
[21]	Punch Kit PK-519	[22]	Job Separator JS-506
[23]	Mount Kit MK-603	[24]	Local Interface Kit EK-608 (*)
[25]	Local Interface Kit EK-609 (*)	[26]	Upgrade Kit UK-221 (*)
[27]	Dehumidifier Heater HT-513 (*)	[28]	Mount Kit MK-719 (*)
[29]	Mount Kit MK-735 (*)	[30]	i-Option (*)
[31]	Expanded Memory Unit MK-907 (*)	-	

NOTE

- **Use the desk or the paper feed cabinet without fail when installing on the floor in order to keep the function and quality of the unit.**
- **No image for options with (*)**
- **Expanded Memory Unit MK-907 (Standard for Japan/Europe) (*)**

2.1.2 Optional configuration

(1) Combination configuration of main body and document options

1	Main body	OC-513		
2	Main body	DF-633	SP-501	Spare TX Marker Stamp

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

1	Main body	DK-518
2	Main body	PC-118
3	Main body	PC-218
4	Main body	PC-418

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

1	Main body	MK-603	JS-506		
2	Main body	MK-603	FS-533	PK-519	MK-602
3	Main body	MK-603	RU-514	FS-539	PK-524
4	Main body	MK-603	RU-514	FS-539SD	PK-524

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

(a) Japan

1	Main body	HT-513	MK-719

(b) Overseas

- No optional settings

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

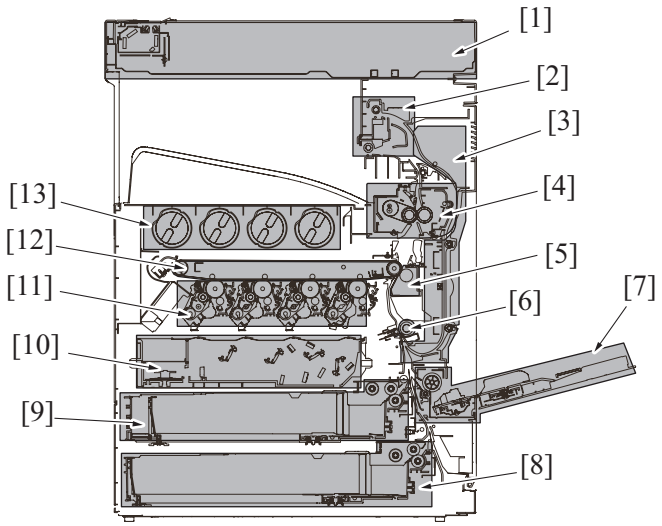
(a) Japan

1	DK-518 (dehumidifier heater is standard equipment)	HT-509
2	PC-118 (dehumidifier heater is standard equipment)	HT-509
3	PC-218 (dehumidifier heater is standard equipment)	HT-509
4	PC-418 (dehumidifier heater is standard equipment)	HT-509

(b) Overseas

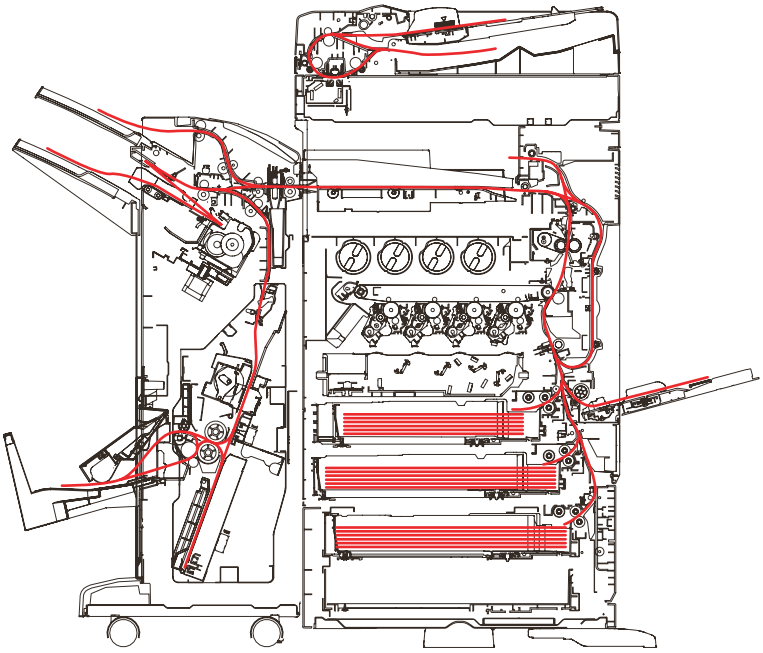
1	DK-518	HT-509	MK-734
2	PC-118	HT-509	MK-734
3	PC-218	HT-509	MK-734
4	PC-418	HT-509	MK-734

2.2 SECTION CONFIGURATION

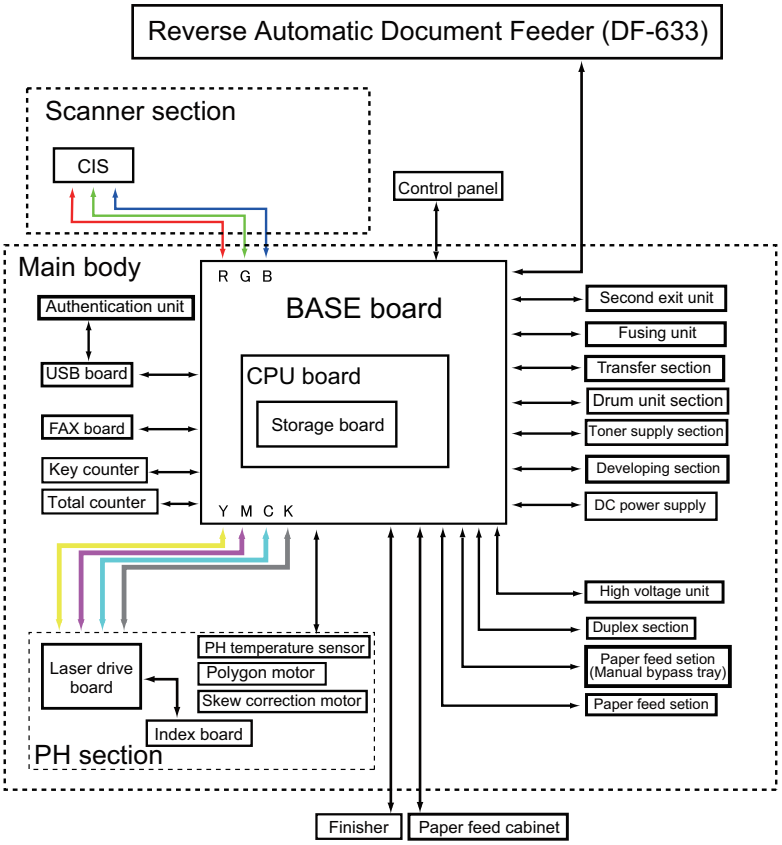


[1]	Scanner section	[2]	Paper exit/reverse section
[3]	Duplex section	[4]	Fusing section
[5]	2nd transfer section	[6]	Registration section
[7]	Paper feed section (Manual bypass tray)	[8]	Paper feed section (Tray 2)
[9]	Paper feed section (Tray 1)	[10]	Write section (PH section)
[11]	Developing section	[12]	Transfer section
[13]	Toner supply section	-	-

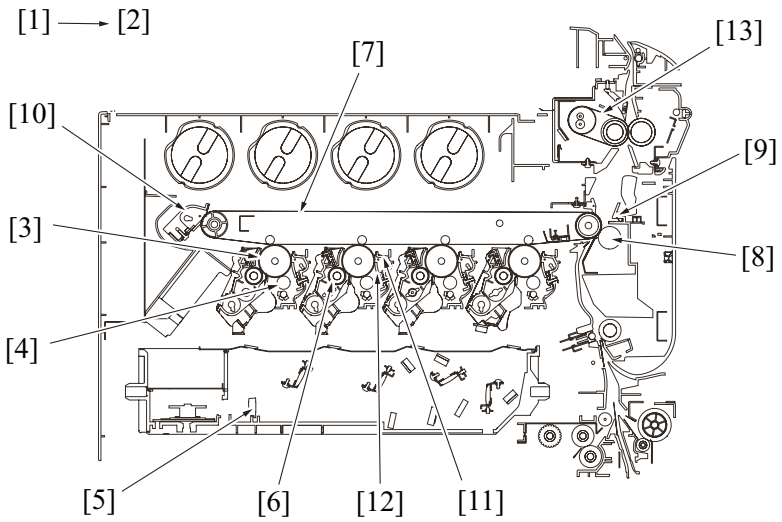
2.3 PAPER PATH



2.4 CONTROL BLOCK DIAGRAM

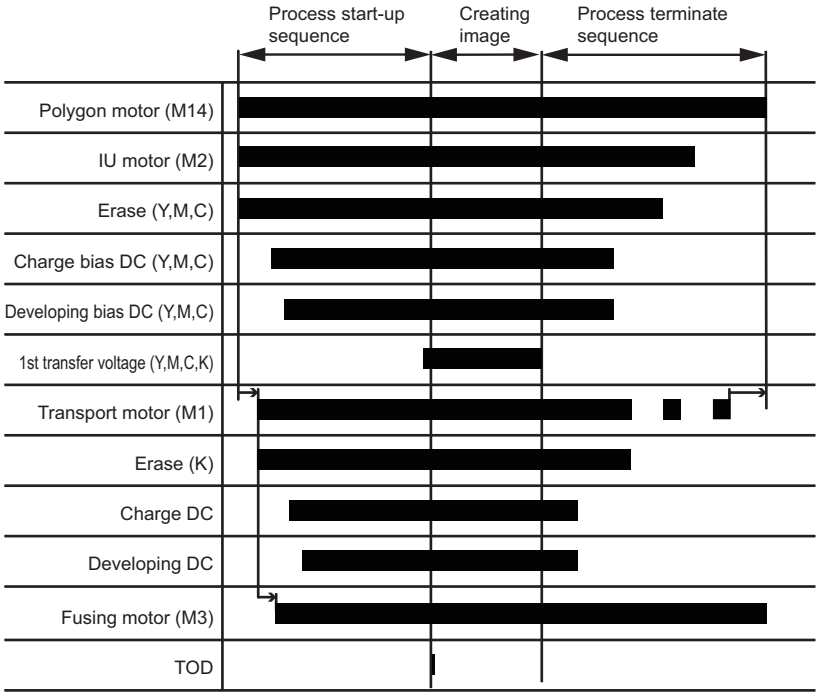


2.5 IMAGE CREATION PROCESS



[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); CIS 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, video signals (C, M, Y, and K) are output to the printer image processing section. • D/A conversion will be performed after the VIDEO signals (Y, M, C, K) are 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 DC charge on the photo conductor.
[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 each of the photo conductors (Y, M, C, and K) 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.

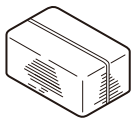
2.6 IMAGE FORMING CONTROL



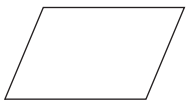
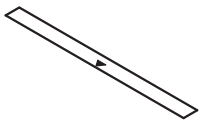
D SERVICE TOOL

1. Main unit tool

Service material list

Name	Shape	Parts No.	Remarks
Cleaning pad (30 pcs)		No Code	30pcs/1 pack
Hydro-wipe		No Code	10pcs/1pack

CE tool list

Tool name	Shape	Quantity	Parts No.	Remarks
Color chart		1	AVGR06936 D	
Monochrome chart		1	AVGR29733 W	
DF reading chart (for Duplex)		1	AVGR25577 W	
DF reading chart		1	AVGR04762 A	

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
OMNIKEY 5427CK (AU-205H)	Auth Device Advanced for 5427CK (AU-205H)
YSoft	Auth Device Tool Advanced for YSoft CR

System requirement of tools

OS	• Windows 7 • Windows 8.1 • Windows 10 Support both 32-bit (x86) and 64-bit (x64) editions.
Library	Microsoft .Net Framework3.5 SP1 or later
Hard disk	10 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 Authentication Device 2 that is compatible with the type of card used.
   NOTE
   - **Use the loadable driver in advanced combination with the firmware version.**
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. Touch [Reboot]. The system restarts automatically, and the initial screen is displayed.
15. Remove the USB memory and select [Card] in [Billing Settings] -> [Authentication Device 2].
16. Touch [Reboot]. The system restarts automatically, and the initial screen is displayed.
17. Set the authentication user.

(b) 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 Authentication Device 2 that is compatible with the type of card used.
   NOTE
   - **Use the loadable driver in advanced combination with the firmware version.**
2. Start the Auth Device Tool Advanced for OMNIKEY 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. Touch [Reboot]. The system restarts automatically, and the initial screen is displayed.
12. Remove the USB memory and select [Card] in [Billing Settings] -> [Authentication Device 2].
13. Touch [Reboot]. The system restarts automatically, and the initial screen is displayed.
14. Set the authentication user.

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

1. Obtain the Authentication Device 2 that is compatible with the type of card used.
   NOTE
   - **Use the loadable driver in advanced combination with the firmware version.**
2. Start the Auth Device Tool Advanced for OMNIKEY 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. Touch [Reboot]. The system restarts automatically, and the initial screen is displayed.
14. Remove the USB memory and select [Card] in [Billing Settings] -> [Authentication Device 2].
15. Touch [Reboot]. The system restarts automatically, and the initial screen is displayed.
16. Set the authentication user.

(d) Auth Device Tool Advanced for YSoft CR

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 CR 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 v3 MF & Legic	LEGIC	TypeA (1) (*1)
KM USB Reader v3 Indala	Indala	Indala
KM USB Reader v3 MF+	EM4100, EM4102, RFID 125 kHz	EM4100/ EM4102/ RFID 125 kHz
	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 Authentication Device 2.
   NOTE
   - **Use the loadable driver in advanced combination with the firmware version.**
2. Start the Auth Device Tool Advanced for YSoft CR.
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. Touch [Reboot]. The system restarts automatically, and the initial screen is displayed.
12. Remove the USB memory and, accessing [Billing Settings] -> [Authentication Device 2], select [Card].
13. Touch [Reboot]. The system restarts automatically, and the initial screen is displayed.
14. 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 Authentication Device 2 that is compatible with the type of card used.
   NOTE
   - **Use the loadable driver in advanced combination with the firmware version.**
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.
    Input the MFP administrator password and click [OK].
14. Click [Start] and write the file in the MFP.
15. Check that “Normal” is shown in [Status].
    Click [Finished] to close the screen.
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 5427CK (Setting: TypeA/HID Prox/Multiple)

1. Install the Authentication Device 2 on the MFP.
   NOTE
   - **Use the loadable driver in advanced combination with the firmware version.**
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.
    Input the MFP administrator password and click [OK].
12. Click [Start] and write the file in the MFP.
13. Check that “Normal” is shown in [Status].
    Click [Finished] to close the screen.
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 (HID iCLASS)

1. Install the Authentication Device 2 on the MFP.
   NOTE
   - **Use the loadable driver in advanced combination with the firmware version.**
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.
    Input the MFP administrator password and click [OK].
14. Click [Start] and write the file in the MFP.
15. Check that “Normal” is shown in [Status].
    Click [Finished] to close the screen.
16. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.
17. Set the authentication user.

(e) Auth Device Tool Advanced for YSoft CR

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 CR 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 v3 MF & Legic	LEGIC	TypeA (1) (*1)
KM USB Reader v3 Indala	Indala	Indala
KM USB Reader v3 MF+	EM4100, EM4102, RFID 125 kHz	EM4100/ EM4102/ RFID 125 kHz

Card Reader Name	Readable Card Type	IC Card Information Setting (card type to be reported)
	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 Authentication Device 2 to the MFP.
   NOTE
   - **Use the loadable driver in advanced combination with the firmware version.**
2. Start the Auth Device Tool Advanced for YSoft CR.
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.
    Input the MFP administrator password and click [OK].
12. Click [Start] and write the file in the MFP.
13. Check that “Normal” is shown in [Status].
    Click [Finished] to close the screen.
14. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.
15. Set the authentication user.

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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	Target model	Field standard yield *1	Replacement time *2	Life stop *2
Drum unit/K	No Olivetti 28ppm	105,000 sheets	6050M	6655M
	d-Color MF257	102,000 sheets		
	No Olivetti 22ppm	80,000 sheets		
Developing unit/K	-	600,000 sheets	600,000 counts	610,000 counts
Imaging unit/Y,M,C	No Olivetti 28ppm	90,000 sheets	99,000 sheets/ 6050M	108,000 sheets/ 6655M
	d-Color MF257	87,000 sheets	96,000 sheets/ 6050M	104,000 sheets/ 6655M
	No Olivetti 22ppm	70,000 sheets	77,000 sheets/ 6050M	84,000 sheets/ 6655M
Transfer belt unit	-	300,000 sheets	330,000 sheets/ 22139min.	330,000 sheets/ 22939min.
Transfer Roller Unit	-	300,000 sheets	300,000 sheets	330,000 sheets
Fusing unit	-	500,000 sheets	500,000 counts	530,000 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. For details, see J.2.10.1 (24) Replacement timing Intelligent Control of Developing unit.

Specified conditions of field standard yield

Japan

Items		No Olivetti - 28ppm	d-Color MF257	No Olivetti - 22ppm
Printing	Color	1.5 P/J	-	-
	Black	3 P/J	-	-
Original density (average coverage ratio)		B/W = 5 % for each color, 5 % for black		
Paper size ratio		A4S: 40 %		
Color ratio		20 %		
Average print volume (pages/ month)		3,000	-	-

North America

Items		No Olivetti - 28ppm	d-Color MF257	No Olivetti - 22ppm
Printing	Color	1.5 P/J	-	1.5 P/J
	Black	3 P/J	-	3 P/J
Original density (average coverage ratio)		B/W = 5 % for each color, 5 % for black		
Paper size ratio		LetterS: 7 %		
Color ratio		30 %		
Average print volume (pages/ month)		3,800	-	2,700

Europe

Items		No Olivetti 28ppm	d-Color MF257	No Olivetti - 22ppm
Printing	Color	-	1.5 P/J	-
	Black	-	3 P/J	-
Original density (average coverage ratio)		B/W = 5 % for each color, 5 % for black		
Paper size ratio		A4S: 7 %		
Color ratio		30 %		
Average print volume (pages/ month)		-	4,200	-

2. Periodical replacement parts list

2.1 d-Color MF257

Classification	Parts name		Parts No.	Qt.	Replacing cycle	Descriptions	Ref. page
Paper feed section	Tray 1 pick-up roller		AVGR25619 K	1	300,000	*2 *4	E.3.1.1 Replacing the tray 1 pick-up roller, tray 1 feed roller, tray 1 separation roller
	Tray 1 feed roller		AVGR25620 R	1	300,000		
	Tray 1 separation roller		AVGR29581 X	1	300,000		
	Tray 2 pick-up roller		AVGR25619 K	1	300,000	*2 *4	E.3.1.2 Replacing the tray 2 pick-up roller, tray 2 feed roller, tray 2 separation roller
	Tray 2 feed roller		AVGR25620 R	1	300,000		
	Tray 2 separation roller		AVGR29581 X	1	300,000		
	Manual bypass tray feed roller		AVGR17878 R	1	200,000	*2 *4	E.3.1.3 Replacing the manual bypass tray feed roller, manual bypass tray separation roller assy
	Manual bypass tray separation roller assy		AVGR10321 H	1	200,000		
Processing section	Toner cartridge/Y *1	d-Color MF257	TN227/Y = B1395	1	24,000	*3	E.3.1.4 Replacing the toner cartridge
	Toner cartridge/M *1		TN227/M = B1396	1	24,000		
	Toner cartridge/C *1		TN227/C = B1397	1	24,000	*3	E.3.1.5 Replacing the drum unit/K
	Toner cartridge/K *1		TN227/K = B1394	1	24,000		
	Drum unit/K *1	d-Color MF257	DR217 - B1399	1	102,000		
	Developing unit/K		DV216 - B1398	1	600,000	*3	E.3.1.6 Replacing the developing unit/K
	Imaging unit/Y,M,C	d-Color MF257	IU217/Y - B1400	1	87,000	*3	E.3.1.7 Replacing the imaging unit/Y, M, C
			IU217/M - B1401	1	87,000		
			IU217/C - B1402	1	87,000		
	Waste toner box *1	d-Color MF257	WX-105 - B1203	1	28,000	*3 *5	E.3.1.8 Replacing the waste toner box
Image transfer section	Transfer belt unit		AVGR31012 S	1	300,000	*3	E.3.1.9 Replacing the transfer belt unit
	Transfer roller unit		AVGR28091 T	1	300,000	*3	E.3.1.10 Replacing the transfer roller unit
Fusing section	Fusing unit		• No Code (100V) • No Code (120V) • • AVGR31034 M (220-240V)	1	500,000	*3	E.3.1.11 Replacing the fusing unit

*1: The parts can be replaced either by user or service engineer.
*2: Actual durable cycle (life counter value)
*3: Field standard yield.
*4: Replace those three parts at the same time.
*5: A waste toner full condition is detected with detecting the actual waste toner emissions.

2.2 Reverse automatic document feeder (DF-633)

Parts name	Parts No.	Qt.	Replacing cycle	Remarks	Ref. page
Pick-up roller	AVGR31088 T	1	200,000	*1 *2	E.3.2.1 Replacing the pick-up roller/feed roller
Feed roller	AVGR31090 V	1	200,000		
Separation roller assy	AVGR31096 B	1	200,000		E.3.2.2 Replacing the separation roller assy

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

2.3 PC-118

Parts name	Parts No.	Qt.	Replacing cycle	Descriptions	Ref. page
Pick-up roller	AVGR25619 K	1	300,000	*1 *2	E.3.3.1 Replacing the tray 3 feed roller, tray 3 pick-up roller, tray 3 separation roller
Feed roller	AVGR29581 X	1	300,000		
Separation roller	AVGR25620 R	1	300,000		

*1: Actual durable cycle (life counter value)
*2: Replace those three parts at the same time.

2.4 PC-218

Parts name	Parts No.	Qt.	Replacing cycle	Descriptions	Ref. page
Pick-up roller	AVGR25619 K	2	300,000	*1 *2	E.3.3.1 Replacing the tray 3 feed roller, tray 3 pick-up roller, tray 3 separation roller E.3.3.2 Replacing the tray 4 feed roller, tray 4 pick-up roller, tray 4 separation roller
Feed roller	AVGR29581 X	2	300,000		
Separation roller	AVGR25620 R	2	300,000		

*1: Actual durable cycle (life counter value)
*2: Replace those three parts at the same time.

2.5 PC-418

Parts name	Parts No.	Qt.	Replacing cycle	Descriptions	Ref. page
Pick-up roller	AVGR25619 K	1	300,000	*1 *2	E.3.4.1 Replacing the feed roller, pick-up roller, separation roller
Feed roller	AVGR29581 X	1	300,000		
Separation roller	AVGR25620 R	1	300,000		

*1: Actual durable cycle (life counter value)
*2: Replace those three parts at the same time.

2.6 FS-539/FS-539SD

Part name	Parts No.	Qt.	Replacing cycle	Descriptions	Ref. page
Paddle (finisher)	AVGR30600 S	2	2,000,000	(*)	E.3.5.1 Replacing the paddle
	AVGR25629 L	1	2,000,000		
Upper paddle (saddle unit)	AVGR16532 G	1	2,000,000	(*)	E.3.5.2 Replacing the upper paddle (saddle section)
Lower paddle (saddle unit)	AVGR16533 C	4	2,000,000	(*)	E.3.5.3 Replacing the lower paddle (saddle section)

- *: Actual replacement cycle (life counter value)

2.7 FS-533

Parts name	Parts No.	Qt.	Replacing cycle	Descriptions	Ref. page
Alignment roller assy/ F	AVGR30598 U	1	1,000,000	(*1) (*2)	E.3.6.1 Replacing the alignment roller assy F/R
Alignment roller assy/ R	AVGR30599 Y	1	1,000,000		

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

3. Periodical replacement procedure

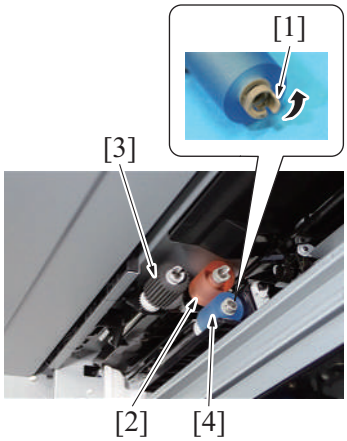
NOTE

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

3.1 d-Color MF257

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

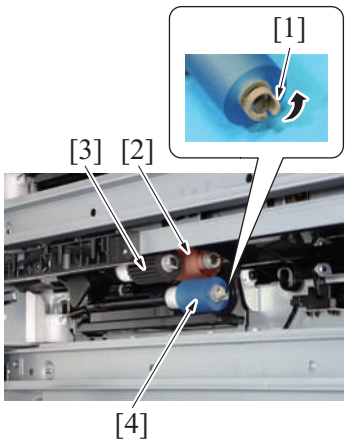
1. Open the right door.
2. Remove the tray 1.
   F.5.1.14 Tray 1
3. Remove the tray 2.
   F.5.1.15 Tray 2
4. Release the tab [1] of each roller, and remove the tray 1 pick-up roller [3], tray 1 feed roller [2] and tray 1 separation roller [4] .



5. To reinstall, reverse the order of removal.
6. Select [Service Mode] -> [Counter] -> [Life] and clear the count of [1st.].

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.5.1.14 Tray 1
3. Remove the tray 2.
   F.5.1.15 Tray 2
4. Release the tab [1] of each roller, and remove the tray 2 pick-up roller [3], tray 2 feed roller [2] and tray 2 separation roller [4].

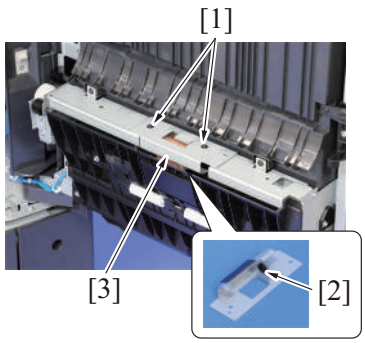


5. To reinstall, reverse the order of removal.
6. Select [Service Mode] -> [Counter] -> [Life] and clear the count of [2nd.].

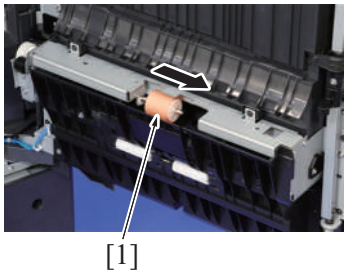
3.1.3 Replacing the manual bypass tray feed roller, manual bypass tray separation roller assy

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

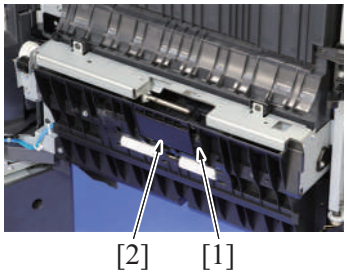
3. Remove two screws [1], and remove the bushing [2] and the plate [3].



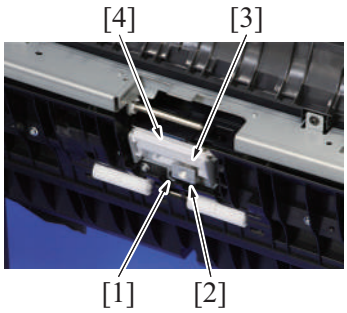
4. Remove the manual bypass tray feed roller [1].



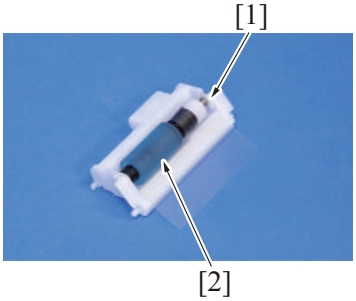
5. Remove the screw [1], and remove the cover [2].



6. Remove the screw [1], the plate [2] and Spring [3].
7. Remove the manual bypass tray separation roller unit [4].



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

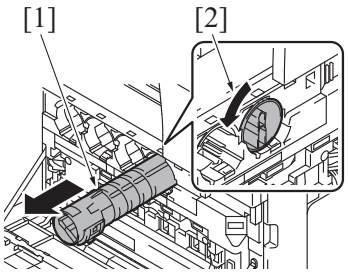


9. To reinstall, reverse the order of removal.
10. Select [Service Mode] -> [Counter] -> [Life] and clear the count of [Manual Tray].

3.1.4 Replacing the toner cartridge

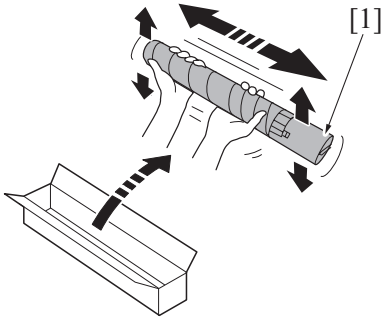
(1) Removal procedure

1. Open the front door.

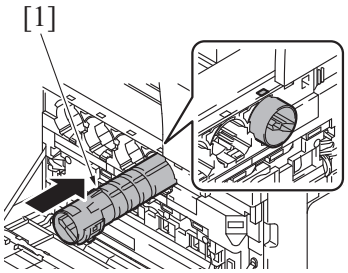


2. Turn the toner cartridge [1] in the direction [2] as shown in the illustration to release the lock.
3. Remove the toner cartridge [1].

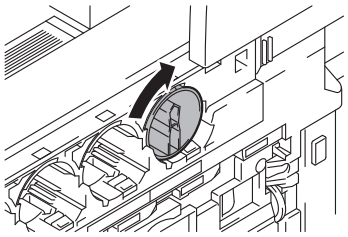
(2) Reinstall procedure



1. Remove the new toner cartridge [1] from its packaging, and the 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.
NOTE
- **Make sure that the toner cartridge is the same color as the label in the cartridge compartment.**
- **Make sure that the blue label position of the toner cartridge is matched with the one of the machine side.**

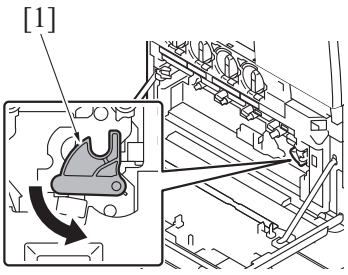


3. Completely insert the toner cartridge into the machine and turn it in the direction as shown in the illustration in order to fix the toner cartridge.

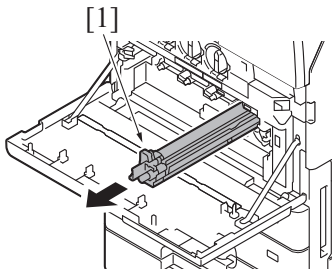
3.1.5 Replacing the drum unit/K

(1) Removal procedure

1. Open the front door.
2. Remove the waste toner box.
E.3.1.8 Replacing the waste toner box

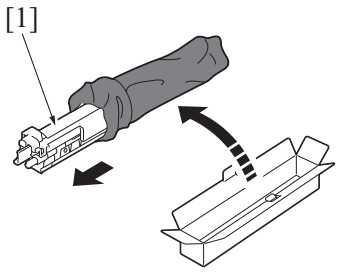


3. Turn the drum unit lock lever [1] and release the lock.

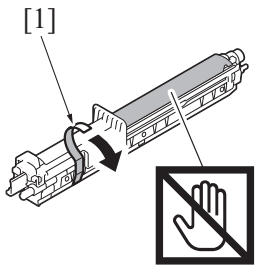


4. Pull the drum unit [1] to you and remove it from the machine.

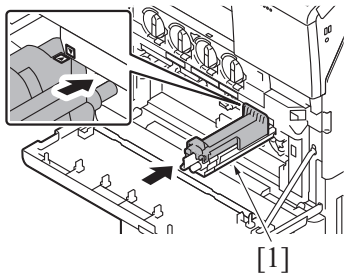
(2) Reinstall procedure



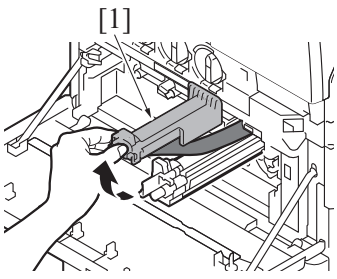
1. Remove the drum unit [1] from its package.
2. Remove the drum unit [1] from the plastic bag.



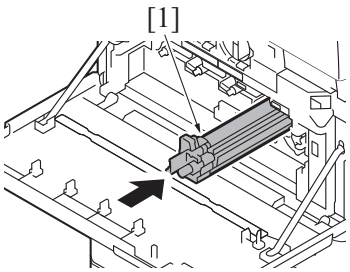
3. Peel off the tape [1].
NOTE
- **Do not hold the drum unit by the upper part. Holding it by the upper part can cause scratches on the surface of the photo conductor, resulting in the deterioration of image quality.**



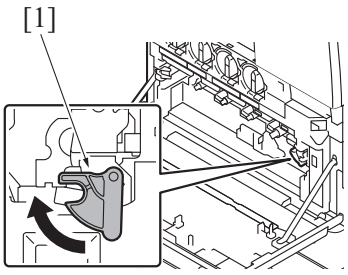
4. Align the "▲" mark on the drum unit with the "▼" mark on the machine and insert the drum unit [1] into the machine.



5. Remove the photo conductor protective sheet [1].



6. Completely insert the drum unit [1].

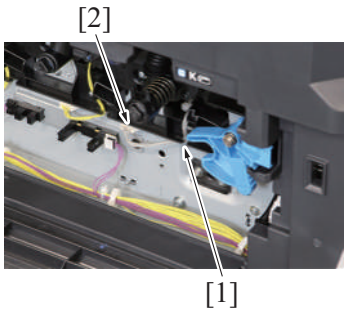


7. Turn the drum unit lock lever [1] and lock the drum unit.
   NOTE
   - **If the lock lever is hard to rotate, turn the lever while pushing the drum unit to the rear.**

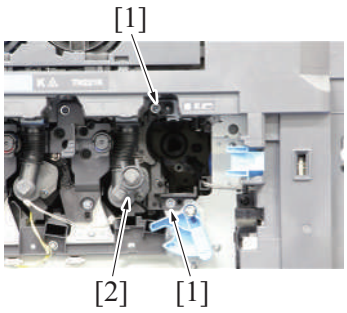
8. Clean the PH window.
   E.5.1.7 PH window
9. Reinstall the waste toner box.
10. Close the front door.
11. Select [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust] and carry out gradation adjust.

3.1.6 Replacing the developing unit/K

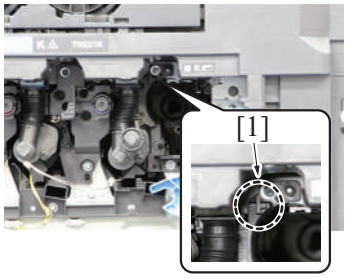
1. Open the front door.
2. Remove the waste toner box.
   E.3.1.8 Replacing the waste toner box
3. Remove the front lower cover.
   F.5.1.5 Front lower cover
4. Remove the drum unit/K.
   E.3.1.5 Replacing the drum unit/K



5. Remove the harness from the harness guide [1], and disconnect the connector [2].



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

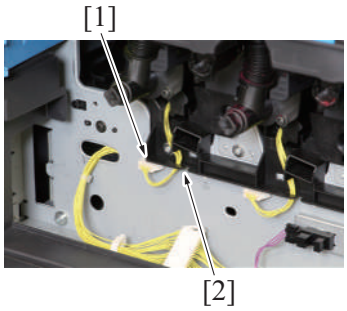


7. To reinstall, reverse the order of removal.
   NOTE
   - **To install the two screws in the developing unit, press the position [1] with your finger as shown in the illustration.**

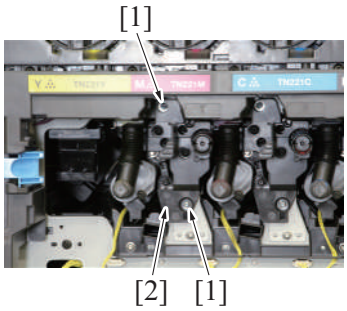
8. Carry out the [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust].

3.1.7 Replacing the imaging unit/Y, M, C

1. Open the front door.
2. Remove the waste toner box.
   E.3.1.8 Replacing the waste toner box
3. Remove the front lower cover.
   F.5.1.5 Front lower cover



4. Disconnect the connector [1], and remove the harness from the harness guide [2].



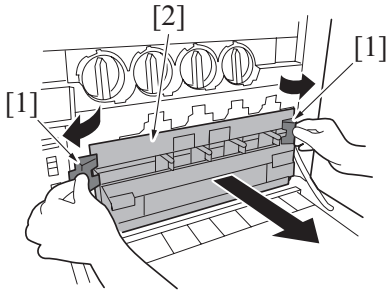
5. Remove two screws [1], and remove the imaging unit [2].

6. To reinstall, reverse the order of removal.

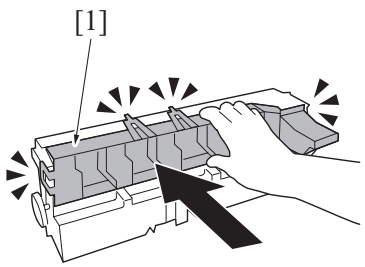
3.1.8 Replacing the waste toner box

(1) Removal procedure

1. Open the front door.



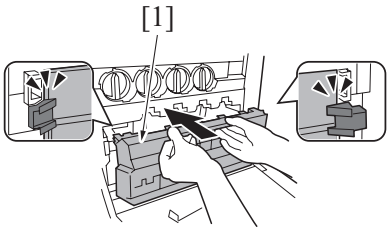
2. Unhook the waste toner box fixing levers [1] and remove the waste toner box [2].



3. Take out the cap [1] from the new waste toner box package, and attach it to the old waste toner box.
   NOTE
   - **After removing the Waste Toner Box, quickly install the cap. If the Waste Toner Box is tilted, waste toner may spill.**

4. Clean the surface around the waste toner collecting port.
   E.5.1.3 Cleaning of the area around the waste toner collecting port

(2) Reinstall procedure

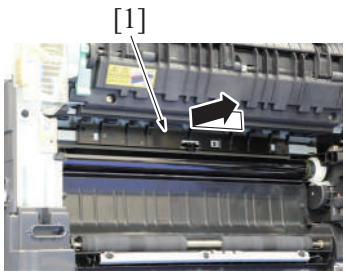


1. Remove the brand new waste toner box from its package and remove the packing material.
2. Set the waste toner box [1].
3. Close the front door.

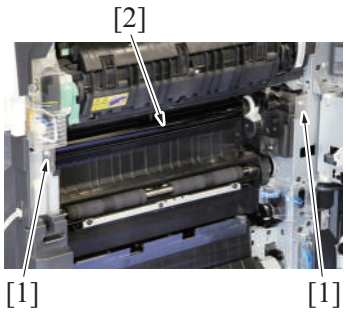
3.1.9 Replacing the transfer belt unit

(1) Removal procedure

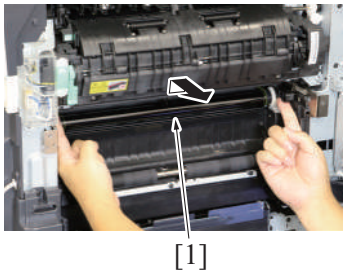
1. Remove the waste toner box.
   E.3.1.8 Replacing the waste toner box
2. Open the right door.



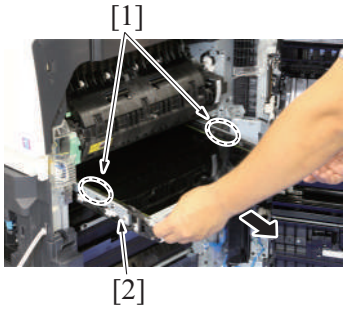
3. Remove the 2nd transfer paper winding prevention guide [1].



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

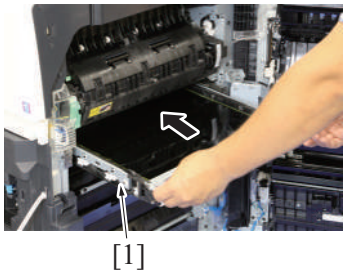


5. Hold the both sides and lift it to take out the transfer belt unit [1] a little.

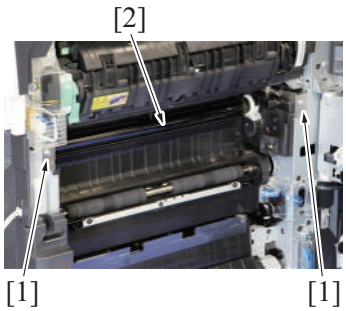


6. Hold the position [1] and remove the transfer belt unit [2].
   NOTE
   - **Do not touch the surface of the transfer belt unit.**
   - **Cover the transfer belt unit with something such shade cloth to protect its surface from dust or foreign matter.**
   - **If accidentally touched the surface of the transfer belt, lightly wipe it using the Hydro-wipe (No Code). 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 (No Code). Do not clean with alcohol or water.**

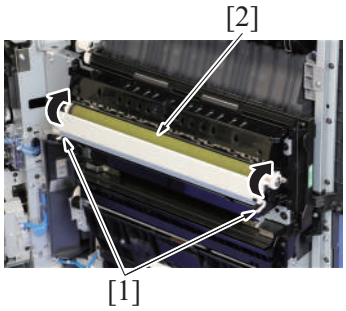


2. Install the transfer belt unit [2] with two screws [1].
   NOTE
   - **Replace the transfer roller unit, which are supplied with the transfer belt unit, at the same time.**
3. Install the 2nd transfer paper winding prevention guide.
4. Turn ON the main power switch.
5. Carry out the [Service Mode] -> [Counter] -> [Life] -> [New Release].
6. Carry out the [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust].

3.1.10 Replacing the transfer roller unit

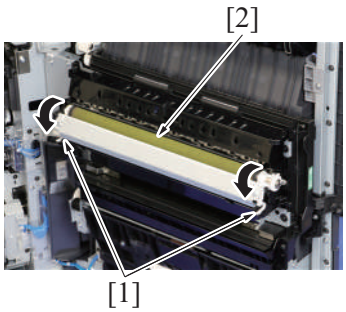
(1) Removal procedure

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].

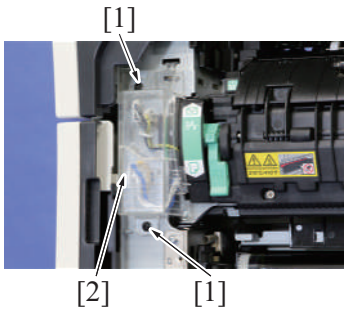
3.1.11 Replacing the fusing unit

⚠CAUTION

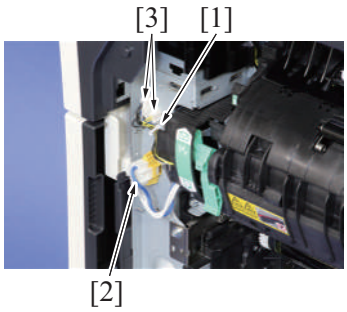
- The temperature gets high in the vicinity of the fusing unit. You may get burned when you come into contact with the area.

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

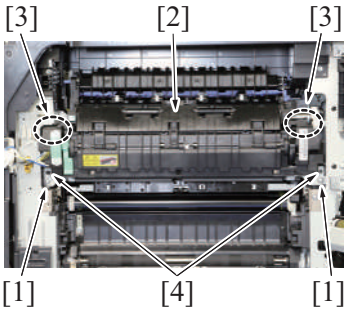
1. Open the right door.



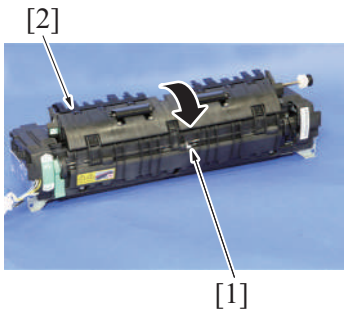
2. Remove two screws [1], and remove the connector protective cover [2].
   NOTE
   - **When installing the connector protective cover, take care to prevent the harness from being pinched.**



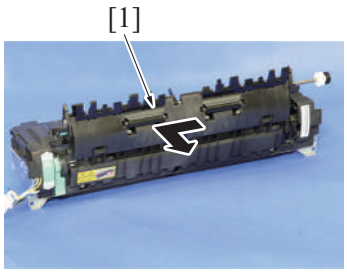
3. Remove the harness from the wire saddle [1].
4. Disconnect the connector [2].
   NOTE
   - **When removing the connector [2], press the claw to release the lock, then remove it.**
5. Disconnect two connectors [3].



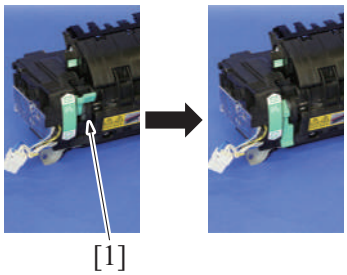
6. Remove two screws [1], and remove the fusing unit [2].
   NOTE
   - **When removing the fusing unit, hold the parts [3] shown on the picture so that it would not fall.**
   - **When installing the fusing unit, make sure that the set pin [4] is inserted in the fusing unit.**



7. Remove the C-clip [1], and raise the guide [2].



8. Remove the guide [1].
NOTE
- **When the fusing unit is to be replaced, mount the guide [1] that has been removed on the new fusing unit.**



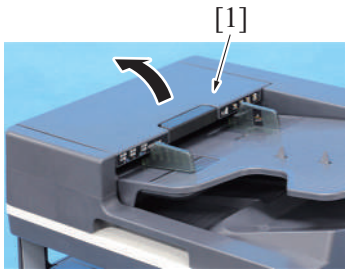
9. To reinstall, reverse the order of removal.
NOTE
- **The lever of the fusing unit for replacement is located at the position for the envelope printing (Uppermost).**
- **When replacing the fusing unit, change the position of lever [1] to that for the normal printing (Lowermost).**

10. Carry out the [Service Mode] -> [Counter] -> [Life] -> [New Release].

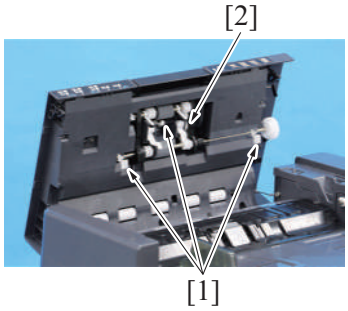
3.2 Reverse automatic document feeder (DF-633)

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

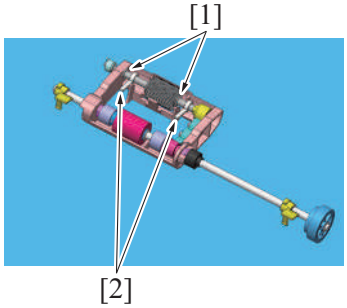
3.2.1 Replacing the pick-up roller/feed roller



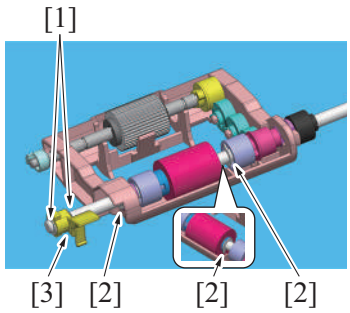
1. Open the upper door [1].



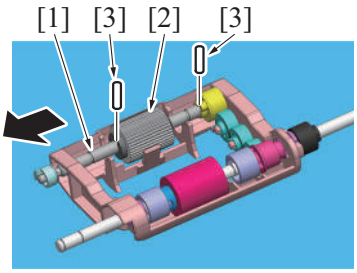
2. Release three tabs [1], and remove the paper feed assy [2].



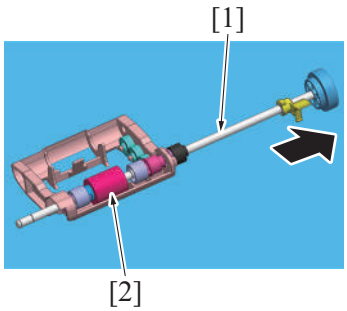
3. Remove two C-clips [1] and two levers [2].



4. Remove two E-rings [1] and three C-clips [2].
5. Remove the lever [3].



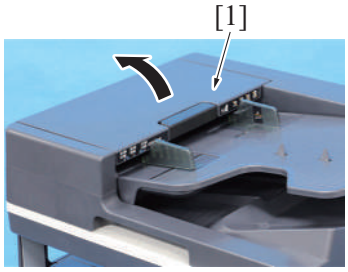
6. Pull out the shaft [1] in the direction of the arrow and remove the pick-up roller [2].
NOTE
- **Be careful not to lose two pins [3].**



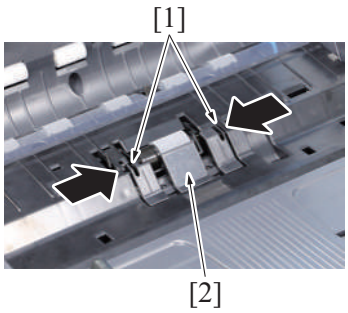
7. Pull out the shaft [1] in the direction of the arrow and remove the feed roller [2].

8. To reinstall, reverse the order of removal.

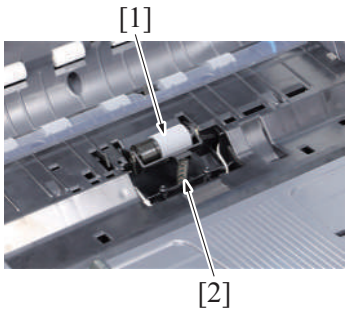
3.2.2 Replacing the separation roller assy



1. Open the upper door [1].



2. Grip both sides [1] of the holder and remove the cover [2].



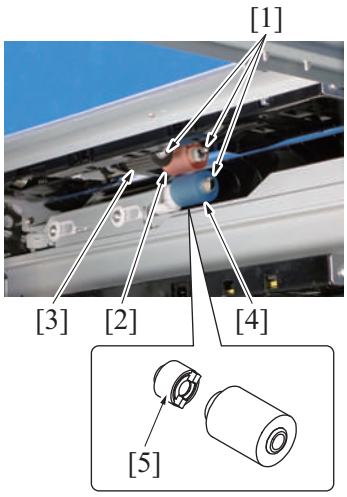
3. Remove the separation roller assy [1].
NOTE
- **Do not lose the spring [2] at the lower part of the separation roller assy [1].**

4. To reinstall, reverse the order of removal.

3.3 PC-118/PC-218

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

1. Open the right door.
2. Remove the tray 3.
F.8.3 Tray 3, Tray 4 (PC-118/PC-218)
3. Remove the tray 4 or storage box.
F.8.3 Tray 3, Tray 4 (PC-118/PC-218)

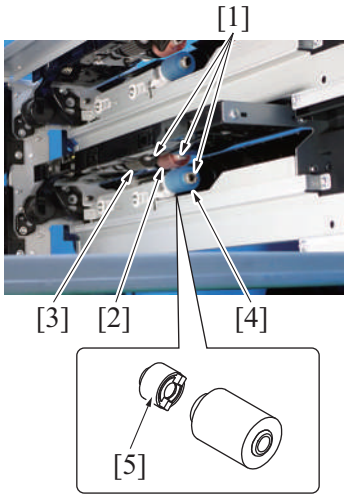


4. Remove the C-clip [1] each, and remove the tray 3 feed roller [2], tray 3 pick-up roller [3] and tray 3 separation roller [4].
NOTE
- **When replacing the tray 3 separation roller, replace the torque limiter [5] at the same time.**

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

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

1. Open the right door.
2. Remove the tray 3 and tray 4.
F.8.3 Tray 3, Tray 4 (PC-118/PC-218)



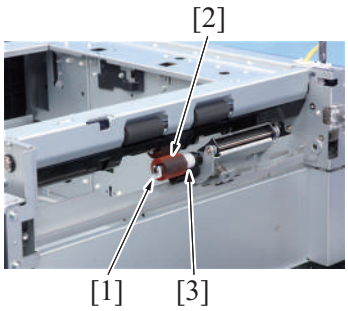
3. Remove the C-clip [1] each, and remove the tray 4 feed roller [2], tray 4 pick-up roller [3] and tray 4 separation roller [4].
NOTE
- **When replacing the tray 4 separation roller, replace the torque limiter [5] at the same time.**

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

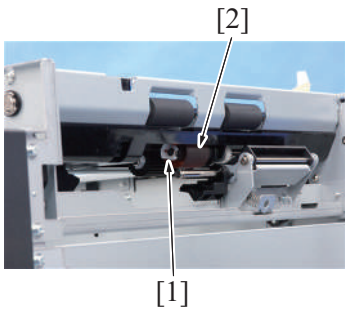
3.4 PC-418

3.4.1 Replacing the feed roller, pick-up roller, separation roller

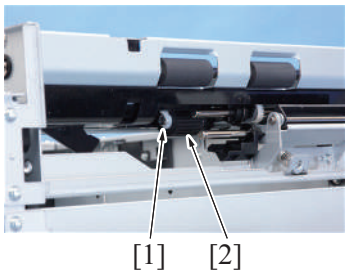
1. Slide out the paper feed tray.
2. Open the right door.



3. Remove the C-clip [1], and remove the separation roller [2].
   NOTE
   - **When replacing the separation roller, replace the torque limiter [3] at the same time.**



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



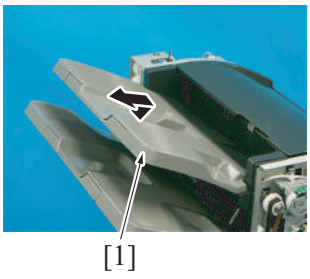
5. Remove the C-clip [1], and remove the pick-up roller [2].
6. To reinstall, reverse the order of removal.
7. Select [Service Mode] -> [Counter] -> [Life] and clear the count of [Tray 3].

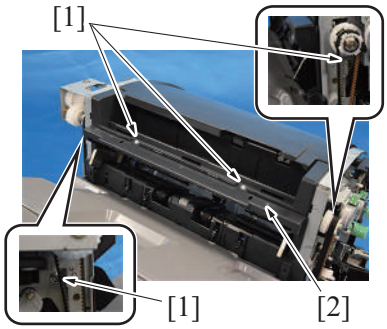
3.5 FS-539/FS-539SD

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

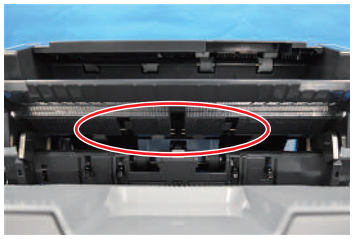
3.5.1 Replacing the paddle

1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover of the finisher.
   F.11.2 Rear cover (FS-539/FS-539SD)
3. Remove the front door of the finisher.
   F.11.3 Front door (FS-539/FS-539SD)
4. Remove the front upper cover of the finisher.
   F.11.4 Front upper cover (FS-539/FS-539SD)
5. Remove the exit tray [1].

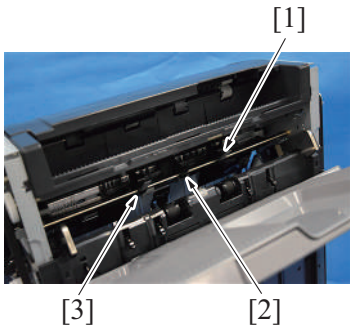




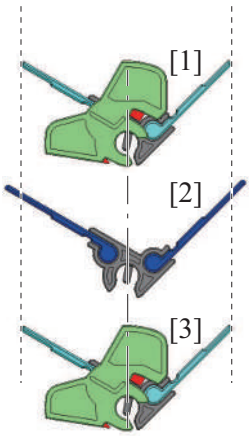
6. Remove four screws [1], and remove the cover [2].



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].

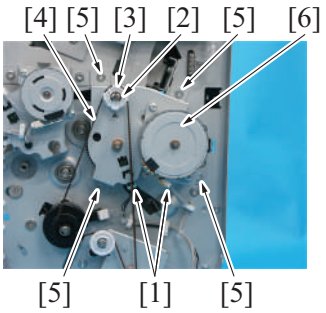


9. **NOTE**
   - **When reinstalling the paddles, be careful not to install them at an incorrect location or in an incorrect orientation.**
     [1]: Paddle assy (front)
     [2]: Paddle assy (center)
     [3]: Paddle assy (rear)

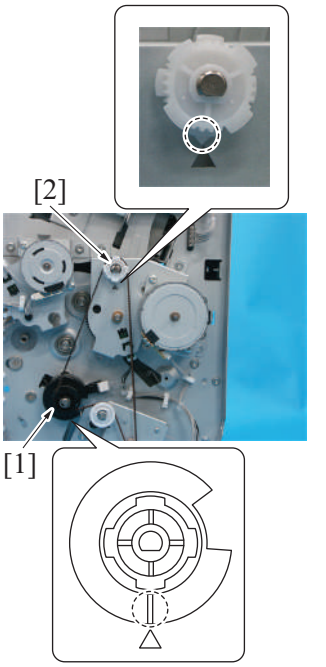
10. To reinstall, reverse the order of removal.

3.5.2 Replacing the upper paddle (saddle section)

1. Remove the saddle unit.
   F.12.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.12.2 Front cover (FS-539SD saddle section)

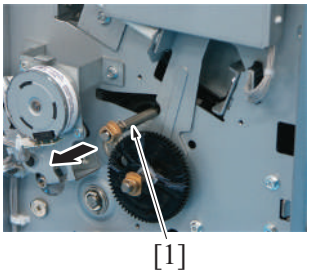


3. Disconnect two connectors [1].
4. Remove the E-ring [2].
5. Remove the gear [3] and the belt [4].
6. Remove four screws [5], and remove the center fold guide motor assy [6].

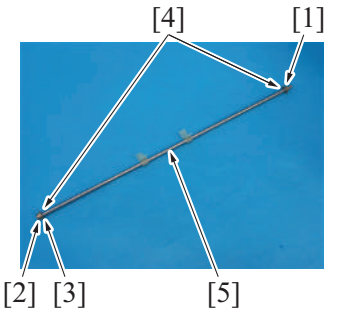


7. **NOTE**
   - **When reinstalling the belt, align the portions of the gear [1] and the gear [2] indicated in the illustration with the triangular marking on the metal plate. Then, install the belt.**

8. Remove the upper paddle assy [1].

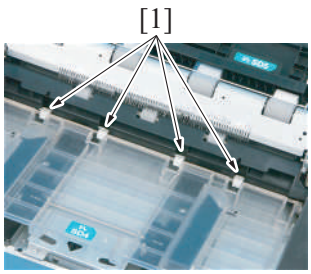


9. Remove the bushing [1].
10. Remove the E-ring [2], and remove the bushing [3].
11. Remove two E-rings [4].
12. Replace the upper paddle [5].



13. To reinstall, reverse the order of removal.

3.5.3 Replacing the lower paddle (saddle section)



1. Remove four lower paddles [1].

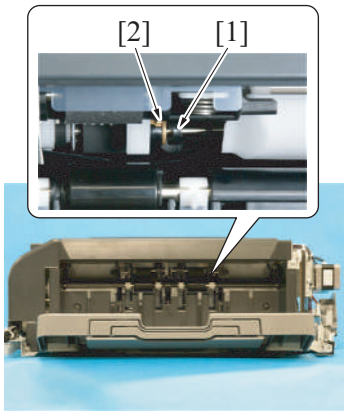
3.6 FS-533

NOTE

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

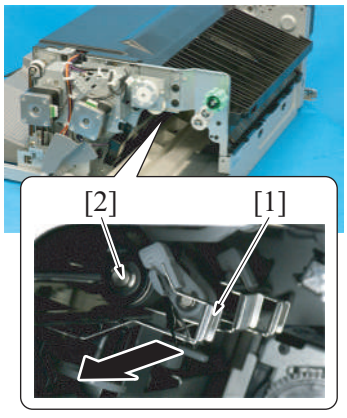
3.6.1 Replacing the alignment roller assy F/R

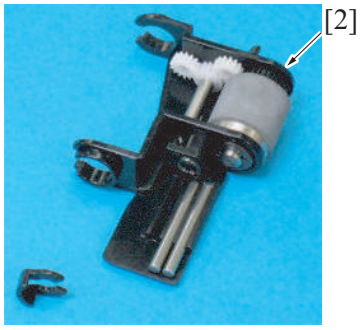
1. Remove the front cover.
   F.15.1 Front cover (FS-533)

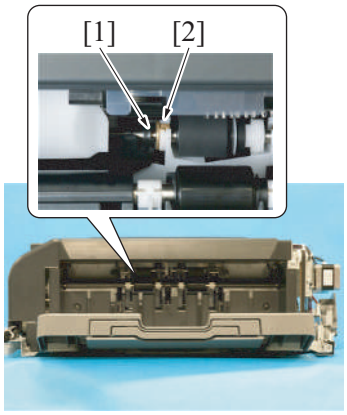


2. Remove the C-clip [1].
3. Move the bushing [2] to the right.

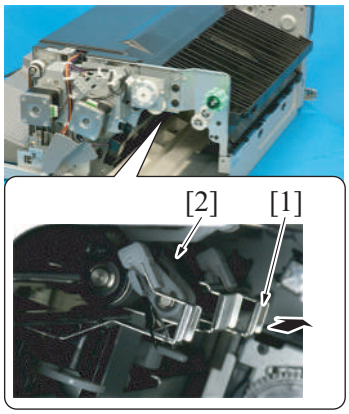
4. Pull the paper stopper [1] and remove the alignment roller assy /F [2].



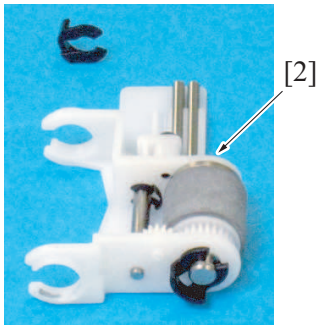




5. Remove the C-clip [1].
6. Move the bushing [2] to the left.



7. Press the paper stopper [1] to the rear and remove the alignment roller assy /R [2].



8. 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 d-Color MF257

Classification	Parts name	Cleaning cycle	Ref. page
Scanner section	Original glass	At abnormal image occurring (image noise, etc.)	E.5.1.13 Original glass
	Rod lens array	At abnormal image occurring (image noise, etc.)	E.5.1.14 Rod lens array
	Slide rail	At abnormal image occurring (synchronized shift, etc.)	E.5.1.15 Slide rail
Tray 1	Tray 1 paper feed roller	At paper feeding jam	E.5.1.8 Tray 1 feed roller, tray 1 pick-up 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 paper feed roller	At paper feeding jam	E.5.1.9 Tray 2 feed roller, tray 2 pick-up 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.5.1.10 Tray 2 transport roller
Manual bypass tray	Manual bypass tray feed roller	At paper feeding jam	E.5.1.11 Manual bypass tray feed roller
	Manual bypass tray separation roller	At paper feeding jam	E.5.1.12 Manual bypass tray separation roller
Processing section	Transfer belt unit	At abnormal image occurring	E.5.1.6 Transfer belt unit
	PH window	At abnormal image occurring	E.5.1.7 PH window
Conveyance section	Registration roller	60,000	E.5.1.4 Cleaning of the registration roller
Image transfer section	Area around the waste toner collecting port	60,000	E.5.1.3 Cleaning of the area around the waste toner collecting port
	Image transfer entrance guide	240,000 or When transfer belt unit is replaced	E.5.1.1 Cleaning of the image transfer entrance guide
	IDC sensor window	240,000 or When transfer belt unit is replaced	E.5.1.2 Cleaning of the IDC sensor window
Duplex section	Duplex transport roller	60,000	E.5.1.5 Cleaning of the duplex transport rollers

4.2 Reverse automatic document feeder (DF-633)

Parts name	Cleaning cycle	Ref. page
Pick-up roller	50,000	E.5.2.1 Cleaning of the pick-up roller/feed roller
Feed roller	50,000	
Separation roller	50,000	E.5.2.2 Cleaning of the separation roller
Rollers and rolls	50,000	E.5.2.3 Cleaning of the miscellaneous rollers E.5.2.4 Cleaning of the miscellaneous rolls
Scanning guide	50,000	E.5.2.5 Cleaning of the scanning guide
Reflective sensor section	50,000	E.5.2.6 Cleaning of the reflective sensor section

4.3 PC-118/PC-218

Parts name	Cleaning cycle	Ref. page
Tray 3 paper feed roller	At paper feeding jam	E.5.3.1 Tray 3 feed roller, tray 3 pick-up roller, tray 3 separation roller
Tray 3 pick-up roller	At paper feeding jam	
Tray 3 separation roller	At paper feeding jam	
Tray 4 feed roller	At paper feeding jam	E.5.3.2 Tray 4 feed roller, tray 4 pick-up roller, tray 4 separation roller
Tray 4 pick-up roller	At paper feeding jam	
Tray 4 separation roller	At paper feeding jam	
Tray 3 vertical transport roller	At paper feeding jam	E.5.3.3 Tray 3 vertical transport roller, tray 4 vertical transport roller
Tray 4 vertical transport roller	At paper feeding jam	

4.4 PC-418

Parts name	Cleaning cycle	Ref. page
Feed roller	At paper feeding jam	E.5.4.1 Feed roller, Pick-up roller, Separation roller
Pick-up roller	At paper feeding jam	
Separation roller	At paper feeding jam	
Vertical transport roller	At paper feeding jam	E.5.4.2 Vertical transport roller

4.5 FS-539/FS-539SD

Part name	Cleaning cycle	Ref. page
Roller and rolls (finisher)	300,000	E.5.5.1 Cleaning roller and rolls
Paddle (finisher)	300,000	E.5.5.2 Cleaning the paddle
Transport roller (saddle unit)	300,000	E.5.5.1 Cleaning roller and rolls
Folding roller (saddle unit)	300,000	
Upper paddle (saddle unit)	300,000	E.5.5.3 Cleaning the upper paddle (saddle section)
Lower paddle (saddle unit)	300,000	E.5.5.4 Cleaning the lower paddles (saddle section)
FNS entrance sensor (PS4) (finisher)	300,000	E.5.5.5 Cleaning the FNS entrance sensor (PS4)
Main tray exit sensor (PS16) (finisher)	300,000	E.5.5.6 Cleaning the main tray exit sensor (PS16)

4.6 FS-533

Part name	Cleaning cycle	Ref. page
Roller and rolls	300,000	E.5.6.1 Cleaning procedure for each parts
Paddle	300,000	E.5.6.2 Cleaning the paper exit paddles

5. Cleaning/Lubrication procedure

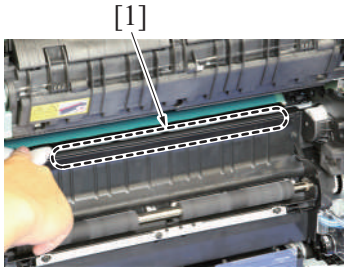
NOTE

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

5.1 d-Color MF257

5.1.1 Cleaning of the image transfer entrance guide

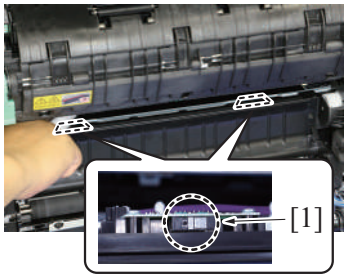
1. Remove the transfer belt unit.
   E.3.1.9 Replacing the transfer belt unit



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

5.1.2 Cleaning of the IDC sensor window

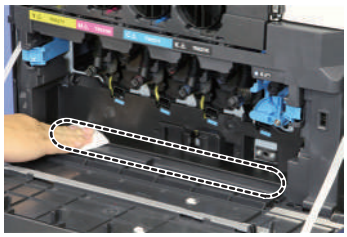
1. Remove the transfer belt unit.
   E.3.1.9 Replacing the transfer belt unit



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

5.1.3 Cleaning of the area around the waste toner collecting port

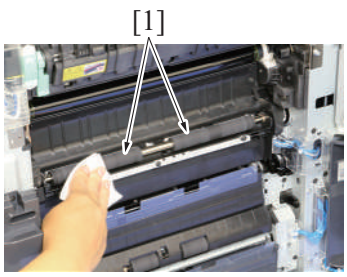
1. Remove the waste toner box.
   E.3.1.8 Replacing the waste toner box



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

5.1.4 Cleaning of the registration roller

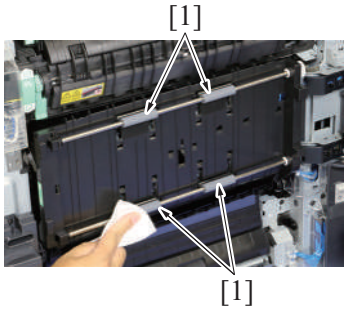
1. Open the right door.

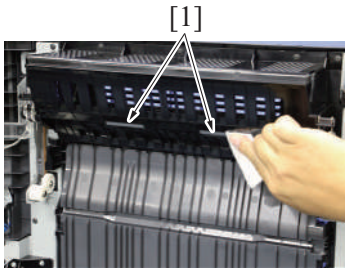


2. Using a cleaning pad with alcohol, wipe the registration roller [1] clean of dirt.

5.1.5 Cleaning of the duplex transport rollers

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

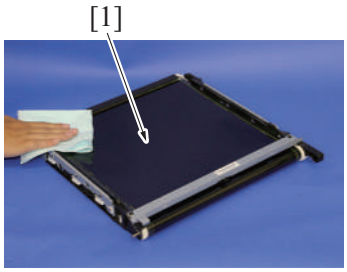




3. Using a cleaning pad with water or alcohol, wipe the duplex transport rollers [1] clean of dirt.

5.1.6 Transfer belt unit

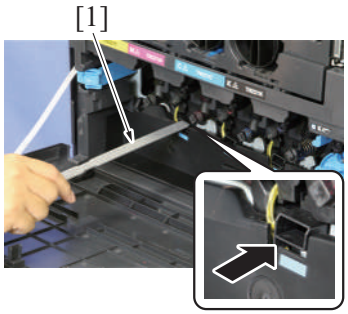
1. Remove the transfer belt unit.
   E.3.1.9 Replacing the transfer belt unit



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.**

5.1.7 PH window

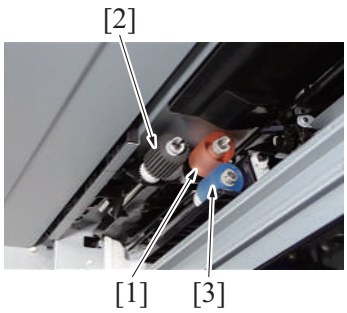
1. Open the front door.
2. Remove the waste toner box.
   E.3.1.8 Replacing the waste toner box



3. Clean the PH window by putting the PH window cleaning jig [1] back and forth a couple times.
   NOTE
   - **Clean every PH window of Y,M,C,K.**

5.1.8 Tray 1 feed roller, tray 1 pick-up roller, tray 1 separation roller

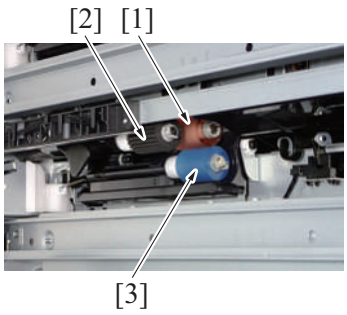
1. Remove the tray 1.
   F.5.1.14 Tray 1
2. Remove the tray 2.
   F.5.1.15 Tray 2



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.

5.1.9 Tray 2 feed roller, tray 2 pick-up roller, tray 2 separation roller

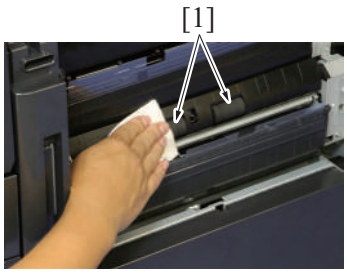
1. Remove the tray 1.
   F.5.1.14 Tray 1
2. Remove the tray 2.
   F.5.1.15 Tray 2



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.

5.1.10 Tray 2 transport roller

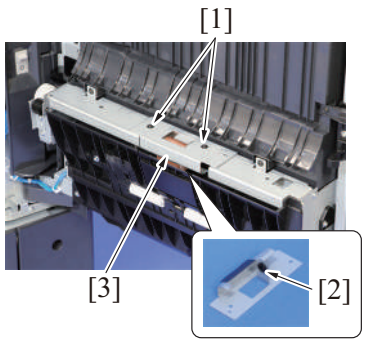
1. Open the right door.



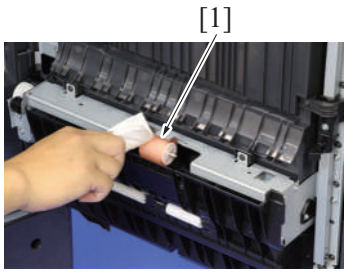
2. Using a cleaning pad dampened with alcohol, wipe the tray 2 transport rollers [1] clean of dirt.

5.1.11 Manual bypass tray feed roller

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



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

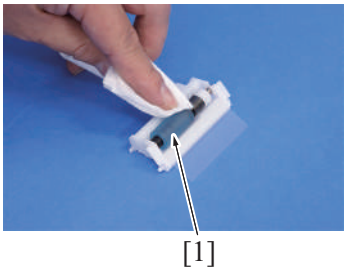


4. Using a cleaning pad dampened with alcohol, wipe the manual bypass tray feed roller [1] clean of dirt.

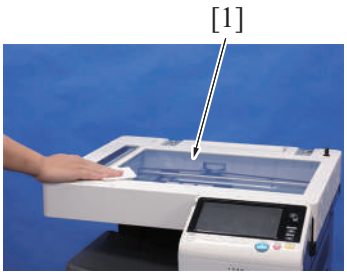
5.1.12 Manual bypass tray separation roller

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

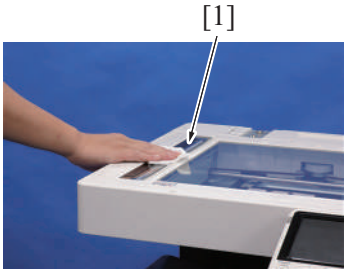
2. Using a cleaning pad dampened with alcohol, wipe the manual bypass tray separation roller [1] clean of dirt.



5.1.13 Original glass



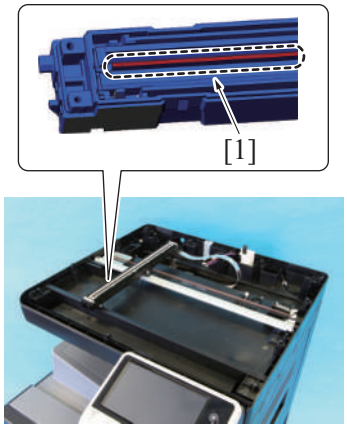
1. Using a cleaning pad dampened with alcohol, wipe the original glass [1] clean of dirt.



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

5.1.14 Rod lens array

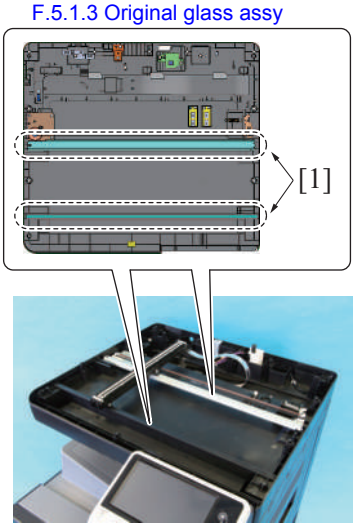
1. Remove the original glass assy.
F.5.1.3 Original glass assy



2. Using a cleaning pad, wipe the rod lens array [1].
NOTE
- **Do not wipe out with water.**
- **Do not wipe out with any solvents.**

5.1.15 Slide rail

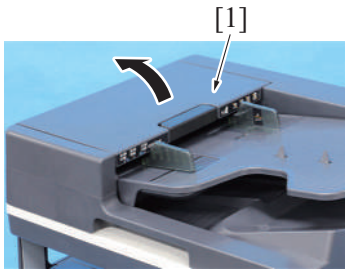
1. Remove the original glass assy.
F.5.1.3 Original glass assy



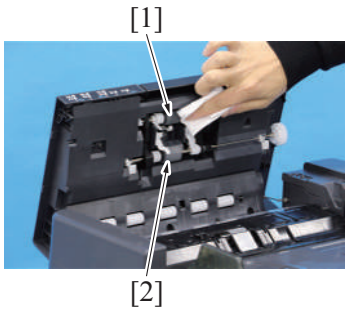
2. Using a cleaning pad, wipe the slide rail [1].
NOTE
- **Do not wipe out with water.**
- **Do not wipe out with any solvents.**

5.2 Reverse automatic document feeder (DF-633)

5.2.1 Cleaning of the pick-up roller/feed roller

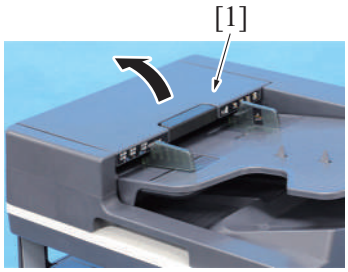


1. Open the upper door [1].

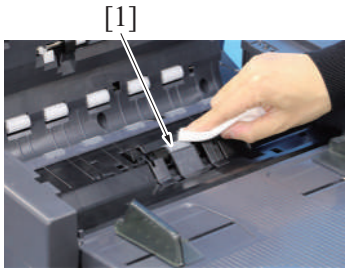


2. Using a cleaning pad dampened with alcohol, wipe the pick-up roller [1] / feed roller [2] clean of dirt.

5.2.2 Cleaning of the separation roller

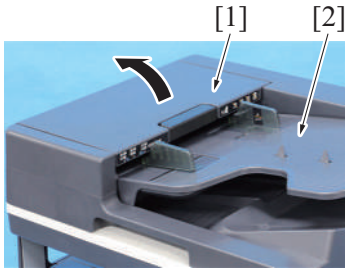


1. Open the upper door [1].

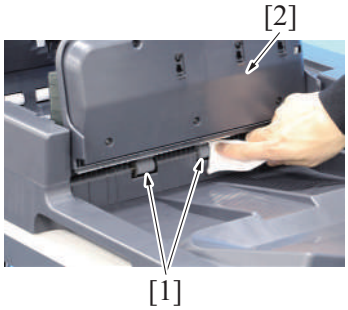


2. Using a cleaning pad dampened with alcohol, wipe the separation roller [1] clean of dirt.

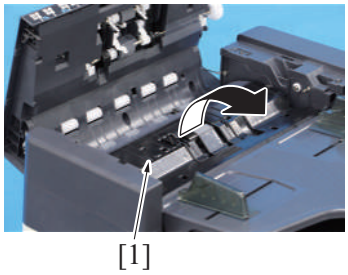
5.2.3 Cleaning of the miscellaneous rollers



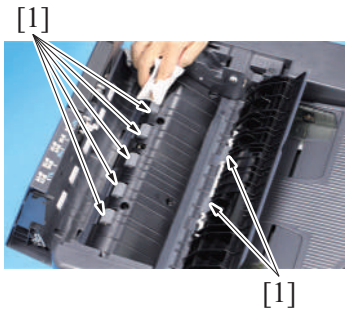
1. Open the upper door [1].
2. Lift up the document feed tray [2].



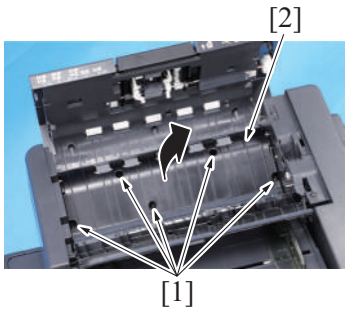
3. Using a cleaning pad dampened with alcohol, wipe the roller [1] clean of dirt.
4. Move down the document feed tray [2].



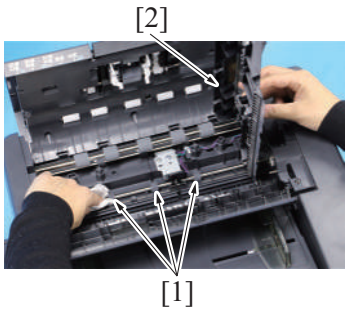
5. Lift up the guide plate [1].



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

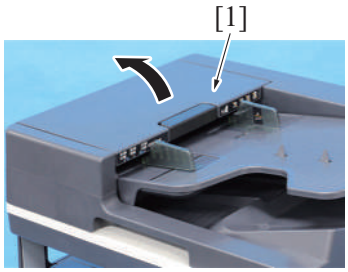


7. Remove five screws [1], and lift up the transport guide [2].

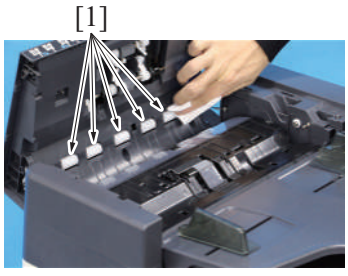


8. Using a cleaning pad dampened with alcohol, wipe the roller [1] clean of dirt.
NOTE
- **While supporting the transport guide [2] with your hand, wipe the roller [1] clean of dirt.**

5.2.4 Cleaning of the miscellaneous rolls



1. Open the upper door [1].



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

5.2.5 Cleaning of the scanning guide

1. Open the reverse automatic document feeder.

2. Clean the scanning guide [1] using a brush or other similar tools.
NOTE
- **Be careful not to damage the sheet.**

5.2.6 Cleaning of the reflective sensor section

1. Open the reverse automatic document feeder.

2. Remove the cover [1].
3. Clean the sensor [2] using a brush or other similar tools.

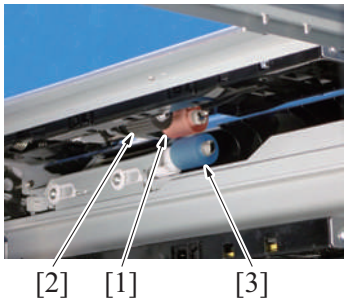
5.3 PC-118/PC-218

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

5.3.1 Tray 3 feed roller, tray 3 pick-up roller, tray 3 separation roller

1. Remove the tray 3.
F.8.3 Tray 3, Tray 4 (PC-118/PC-218)
2. Remove the tray 4 or storage box.
F.8.3 Tray 3, Tray 4 (PC-118/PC-218)

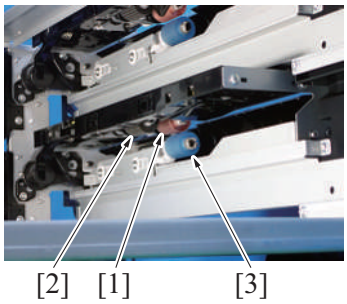
3. Using a cleaning pad dampened with alcohol, wipe the tray 3 feed roller [1], tray 3 pick-up roller [2], tray 3 separation roller [3] clean of dirt.



5.3.2 Tray 4 feed roller, tray 4 pick-up roller, tray 4 separation roller

1. Remove the tray 3.
F.8.3 Tray 3, Tray 4 (PC-118/PC-218)
2. Remove the tray 4.
F.8.3 Tray 3, Tray 4 (PC-118/PC-218)

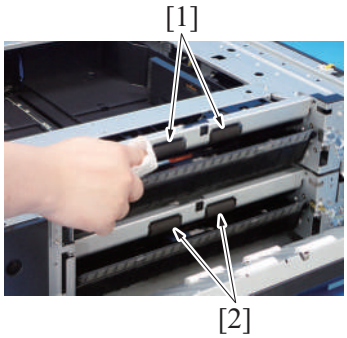
3. Using a cleaning pad dampened with alcohol, wipe the tray 4 feed roller [1], tray 4 pick-up roller [2], tray 4 separation roller [3] clean of dirt.



5.3.3 Tray 3 vertical transport roller, tray 4 vertical transport roller

1. Open the right door.

2. Using a cleaning pad dampened with alcohol, wipe the tray 3 vertical transport roller [1], tray 4 vertical transport roller [2] clean of dirt.



5.4 PC-418

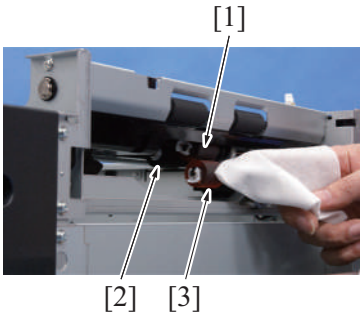
NOTE

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

5.4.1 Feed roller, Pick-up roller, Separation roller

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

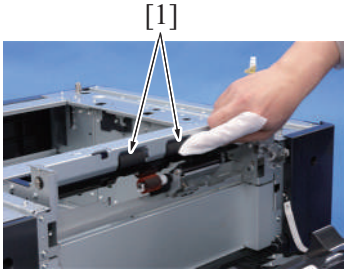
3. Using a cleaning pad dampened with alcohol, wipe the feed roller [1], pick-up roller [2], separation roller [3] clean of dirt.



5.4.2 Vertical transport roller

1. Open the right door.

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



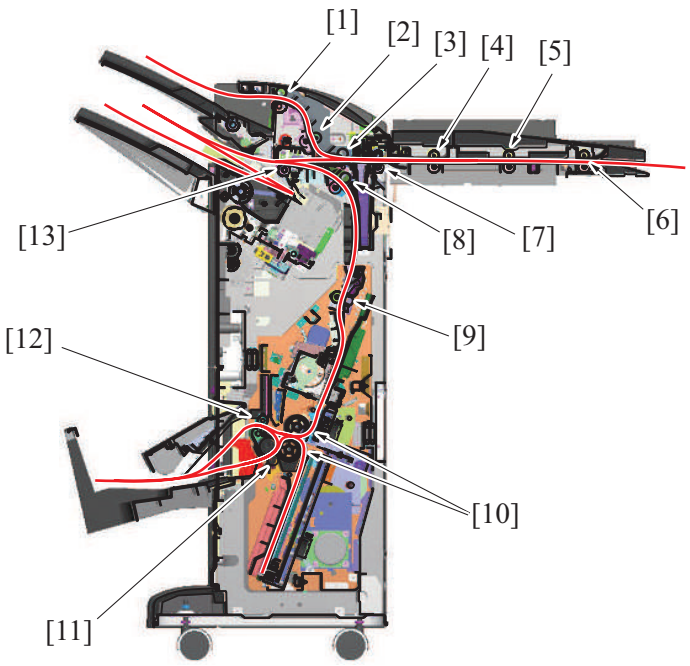
5.5 FS-539/FS-539SD

NOTE

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

5.5.1 Cleaning roller and rolls

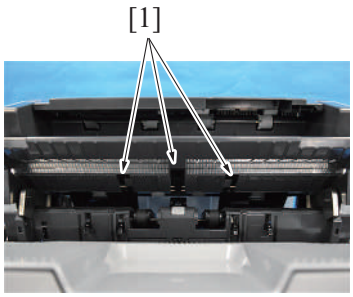
FS-539/FS-539SD (When PK-524 installed)



[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

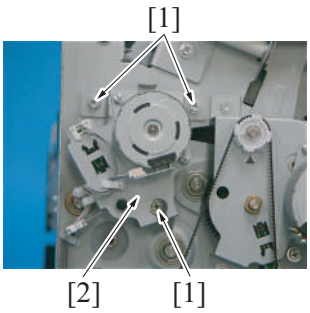
5.5.2 Cleaning the paddle



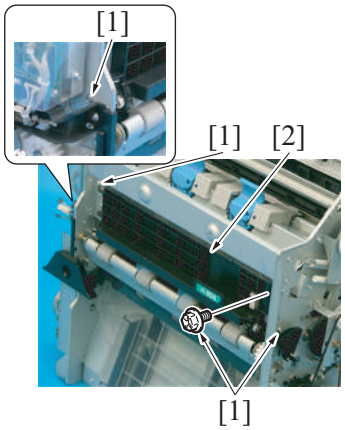
1. Using a cleaning pad dampened with alcohol, wipe the paddles [1] clean of dirt.

5.5.3 Cleaning the upper paddle (saddle section)

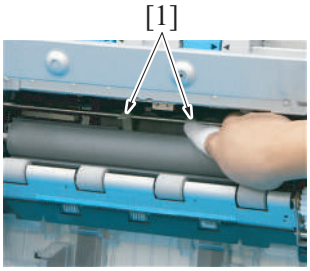
1. Remove the saddle unit.
   F.12.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.12.2 Front cover (FS-539SD saddle section)



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

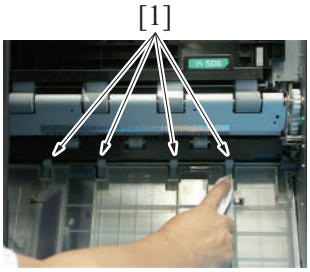


4. Remove four screws [1], and remove the transport assy [2].



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

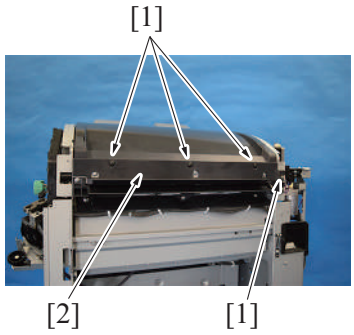
5.5.4 Cleaning the lower paddles (saddle section)



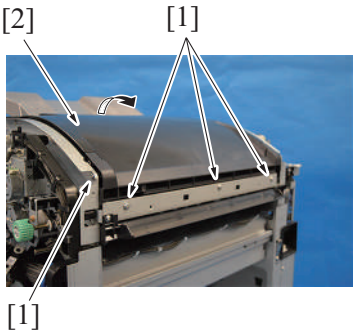
1. Using a cleaning pad dampened with alcohol, wipe the paddles [1] clean of dirt.

5.5.5 Cleaning the FNS entrance sensor (PS4)

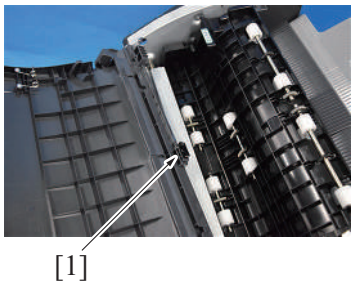
1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover of the finisher.
   F.11.2 Rear cover (FS-539/FS-539SD)
3. Remove the front door of the finisher.
   F.11.3 Front door (FS-539/FS-539SD)
4. Remove the front upper cover of the finisher.
   F.11.4 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].

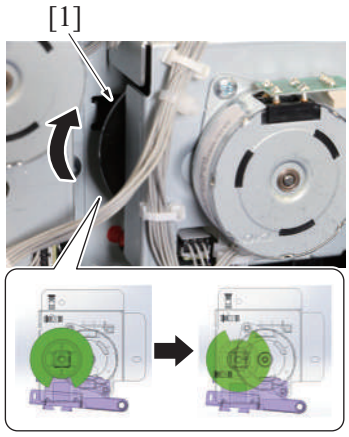


7. Using a cleaning pad dampened with alcohol, wipe the FNS entrance sensor [1] clean of dirt.

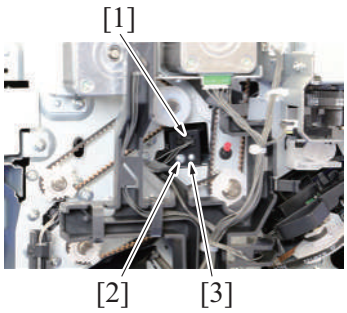
8. To reinstall, reverse the order of removal.

5.5.6 Cleaning the main tray exit sensor (PS16)

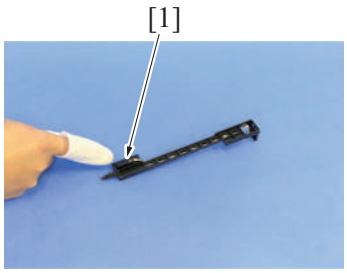
1. Remove the finisher from the main body.
F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover of the finisher.
F.11.2 Rear cover (FS-539/FS-539SD)
3. Remove the front door of the finisher.
F.11.3 Front door (FS-539/FS-539SD)
4. Remove the front upper cover of the finisher.
F.11.4 Front upper 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.

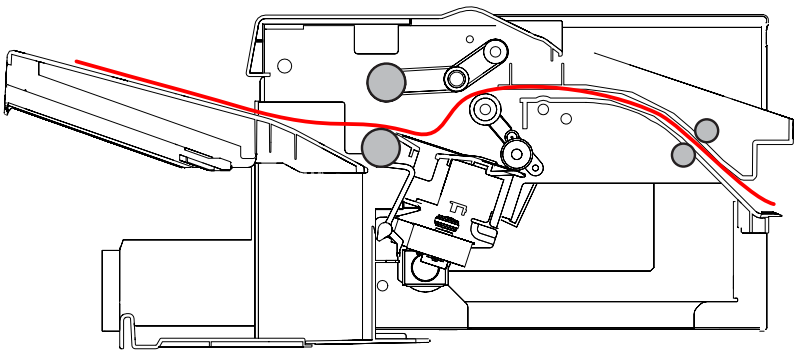
8. To reinstall, reverse the order of removal.

5.6 FS-533

NOTE

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

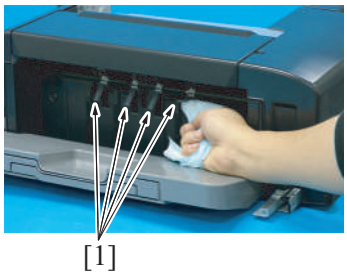
5.6.1 Cleaning procedure for each parts



NOTE

- **Do not clean the alignment roller F/R.**

5.6.2 Cleaning the paper exit paddles



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

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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.

2. Units from which removing is prohibited

2.1 PH unit

2.1.1 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.

2.2 Fusing unit

2.2.1 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

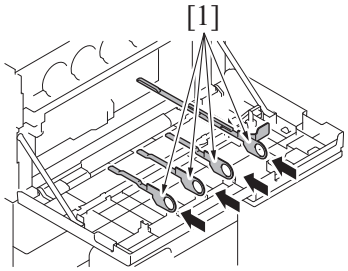
NOTE

- **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.**

4.1 Protective materials

4.1.1 Protective materials for the photoconductors

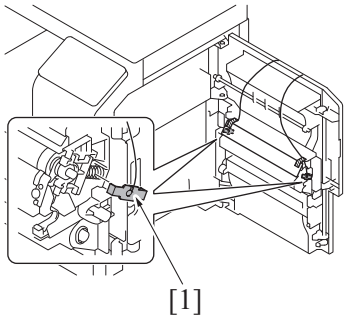
1. Remove the waste toner box.
   E.3.1.8 Replacing the waste toner box



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 Transfer roller locking materials

1. Open the right door.

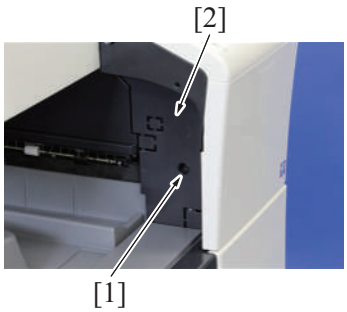


2. Install the locking materials [1].
3. Close the right door.

5. d-Color MF257

5.1 Exterior parts

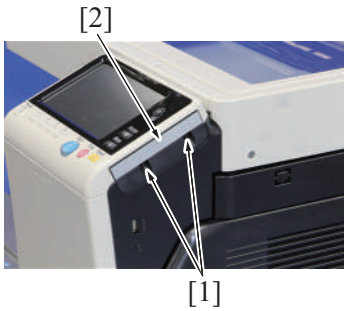
5.1.1 Control panel left cover



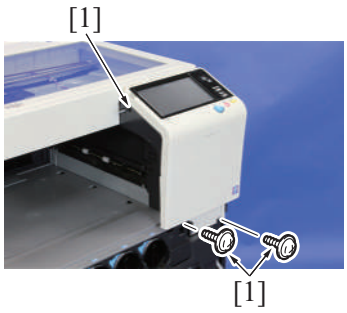
1. Remove the screw [1], and remove the control panel left cover [2].
2. To reinstall, reverse the order of removal.

5.1.2 Control panel unit

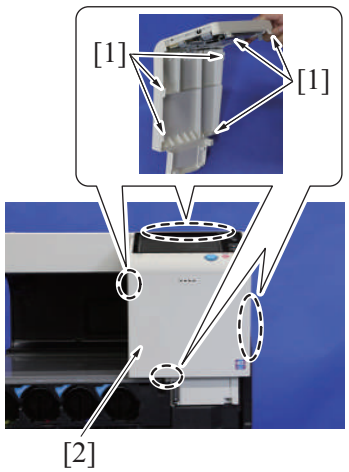
1. Open the front door.



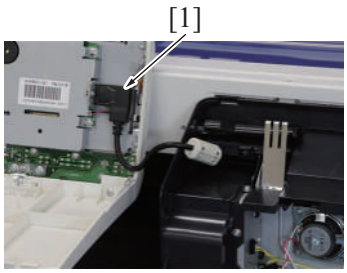
2. Remove two screws [1], and remove the cover [2].



3. Remove three screws [1].

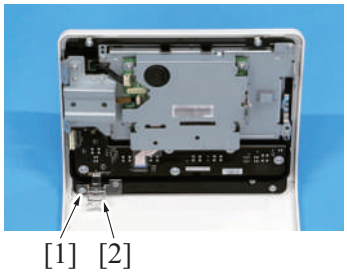


4. Release six hooks [1], and remove the control panel assy [2].
   NOTE
   - **Do not forcefully remove the control panel assy since there is a connector connected to the back of the assy.**
   - **When installing the control panel assy, hook the upper claws of the control panel assy to the main body, and rotate the control panel assy around the claws as support points. At that time, all claws should be hooked firmly.**

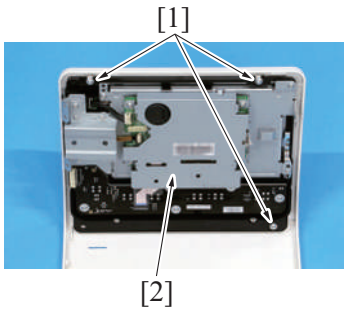


5. Disconnect the connector [1].

6. Remove the screw [1], and remove the lens [2].

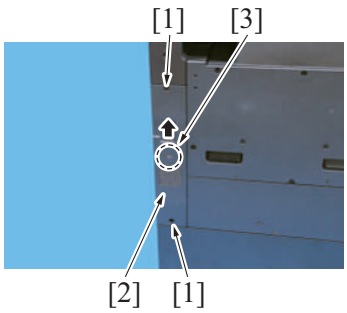


7. Remove three screws [1], and remove the control panel [2].

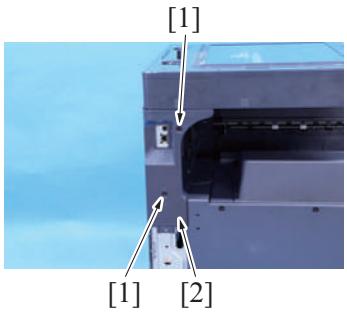


8. To reinstall, reverse the order of removal.

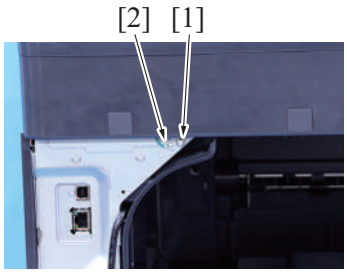
5.1.3 Original glass assy



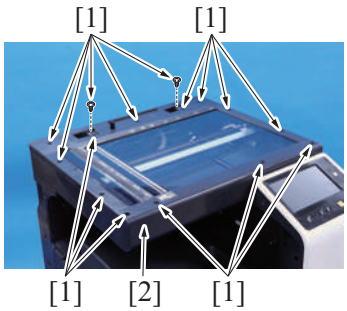
1. Remove two screws [1], and remove the cover [2].
NOTE
- **Remove the cover by releasing the claw [3] while lifting up the cover.**



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



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

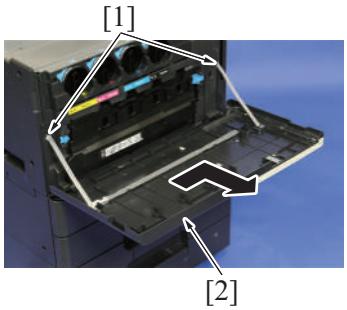


4. Remove 15 screws [2], and remove the original glass assy [3].

5. To reinstall, reverse the order of removal.
6. Carry out the [Service Mode] -> [Machine] -> [Scan Area] -> [Scanner Image Side Edge].
7. Carry out the [Service Mode] -> [Machine] -> [Scan Area] -> [Image Position: Leading Edge].

5.1.4 Front door

1. Open the front door.

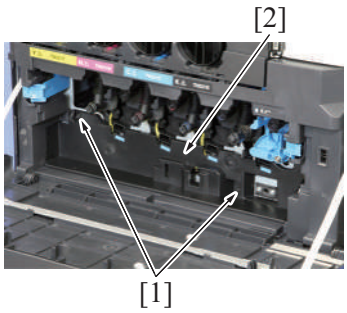


2. By twisting the ends of the stopper [1], remove it from the main body.
3. Remove the front door [2].

4. To reinstall, reverse the order of removal.

5.1.5 Front lower cover

1. Open the front door.
2. Remove the waste toner box.
   E.3.1.8 Replacing the waste toner box

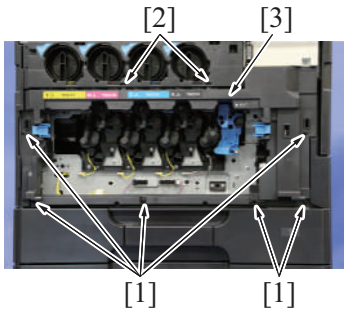


3. Remove two screws [1], and remove the front lower cover [2].

4. To reinstall, reverse the order of removal.

5.1.6 Front cover

1. Remove the waste toner box.
   E.3.1.8 Replacing the waste toner box
2. Remove the front door.
   F.5.1.4 Front door
3. Remove the front lower cover.
   F.5.1.5 Front lower cover

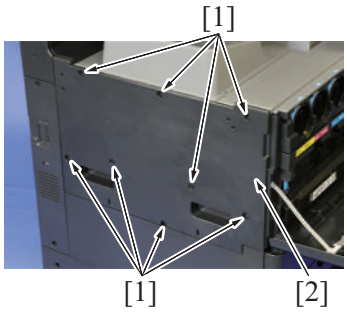


4. Remove six screws [1].
5. Release two claws [2], and remove the front cover [3].

6. To reinstall, reverse the order of removal.

5.1.7 Left cover

1. Open the front door.

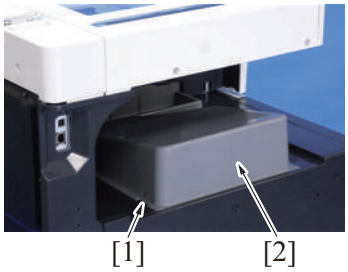


2. Remove eight screws [1], and remove the left cover [2].

3. To reinstall, reverse the order of removal.

5.1.8 Exit tray

1. Release the hook [1], and remove the exit tray [2].

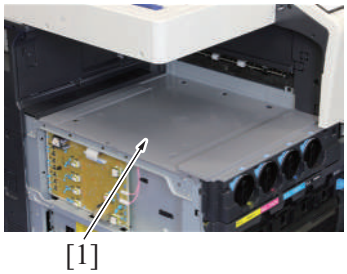


2. To reinstall, reverse the order of removal.

5.1.9 Exit cover

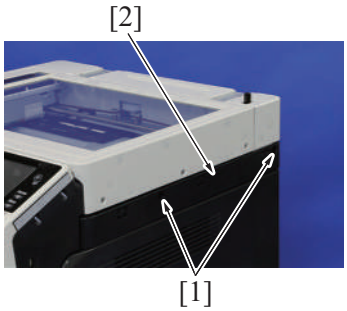
1. Open the front door.
2. Remove the exit tray.
   F.5.1.8 Exit tray
3. Remove the left cover.
   F.5.1.7 Left cover

4. Remove the exit cover [1].



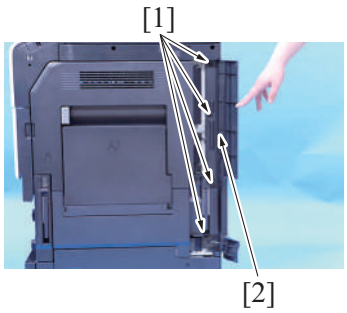
5. To reinstall, reverse the order of removal.

5.1.10 Upper right cover



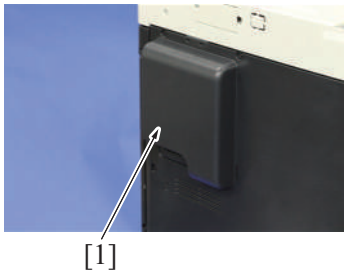
1. Remove two screws [1], and remove the upper right cover [2].
2. To reinstall, reverse the order of removal.

5.1.11 Rear right cover

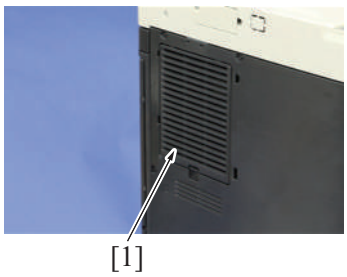


1. Remove four screws [1], and remove the rear right cover [2].
2. To reinstall, reverse the order of removal.

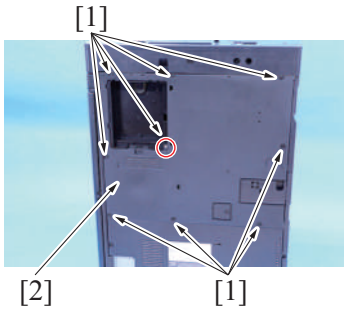
5.1.12 Upper rear cover



1. Remove the exhaust cover [1].



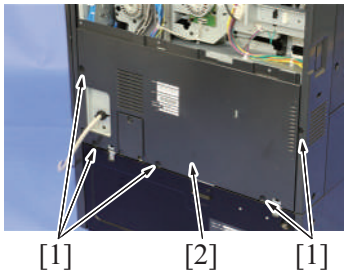
2. Remove the filter cover [1].



3. Remove nine screws [1], and remove the upper rear cover [2].
   NOTE
   - **When installing the cover, note that only the type of screws circled in red differs from others.**
4. To reinstall, reverse the order of removal.

5.1.13 Lower rear cover

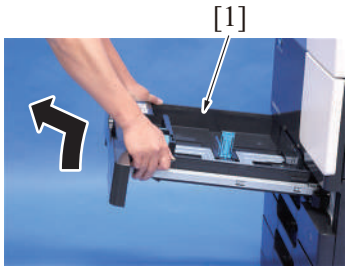
1. Remove the upper rear cover.
   F.5.1.12 Upper rear cover
2. Remove five screws [1], and remove the lower rear cover [2].



3. To reinstall, reverse the order of removal.

5.1.14 Tray 1

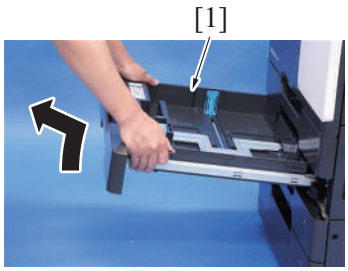
1. Slide out the tray 1, and remove the paper.
2. Hold up the tray 1 [1] to remove it.



3. To reinstall, reverse the order of removal.

5.1.15 Tray 2

1. Slide out the tray 2, and remove the paper.
2. Hold up the tray 2 [1] to remove it.

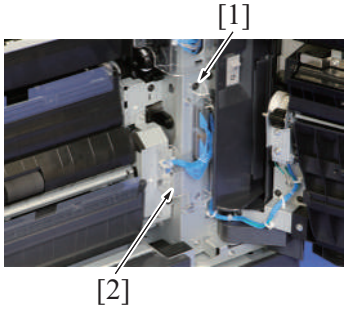


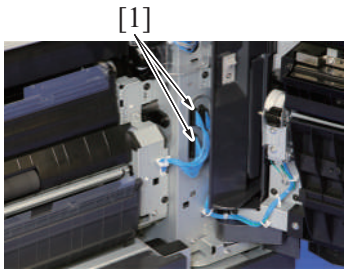
3. To reinstall, reverse the order of removal.

5.2 Units

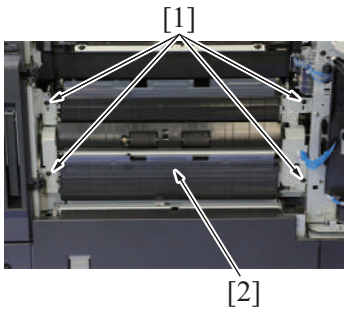
5.2.1 Paper feed unit

1. Slide out the tray 1 and tray 2.
2. Open the right door.
3. Remove the screw [1], and remove the connector cover [2].





4. Disconnect two connectors [1].



5. Remove four screws [1], and remove the paper feed unit [2].

6. To reinstall, reverse the order of removal.

5.2.2 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.

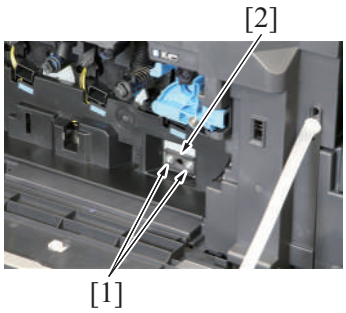
⚠WARNING

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

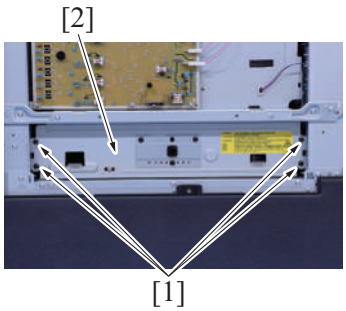
  The laser light can enter your eye, leading to a risk of loss of eyesight.

(1) Removal procedure

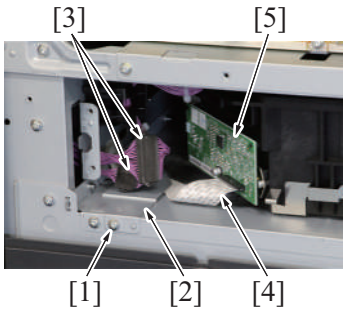
1. Remove the waste toner box.
   E.3.1.8 Replacing the waste toner box
2. Remove the left cover.
   F.5.1.7 Left cover



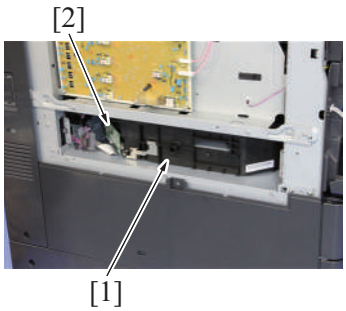
3. Remove two screws [1], and remove the set pin [2] for the PH unit.



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



5. Remove the screw [1], and remove the plate [2].
6. Disconnect two connectors [3].
7. Disconnect the flat cable [4].
   NOTE
   - **Pay attention not to damage the flat cable [4] or board [5] when removing/mounting the plate [2].**



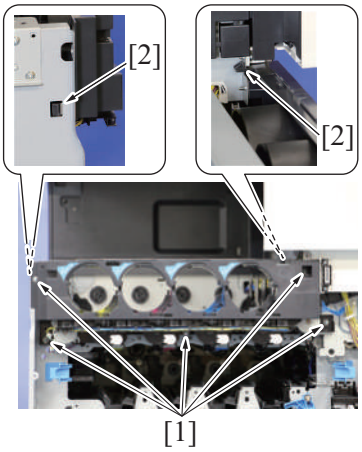
8. Remove the PH unit [1].
   NOTE
   - **Do not touch the board [2] with bare hands when removing/mounting the PH unit.**

9. To reinstall, reverse the order of removal.
10. Carry out the [Service Mode] -> [Machine] -> [Print Head Skew Adj.] -> [Print Head Skew Reset].
11. Carry out the [Service Mode] -> [Machine] -> [Printer Area] -> [Leading Edge Adjustment].
12. Carry out the [Service Mode] -> [Machine] -> [Printer Area] -> [Printer Image Centering Side 1].

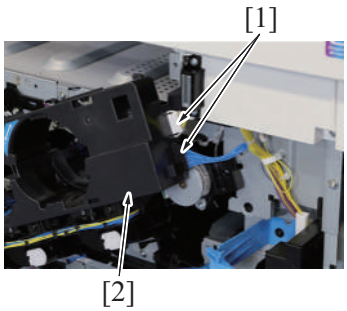
5.2.3 Sub hopper unit

1. Remove the front door.
   F.5.1.4 Front door
2. Remove the waste toner box.
   E.3.1.8 Replacing the waste toner box
3. Remove the front lower cover.
   F.5.1.5 Front lower cover
4. Remove the front cover.
   F.5.1.6 Front cover
5. Remove the toner cartridge/Y, M, C, K.
   E.3.1.4 Replacing the toner cartridge
6. Remove the drum unit/K.
   E.3.1.5 Replacing the drum unit/K
7. Remove the developing unit/K.
   E.3.1.6 Replacing the developing unit/K
8. Remove the imaging unit/Y, M, C.
   E.3.1.7 Replacing the imaging unit/Y, M, C
9. Remove the left cover.
   F.5.1.7 Left cover

10. Remove the exit tray.
    F.5.1.8 Exit tray
11. Remove the exit cover.
    F.5.1.9 Exit cover



12. Remove five screws [1], and remove two claws [2].

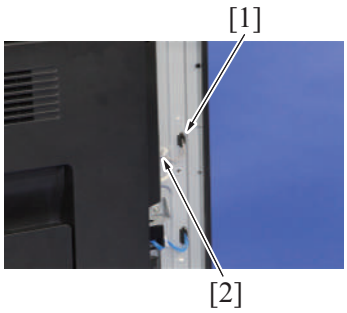


13. Disconnect two connectors [1], and remove the sub hopper unit [2].

14. To reinstall, reverse the order of removal.

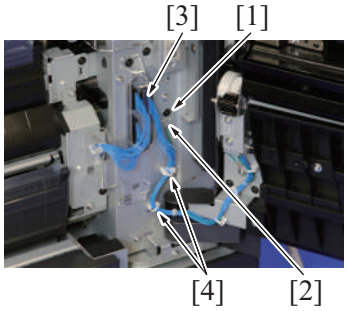
5.2.4 Right door unit

1. Remove the upper right cover.
   F.5.1.10 Upper right cover
2. Remove the rear right cover.
   F.5.1.11 Rear right cover



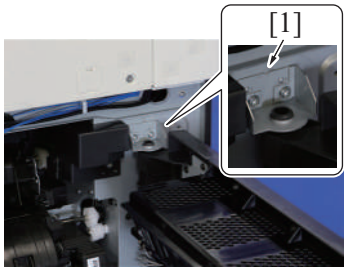
3. Disconnect the connector [1], and remove the harness from the wire saddle [2].

4. Open the right door.

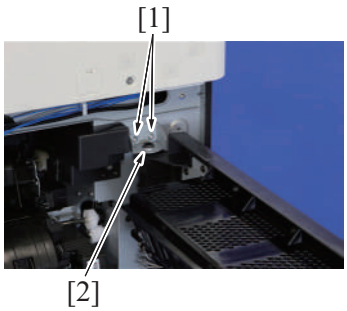


5. Remove the screw [1], and remove the ground terminal [2].
6. Disconnect the connector [3], and remove the harness from two wire saddles [4].

7. Open the inner door unit.

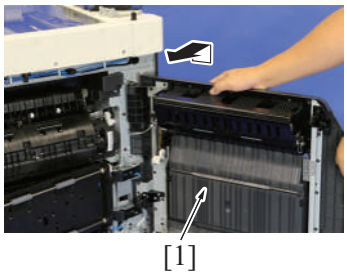


8. Draw the gauge line to the hinge mounting part [1] along the cutout of the hinge on the frame of the main body.



9. Remove two screws [1], and remove the hinge [2].
NOTE
- **When you have removed the screw [1], firmly support the right door so that it will not fall down.**

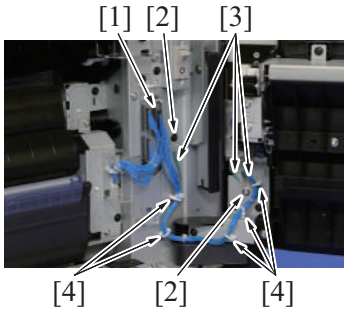
10. Hold up the right door unit [1] to remove it.



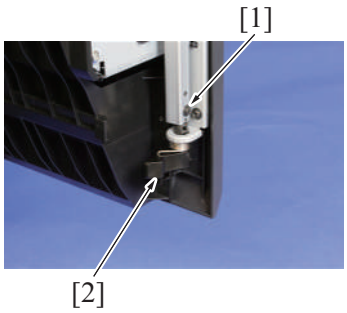
11. To reinstall, reverse the order of removal.
NOTE
- **When installing the right door unit, align it with the guide lines drawn on the scales indicated on the machine frame. Open and close the right door to check for any interference and correct if necessary.**

5.2.5 Manual bypass tray unit

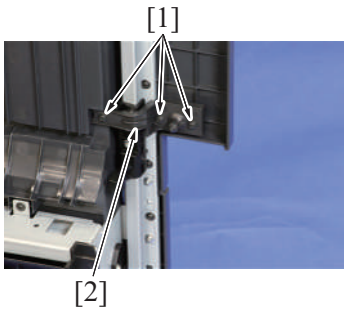
1. Remove the upper right cover.
F.5.1.10 Upper right cover
2. Remove the rear right cover.
F.5.1.11 Rear right cover
3. Open the right door.
4. Open the inner door unit.



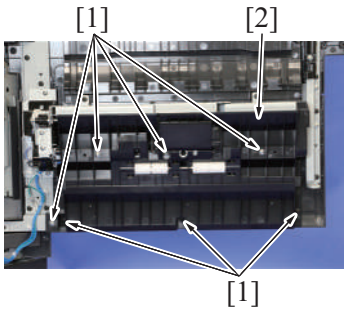
5. Disconnect the connector [1].
6. Remove two screws [2], and remove three ground wires [3].
7. Remove the harness from five wire saddles [4].



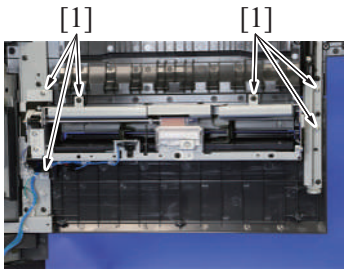
8. Remove the screw [1], and remove the stopper [2].



9. Remove three screws [1], and remove the holder [2].

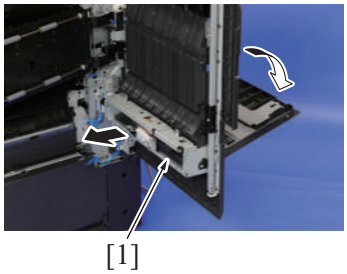


10. Remove seven screws [1], and remove the vertical transport roll assy [2].



11. Remove six screws [1].

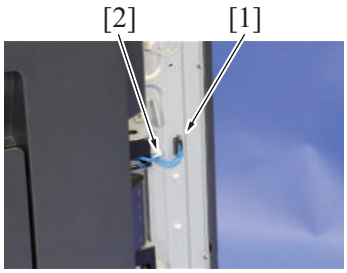
12. Open the manual bypass tray.
13. Remove the manual bypass tray unit [1].



14. To reinstall, reverse the order of removal.

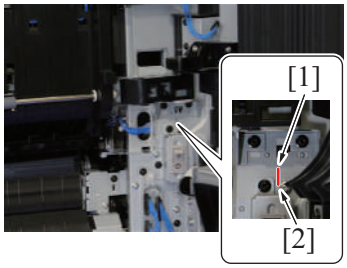
5.2.6 Inner door unit

1. Remove the rear right cover.
F.5.1.11 Rear right cover

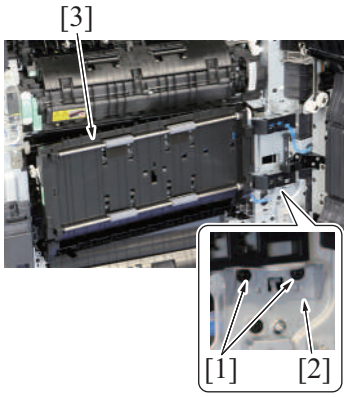


2. Disconnect the connector [1], and remove the harness from the wire saddle [2].

3. Open the right door.
4. Open the inner door unit.



5. Draw the gauge line [2] to the frame of the main body along the hinge cutout part [1].

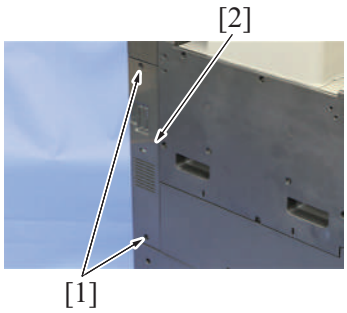


6. Remove two screws [1], and remove the hinge [2].
7. Remove the inner door unit [3].
   NOTE
   - **Support the inner door unit when removing the hinge so that it does not fall down.**

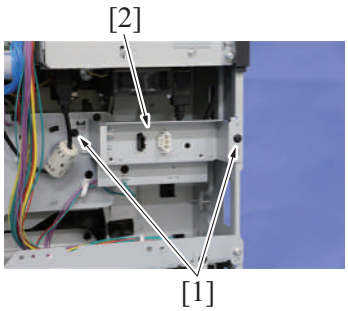
8. To reinstall, reverse the order of removal.

5.2.7 Main drive unit

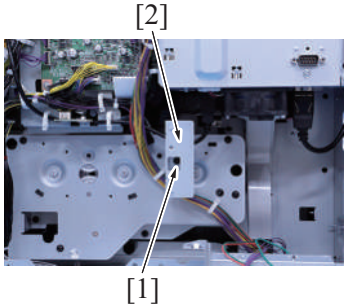
1. Remove the drum unit/K.
   E.3.1.5 Replacing the drum unit/K
2. Remove the developing unit/K.
   E.3.1.6 Replacing the developing unit/K
3. Remove the imaging unit/Y, M, C.
   E.3.1.7 Replacing the imaging unit/Y, M, C
4. Remove the transfer belt unit.
   E.3.1.9 Replacing the transfer belt unit
5. Remove the upper rear cover.
   F.5.1.12 Upper rear cover
6. Remove the lower rear cover.
   F.5.1.13 Lower rear cover
7. Remove the transport motor.
   F.5.4.1 Transport motor (M1)
8. Remove the IU motor.
   F.5.4.2 IU motor (M2)
9. Remove the harness guide.
   F.5.7.5 Harness guide



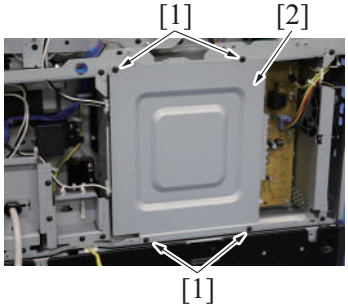
10. Remove two screws [1], and remove the cover [2].



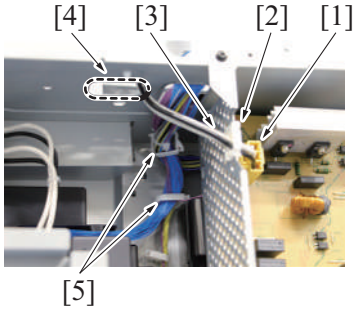
11. Remove two screws [1], and evacuate the plate [2].



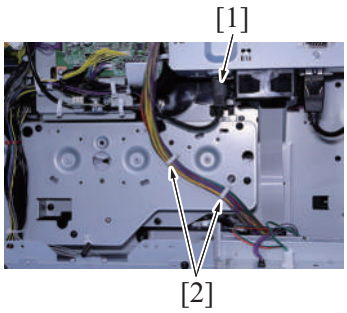
12. Remove the screw [1], and remove the plate [2].



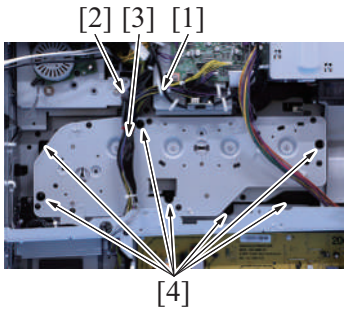
13. Remove four screws [1], and remove the plate [2].



14. Disconnect the connector [1], and remove the harness [3] from the edge cover [2].
15. Pull the harness [3] out of the hole [4] in the plate.
16. Remove the harness from two wire saddles [5].



17. Disconnect the USB cable [1].
18. Remove the harness from three wire saddles [2].

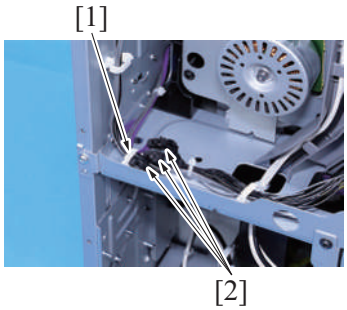


19. Remove the harness from the wire saddle [1].
20. Disconnect the connector [2].
21. Lightly pull the harness [3] to let it slack off.
22. Remove seven screws [4], and remove the main drive unit [5].

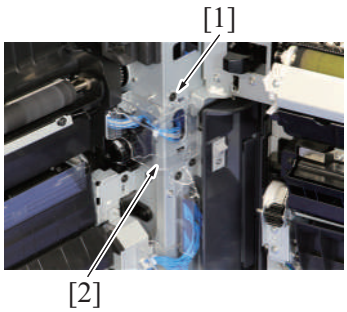
23. To reinstall, reverse the order of removal.

5.2.8 Transport unit

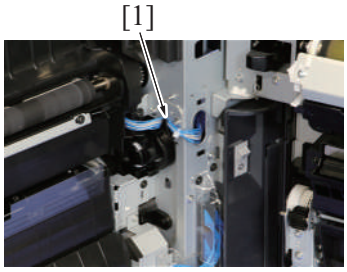
1. Remove the waste toner box.
   E.3.1.8 Replacing the waste toner box
2. Remove the transfer belt unit.
   E.3.1.9 Replacing the transfer belt unit
3. Remove the upper rear cover.
   F.5.1.12 Upper rear cover
4. Remove the lower rear cover.
   F.5.1.13 Lower rear cover



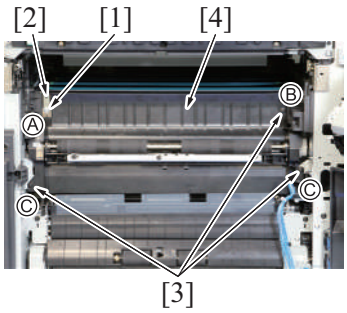
5. Remove the harness from the wire saddle [1], and disconnect three connectors [2].



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



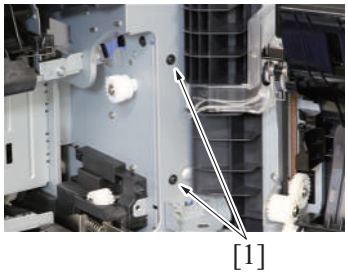
7. Remove the harness from harness guide [1].

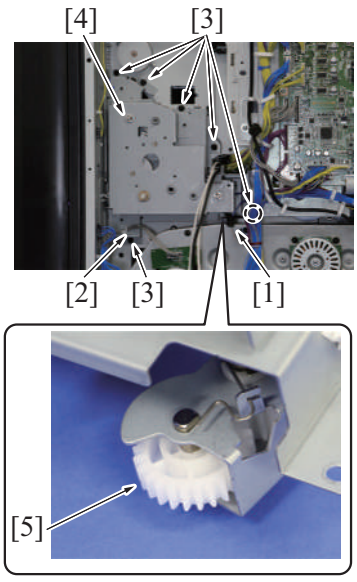


10. To reinstall, reverse the order of removal.

5.2.9 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 upper rear cover.
   F.5.1.12 Upper rear cover
4. Remove the harness guide.
   F.5.7.5 Harness guide
5. Remove the fusing motor.
   F.5.4.3 Fusing motor (M3)





10. To reinstall, reverse the order of removal.

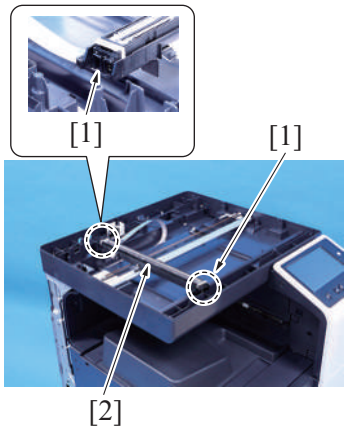
5.2.10 Contact image sensor (CIS)

1. Remove the original glass assy.
   F.5.1.3 Original glass assy

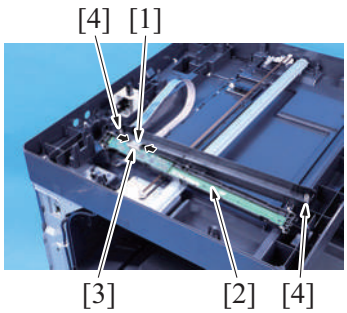
8. Remove the screw [1], and remove the plate spring [2].
9. Remove three screws [3], and remove the transport unit [4].
   NOTE
   - **When removing the transport unit [4], be careful not to damage or deform the guide sheet of the tray 1 paper feed unit.**
   - **When installing the unit, note that three types of screws is present.**
     A: Shoulder screw x 1
     B: Screw (long) x 1
     C: Screw (short) x 2

6. Remove two screws [1].

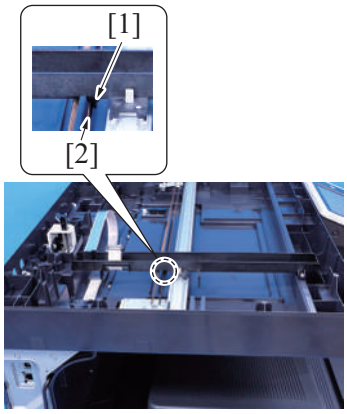
7. Disconnect the connector [1].
8. Remove the harness from the wire saddle [2].
9. Remove six screws [3], and remove the fusing drive unit [4].
   NOTE
   - **When removing the fusing drive unit, the 1st transfer gear [5] is caught by the plate of the machine. To prevent this from occurring, remove the fusing drive unit while raising the 1st transfer gear.**



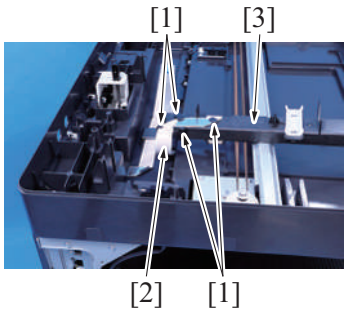
2. Unhook two claws [1], and hold up the contact image sensor [2].



3. Disconnect the flat cable [1], and remove the contact image sensor [2].
NOTE
- **When removing the flat cable [1], unlock the connector [3] and remove the cable together with the connector.**
- **Be careful not to lose two springs [4].**



4. Remove the belt [2] from the cover [1].



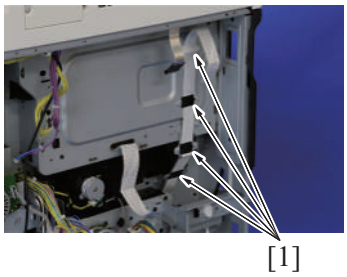
5. Remove the flat cable [2] from each guide [1], and remove the cover [3].

6. To reinstall, reverse the order of removal.
7. Carry out the [Service Mode] -> [System2] -> [CCD Calibration].
8. Carry out the [Service Mode] -> [Machine] -> [Printer Area] -> [Paper Feed Direction Adj.].
9. Carry out the [Service Mode] -> [Machine] -> [Scan Area] -> [Main Scan Zoom Adj.].
10. Carry out the [Service Mode] -> [Machine] -> [Scan Area] -> [Scanner Image Side Edge].

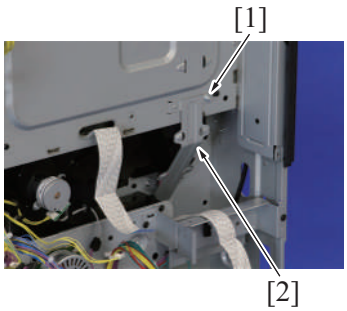
5.2.11 Toner cartridge drive assy

1. Remove the upper rear cover.
F.5.1.12 Upper rear cover
2. Remove the board box.
F.5.7.6 Board box

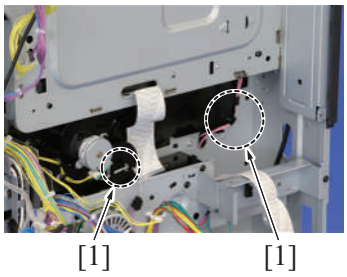
3. Remove four flat cable holders [1].



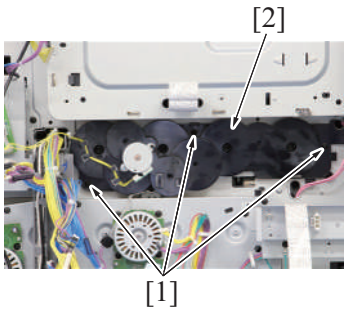
4. Remove the screw [1], and remove the plate [2].



5. Remove the harness from two harness guides [1].



6. Remove three screws [1], and remove the toner cartridge drive assy [2].

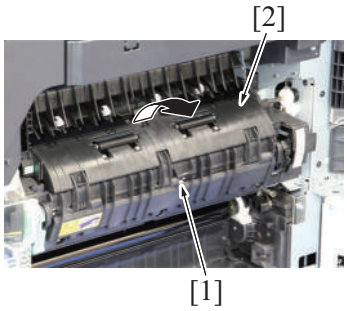


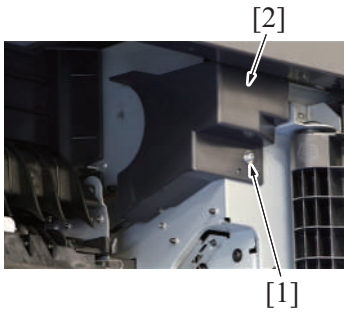
7. To reinstall, reverse the order of removal.

5.2.12 Exit/reverse unit

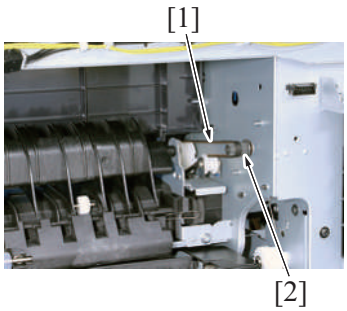
1. Open the right door.

2. Remove the C-clip [1], and remove the exit guide [2].

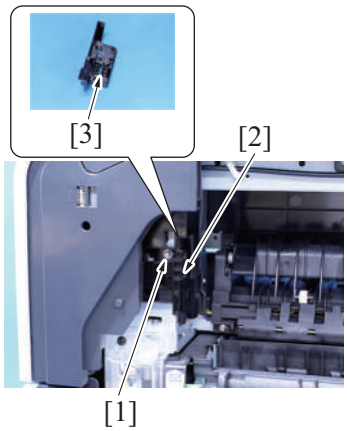




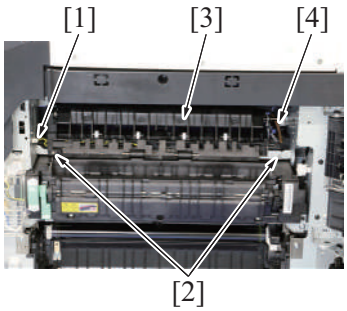
3. Remove the screw [1], and remove the cover [2].



4. Remove the belt [1] from the gear [2].



5. 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].**



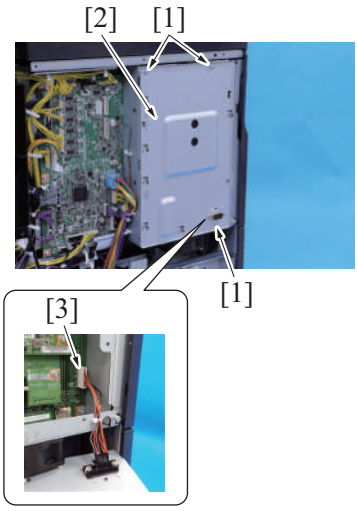
6. Disconnect the connector [1].
7. Remove two screws [2], and remove the exit/reverse unit [3].
NOTE
- **Make sure not to lose the belt [4].**

8. To reinstall, reverse the order of removal.

5.3 Boards

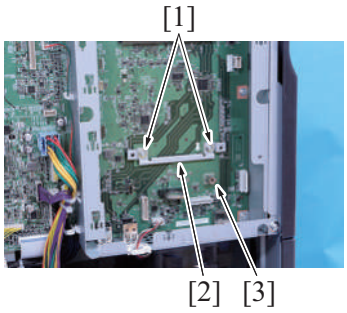
5.3.1 Base board (BASEB)

1. Remove the upper rear cover.
F.5.1.12 Upper rear cover

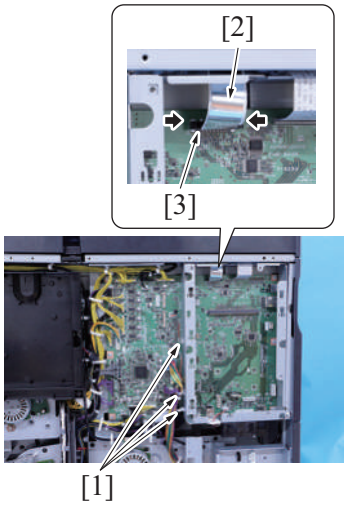


2. Remove three screws [1], and remove the plate [2].
   NOTE
   - **When the connector cable is attached, remove the connector [3].**

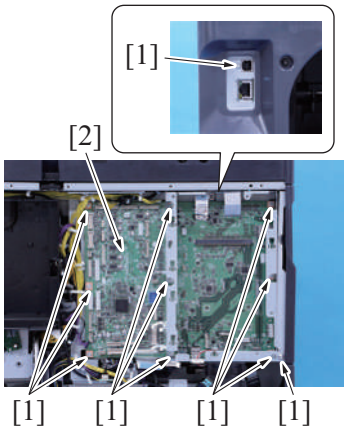
3. If the FAX kit FK-513 is mounted, remove the FAX board.
   F.17 FK-513
4. If the Upgrade kit UK-221 is mounted, remove the Upgrade kit.
   F.18 UK-221
5. Remove the CPU board.
   F.5.3.3 CPU board (CPUB)
6. Remove the TPM board.
   F.5.3.5 TPM board (TPMB)



7. Remove two screws [1], and remove the plate [2].
8. Remove the shoulder screw [3].

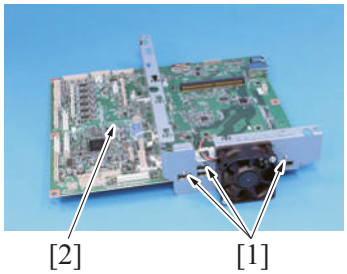


9. Remove the harness from three wire saddles [1].
10. Remove all the connectors, flat cables, USB cables, and control panel cable on the base board.
    NOTE
    - **When removing the flat cable [2], unlock the connector [3] and remove the cable together with the connector.**



11. Remove 11 screws [1], and remove the base board assy [2].

12. Remove three screws [1], and remove the base board [2].



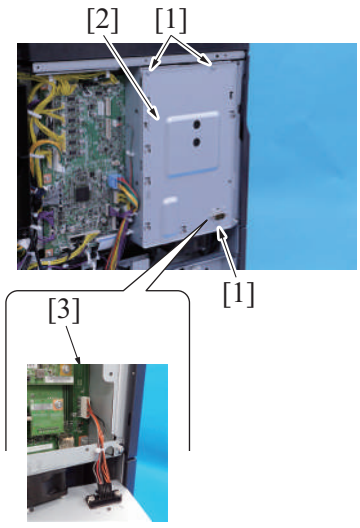
13. To reinstall, reverse the order of removal.

5.3.2 Storage board (STRGB)

NOTE

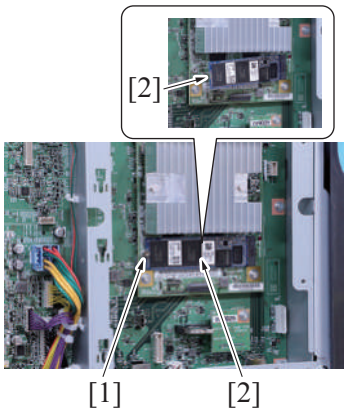
- **Never use the combination of the used storage board removed from another machine and the CPU board. This combination causes corruption of stored data. Note that the combination of the original storage board and the used CPU board removed from another machine also causes the same problem.**
- **Never replace the storage board and CPU board with new one at the same time.**
- **When replacing a 64-layer storage board (AVGR31186 T) with a 96-layer storage board (AVGR31468 Q), it is necessary to adapt the corresponding BootProgram.**
  Obtain the procedures for checking and updating the version of BootProgram from Dema
  Ref the Technical Information "BootProgram_Update_Physon-96-Layer_Gen.pdf" released with TIB 810400-20. Moreover, starting from TIB "810400-18" for releasing FW "G00-J9" this Technical Document is included in all TIBs for the release of a new Firmware version.
- **Standard equipment in Japan, Europe.**

1. Remove the upper rear cover.
F.5.1.12 Upper rear cover



2. Remove three screws [1], and remove the plate [2].
NOTE

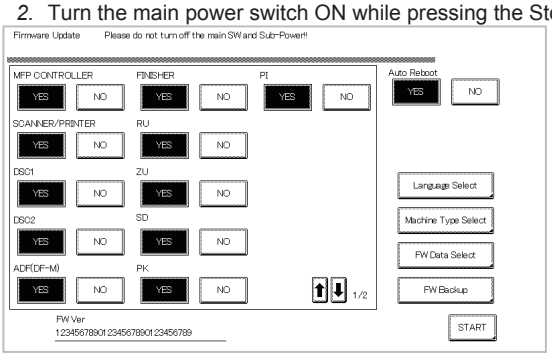
- **When the connector cable is attached, remove the connector [3].**



3. Remove the screw[1], and remove the storage boad[2].
   NOTE
   - **When mounting the storage board[2], 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.

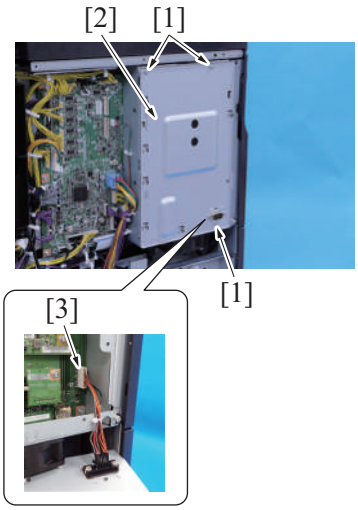
5. When [Recover Data] appears on the screen, touch [Recover Data].
6. When a verification message appears, touch [Yes].
7. When the “Turn the main switch OFF and ON.” screen appears, turn OFF the main power switch, and remove the USB memory.
8. Turn ON the main power switch.
9. After starting up the 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.

5.3.3 CPU board (CPUB)

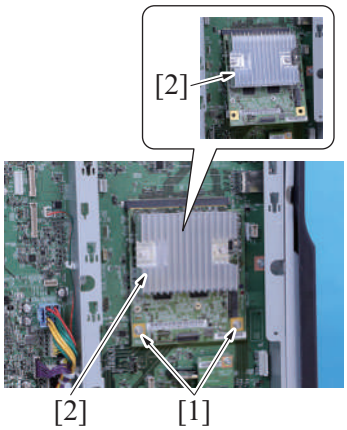
NOTE

- **Never use the combination of the used CPU board removed from another machine and the storage (microSD card or storage board). This combination causes corruption of stored data. Note that the combination of the original CPU board and the used storage (microSD card or storage board) removed from another machine also causes the same problem.**
- **Never replace the CPU board and storage (microSD card or storage board) with new one at the same time.**

1. Remove the upper rear cover.
   F.5.1.12 Upper rear cover



2. Remove three screws [1], and remove the plate [2].
NOTE
- **When the connector cable is attached, remove the connector [3].**



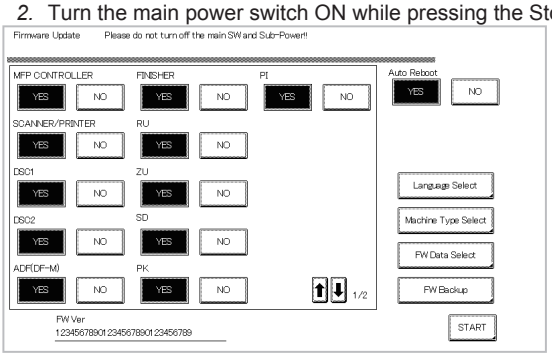
3. Remove two screws [1], and remove the CPU board [2].
NOTE
- **When mounting the CPU board [2], insert it obliquely.**

4. If the storage board is mounted, remove the storage board.
F.5.3.2 Storage board (STRGB)
F.22 EM-907
5. If the microSD card is mounted, remove the microSD card.
F.5.3.8 microSD card
6. To reinstall, reverse the order of removal.

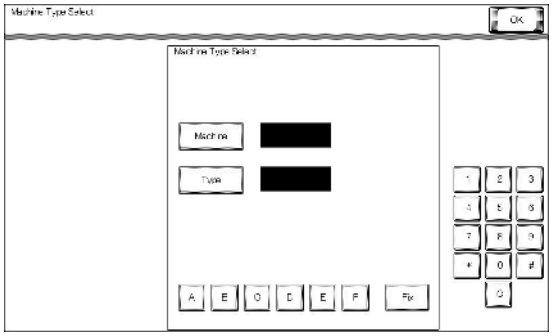
Actions after replacement of the board

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.

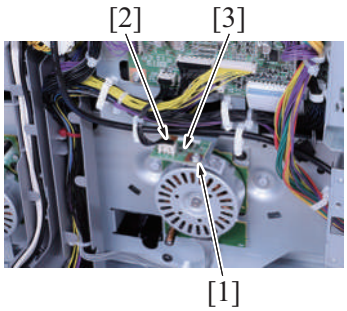
8. Wait until the trouble code (C-D3C0) screen appears.
9. When [Recover Data] appears on the trouble code screen, touch [Recover Data].
10. When a verification message appears, touch [Yes].
11. When the “Turn the main switch OFF and ON.” screen appears, turn OFF the main power switch.
12. Turn ON the 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	ACM1		ACVD			ACM2	
	China	etc./Japan	China	Europe	etc.	China	etc.
[Machine]	15	15	15	15	15	15	15
[Type]	D2	2	CD	D	DD	C3	3

5.3.4 Backup board(ERB)

1. Remove the upper rear cover.
F.5.1.12 Upper rear cover



2. Remove the screw [1].
3. Disconnect the connector [2], and remove the backup board [3].
4. 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].**
- **Imaging unit/Y,M,C**
- **Developing unit/K**
- **Drum unit/K**
- **Toner cartridge/Y,M,C,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.**

5. Open the front door and turn on the main power supply switch.

6. Enter the Service Mode. Make individual adjustments shown in Table 1: Readjustment item in the order listed, using the machine maintenance list and the adjustment lists that were output at the time of main body installation and maintenance.
   NOTE
   - **Ensure the front 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.**
7. Turn OFF the main power switch.
8. Turn ON the main power switch and close the front door. Check to see that warm-up and image stabilization operations are completed normally.
9. Enter the Service Mode again. Make individual adjustments shown in Table 2: Readjustment item 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.
10. 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 item

Adjustment items	Service mode readjustment items		
1	Machine	Color Registration Adjustment	Cyan
2			Magenta
3			Yellow
4	Imaging Process Adjustment	Image Background Adj	
5		Max Image Density Adj	
6		Grad/Dev AC Bias V Selection	
7	System 1	Warm-up	
8	Imaging Process Adjustment	Charging Voltage Adjustment	
9	System 2	Unit Change	Warning Display

Table 2: Readjustment item

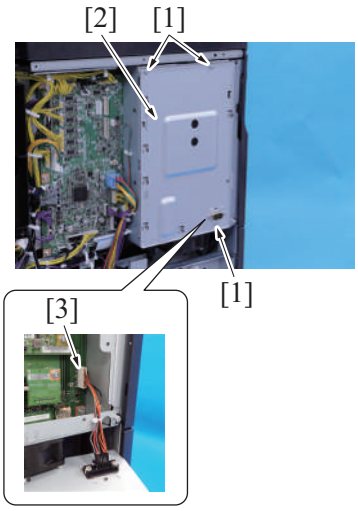
Adjustment items	Service mode readjustment items		
1	Machine	Manual Bypass Tray Width Adj	
2		Printer Reg. Loop Adj.	
3		Fusing Temperature	
4	Finisher	FS-FN Adjustment	
5	Machine	Printer Area	Paper Feed Direction Adj.
6		Fusing Transport Speed	
7		Printer Area	Printer Image Centering Side 1
8			Prt. 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

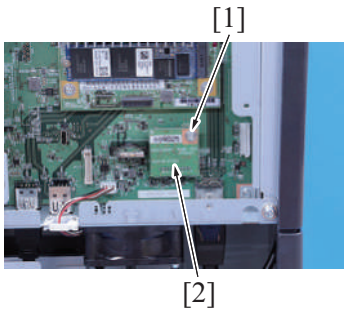
Region	Switch No. to be enabled
Japan	[6] is set to OFF (normal display)
Other than Japan	[6] is set to ON (reverse display)

5.3.5 TPM board (TPMB)

1. Remove the upper rear cover.
   F.5.1.12 Upper rear cover



2. Remove three screws [1], and remove the plate [2].
NOTE
- **When the connector cable is attached, remove the connector [3].**

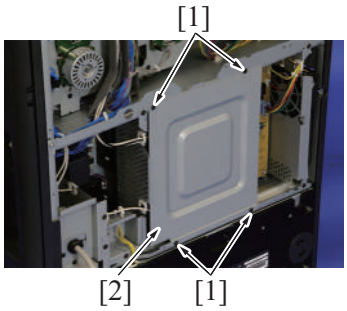


3. Remove the screw [1], and remove the TPM board [2].

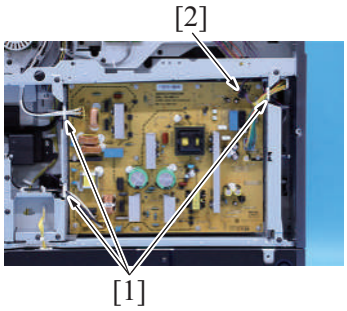
4. To reinstall, reverse the order of removal.

5.3.6 DC power supply (DCPU)

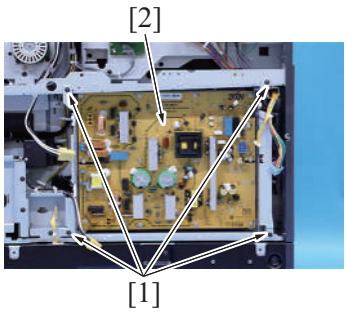
1. Remove the upper rear cover.
F.5.1.12 Upper rear cover
2. Remove the lower rear cover.
F.5.1.13 Lower rear cover



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



4. Remove harnesses from three edge covers [1].
5. Disconnect all connectors on the DC power supply.
6. Disconnect the connector [2].



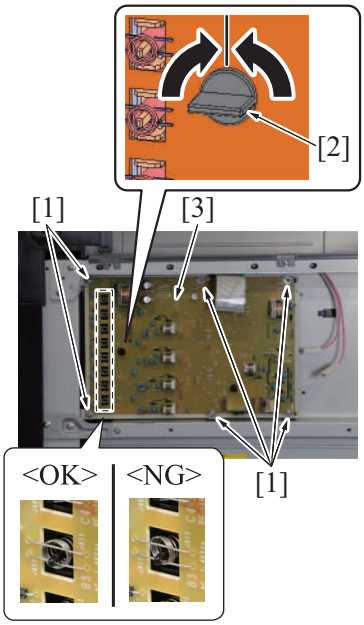
7. Remove four screws [1], and remove the DC power supply [2].

8. To reinstall, reverse the order of removal.

5.3.7 High voltage unit (HV)

1. Open the front door.
2. Remove the left cover.
F.5.1.7 Left cover

3. Disconnect all connectors and solderless terminals on the high voltage unit.



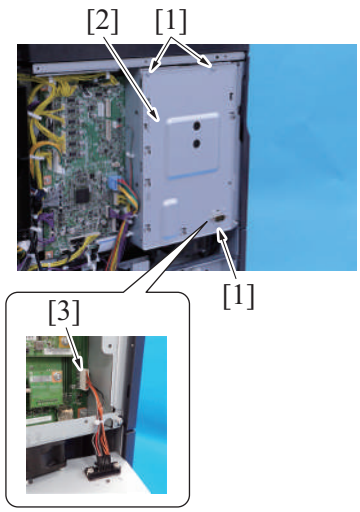
4. Remove six screws [1].
5. Remove the stopper [2], and remove the high voltage unit [3].
NOTE
- **When mounting the high voltage unit, the terminal contact point must be contacted without fail.**

6. To reinstall, reverse the order of removal.

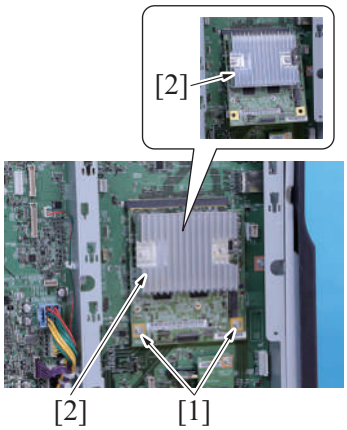
5.3.8 microSD card

NOTE
- **Never use the combination of the used microSD card removed from another machine and the CPU board. This combination causes corruption of stored data. Note that the combination of the original microSD card and the used CPU board removed from another machine also causes the same problem.**
- **Never replace the microSD card and CPU board with new one at the same time.**

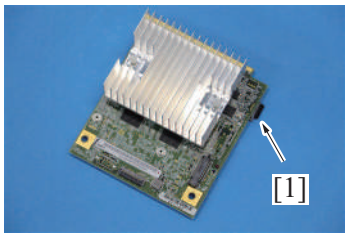
1. Remove the upper rear cover.
F.5.1.12 Upper rear cover



2. Remove three screws [1], and remove the plate [2].
NOTE
- **When the connector cable is attached, remove the connector [3].**



3. Remove two screws [1], and remove the CPU board [2].
NOTE
- **When mounting the CPU board [2], insert it obliquely.**

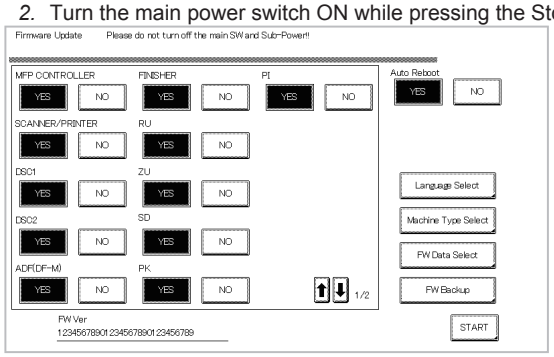


4. Remove the microSD card [1].

5. 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.

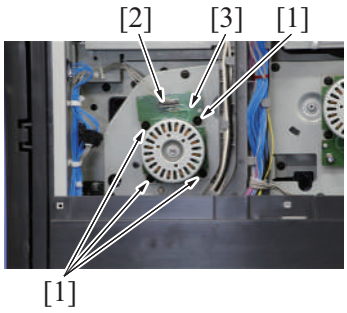
5. When [Recover Data] appears on the screen, touch [Recover Data].
6. When a verification message appears, touch [Yes].

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.

5.4 Motors

5.4.1 Transport motor (M1)

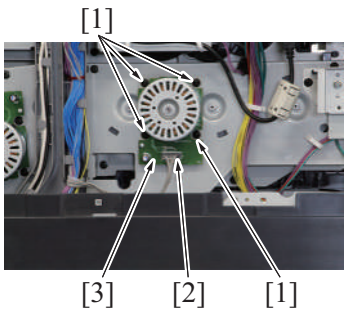
1. Remove the upper rear cover.
   F.5.1.12 Upper rear cover



2. Remove four screws [1]. Disconnect the connector [2], and remove the transport motor [3].
3. To reinstall, reverse the order of removal.

5.4.2 IU motor (M2)

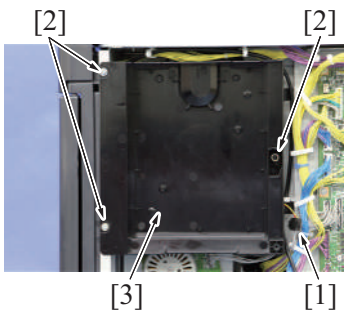
1. Remove the upper rear cover.
   F.5.1.12 Upper rear cover



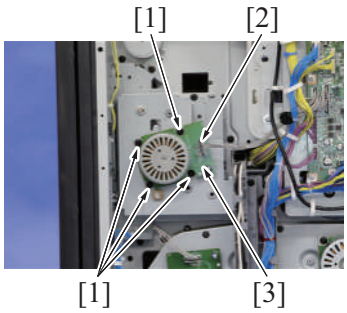
2. Remove four screws [1]. Disconnect the connector [2], and remove the IU motor [3].
3. To reinstall, reverse the order of removal.

5.4.3 Fusing motor (M3)

1. Remove the upper rear cover.
   F.5.1.12 Upper rear cover



2. Disconnect the connector [1].
3. Remove three screws [2], and remove the paper cooling fan assy [3].



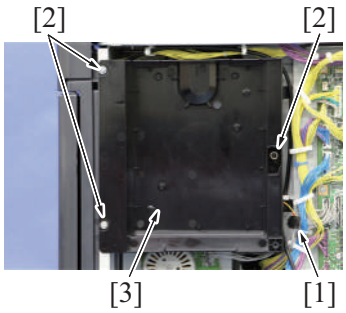
4. Remove four screws [1]. Disconnect the connector [2], and remove the fusing motor [3].

5. To reinstall, reverse the order of removal.

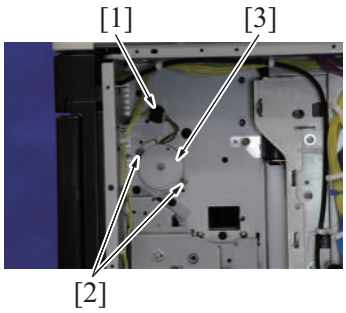
5.4.4 Paper exit/reverse motor (M4)

(1) Removal procedure

1. Remove the upper rear cover.
   F.5.1.12 Upper rear cover



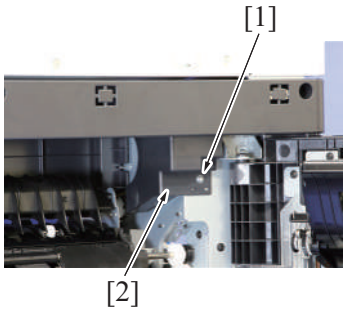
2. Disconnect the connector [1].
3. Remove three screws [2], and remove the paper cooling fan assy [3].



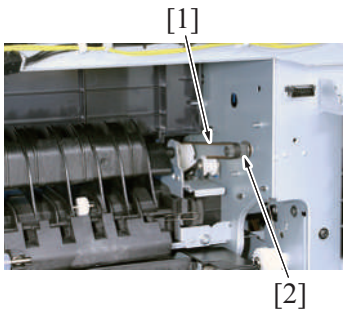
4. Disconnect the connector [1].
5. Remove two screws [2], and remove the paper exit/reverse motor [3].

(2) Reinstall procedure

1. Open the right door.



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

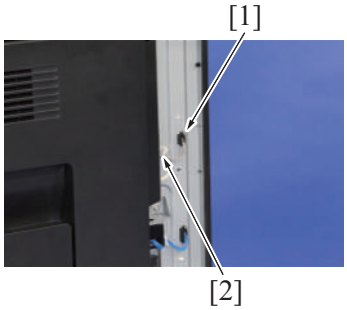


3. Attach the drive belt [1] to the gear of the paper exit/reverse motor

4. Attach it in reversed procedures of removal.

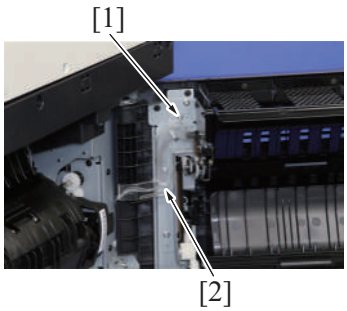
5.4.5 ADU transport motor (M5)

1. Remove the rear right cover.
   F.5.1.11 Rear right cover



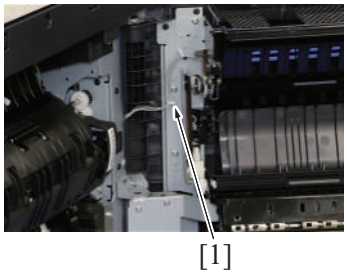
2. Disconnect the connector [1], and remove the harness from the wire saddle [2].

3. Open the right door.

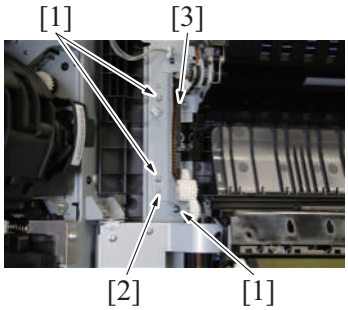


4. Remove the screw [1], and remove the connector cover [2].

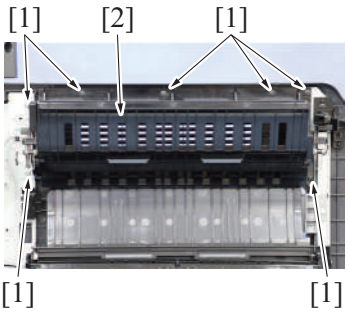
5. Remove the harness from the wire saddle [1].

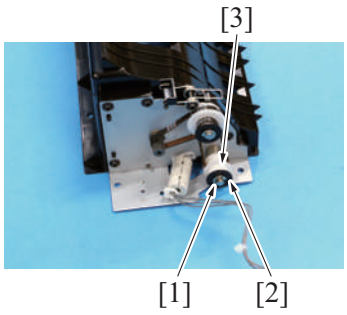


6. Remove three screws [1], and remove the ADU drive assy [2].
7. Remove the belt [3].

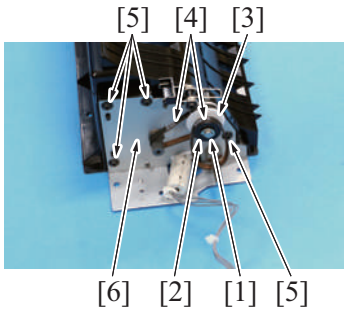


8. Remove seven screws [1], and remove the ADU transport assy [2].

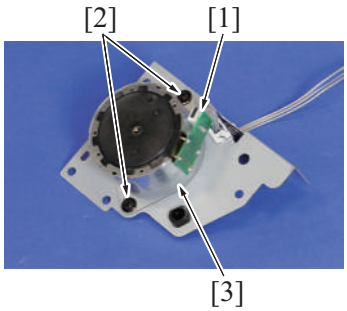




9. Remove the E-ring, and remove the frange [2] and the gear [3].



10. Remove the E-ring [1], and remove the flange [2].
11. Remove the gear [3] and two belts [4].
12. Remove four screws [5], and remove the ADU transport motor assy [6].

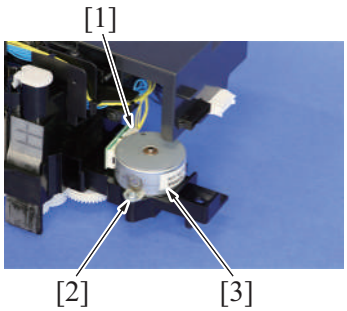


13. Disconnect the connector [1].
14. Remove two screws [2], and remove the ADU transport motor [3].

15. To reinstall, reverse the order of removal.

5.4.6 Toner supply motor/C, K (M7)

1. Remove the sub hopper unit.
   F.5.2.3 Sub hopper unit

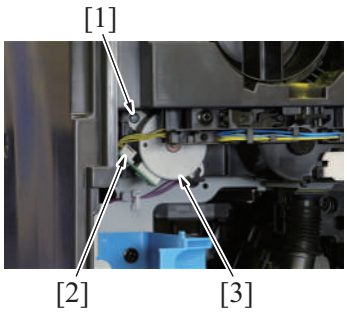


2. Disconnect the connector [1].
3. Remove the screw [2], and remove the toner supply motor/C, K [3].

4. To reinstall, reverse the order of removal.

5.4.7 Toner supply motor/Y, M (M9)

1. Remove the front door.
   F.5.1.4 Front door
2. Remove the waste toner box.
   E.3.1.8 Replacing the waste toner box
3. Remove the front lower cover.
   F.5.1.5 Front lower cover
4. Remove the front cover.
   F.5.1.6 Front cover

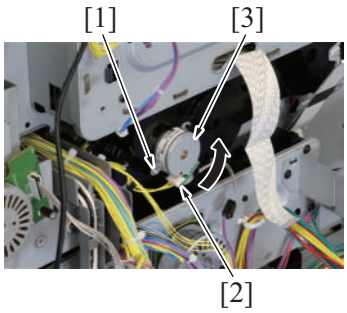


5. Remove the screw [1].
6. Disconnect the connector [2], and remove the toner supply motor/Y, M [3].

7. To reinstall, reverse the order of removal.

5.4.8 Toner cartridge motor (M10)

1. Remove the upper rear cover.
   F.5.1.12 Upper rear cover
2. Remove the board box.
   F.5.7.6 Board box

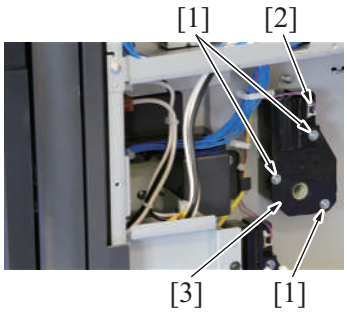


3. Remove the screw [1]. Disconnect the connector [2], and remove the toner cartridge motor [3].
   NOTE
   - **When removing the toner cartridge motor [3], make sure to turn it in the direction shown in the illustration.**

4. To reinstall, reverse the order of removal.

5.4.9 Tray 1 lift-up motor (M12)

1. Remove the upper rear cover.
   F.5.1.12 Upper rear cover
2. Remove the lower rear cover.
   F.5.1.13 Lower rear cover
3. Remove the DC power supply.
   F.5.3.6 DC power supply (DCPU)
4. Slide out the tray 1.

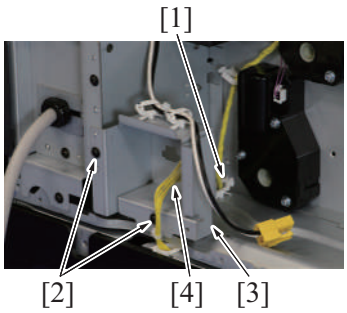


5. Remove three screws [1]. Disconnect the connector [2], and remove the tray 1 lift-up motor [3].

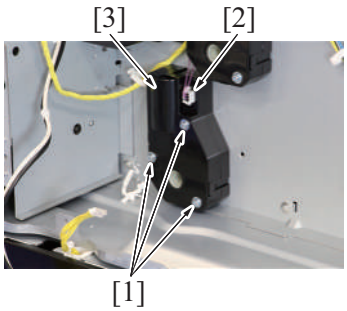
6. To reinstall, reverse the order of removal.

5.4.10 Tray 2 lift-up motor (M13)

1. Remove the upper rear cover.
   F.5.1.12 Upper rear cover
2. Remove the lower rear cover.
   F.5.1.13 Lower rear cover
3. Remove the DC power supply.
   F.5.3.6 DC power supply (DCPU)
4. Slide out the tray 2.



5. Remove the harness from the wire saddle [1].
6. Remove two screws [2], and evacuate the metal plate [3].
   NOTE
   - **Remove the connector [4] of the optional paper feed unit from the metal plate [3].**

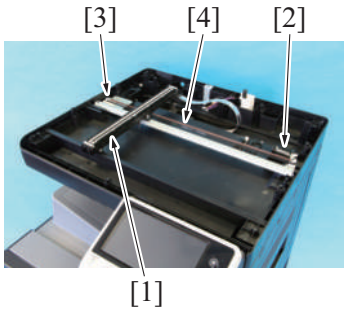


7. Remove three screws [1]. Disconnect the connector [2], and remove the tray 2 lift-up motor [3].

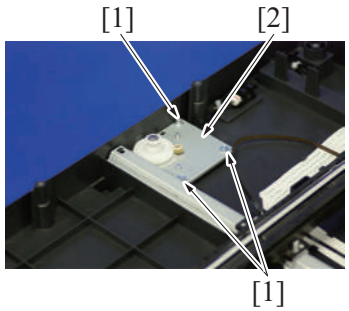
8. To reinstall, reverse the order of removal.

5.4.11 Scanner motor (M201)

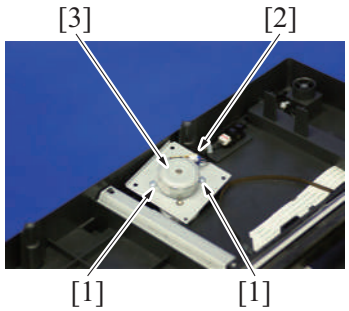
1. Remove the original glass assy.
   F.5.1.3 Original glass assy



2. Slide the contact image sensor [1].
3. Remove the spring [2], and take off the belt [4] from the gear [3].



4. Remove three screws [1], and upset the scanner motor assy [2].



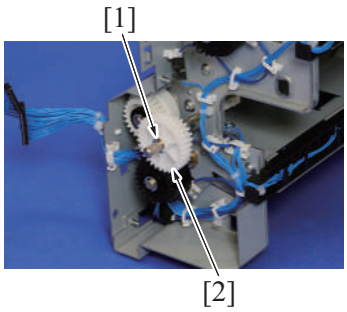
5. Remove two screws [1], disconnect the connector [2], and remove the scanner motor [3].

6. To reinstall, reverse the order of removal.
7. Carry out the [Service Mode] -> [Machine] -> [Scan Area] -> [Main Scan Zoom Adj.].

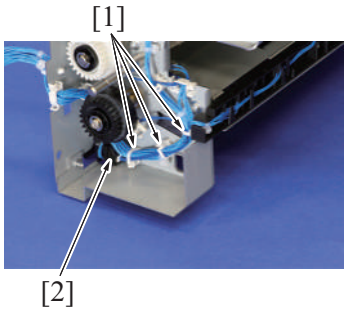
5.5 Clutches

5.5.1 Tray 2 paper feed clutch (CL1)

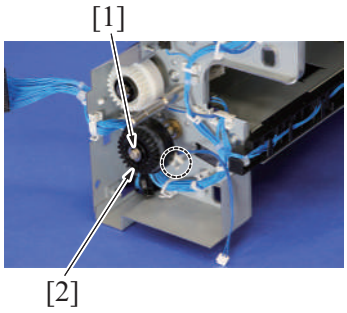
1. Slide out the tray 1 and tray 2.
2. Open the right door.
3. Remove the paper feed unit.
   F.5.2.1 Paper feed unit



4. Remove the E-ring [1], and remove the gear [2].



5. Remove the harness from three wire saddles [1], and disconnect the connector [2].

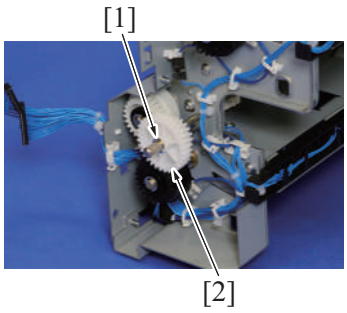


6. Remove the E-ring [1], and remove the tray 2 paper feed clutch [2].
   NOTE
   - **When mounting the tray 2 paper feed clutch [2], set the convex part of the stopper into the concave part of the tray 2 paper feed clutch.**

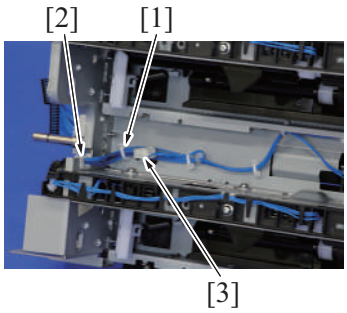
7. To reinstall, reverse the order of removal.

5.5.2 Tray 2 vertical transport clutch (CL2)

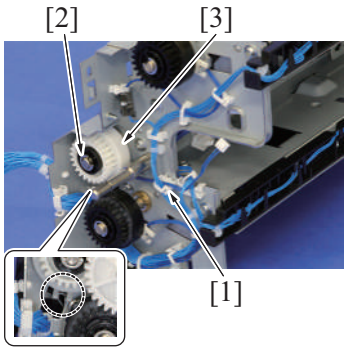
1. Slide out the tray 1 and tray 2.
2. Open the right door.
3. Remove the paper feed unit.
   F.5.2.1 Paper feed unit



4. Remove the E-ring [1], and remove the gear [2].



5. Remove the harness from wire saddle [1] and edge cover [2], and disconnect the connector [3].

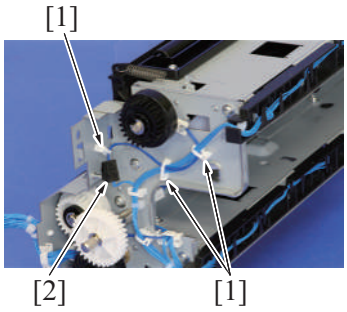


6. Remove the harness from the wire saddle [1].
7. Remove the E-ring [2], and remove the tray 2 vertical transport clutch [3].
NOTE
- **When mounting the tray 2 vertical transport clutch [3], set the convex part of the stopper into the concave part of the tray 2 vertical transport clutch.**

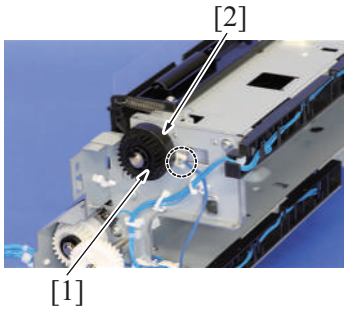
8. To reinstall, reverse the order of removal.

5.5.3 Tray 1 paper feed clutch (CL3)

1. Slide out the tray 1 and tray 2.
2. Open the right door.
3. Remove the paper feed unit.
F.5.2.1 Paper feed unit



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

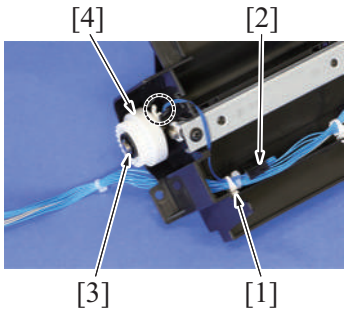


5. Remove the E-ring [1], and remove the tray 1 paper feed clutch [2].
NOTE
- **When mounting the tray 1 paper feed clutch [2], set the convex part of the stopper into the concave part of the tray 1 paper feed clutch.**

6. To reinstall, reverse the order of removal.

5.5.4 Registration clutch (CL4)

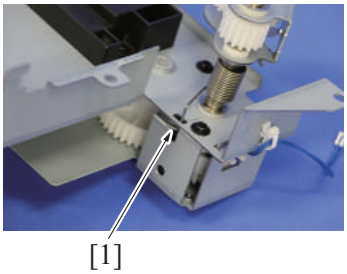
1. Remove the transport unit.
F.5.2.8 Transport unit



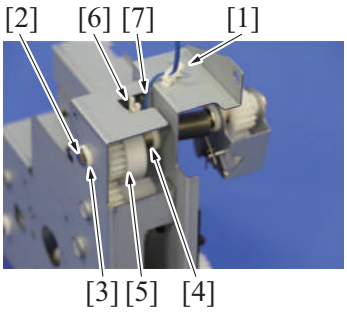
2. Remove the harness from the wire saddle [1], and disconnect the connector [2].
3. Remove the E-ring [3], and remove the registration clutch [4].
   NOTE
   - **When mounting the registration clutch, set the convex part of the stopper into the concave part of the registration clutch [3].**
4. To reinstall, reverse the order of removal.

5.5.5 1st transfer pressure clutch (CL5)

1. Remove the fusing drive unit.
   F.5.2.9 Fusing drive unit



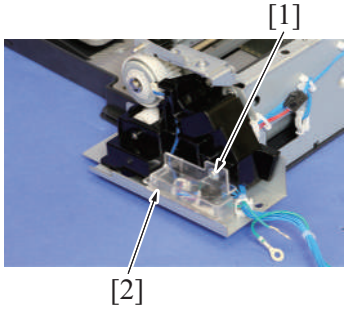
2. Remove the tip of the spring [1] from the plate.



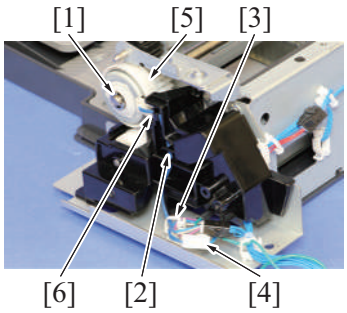
3. Remove the harness from the wire saddle [1].
4. Remove the E-ring [2] and the bushing [3], and remove the 1st transfer pressure clutch [5] while pulling out the shaft [4].
   NOTE
   - **Pass the stopper [6] into the hole of the plate [7] when mounting the 1st transfer pressure clutch.**
5. To reinstall, reverse the order of removal.

5.5.6 Bypass paper feed clutch (CL7)

1. Remove the upper right cover.
   F.5.1.10 Upper right cover
2. Remove the rear right cover.
   F.5.1.11 Rear right cover
3. Remove the manual bypass tray unit.
   F.5.2.5 Manual bypass tray unit



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



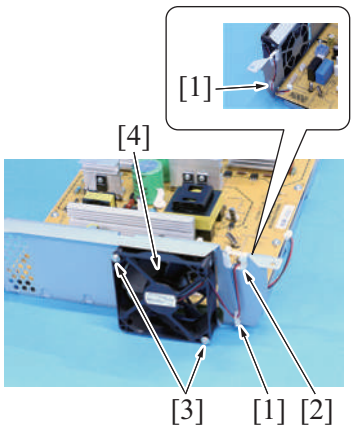
5. Remove the E-ring [1].
6. Disconnect the harness from the harness guide [2] and wire saddle [3].
7. Disconnect the connector [4], and remove the bypass paper feed clutch [5].
   NOTE
   - **When installing the bypass paper feed clutch, install it with the stopper [6] coming to the position shown in the figure.**

8. To reinstall, reverse the order of removal.

5.6 Fans

5.6.1 Power supply cooling fan (FM1)

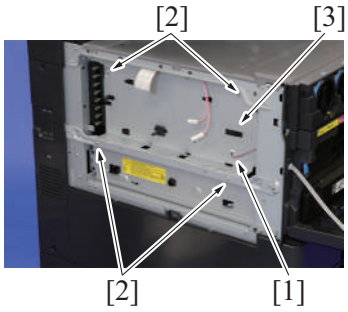
1. Remove the DC power supply.
   F.5.3.6 DC power supply (DCPU)



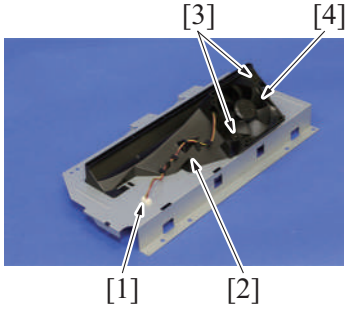
2. Remove the harness from two wire saddles [1] and the edge cover [2].
3. Remove two screws [3], and remove the power supply cooling fan [4].
4. To reinstall, reverse the order of removal.

5.6.2 Transfer belt cleaner cooling fan (FM2)

1. Open the front door.
2. Remove the left cover.
   F.5.1.7 Left cover
3. Remove the high voltage unit.
   F.5.3.7 High voltage unit (HV)



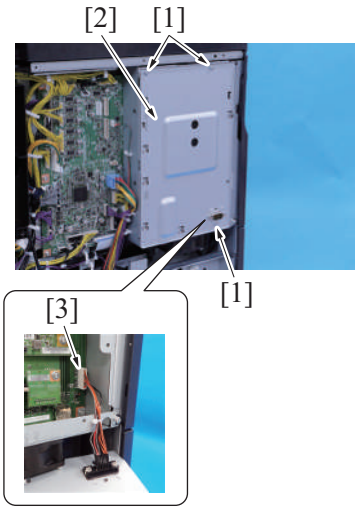
4. Disconnect the connector [1].
5. Remove four screws [2], and remove the plate [3].



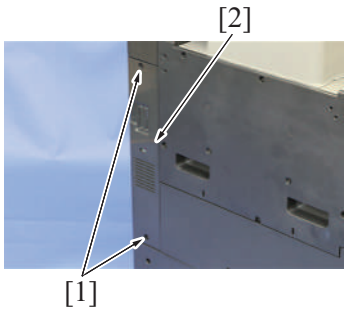
6. Disconnect the connector [1], and remove the harness from the harness guide [2].
7. Remove two screws [3], and remove the transfer belt cleaner cooling fan [4].
8. To reinstall, reverse the order of removal.

5.6.3 Rear side cooling fan (FM3)

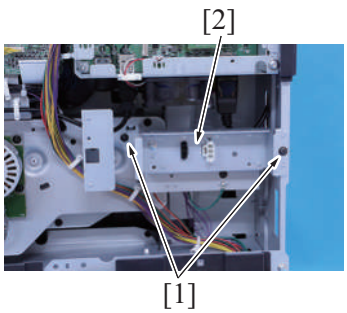
1. Remove the upper rear cover.
F.5.1.12 Upper rear cover



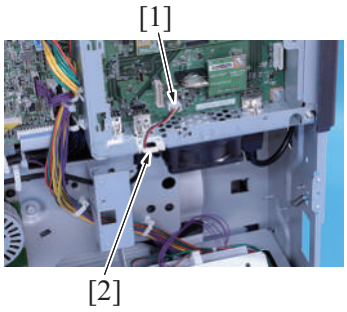
2. Remove three screws [1], and remove the plate [2].
NOTE
- **When the connector cable is attached, remove the connector [3].**



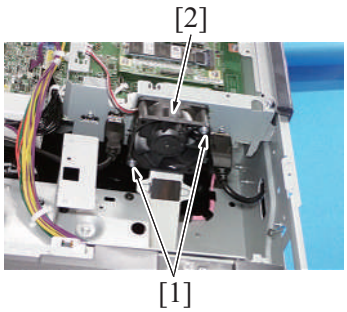
3. Remove two screws [1], and remove the cover [2].



4. Remove two screws [1], and evacuate the plate [2].



5. Disconnect the connector [1], and remove the harness from the edge cover [2].

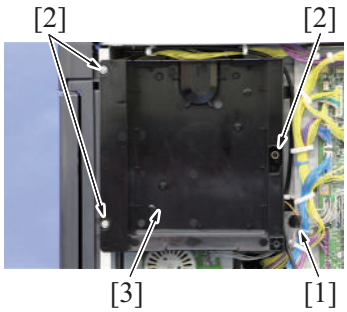


6. Remove two screws [1], and remove the rear side cooling fan [2].

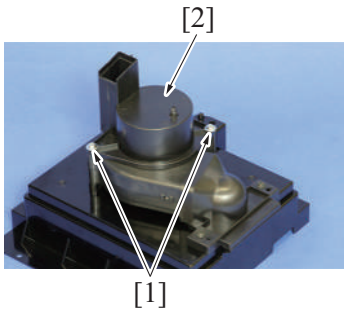
7. To reinstall, reverse the order of removal.

5.6.4 Paper cooling fan (FM8)

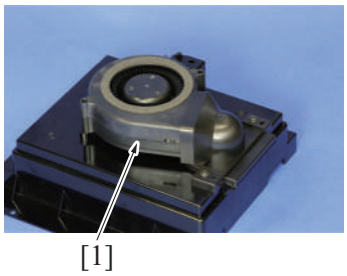
1. Remove the upper rear cover.
   F.5.1.12 Upper rear cover



2. Disconnect the connector [1].
3. Remove three screws [2], and remove the paper cooling fan assy [3].



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



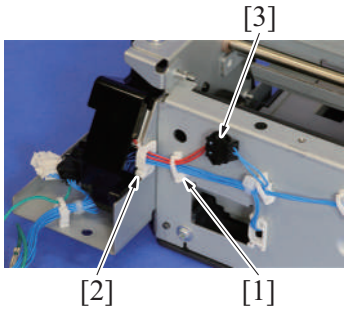
5. Remove the paper cooling fan [1].

6. To reinstall, reverse the order of removal.

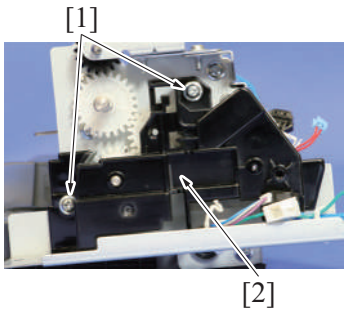
5.7 Others

5.7.1 Bypass pick-up solenoid (SD1)

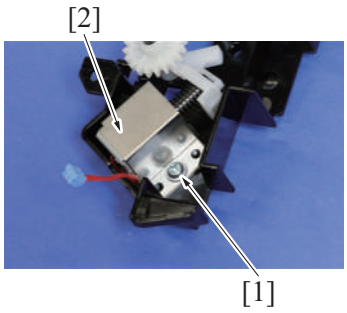
1. Remove the upper right cover.
   F.5.1.10 Upper right cover
2. Remove the rear right cover.
   F.5.1.11 Rear right cover
3. Remove the manual bypass tray unit.
   F.5.2.5 Manual bypass tray unit
4. Remove the bypass paper feed clutch.
   F.5.5.6 Bypass paper feed clutch (CL7)



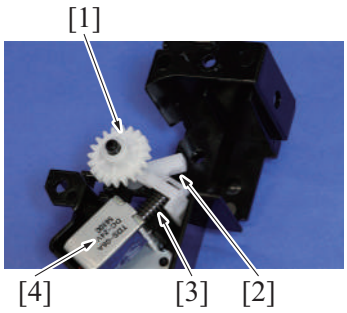
5. Remove the harness from wire saddle [1] and edge cover [2], and disconnect the connector [3].



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



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



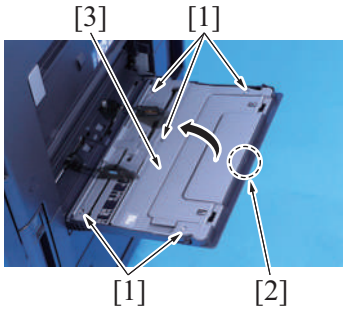
8. Remove the gear [1], actuator [2], and spring [3].
9. Remove the bypass pick-up solenoid [4].

10. To reinstall, reverse the order of removal.

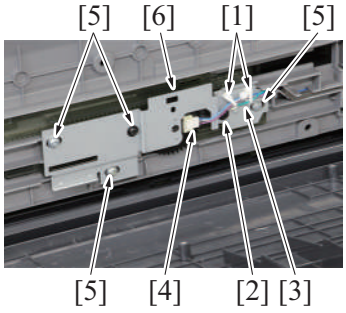
5.7.2 Bypass CD paper size VR (VR1)

(1) Removal procedure

1. Open the bypass tray.

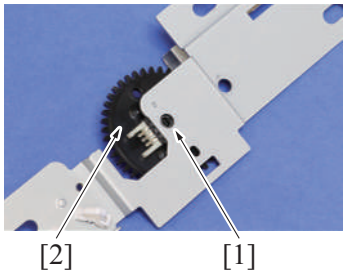


2. Remove five screws [1], and unhook the tab, and raise the paper regulating board assy [2].

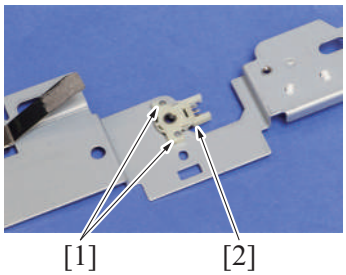


3. Remove the harness from two wire saddles [1].
4. Remove the screw [2], and remove the earth wire [3].
5. Disconnect the connector [4].
6. Remove four screws [5], and remove the bypass CD paper size VR assy [6].

7. Remove the tab [1], and remove the gear [2].

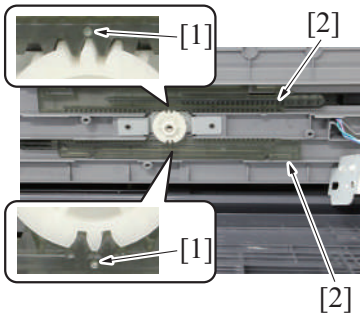


8. Remove two screws [1], and remove the bypass CD paper size VR [2].

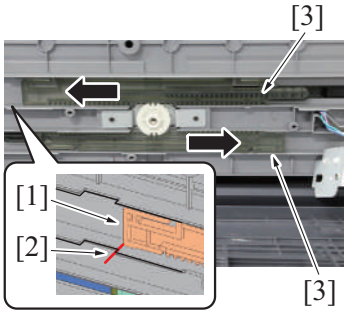


(2) Reinstall procedure

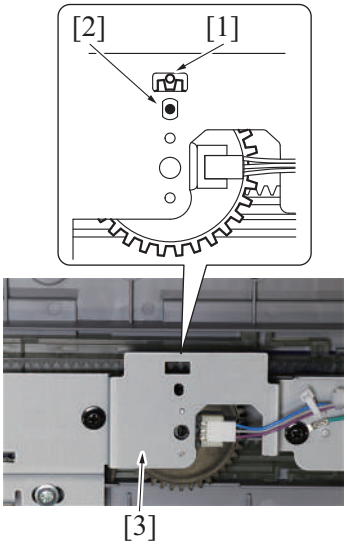
1. Align the match mark [1] on the bypass guide rack gear with the groove on the gear rim at two places and install two bypass guide rack gears [2].



2. Move the bypass guide rack gear [3] so that the end of the bypass guide rack gear [1] and the concave of the paper guide assy [2] are aligned.



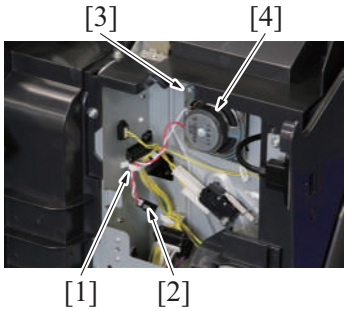
3. When installing the bypass CD paper size VR assy [3], make sure that the part [1] (pointed by the arrow) on the bypass guide rack gear and the gear's hole [2] on the bypass CD paper size VR assy are placed in a straight line.
4. Secure the bypass CD paper size VR assy with the four screws.



5. After the bypass CD paper size VR base has been mounted, check that the lever of the bypass CD paper size VR moves smoothly in a manner operatively connected to the bypass guide.
6. Call the Service Mode to the screen and select [Machine] -> [Manual Bypass Tray Width Adj]. Then, carry out manual bypass tray width adjustment.

5.7.3 FAX speaker (SP1)

1. Remove the control panel.
F.5.1.2 Control panel unit



2. Remove the harness from the wire saddle [1], and disconnect the connector [2].
3. Remove the screw [3], and remove the FAX speaker [4].
4. To reinstall, reverse the order of removal.

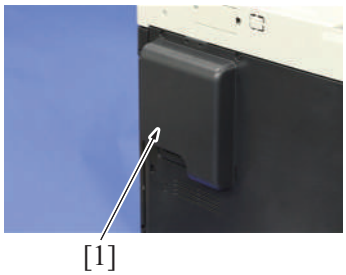
5.7.4 UFP filter/ Deodorant filter

(1) UFP filter

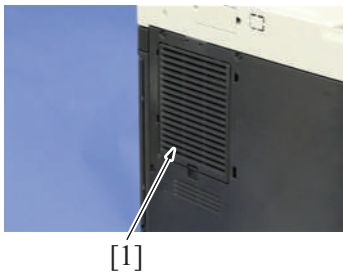
NOTE

- **The UFP filter is standard equipment only on models destined for Europe.**

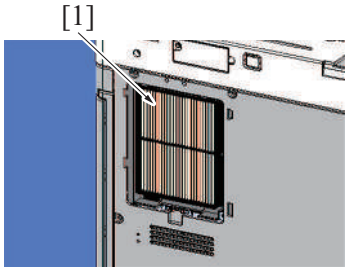
1. Remove the exhaust cover [1].



2. Remove the filter cover [1].



3. Remove the UFP filter [1].



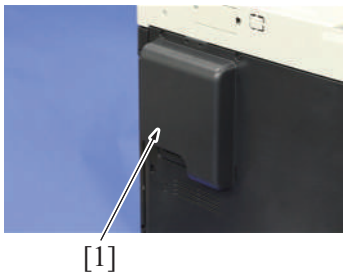
4. To reinstall, reverse the order of removal.

(2) Deodorant filter

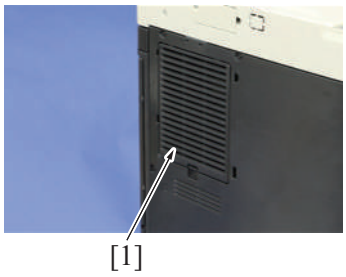
NOTE

- **The deodorant filter is standard equipment only on model of the 28ppm No Olivetti destined for China.**

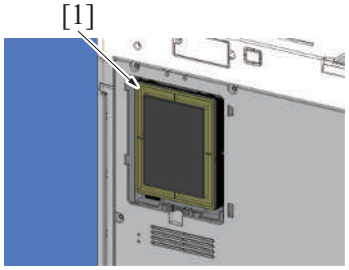
1. Remove the exhaust cover [1].



2. Remove the filter cover [1].



3. Remove the deodorant filter [1].



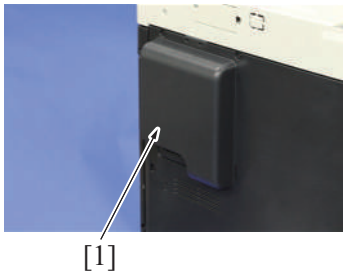
4. To reinstall, reverse the order of removal.

(3) When both the UFP filter and deodorant filter are installed.

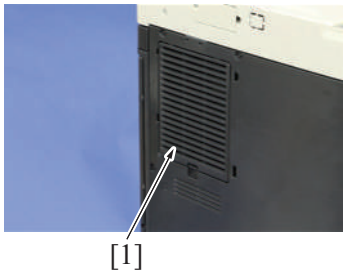
NOTE

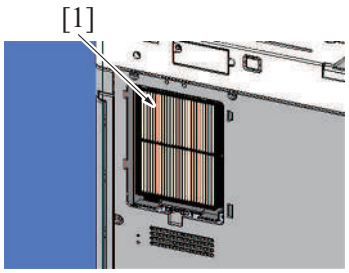
- **The UFP filter and deodorant filter can be used combined. In this situation, install by the following procedure.**

1. Remove the exhaust cover [1].

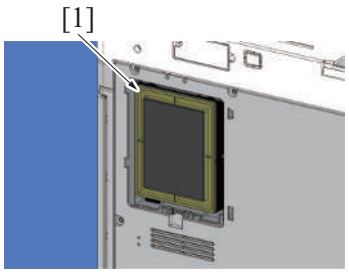


2. Remove the filter cover [1].

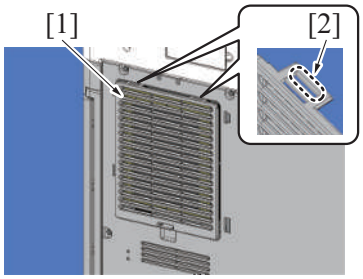




3. Install the UFP filter [1].



4. Install the deodorant filter [1].

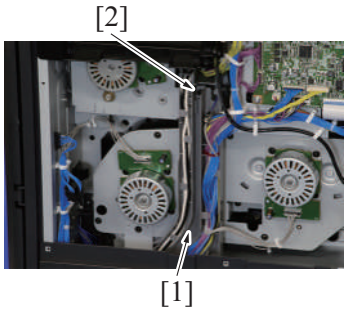


5. Install the filter cover [1].
NOTE
- **Install the filter cover [1] while hooking the slots [2] onto the protrusions on the main body.**

6. Install the exhaust cover.

5.7.5 Harness guide

1. Remove the upper rear cover.
F.5.1.12 Upper rear cover

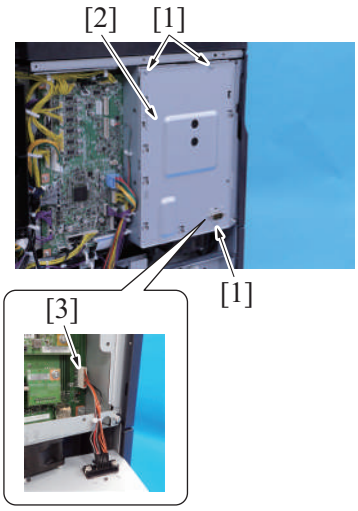


2. Remove all harnesses from the harness guide [1].
3. Remove the screw [2], and remove the harness guide [1].

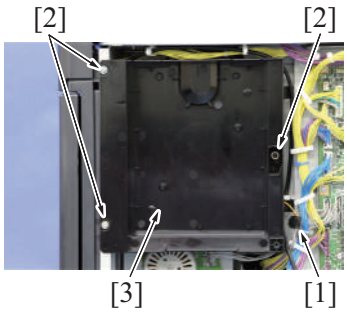
4. To reinstall, reverse the order of removal.

5.7.6 Board box

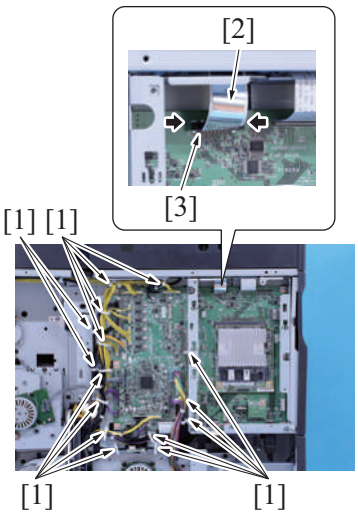
1. Remove the upper rear cover.
F.5.1.12 Upper rear cover



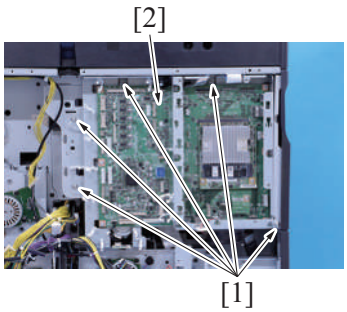
2. Remove three screws [1], and remove the plate [2].
NOTE
- **When the connector cable is attached, remove the connector [3].**



3. Disconnect the connector [1].
4. Remove three screws [2], and remove the paper cooling fan assy [3].



5. Remove the harness from 15 wire saddles [1].
6. Remove all the connectors, flat cables, USB cables, and control panel cable on the base board.
NOTE
- **When removing the flat cable [2], unlock the connector [3] and remove the cable together with the connector.**
- **Pass the flat cable [2] into the plate.**

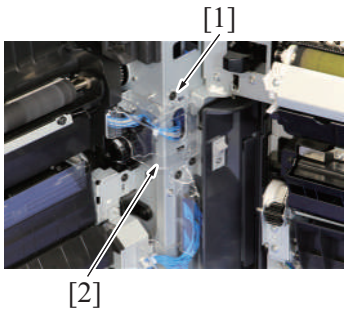


7. Remove five screws [1], and remove the board box [2].

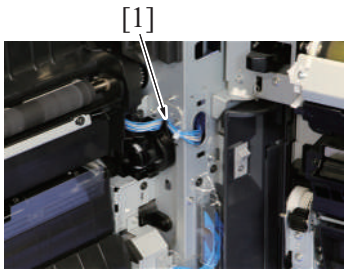
8. To reinstall, reverse the order of removal.

5.7.7 IDC sensor

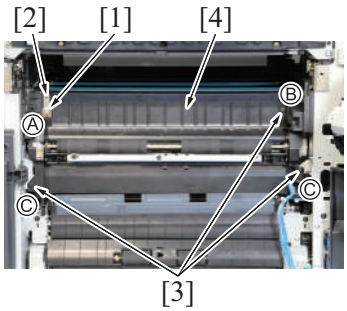
1. Remove the transfer belt unit.
E.3.1.9 Replacing the transfer belt unit



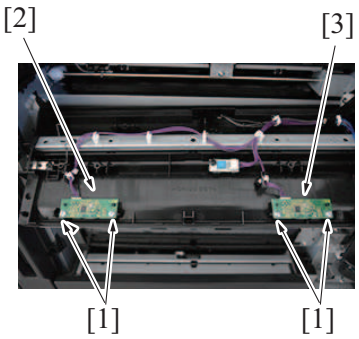
2. Remove the screw [1], and remove the cover [2].



3. Remove the harness from harness guide [1].



4. Remove the screw [1], and remove the plate spring [2].
5. 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 tray 1 paper feed unit.**
   - **When installing the unit, note that three types of screws is present.**
     A: Shoulder screw x 1
     B: Screw (long) x 1
     C: Screw (short) x 2



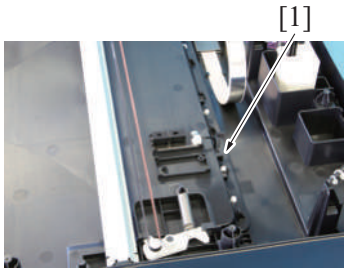
6. Remove four screws [1], and remove the IDC sensor/Fr [2] and IDC sensor/Rr [3].

7. To reinstall, reverse the order of removal.

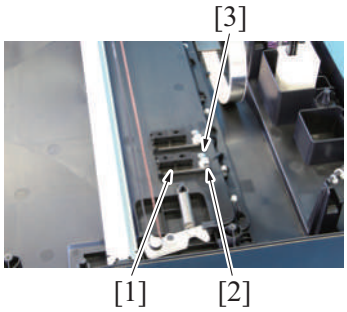
6. Commercially available parts

6.1 Installing the original size sensor/2 (Option)

1. Remove the original glass.
F.5.1.3 Original glass assy



2. Remove the harness from the harness guide [1].

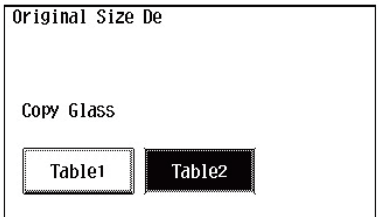


3. Connect the connector [2] to the original size sensor/2 [1].
4. Fix the original size sensor/2 (PS102) [1] with the screw [3].

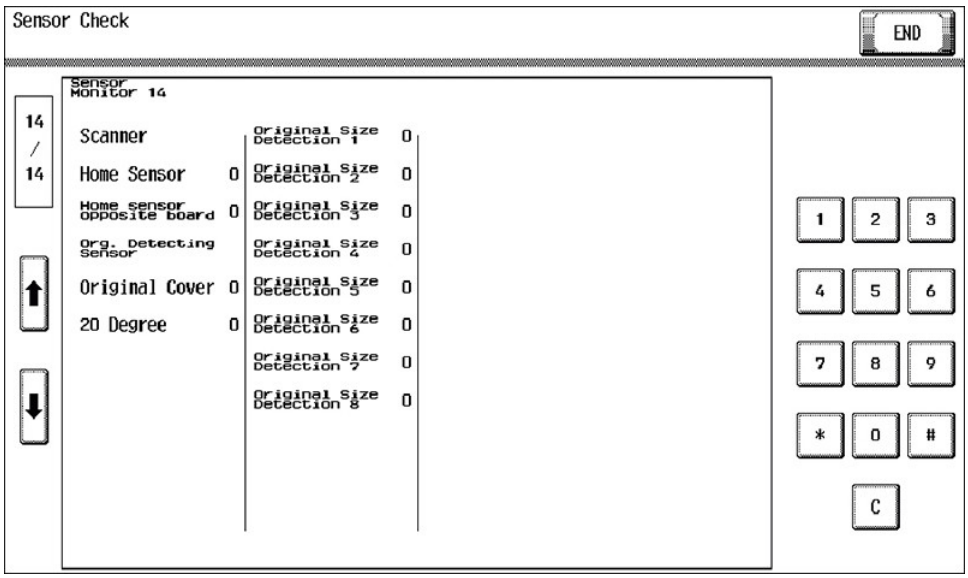
NOTE

- **Refer to the Parts Guide Manual for the part numbers of the wire saddle, screws, and original size sensor.**

5. Select [Service Mode] -> [System 1] -> [Original Size Detection], and set the original glass to [Table2].



6. Select [Service Mode] -> [State Confirmation] -> [Sensor Check].

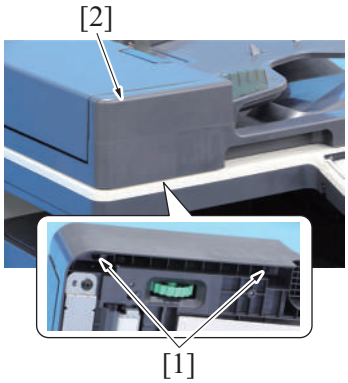


7. Set the original on the original glass, and check that the data for “Original Size Detection 2” changes from “0” to “1” on the screen.
8. Carry out the [Service mode] -> [System1] -> [Original Size Detection] -> [Copy Glass].

7. Reverse automatic document feeder (DF-633)

7.1 Front cover (DF-633)

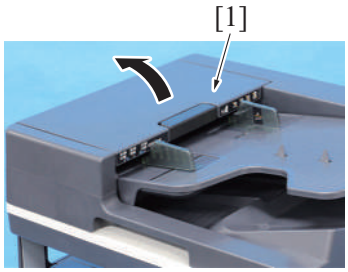
1. Open the reverse automatic document feeder.



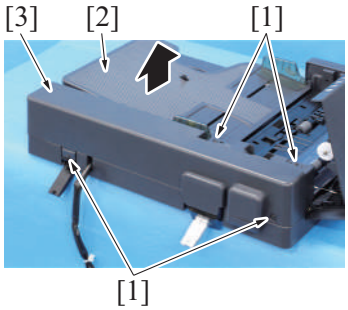
2. Remove two screws [1], and remove the front cover [2].
3. To reinstall, reverse the order of removal.

7.2 Rear cover (DF-633)

1. Open the upper door [1].



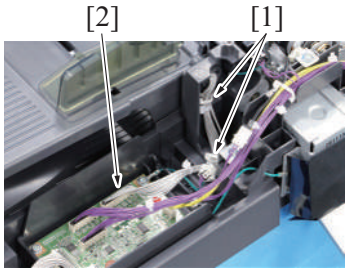
2. Remove four screws [1].
3. Remove the rear cover [3] while raising the document feed tray [2] up.



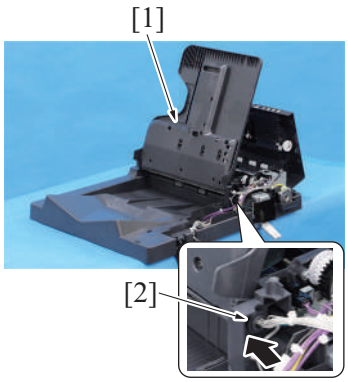
4. To reinstall, reverse the order of removal.

7.3 Document feed tray (DF-633)

1. Remove the front cover.
   F.7.1 Front cover (DF-633)
2. Remove the rear cover.
   F.7.2 Rear cover (DF-633)



3. Remove the harness from two wire saddles [1].
4. Disconnect the connector [2] from the DF control board.

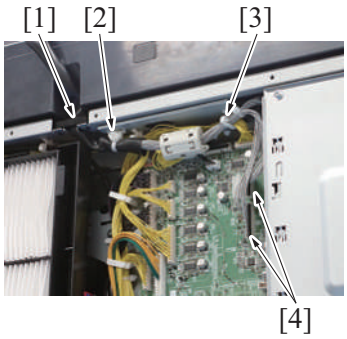


5. Remove the document feed tray [1] and insert the harness to the hole [2].

6. To reinstall, reverse the order of removal.

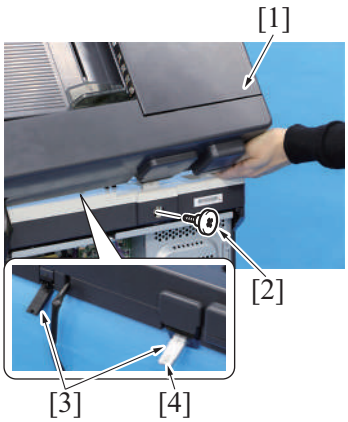
7.4 Reverse automatic document feeder (DF-633)

1. Remove the upper rear cover from the main body.
F.5.1.12 Upper rear cover



2. Remove the harness cover [1] from the main body.
3. Remove the cable tie [2] from the main body.
4. Remove the harness from the wire saddle [3].
5. Disconnect two connectors [4] from the base board.

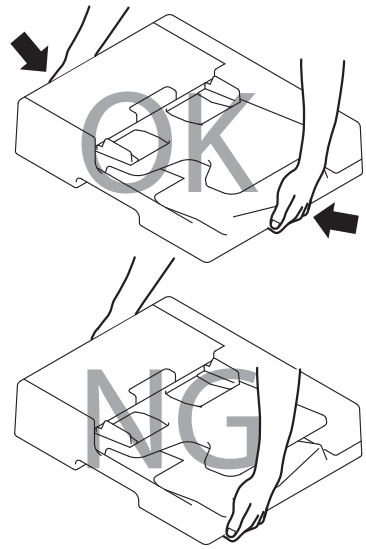
6. Open the reverse automatic document feeder.



7. Remove the screw [2] while raising rear right side of the reverse automatic document feeder [1] up.
8. Remove the reverse automatic document feeder [1].

NOTE

- **The protrusion [3] of the reverse automatic document feeder is caught on the scanner section and it may be difficult to remove the reverse automatic document feeder. At this time, lift the reverse automatic document feeder [1] up while swinging it.**
- **When installing the reverse automatic document feeder [1], tighten the screw [2] in the screw hole [4].**

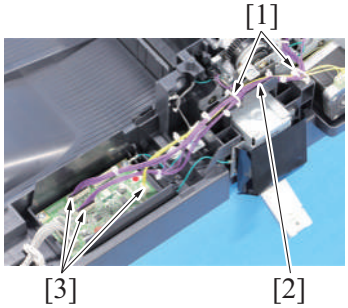


9. **NOTE**
   - **When carrying the reverse automatic document feeder, be sure to hold onto the specified positions. The feeder main body can be distorted if held at inappropriate positions.**
   - **After removing the reverse automatic document feeder from the main body, place it on the floor or the like as shown in the illustration.**

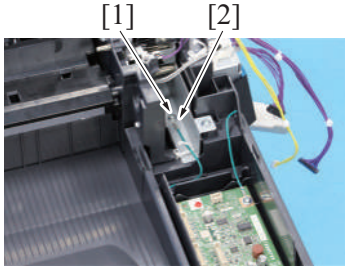
10. To reinstall, reverse the order of removal.

7.5 Document feed unit (DF-633)

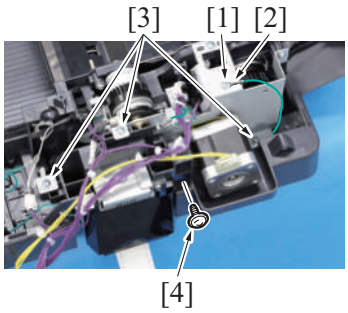
1. Remove the front cover.
   F.7.1 Front cover (DF-633)
2. Remove the rear cover.
   F.7.2 Rear cover (DF-633)
3. Remove the document feed tray.
   F.7.3 Document feed tray (DF-633)



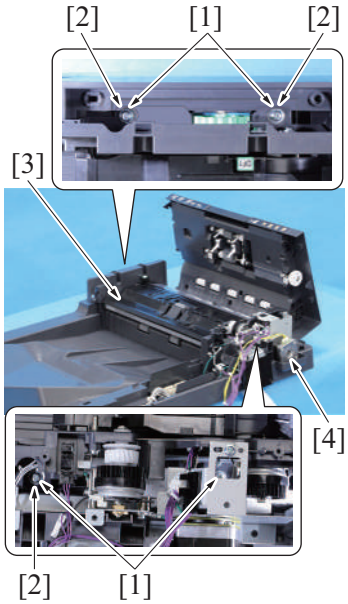
4. Remove the harness from two wire saddles [1] and the harness guide [2].
5. Disconnect three connectors [3] from the DF control board.



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



7. Remove the screw [1], and remove the ground terminal [2].
8. Remove three screws [3] and the screw [4].
NOTE
- **The screw [3] and the screw [4] are different type of screw, so be careful not to mistake the place to install.**

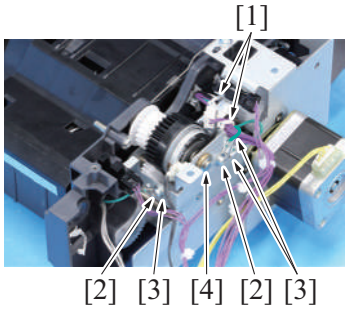


9. Remove four screws [1] and three washers [2], and remove the document feed unit [3].
NOTE
- **When removing the document feed unit, do not hold the document feed motor [4].**

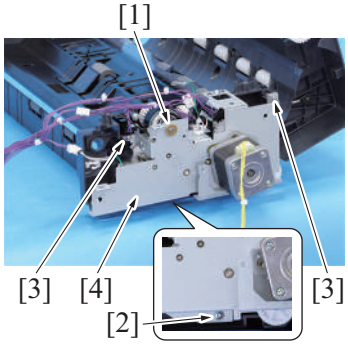
10. To reinstall, reverse the order of removal.

7.6 Document feed motor assy (DF-633)

1. Remove the front cover.
F.7.1 Front cover (DF-633)
2. Remove the rear cover.
F.7.2 Rear cover (DF-633)
3. Remove the document feed tray.
F.7.3 Document feed tray (DF-633)
4. Remove the document feed unit.
F.7.5 Document feed unit (DF-633)



5. Remove the harness from two wire saddles [1].
6. Remove two screws [2], and remove three ground terminals [3].
7. Remove the E-ring [4].

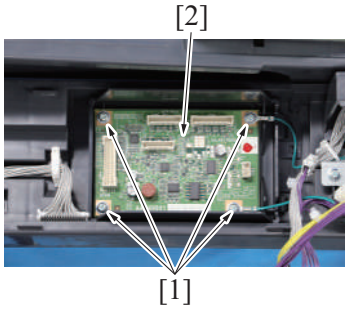


8. Remove the bushing [1].
9. Remove the screw [2] and two screws [3], and remove the document feed motor assy [4].
NOTE
- **The screw [2] and the screw [3] are different type of screw, so be careful not to mistake the place to install.**

10. To reinstall, reverse the order of removal.

7.7 DF control board (DFCB) (DF-633)

1. Remove the rear cover.
   F.7.2 Rear cover (DF-633)
2. Disconnect all connectors on the DF control board.



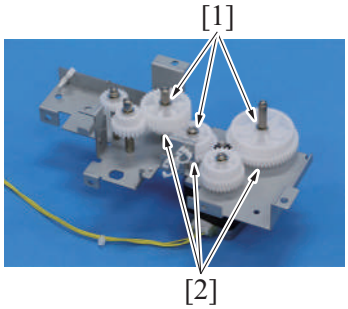
3. Remove four screws [1], and remove the DF control board [2].
4. To reinstall, reverse the order of removal.

NOTE

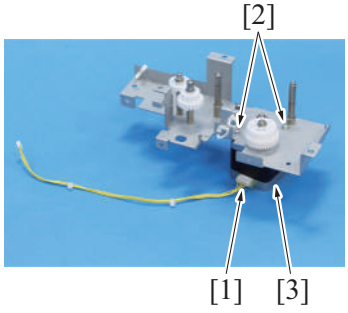
- **Be sure to perform the following steps after the DF control board has been replaced with a new one.**
- **Install the firmware.**

7.8 Document feed motor (M1) (DF-633)

1. Remove the front cover.
   F.7.1 Front cover (DF-633)
2. Remove the rear cover.
   F.7.2 Rear cover (DF-633)
3. Remove the document feed tray.
   F.7.3 Document feed tray (DF-633)
4. Remove the document feed unit.
   F.7.5 Document feed unit (DF-633)
5. Remove the document feed motor assy.
   F.7.6 Document feed motor assy (DF-633)
6. Remove three E-rings [1], and remove three gears [2].



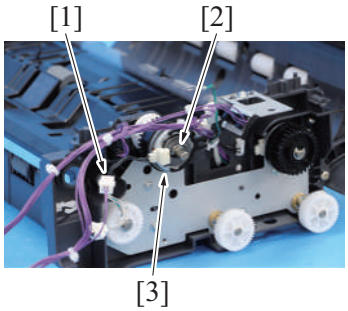
7. Disconnect the harness [1].
8. Remove two screws [2], and remove the document feed motor [3].



9. To reinstall, reverse the order of removal.

7.9 Document feed clutch (CL1) (DF-633)

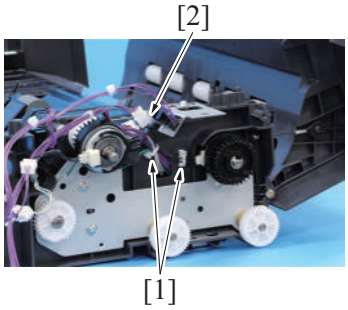
1. Remove the front cover.
   F.7.1 Front cover (DF-633)
2. Remove the rear cover.
   F.7.2 Rear cover (DF-633)
3. Remove the document feed tray.
   F.7.3 Document feed tray (DF-633)
4. Remove the document feed unit.
   F.7.5 Document feed unit (DF-633)
5. Remove the document feed motor assy.
   F.7.6 Document feed motor assy (DF-633)



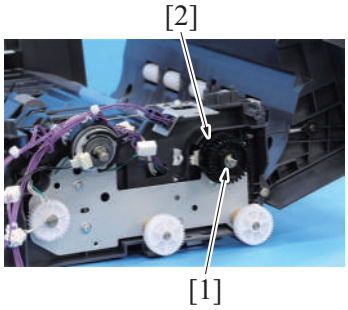
6. Disconnect the connector [1].
7. Remove the E-ring [2] and remove the document feed clutch [3].
8. To reinstall, reverse the order of removal.

7.10 Document registration clutch (CL2) (DF-633)

1. Remove the front cover.
   F.7.1 Front cover (DF-633)
2. Remove the rear cover.
   F.7.2 Rear cover (DF-633)
3. Remove the document feed tray.
   F.7.3 Document feed tray (DF-633)
4. Remove the document feed unit.
   F.7.5 Document feed unit (DF-633)
5. Remove the document feed motor assy.
   F.7.6 Document feed motor assy (DF-633)



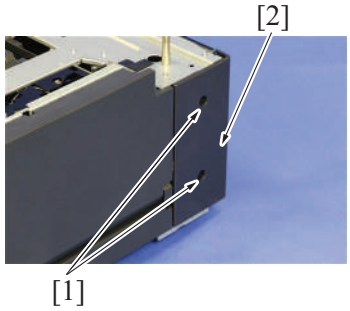
6. Remove the harness from two wire saddles [1].
7. Disconnect the connector [2].



8. Remove the E-ring [1], and remove the document registration clutch [2].
9. To reinstall, reverse the order of removal.

8. PC-118/PC-218

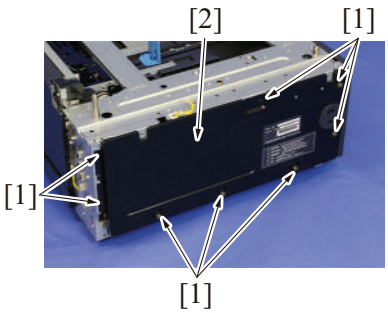
8.1 Rear right cover (PC-118/PC-218)



1. Remove two screws [1], and remove the rear right cover [2].
2. To reinstall, reverse the order of removal.

8.2 Rear cover (PC-118/PC-218)

1. Remove the rear right cover.
   F.8.1 Rear right cover (PC-118/PC-218)



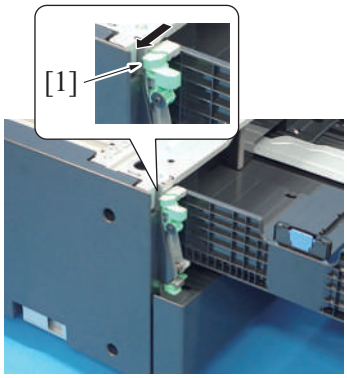
2. Remove eight screws [1], and remove the rear cover [2].
3. To reinstall, reverse the order of removal.

8.3 Tray 3, Tray 4 (PC-118/PC-218)

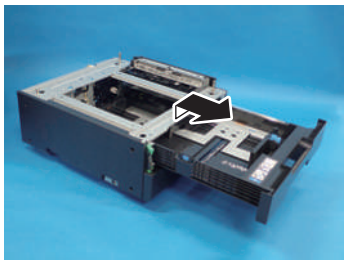
NOTE

- **The tray 3 and the tray 4 are of the same form and mechanism. This procedure shows the steps taken for the tray 3.**

1. Slide out the tray 3.



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

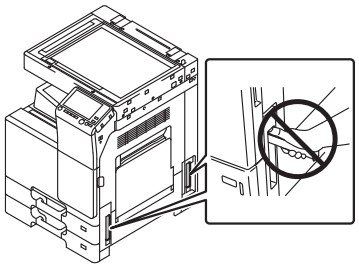


4. To reinstall, reverse the order of removal.

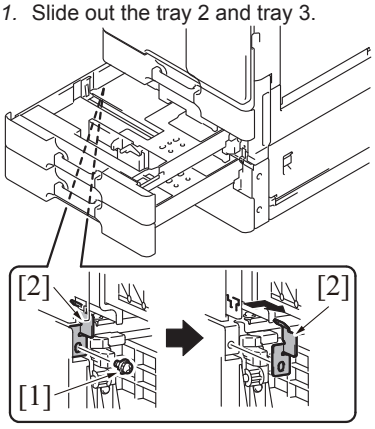
8.4 Paper feed cabinet (PC-118/PC-218)

⚠CAUTION

- When holding the transportation handles, be careful not to catch your fingers in the main body.

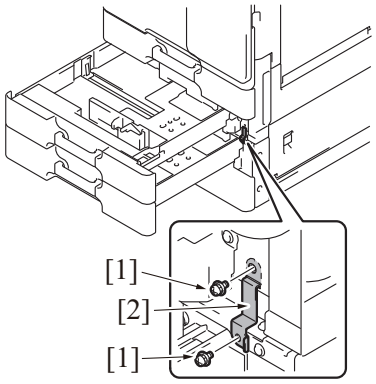


1. Slide out the tray 2 and tray 3.



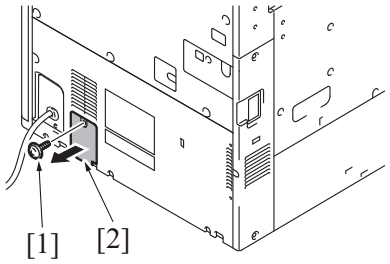
2. Remove the screw [1], and remove the fixing bracket [2].

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

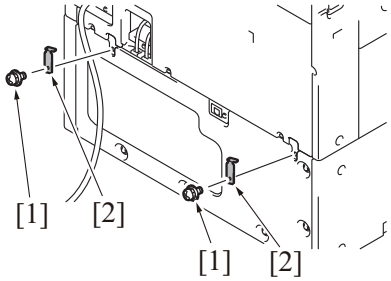


4. Slide the tray 2 and tray 3 back in.

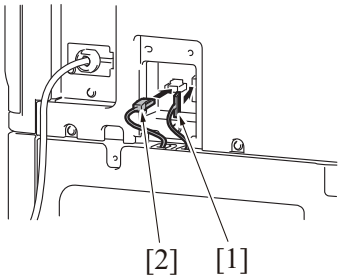
5. Remove the screw [1], and remove the connector cover [2].



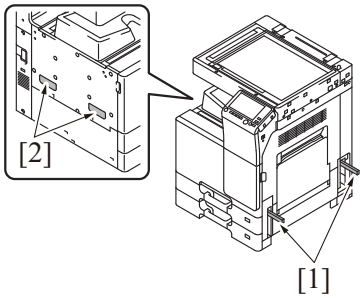
6. Remove two screws [1], and remove two fixing brackets [2].



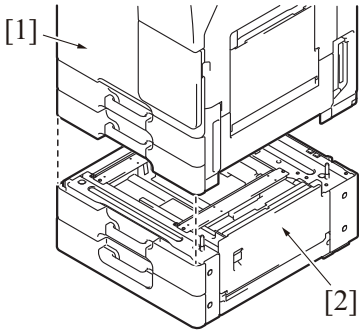
7. Disconnect the connector [1].
   Disconnect the connector [2]. (Japan only)



8. Pull out the transportation handles [1].
9. Hold the main body by the parts [2] shown in the figure on the left and by the transport handles on the right.

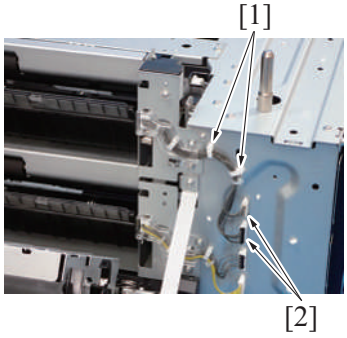


10. Hold up the main body [1] up and remove the paper feed cabinet [2].
    NOTE
    - **When transporting or moving the main body, assign adequate number of persons.**

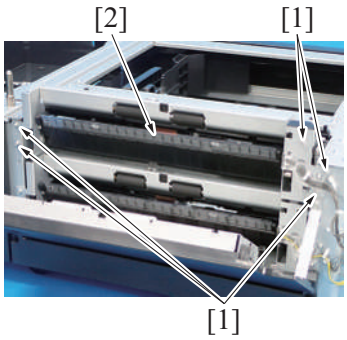


8.5 Tray 3 paper feed unit (PC-118/PC-218)

1. Open the right door.
2. Remove the rear right cover.
   F.8.1 Rear right cover (PC-118/PC-218)
3. Slide out the tray 3.



4. Remove the harness from two wire saddles [1].
5. Disconnect two connectors [2].

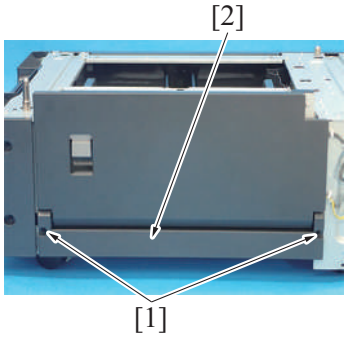


6. Remove five screws [1], and remove the tray 3 paper feed unit [2].

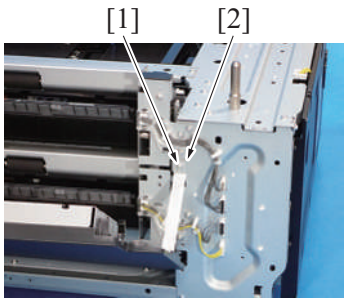
7. To reinstall, reverse the order of removal.

8.6 Tray 4 paper feed unit (PC-218)

1. Remove the rear right cover.
F.8.1 Rear right cover (PC-118/PC-218)

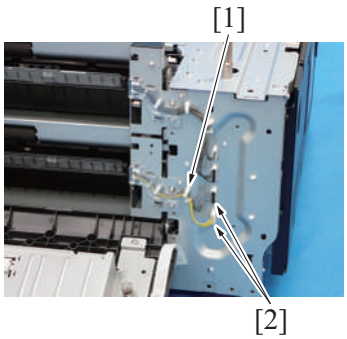


2. Remove two screws [1], and remove the cover [2].

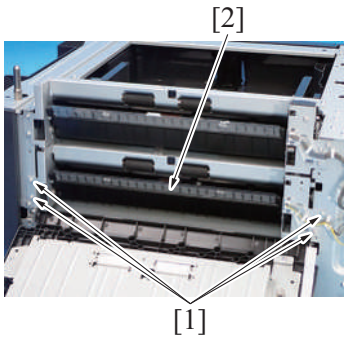


3. Open the right door, and remove the screw [1] and plate [2].

4. Slide out the tray 4.



5. Remove the harness from the wire saddle [1].
6. Disconnect two connectors [2].

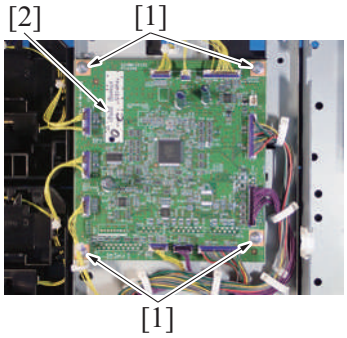


7. Remove four screws [1], and remove the tray 4 paper feed unit [2].

8. To reinstall, reverse the order of removal.

8.7 PC control board (PCCB) (PC-118/PC-218)

1. Remove the rear right cover.
   F.8.1 Rear right cover (PC-118/PC-218)
2. Remove the rear cover.
   F.8.2 Rear cover (PC-118/PC-218)



3. Disconnect all connectors on the PC control board.
4. Remove four screws [1], and remove the PC control board [2].

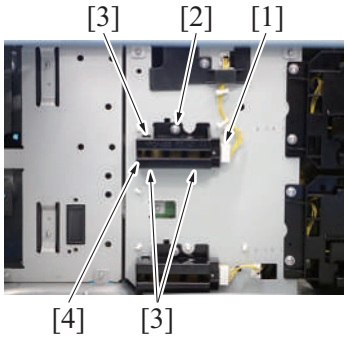
5. To reinstall, reverse the order of removal.

8.8 Tray 3 FD paper size board (FDPSB/3), tray 4 FD paper size board (FDPSB/4) (PC-118/PC-218)

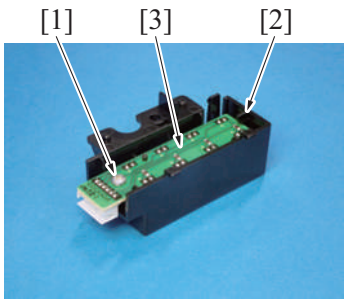
NOTE

- **The tray 3 FD paper size board and the tray 4 FD paper size board are of the same form and mechanism. This procedure shows the steps taken for the tray 3 FD paper size board.**

1. Remove the tray 3.
   F.8.3 Tray 3, Tray 4 (PC-118/PC-218)
2. Remove the tray 4.
   F.8.3 Tray 3, Tray 4 (PC-118/PC-218)



3. Disconnect the connector [1].
4. Remove the screw [2] and three tabs [3], and remove the tray 3 FD paper size board assy [4].

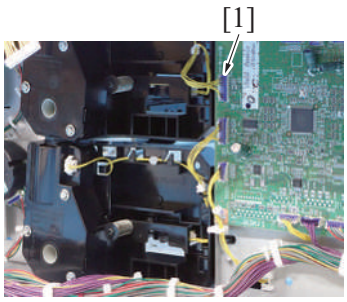


5. Remove the screw [1] and the tab [2], and remove the tray 3 FD paper size board [3].

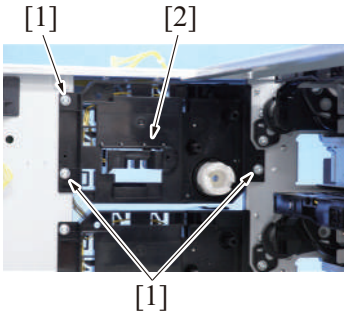
6. To reinstall, reverse the order of removal.

8.9 Tray 3 CD paper size board (CDPSB/3) (PC-118/PC-218)

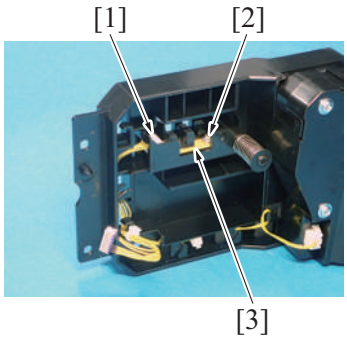
1. Remove the tray 3.
   F.8.3 Tray 3, Tray 4 (PC-118/PC-218)
2. Remove the tray 4.
   F.8.3 Tray 3, Tray 4 (PC-118/PC-218)
3. Remove the rear right cover.
   F.8.1 Rear right cover (PC-118/PC-218)
4. Remove the rear cover.
   F.8.2 Rear cover (PC-118/PC-218)



5. Disconnect the connector [1] on the PC control board.



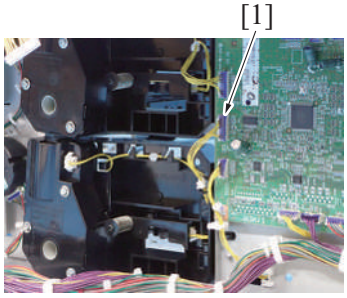
6. Remove three screws [1], and remove the tray 3 lift-up motor assy [2].



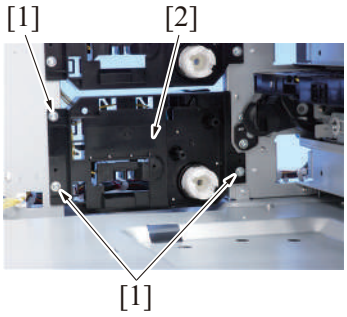
7. Disconnect the connector [1].
8. Remove the screw [2], and remove the tray 3 CD paper size board [3].
9. To reinstall, reverse the order of removal.

8.10 Tray 4 CD paper size board (CDPSB/4) (PC-218)

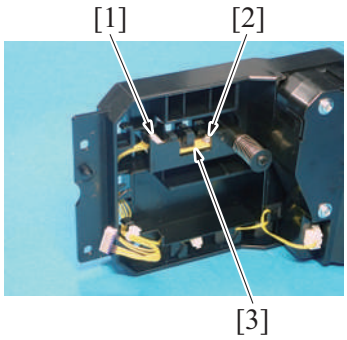
1. Remove the tray 3 and tray 4.
   F.8.3 Tray 3, Tray 4 (PC-118/PC-218)
2. Remove the rear right cover.
   F.8.1 Rear right cover (PC-118/PC-218)
3. Remove the rear cover.
   F.8.2 Rear cover (PC-118/PC-218)



4. Disconnect the connector [1] on the PC control board.



5. Remove three screws [1], and remove the tray 4 lift-up motor assy [2].



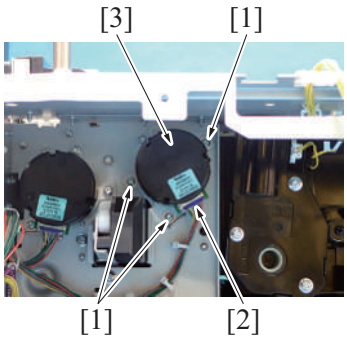
6. Disconnect the connector [1].
7. Remove the screw [2], and remove the tray 4 CD paper size board [3].
8. To reinstall, reverse the order of removal.

8.11 Tray 3 paper feed motor (M111), tray 4 paper feed motor (M121) (PC-118/PC-218)

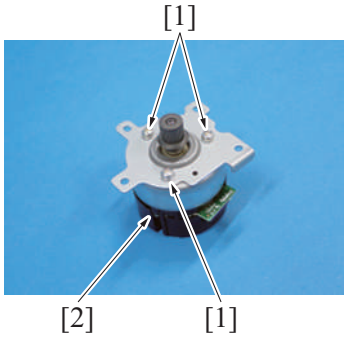
NOTE

- **The tray 3 paper feed motor and the tray 4 paper feed motor are of the same form and mechanism. This procedure shows the steps taken for the tray 3 paper feed motor.**

1. Remove the rear right cover.
   F.8.1 Rear right cover (PC-118/PC-218)
2. Remove the rear cover.
   F.8.2 Rear cover (PC-118/PC-218)



3. Remove three screws [1].
4. Disconnect the connector [2], and remove the tray 3 paper feed motor assy [3].
   NOTE
   - **When mounting the tray 3 paper feed motor assy, use care not to forget to set the belt to the gear.**



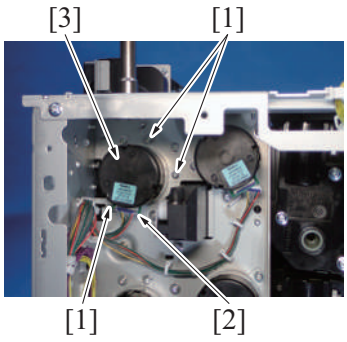
5. Remove three screws [1], and remove the tray 3 paper feed motor [2].
6. To reinstall, reverse the order of removal.

8.12 Tray 3 vertical transport motor (M112), tray 4 vertical transport motor (M122) (PC-118/PC-218)

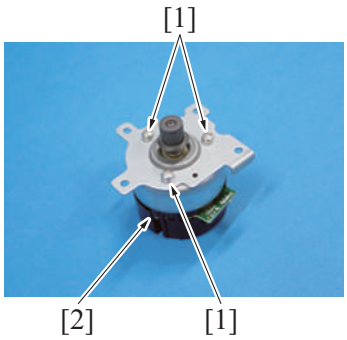
NOTE

- **The tray 3 vertical transport motor and the tray 4 vertical transport motor are of the same form and mechanism. This procedure shows the steps taken for the tray 3 vertical transport motor.**

1. Remove the rear right cover.
   F.8.1 Rear right cover (PC-118/PC-218)
2. Remove the rear cover.
   F.8.2 Rear cover (PC-118/PC-218)



3. Remove three screws [1].
4. Disconnect the connector [2], and remove the tray 3 vertical transport motor assy [3].
   NOTE
   - **When mounting the tray 3 vertical transport motor assy, use care not to forget to set the belt to the gear.**



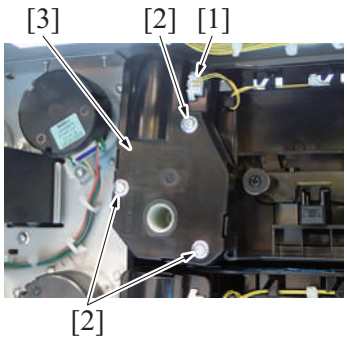
5. Remove three screws [1], and remove the tray 3 vertical transport motor [2].
6. To reinstall, reverse the order of removal.

8.13 Tray 3 lift-up motor (M113), tray 4 lift-up motor (M123) (PC-118/PC-218)

NOTE

- **The tray 3 lift-up motor and the tray 4 lift-up motor are of the same form and mechanism. This procedure shows the steps taken for the tray 3 lift-up motor.**

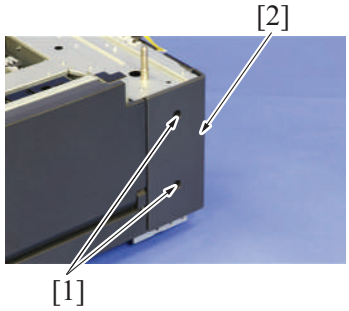
1. Remove the rear right cover.
   F.8.1 Rear right cover (PC-118/PC-218)
2. Remove the rear cover.
   F.8.2 Rear cover (PC-118/PC-218)



3. Disconnect the connector [1].
4. Remove three screws [2], and remove the tray 3 lift-up motor [3].
5. To reinstall, reverse the order of removal.

9. PC-418

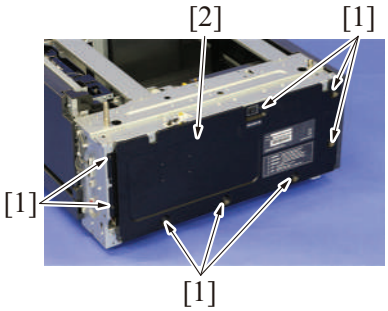
9.1 Rear right cover (PC-418)



1. Remove two screws [1], and remove the rear right cover [2].
2. To reinstall, reverse the order of removal.

9.2 Rear cover (PC-418)

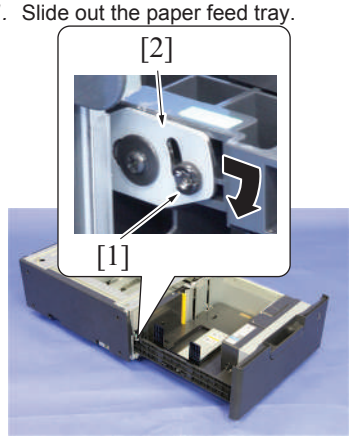
1. Remove the rear right cover.
F.9.1 Rear right cover (PC-418)



2. Remove eight screws [1], and remove the rear cover [2].
3. To reinstall, reverse the order of removal.

9.3 Paper feed tray (PC-418)

1. Slide out the paper feed tray.

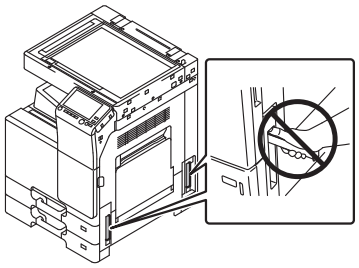


2. Loosen the screw [1], pulling the stopper [2].
3. Remove the paper feed tray.
4. To reinstall, reverse the order of removal.

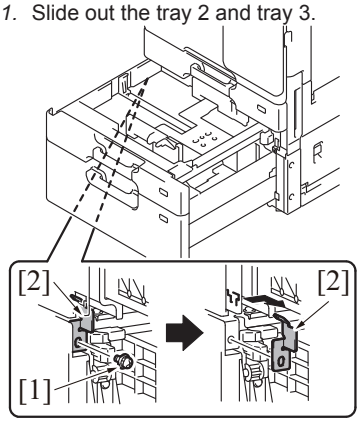
9.4 Paper feed cabinet (PC-418)

⚠CAUTION

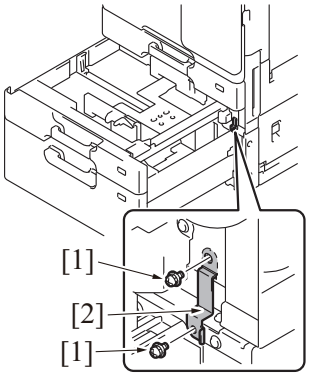
- When holding the transportation handles, be careful not to catch your fingers in the main body.



1. Slide out the tray 2 and tray 3.

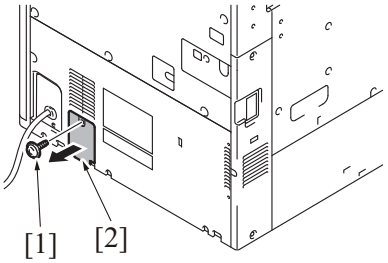


2. Remove the screw [1], and remove the fixing bracket [2].



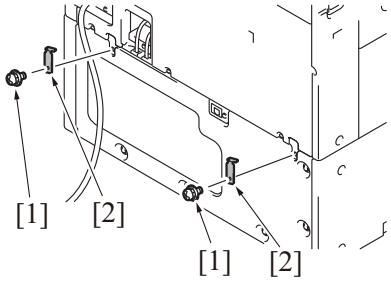
3. Remove two screws [1], and remove the fixing bracket [2].

4. Slide the tray 2 and tray 3 back in.

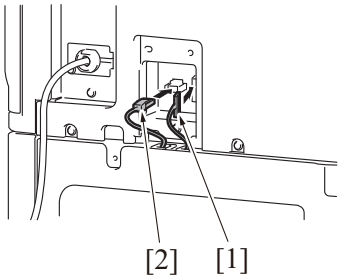


5. Remove the screw [1], and remove the connector cover [2].

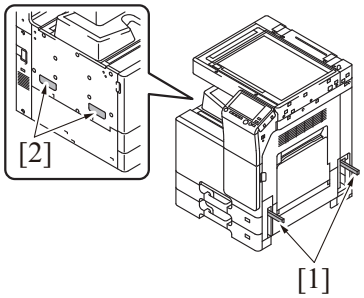
6. Remove two screws [1], and remove two fixing brackets [2].



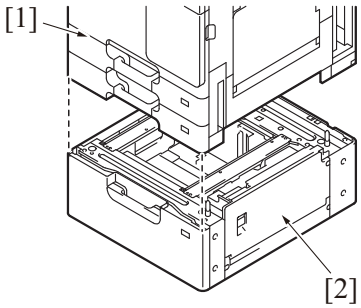
7. Disconnect the connector [1].
   Disconnect the connector [2]. (Japan only)



8. Pull out the transportation handles [1].
9. Hold the main body by the parts [2] shown in the figure on the left and by the transport handles on the right.

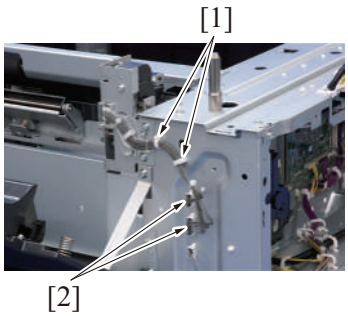


10. Hold up the main body [1] up and remove the paper feed cabinet [2].
    NOTE
    - **When transporting or moving the main body, assign adequate number of persons.**

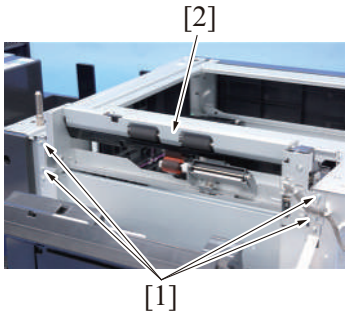


9.5 Paper feed unit (PC-418)

1. Open the right door.
2. Remove the rear right cover.
   F.9.1 Rear right cover (PC-418)
3. Slide out the paper feed tray.



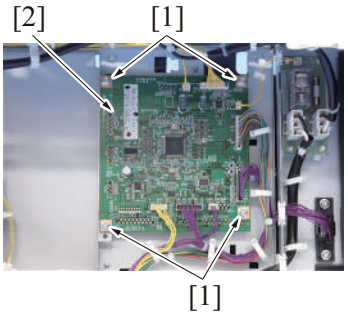
4. Remove the harness from two wire saddles [1].
5. Disconnect two connectors [2].



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

9.6 PC control board (PCCB) (PC-418)

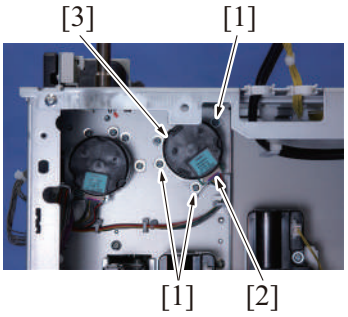
1. Remove the rear right cover.
   F.9.1 Rear right cover (PC-418)
2. Remove the rear cover.
   F.9.2 Rear cover (PC-418)



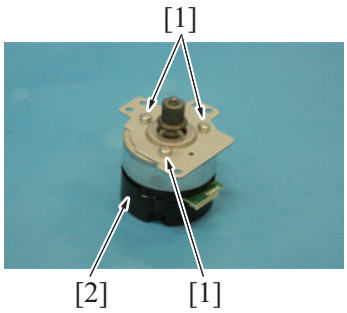
3. Disconnect all connectors on the PC control board.
4. Remove four screws [1], and remove the PC control board [2].
5. To reinstall, reverse the order of removal.

9.7 Paper feed motor (M131) (PC-418)

1. Remove the rear right cover.
   F.9.1 Rear right cover (PC-418)
2. Remove the rear cover.
   F.9.2 Rear cover (PC-418)



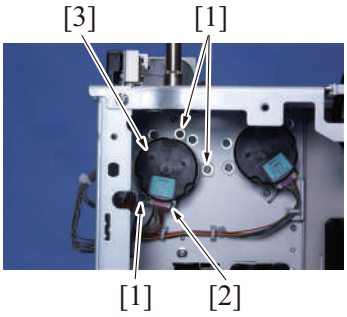
3. Remove three screws [1].
4. Disconnect the connector [2], and remove the paper feed motor assy [3].
   NOTE
   - **When mounting the paper feed motor assy, use care not to forget to set the belt to the gear.**



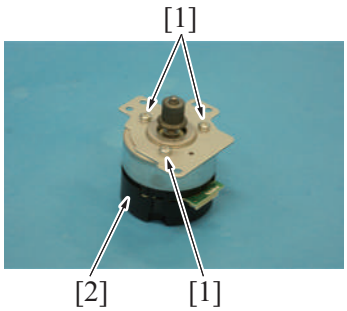
5. Remove three screws [1], and remove the paper feed motor [2].
6. To reinstall, reverse the order of removal.

9.8 Vertical transport motor (M132) (PC-418)

1. Remove the rear right cover.
   F.9.1 Rear right cover (PC-418)
2. Remove the rear cover.
   F.9.2 Rear cover (PC-418)



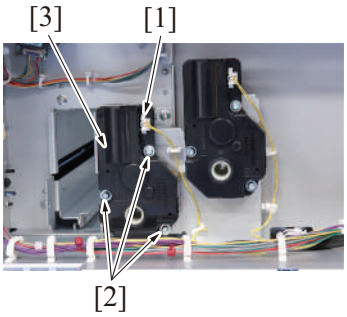
3. Remove three screws [1].
4. Disconnect the connector [2], and remove the vertical transport motor assy [3].
   NOTE
   - **When mounting the vertical transport motor assy, use care not to forget to set the belt to the gear.**



5. Remove three screws [1], and remove the vertical transport motor [2].
6. To reinstall, reverse the order of removal.

9.9 Elevator motor (M134) (PC-418)

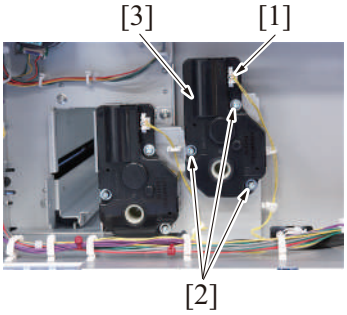
1. Slide out the paper feed tray.
2. Remove the rear right cover.
   F.9.1 Rear right cover (PC-418)
3. Remove the rear cover.
   F.9.2 Rear cover (PC-418)



4. Disconnect the connector [1].
5. Remove three screws [2], and remove the elevator motor [3].
6. To reinstall, reverse the order of removal.

9.10 Shifter motor (M133) (PC-418)

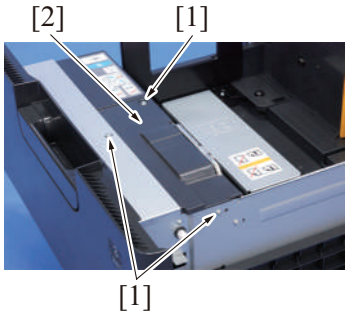
1. Slide out the paper feed tray.
2. Remove the rear right cover.
   F.9.1 Rear right cover (PC-418)
3. Remove the rear cover.
   F.9.2 Rear cover (PC-418)



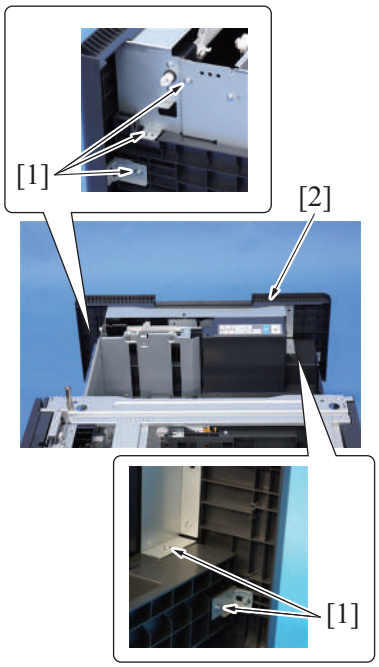
4. Disconnect the connector [1].
5. Remove three screws [2], and remove the shifter motor [3].
6. To reinstall, reverse the order of removal.

9.11 Wire (PC-418)

1. Slide out the paper feed tray.

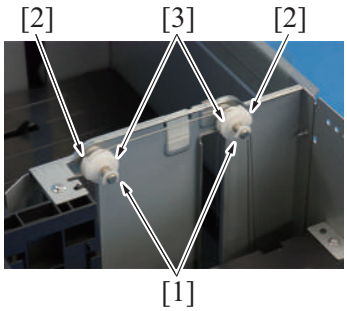


2. Remove three screws [1], and remove the cover [2].

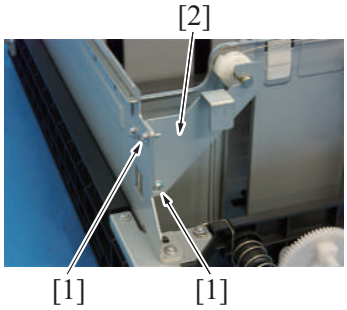


3. Remove five screws [1], and remove the front cover assy [2].

4. Remove the paper feed tray.
F.9.3 Paper feed tray (PC-418)

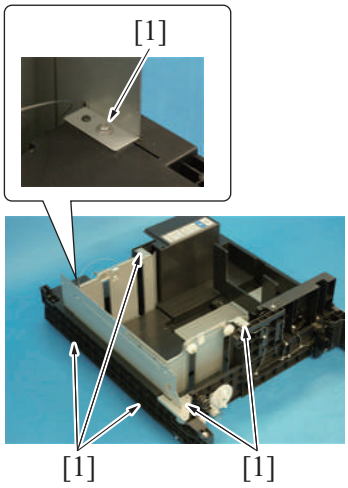


5. Remove two C-rings [1].
6. Remove two pulley covers [2].
7. Remove two pulleys [3].

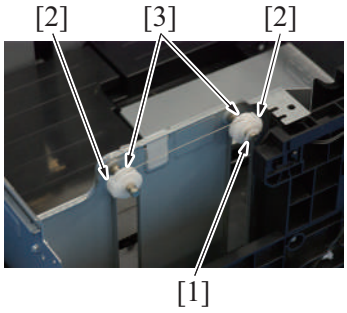


8. Remove two screws [1], and remove the metal plate [2].

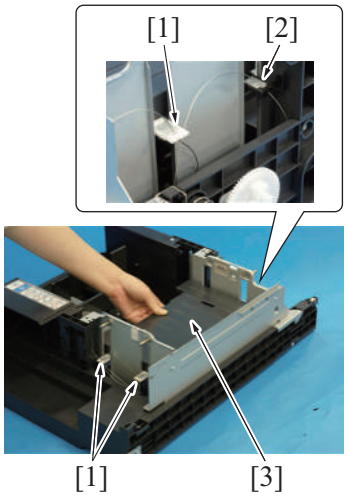
9. Remove six screws [1] of the right paper guide plate.



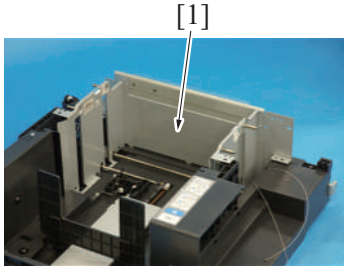
10. Remove the C-ring [1].
11. Remove two pulley covers [2].
12. Remove two pulleys [3].

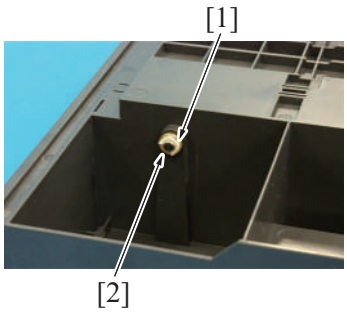


13. Remove three cable holding jigs (white) [1] and the cable holding jig (black) [2], and remove the main tray [3].
NOTE
- **Use care not to bend the wires.**

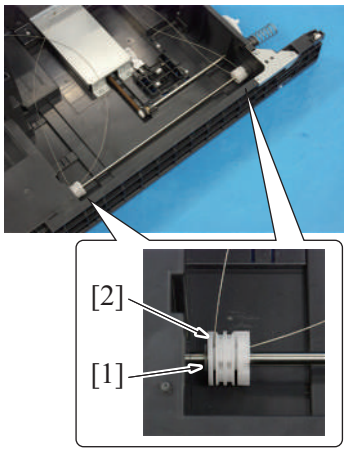


14. Remove the right paper guide plate assy [1].





15. Turn the tray upside down.
16. Remove the C-ring [1] and the bushing [2].



17. Turn the tray back to the original status.
18. Remove two C-rings [1] and two wire pulleys [2].
19. Remove the wire from the wire pulley [2].

NOTE

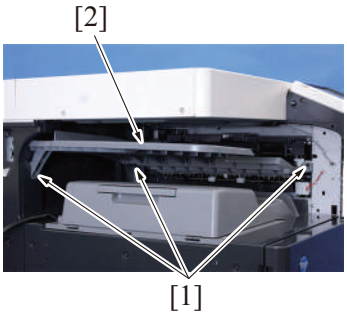
- **Take care not to lose the pin.**
- **When reinstalling the wire pulley [2], check that the direction of the wire coming from both wire pulleys are the same.**

20. To reinstall, reverse the order of removal.

10. JS-506

10.1 Exit tray 1 (JS-506)

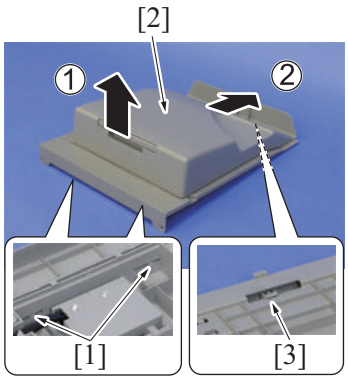
1. Remove the control panel left cover.
   F.5.1.1 Control panel left cover



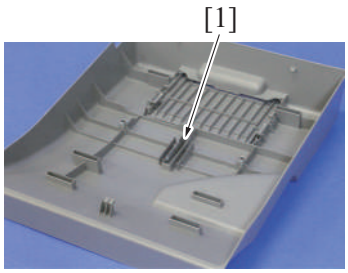
2. Remove three screws [1], and remove the exit tray 1 [2].
3. To reinstall, reverse the order of removal.

10.2 Exit tray 2 (JS-506)

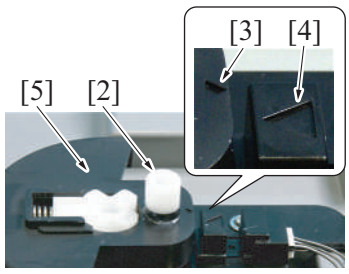
1. Remove the job separator.
   F.10.3 Job separator (JS-506)

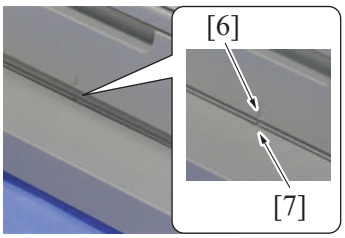


2. Unhook two tabs [1], and move the exit tray 2 [2] upward.
3. Slide the exit tray 2 [2] to unlock the tabs [3], and remove the exit tray 2 [2].



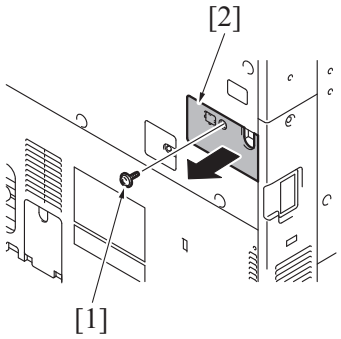
4. **NOTE**
   - **When mounting the exit tray 2, mount the exit tray 2 in the following step so that the shaft [2] of the actuator can be set to the groove [1] of the exit tray 2.**
   - **Adjust the actuator [5] so that the positioning marks [3] and [4] will be aligned.**
   - **Press the exit tray 2 down with the positioning mark [6] for the exit tray 2 and the positioning mark [7] for the shift unit being aligned.**



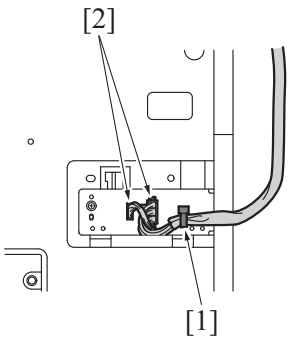


5. To reinstall, reverse the order of removal.

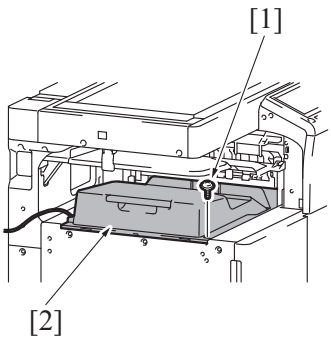
10.3 Job separator (JS-506)



1. Remove the screw [1], and remove the cover [2].
   NOTE
   - **Make sure that the harness is not pinched by the cover when attaching the cover.**



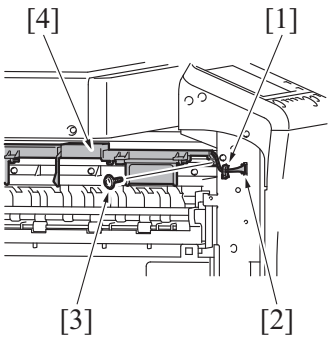
2. Remove the cable tie [1], and disconnect two connectors [2].



3. Remove screw [1], and remove the job separator [2].
4. To reinstall, reverse the order of removal.

10.4 Sensor unit (JS-506)

1. Remove the control panel left cover.
   F.5.1.1 Control panel left cover

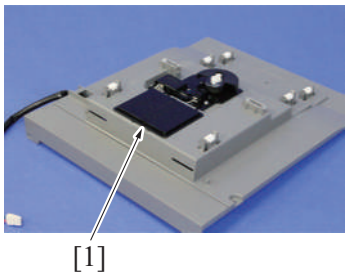


2. Remove the harness from the wire saddle [1].
3. Disconnect the connector [2].
4. Remove the screw [3], and remove the sensor unit [4].
5. To reinstall, reverse the order of removal.

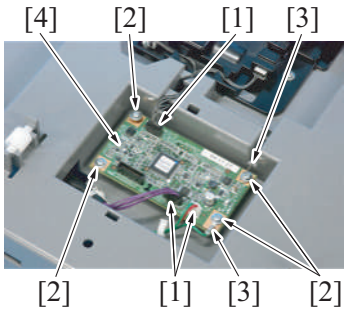
10.5 JS control board (JSCB) (JS-506)

1. Remove the job separator.
   F.10.3 Job separator (JS-506)
2. Remove the paper exit tray 2.
   F.10.2 Exit tray 2 (JS-506)

3. Remove the cover [1].



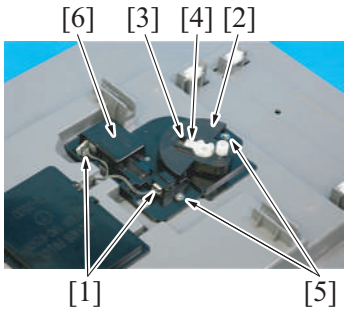
4. Disconnect three connectors [1].
5. Remove four screws [2], and remove two ground terminals [3].
6. Remove the JS control board [4].



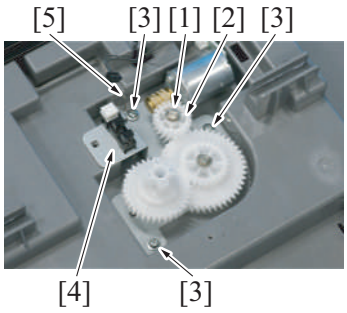
7. To reinstall, reverse the order of removal.

10.6 Tray shift motor (M1) (JS-506)

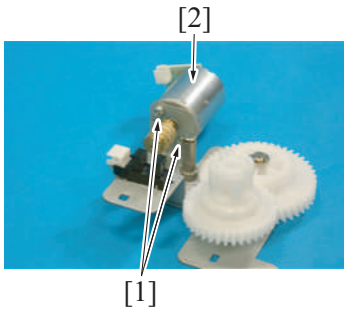
1. Remove the job separator.
   F.10.3 Job separator (JS-506)
2. Remove the paper exit tray 2.
   F.10.2 Exit tray 2 (JS-506)



3. Disconnect two connectors [1].
4. Remove the actuator [2].
   NOTE
   - **Be careful not to lose the spring [3] and stopper [4].**
5. Remove two screws [5], and remove the cover [6].



6. Remove the E-ring [1], and remove the gear [2].
7. Remove three screws [3], and remove the tray shift motor drive assy [4].
   NOTE
   - **When mounting the tray shift motor drive assy, place the earth terminal [5] on the plate for the tray shift motor drive assy and tighten the screw.**



8. Remove two screws [1], and remove the tray shift motor [2].

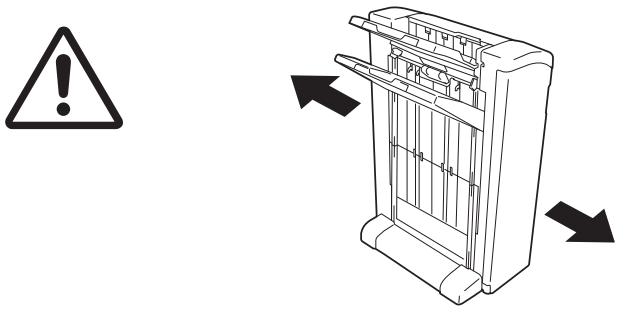
9. To reinstall, reverse the order of removal.

11. FS-539/FS-539SD

11.1 Finisher (FS-539/FS-539SD)

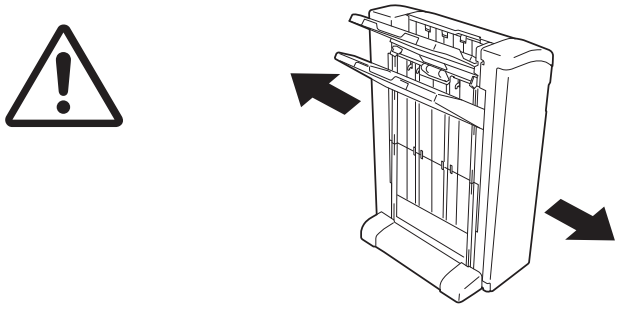
⚠CAUTION

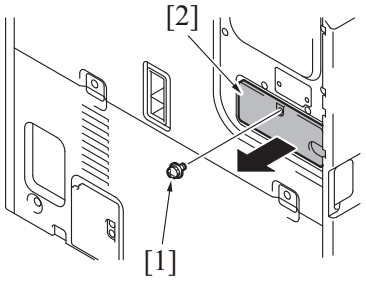
- When transporting the finisher, make sure to push it to the direction as shown in the illustration. (to prevent turnover during transportation)



⚠CAUTION

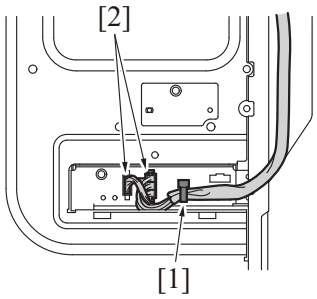
- When transporting the finisher, make sure to push it to the direction as shown in the illustration. (to prevent turnover during transportation)





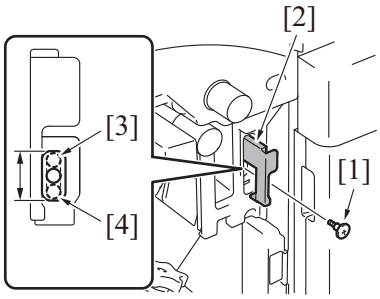
1. Remove the screw [1], and remove the cover [2].
   NOTE
   - **Make sure that the harness is not pinched by the cover when attaching the cover.**

2. Remove the cable tie [1], and disconnect two connectors [2].

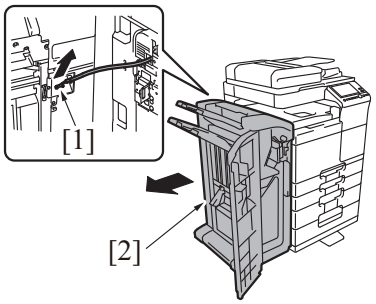


3. Open the front door.

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].**



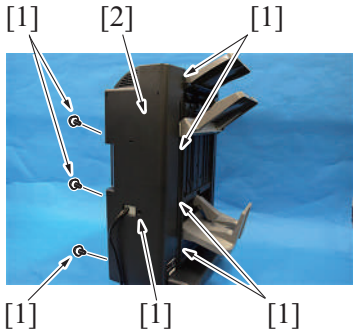
5. Disconnect the connector [1].
6. Remove the finisher [2] from the main body.



7. To reinstall, reverse the order of removal.

11.2 Rear cover (FS-539/FS-539SD)

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

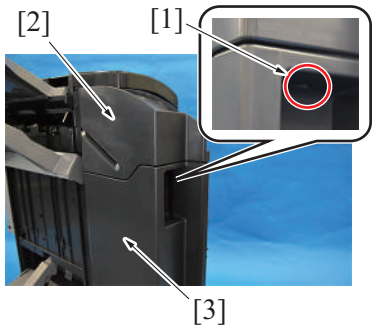


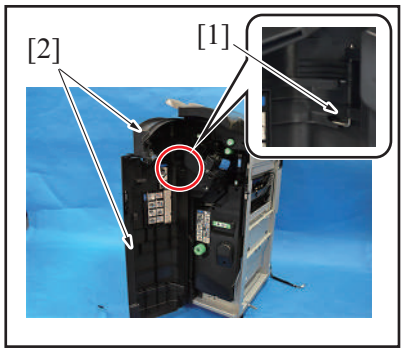
2. To reinstall, reverse the order of removal.

11.3 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].



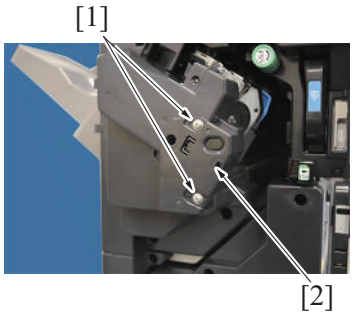


3. Remove the stopper [1], and remove the front door (upper part and lower part) [2].

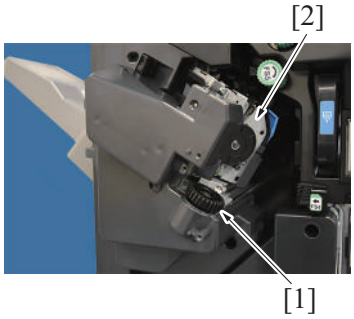
4. To reinstall, reverse the order of removal.

11.4 Front upper cover (FS-539/FS-539SD)

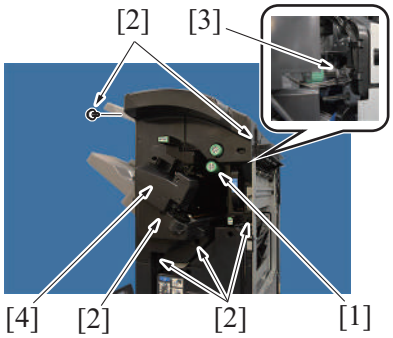
1. Remove the front door.
F.11.3 Front door (FS-539/FS-539SD)



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.

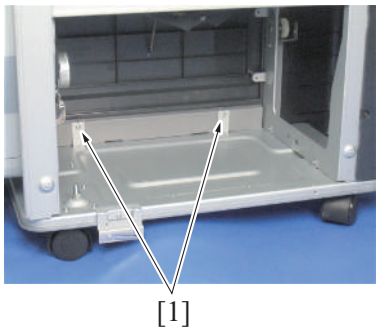


4. Remove the dial FS5 [1].
5. Remove six screws [2], and disconnect the connector [3] located behind the front upper cover.
6. Open the guide plate FS2, and then remove the front upper cover [4].
NOTE
- **If the saddle unit is installed, move the guide plate (FS4), and then remove the front upper cover.**

7. To reinstall, reverse the order of removal.

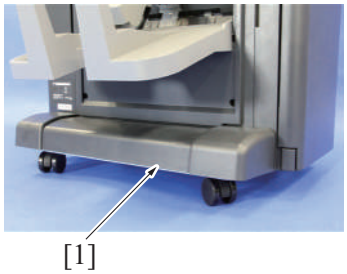
11.5 Left lower cover (FS-539/FS-539SD)

1. Remove the finisher from the main body.
F.11.1 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].**

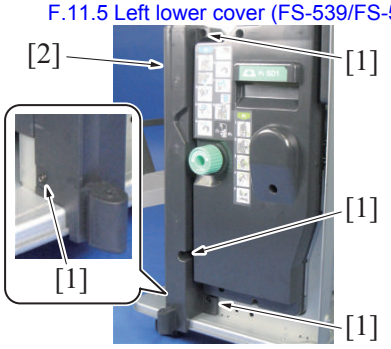
3. Remove the left lower cover [1].



4. To reinstall, reverse the order of removal.

11.6 Front lower cover (FS-539/FS-539SD)

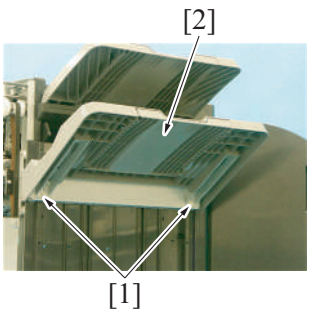
1. Remove the front door.
F.11.3 Front door (FS-539/FS-539SD)
2. Remove the front upper cover.
F.11.4 Front upper cover (FS-539/FS-539SD)
3. Remove the left lower cover.
F.11.5 Left lower cover (FS-539/FS-539SD)



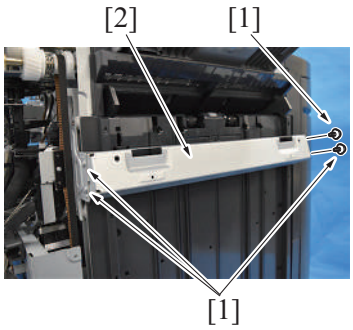
4. Remove four screws [1], and remove the front lower cover [2].
5. To reinstall, reverse the order of removal.

11.7 Left cover (FS-539/FS-539SD)

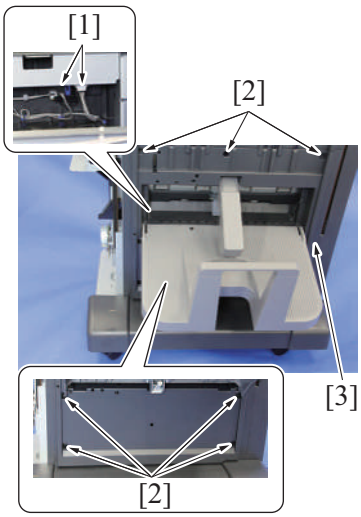
1. Remove the finisher from the main body.
F.11.1 Finisher (FS-539/FS-539SD)
2. When the saddle unit is attached, open the front door and pull out the saddle unit.



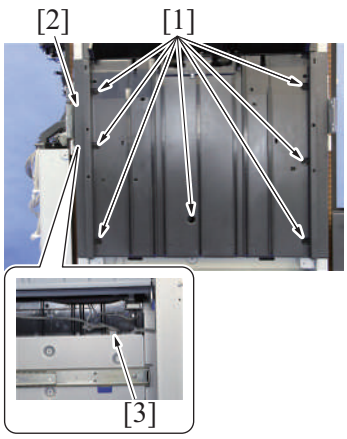
3. Remove two screws [1], and remove the exit tray [2].



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



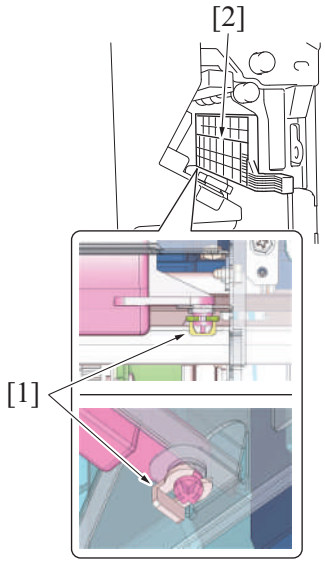
5. Disconnect two connectors [1].
6. Remove seven screws [2], and remove the left cover (lower) [3].
   NOTE
   - **Disconnect one connector when the saddle unit is not installed.**



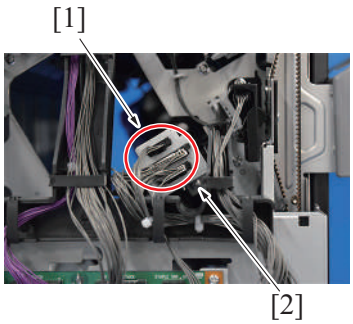
7. Disconnect the connector [3].
8. Remove seven screws [1], and remove the left cover (upper) [2].
9. To reinstall, reverse the order of removal.

11.8 Stapler unit (FS-539/FS-539SD)

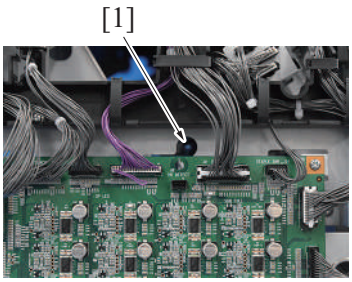
1. Remove the front door.
   F.11.3 Front door (FS-539/FS-539SD)
2. Remove the front upper cover.
   F.11.4 Front upper cover (FS-539/FS-539SD)
3. Remove the rear cover.
   F.11.2 Rear cover (FS-539/FS-539SD)



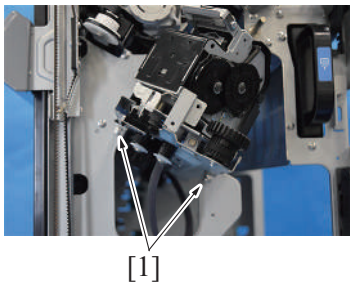
4. When the saddle unit is attached, remove the C-clip [1], and remove the guide plate [2].



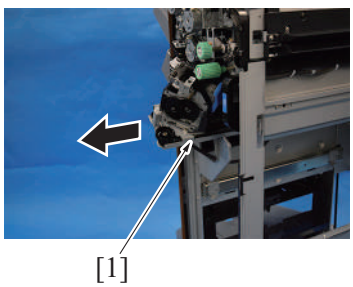
5. Disconnect three connectors [1] from the back of the finisher.
6. Remove the screw [2].



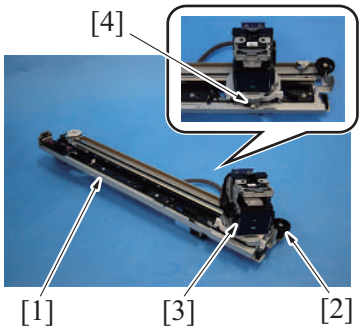
7. Remove the screw [1].



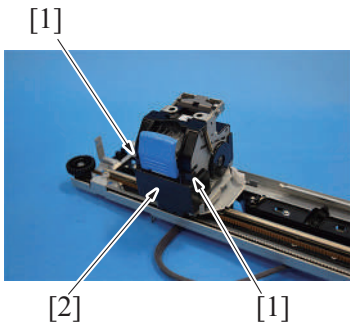
8. Remove two screws [1] from the front of the finisher.



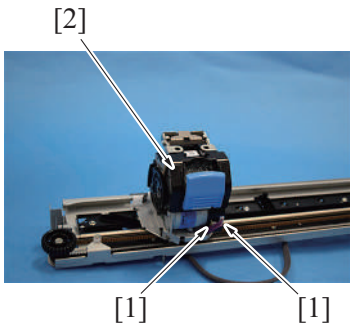
9. Remove the stapler assy [1] from the finisher.
NOTE
- **While removing the stapler assy [1], be careful not to hit the stapler against the finisher frame.**



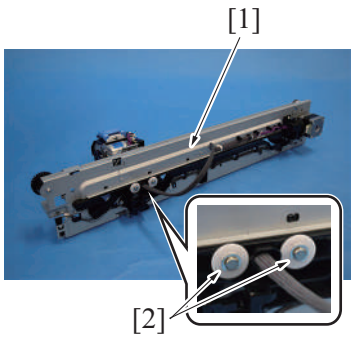
10. Put the stapler assy [1] on a stable workbench.
11. Rotate the stapler transfer dial [2] and move the stapler unit [3] until the roll [4] is visible.



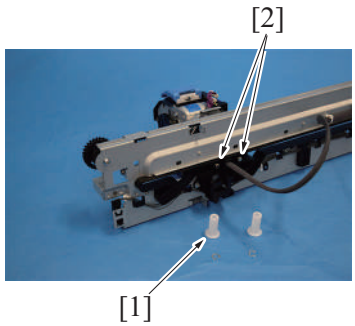
12. Unhook two tabs [1], and remove the cover [2].



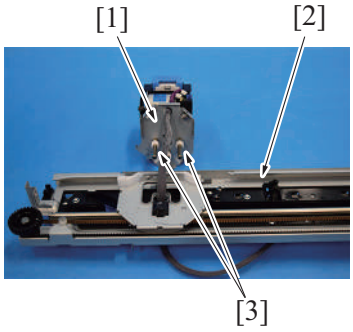
13. Disconnect two connectors [1] from the stapler unit [2].



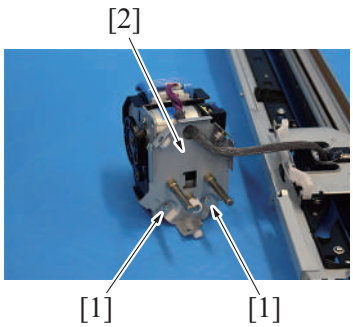
14. Flip the stapler assy [1] over.
15. Remove two E-rings [2] from the guide shafts.



16. Remove two rolls [1] from the guide shaft [2].



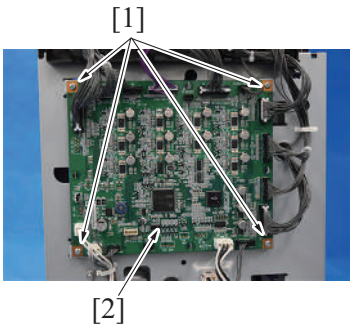
17. Carefully remove the stapler unit [1] from the stapler unit assy [2].
18. Remove two rolls [3] from the guide shafts.
    NOTE
    - **Ensure that the harness does not get damaged in the process.**
    - **Be careful not to lose the rolls.**



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.**

11.9 FS control board (FSCB) (FS-539/FS-539SD)

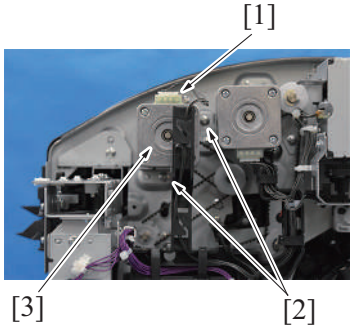
1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover.
   F.11.2 Rear cover (FS-539/FS-539SD)



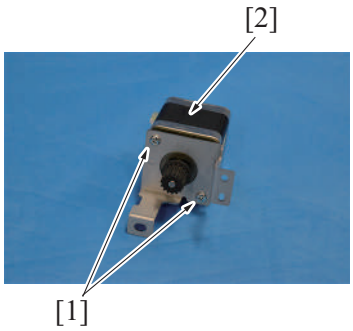
3. Disconnect all connectors from the board.
4. Remove four screws [1], and remove the FS control board [2].
5. To reinstall, reverse the order of removal.

11.10 FNS entry transport motor (M2) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover.
   F.11.2 Rear cover (FS-539/FS-539SD)



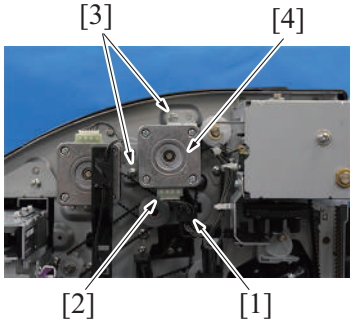
3. Disconnect the connector [1].
4. Remove two screws [2], and remove the FNS entry transport motor assy [3].



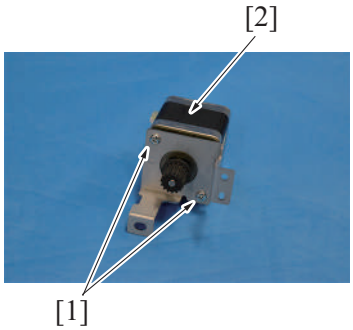
5. Remove two screws [1], and remove the FNS entry transport motor [2].
6. To reinstall, reverse the order of removal.

11.11 FNS discharge motor (M3) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover.
   F.11.2 Rear cover (FS-539/FS-539SD)



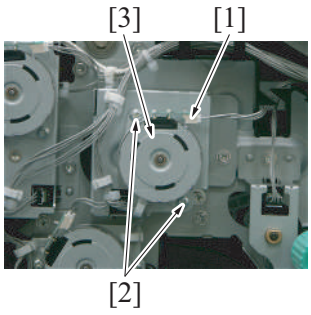
3. Remove the harness from the wire saddle [1], and disconnect the connector [2].
4. Remove two screws [3], and remove the FNS discharge motor assy [4].



5. Remove two screws [1], and remove the FNS discharge motor [2].
6. To reinstall, reverse the order of removal.

11.12 Receiving roller retraction motor (M4) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the front door.
   F.11.3 Front door (FS-539/FS-539SD)
3. Remove the front upper cover.
   F.11.4 Front upper cover (FS-539/FS-539SD)

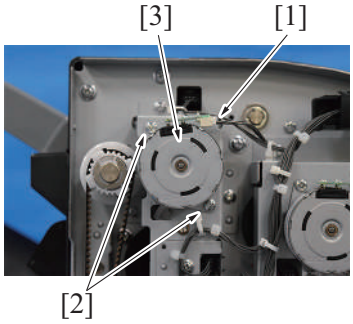


4. Disconnect the connector [1].
5. Remove two screws [2], and remove the receiving roller retraction motor [3].
6. To reinstall, reverse the order of removal.

11.13 FNS paddle motor (M5) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)

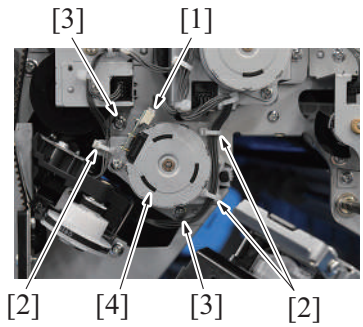
2. Remove the front door.
   F.11.3 Front door (FS-539/FS-539SD)
3. Remove the front upper cover.
   F.11.4 Front upper cover (FS-539/FS-539SD)



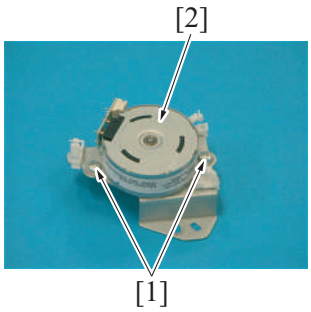
4. Disconnect the connector [1].
5. Remove two screws [2], and remove the FNS paddle motor [3].
6. To reinstall, reverse the order of removal.

11.14 Trail edge stopper motor (M6) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the front door.
   F.11.3 Front door (FS-539/FS-539SD)
3. Remove the front upper cover.
   F.11.4 Front upper cover (FS-539/FS-539SD)



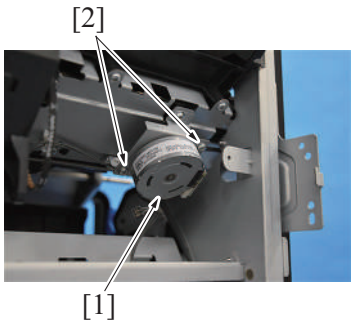
4. Disconnect the connector [1].
5. Remove the harness from three wire saddles [2].
6. Remove two screws [3], and remove the trailing edge stopper motor assy [4].
7. Remove two screws [1], and remove the trailing edge stopper motor [2].



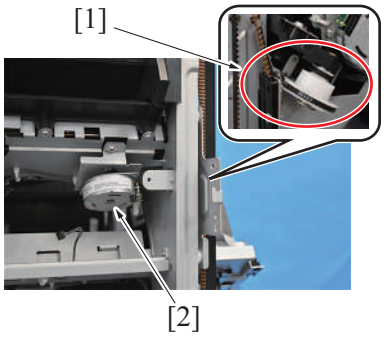
8. To reinstall, reverse the order of removal.

11.15 Alignment motor/Fr (M7) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the front door.
   F.11.3 Front door (FS-539/FS-539SD)
3. Remove the front upper cover.
   F.11.4 Front upper cover (FS-539/FS-539SD)
4. Remove the left cover.
   F.11.7 Left cover (FS-539/FS-539SD)
5. Remove the bundle eject motor.
   F.11.18 Bundle eject motor (M10) (FS-539/FS-539SD)



6. Disconnect the connector [1].
7. Remove two screws [2].

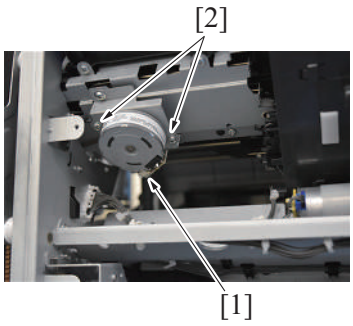


8. Remove the drive belt from the pulley [1], and remove the alignment motor/Fr [2].

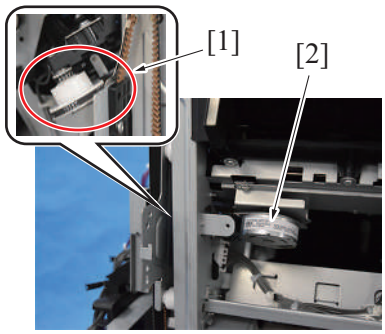
9. To reinstall, reverse the order of removal.

11.16 Alignment motor/Rr (M8) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover.
   F.11.2 Rear cover (FS-539/FS-539SD)
3. Remove the left cover.
   F.11.7 Left cover (FS-539/FS-539SD)



4. Disconnect the connector [1].
5. Remove two screws [2].

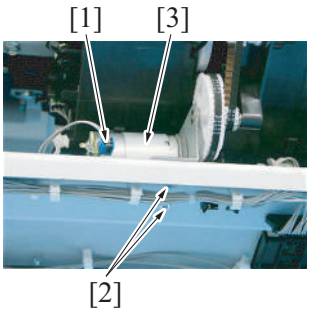


6. Remove the drive belt from the pulley [1], and remove the alignment motor/Rr [2].

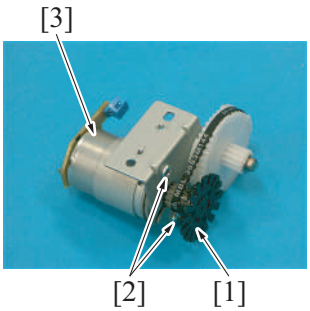
7. To reinstall, reverse the order of removal.

11.17 Pre-eject drive motor (M9) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the left cover.
   F.11.7 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].

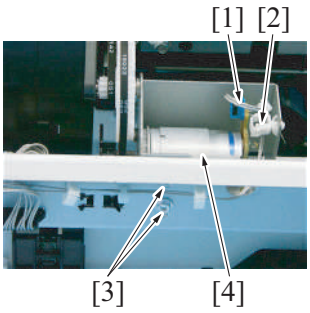


6. Remove the rotating disk [1].
7. Remove two screws [2], and remove the pre-eject drive motor [3].

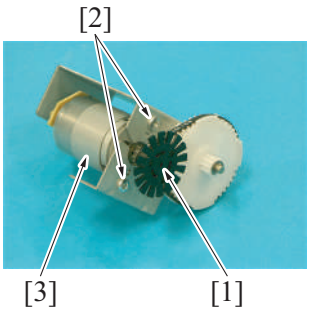
8. To reinstall, reverse the order of removal.

11.18 Bundle eject motor (M10) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the left cover.
   F.11.7 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].

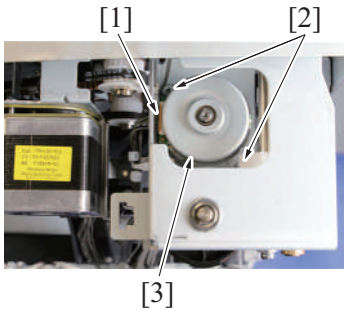


5. Remove the rotating disk [1].
6. Remove two screws [2], and remove the bundle eject motor [3].

7. To reinstall, reverse the order of removal.

11.19 Main tray up/down motor (M11) (FS-539/FS-539SD)

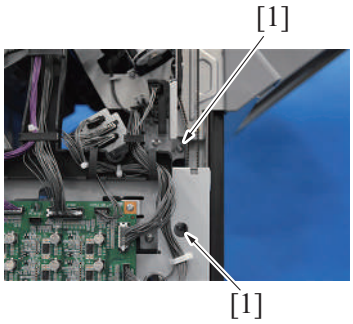
1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover.
   F.11.2 Rear cover (FS-539/FS-539SD)



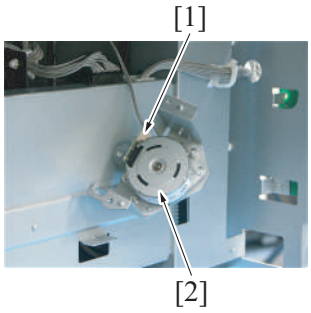
3. Disconnect the connector [1].
4. Remove two screws [2], and remove the main tray up/down motor [3].
5. To reinstall, reverse the order of removal.

11.20 Paper delivery control motor (M12) (FS-539/FS-539SD)

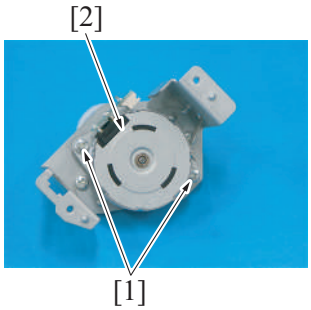
1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover.
   F.11.2 Rear cover (FS-539/FS-539SD)
3. When the saddle unit is attached, open the front door and pull out the saddle unit.



4. Remove two screws [1].



5. Disconnect the connector [1], and remove the paper delivery control motor assy [2].

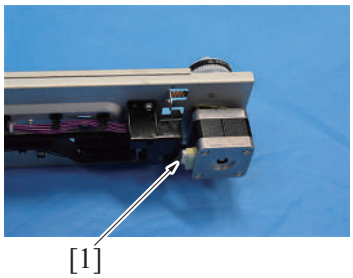


6. Remove two screws [1], and remove the paper delivery control motor [2].
7. To reinstall, reverse the order of removal.

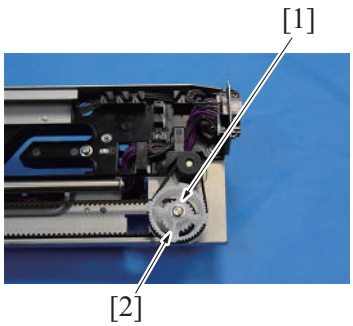
11.21 Stapler movement motor (M13) (FS-539/FS-539SD)

1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the front door.
   F.11.3 Front door (FS-539/FS-539SD)
3. Remove the rear cover.
   F.11.2 Rear cover (FS-539/FS-539SD)
4. Remove the front upper cover.
   F.11.4 Front upper cover (FS-539/FS-539SD)
5. Remove the stapler unit.
   F.11.8 Stapler unit (FS-539/FS-539SD)

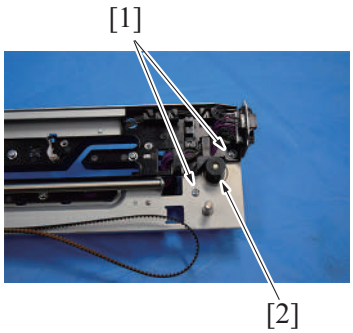
6. Disconnect the connector [1].



7. Remove the E-ring [1], and remove the pulley [2].



8. Remove two screws [1], and remove the stapler movement motor [2].



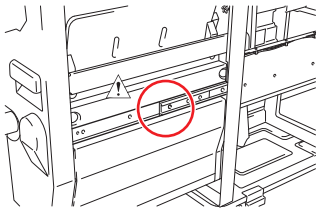
9. To reinstall, reverse the order of removal.

12. FS-539SD saddle section

12.1 Saddle unit (FS-539SD saddle section)

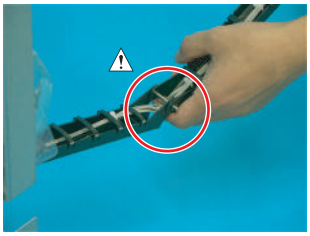
⚠CAUTION

- 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.

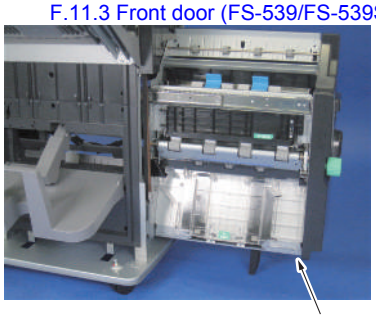


⚠CAUTION

- Be careful not to jam your finger in the connecting section of the pantograph.



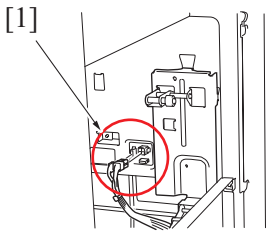
1. Remove the finisher.
   F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the front door of the finisher.
   F.11.3 Front door (FS-539/FS-539SD)



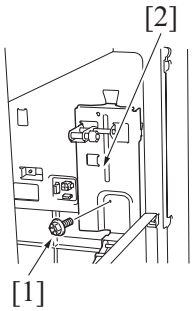
3. Pull out the saddle unit [1].
4. Remove the finisher left lower cover.
   F.11.5 Left lower cover (FS-539/FS-539SD)
5. Remove the finisher front upper cover.
   F.11.4 Front upper cover (FS-539/FS-539SD)
6. Remove the finisher front lower cover.

F.11.6 Front lower cover (FS-539/FS-539SD)

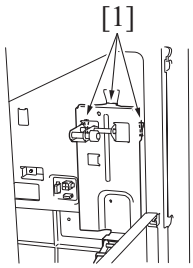
7. Disconnect two connectors [1].



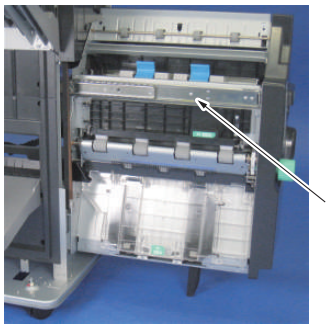
8. Remove the screw [1], and remove the pantograph [2].



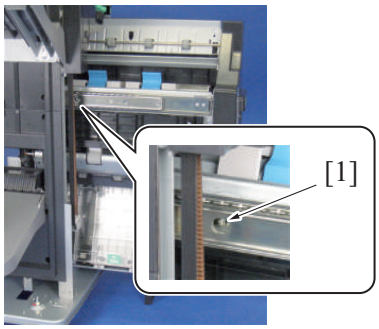
9. **NOTE**
   - **For installation of the pantograph, insert three hooks [1] on the pantograph of the saddle unit into the back holes inside the finisher.**

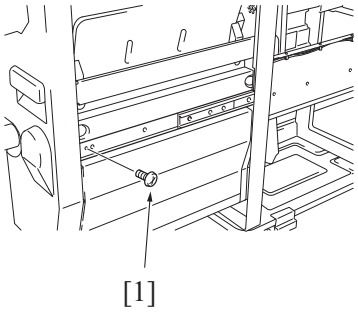


10. Remove the screw [1].

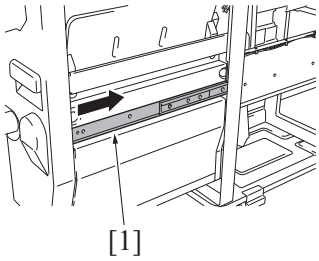


11. Push back the saddle unit into the position of the illustration, and then remove the screw [1].

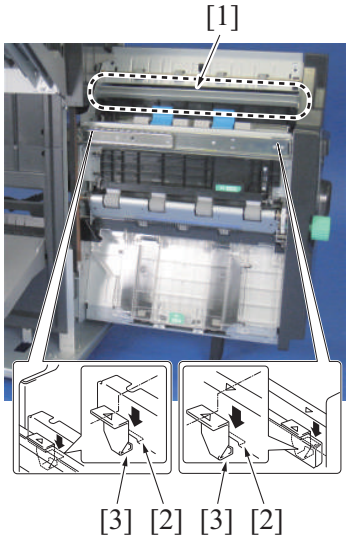




12. Pull out the saddle unit, and then remove the screw [1].



13. Insert the rail [1] on the right side into the finisher.

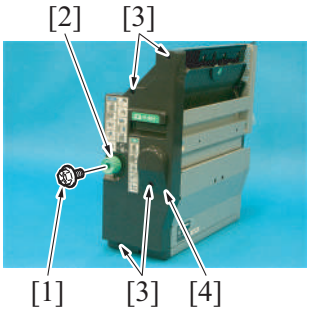


14. Grip the portion [1] as shown in the illustration to raise the saddle unit and take it out.
NOTE
- **For installation of the saddle unit, insert two hooks on the left rail [3] into the two holes of the saddle unit [2].**

15. To reinstall, reverse the order of removal.

12.2 Front cover (FS-539SD saddle section)

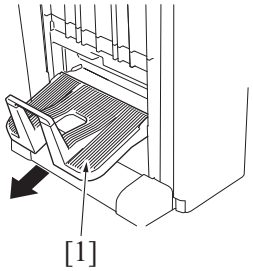
1. Remove the saddle unit.
F.12.1 Saddle unit (FS-539SD saddle section)



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.

12.3 Exit tray (FS-539SD saddle section)

1. Remove the pin [1], and remove the exit lever [2].

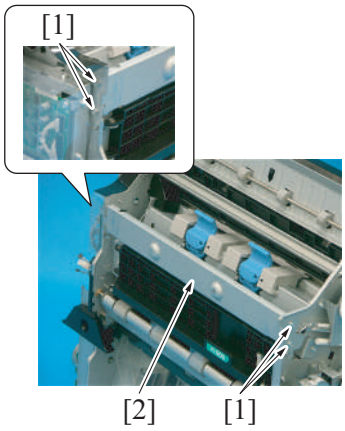


2. Remove the exit tray [1].

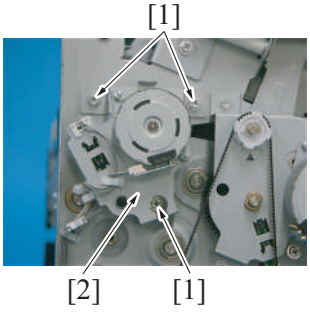
3. To reinstall, reverse the order of removal.

12.4 Stapler unit (FS-539SD saddle section)

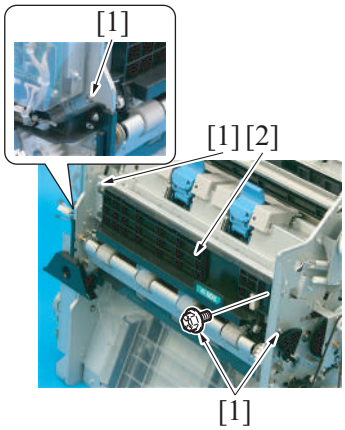
1. Remove the saddle unit.
   F.12.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.12.2 Front cover (FS-539SD saddle section)



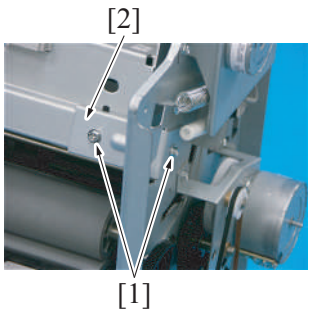
3. Remove four screws [1], and remove the plate [2].



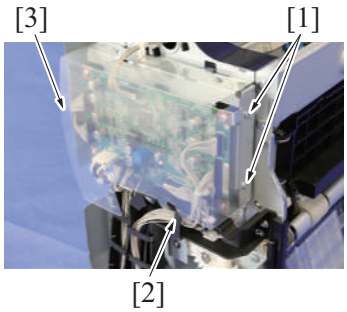
4. Remove three screws [1], and remove the tri-folding guide motor assy [2].



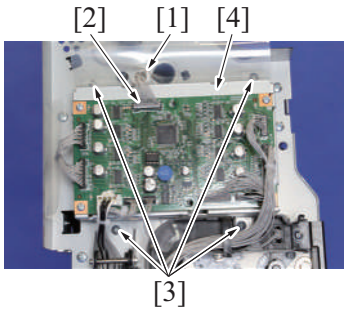
5. Remove four screws [1], and remove the transport assy [2].



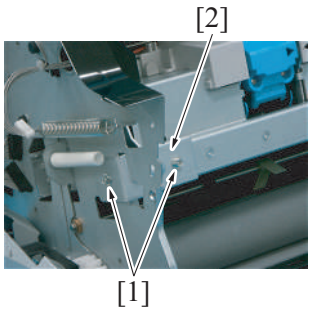
6. Remove two screws [1], and remove the plate [2].



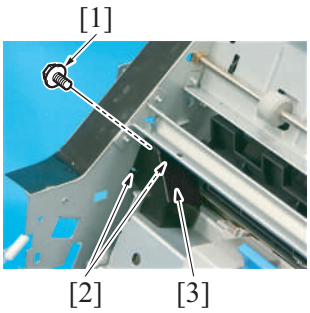
7. Remove two screws [1].
8. Detach the board support film [3] from the harness guide tab [2].



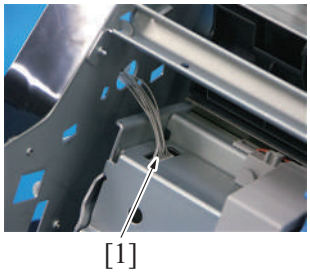
9. Remove the harness from the wire saddle [1].
10. Disconnect the connector [2].
11. Remove four screws [3], and remove the SD control board assy [4].



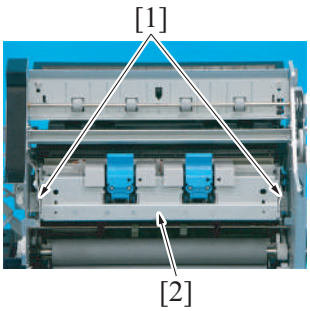
12. Remove two screws [1], and remove the plate [2].



13. Remove the screw [1].
14. Unhook two tabs [2], and remove the cover [3].



15. Disconnect the connector [1].

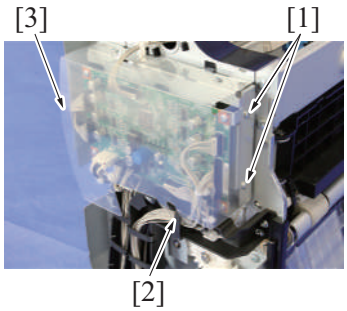


16. Remove two screws [1], and remove the stapler unit [2].

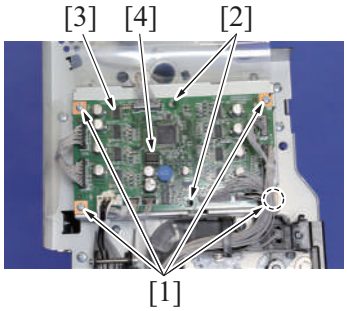
17. To reinstall, reverse the order of removal.

12.5 SD control board (SDCB) (FS-539SD saddle section)

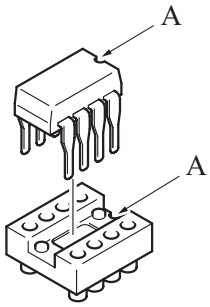
1. Remove the saddle unit.
F.12.1 Saddle unit (FS-539SD saddle section)



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.



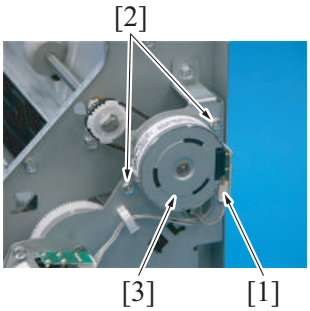
7. **NOTE**
   - **When mounting EEPROM (U3), align the notches (indicated by "A" in the illustration).**

8. To reinstall, reverse the order of removal.

NOTE
- **After replacing the SD control board, be sure to install the latest firmware.**

12.6 SD transport motor (M101) (FS-539SD saddle section)

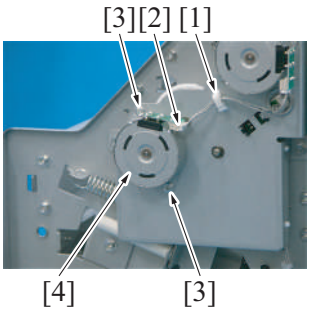
1. Remove the saddle unit.
   F.12.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.12.2 Front cover (FS-539SD saddle section)



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.

12.7 Paper discharge control motor (M102) (FS-539SD saddle section)

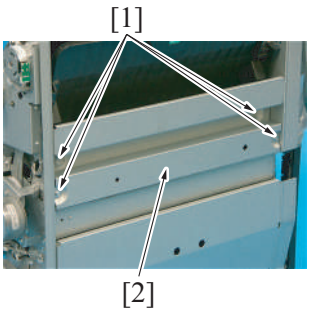
1. Remove the saddle unit.
   F.12.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.12.2 Front cover (FS-539SD saddle section)



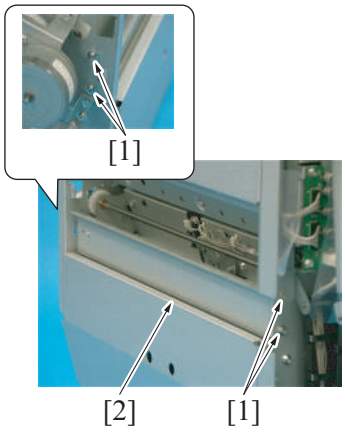
3. Remove the harness from the wire saddle [1], and disconnect the connector [2].
4. Remove two screws [3], and remove the paper discharge control motor [4].
5. To reinstall, reverse the order of removal.

12.8 Alignment motor (M103) (FS-539SD saddle section)

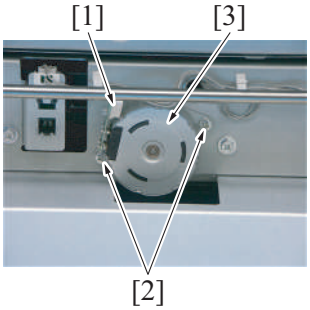
1. Remove the saddle unit.
   F.12.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.12.2 Front cover (FS-539SD saddle section)



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



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

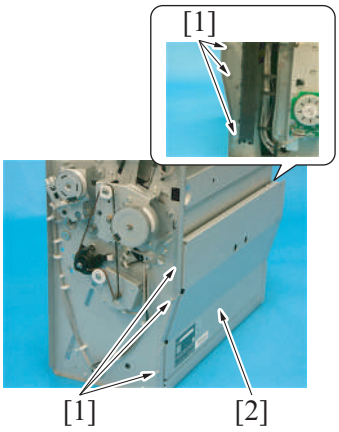


5. Disconnect the connector [1].
6. Remove two screws [2], and remove the alignment motor [3].

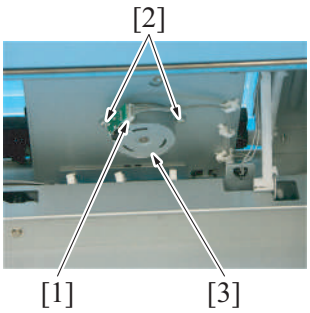
7. To reinstall, reverse the order of removal.

12.9 Stopper drive motor (M104) (FS-539SD saddle section)

1. Remove the saddle unit.
   F.12.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.12.2 Front cover (FS-539SD saddle section)



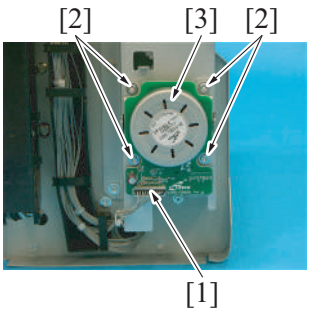
3. Remove six screws [1], and remove the plate [2].



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.

12.10 Center fold roller motor (M105) (FS-539SD saddle section)

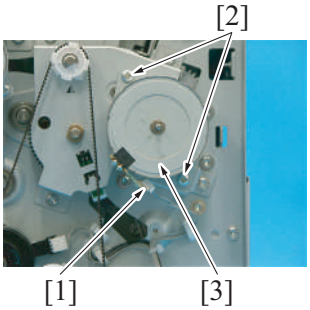
1. Remove the saddle unit.
   F.12.1 Saddle unit (FS-539SD saddle section)



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.

12.11 Center fold guide motor (M106) (FS-539SD saddle section)

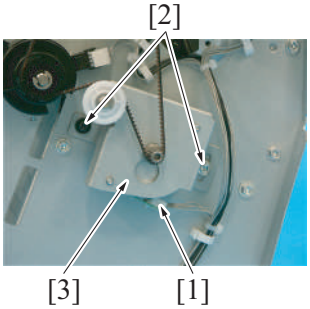
1. Remove the saddle unit.
   F.12.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.12.2 Front cover (FS-539SD saddle section)



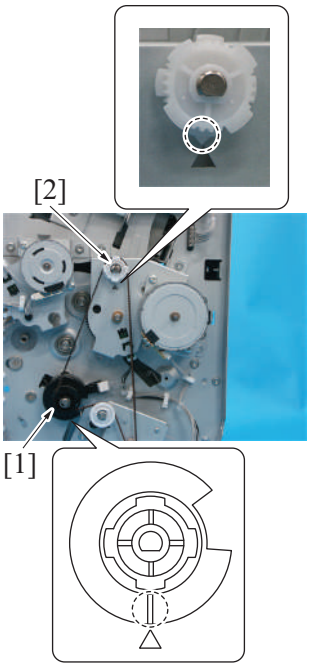
3. Disconnect the connector [1].
4. Remove two screws [2], and remove the center fold guide motor [3].
5. To reinstall, reverse the order of removal.

12.12 SD paddle motor (M107) (FS-539SD saddle section)

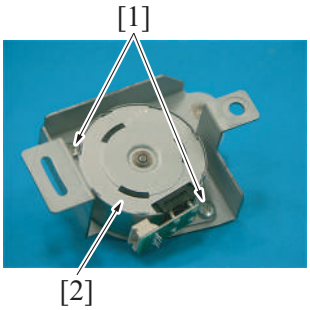
1. Remove the saddle unit.
   F.12.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.12.2 Front cover (FS-539SD saddle section)



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.**

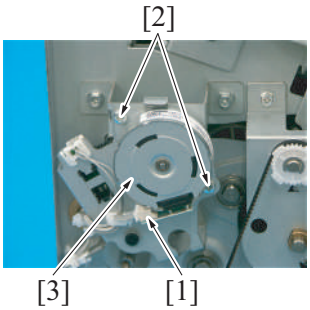


6. Remove two screws [1], and remove the SD paddle motor [2].

7. To reinstall, reverse the order of removal.

12.13 Tri-folding guide motor (M108) (FS-539SD saddle section)

1. Remove the saddle unit.
   F.12.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.12.2 Front cover (FS-539SD saddle section)

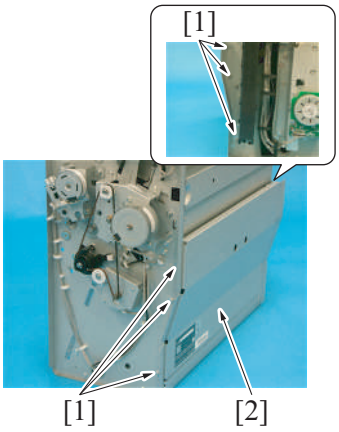


3. Disconnect the connector [1].
4. Remove two screws [2], and remove the tri-folding guide motor [3].

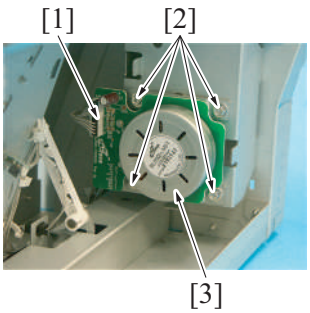
5. To reinstall, reverse the order of removal.

12.14 Center fold knife motor (M109) (FS-539SD saddle section)

1. Remove the saddle unit.
   F.12.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.12.2 Front cover (FS-539SD saddle section)



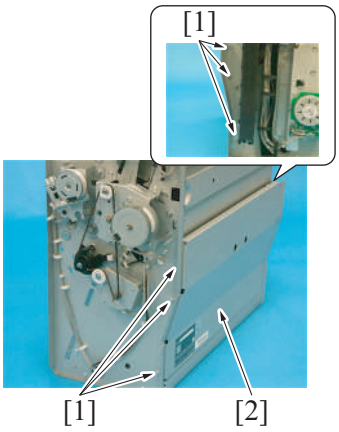
3. Remove six screws [1], and remove the plate [2].



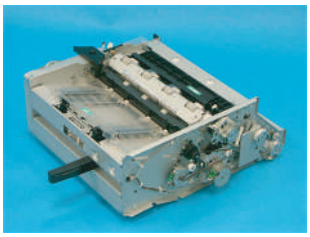
4. Disconnect the connector [1].
5. Remove four screws [2], and remove the center fold knife motor [3].
6. To reinstall, reverse the order of removal.

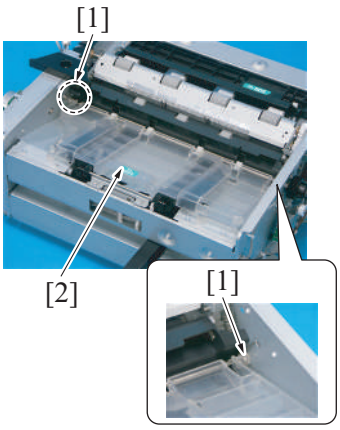
12.15 Stopper solenoid (SD101) (FS-539SD saddle section)

1. Remove the saddle unit.
   F.12.1 Saddle unit (FS-539SD saddle section)
2. Remove the front cover.
   F.12.2 Front cover (FS-539SD saddle section)

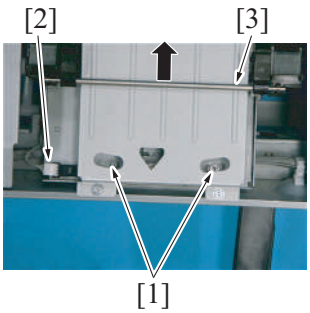


3. Remove six screws [1], and remove the plate [2].
4. Place the saddle unit as shown in the illustration.



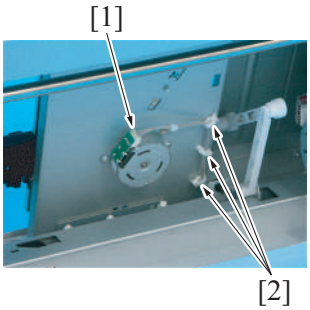


5. Remove two stoppers [1], and remove the guide plate [2].

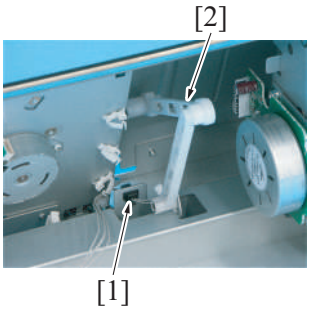


6. Slide the lever unit [3] upward.
7. Remove two screws [1] and disconnect the connector [2].

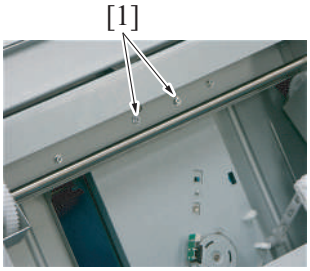
8. Raise the saddle unit.



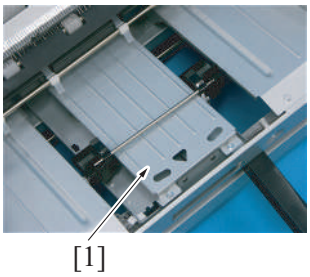
9. Disconnect the connector [1], and remove the harness from three wire saddles [2].



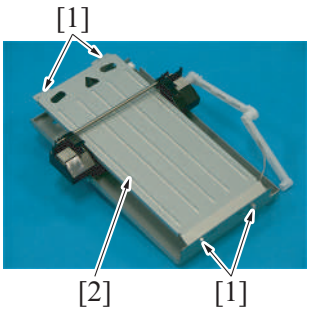
10. Disconnect the connector [1], and remove the drive lever [2].



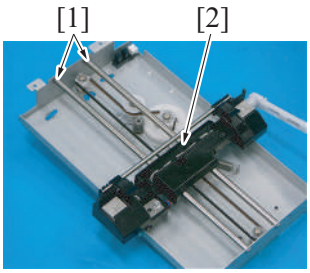
11. Remove two screws [1].



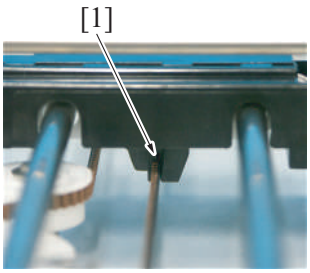
12. Remove the guide plate assy [1].
NOTE
- **When installing the guide plate assy, perform mechanical adjustment.**
  G.5.1 Half-fold skew adjustment



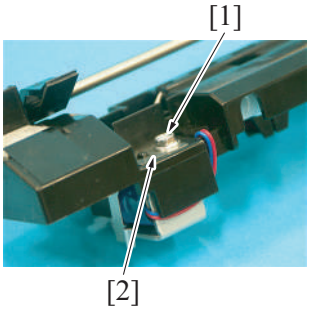
13. Remove four screws [1], and remove the plate [2].



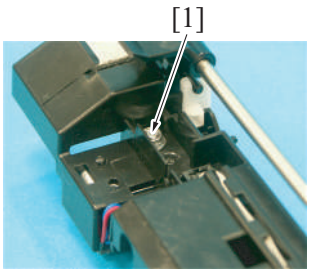
14. Remove two E-rings [1], and remove the stopper guide [2].



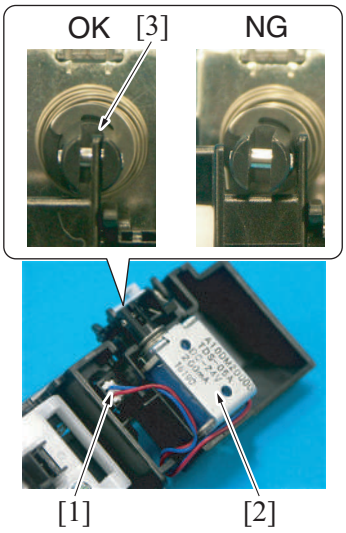
15. **NOTE**
- **When installing the stopper guide, fit the belt into the stopper guide groove [1].**



16. Remove the screw [1], and remove the plate [2].



17. Remove the screw [1].



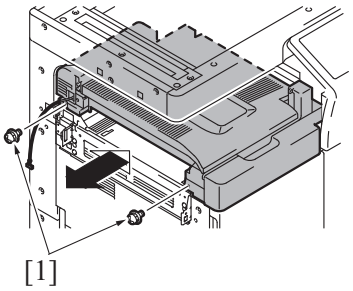
18. Disconnect the connector [1], and remove the stopper solenoid [2].
NOTE
- **When installing the stopper solenoid, fit its tip into the place [3] shown in the illustration.**

19. To reinstall, reverse the order of removal.

13. RU-514

13.1 RU transport unit (RU-514)

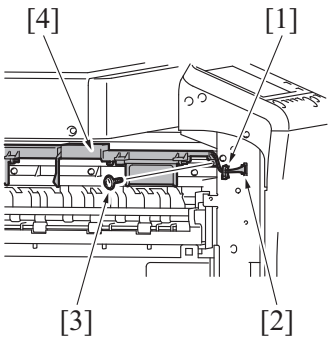
1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)



2. Remove two screws [1], and remove the RU transport unit.
3. To reinstall, reverse the order of removal.

13.2 Sensor unit (RU-514)

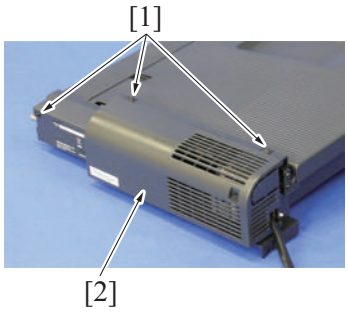
1. Remove the RU transport unit.
   F.13.1 RU transport unit (RU-514)
2. Remove the control panel left cover.
   F.5.1.1 Control panel left cover



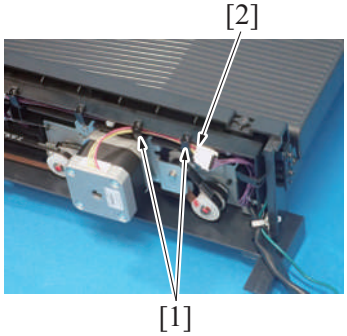
3. Remove the harness from the wire saddle [1].
4. Disconnect the connector [2].
5. Remove the screw [3], and remove the sensor unit [4].
6. To reinstall, reverse the order of removal.

13.3 RU transport motor (M1) (RU-514)

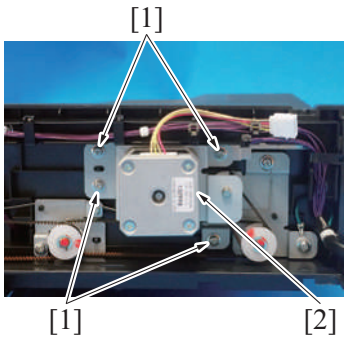
1. Remove the RU transport unit.
   F.13.1 RU transport unit (RU-514)



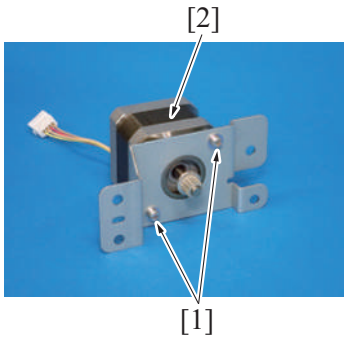
2. Remove three screws [1], and remove the rear cover [2] of the RU transport unit.



3. Remove the harness from two wire saddles [1].
4. Disconnect the connector [2].



5. Remove four screws [1], and remove the RU transport motor assy [2].



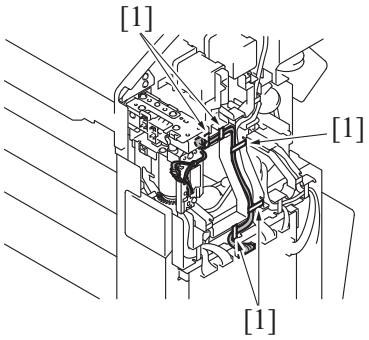
6. Remove two screws [1], and remove the RU transport motor [2].

7. To reinstall, reverse the order of removal.

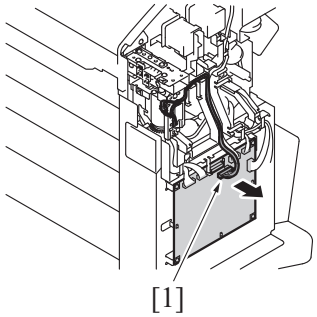
14. PK-524

14.1 Punch Kit (PK-524)

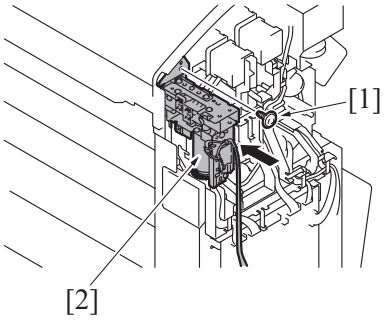
1. Remove the finisher from the main body.
   F.11.1 Finisher (FS-539/FS-539SD)
2. Remove the rear cover of the finisher.
   F.11.2 Rear cover (FS-539/FS-539SD)



3. Remove the harness from five wire saddles [1].



4. Disconnect the connector [1].

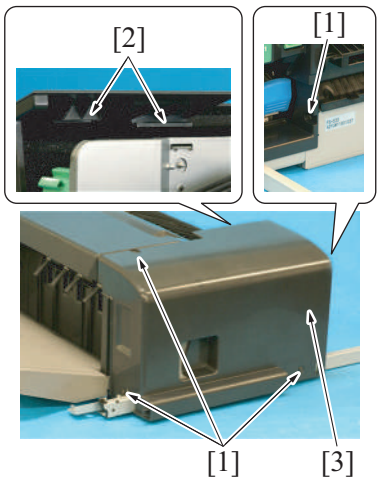


5. Remove the screw [1], and remove the punch kit [2].

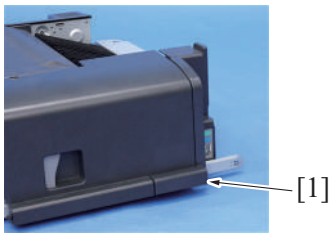
6. To reinstall, reverse the order of removal.

15. FS-533

15.1 Front cover (FS-533)



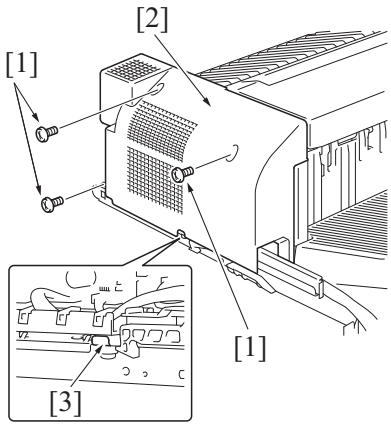
1. Remove four screws [1] and two tabs [2], and remove the front cover [3].



2. **NOTE**
   - **When the punch kit (PK-519) is installed, the cover [1] should be removed.**

3. To reinstall, reverse the order of removal.

15.2 Rear cover (FS-533)

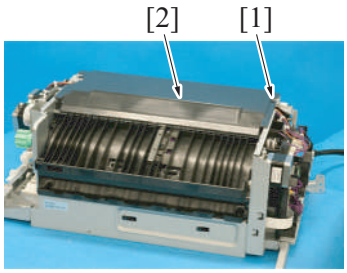


1. Remove three screws [1], and remove the rear cover [2].
   NOTE
   - **When mounting the rear cover, hook the tab [3] on the plate to the rear cover.**

2. To reinstall, reverse the order of removal.

15.3 Upper cover (FS-533)

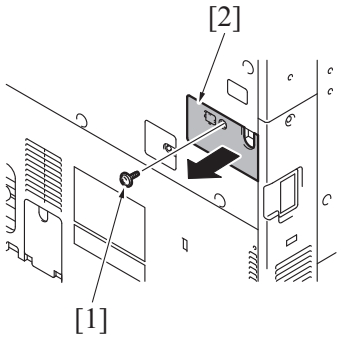
1. Remove the front cover.
   F.15.1 Front cover (FS-533)
2. Remove the rear cover.
   F.15.2 Rear cover (FS-533)



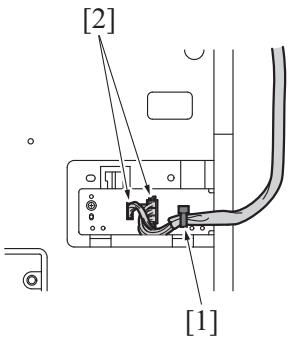
3. Remove the screw [1], and remove the cover [2].

4. To reinstall, reverse the order of removal.

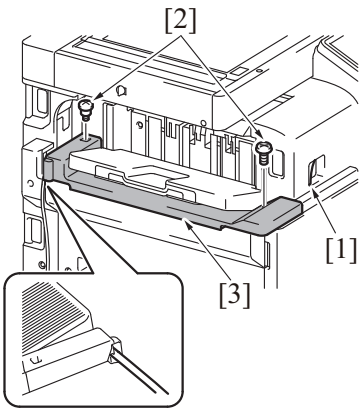
15.4 Finisher (FS-533)



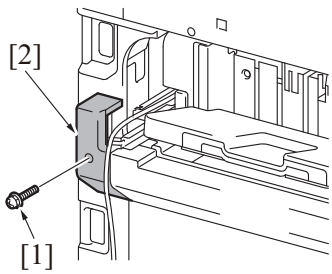
1. Remove the screw [1], and remove the cover [2].
NOTE
- **Make sure that the harness is not pinched by the cover when attaching the cover.**



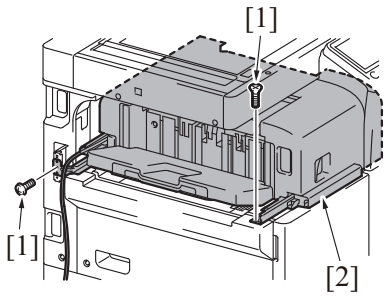
2. Remove the cable tie [1], and disconnect two connectors [2].



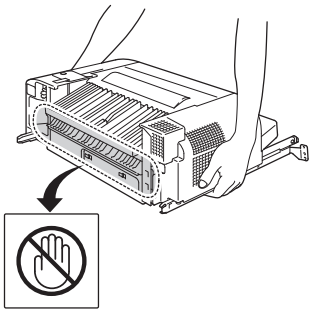
3. Slide the finisher by pulling the lever [1].
4. Remove two screws [2], and remove the cover [3].
NOTE
- **When mounting the cover, make the finisher's cable come out from the cover at the position shown in the illustration.**



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



6. Remove two screws [1], and remove the finisher [2] from the main body.

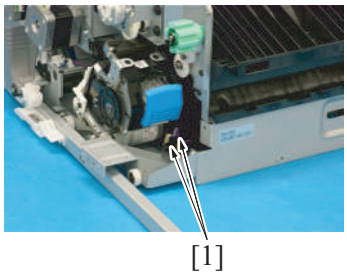


7. **NOTE**
   - **When carrying the finisher, be sure to hold the finisher by the sides as shown in the illustration.**

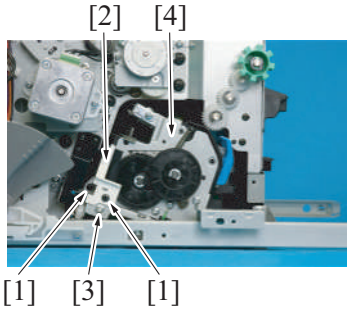
8. To reinstall, reverse the order of removal.

15.5 Stapler unit (FS-533)

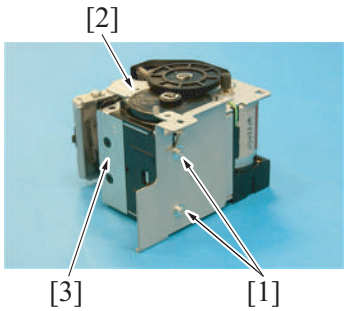
1. Remove the front cover.
   F.15.1 Front cover (FS-533)



2. Disconnect two connectors [1].



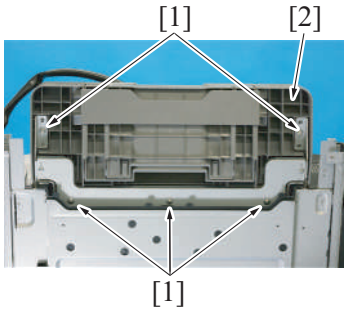
3. Remove two screws [1], and remove the cover [2].
4. Remove the screw [3], and remove the stapler unit assy [4].



5. Remove two screws [1], and remove the stapler unit [2].
   NOTE
   - **When replacing the stapler unit, attach the guide [3] (Parts No.: AVGR29735 P) to the stapler unit.**

6. To reinstall, reverse the order of removal.

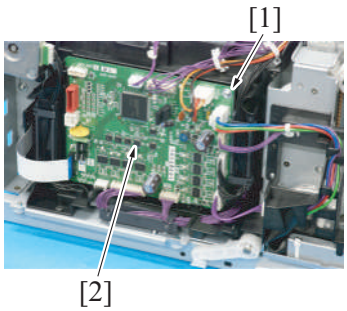
15.6 Paper exit tray unit (FS-533)



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

15.7 FS control board (FSCB) (FS-533)

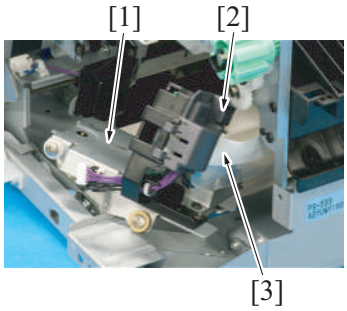
1. Remove the rear cover.
   F.15.2 Rear cover (FS-533)



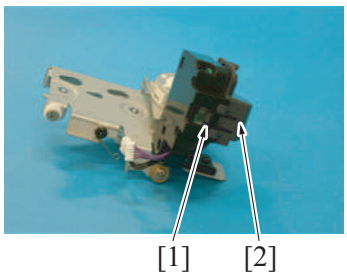
2. Remove all connectors from the board.
3. Remove the screw [1], and remove the FS control board [2].
4. To reinstall, reverse the order of removal.
5. Install the firmware.

15.8 Stapler relay board (STRYB) (FS-533)

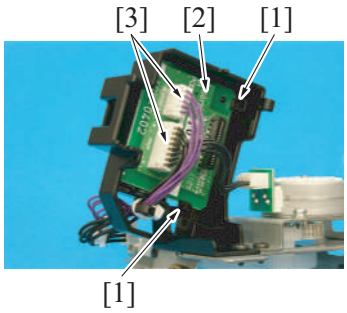
1. Remove the front cover.
   F.15.1 Front cover (FS-533)
2. Remove the stapler unit.
   F.15.5 Stapler unit (FS-533)



3. Pull out the stapler drive assy [1].
4. Release the lock [2] of the board cover, and remove the flat cable [3].



5. Unhook the tab [1], and remove the board cover [2].

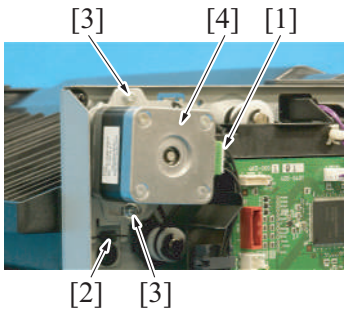


6. Unhook two tabs [1], and remove the stapler relay board [2].
7. Disconnect two connectors [3].

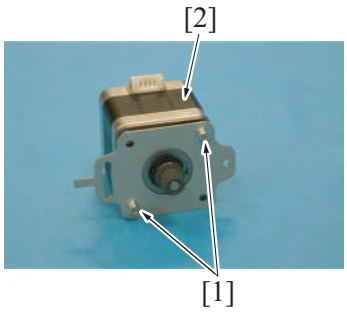
8. To reinstall, reverse the order of removal.

15.9 Paper conveyance motor (M101) (FS-533)

1. Remove the rear cover.
F.15.2 Rear cover (FS-533)



2. Disconnect the connector [1].
3. Remove the spring [2].
4. Remove two screws [3], and remove the paper conveyance motor assy [4].

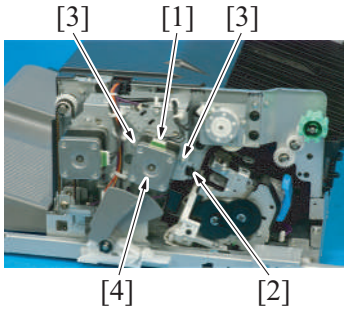


5. Remove two screws [1], and remove the paper conveyance motor [2].

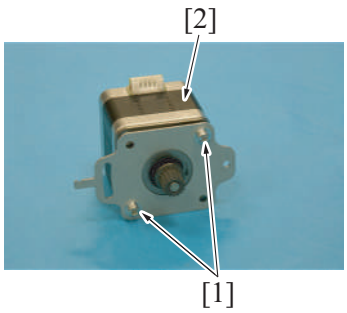
6. To reinstall, reverse the order of removal.

15.10 Paper exit motor (M102) (FS-533)

1. Remove the front cover.
F.15.1 Front cover (FS-533)



2. Disconnect the connector [1].
3. Remove the spring [2].
4. Remove two screws [3], and remove the paper exit motor assy [4].

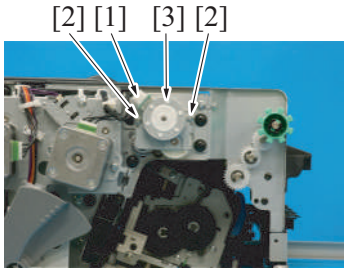


5. Remove two screws [1], and remove the paper exit motor [2].

6. To reinstall, reverse the order of removal.

15.11 Alignment roller motor (M103) (FS-533)

1. Remove the front cover.
F.15.1 Front cover (FS-533)

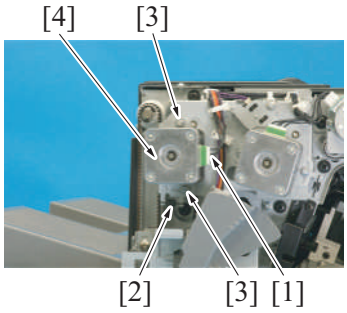


2. Disconnect the connector [1].
3. Remove two screws [2], and remove the alignment roller motor [3].

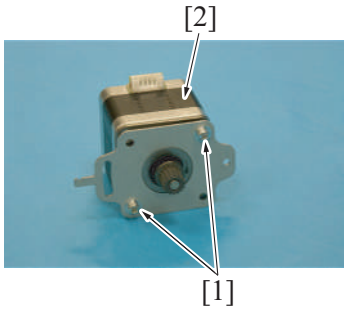
4. To reinstall, reverse the order of removal.

15.12 Exit roller lift up motor (M104) (FS-533)

1. Remove the front cover.
F.15.1 Front cover (FS-533)



2. Disconnect the connector [1].
3. Remove the spring [2].
4. Remove two screws [3], and remove the exit roller lift up motor assy [4].

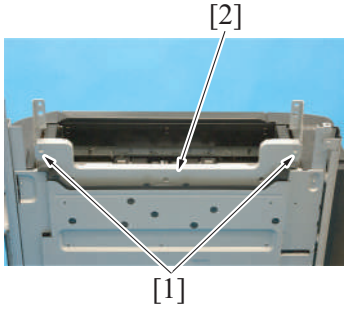


5. Remove two screws [1], and remove the exit roller lift up motor [2].

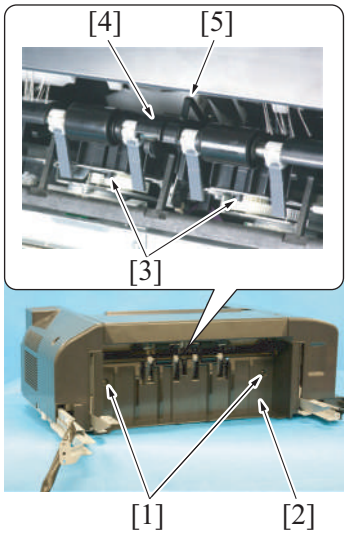
6. To reinstall, reverse the order of removal.

15.13 Alignment motor/Fr (M105), Alignment motor/Rr (M106) (FS-533)

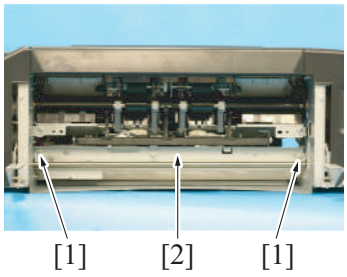
1. Remove the paper exit tray unit.
F.15.6 Paper exit tray unit (FS-533)



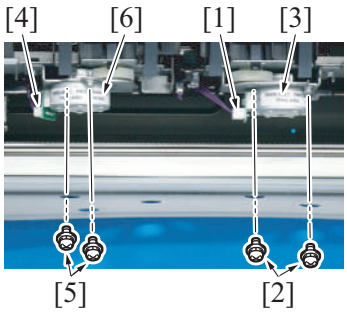
2. Remove two screws [1], and remove the plate [2].



3. Remove two screws [1], and remove the cover [2].
NOTE
- **When removing the cover [2], two claws [3] may come off and the alignment tray [4] may come up. This may cause the alignment tray to contact the actuator [5] and cause malfunction of the actuator.**
- **When mounting the cover [2], make sure two claws [3] are attached to the plate.**



4. Remove two screws [1], and pull out the paper surface detect solenoid assy [2].

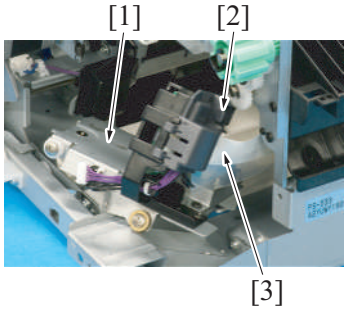


5. Disconnect the connector [1], remove two screws [2], and remove the alignment motor/Fr [3].
6. Disconnect the connector [4], remove two screws [5], and remove the alignment motor/Rr [6].

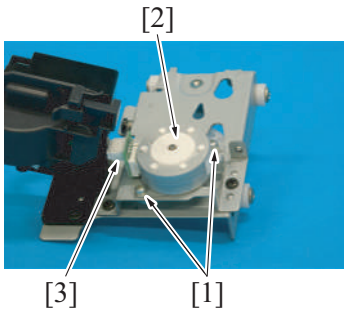
7. To reinstall, reverse the order of removal.

15.14 Stapler movement motor (M107) (FS-533)

1. Remove the front cover.
F.15.1 Front cover (FS-533)
2. Remove the stapler unit.
F.15.5 Stapler unit (FS-533)



3. Pull out the stapler drive assy [1].
4. Release the lock [2] of the board cover, and remove the flat cable [3].

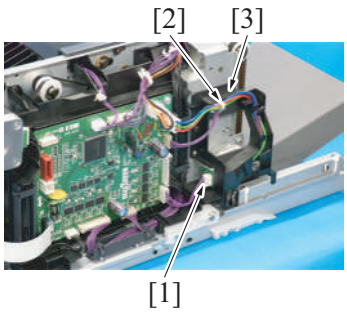


5. Remove two screws [1], and remove the stapler movement motor [2].
6. Disconnect the connector [3].

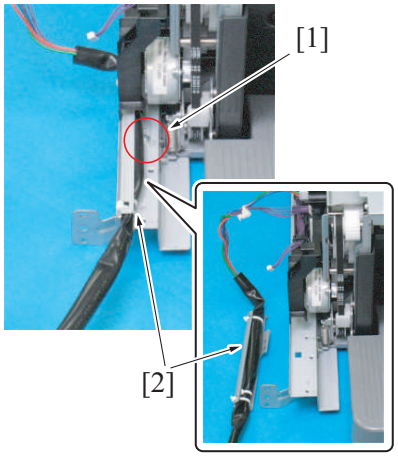
7. To reinstall, reverse the order of removal.

15.15 Tray lift up motor (M109) (FS-533)

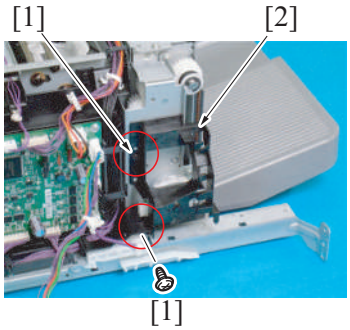
1. Remove the rear cover.
F.15.2 Rear cover (FS-533)



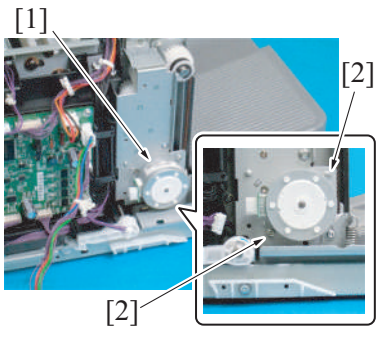
2. Disconnect the connector [1].
3. Remove the harness tie [2] and harness from the harness guide [3].



4. Remove the screw [1], and remove the finisher's cable [2].



5. Remove two screws [1], and remove the harness guide [2].

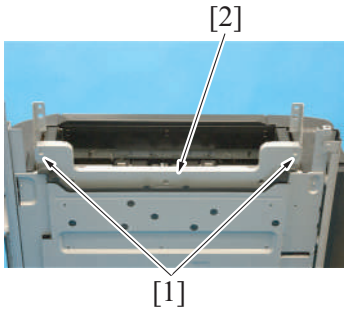


6. Remove two screws [2], and remove the tray lift up motor [1].

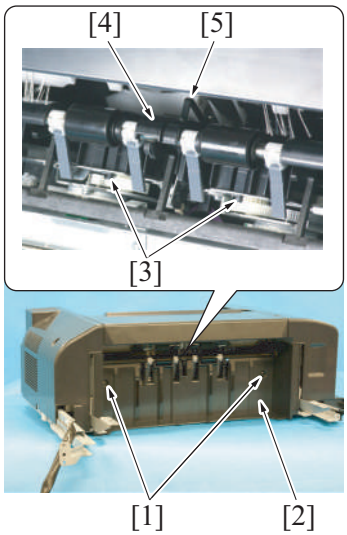
7. To reinstall, reverse the order of removal.

15.16 Paper surface detect solenoid (SD101) (FS-533)

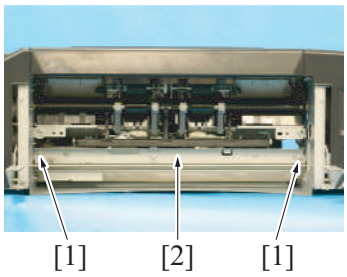
1. Remove the paper exit tray unit.
F.15.6 Paper exit tray unit (FS-533)



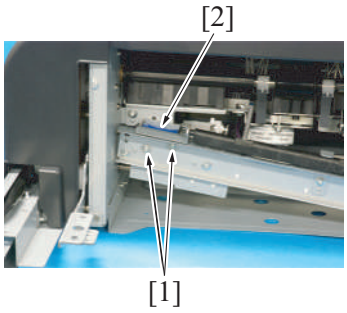
2. Remove two screws [1], and remove the plate [2].



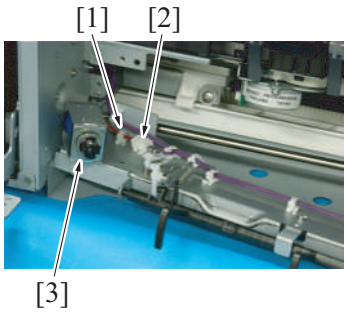
3. Remove two screws [1], and remove the cover [2].
NOTE
- **When removing the cover [2], two claws [3] may come off and the alignment tray [4] may come up. This may cause the alignment tray to contact the actuator [5] and cause malfunction of the actuator.**
- **When mounting the cover [2], make sure two claws [3] are attached to the plate.**



4. Remove two screws [1], and pull out the paper surface detect solenoid assy [2].



5. Remove two screws [1], and pull out the paper surface detect solenoid [2].

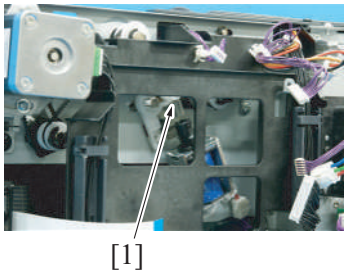


6. Remove the harness from wire saddle [1], and disconnect the connector [2] and remove the paper surface detect solenoid [3].

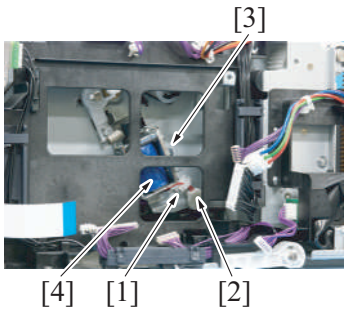
7. To reinstall, reverse the order of removal.

15.17 Batch solenoid (SD102) (FS-533)

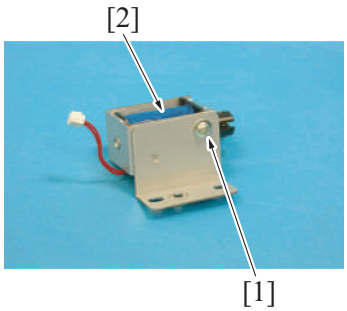
1. Remove the rear cover.
   F.15.2 Rear cover (FS-533)
2. Remove the FS control board.
   F.15.7 FS control board (FSCB) (FS-533)



3. Remove the spring [1].



4. Remove the harness from the wire saddle [1].
5. Disconnect the connector [2].
6. Remove the screw [3], and remove the batch solenoid assy [4].



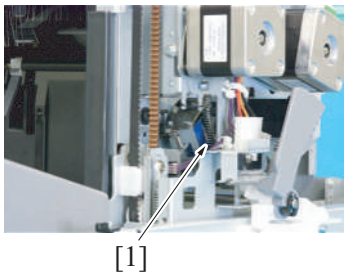
7. Remove the screw [1], and remove the batch solenoid [2].

8. To reinstall, reverse the order of removal.

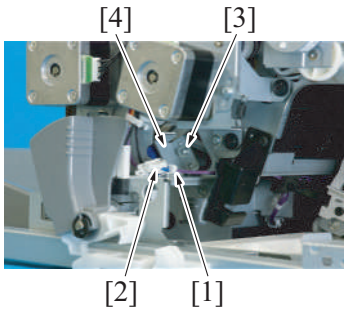
15.18 Paper exit roller solenoid (SD103) (FS-533)

1. Remove the front cover.
   F.15.1 Front cover (FS-533)

2. Remove the spring [1].



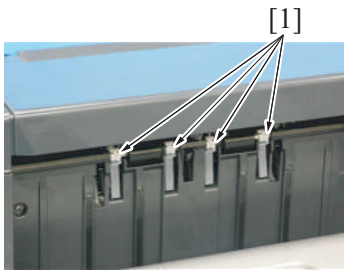
3. Remove the harness from the wire saddle [1].
4. Disconnect the connector [2].
5. Remove the screw [3], and remove the paper exit roller solenoid [4].



6. To reinstall, reverse the order of removal.

15.19 Paper exit paddle (FS-533)

1. Pull the knobs [1] to remove the exit paddle.

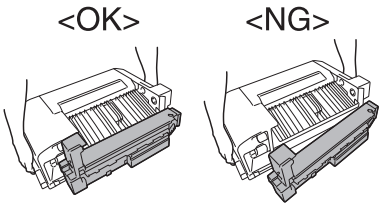


2. To reinstall, reverse the order of removal.

16. PK-519

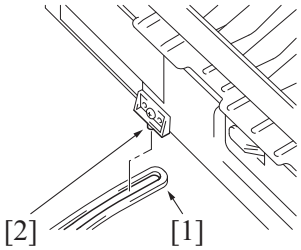
16.1 Punch kit (PK-519)

1. Remove the finisher from the main body.
   F.15.4 Finisher (FS-533)

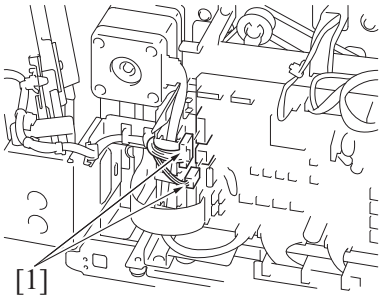


2. **NOTE**
   - **Make sure that the punch unit is locked to the finisher before removing it.**

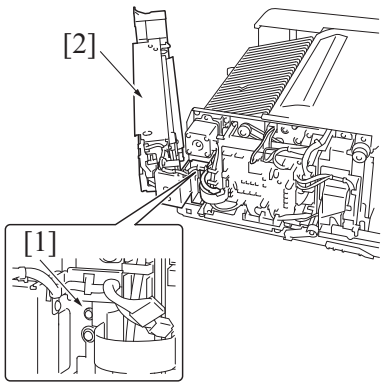
3. Remove the rear cover.
   F.15.2 Rear cover (FS-533)



4. Open the punch unit.
5. Remove the stopper arm [1] from the stopper pin [2].



6. Disconnect two connectors [1].

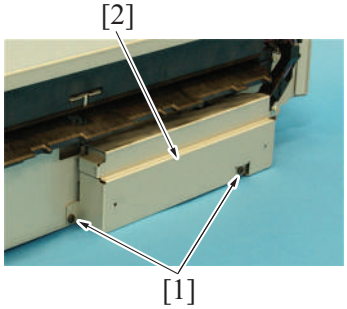


7. Remove the screw [1], and remove the punch unit [2].

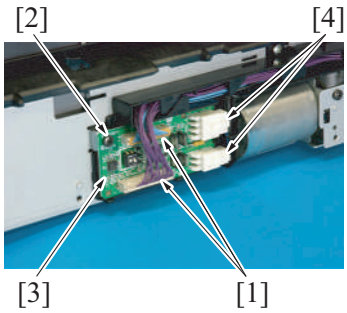
8. To reinstall, reverse the order of removal.

16.2 PK control board (PKCB) (PK-519)

1. Remove the finisher.
   F.15.4 Finisher (FS-533)



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

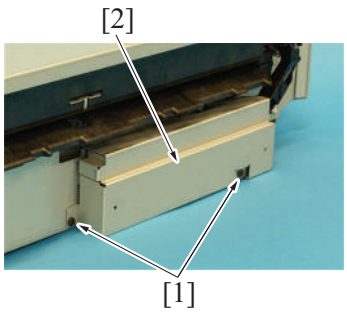


3. Disconnect two connectors [1].
4. Remove the screw [2], and pull out the PK control board [3].
5. Disconnect two connectors [4], and remove the PK control board [3].

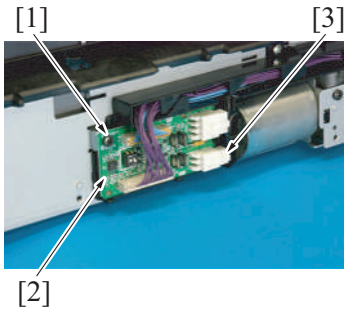
6. To reinstall, reverse the order of removal.

16.3 Punch motor (M201) (PK-519)

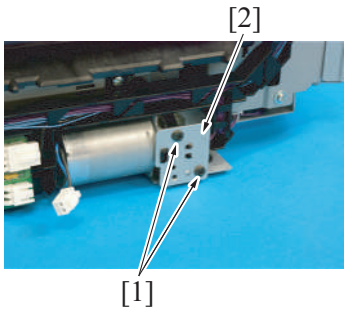
1. Remove the finisher.
F.15.4 Finisher (FS-533)



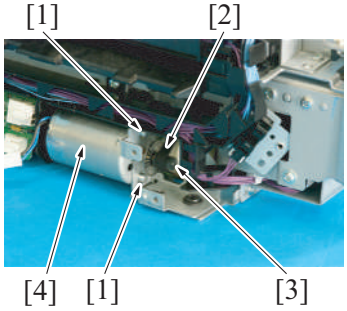
2. Remove two screws [1], and remove the plate [2].



3. Remove the screw [1], and pull out the PK control board [2].
4. Disconnect the connector [3].



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



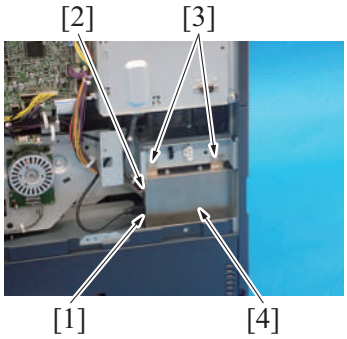
6. Remove two screws [1], and remove the drive belt [2] from the gear [3].
7. Remove the punch motor [4].

8. To reinstall, reverse the order of removal.

17. FK-513

17.1 Fax kit

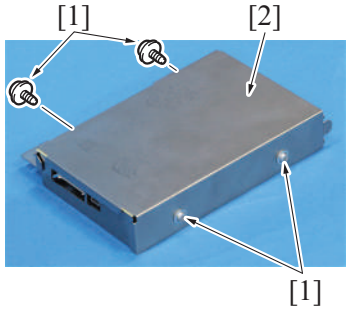
1. Remove the upper rear cover.
   F.5.1.12 Upper rear cover



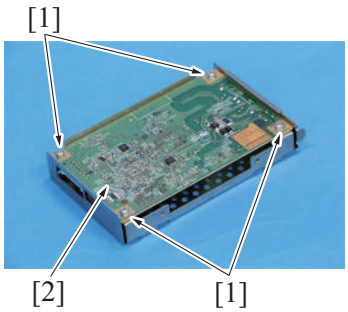
2. Disconnect the USB connector [1] and connector [2].
3. Remove two screws [3], and remove the fax kit [4].
4. To reinstall, reverse the order of removal.

17.2 FAX board (FAXB)

1. Remove the upper rear cover.
   F.5.1.12 Upper rear cover
2. Remove the fax kit.
   F.17.1 Fax kit



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

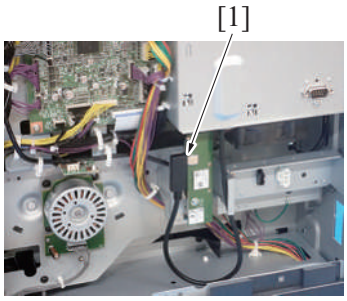


4. Remove four screws [1] and remove the FAX board [2].
5. To reinstall, reverse the order of removal.

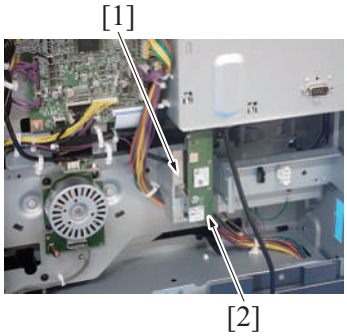
18. UK-221

18.1 Upgrade kit (UK-221)

1. Remove the upper rear cover.
F.5.1.12 Upper rear cover



2. Disconnect the USB cable [1].

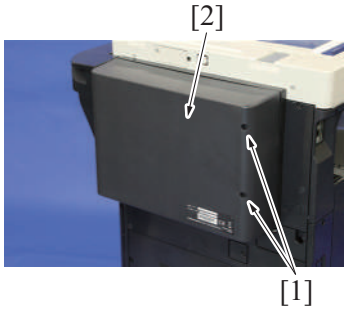


3. Remove the screw [1], and remove the upgrade kit [2].

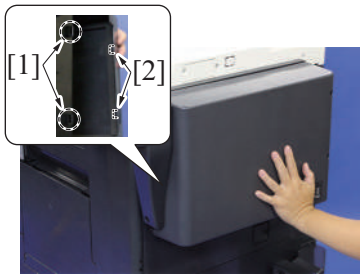
4. To reinstall, reverse the order of removal.

19. CU-101

19.1 Clean unit cover



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

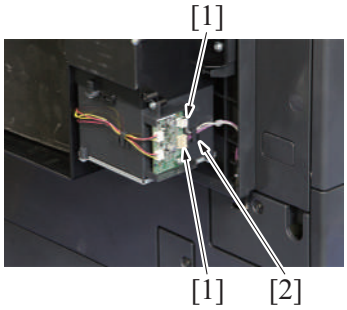


2. **NOTE**
   - **When installing the clean unit cover, fit the clean unit cover tabs [2] into the holes [1], hold it in place and secure the screws.**

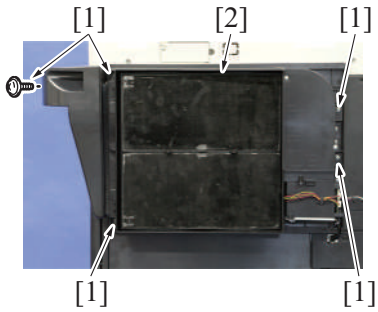
3. To reinstall, reverse the order of removal.

19.2 Clean unit (CU-101)

1. Remove the clean unit cover.
   F.19.1 Clean unit cover



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

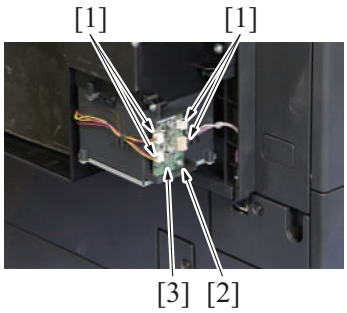


3. Remove five screws [1], and remove the clean unit [2].

4. To reinstall, reverse the order of removal.

19.3 Clean unit drive board (CUDB)

1. Remove the clean unit cover.
   F.19.1 Clean unit cover

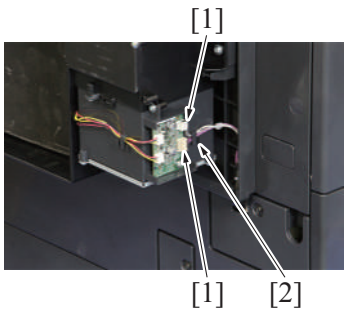


2. Disconnect four connectors [1].
3. Remove the screw [2], and remove the clean unit drive board [3].

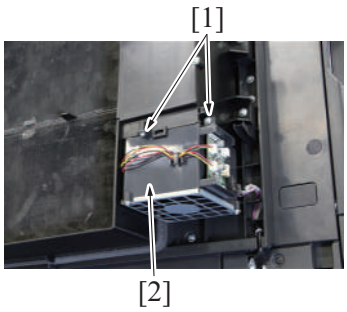
4. To reinstall, reverse the order of removal.

19.4 Exhaust fan/1 (FM14)

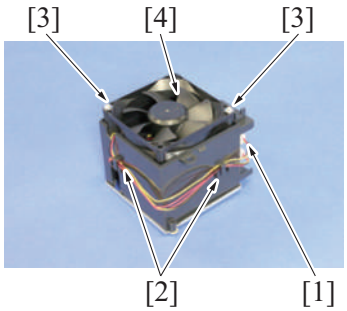
1. Remove the clean unit cover.
F.19.1 Clean unit cover



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



3. Remove two screws [1], and remove the exhaust fan assy [2].

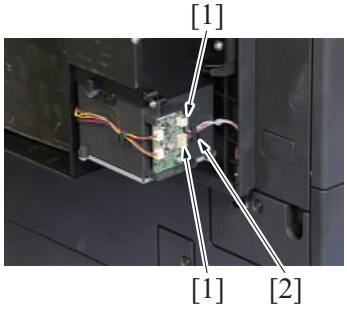


4. Disconnect the connector [1], and remove the harness from two harness guides [2].
5. Remove two screws [3], and remove the exhaust fan/1 [4].

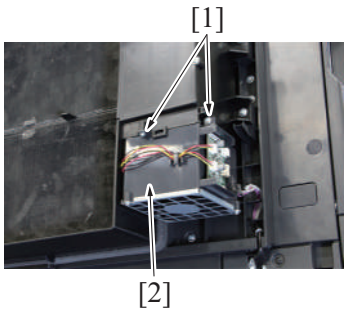
6. To reinstall, reverse the order of removal.

19.5 Exhaust fan/2 (FM15)

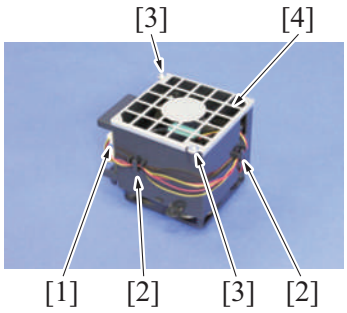
1. Remove the clean unit cover.
F.19.1 Clean unit cover



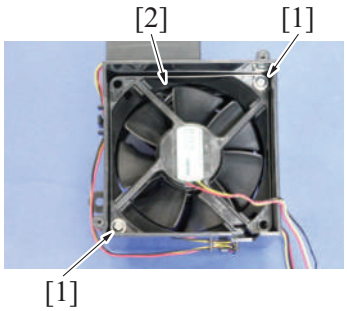
2. Disconnect two connectors [1], and remove the harness from the harness guide [2].



3. Remove two screws [1], and remove the exhaust fan assy [2].



4. Disconnect the connector [1], and remove the harness from two harness guides [2].
5. Remove two screws [3], and remove the exhaust fan cover [4].

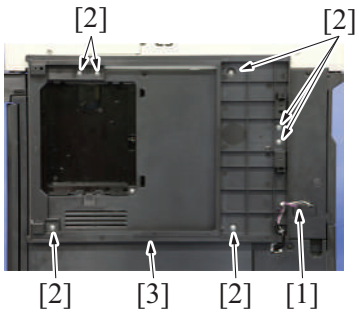


6. Remove two screws [1], and remove the exhaust fan/2 [2].

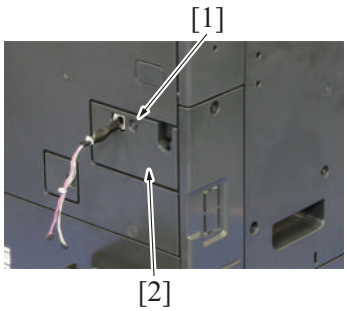
7. To reinstall, reverse the order of removal.

19.6 Suction fan (FM16)

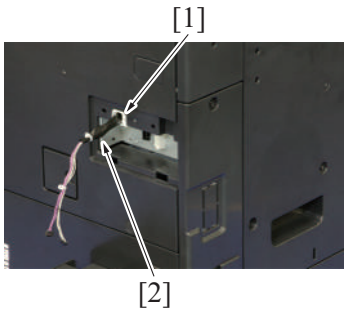
1. Remove the clean unit cover.
   F.19.1 Clean unit cover
2. Remove the clean unit.
   F.19.2 Clean unit (CU-101)



3. Remove the harness [1] from harness guide.
4. Remove seven screws [2], and remove the attachment [3].

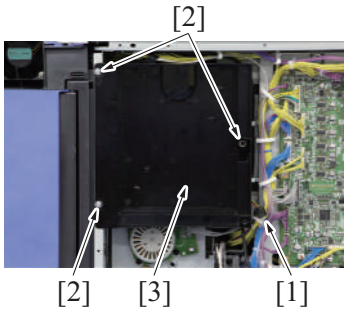


5. Remove the screw [1], and remove the cover [2].

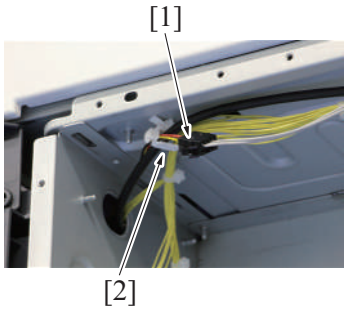


6. Remove the harness [2] from the edge cover [1].

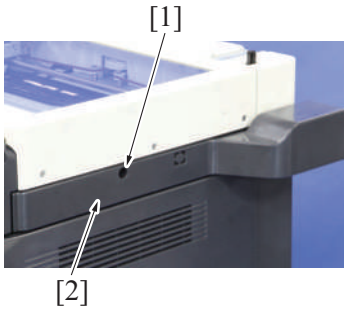
7. Remove the upper rear cover.
F.5.1.12 Upper rear cover



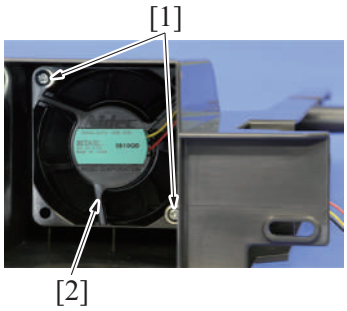
8. Disconnect the connector [1].
9. Remove three screws [2], and remove the paper cooling fan assy [3].



10. Disconnect the connector [1], and remove the harness from the wire saddle [2].



11. Remove the screw [1], and remove the suction fan assy [2].

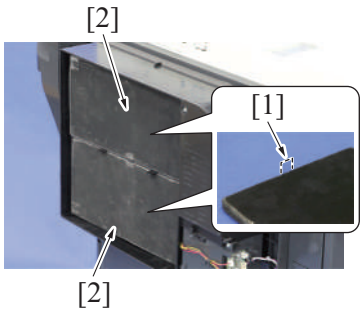


12. Remove two screws [1], and remove the suction fan [2].

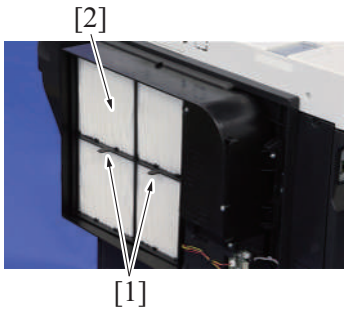
13. To reinstall, reverse the order of removal.

19.7 Deodorant filter/UFP filter

1. Remove the clean unit cover.
F.19.1 Clean unit cover



2. Hold the pull tab [1], and remove the deodorant filter [2].

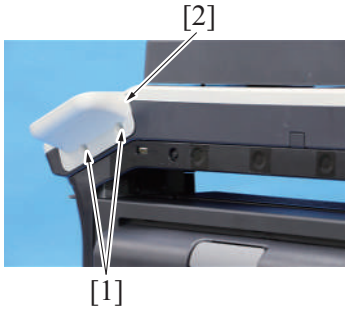


3. Hold the pull tab [1], and remove the UPF filter [2].

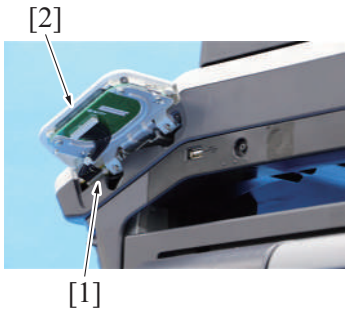
4. To reinstall, reverse the order of removal.

20. KP-101

20.1 Keypad



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



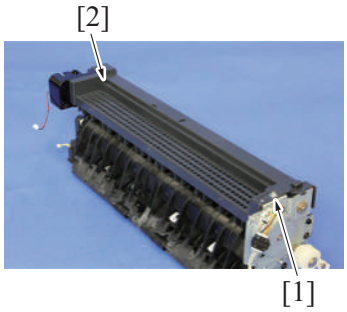
2. Disconnect the connector [1] and remove the keypad [2].

3. To reinstall, reverse the order of removal.

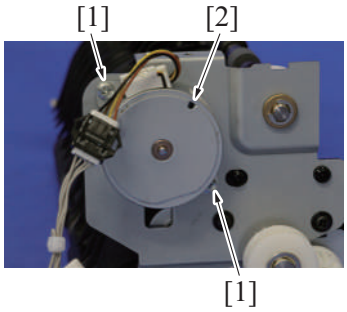
21. MK-603

21.1 Upper paper exit motor (M6) (MK-603)

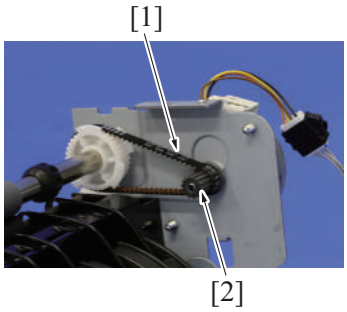
1. Remove the paper exit unit.
   Refer to the procedure 1 to 8 shown in F.21.2 Mount Kit (MK-603).



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



3. Remove two screws [1], and remove the upper paper exit motor [2].

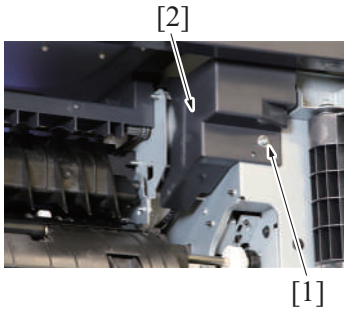


4. **NOTE**
   - **Put the belt [1] around the gear [2] when installing the upper paper exit motor.**

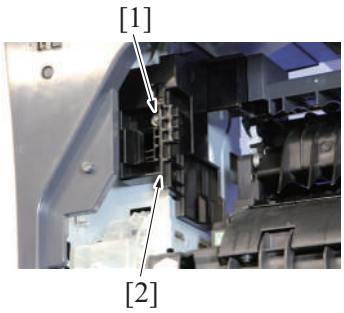
5. To reinstall, reverse the order of removal.

21.2 Mount Kit (MK-603)

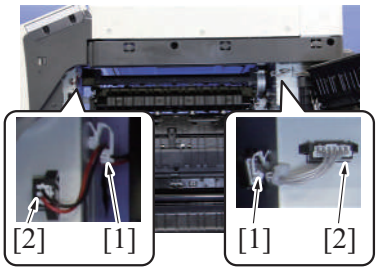
1. Remove the sensor unit.
   F.10.4 Sensor unit (JS-506)
   F.13.2 Sensor unit (RU-514)
2. Open the right door.



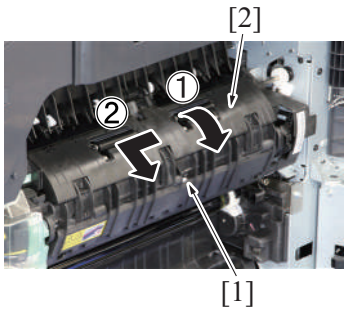
3. Remove the screw [1], and remove the cover [2].



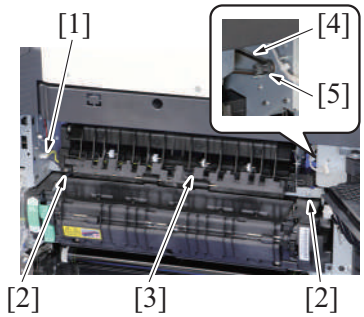
4. Remove the screw [1], and remove the cover [2].



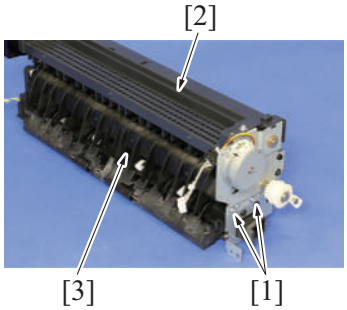
5. Remove the harness from two wire saddles [1], and disconnect two connectors [2].



6. Remove the C-clip [1], and remove the exit guide [2].



7. Disconnect the connector [1].
8. Remove two screws [2], and remove the exit unit [3].
NOTE
- **Set the belt [4] to the gear [5] when mounting the exit unit.**

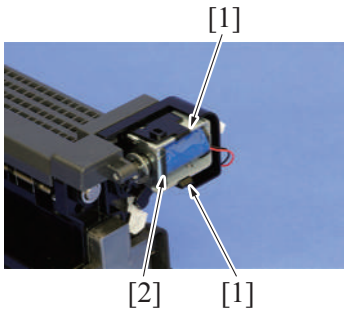


9. Remove two screws [1], and remove the exit unit [2].
NOTE
- **Holding the guide [3] by hands is required when mounting the unit.**

10. To reinstall, reverse the order of removal.

21.3 Gate switch solenoid (SD3) (MK-603)

1. Remove the paper exit unit.
Refer to the procedure 1 to 8 shown in F.21.2 Mount Kit (MK-603).



2. Remove two tabs [1], and remove the gate switch solenoid [2].

3. To reinstall, reverse the order of removal.

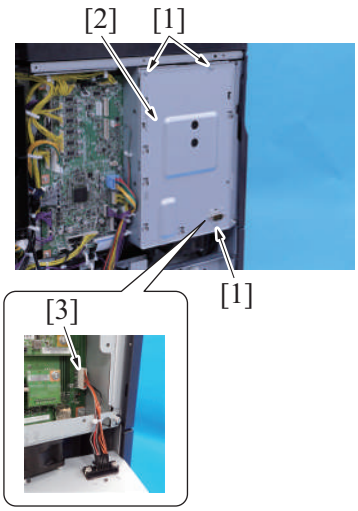
22. EM-907

22.1 Storage board (STRGB)

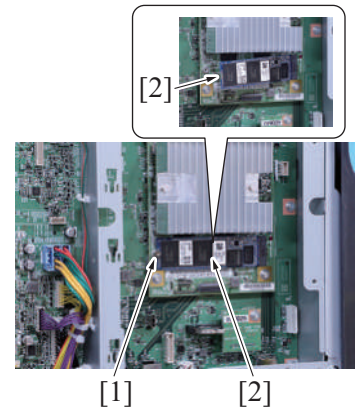
NOTE

- **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 upper rear cover.
   F.5.1.12 Upper rear cover



2. Remove three screws [1], and remove the plate [2].
   NOTE
   - **When the connector cable is attached, remove the connector [3].**

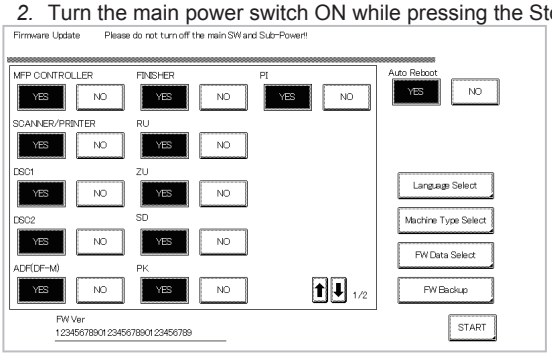


3. Remove the screw[1], and remove the storage boad[2].
   NOTE
   - **When mounting the storage board[2], insert it obliquely.**

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.

G MECHANICAL ADJUSTMENT

1. d-Color MF257

1.1 Paper feed section

1.1.1 Centering adjustment of the tray 1/2

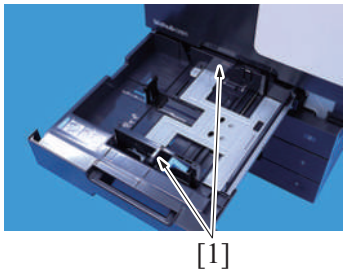
(1) Purpose

This adjustment must be made in the following case:

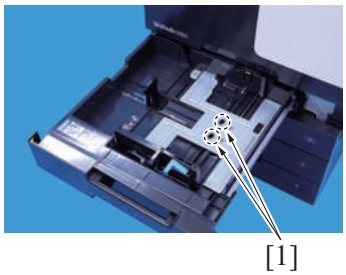
- When an image printed on a copy is displaced from the correct position with the use of the tray1/2.

(2) Procedure

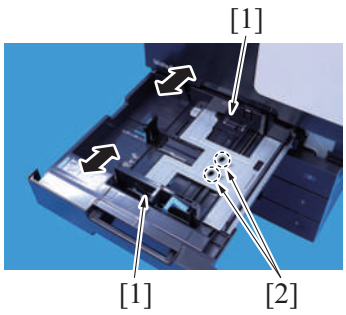
1. Make a test print and check the amount of misalignment.
2. Pull out the tray where this adjustment is made.
3. Stretch the paper guides [1] to the maximum size position.



4. Loosen two 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 two screws [2].



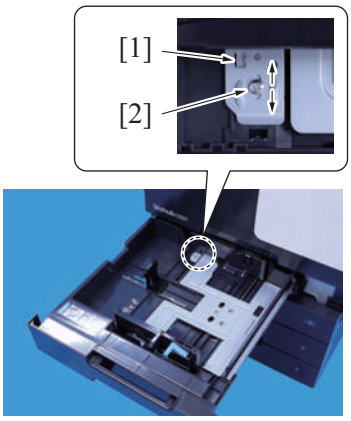
7. Make another test print and check the amount of misalignment.

NOTE

- **When the paper guide position has been adjusted at the centering adjustment, make adjustment of the installation position of the paper width detection adjustment plate to detect paper sizes correctly.**

(a) How to adjust the paper width detection adjustment plate

1. Loosen the mounting screw [2] of the paper width detection adjustment plate [1] and adjust the position of the plate, then fix it with the screw.



Adjustment indication

- **Move frontward the paper width detection adjustment plate [1] by 1 mm when the paper guide has been moved rearward by 1 mm at the centering adjustment.**
- **Move rearward the paper width detection adjustment plate [1] by 1 mm when the paper guide has been moved frontward by 1 mm at the centering adjustment.**

2. Slide the paper guide corresponding to the paper size.
3. Set paper and close the tray.
4. Check that the paper size is detected correctly.
5. If not, readjust the installation position of the paper width detection adjustment plate.

NOTE

- **When only paper either one of the millimeter system and the inch system is used, it is possible to prevent erroneous detection by rounding the paper size with the following setting.**
- **Engine FW DipSW "33/34": First paper size detection option**
- **Engine FW DipSW "36/37": Second paper size detection option**

1.2 Fusing section

1.2.1 Adjusting the parallelism of the fusing unit path

(1) Purpose

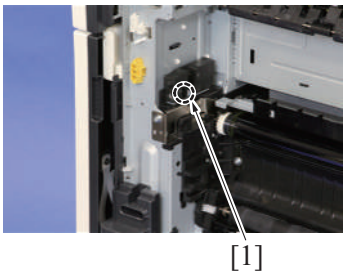
This adjustment must be made in the following case:

- When the second transfer paper feed path and the fusing section path are not parallel and caused wrinkles on the paper.

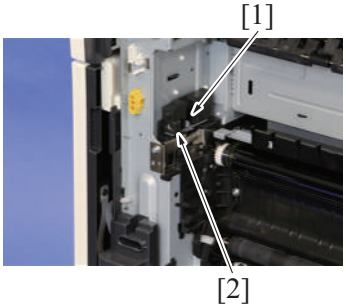
(2) Procedure

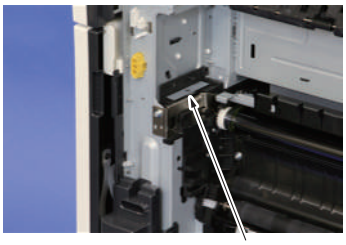
1. Remove the fusing unit.
   E.3.1.11 Replacing the fusing unit

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: AVGR29736 T
5. To reinstall, reverse the order of removal.
6. Make a test print to check whether paper is fed properly.

1.3 Scanner section

1.3.1 Adjusting the scanner skew

(1) Purpose

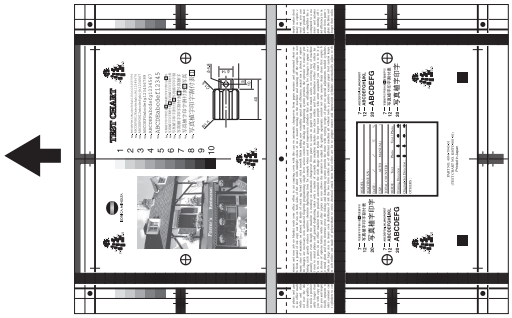
Make this adjustment in the following case.

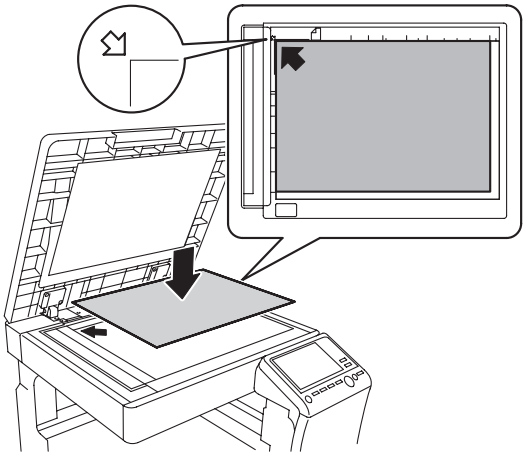
- Scan/copy image skew occur.

  NOTE
  - **Make a test print and check that no image skew occurs.**
  - **If print image skew occur, make adjustment in [Service Mode] -> [Machine] -> [Printer Area].**
  - **After making the scanner skew adjustment, check [Service Mode] -> [Machine] -> [Scan Area].**

(2) Procedure

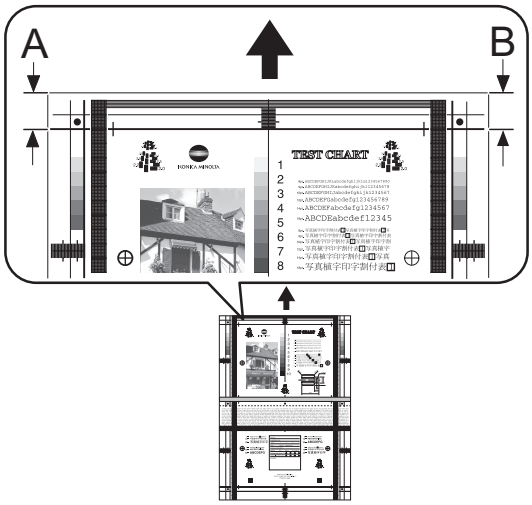
1. Prepare the test chart (gray scale) for the scanner skew adjustment.





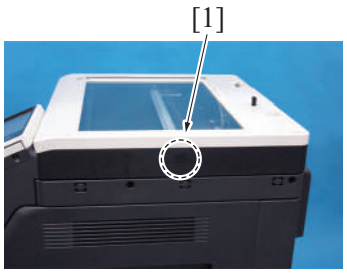
2. Set the test chart on the original glass.

   NOTE
   - **Fit the corner of the test chart to that of the original scale and be sure that the margin between the test chart and the original scale is within 0.3 mm.**
3. Close the original cover slowly.
4. Press the Start key to make a copy.

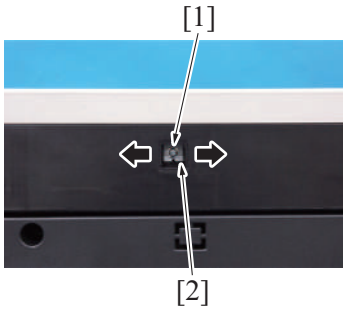


5. Check the image skew with the output copy.
6. If the image skew (the difference between A width and B width) is not within the standard value (±1.5 mm), make the following adjustment.

(a) Adjustment procedure

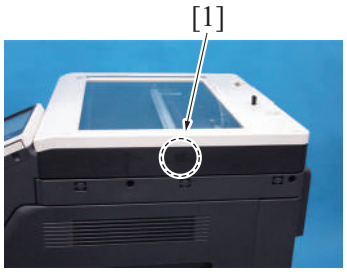


1. Remove the hiding cover [1] on the right side of the scanner.



2. Loosen the screw [1] and adjust the fixing position of the plate [2].
   - If A width is smaller than B width (A < B), move the plate [2] to the right and fix it with screw [1].
   - If A width is bigger than B width (A > B), move the plate [2] to the left and fix it with screw [1].

   NOTE
   - **Be careful not to loosen the screw excessively to prevent it from coming off from the scanner axis.**



3. Continue the procedure above while making and checking copies until the image skew becomes within the standard value.
4. Install the hiding cover [1] after the completion of the adjustment.

   NOTE
   - **Make the following adjustment after the completion of this adjustment.**
   - **[Service Mode] -> [Machine] -> [Scan Area]**

1.4 Write section

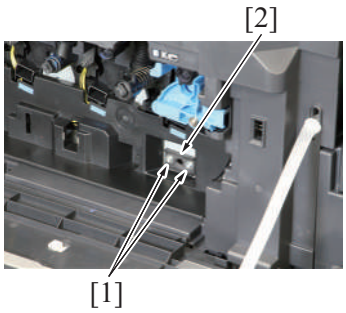
1.4.1 PH skew adjustment

(1) 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.

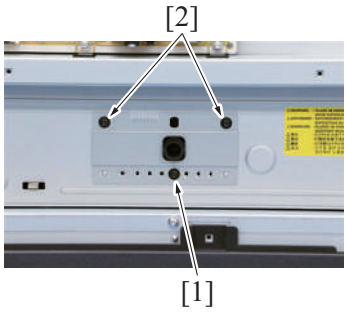
(2) Procedure

1. Remove the waste toner box.
   E.3.1.8 Replacing the waste toner box

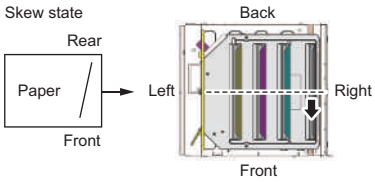


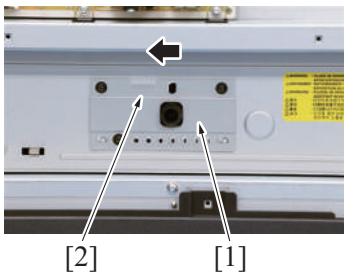
2. Remove two screws [1], and remove the set pin [2] for the PH unit.

3. Remove the left cover.
F.5.1.7 Left cover

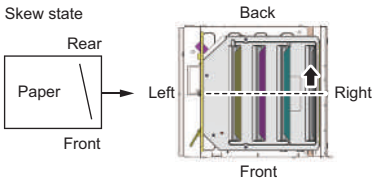


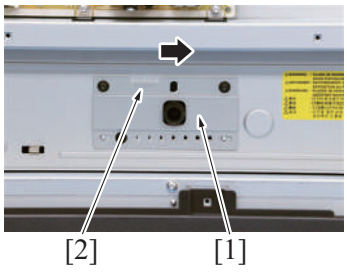
4. Remove the screw [1]. Loosen two fixing screws [2].

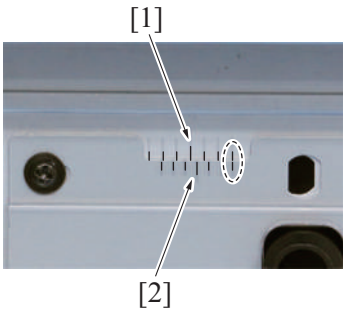




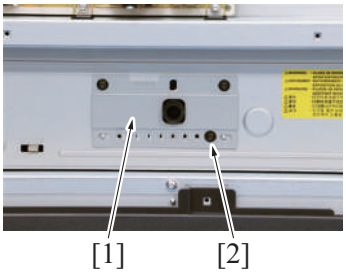
5. Confirm the skew state, and move the slide plate [1] in the adjustment direction to fit the index [2].
   - Upper illustration: Shift the PH forward to accelerate the writing on the front side.
   - Lower illustration: Shift the PH backward to accelerate the writing on the rear side.



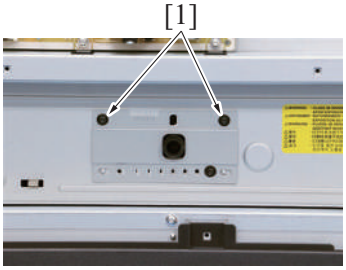




6. NOTICE
   The adjust widths are as follows. The illustration shows when the scale is set to +3 (+0.3%).
   - Skew adjust width: -3 (leftmost line) to +3 (rightmost line) (±0.3%)
   - 1 index 0.1% (0.4 mm)
   - Upper index [1]: every 2.6 mm
   - Lower index [2]: every 2.2 mm



7. Move the slide plate [1] and secure it by tightening the removed screw [2] while aligning the hole.



8. Tighten two screws [1].

9. To reinstall, reverse the order of removal.
10. Perform a copy and check the skew result. Repeat steps from 1 through 9 as necessary.

2. Reverse automatic document feeder (DF-633)

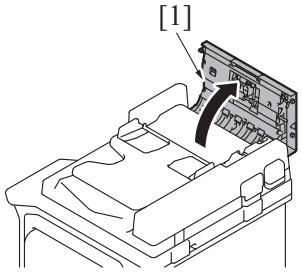
2.1 ADF skew adjustment

Purpose

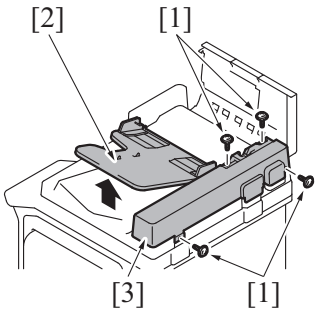
- This adjustment must be made in the following case:
  - When the reverse automatic document feeder has been reinstalled.

Procedure

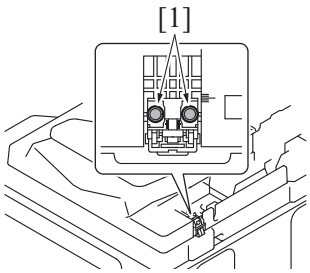
1. Call the Service Mode to the screen, and measure the DF skew.
   [Service Mode] -> [ADF] -> [Skew Measurement (1-Sided)].
2. If the value of [Avg. Value] does not fall within the “specified range”, perform the following adjustment.
3. Open the upper door [1].



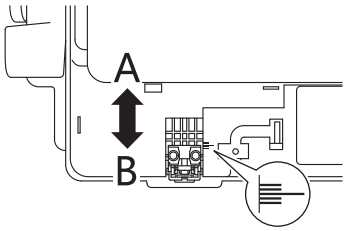
4. Remove four screws [1].
5. Remove the rear cover [3] while raising the document feed tray [2] up.



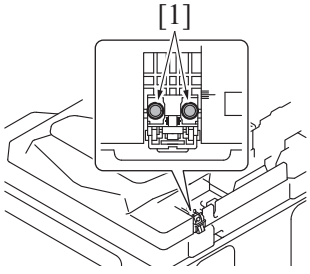
6. Loosen two screws [1] of the hinge.

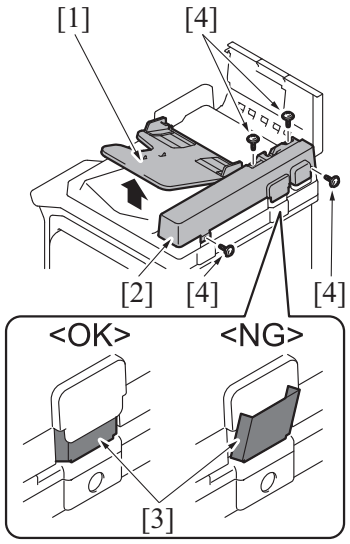


7. Shift the reverse automatic document feeder toward the direction of the arrow.
   - When of the deviation is + (plus), shift it toward the A direction.
   - When of the deviation is - (minus), shift it toward the B direction.



8. After the adjustment is completed, tighten the two mounting screws [1] on hinge securely with screwdriver.





9. Install the rear cover [2] while raising the document feed tray [1] up.
NOTE
- **When installing the rear cover [2], place the film [3] inside the rear cover.**

10. Tighten four screws [4].

11. Re-scan the chart five times by selecting [Service Mode] -> [ADF] -> [Skew Measurement (1-Sided)] and measure the average skew value.
12. Check the [Avg. Value] is within the “specified range”.
13. If the value of [Avg. Value] does not fall within the “specified range”, repeat the adjustment.

3. PC-118/PC-218

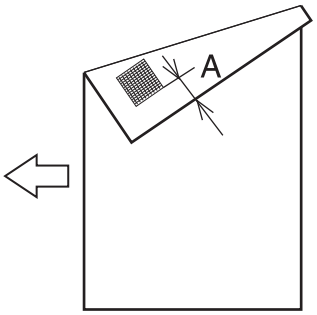
3.1 Paper reference position

3.1.1 Purpose

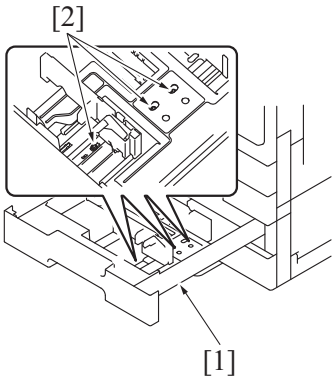
This adjustment must be made in the following case:

- When the PH unit has been replaced.
- When the image on the print is offset in the main scan direction.
- When adjustment in [Service Mode] -> [Machine] -> [Printer Area] -> [Printer Image Centering Side 1] does not resolve a problem.
  NOTE
  - **When the optional finisher is installed, mechanical adjustment is necessary before adjustment [Printer Image Centering Side 1].**

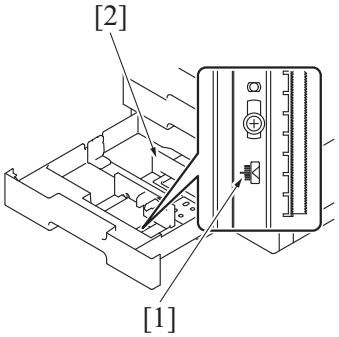
3.1.2 Procedure



1. Measure the width of printed reference line A. Target: 3.0 mm ± 1.0 mm



2. Slide out the tray [1] and unload paper from it.
3. Loosen three screws [2].



4. Watching the graduations [1] provided in the drawer, move the paper width guide [2] in the rear.
  - If width A is greater than the target, move the paper width guide toward the front.
  - If width A is smaller than the target, move the paper width guide toward the rear.

5. Tighten three screws which have been loosened.
6. Perform another test print and check the reference deviation.

4. PC-418

4.1 Paper reference position

4.1.1 Purpose

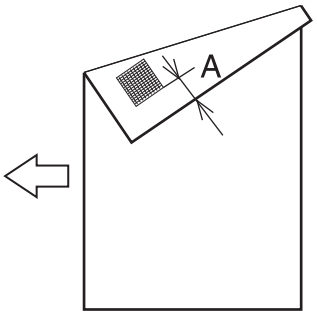
This adjustment must be made in the following case:

- When the PH unit has been replaced.
- When the image on the print is offset in the main scan direction.
- When adjustment in [Service Mode] -> [Machine] -> [Printer Area] -> [Printer Image Centering Side 1] does not resolve a problem.

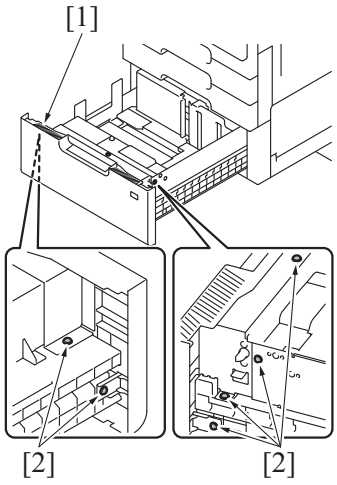
NOTE

- **When the optional finisher is installed, mechanical adjustment is necessary before adjustment [Printer Image Centering Side 1].**

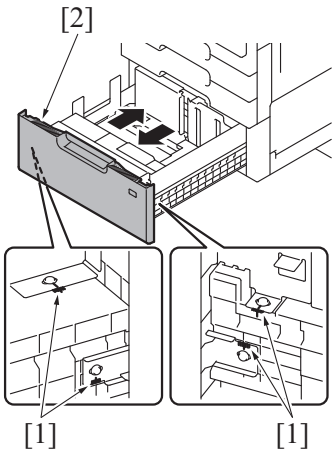
4.1.2 Procedure



1. Measure the width of printed reference line A. Target: 3.0 mm ± 1.0 mm



2. Slide out the paper feed tray [1] and unload paper from it.
3. Loosen six screws [2].

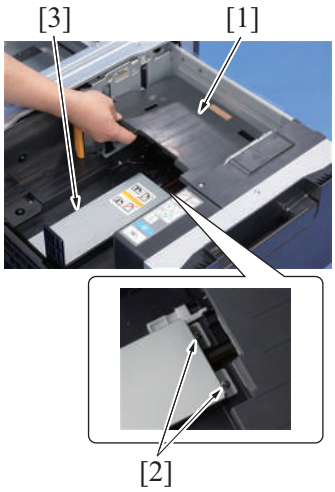


4. Watching the graduations [1] provided near the screws, move the front cover assy [2].
   - If width A is greater than the target, move the front cover assy toward the rear.
   - If width A is smaller than the target, move the front cover assy toward the front.
5. Tighten six screws which have been loosened.
6. Perform another test print and check the reference deviation.

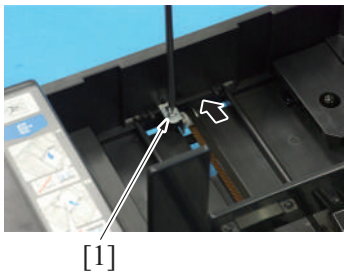
4.2 Shifter movement timing belt adjustment

4.2.1 Procedure

1. Remove the paper feed tray.
   F.9.3 Paper feed tray (PC-418)



2. While raising the main tray [1], and remove two screws [2] that hold the shift tray in position.
   NOTE
   - **When reinstalling, use caution because the wire of the main tray [1] comes off easily.**
3. Remove the shift tray [3].



4. Move the sifter.
5. Loosen the tension pulley assy fixing screw [1] and move it in the direction of the arrow.
6. After moving the shifter, tighten the tension pulley assy fixing screw [1].

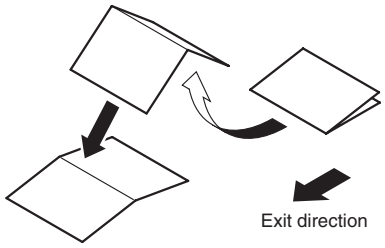
5. FS-539SD

5.1 Half-fold skew adjustment

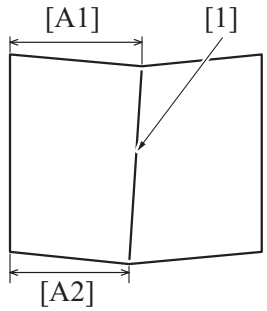
Purpose

- 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

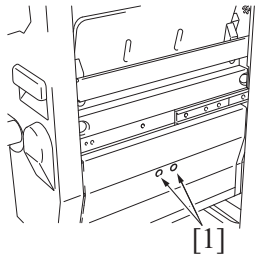


1. Make a copy in the half-fold mode.
2. Unfold the paper that exits the main body and lay the paper with the ridge facing up.

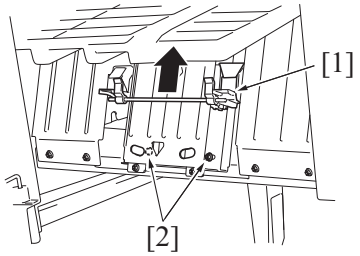


3. Confirm the skew of the fold line [1] of the output copy sample (Widths of A1 and A2)
   - Target: A1-A2=±1.0 mm
4. In case the figure exceeds the above mentioned target, follow the adjustment procedures below.

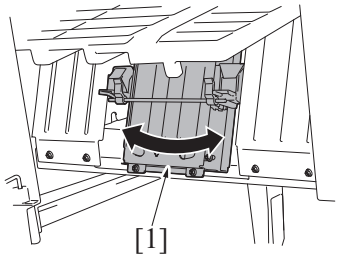
5. Open the front door of the finisher.
6. Pull the saddle unit.



7. Loosen two screws [1].

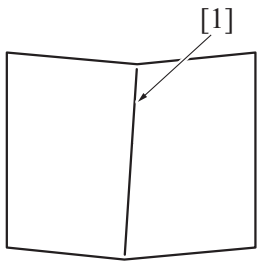


8. Slide the lever unit [1] upward.
9. Loosen two screws [2].



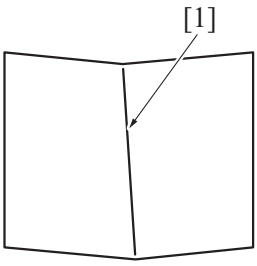
10. Incline the guide plate assy [1] forward or backward according to the deviation of the crease.

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.

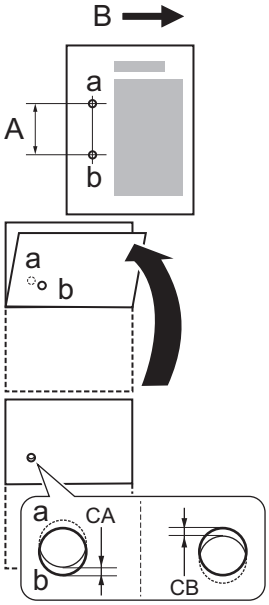
6. PK-524

6.1 Punch hole deviation correction

Purpose

- This adjustment must be made in the following case:
  - The punch holes are on a slanted line.

Procedure

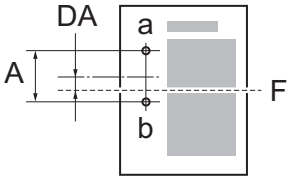


1. Make a 1sided copy sample in the punch mode. Face the printed surface upward.
   - [A]: The distance between holes
   - [B]: Paper feeding direction
   - [a]: Punch hole (upper)
   - [b]: Punch hole (lower)

2. Fold the paper in half along the center in the paper feeding direction.

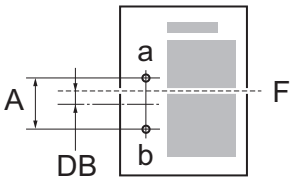
3. Measure the deviation amount [D] between punch holes [a] and [b].
   Target: D = 0 ± 1.0 mm

Ex.1



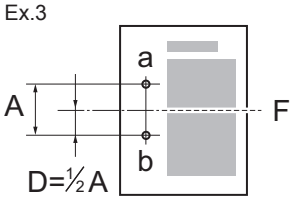
4. If the deviation between the punch holes [a] and [b] is [CA], the punch holes deviate upward in the figure relative to the paper folding line [F] (center in the paper feeding direction).
   - Ex.1: Punch hole deviation amount [DA] = Measured value [CA] 3 mm ÷ 2 = -1.5 mm (hole positions deviate upward)

Ex.2

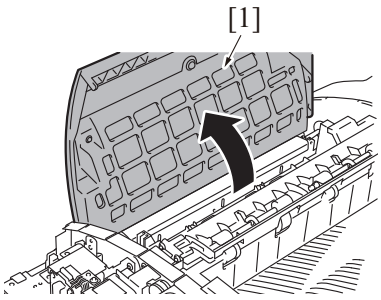


5. If the deviation between the punch holes [a] and [b] is [CB], the punch holes deviate downward in the figure relative to the paper folding line [F] (center in the paper feeding direction).
   - Ex.2: Punch hole deviation amount [DB] = Measured value [CB] 3 mm ÷ 2 = +1.5 mm (hole positions deviate downward)

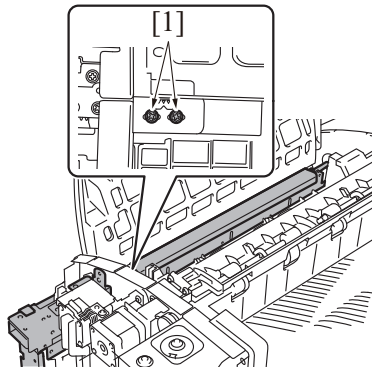
Ex.3



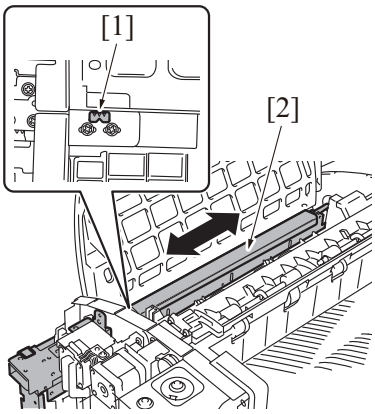
6. Complete the adjustment, if the deviation amount [D] between punch holes [a] and [b] falls within the target (±1.0 mm or less).
   - Ex.3: Punch hole deviation amount [D] = Measured value [C] 0mm÷2 = 0 (punch hole deviation amount falls within the target)



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.

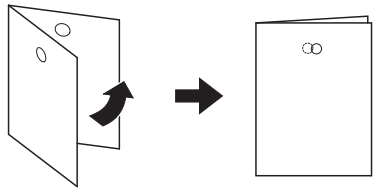
7. PK-519

7.1 Punch hole deviation correction

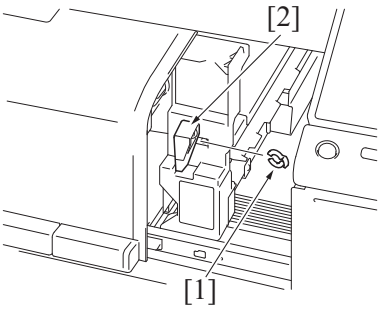
Purpose

- This adjustment must be made in the following case:
  - The punch holes are on a slanted line.

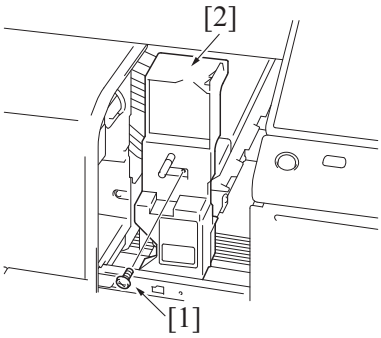
Procedure



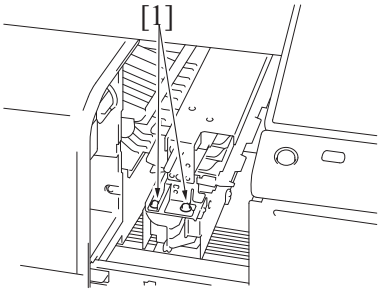
1. Set the mode to Punch mode for printing.
2. Hold the output paper half and check the displacement of the punch hole.
   - Target: 0 ± 2.0 mm
3. In case the figure exceeds the above mentioned target, follow the procedures shown below.
4. Slide the finisher by pulling its lever.



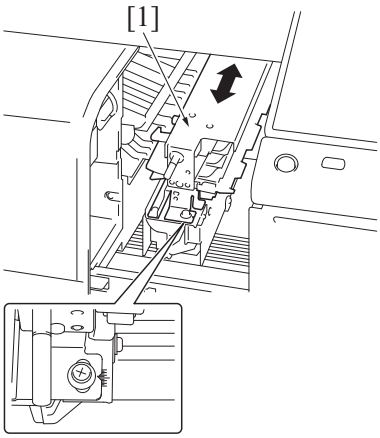
5. Remove the C-clip [1], and remove the lever [2].



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



7. Loosen two screws [1].



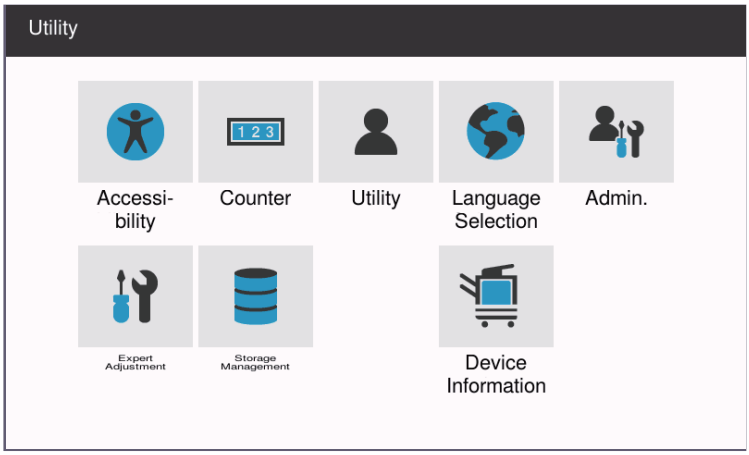
8. Move the punch unit [1] back and forth to adjust its position, referring to the guide lines.

9. Reinstall the above parts following the removal steps in reverse.
10. Make a copy and check the punch hole positions again.

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
Touch Panel Adjustment	-
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	-

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	-	
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 Auth. and 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 Authentication/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	-
	ICC Profile 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 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.” • 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].
d-Color 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.”	

Key name	Function/Precondition	
Auto Paper Select for Small Original	-	
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	-	
Searchable PDF Settings	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 (600dpi)	-	
	Gray Background Text Correction	-	
	Minimal Print	-	
	OOXML Print Mode	-	
	Gloss 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	-	
PCL Setting	Select Color	-	
	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.	
	Auto Trapping	-	
PS Setting	Select Color	-	
	PS Error Print	-	
	ICC Profile Settings	-	
	Auto Trapping	-	
	Black Overprint	-	
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	-
	WebDAV	-
	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.)
	Fax	-

Key name	Function/Precondition	
	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	-
	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
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	

Key name	Function/Precondition	
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. • 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	-
		Work Time Setting	-
Network Error Code Display Setting	-		
License Settings	Get Request Code		-

Key name	Function/Precondition	
	Install License	• By making settings in [Service Mode] -> [Billing Setting], CE can also activate functions provided by i-Option. • When activating i-Option, MFP accesses to OLI 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 OLI 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.9.1 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	Function/Precondition		
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	Function/Precondition	
Delete Unused User Box	-	
Delete Secure Print File	-	
Delete Time Setting	Auto Delete Secure Document	-
	Encrypted PDF Delete Time Setting	-

Key name	Function/Precondition
Document Delete Time Setting	-
Deletion Setting for MFP Shared Folder	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

Key name	Function/Precondition
Original Glass Original Size Detect	It will be displayed when [Service Mode] -> [Enhanced Security] -> [Administrator Feature Level] is set to “Level 2.”
Foolscap 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.”

Key name	Function/Precondition
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	-
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 Display 10 Keypad when entering Number of Sets

Key name	Function/Precondition
Display 10 Keypad when entering Number of Sets	-

6.3.29 Print end notification lamp ON time settings

Key name	Function/Precondition
Print end notification lamp ON time settings	-

6.3.30 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)
	Client Function Setting	-
	Universal Print Group Setting	-

Key name	Function/Precondition	
	IPP Authentication Settings	-
	Topology Function Setting	-
	Rebuild Serverless Pull Printing Group	-
	Domain group list	-

6.3.31 Widget Function Settings

Key name	Function/Precondition
Widget Function Settings	-

6.3.32 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	-	

6.3.33 Bypass Tray Overwrite Settings for Print PC

Key name	Function/Precondition
Bypass Tray Overwrite Settings for Print PC	-

6.3.34 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	

6.3.35 Job History Display Setting

Key name	Function/Precondition
Communication history sort method	-

6.3.36 Paper Size/Type Settings Screen Display

Key name	Function/Precondition
Paper Size/Type Settings Screen Display	-

6.3.37 Default Bypass Paper Type Setting

Key name	Function/Precondition
Default Bypass Paper Type Setting	-

6.3.38 Page Number Print Position

Key name	Function/Precondition
Page Number Print Position	-

6.3.39 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.”

6.3.40 ADF Settings

Key name	Function/Precondition
ADF Settings	-

6.3.41 ADF original skew adj.setting

Key name	Function/Precondition
ADF original skew adj.setting	It will be displayed when the ADF is installed.

6.3.42 Def. operation mode set.

Key name	Function/Precondition
Def. operation mode set.	-

6.3.43 Change Permission for Default Value Setting

Key name	Function/Precondition
Change Permission for Default Value Setting	-

6.3.44 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] is set to “Vendor 2.” • 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	
	Using the Program Function	
	Synchronize User Authentication / Account Track By User	
	Restrict Program Function Setting	
	Multiple Addresses Restriction Setting	
	Add Dest. Button	
	Allow full selection of group destinations.	
	Changing Job Priority	
	Delete Other User Jobs	
	Changing Zoom Ratio	
	Change Registered Overlay	
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	-	
Lock “My Settings” item (Copy)	-	
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] is set to “Vendor 2.”	
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.

Key name	Function/Precondition	
		• 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.
	Prohibit Functions	• 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.
	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	-	
Firmware 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."	

Key name	Function/Precondition
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			
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.	
	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

Key name	Function/Precondition		
			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	-		
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.	

Key name	Function/Precondition	
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].
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.	

Key name	Function/Precondition		
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 OLI 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	-		
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."

Key name	Function/Precondition		
		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.		
d-Color 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 d-Color Remote Access using NFC, configure a setting to enable NFC on this machine in advance. • To connect the device to this machine through d-Color 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	
Basic Setting	Operation when 1200 dpi file is received	-
PCL Setting	Brightness	-
	Contrast	-
	Saturation	-
	Color Balance	-
PS Setting	Brightness	-
	Contrast	-
	Saturation	-
	Color Balance	-
Security Setting	Print XPS/OOXML Errors	-
Interface Setting	Network Timeout	-
	USB Timeout	-
Assign Account to Acquire Device Info	-	
Direct Print Settings	PDF print settings	-

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	-
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	-

Key name	Function/Precondition	
	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	-	
Recommended settings for IP line	-	

6.10.5 Report Settings

Key name	Function/Precondition	
TX Result Report	-	
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	• 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].
	E-mail Notification	

Key name	Function/Precondition
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	It will be displayed when [Administrator] -> [Network] -> [Network Fax Setting] -> [Network Fax Setting] -> [I-Fax Function Setting] is set to “ON.”
DSN Message	
Print E-mail Message Body	
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	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].
Color/Grayscale Multi-Value Compression Method	
Internet Fax RX Ability	It will be displayed when [Administrator] -> [Network] -> [Network Fax Setting] -> [Network Fax Setting] -> [I-Fax Function Setting] is set to “ON.”
I-Fax Advanced Setting	
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	-
	Color Setting	-

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-536SD or FS-539SD is installed.
	Half-Fold Position	
	1st Tri-Fold Position Adjustment	
	2nd Tri-Fold Position Adjustment	
	Punch Horizontal Position Adjustment	It will be displayed when the finisher FS-539/FS-539SD and the punch kit PK-524 are installed.
	Paper Alignment Plate Settings	It will be displayed when the finisher FS-533 is installed.
	Punch Regist Loop Size Adjustment	It will be displayed when the finisher FS-539/FS-539SD and the punch kit PK-524 are installed.
Density Adjustment	-	
Image Stabilization	-	
Paper Separation Adjustment	-	
Color Registration Adjust	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].	
Gradation 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]. • Before executing Gradation adjust, be sure to perform Image Stabilization.	
Scanner Area	• 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.	
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	
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	-	
PS Designer Settings	-	

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 OLI 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 OLI 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 [Password Rules] which can be displayed by [Administrator] -> [Security] -> [Security Details] is set to "Enable", the password cannot be changed or registered unless it follows the conditions.**

<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	Default setting
Save Document (*1)	Select whether to allow users to save files into a USB memory.	Allow	
		Restrict	○
Print Document (*1)	Select whether to allow users to print files from a 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	○
PC Print (*2)	Select whether to allow users 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

NOTE
- **When the password rule is enabled, the password cannot be changed or registered unless it follows the above conditions.**

Setting item	Contents	Default setting
Complexity 1	Apply the following rules • Minimum number of characters specified in [Set Minimum Password Length]. • 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.	
Complexity 2	Apply the following rules • Rules of [Complexity 1] • Be sure to mix any three of the following: uppercase letters, lowercase letters, numbers, and symbols. • Password that contains easily associative words such as Admin and Public is prohibited. • Password that contains the words registered in the [Prohibited words] is prohibited. • Password that is the same as the current one and the previous one is prohibited.	
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 the MFP to receive the access from devices within the same IP group via the network.
- 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 address 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 access 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.20.2.1 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.20.2.1 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.20.2.1 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.20.2.2 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.20.2.2 (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.20.2.1 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.

This page is intentionally left blank.

I SERVICE MODE

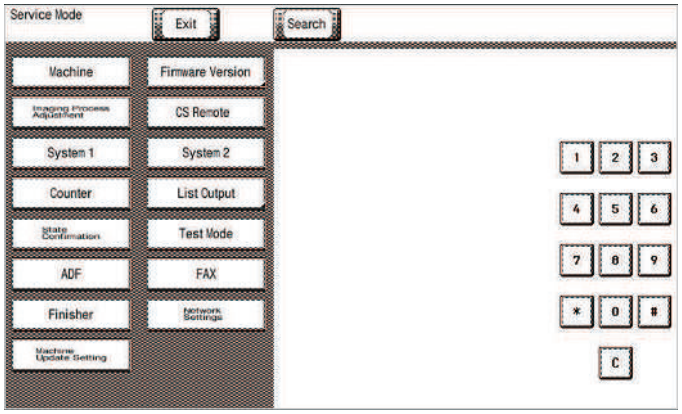
1. Outline

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.

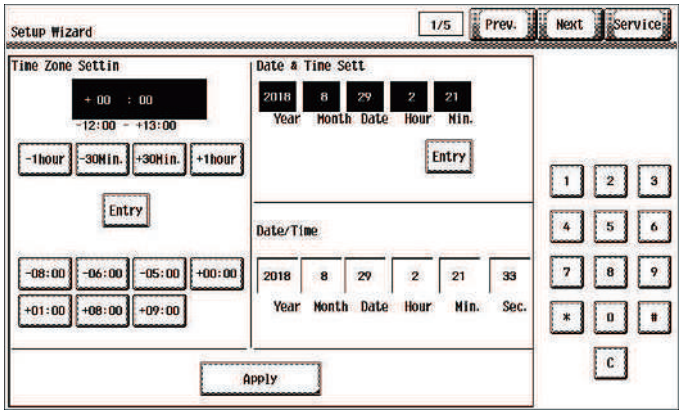
NOTE

- **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.

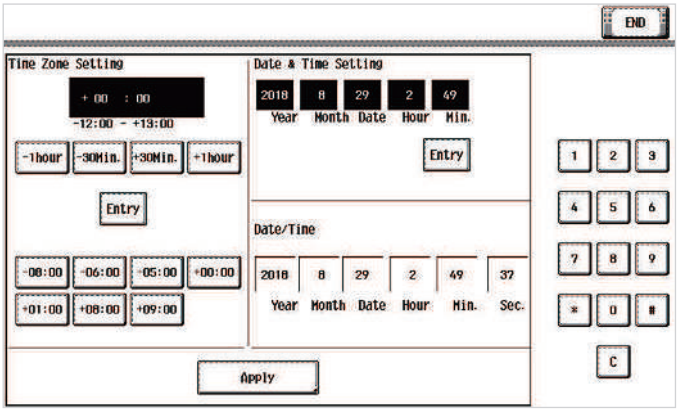
3. Time Zone/Date & Time Input mode

- 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.

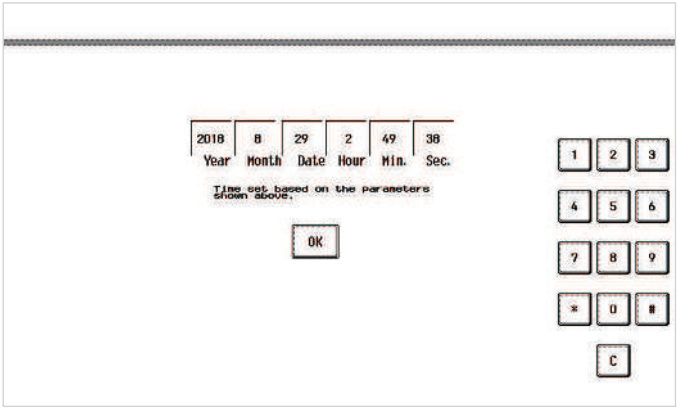
Time Zone Setting	Set the time zone applicable to the area. After the setting, touch [Entry] and then [Apply] to validate the time. The following lists settings of time zones of different areas. -08:00: U.S.: Pacific Standard Time -06:00: U.S.: Central Standard Time -05:00: U.S.: Eastern Standard Time -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].

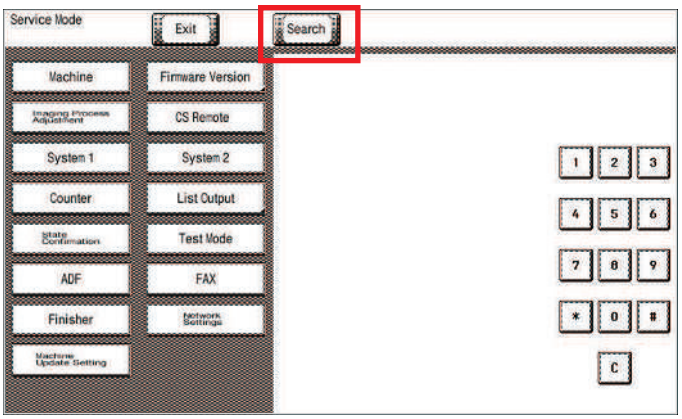


4. Search

- 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.

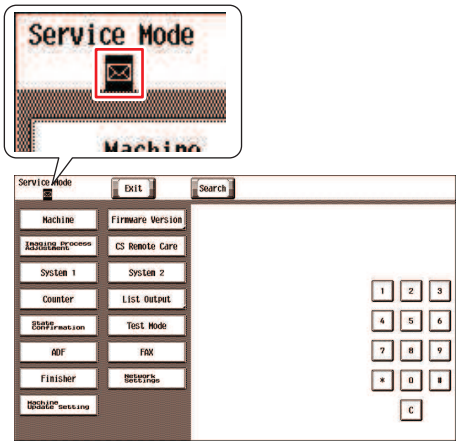


2. Enter the desired search keyword.
3. Touch [END].
4. Select the desired function from the displayed search results and touch [Start].
5. The screen for the selected function displays.

5. Method to cancel the envelope print mode

NOTE

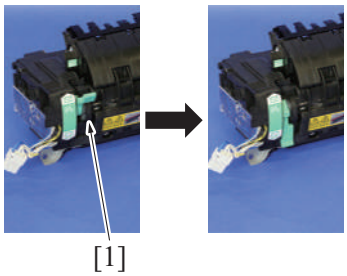
- **The envelope mark appears when attempting to enter service mode while the fusing unit is in the envelope print mode.**
- **List and other printing operations cannot be performed in envelope print mode.**



Procedure

1. Open the right door.

2. Move the position of the lever [1] to the normal print position (bottom).



3. Close the right door.

6. Machine

6.1 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
Plain Paper	- 20°C to +10°C (step: 5°C)	0°C
OHP Film		
Thick1		
Thick1+		
Thick2		
Thick3		
Post.		
Enve.	- 10°C to +20°C (step: 5°C)	
Recycled	- 20°C to +10°C (step: 5°C)	

<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.

6.2 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
Plain Paper	-20 to +20 (Step: 1)	+0
Thick1/1+		
Thick2/3		

<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.

6.3 Heater Control Level

- The fluorescent lamp connected to the same power source as the MFP may flicker due to the fusing heater lamp switching On/Off.
- The MFP DC power supply may generate noise due to the fusing heater lamp switching On/Off.
- Control the flicker and noise generation by changing the level of the fusing unit phase control.

NOTE

- **Reducing the control level can cause the DC power supply to generate noise, and increasing the level can cause the fluorescent lamp to flicker.**
- **Whenever changing the control level, specify a level that will reduce the fluorescent lamp flickering and DC power source noise.**

Setting range	Default setting
Level 1 to Level 4 (Step: 1)	Level 3

<Procedure>

1. Enter the new setting from the [+] / [-] keys.
   - When the fluorescent light flickers: Turn down the level.
   - When there is a noise at power source system such as DC power supply: Turn up the level.

6.4 Printer Area

6.4.1 Leading Edge Adjustment

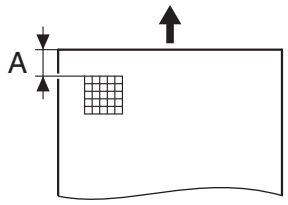
- To vary the print start position in the sub scan direction for each of different paper types. (to adjust the timing starting from the roller connection up to start of transfer output).

- 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.
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].

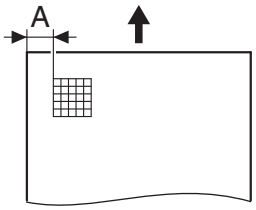
6.4.2 Printer Image Centering Side 1

- 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].

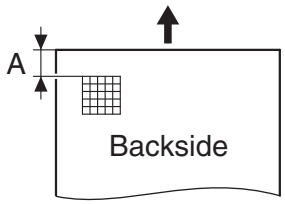
6.4.3 Leading Edge Adj. Side 2 (Duplex)

- 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.
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].

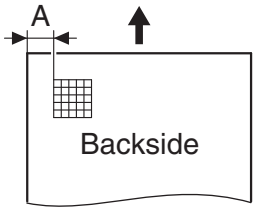
6.4.4 Prt. Image Center. Side 2 (Dup)

- 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].

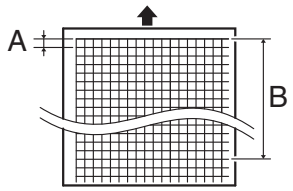
6.4.5 Paper Feed Direction Adj.

- 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].

6.4.6 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.

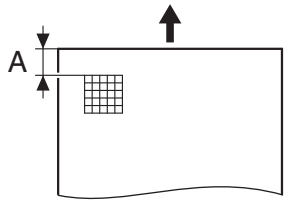
NOTE

- **[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.

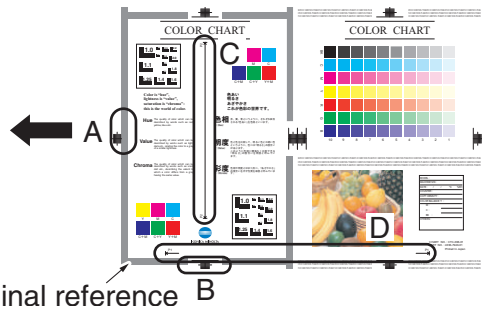


4. If width A falls outside the target, change the setting using the [+] / [-] key.
   - If width A is longer than the target, make the setting value smaller than the current one.
   - If width A is shorter than the target, make the setting value greater than the current one.
5. Press the Start key to 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].

6.5 Scan Area

6.5.1 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

Measurement position	Adjustment item
B	Scanner Image Side Edge
C	Main Scan Zoom Adj.
D	Sub Scan Zoom Adj.

6.5.2 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

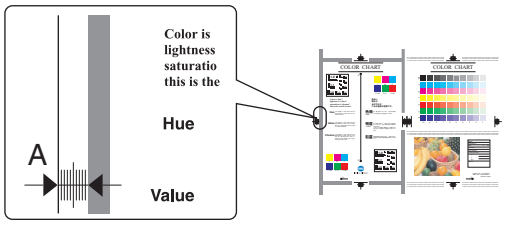
- **Width A on the test chart and one on the test pattern are measured and adjusted so that the difference of width A satisfies the the following target shown below.**
- **An adjustment must have been completed correctly of [Leading Edge Adjustment] of the [Printer Area].**

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.

6.5.3 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

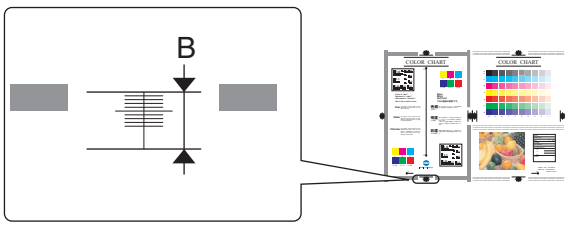
- **Width B on the test chart and one on the test pattern are measured and adjusted so that the difference of width B satisfies the the following target shown below.**
- **An adjustment must have been completed correctly of [Printer Image Centering Side 1] of [Printer Area].**

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.

6.5.4 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].**

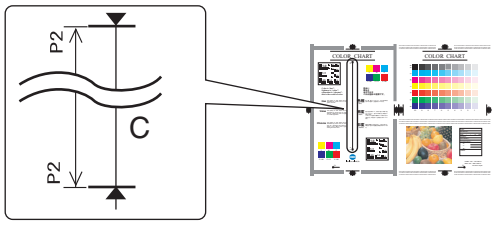
Target	Setting range	Default setting
Width C: ± 1.0 mm	0.990 to 1.010 (Step: 0.001)	1.000

* 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.

6.5.5 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].**

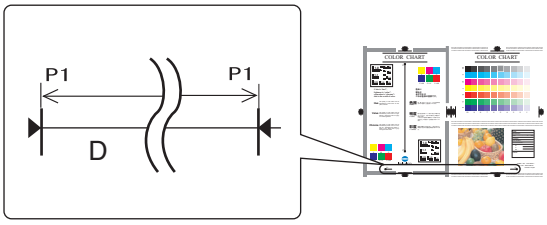
Target	Setting range	Default setting
Width D: ± 1.5 mm	0.990 to 1.010 (Step: 0.001)	1.000

* 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.

6.6 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	Tray 2-4 LCT(Built-in)	manual	Duplex
Plain Paper	-11 to +7	-11 to +7	-11 to +7	-12 to +8
Thick1/1+	-11 to +7	-11 to +7	-11 to +8	-12 to +8

	Tray 1	Tray 2-4 LCT(Built-in)	manual	Duplex
Thick2/3	-11 to +7	-11 to +7	-11 to +8	-12 to +8

<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.

6.7 Color Registration Adjustment

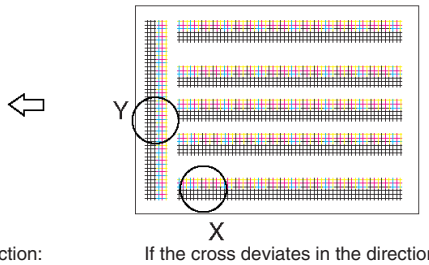
- To adjust color shift if there is any when comparing the original with copy of the plain or thick paper.
- To correct any color shift.
- This setting can be made independently for each paper type.

Setting item		Setting range	
Paper type	Color selection		
Plain Paper, Thick1/1+, Thick2, Thick3	Cyan, Magenta, Yellow	X	-6 to +6 dot (step: 1 dot)
		Y	-6 to +6 dot (step: 1 dot)

<Procedure>
1. Load manual bypass tray with A3 or A4 paper.
2. Press the Start key.
3. On the test pattern produced, check for deviation between the black line and the line of each color at positions X and Y.
4. Select the paper type and color to be adjusted.
5. Using the [+] / [-] key, change the setting value as necessary. (At this time, only the line of the selected color moves.)
   - If the cross deviates in the direction of A, decrease the setting.
   - If the cross deviates in the direction of B, increase the setting.
6. Produce another test pattern and make sure that there is no deviation.

Check Procedure

Check point X, Y



Adjustment for X direction:
Check point X

If the cross deviates in the direction of A, decrease the setting.
If the cross deviates in the direction of B, increase the setting.

Direction of A

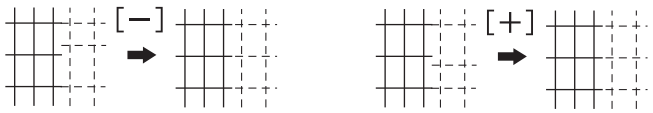
Direction of B

Adjustment for Y direction:
Check point Y

If the cross deviates in the direction of A, decrease the setting.
If the cross deviates in the direction of B, increase the setting.

Direction of A

Direction of B



6.8 Print Head Skew Adj.

Print Head Skew Adj.

- To display the default position of the skew correction motor.
- In this machine, it is not unable to enter the adjusting value.

<Procedure>
1. Touch [Print Head Skew Adj.].
2. Check the skew adjustment value for each color.
3. Touch [END].

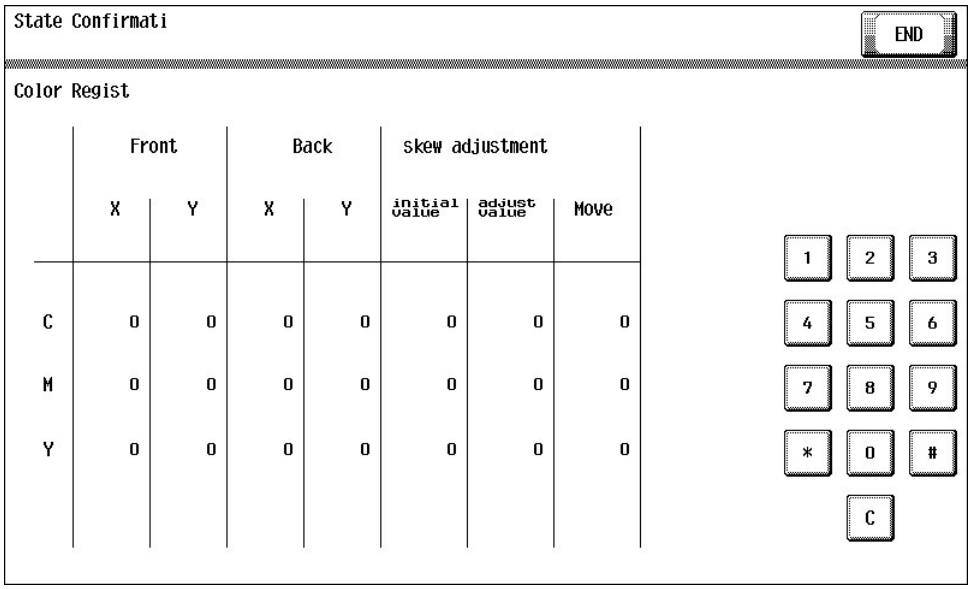
Print Head Skew Reset

- Returns the skew correction motor to the default position and clear the backup copies of the cumulative skew amount.
- To be used when the backup position information of settings in the machine is lost.
- After addressing the alert code P-14 and completing an action to the problem, perform this function.
- Use this function when the current skew correction motor's position becomes unavailable due to the skew adjustment interrupted by the door being opened or the main power switch being turned OFF.

<Procedure>
1. Touch [Print Head Skew Reset].
2. Touch the start key and execute the print head skew reset.

NOTE
- **After the print head skew reset is complete, be sure to perform [Initialize + Image Stabilization].**

Skew adjustment result on the panel
- Skew adjustment result is provided in [Skew Adjust Value], which is selected as follows: [Service Mode] -> [State Confirmation] -> [Color Regist].



Skew Adjust Value	Contents
initial value	Displays the initial position of the skew correction.
adjust value	Displays the final skew correction position that was obtained after finishing the image stabilization control.
Move	Displays how much skew adjust value changed in the previous image stabilization control.

6.9 LD adjustment

6.9.1 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.

6.10 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].

6.11 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 and Second Side.

Setting item	Setting value	Default setting
First Side/Second Side (*1)	4 mm	○
	5 mm	
	7 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.

6.12 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.**

6.13 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 thin paper is not applicable for this machine.**

Setting value	Default setting
100 %	
70 %	○

6.14 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.

7. Firmware Version

- To check the firmware version.
- Use when the firmware is upgraded.

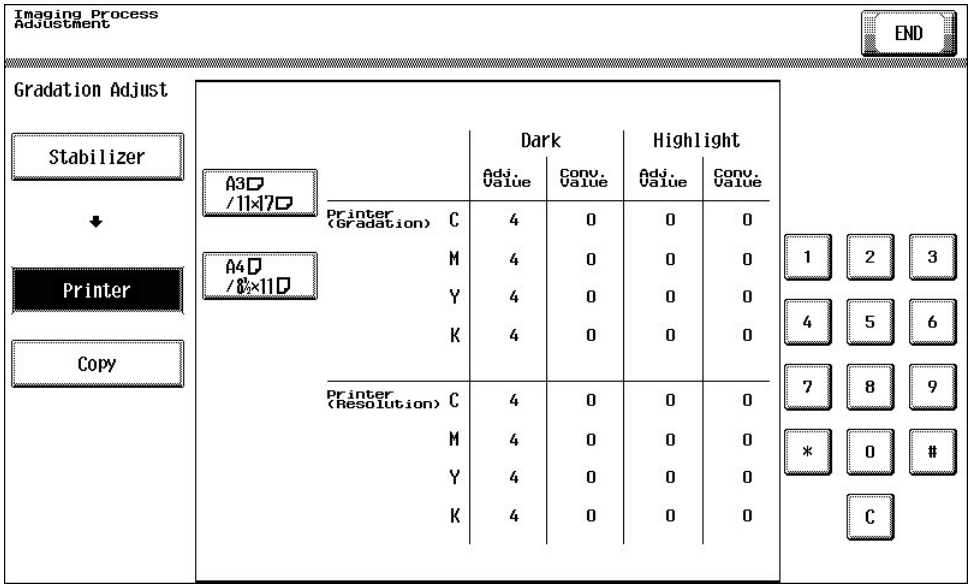
<Procedure>

1. Touch [Firmware Version].
2. Touch the [↑] / [↓] key to check the firmware version.

8. Imaging Process Adjustment

8.1 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	Description
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	Detect the gradation reproducibility of the gradation reproduction method (gradation screen, resolution screen), 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 of each color 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 color copy.**

1. Touch [Stabilizer] and the Start key to perform image stabilization.
   NOTE
   - **Before executing Gradation adjust, be sure to perform Stabilizer.**
2. Select Printer or Copy and select the paper size on which test pattern is printed.
3. Press the Start key to let the machine produce a test pattern.
   NOTE
   - **When the image stabilization performed in step 3 is NG, the Start key stops functioning.**
   - **When one of the alert codes, P-5, P-6, P-7, P-8, P-9, and P-28 is on the screen and [Printer] is selected, the Start key stops functioning.**
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. Value and Conv. Value of each color (C, M, Y and K) 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.**

8.2 Stabilizer

- Use if an image problem persists even after gradation adjustment has been executed.

Mode	Contents
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. When color shift correction is needed again after the machine maintenance.
Stabilization Only	The image stabilization sequence is carried out without clearing the historical data of image stabilization control. When [Imaging Process Adjustment] -> [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.

8.3 Max Image Density Adj

- To adjust gradation, color, and image density to target reproduction levels by varying the maximum amount of toner sticking to paper through auxiliary manual fine-adjustment of gamma of each color after gradation adjust.
- An image quality problem is not corrected even after gradation adjust has been run.

Setting item		Setting value	Default setting
Copy, Printer	Cyan, Yellow, Black	-10 to +10 (Step: 1) • "-" direction: 1 step corresponds to -0.03 in density difference. • "+" direction: 1 step corresponds to 0.01 in density difference.	0
	Magenta		2

<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].**

8.4 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
Cyan, Magenta, Yellow, 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].**

8.5 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	-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.

8.6 Monochrome Density Adjustment

- To fine-adjust the density of the printed image for a black print.
- To vary the density of the printed image of a black print.

Setting range	Default setting
-2 to +2 (step: 1)	0

<Procedure>

1. Touch [Lighter] or [Darker] as necessary to correct the image density.
   - If the black is light, touch the Darker key.
   - If the black is dark, touch the Lighter key.
2. Touch [END] to validate the setting value.

8.7 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
Cyan, Magenta, Yellow, 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.

8.8 Transfer Voltage Fine Adj

8.8.1 Primary transfer adj.

- Adjust the output value for the 1st image transfer voltage.
- To use when white spots appeared.

Setting range	Default setting
-8 to +7 (Step: 1) • 1 step is equivalent to 50 V.	0

<Procedure>

1. Select [Service Mode] -> [Test Mode] -> [Halftone Pattern] to output the red or green 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 color chart when adjusting.**

8.8.2 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.

Image side	Setting item	Setting value		Default setting
600dpi - Front	Current Control	ON		○
		OFF		
	Paper type	Plain - Color, Normal Paper - Black, Thick1 - Color, Thick Paper1 - Black, Thick1+ - Color, Thick Paper 1+ - Black, Thick 2, Thick 3, 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	Plain - Color, Normal Paper - Black, Thick1, Thick 1+, Thick 2, Thick 3, 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.

8.9 Charging voltage adjustment

- The heat dissipating effect inside the unit is reduced due to the effects of low atmospheric pressure in locations of high altitude. For this reason, since the temperature of parts and units is increased, make a charging voltage adjustment to lower the ambient temperature.
- Change the setting in accordance with your altitude.

Setting	Altitude	Default setting
0	0	0
1	500	
2	1000	
3	1500	
4	2000	
5	2500	
6	3000	
7	3500	
8	4000	
9	4500	
10	5000	

8.10 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 *	Cyan, Magenta, Yellow, Black	-5 to +5 (step: 1)	0

*: Thick 1/1+, Thick 2, Thick 3, Thick 4, Envelope, Glossy Mode (Color), Glossy Mode (Monochrome)

<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.

8.11 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.
- Also used when void areas occur on a yellow halftone pattern image or a solid pattern image.

Setting value	Default setting
ON	
OFF	○

8.12 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.

9. CS Remote

9.1 Remote Care

9.1.1 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

9.1.2 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].**

9.1.3 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.

9.1.4 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].

9.1.5 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.**

9.1.6 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.

9.1.7 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.9.2 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.**

9.1.8 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	○

9.1.9 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.

9.1.10 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	○

9.1.11 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	○

9.2 Software SW setting for Remote Care

9.2.1 List of software SW for CS Remote Care

SW No.	Functions	Ref. page
01	• Dial Mode, Line for send only, Baud rate	" I.9.2.2 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.9.2.3 SW No. 02"
03	• Trouble display setting, Auto call on the toner empty, Auto call on the waste toner bottle full	" I.9.2.4 SW No. 03"
04	• CS Remote Care communication mode	" I.9.2.5 SW No. 04"
05	• Modem redial interval	" I.9.2.6 SW No. 05"
06	• Modem redial times	" I.9.2.7 SW No. 06"
07	• Redial for response time out	" I.9.2.8 SW No. 07"
08	• Retransmission interval on E-Mail/http delivery error	" I.9.2.9 SW No. 08"
09	• Retransmission times on E-Mail/http delivery error	" I.9.2.10 SW No. 09"
10	• Time zone settings	" I.9.2.11 SW No. 10"
11	• Timer 1 RING reception -> CONNECT reception	" I.9.2.12 SW No. 11"
12	• Timer 2 Dial request completed -> CONNECT reception	" I.9.2.13 SW No. 12"
13	• Reservation	-
14	• Timer 4 Line connection -> Start request telegram delivery	" I.9.2.14 SW No. 14"
15	• Timer 5 Wait time for other side's response	" I.9.2.15 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.9.2.16 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.9.2.17 SW No. 21"
22	• Paper-based misfeed frequent occurrence threshold value	" I.9.2.18 SW No. 22"
23	• Original-based misfeed frequent occurrence threshold value	" I.9.2.19 SW No. 23"
24 : 40	• Reservation	-

9.2.2 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	

9.2.3 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	

9.2.4 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.

9.2.5 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

9.2.6 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

9.2.7 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

9.2.8 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				

9.2.9 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

9.2.10 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

9.2.11 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

9.2.12 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				

9.2.13 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				

9.2.14 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				

9.2.15 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				

9.2.16 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	

9.2.17 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	

9.2.18 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

9.2.19 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

9.2.20 SW No. 24

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	Reservation			
6				
5	Monthly reboot date of MFP If multiple selections are made, only once (minimum date) per month.	0010 0000		25th of every month
4		0001 0000		20th of every month
3		0000 1000		15th of every month
2		0000 0100		10th of every month
1		0000 0010		5th of every month
0		0000 0001		1st of every month

10. System 1

10.1 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].

10.1.1 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

10.2 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.

10.3 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].**

10.4 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.	○

10.5 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.**

10.6 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	

10.7 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	

10.8 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.

10.9 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.

10.9.1 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

10.10 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 manual Half-Fold/Tri-Fold Center Stapling 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.

10.11 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.	

10.12 Warm-up

10.12.1 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	It makes the warm-up time for black print shortest.	○
Mode 2	The warm-up time for both black and color 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 for both black and color 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 Black usage rate is high	Makes warm-up time for black shortest	Curling may occur in high humidity
2		ON	Want to prevent curling Black usage rate is high	Warm-up time for black 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 Color usage rate is high	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 Color usage rate is high	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			

10.13 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	Type 1	
	Type 2	○

<LED display forms for each type>

Machine State LED Setting		Type1	Type2
Warning Status	Attention • Toner supply door open • Toner Empty	Blinking	Blinking
	• Near life • Toner Near Empty	Blinking	Unlit
	Malfunction code	Unlit	Unlit
	Problem Unit Isolation	Blinking	Blinking
	Fatal error • Trouble code • Jam • Door opened • Life stop • Toner Empty Stop	Lit	Lit

10.14 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	

11. System 2

11.1 Set storage type

- To set the installation status of the MFP storage.

Setting value	Default setting	
	Japan	Overseas
Storage	○	-
microSD	-	○

11.2 Option Board Status

- To be used for setup of the optional fax kit.

Setting item	Setting value	Default setting
FAX (circuit 1)	Set	
	Unset	○

11.3 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, imaging 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.	○

11.4 Unit Change

11.4.1 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			

11.4.2 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	Setting value	Default setting
CMY	0 to +25 (step: 1)	0
K	0 to +25 (step: 1)	7

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	

11.5 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	
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	
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	Settings for installing MarketPlace Client App automatically	
188	Operation setting for print status LED	

Switch No.	Function	
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
	HTML 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 an unintentional sending to a wrong destination
237	HEX 20	Setting for displaying/hiding the Recommended settings for IP line.

11.5.1 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]

11.5.2 SW No.025

- FW function version setting

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00010000	10	FW compatible with version 2.0	00110000/30
00100000	20	FW compatible with version 2.1	
00110000	30	FW compatible with version 2.2	

Reference
- [Utility] -> [Device Information List]

11.5.3 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]

11.5.4 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)	

11.5.5 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]

11.5.6 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
00000001	01	Start printing with the paper settings specified by the printer driver as the manual bypass tray paper settings without giving a warning.	

11.5.7 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.	

11.5.8 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]

11.5.9 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]

11.5.10 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.	

11.5.11 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.**

11.5.12 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	

11.5.13 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.	

11.5.14 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.	

11.5.15 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]

11.5.16 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

11.5.17 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]

11.5.18 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]

11.5.19 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.	

11.5.20 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 (Japan)
00000001	01	At the time of installation, the MarketPlace Client App is not installed automatically.	

NOTE
- **The installed MarketPlace Client App is not uninstalled even if it is changed to 0x01.**

11.5.21 SW No.188

- Operation setting for print status LED

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000001	01	Blinking	00000001 / 01
00000010	02	Unlit	

11.5.22 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.	

11.5.23 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]

11.5.24 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.	

11.5.25 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	

11.5.26 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.	

11.5.27 SW No.237

HEX 20

- Setting for displaying/hiding the recommended settings for IP line in [Administrator] -> [Fax Settings] -> [Function Setting].

Bit Assignment	HEX Assignment	Details	Default value (Bit/HEX)
00000000	00	Does not show the recommended settings for IP line	00000000 / 00 (IT-6_2.0 or earlier) 00100000 / 20 (IT-6_2.1 or later)
00100000	20	Shows the recommended settings for IP line	

Reference
- [Administrator] -> [Fax Settings] -> [Function Setting] -> [Recommended settings for IP line]

11.6 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.**

11.7 LCT (Built-in) Size Settings
- To set the paper size for the built-in LCT.
- To use when the optional large capacity paper feed cabinet is mounted.

Setting value	Default setting
A4	○ (Except for North America)
$8^1/_2$ x 11	○ (North America)

- Used when the parallel large capacity cabinet is installed, and when setting the paper size for tray 3 and tray 4.

Setting value		Default setting
Tray 3, Tray 4	A4	○ (Except for North America)
	B5	
	$8^1/_2$ x 11	○ (North America)
	16K	
	A5S	
	$5^1/_2$×$8^1/_2$S	

11.8 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.

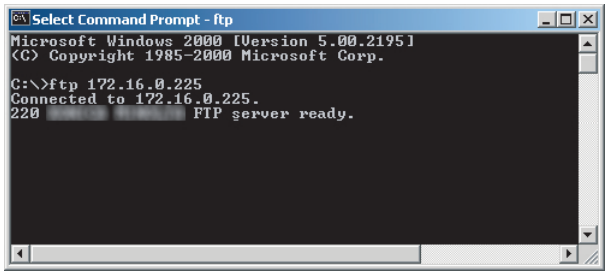
Setting item	Setting value	Default setting
Front side/back side	ON	○
	OFF	

NOTE
- **The [Front Side] and [Back Side] keys are displayed when dual scan document feeder is mounted.**

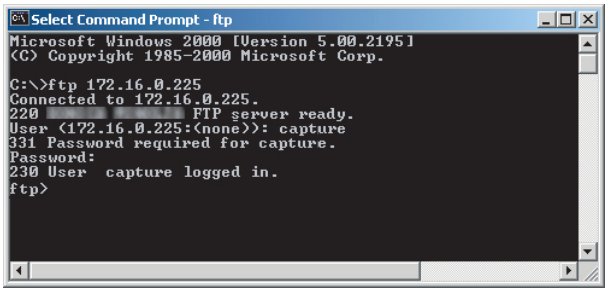
11.9 Data Capture
- When an error occurs, it acquires the print job data in order to analyze the cause of the error.
- When an error occurs, this will be used to analyze the cause of the error according to the print job data.

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.”**

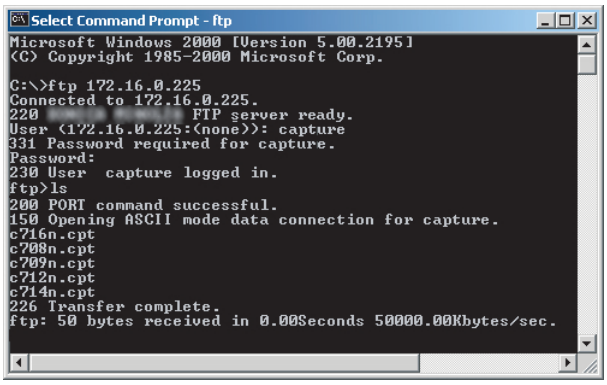
<Procedure>
1. Select [Service Mode] -> [System 2], and touch [Data Capture]. Select “ON.” (While the Data Capture setting is [ON], the print job data from the PC will be stored in the Main body storage disk.)
   NOTE
   - **Maximum 5 print job data can be stored. The data will be overwritten beginning 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.



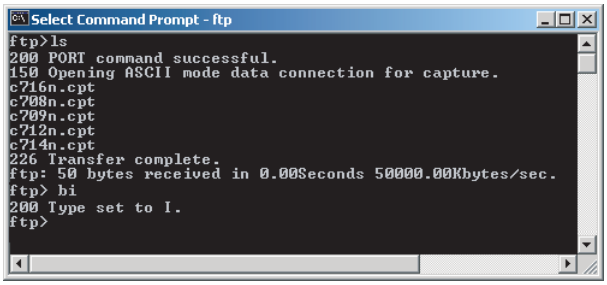
5. Input the user name and the password.
   - User name: capture
   - Password: sysadm



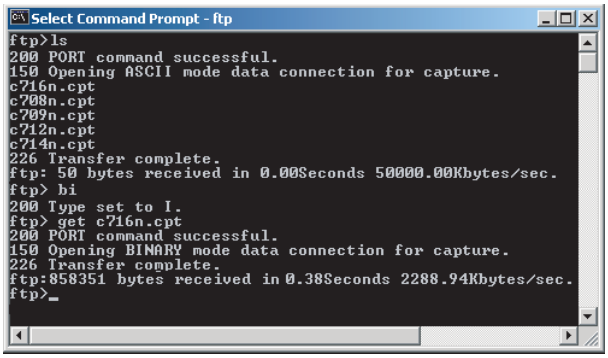
6. Using the “ls” command, display the list of the file available for capture.



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.**

11.10 Stamp

- Not used

11.11 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	○

11.12 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	○

11.13 ADF Settings

- To configure ADF installation settings.

Setting value	Default setting
Unset	○
Single-Sided Scan Tx	

11.14 Image Stabilization Setting

- To change the type and timing of image stabilization.
- To provide the desirable image stabilization control that depends on customer's machine usage pattern, i.e. the ratio of color to black print.

Setting value	Target user	Contents	Default setting
Standard	This mode is suitable for low-volume users and reduces the number of times image stabilization is carried out when the main power switch is turned ON.	If the change of absolute humidity is detected during warm-up, normal stabilization is performed during warm-up.	○
Color priority	This mode is suitable for high-volume and high ratio of color print users.	Color stabilization sequence is performed unconditionally when the main power switch is turned ON.	

Setting value	Target user	Contents	Default setting
Black priority	This mode is suitable for users who use mainly black print and use less color print. It provides monochrome stabilization and reduces the number of times image stabilization is carried out when the main power switch is turned ON.	If the change of absolute humidity is detected during warm-up, monochrome stabilization is performed during the warm-up and color stabilization is performed before color printing.	

11.15 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.

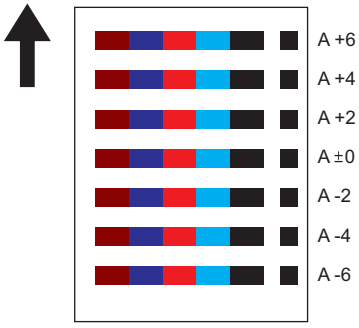
Registered Key	Paper type	Basic weight	Fusing Temperature		2nd Transfer Adj.	
		Setting range	Setting item	Setting range	Setting item	Setting range
User Paper 1	Plain paper	60 to 90 g/m^2 (Step: 1)	600 dpi	- 20 °C to +10 °C (step: 5 °C)	Front - Color Front - Black Back - Color Back - Black	-8 to +7 (Step: 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)			Front Back	-8 to +7 (Step: 1)
User Paper 6	Thick 3	210 to 256 g/m^2 (Step: 1)				

<Procedure>

1. Select the desired key from [User Paper 1] to [User Paper 6] 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.

11.16 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	○

11.17 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	○

11.18 Import Config. Data

11.18.1 BootUp Screen

- To customize the BootUp Screen displayed upon machine start-up.
- Use this feature when changing the Olivetti 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.**

11.18.2 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.**

11.18.3 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.**

11.19 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.**

11.20 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	○

11.21 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].

11.22 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	○
	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.)

11.23 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	

11.24 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].

11.25 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	

11.26 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.**

11.27 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.

11.28 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.	

11.29 Cleaning Unit Setting

- Use this feature upon the optional clean unit set-up.

Setting value	Default setting
Installed	
Not Installed	○

11.30 Fuser roll deform

- Rotates the fusing belt to prevent the same fusing belt surface from being left alone for long periods of time in order to prevent deformation.
- Prevents unevenness in gloss caused by fusing belt deformation.

Setting value	Detail	Default setting
OFF	-	○
Mode 1 *	• Rotates the fusing roller for a certain distance when the machine has been in standby mode for over 6 hours. • Rotates the fusing roller for a certain distance when the machine has been in energy save mode for over 13 days. • (Energy save mode in this case does not include sub power OFF mode and ErP Auto Power OFF mode.)	
Mode 2 *	• Rotates the fusing roller for a certain distance when the machine has been in standby mode for over 6 hours. • Rotates the fusing roller for a certain distance when the machine has been in energy save mode for over 13 days. • (Energy save mode in this case does not include sub power OFF mode and ErP Auto Power OFF mode.) • Rotates the belt for 30 seconds while warming the fusing unit up to a certain temperature during the warmup process or when starting to print in order to prevent belt deformation.	

*: Perform the following steps when selecting this setting to an option other than [OFF].
- When setting the [Weekly Timer ON/OFF Settings] found under [Administrator Settings] -> [System Settings] -> [Weekly Timer Settings] to [ON], select the energy save mode when the weekly timer is turned off to [Sleep].
- Select [Power Save] in the [Power Key Setting] found under [Administrator Settings] -> [System Settings] -> [Power Supply/Power Save Settings].
- Do not turn off the main power switch.
- Do not turn off the sub power switch. (Do not long-press the power key.)

11.31 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.

12. Counter

12.1 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.)

12.2 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 unit has turned.
Imaging Unit (C) Rotation Time	Counts how many hours PC drum has turned.
Imaging Unit (M) Rotation Time	
Imaging Unit (Y) Rotation Time	
Drum Unit(K)Rotation Time	
Imaging Unit (C) Page 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.
Imaging Unit (M) Page Count	
Imaging Unit (Y) Page Count	
Developing Unit(K)Print count	
TCR new article detection(C)	Count the number of the replacement of the toner cartridge.
TCR new article detection(M)	
TCR new article detection(Y)	
TCR new article detection(K)	
LCT(Built-in) Parts	Number of sheets of paper fed from the LCT (large capacity unit)
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)
1st Feed Count	Number of sheets of paper fed from tray 1
2nd Feed Count	Number of sheets of paper fed from tray 2
3rd Feed Count	Number of sheets of paper fed from tray 3

Counter item	Counting method
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 Jam Count	Count the frequency of paper feed jam of tray 1.
2nd Feed Jam Count	Count the frequency of paper feed jam of tray 2.
3rd Feed Jam Count	Count the frequency of paper feed jam of tray 3.
4th Feed Jam Count	Count the frequency of paper feed jam of tray 4.
Manual Tray Feed Jam Count	Count the frequency of paper feed jam of 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.
1st Feed Slip Rate	Count the frequency of paper feed slip of tray 1.
2nd Feed Slip Rate	Count the frequency of paper feed slip of tray 2.
3rd Feed Slip Rate	Count the frequency of paper feed slip of tray 3.
4th Feed Slip Rate	Count the frequency of paper feed slip of tray 4.
Manual Tray Feed Slip Rate	Count the frequency of paper feed slip of manual bypass tray.
1st Feed Maximum Slip Rate	Displays the maximum value of paper feed slip of tray 1.
2nd Feed Maximum Slip Rate	Displays the maximum value of paper feed slip of tray 2.
3rd Feed Maximum Slip Rate	Displays the maximum value of paper feed slip of tray 3.
4th Feed Maximum Slip Rate	Displays the maximum value of paper feed slip of tray 4.
Manual Tray Feed Maximum Slip Rate	Displays the maximum value of paper feed slip of manual bypass tray.

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.

12.3 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.**

12.4 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.**

12.5 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.

12.6 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.

12.7 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

12.8 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.

12.9 Service Call History (Data)

- To display the trouble history in chronological order.
- Display the latest 50 trouble codes.

12.10 ADF Paper Pages

- To display the number of sheets and mixed originals fed to the automatic document feeder.

12.11 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."**

12.12 Fax Connection Error

- To display the number of fax transmission errors occurred.

12.13 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.

12.13.1 Fixed parts to be counted

No.	CSRC parameter	Parts name	Parts No.	Limit value	Count condition	FS-539/ FS-539SD	FS-533
001	22	FNS 2-Staple Stapler	AVGR13780 F	300,000	1 count for each sheet ejection in both 1 staple and 2 staple mode	○	-
			No for MF257	500,000		-	-
002	23	FNS Center Staple & Fold Stapler	AVGR14457 V	200,000	1 count for each sheet ejection in both 1 staple and 2 staple mode	○	-

No.	CSRC parameter	Parts name		Parts No.	Limit value	Count condition	FS-539/ FS-539SD	FS-533
003	3A	Stacker Accessory Plate Movement Motor		No for MF257	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 Kn Motor		AVGR16974 N	2,000,000	1 count for each sheet ejection in half-fold, saddle stitch, and tri-fold mode	○	-
005	56	FNS 2nd Mid Fold Kn Motor		AVGR16988 Y	2,000,000	1 count for each sheet ejection in tri-fold mode	○	-
006	57	FNS FD Alignment		AVGR17979 P AVGR17980 V	1,000,000	-	-	○
007	29	PI sheet paper feed clutch (Upper)		AVGR09842 Y	1,000,000	1 count for each sheet fed from the PI upper tray	-	-
008	2A	PI sending Roller Pair/A (Upper)		No for MF257	200,000		-	-
009	2B	PI sending Roller Pair/B (Upper)		No for MF257	100,000		-	-
010	2C	PI Reversal Rubber Pair (Upper)		No for MF257	100,000		-	-
011	2D	PI Torque Limiter (Upper)		AVGR09861 N	600,000		-	-
012	3C	PI Tray Up/Down Motor (Up)		No for MF257	1,000,000	1 count for each job where paper is fed from the PI upper tray	-	-
013	2E	PI sheet paper feed clutch (Lower)		AVGR09842 Y	1,000,000	1 count for each sheet fed from the PI lower tray	-	-
014	2F	PI sending Roller Pair/A (Lower)		No for MF257	200,000		-	-
015	30	PI sending Roller Pair/B (Lower)		No for MF257	100,000		-	-
016	31	PI Reversal Rubber Pair (Lower)		No for MF257	100,000		-	-
017	32	PI Torque Limiter (Lower)		AVGR09861 N	600,000	1 count for each sheet fed from the PI lower tray	-	-
018	3D	PI Tray Up/Down Motor (Down)		No for MF257	1,000,000	1 count for each job where paper is fed from the PI lower tray	-	-
019	33	PI Regist		AVGR09842 Y	1,000,000	1 count each time a sheet is ejected from PI	-	-
020	3B	Punch Drive Motor		No Code	1,000,000	Number of sheets ejected in punch mode	○	-
021	37	PK counter	2-Holes	No Code	1,000,000	Number of punch kit punching	○	-
				No Code			-	-
			2-Holes/3-Holes	No Code			○	-
				No Code			-	-
			2-Holes/4-Holes	AVGR19072 Y			○	-
				No Code			-	-
			SWE4 holes	No Code			○	-
				No Code			-	-
022	38	Punch scrap transportation motor pair		No Code	1,000,000	-	-	-
023	39	Punch clutch		AVGR10463 X	1,000,000	-	-	-

12.14 Jam

- To count and display how many times jam has been detected on a jam location basis.

12.15 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].

12.16 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].

12.17 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”.

13. List Output

13.1 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 OLI, 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.**

13.2 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.

14. State Confirmation

14.1 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.

14.1.1 28ppm No Olivetti

Sensor Monitor 1

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
Paper feed tray1	Paper empty	Tray 1 paper empty sensor	PS24	Paper not present	Paper present
	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 tray2	Paper empty	Tray 2 paper empty sensor	PS21	Paper not present	Paper present
	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 tray3	Paper empty	Tray 3 paper empty sensor	PS114	Paper not present	Paper present
	Vertical transport	Tray 3 vertical transport sensor	PS113	Paper present	Paper not present
	Paper feed	Tray 3 paper feed sensor	PS112	Paper present	Paper not present
	Upper Limit of Lift-up	Tray 3 upper limit sensor	PS116	At raised position	Not at raised position
Paper feed tray4	Paper empty	Tray 4 paper empty sensor	PS124	Paper not present	Paper present
	Vertical transport	Tray 4 vertical transport sensor	PS123	Paper present	Paper not present
	Paper feed	Tray 4 paper feed sensor	PS122	Paper present	Paper not present
	Upper Limit of Lift-up	Tray 4 upper limit sensor	PS126	At raised position	Not at raised position
Manual	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
Paper passage transportation	Reg. roller front sensor	Registration sensor	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

Sensor Monitor 2

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
LCT(Built-in)	Lift Up Limit	Main tray upper limit sensor	PS136	At raised position	Not at raised position
	Lift Lower Limit/Stop Shift Tray	Shifter stop / lower limit position sensor	PS138	At lower position	Not at lower position
	Shift Tray Home	Shifter home sensor	PS139	At home	Not at home
	Paper Feed	Paper feed sensor	PS132	Paper present	Paper not present
	Vertical Transport	Vertical transport sensor	PS133	Paper present	Paper not present
	Paper empty	Main tray upper paper empty sensor	PS137	Original Detection Sensor	Paper present
	Main Tray Paper Empty	Main tray paper empty sensor	PS134	Original Detection Sensor	Paper present
	Division Board Position	Division board sensor	PS142	Set	Unset
	Cassette Open	Cassette set sensor	PS143	Open	Closed
	Shift Tray Empty	Sub tray paper empty sensor	PS140	Original Detection Sensor	Paper present
	LCT Paper Level Detection	Sub tray paper remaining amount sensor	PS141	Paper present	Paper not present

Sensor Monitor 3

Panel display		Part/signal name	Symbol	Operation characteristics/panel display	
				1	0
Duplex	Paper passage 2	ADU paper passage sensor/2	PS41	Paper present	Paper not present
Transfer belt	Retraction	1st transfer pressure sensor	PS39	Not released	Released
Waste Toner	Waste Toner Box Set	Waste toner box set sensor	PS100	Set	Out of position
	Waste Toner full	Waste toner full sensor	PS101	Blocked	Unblocked

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 13.5 degree	13.5 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	-	-	-

14.2 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 100 V to 1600 V.
Vg	Around -1600 V to 0 V.

LD Light Value

- Shows the LD light value of toner during print image formation.

14.3 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-C/-M/-Y/-K	Shows the T/C output reading taken last. (*)
IDC1/IDC2	Shows the latest IDC data.
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.

14.4 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.

Display item	Contents
	The normal value is 35 to 110, but the value increases depending on how long the machine has been used.
ATVC	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)

14.5 Temp. & Humidity

- Displays the temperature and humidity 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 ℃ in 1 °C increments

14.6 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.
- Used for troubleshooting for the CCD sensor/CIS.

CCD Check

- CLAMP: 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

14.7 Memory/Storage Adjustment

14.7.1 Memory Check

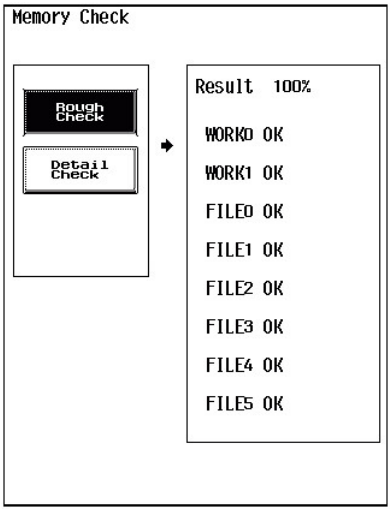
- If the copy image is faulty.
- To check correspondence of data written to and that read from memory through write/read check.
- The following shows the memory names that correspond to each memory where check is made.

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

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.

14.7.2 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.

14.7.3 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.

14.7.4 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.

14.7.5 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.

14.8 Memory/Storage Status

- To display the condition and amount of the memory and MFP storage.

14.9 Color Regist

- To check when there is a color shift.
- For each of C, M, and Y, the color shift amount (in X and Y directions) at two locations (one at the front and the other in the rear) is displayed.
- Individual color shifts of C, M, and Y are based on K and their amounts are displayed. (Display unit: dots)
- The data is updated after a color shift correction has been made or color shift adjustment has been completed.
- To display the results of skew adjustment.
- For details of skew adjustment, see the " I.6.8 Print Head Skew Adj."

14.10 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.

14.10.1 Load check list

Check code	Multi code	Symbol	Load name	Operation outline	Note
8	1	EL/Y, EL/M, EL/C	Erase LED /Y,M,C	Outputs erase LED. <At the time of start> 1. Turns on erase LED/Y, M, C remote. 2. Turns on erase LED/K low light intensity remote. 3. Turns on erase LED/K. <At the time of stop> 1. Turns off erase LED/Y, M, C remote. 2. Turns off erase LED/K low light intensity remote. 3. Turns off erase LED/K.	-
	2	EL/K	Erase LED /K		-
20	1	CL3	Tray 1 paper feed clutch	Drives the specified clutch.	-
	2	CL1	Tray 2 paper feed clutch		-
	3	CL7	Bypass paper feed clutch		-
21	1	CL2	Tray 2 vertical transport clutch	Drives the specified clutch.	-
	2	CL4	Registration clutch		-

Check code	Multi code	Symbol	Load name	Operation outline	Note
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 pick-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		The motor stops when the upper limit sensor or lower limit is detected.
	6	M113	Tray 3 lift-up motor		Only when PC-118 or PC-218 is mounted. The motor stops when the upper limit sensor or lower limit is detected.
	7	M123	Tray 4 lift-up motor		Only when PC-218 is mounted. The motor stops when the upper limit sensor or lower limit is detected.
	9	M134	LCT elevator motor moving up		Only when PC-418 is mounted. The motor stops when the upper limit sensor or lower limit is detected.
	10		LCT elevator motor moving down		
	11	M133	Shifter motor move to home position	Starts the shifter operation.	Only when PC-418 is mounted.
	12		Shifter motor shift operation		Only when PC-418 is mounted.
24	1	-	1st transfer roller (Y,M,C) pressure	Starts the pressure/release operation of the 1st transfer roller. **NOTE Be sure to perform the release operation whenever the pressure/release operation has been performed. *1**	-
	2	-	1st transfer roller (Y,M,C) release		-
28	1	M131	LCT paper feed motor high speed	Drives the motor at the specified speed.	Only when PC-418 is mounted. The paper lifting plate must not be at upper limit position.
	3		LCT paper feed motor low speed		
	5	M132	LCT vertical transport motor high speed		Only when PC-418 is mounted.
	7		LCT vertical transport motor low speed		
	9	M111	Tray 3 paper feed motor high speed		Only when PC-118 or PC-218 is mounted. The paper lifting plate must not be at upper limit position.
	11		Tray 3 paper feed motor low speed		
	13	M121	Tray 4 paper feed motor high speed		Only when PC-218 is mounted. The paper lifting plate must not be at upper limit position.
	15		Tray 4 paper feed motor low speed		
	17	M112	Tray 3 vertical transport motor high speed		Only when PC-118 or PC-218 is mounted.
	19		Tray 3 vertical transport motor low speed		
	21	M122	Tray 4 vertical transport motor high speed		Only when PC-218 is mounted.

Check code	Multi code	Symbol	Load name	Operation outline	Note
	23		Tray 4 vertical transport motor low speed		
	101	-	Tray 1 paper feed roller drive	The transport motor and Tray 1 paper feed clutch are driven.	The paper lifting plate of the tray 1 must not be at upper limit position.
	105	-	Tray 2 paper feed roller drive	The transport motor and Tray 2 paper feed clutch are driven.	The paper lifting plate of the tray 2 must not be at upper limit position.
	109	-	Tray 3 paper feed roller drive high speed	-	The paper lifting plate of the tray 3 must not be at upper limit position.
	111		Tray 3 paper feed roller drive low speed		
	113	-	Tray 4 paper feed roller drive high speed	-	The paper lifting plate of the tray 4 must not be at upper limit position.
	115		Tray 4 paper feed roller drive low speed		
	117	-	Manual bypass paper feed roller drive	The transport motor and manual bypass paper feed clutch are driven.	-
32	1	M14	Polygon motor high speed	Drives the motor at the specified speed. Drives the power supply cooling fan at the same timing.	-
	3		Polygon motor low 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**	-
	3		Transport motor low speed		-
41	1	M2	IU motor high speed	Drives the motor at the specified speed. **NOTE** **Perform the operation check after the imaging units/Y,M,C have been removed. *3**	-
	3		IU motor low speed		-
42	1	FM1	Power supply cooling fan	Drives the specified fan.	-
	2	FM2	Transfer belt cleaner cooling fan		-
	4	FM8	Exit cooling fan		-
	5	FM14	Exhaust fan/1		Only when CU-101 is mounted.
	5	FM15	Exhaust fan/2		Only when CU-101 is mounted.
	5	FM16	Suction fan		Only when CU-101 is mounted.
45	1	M3	Fusing motor high speed	Drives the motor at the specified speed.	-
	3		Fusing motor low speed		-
	5		Fusing motor standby speed		-
60	33	M1	Document feed motor speed1/ normal rotation (300dpi Monochrome)	• Drives the motor at the specified speed. • Stop rotating when pressing the Stop key.	Only when DF-633 is mounted.
	34		Document feed motor speed2/ normal rotation (600dpi Monochrome)		
	35		Document feed motor speed3/ normal rotation (300dpi Color)		
	36		Document feed motor speed4/ normal rotation (600dpi Color)		
	38		Document feed motor speed1/ reverse rotation (300dpi Monochrome)		
	39		Document feed motor speed2/ reverse rotation (600dpi Monochrome)		
	40		Document feed motor speed3/ reverse rotation (300dpi Color)		
	41		Document feed motor speed4/ reverse rotation (600dpi Color)		
	145	CL1	Paper feed clutch	• Drives the clutch.	

Check code	Multi code	Symbol	Load name	Operation outline	Note
	146	CL2	Registration clutch	Stop rotating when pressing the Stop key.	
83	0	SD3	Gate switch solenoid	Turns ON the solenoid.	Only when MK-603 is mounted. The solenoid will stop after a lapse of predetermined time.
84	1	M4	Reverse motor high speed (Normal rotation)	Drives the motor at the specified speed and direction.	-
	3		Reverse motor low speed (Normal rotation)		-
	5		Reverse motor high speed (Reverse rotation)		-
	7		Reverse motor low speed (Reverse rotation)		-
	11	M6	Upper paper exit motor high speed (Normal rotation)		Only when MK-603 is mounted.
	13		Upper paper exit motor low speed (Normal rotation)		
	15		Upper paper exit motor high speed (Reverse rotation)		
	17		Upper paper exit motor low speed (Reverse rotation)		
85	1	M5	ADU transport motor high speed	Drives the motor at the specified speed.	-
	3		ADU transport motor low speed		-
	5		ADU transport motor high speed (speed up)		
	7		ADU transport motor low speed (speed up)		-

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 cleaning blades of the drum unit/Y,M,C, if driven with no toner deposited, may be curved to warp.**

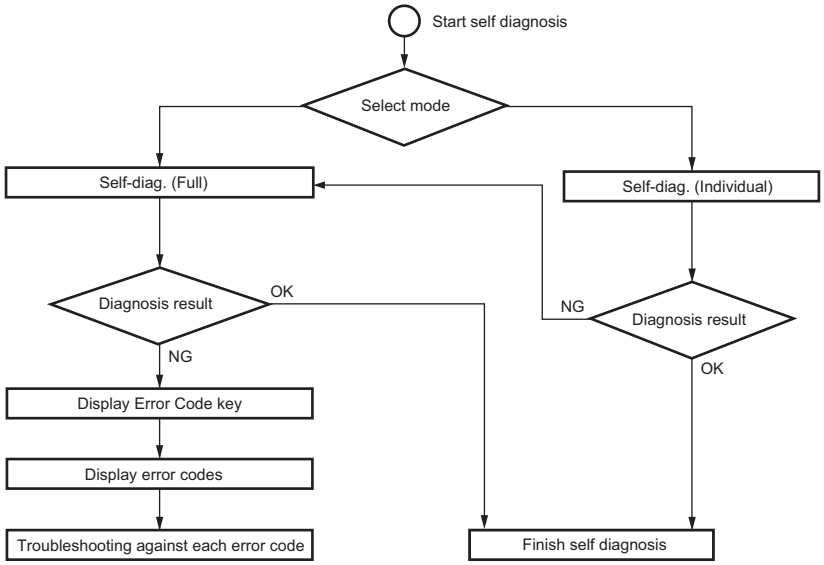
14.11 Adjustment Data List

- To display the adjustment and setting value set in the main body.

14.12 Self-diag. (Full/Individual)

14.12.1 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

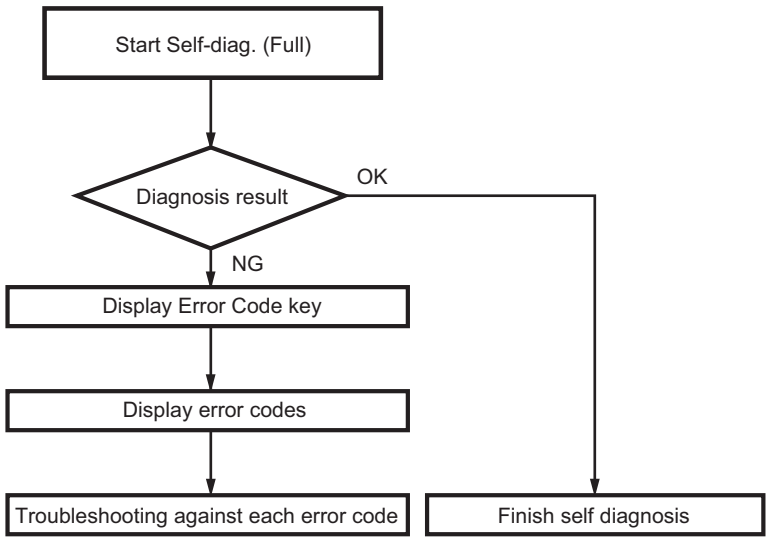
Check item	
NVMe Storage Check	Device recognition
	R/W Check
	S.M.A.R.T diag.
	MFP FW checksum
	Partition check
I2C Check	TPM
	AUDIO (Control)
	PS-CPU
I2S Check (*)	AUDIO (Voice)
Sys/Image mem check	WORK0 (Main Memory ch.A)
	WORK1 (Main Memory ch.B)
Various USB Check	USB Device
	Keyboard (*)
	USB Memory (*)
CCD Board Check	I/P Image Bus Check
	Line RAM Comparison
ADF Board Check	MINET communication check
FAX Board Check (*)	Line1 (*)
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.

14.12.2 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.

14.12.3 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)
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) 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)

<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.**

(4) 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.”

(5) CCD Board Check

- To check each item of the CCD board individually.

Diagnosis item	Relevant electrical parts
I/P Image Bus Check	Connection cable, CIS module (CIS), CPU board (CPUB), Base board (BASEB)
Line RAM Comparison	CIS module (CIS)

<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).

(6) 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).

(7) FAX Board Check

- To check each item of the FAX board individually.

Diagnosis item	Relevant electrical parts
Line 1	Fax board (FAXB)

<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).

(8) 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.”

(9) 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)*

<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).

15. Test Mode

15.1 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.

15.1.1 Gradation Pattern

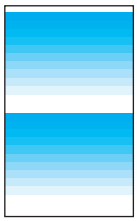
- To produce a gradation pattern.
- Used for checking gradation reproducibility.

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	
Single color gradation setting	12 gradations, 24 gradations, 256 gradations	
Printable area	Full Bleed, Front Half	
Color mode	Black(1PC), Cyan, Magenta, Yellow, Black(4PC), CMYK, 8 Color, 4 Color	

NOTE

- **[Front Half] is selectable only for 8-color/one-side printing.**
- **When 24 Gradations or 256 Gradations is selected, [8 Color] or [4 Color] is not selectable in color mode.**

Sample



- SINGLE
- HYPER
- Gradation
- Full Bleed
- Cyan

15.1.2 Halftone Pattern

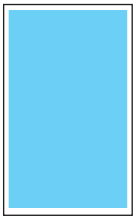
- To produce a solid halftone pattern.
- Used for checking uneven density and pitch noise.

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, Front Half	
Color mode	Black(1PC), Cyan, Magenta, Yellow, Black(4PC), Red, Green, Blue, CMYK, 3 Color, 4 Color, MIX	
Density	0 to 255	

NOTE

- **[Front Half] is selectable only for one-side printing.**

Sample



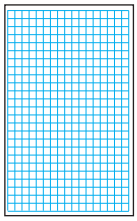
- SINGLE
- HYPER
- Gradation
- Full Bleed
- Cyan
- Density: 128

15.1.3 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	
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	
Color mode	Black(1PC), Cyan, Magenta, Yellow, Black(4PC), Red, Green, Blue, CMYK, 3 Color, 4 Color	
CD Width	0 to 191 dots	
FD Width	0 to 191 dots	
Density	0 to 255	
Output pattern	Normal, Reverse	

Sample



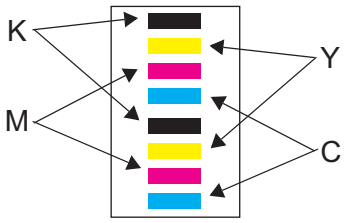
- SINGLE
- FEET
- Cyan
- CD Width: 5
- FD Width: 5
- Density: 255
- Normal

15.1.4 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-sided	
Density	0 - 255	

Sample



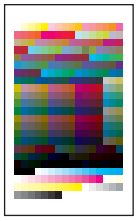
- SINGLE
- HYPER
- Gradation
- Density: 255

15.1.5 Color Sample

- To produce a color sample.
- Produce 12-gradation-level patches of C, M, Y, K, R, G, and B, and a patch of each of the 12 reference colors in the hue circle with lightness and saturation corrected.
- Used for checking reproducibility of each of the different colors.

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	

Sample



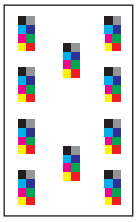
- SINGLE
- HYPER
- Gradation

15.1.6 8 Color Solid Pattern

- To produce an 8-color solid pattern.
- Used for checking color reproducibility and uneven density of each color.

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	
Density	0 to 255	

Sample



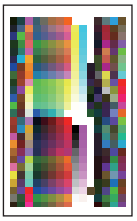
- SINGLE
- HYPER
- Gradation
- Density: 255

15.1.7 CMM pattern

- To produce a CMM (Color Management Module) pattern.
- Used to check color difference depending on the places where output is made.

Setting item	Setting value
Copies	1 (always)
Screen pattern setting	Error diffusion, Gradation, Resolution
Angle	0 degrees, 90 degrees, 180 degrees, 270 degrees

Sample



- Error diffusion
- Angle: 270 degrees

15.2 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 value
Pattern Printing	Yes, No
Select Tray	Tray 1, Tray 2, Tray 3, Tray 4, Manual
Paper Size	A3, A4, 11 x 17, $8^1/_2$ x 11, Post, A6Card, 4 x 6
Paper Type	Plain Paper, Thick1, Thick 1+, Thick2, Thick3, OHP Film, Enve.

NOTE

- **[Paper Size] is selectable only when [Manual] is selected in Select Tray.**
- **[Enve.] is selectable only when [Tray 1] or [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.

15.3 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

Setting item	Setting value	Default setting
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

16. ADF

16.1 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

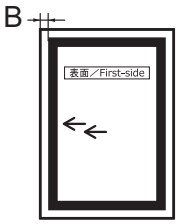
Target	Setting range	Default setting
0.0 ± 2.0 mm	-4.0 to +4.0 mm (1 step: 0.1 mm)	0.0 mm

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

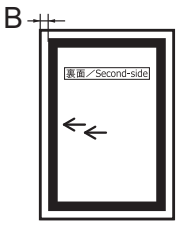
Target	Setting range	Default setting
0.0 ± 2.0 mm	-4.0 to +4.0 mm (1 step: 0.1 mm)	0.0 mm

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.



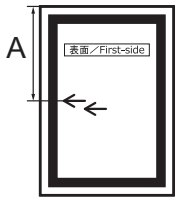
4. Touch [Sub Scanning Direction 2-Side].
5. Enter the value from the 10-key pad. (Press the [+/-] key to change the +/- code.)
   - If the difference in the widths of B is greater than the target, enter the [+] value.
   - If the difference in the widths of B is smaller than the target, enter the [-] 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.



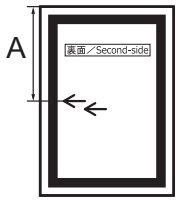
4. Touch [Main Scanning (Front)].
5. Enter the value from the 10-key pad. (Press the [+/-] key to change the +/- code.)
   - If the difference in the widths of A is greater than the target, enter the [+] value.
   - If the difference in the widths of A is smaller than the target, enter the [-] value.
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].

16.2 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].

16.3 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].**

16.4 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.**

16.5 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
PS13	Feed Open&Close	Upper door sensor	Open	Closed
PS3	Registration Sensor	Registration sensor	Paper present (blocked)	Paper not present (unblocked)
PS2	After Separate	After separate sensor	Paper present (unblocked)	Paper not present (blocked)
PS5	Paper Exit	Document exit sensor	Paper present (unblocked)	Paper not present (blocked)
RS201	DF Open	Original cover sensor	Open	Closed
PS4	Before Read	Document reading sensor	Paper present (blocked)	Paper not present (unblocked)
PS6	Length Sensor1	Document length sensor/1	Paper present	Paper not present
PS7	Length Sensor2	Document length size sensor/2	Blocked	Unblocked
PS1	Original Detection Sensor	Document empty sensor	Paper present	Paper not present
PS8	Width Sensor 1	Mixed Original sensor/1	Paper present	Paper not present
PS9	Width Sensor 2	Mixed Original sensor/2	Paper present	Paper not present
PS10	Width Sensor 3	Mixed Original sensor/3	Paper present	Paper not present

16.6 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.**

16.7 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].

16.8 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].

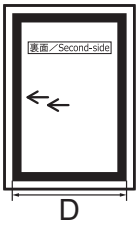
16.9 FD-Mag. Adj. (B)

- 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].

16.10 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-633	DFSkew(Front)	Adjusting front side skew feed on ADF

16.11 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.

Adjustment item	Contents
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.

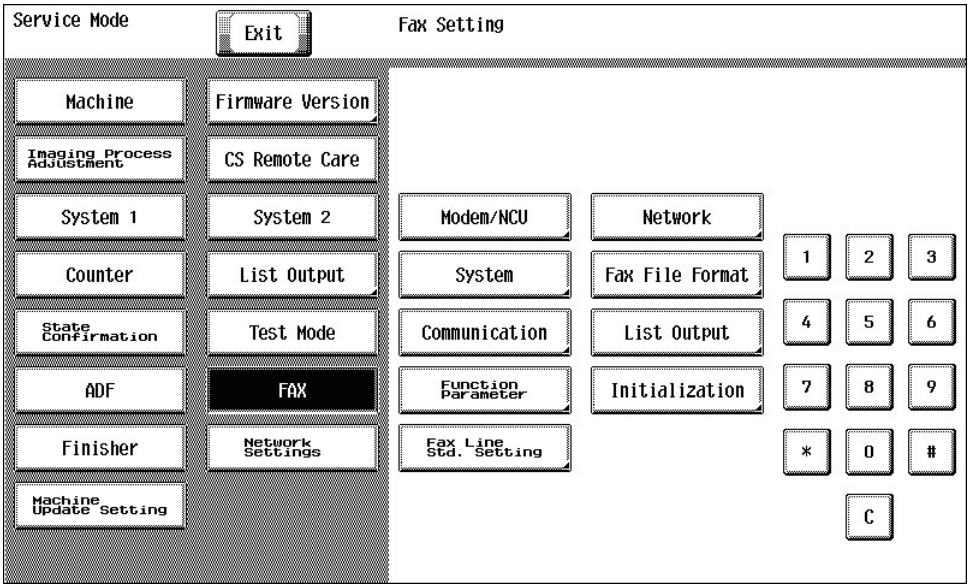
DF	Reference
DF-633	Adjusting front side skew feed on ADF

<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].**

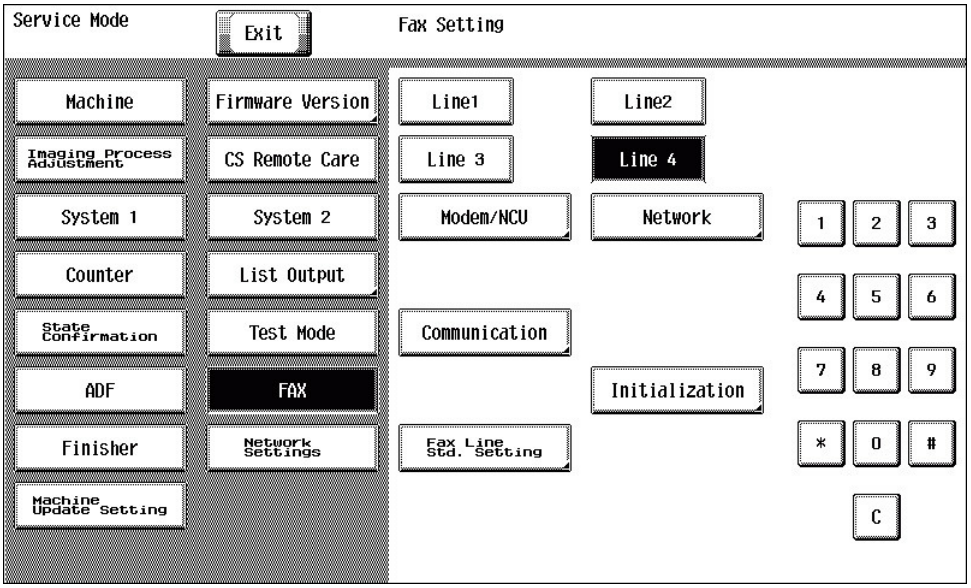
17. FAX

17.1 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.

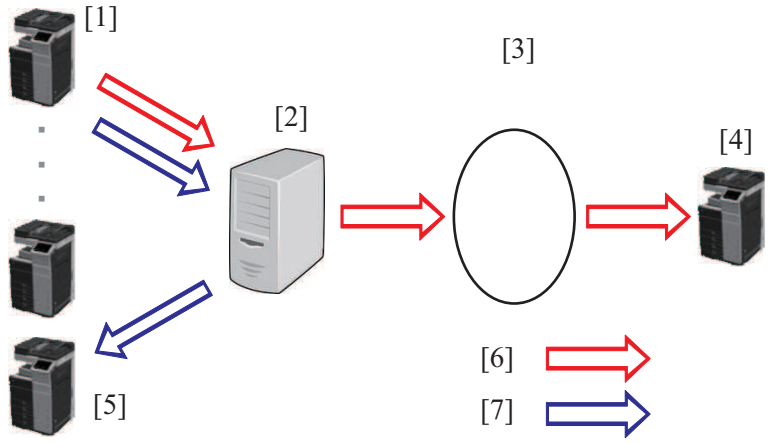
- System, Fax File Format, List Output, Function Parameter

NOTE

- **Fax lines that can be set may vary by different MFPs. For details, see “PRODUCT OUTLINE.”**

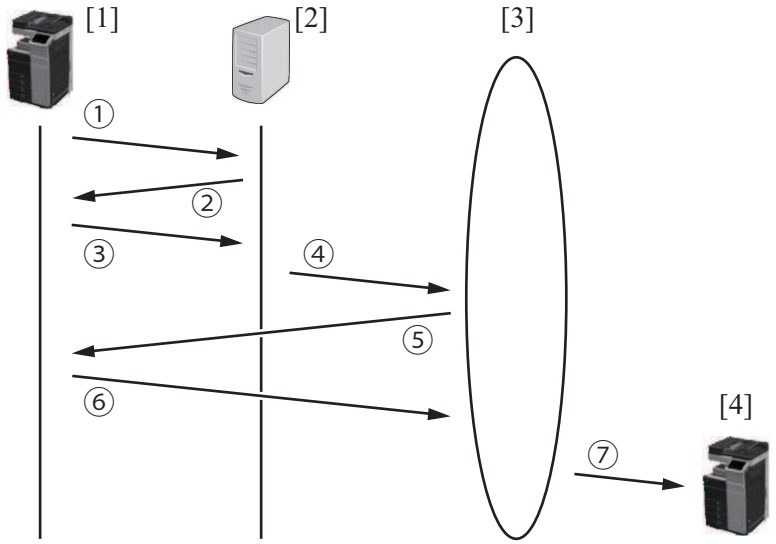
17.1.1 PBX operating environment

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.

17.2 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

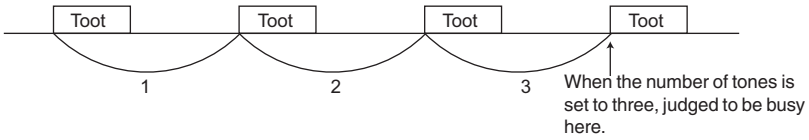
Setting item	Contents	Setting value	Default setting
Send/Rec.	To correct the delay characteristics of the communication line.	0 Km	○
		1.8 Km	
		3.6 Km	
		7.2 Km	

17.3 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)

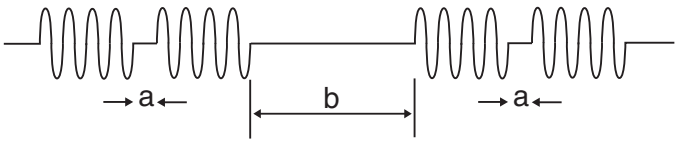
- *: No. of Times of Busy Tone Detection



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	-	-

17.4 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

17.5 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.

17.6 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

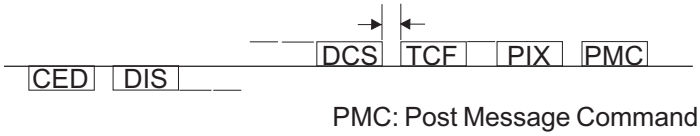
Int’l Comm. Function

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

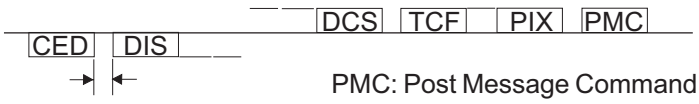
Setting item	Contents	Setting value	Default setting
T1	T1 timer (T.30 standard) • Calling: Designate by the response waiting timer • Called: Starts after DIS is output. The waiting time until DCS is received. Response waiting timer (55sec) • Calling: Starts after dialing. Until CED is received.	30 to 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	○

17.7 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	○

17.8 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].

17.9 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.17.5 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.

17.10 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].

17.11 Function parameter list (for all fax lines)

17.11.1 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	-	-	

17.11.2 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	

17.11.3 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	

17.11.4 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

17.12 Function parameter list (for separate line)

17.12.1 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

17.12.2 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)

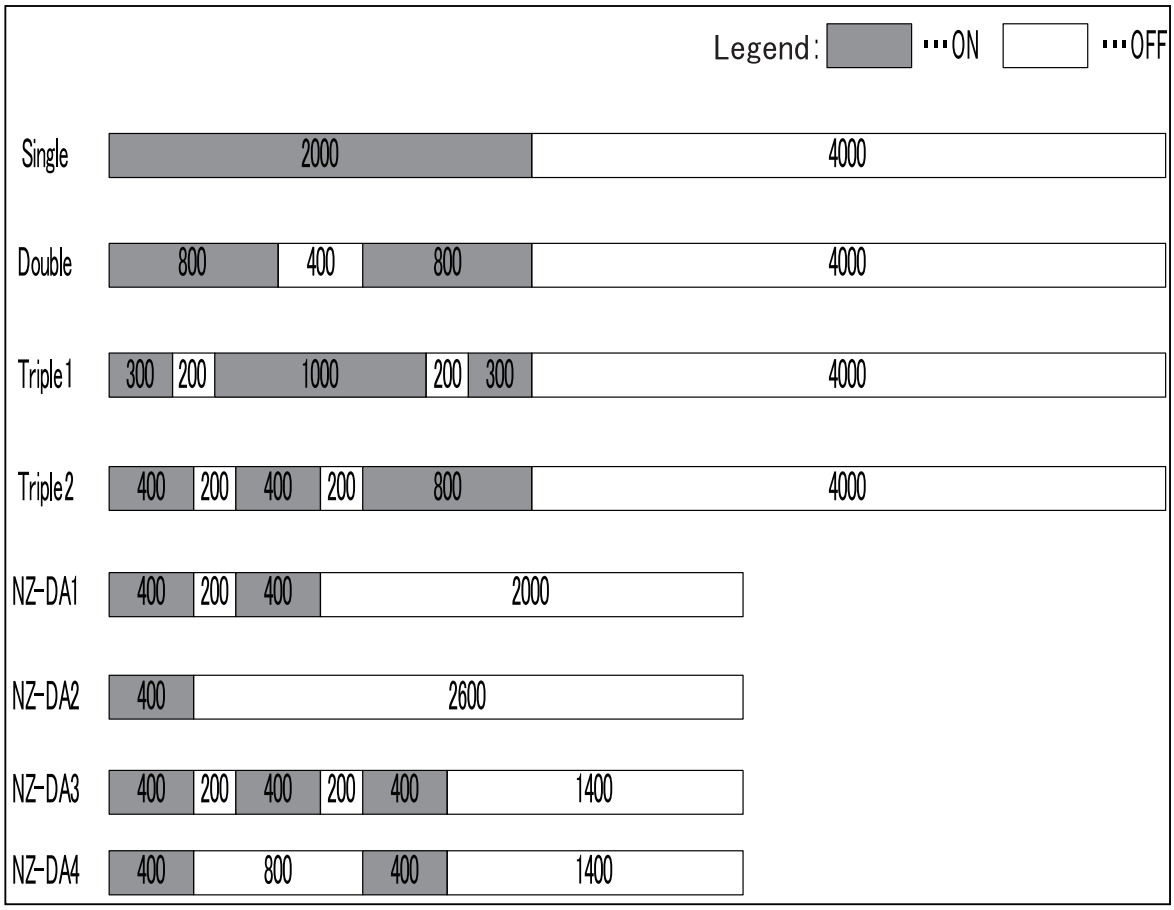
17.12.3 Function setting 3

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



17.12.4 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

17.12.5 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

17.12.6 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	○	

17.12.7 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	×	

17.13 Recommended Settings for IP Line

To set the line parameter settings related to VoIP in FAX nonvolatile parameter setting.

NOTE

- **It will be displayed when [Service Mode] -> [System 2] -> [Software Switch Setting] shows that switch No.237 is set to [00100000] at Bit assignment/[20] at HEX assignment.**
- **If the fax destination is changed, all of these settings are initialized.**
- **The default setting value varies depending on the fax destination.**

Region List of Default Settings

Destination	Region
JP	JP
US	US, CA
EU	EU, DE, GB, FR, CH, NL, BE, AT, NO, SE, FI, IE, DK, IT, ES, PT, PL, RU
Others	AU, NZ, ZA, TW, SA, CN, MY, SG, KR, HK, AR, BR, VN, PH, OT

Protocol

Setting item	Contents	Setting value	Default setting			
			JP	US	EU	Others
V34 TX	To set whether or not to use the V34 protocol.	ON				
		OFF	○	○	○	○
V34 RX	To set whether or not to use the V34 protocol.	ON				
		OFF	○	○	○	○

Speed 1

Setting item	Contents	Setting value	Default setting			
			JP	US	EU	Others
V17 TX Max. Speed	To set the max. speed for transmission.	V17-14400 bps				
		V17-12000 bps	○	○		○
		V17-9600 bps				
		V17-7200 bps				
		V29-9600 bps			○	
		V29-7200 bps				
		V27-4800 bps				
		V27-2400 bps				
V17 RX Max. Speed	To set the max. speed for reception.	V17-14400 bps	○	○		○
		V29-9600 bps			○	
		V27-4800 bps				

Speed 2

Setting item	Contents	Setting value	Default setting			
			JP	US	EU	Others
RX Max. Bit Speed	To set the max. bit speed for reception in V.34.	2400 to 33600 bps (step: 2400 bps)	28800 bps	24000 bps	21600 bps	21600 bps
RX Max. Bit Speed	To set the max. bit speed for transmission in V.34.	2400 to 33600 bps (step: 2400 bps)	28800 bps	24000 bps	21600 bps	21600 bps
Max. SYMB Speed	To set 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 changes 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				

Level

Setting item	Contents	Setting value	Default setting			
			JP	US	EU	Others
PIX TxATT	To set the PIX transmission level. Set directly to modem, no external attenuator.	-15 to -10 dBm (Step: 1 dBm)	-15 dBm	-15 dBm	-15 dBm	-15 dBm
CED/ANSam TxATT	To set the CED/ANSam transmission level. Set directly to modem, no external attenuator.	-15 to -10 dBm (Step: 1 dBm)	-15 dBm	-15 dBm	-15 dBm	-15 dBm
TONE/procedure signal TxATT	To set the TONE/procedure signal TxATT transmission level. Set directly to modem, no external attenuator.	-15 to -10 dBm (Step: 1 dBm)	-15 dBm	-15 dBm	-15 dBm	-15 dBm
CD/SED ON Level	To set the CD/SED ON transmission level. Set directly to modem, no external attenuator.	-48 to -33 dBm (Step: 5 dBm)	-43 dBm	-43 dBm	-43 dBm	-43 dBm

Cording Ability

Setting item	Contents	Setting value	Default setting			
			JP	US	EU	Others
Cording Ability	To set the coding ability. Effective to both sending and reception.	MH				
		MH/MR				
		MH/MR/MMR	○	○	○	○
		MH/MR/MMR/JBIG				

Timer1

Setting item	Contents	Setting value	Default setting			
			JP	US	EU	Others
CFR-PIXWAIT	To set the delay time between CFR and PIX.	6.0 to 25.5 s (Step: 0.5 s)	10.0 s	10.0 s	10.0 s	10.0 s
EOM-PIXWAIT	To set the delay time between EOM and PIX.	5.5 to 25.5 s (Step: 0.5 s)	10.5 s	10.5 s	10.5 s	10.5 s

Setting item	Contents	Setting value	Default setting			
			JP	US	EU	Others
T4 Timer(Tx)	To set the T4 Timer (Tx) value.	3.0 to 4.5 s (Step: 0.5 s)	3.0 s	3.0 s	3.0 s	3.0 s
T4 Timer(Rx)	To set the T4 Timer (Rx) value.	3.0 to 4.5 s (Step: 0.5 s)	3.0 s	3.0 s	3.0 s	3.0 s

Timer2

Setting item	Contents	Setting value	Default setting			
			JP	US	EU	Others
between V.21 Signals	To set the signal interval for V.21.	30 to 90 ms (Step: 5 ms)	70 ms	70 ms	90 ms	70 ms
Calling Interval	To set the call interval.	3 to 60 s (Step: 1 s)	5 s	5 s	5 s	5 s

Others

Setting item	Contents	Setting value	Default setting			
			JP	US	EU	Others
No. of DIS Waiting Times	No. of DIS waiting times at overseas communication	1 time	○	○	○	○
		2 times				
Admin. Screen Display Sett. (ECM Function)	To set whether or not to use the administrator screen display (ECM function).	ON	Do not display	Do not display	○	Do not display
		OFF	Do not display	Do not display		Do not display
Admin. Screen Display Sett. (DTS Function)	To set whether or not to use the administrator screen display (DTS function).	ON	Do not display	Do not display	○	Do not display
		OFF	Do not display	Do not display		Do not display
ECM Function	To set whether or not to use reception ECM (error correction mode).	ON	Do not display	Do not display	○	Do not display
		OFF	Do not display	Do not display		Do not display
DTS Function	To set whether or not to use the DTS function.	ON	Do not display	Do not display		Do not display
		OFF	Do not display	Do not display	○	Do not display

18. Finisher

18.1 FS-FN adjustment

18.1.1 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

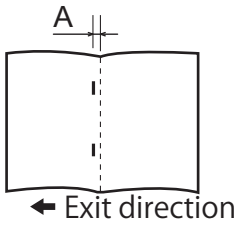
Target	Setting range
0 ± 1.0 mm	-10.0 mm to +10.0 mm (1 step: 0.1 mm)

NOTE

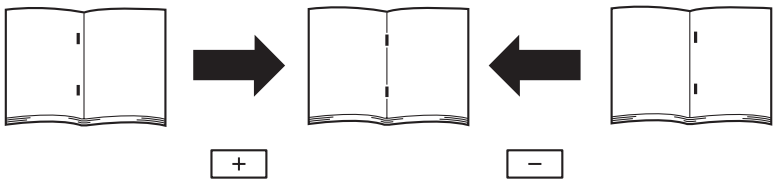
- **After [Half-Fold Position] adjustment, make this [Center Staple Position] adjustment.**

<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.

18.1.2 Half-Fold Position

- Use this adjustment to adjust the half-fold position in half-fold printing.

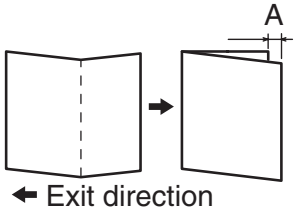
<Target model>

- FS-539SD

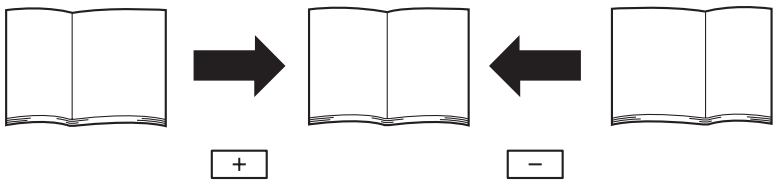
Target	Setting range
A = Less than 1.0 mm	-10.0 mm to +10.0 mm (1 step: 0.1 mm)

<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.

18.1.3 Punch Edge Adj

- To change the horizontal position of the punch holes.

<Target model>

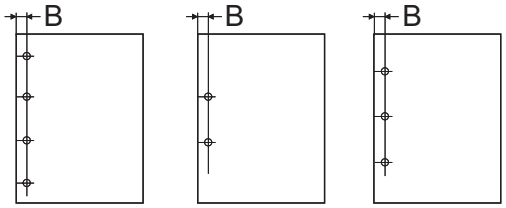
- FS-539 + PK-524

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	

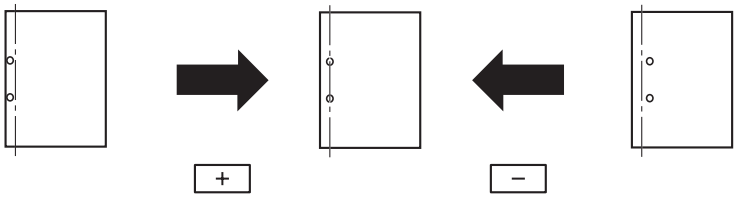
- *: The adjustment 1 is equivalent to 0.5 mm.

<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.

18.1.4 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-533 + PK-519, FS-539 + PK-524

Setting range	Default setting
-4.0 to +4.0 mm (1 step: 1 mm)	0.0 mm

<Procedure>

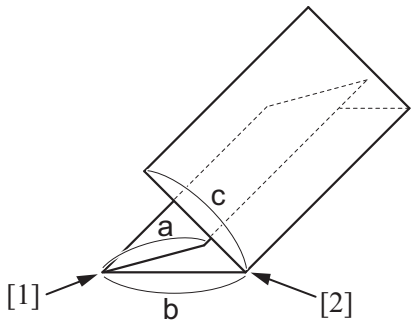
1. Select a paper type where the punch hole position needs adjustment.
2. Set the target using the [+] / [-] keys.
   - Misaligned punched holes: Enter the value of [+]
   - Wrinkled paper: Enter the value of [-]
3. Touch [OK].

18.1.5 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



[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.

18.1.6 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-533

Mode
Stapler Movement
Alignment Plate F/R Movement
Tray up/down Operation
Exit Roller Retraction
Conveyance Drive
Paper Surface Detect Solenoid
Paddle 1 Rotation Solenoid Drive
Punch Drive Motor
Batch Solenoid Driver

(b) 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

Mode	
	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

18.1.7 Alignment Plate Position

- Use this feature to fine adjust the aligning plate that aligns ejected paper.

<Target model>

- FS-533

Setting range	Default setting
-10.0 mm to +10.0 mm (1 step: 0.1 mm)	0.0 mm

<Procedure>

1. Select the [Alignment Plate Position (Back)] or [Alignment Plate Position (Side)].
2. Set and adjust a value with the [+] / [-] key.
3. Touch [OK].

18.1.8 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

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].

18.2 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].

19. Network Settings

19.1 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, d-Color 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.

19.2 Remote Service Setting

19.2.1 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

19.2.2 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

19.2.3 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.

19.2.4 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.

19.2.5 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.

19.3 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

19.4 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

20. Machine Update Setting

20.1 Internet ISW

20.1.1 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	○

20.1.2 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.

20.1.3 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	○

20.1.4 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.

20.1.5 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.

20.1.6 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.

20.2 Machine Auto Update setting

20.2.1 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.

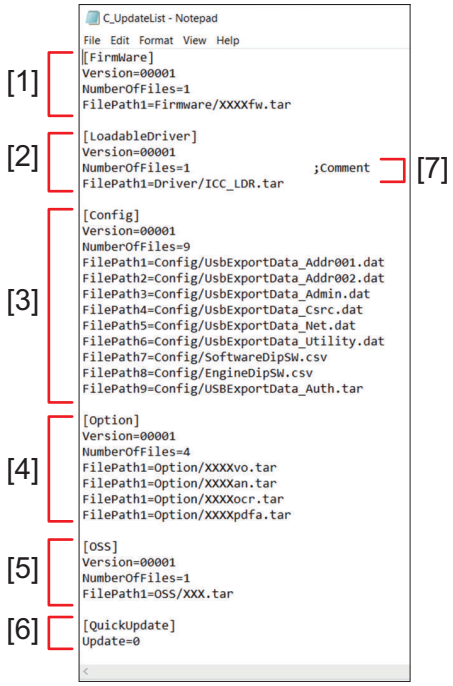
(2) Preparations

- 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], [OSS], [QuickUpdate] and Update must be specified by using the capital letters and small letters properly.**

A sample of C_UpdateList.ini



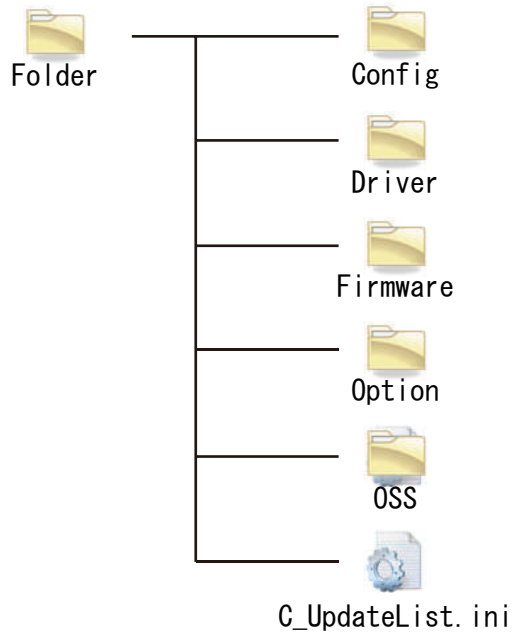
	Setting item	Description	Parameter list
[1]	[FirmWare]	Firmware updating information	Version, NumberOfFiles, FilePath
[2]	[LoadableDriver]	Loadable driver updating information	Version, NumberOfFiles, FilePath
[3]	[Config]	Configuration files updating information	Version, NumberOfFiles, FilePath
[4]	[Option]	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
[5]	[OSS]	OSS update information (for independent OSS update)	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.

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.

Error code	Cause of error	Solution
N00110		
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		

20.2.2 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.**

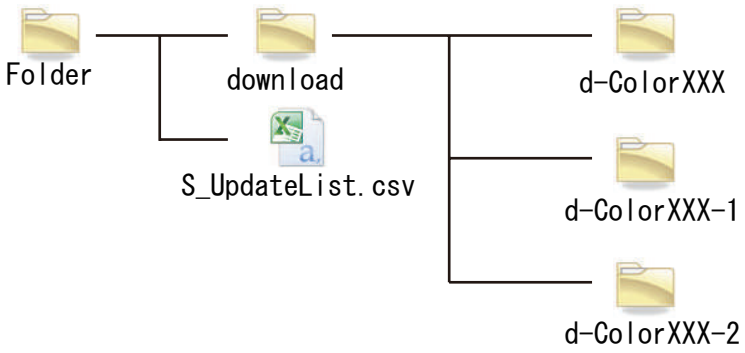
A sample of S_UpdateList.csv

	A	B	C
1	[illegible]XXX Standard	YYYY/MM/DD hh:mm:ss	download/[illegible]XXX
2	[illegible]XXX Customer1	YYYY/MM/DD hh:mm:ss	download/[illegible]XXX-1
3	[illegible]XXX Customer2	YYYY/MM/DD hh:mm:ss	download/[illegible]XXX-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/d-ColorXXX
   - 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].

20.2.3 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	-

20.2.4 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	-

20.2.5 Update Log Display

- To check the log related to the file download of the machine auto update.
- The latest five logs can be checked.

20.2.6 Relay Server Log Confirmation

To check the log related to the file download of the relay server.

The latest five logs can be checked.

20.2.7 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.**

20.2.8 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.**

20.2.9 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**

20.2.10 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.**

20.3 Firmware Update

- Not used

20.4 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

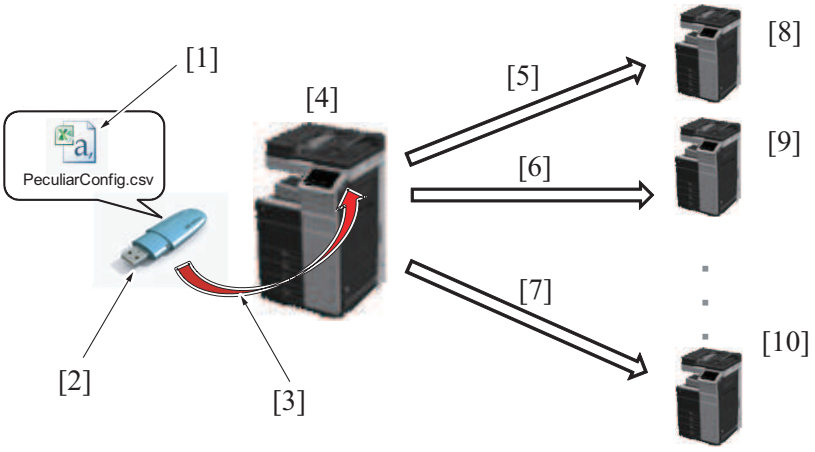
- To set whether to display/hide [Firmware Rollback] when selecting [Administrator] -> [Network] -> [Machine Update Settings].
- Even an administrator can rewrite to the backed up firmware.

Setting item	Default setting
Set	○
Unset	

20.5 Copy Network Settings

20.5.1 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)

20.5.2 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.**

20.5.3 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.

20.6 OSS Update

- Not used

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J BILLING SETTING/ENHANCED SECURITY/DEBUG SETTINGS

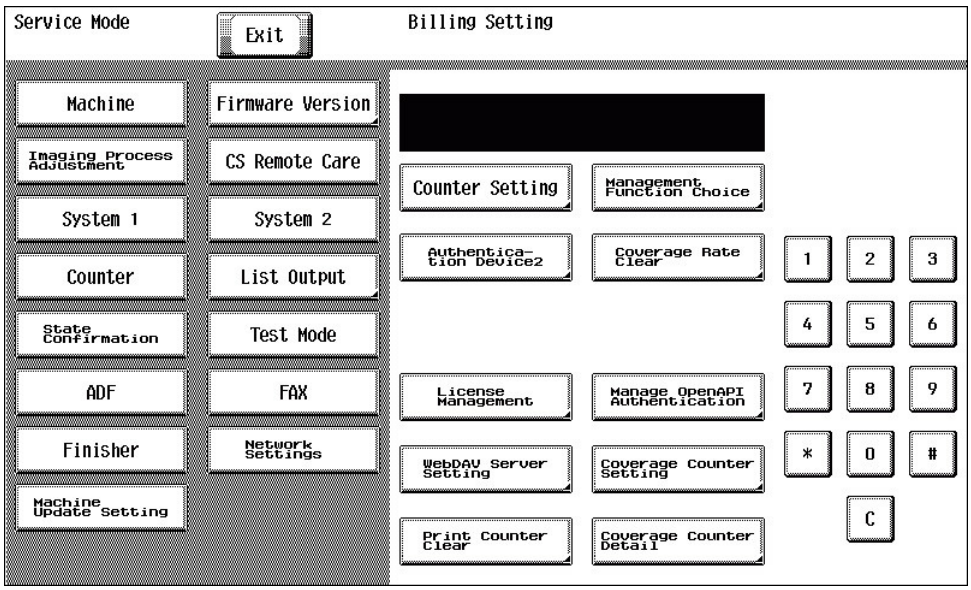
1. BILLING SETTING

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

- To set the counting method for the color output.

Setting item	Total Counter mode	Paper size	Print count of 1 print cycle
Mode 1	Mode 1	-	1 count
	Mode 2	Except for large size	1 count
		Large size	2 counts
Mode 2	Mode 1	-	2 counts
	Mode 2	Except for large size	2 counts
		Large size	4 counts
Mode 3	Mode 1	-	3 counts
	Mode 2	Except for large size	3 counts
		Large size	6 counts
Mode 4	Mode 1	-	4 counts
	Mode 2	Except for large size	4 counts
		Large size	8 counts
Mode 5	Mode 1	-	5 counts
	Mode 2	Except for large size	5 counts
		Large size	10 counts

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 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

- To set the counting method for the color output.

Setting item	Total Counter mode	Paper size	Print count of 1 print cycle
Mode 1	Mode 1	-	1 count
	Mode 2	Except for large size	1 count
		Large size	2 counts
Mode 2	Mode 1	-	2 counts
	Mode 2	Except for large size	2 counts
		Large size	4 counts
Mode 3	Mode 1	-	3 counts
	Mode 2	Except for large size	3 counts
		Large size	6 counts
Mode 4	Mode 1	-	4 counts
	Mode 2	Except for large size	4 counts
		Large size	8 counts
Mode 5	Mode 1	-	5 counts
	Mode 2	Except for large size	5 counts
		Large size	10 counts

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
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 OLI.**

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 (OLI 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

Information to be obtained from the administrator		
Items of FeliCa SSFC detail setting	Sample-data (decimal number)	Setting value (hexadecimal number)
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 (OLI 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	Compatible IC cards	Loadable driver name (OLI standard setting)
OMNIKEY 5427CK (AU-205H)	**HID Prox, HID iCLASS, TypeA, FeliCa IDm (*1)**	**5427CK (AU-205H) loadable driver (*2)**
KM USB Reader v3 MF & Legic	**LEGIC**	**Loadable driver for YSoft card reader (Default: HID Prox) (*3)**
KM USB Reader v3 Indala	**Indala**	
KM USB Reader v3 MF+	**Mifare**	
	EM4100, EM4102, RFID 125kHz	
	HID Prox	
	HID iCLASS	

Note *1

- **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.**

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 v3 MF & Legic	LEGIC	HID Prox	TypeA (1) (*3-1,*3-2)
KM USB Reader v3 Indala	Indala	HID Prox	Indala
KM USB Reader v3 MF+	Mifare	HID Prox	TypeA (1) (*3-1,*3-2)
	EM4100, EM4102, RFID 125kHz	HID Prox	EM4100/ EM4102/ RFID 125kHz
	HID Prox	HID Prox	HID Prox (1) (*3-2)
	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.

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."
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]

Setting item		Key counter IF Vendor
	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”.
	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.

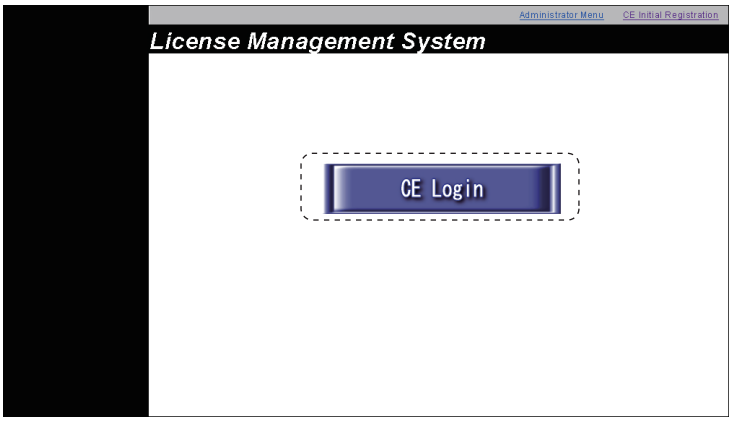
NOTE

- **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.**

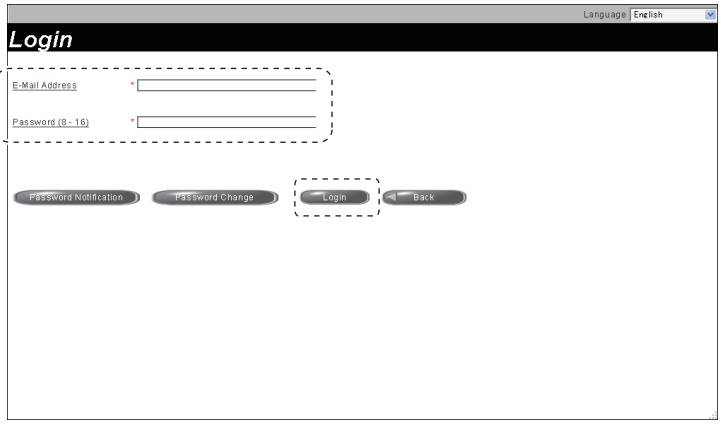
<Procedure>

1. Prepare “token certification.”
2. Access the following URL using the PC connected to the Internet.
   https://lms.olivetti.com/license/OLI/support.aspx

3. Click [CE Login].

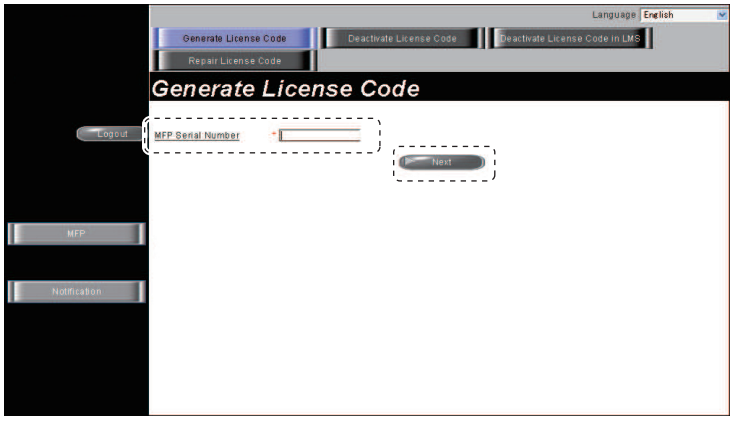


4. Enter [E-Mail Address] and [Password], and click [Login].

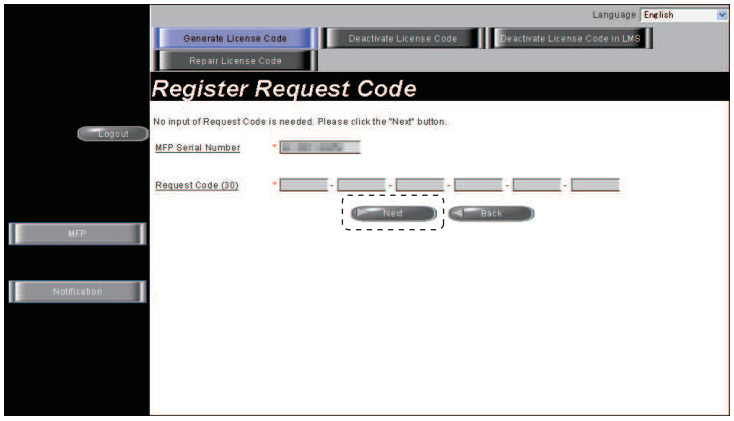


5. Click [Generate License Code].

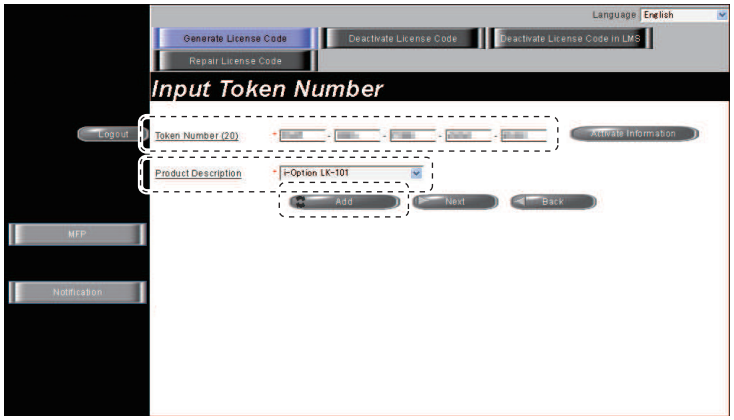
6. Enter the serial number of the target MFP, and click [Next].
NOTE
- **Make sure to enter alphabet letters of the serial number in all capital letters.**



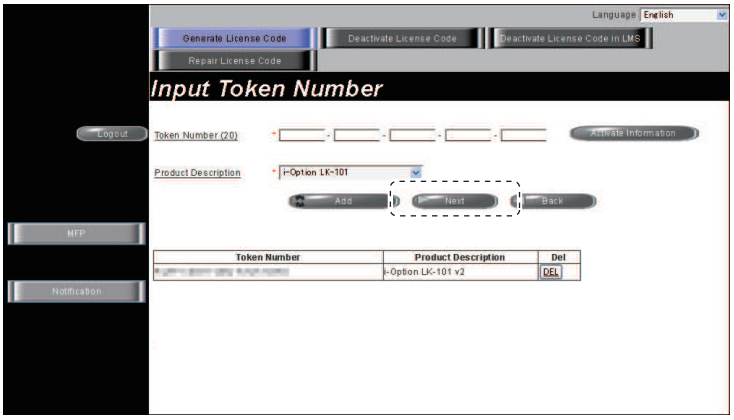
7. Click [Next].



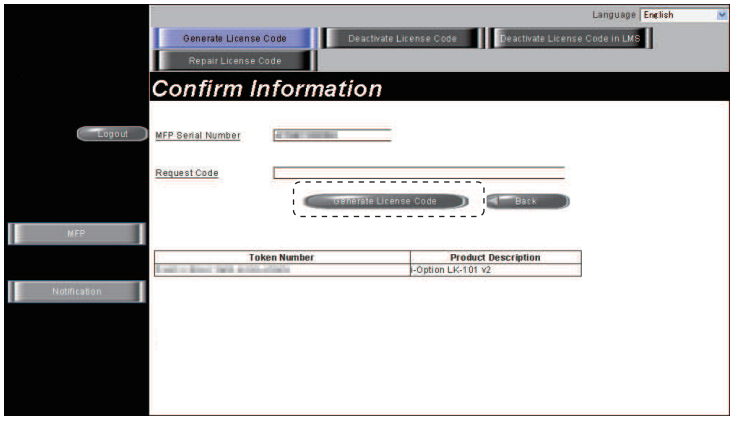
8. Enter the token number written in the token certification, and select the product description.
9. Click [Add].



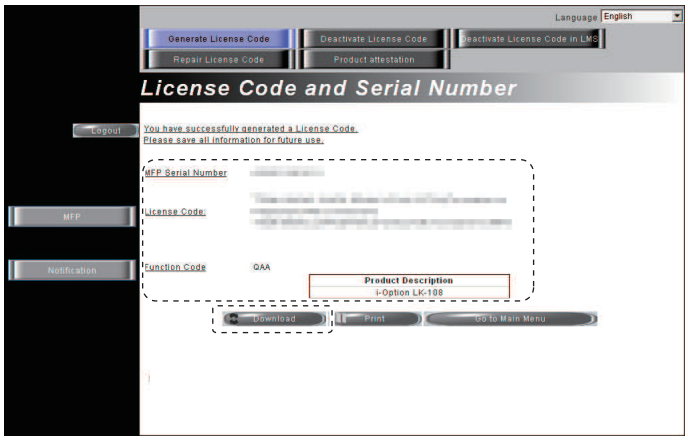
10. Confirm the registered items, and click [Next].



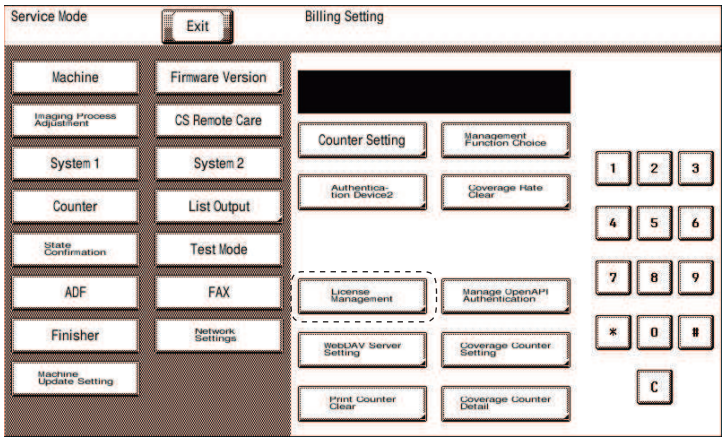
11. Click [Generate License Code].



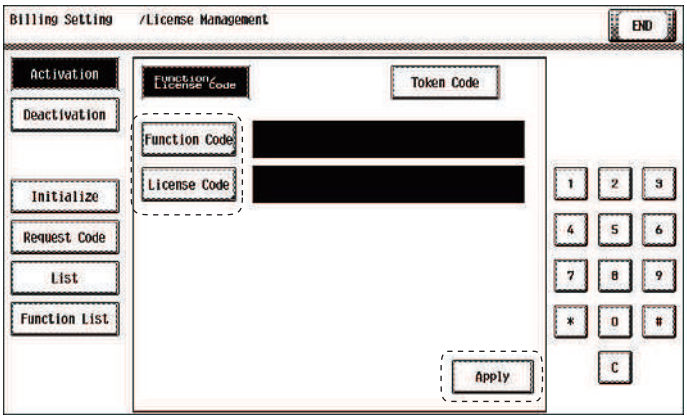
12. LMS issues license code and function code.
13. Write down the serial number, license code and function code.
    <When activating with an USB memory>
    Click [Download], and save a "***.fek" file to the root directory of the USB memory.



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

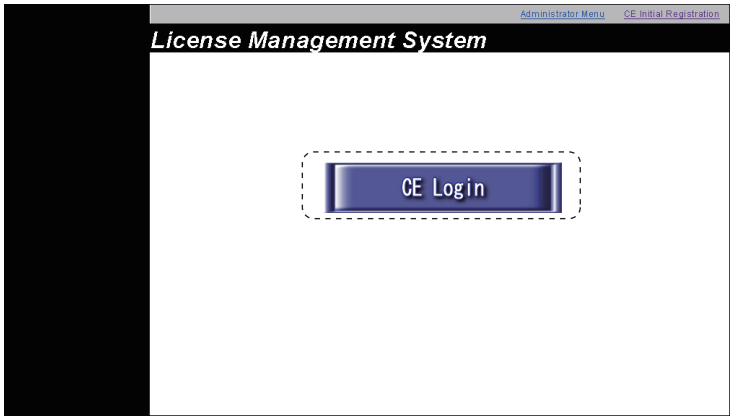
- To deactivate i-Option functions.
- To deactivate i-Option functions due to registration error, expiration of lease term, change to other MFP or etc.
- The functions can be deactivated by selecting the desired function and enter the appropriate deactivation code.

NOTE

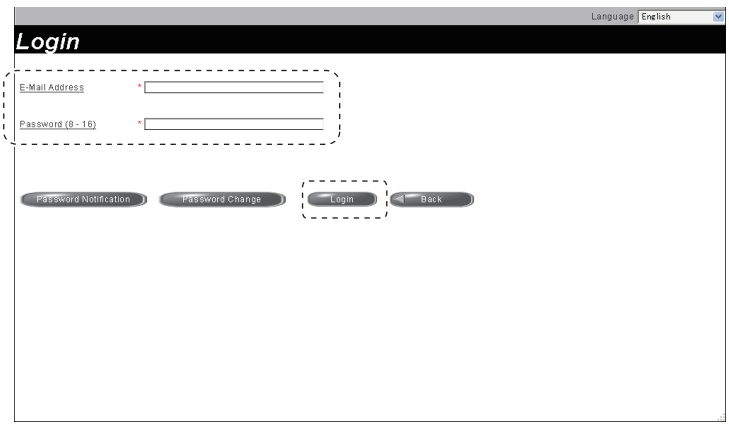
- **You need to access License Management System (LMS) to implement each function setting.**
- **Before accessing the LMS, CE are required to register the E-mail address and the password in the LMS. To register, click [CE Initial Registration] that is located in the upper right of CE Login screen.**

<Procedure>

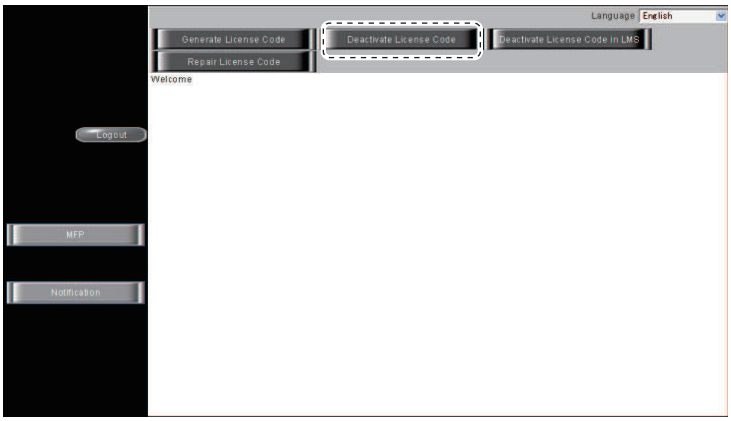
1. Check the serial number of the target MFP.
2. Access the following URL using the PC connected to the Internet.
   https://lms.olivetti.com/license/OLI/support.aspx
3. Click [CE Login].



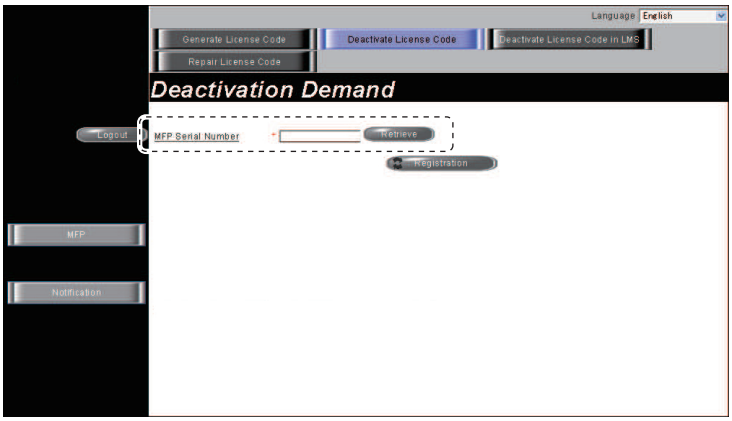
4. Enter [E-Mail Address] and [Password], and click [Login].



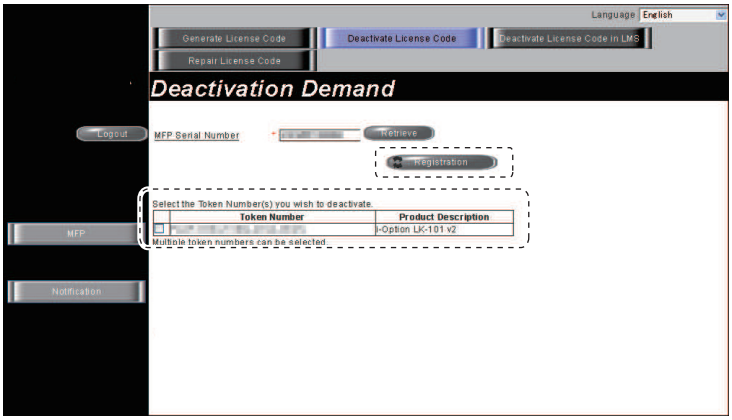
5. Click [Deactivate License Code].



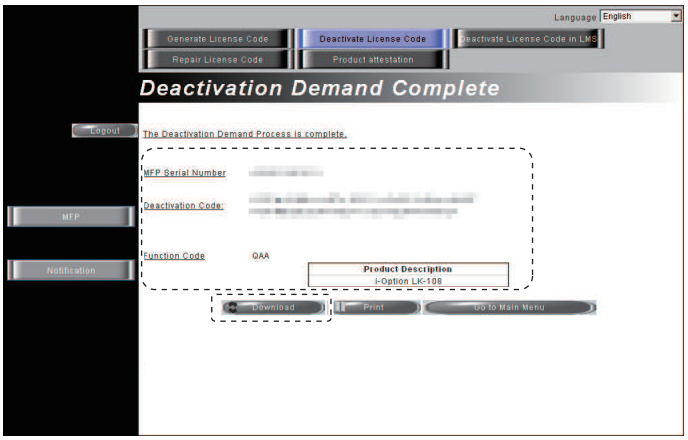
6. Enter the serial number of the target MFP, and click [Retrieve].
   NOTE
   - **Make sure to enter alphabet letters of the serial number in all capital letters.**



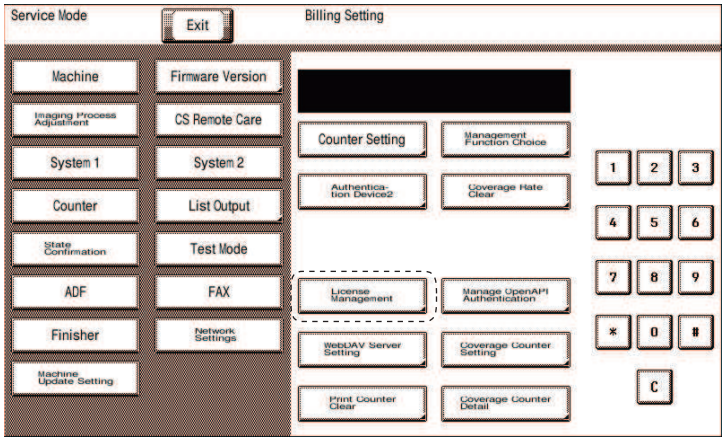
7. Select the token to be deactivated, and click [Registration].



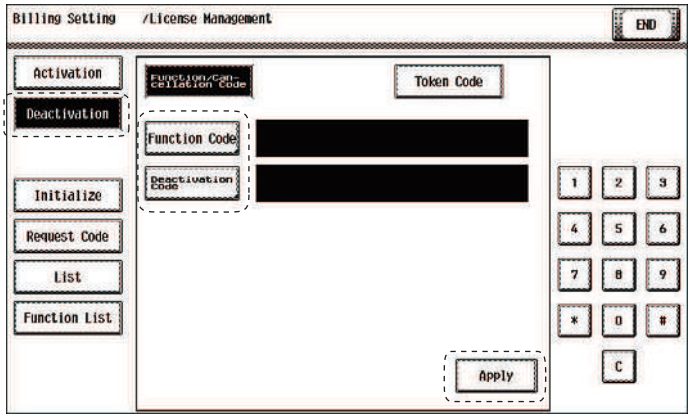
8. LMS issues deactivation code and function code.
9. Write down the serial number, deactivation code and function code.
   <When deactivating with an USB memory>
   Click [Download], and save a "***.fek" file to the root directory of the USB memory.



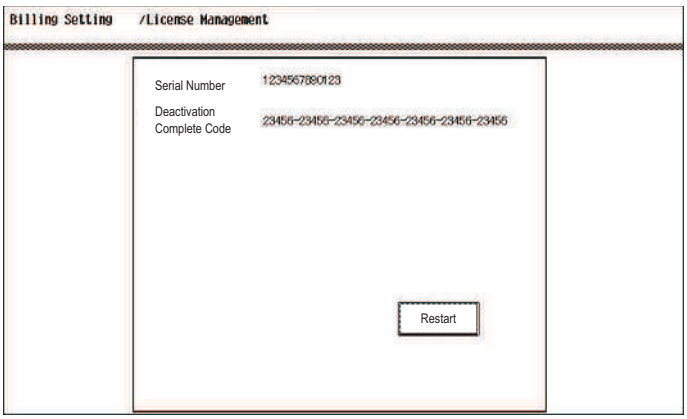
10. Select [Service Mode] -> [Billing Setting] -> [License Management].



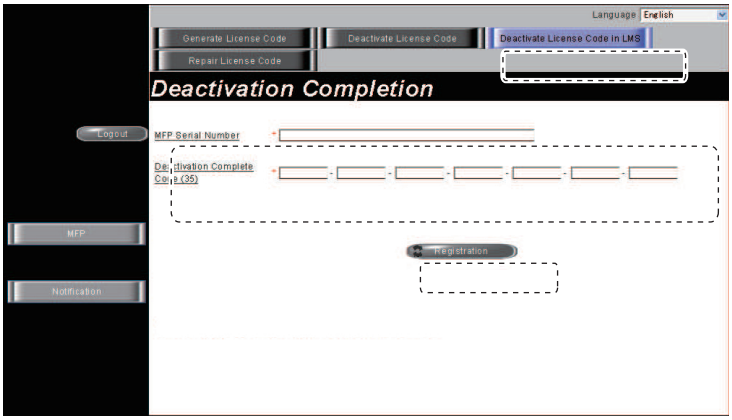
11. Select [Deactivation] -> [Function Code] or [Deactivation Code], and enter the function code and the deactivation code confirmed at Step9.
<When deactivating with an USB memory>
Connect the USB memory to the USB port on the side of the control panel, and select [Deactivation] -> [USB].
12. Touch [Apply].



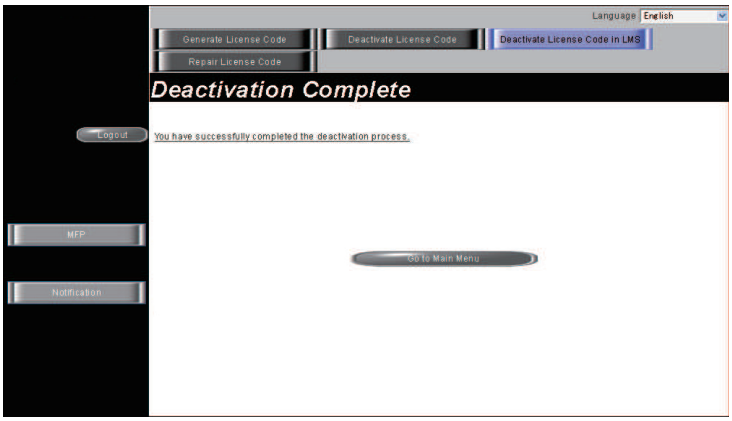
13. Write down or print out the serial number and deactivation complete code.
<When deactivating with an USB memory>
MFP will restart automatically. After MFP restarts, write down or print out the serial number and deactivation complete code.
NOTE
- **When A4S or 8 1/2 x 11S is set to the paper feed 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.

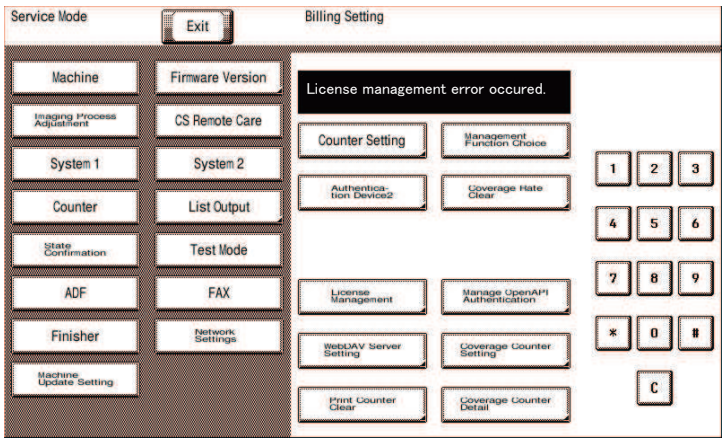


1.7.3 Repair

- 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.

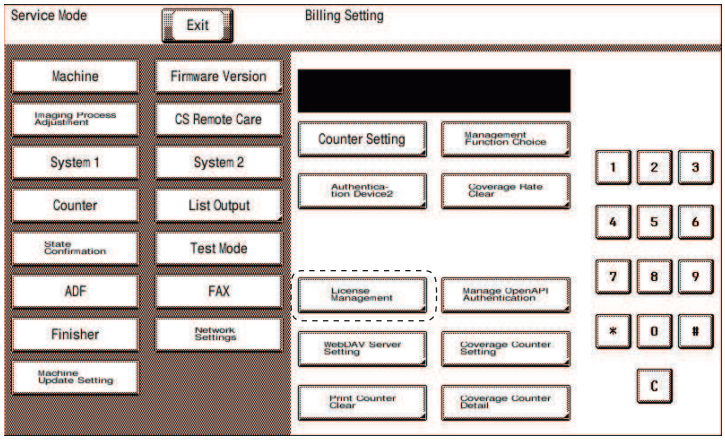
NOTE

- **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.**

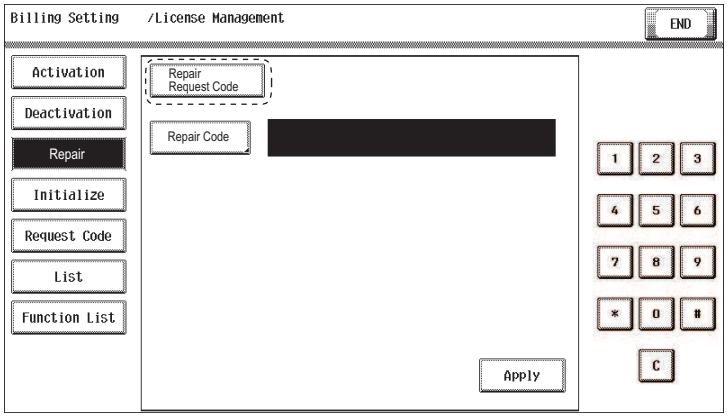


<Procedure>

1. Select [Service Mode] -> [Billing Setting] -> [License Management].



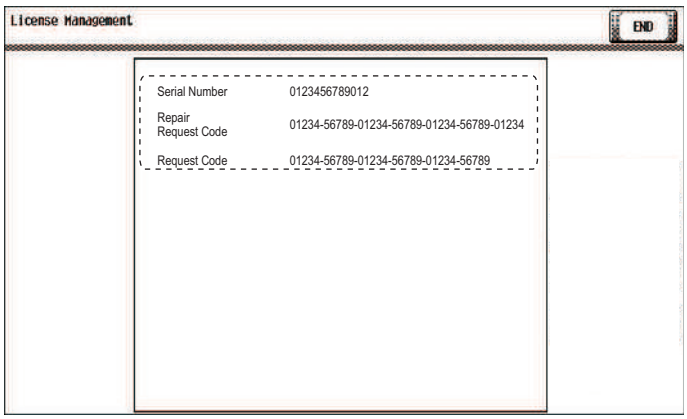
2. Select [Repair] -> [Repair Request Code].



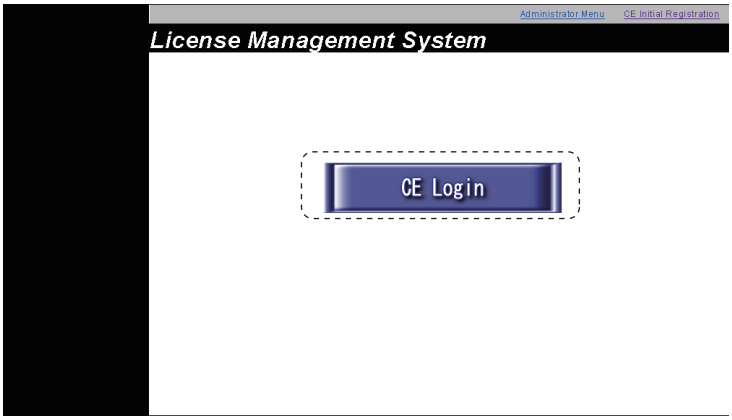
3. Write down or print out the serial number, repair request code and request code.

NOTE

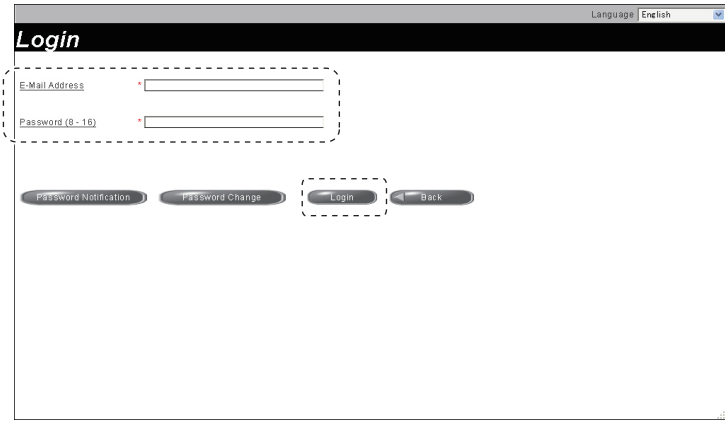
- **When A4S or 8 1/2 x 11S is set to the paper feed tray, the above-mentioned serial number and repair request code can be printed out by pressing the start key.**



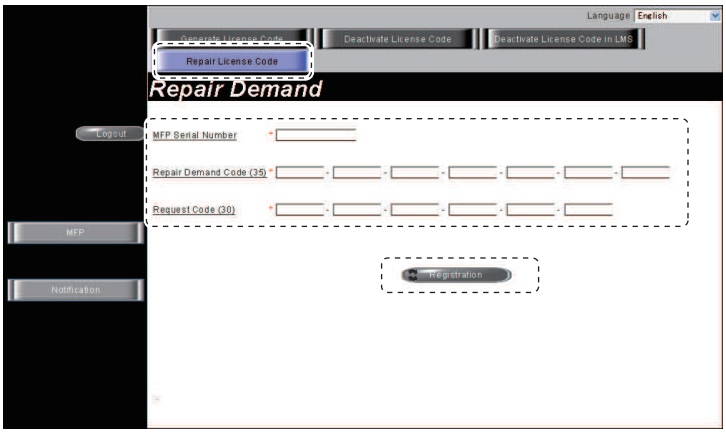
4. Access the following URL using the PC connected to the Internet.
   - https://lms.olivetti.com/license/OLI/support.aspx
5. Click [CE Login].



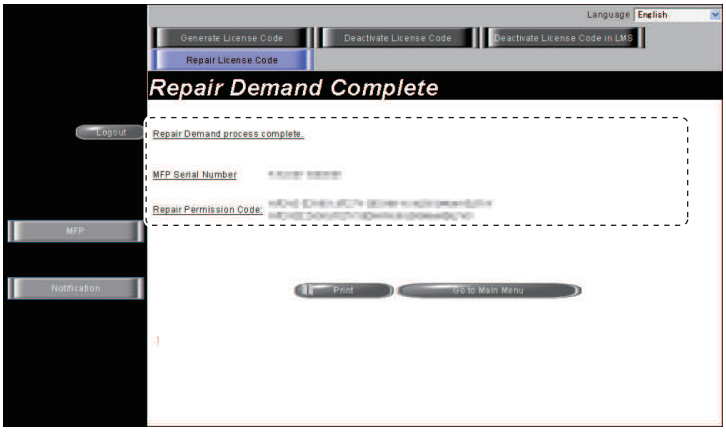
6. Enter [E-Mail Address] and [Password], and click [Login].



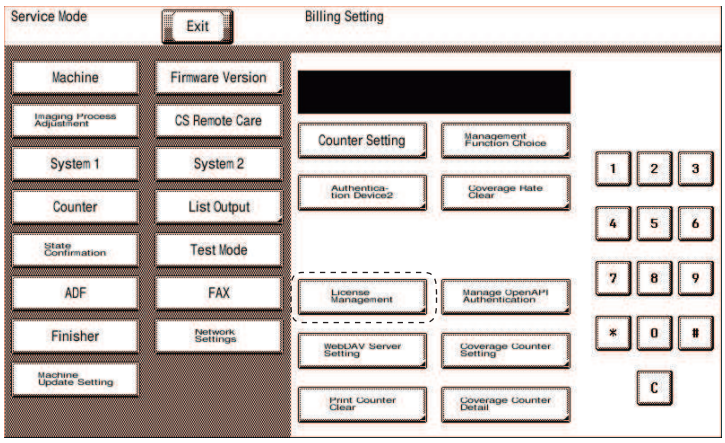
7. Click [Repair License Code].
8. Enter the serial number, repair request code and request code confirmed at step3, and click [Registration].
   NOTE
   - **Make sure to enter alphabet letters of the serial number in all capital letters.**



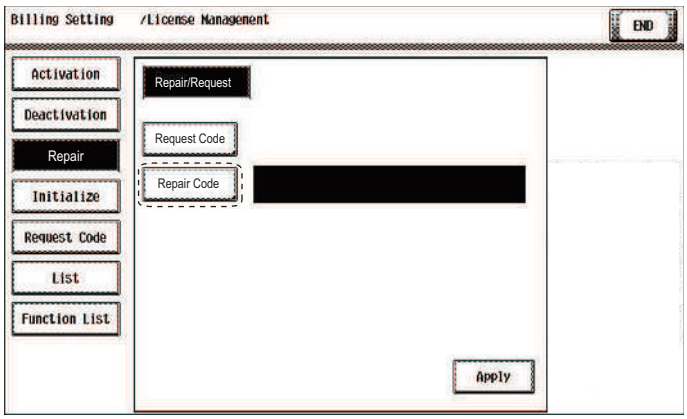
9. LMS issues repair permission code.
10. Write down the serial number and repair permission code.



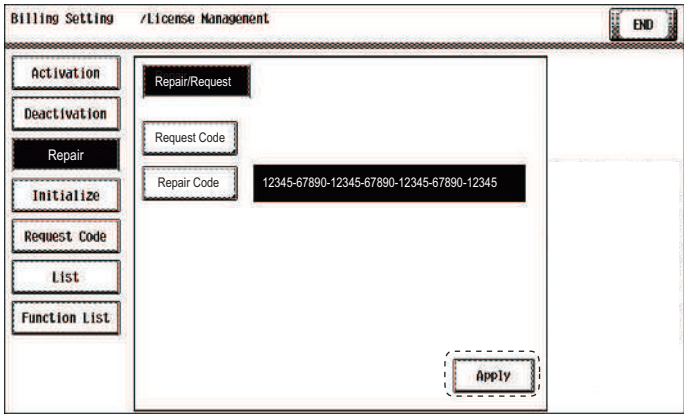
11. Select [Service Mode] -> [Billing Setting] -> [License Management].



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

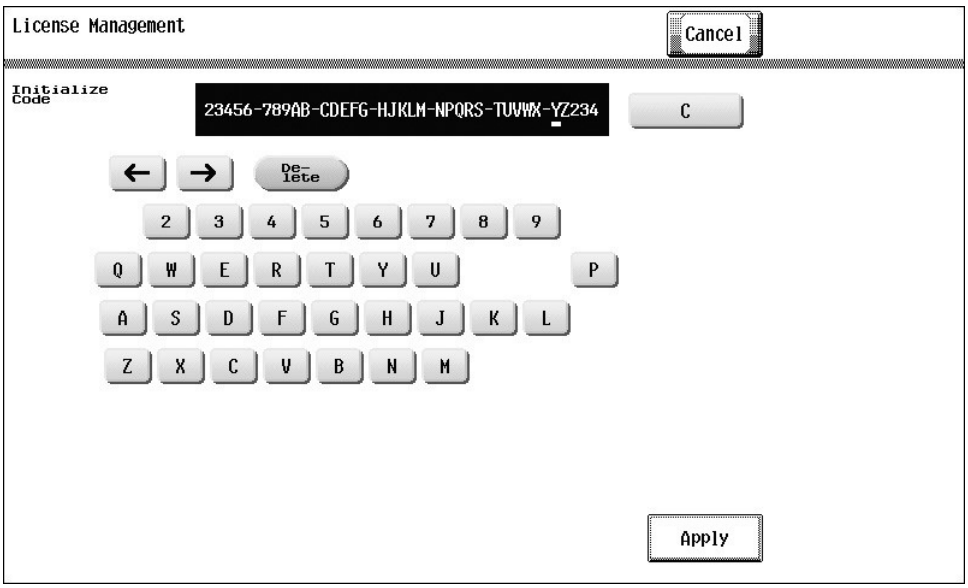
- To initialize license management information.
- To be used when license management information cannot be repaired.
- License management information should be initialized when the machine fails to generate request code or repair request code due to any trouble and the information cannot be repaired.

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.

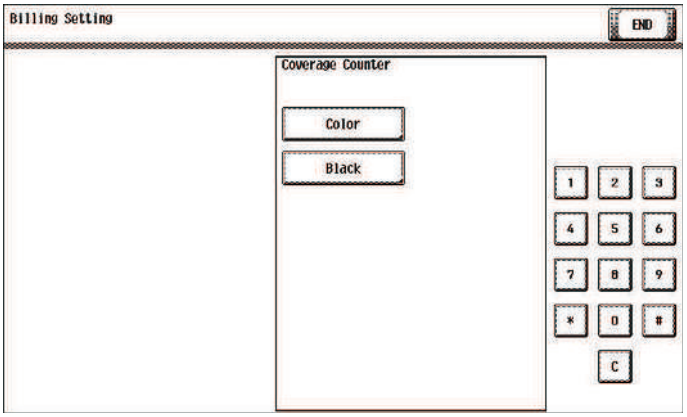
NOTE

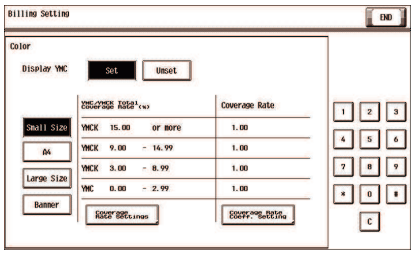
- **When MFP accesses to WebDAV server via proxy server, set the proxy setting in [Administrator] -> [Network] -> [WebDAV Settings] -> [Proxy Setting for Remote Access].**

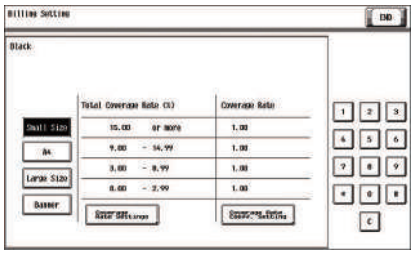
1.10 Coverage Counter Setting

- 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 of each color, and the count-up coefficient.
  NOTE
  - **The coverage rate refers to a ratio of the print area of each color relative to the print paper size.**
- The coverage rate and the coefficient can be set for each of the print modes and paper sizes listed in the following table.

Print mode	Paper size	Description
Color/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 smaller than A3.
	Long size	Set the counting method for data printed on paper having a size larger than A3.

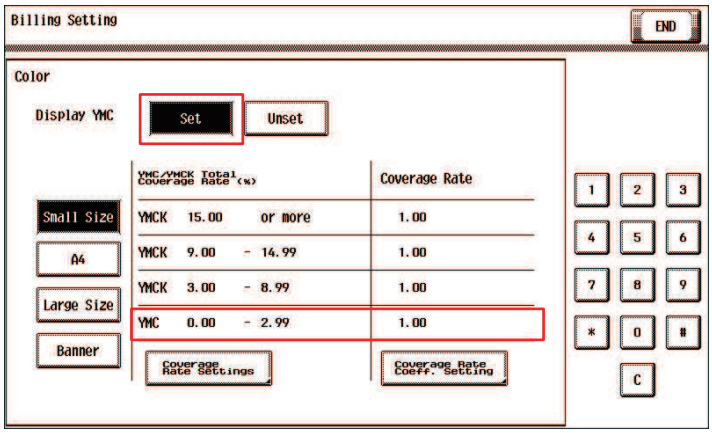




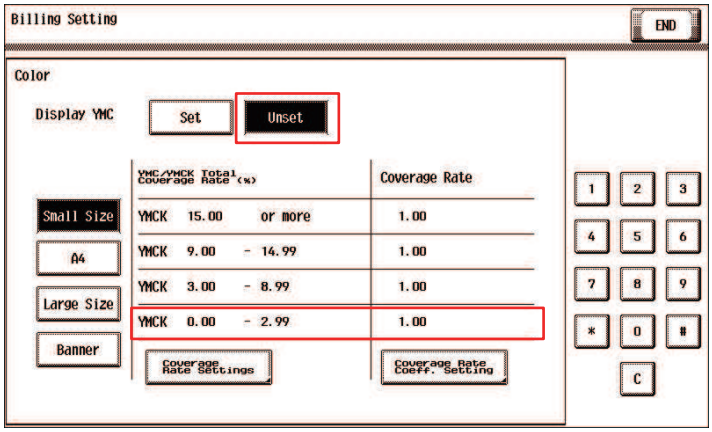


Display YMC

- Set whether to use the total coverage rates of YMC, but K (black), in color printing as a basis for calculating the coverage counter.
- “Set” is the default setting.
- When “Set” is set, counting is performed regardless of the coverage rate of K as long as the coverage rate of YMC falls within the YMC total coverage rate.



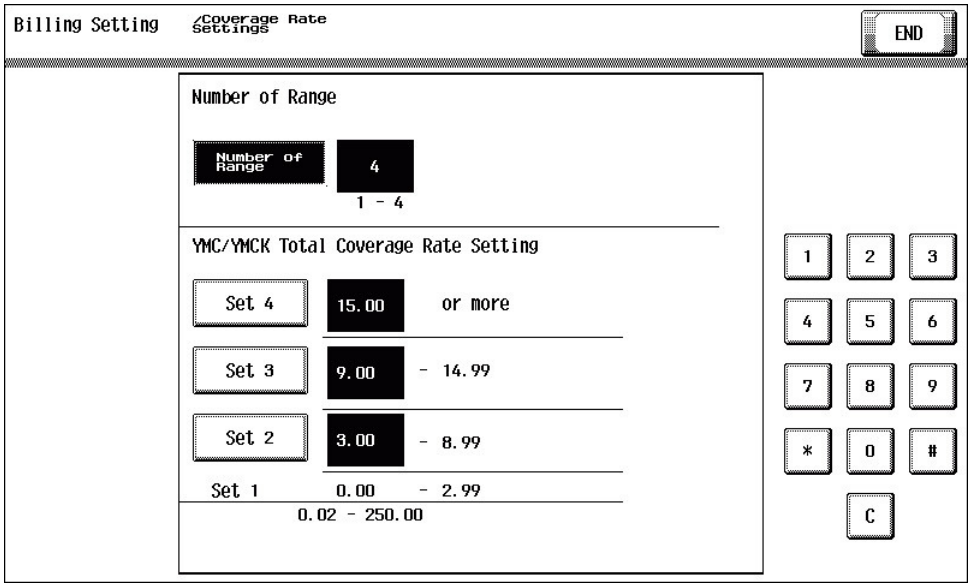
- If “Unset” is set, the area to be counted is determined based on the total coverage rate of YMCK.



Coverage Rate Settings

- To configure settings related to the YMC/YMCK total coverage rate.

Setting item	Description	Setting range	Default setting
Number of Range	Set the number of ranges used for setting the YMC/YMCK total coverage rate.	1 to 4 ranges	4 ranges
YMC/YMCK 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



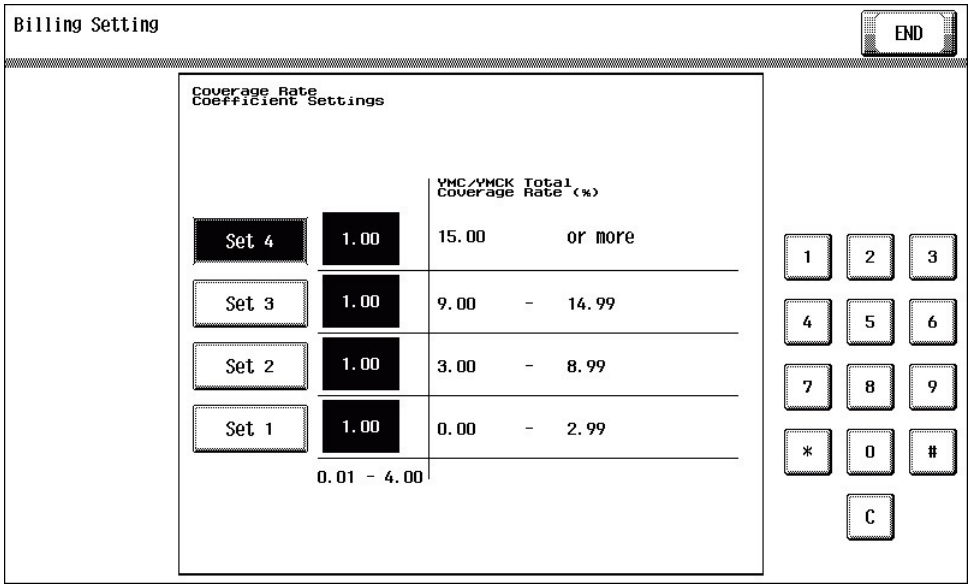
<Procedure>

1. Select [Color] or [Black].
2. When [Color] is selected, select [Set] or [Unset] for Display YMC.
3. Select the paper size.
4. Select [Coverage Rate Settings].
5. Enter [Number of Range] using the 10-key pad.
6. When [Number of Range] is entered, the corresponding number of sets are displayed.
7. Select a [Set] and enter the threshold values of the coverage to be set using the 10-key pad.
8. 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

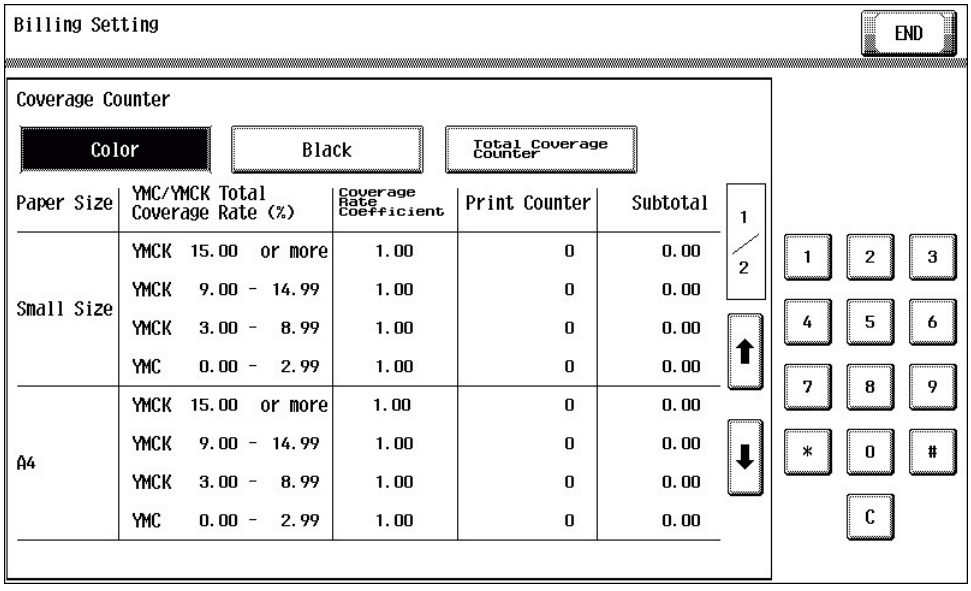
- It will be displayed when [Service Mode] -> [System 2] -> [Software Switch Setting] shows that switch No.206 is set to [00000001] at Bit assignment/[01] at HEX assignment.
- To clear Print Counter and Subtotal values of Coverage Counter Detail.
- Clear Subtotal value in [Meter Count] -> [Coverage Counter].

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
Color/Black	Displays the count values of color and monochrome printing.
Total Coverage Counter	Displays the count values of color, monochrome, and total. Displays the cumulative value of the coverage counter since the installation of the machine.

Indication	Contents
YMC/YMCK 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 on which the print paper size and the total coverage rates of each color 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.**

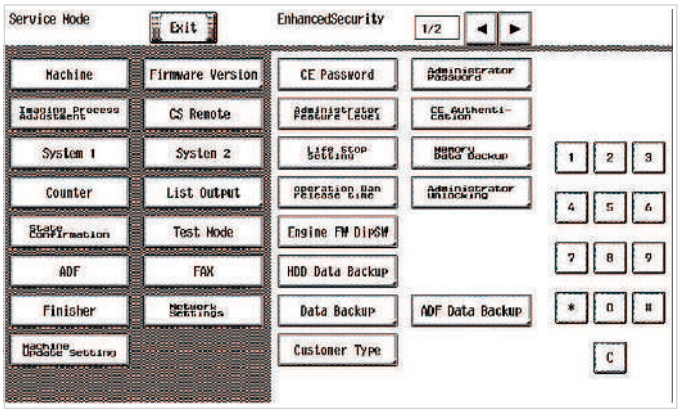
2. ENHANCED SECURITY

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 OLI.**

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
IU/Drum/DevUnit, Transfer belt, and Fusing Unit	Enable	○ (For others)
	Off	○ (For Japan, North America and Europe)

Life Cycle Display Warning

- Select whether to display or not display the near life warning, life warning, life stop warning, and L-call warning. Warning statuses are not displayed for units in which this setting is set to [OFF] even if each warning status is enabled.

NOTE

- **The settings of software Dip switch No.227 (bit7) and switch No. 230 (bit3) have priority.**

Setting item	Setting value	Default setting
IU/Drum, 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.

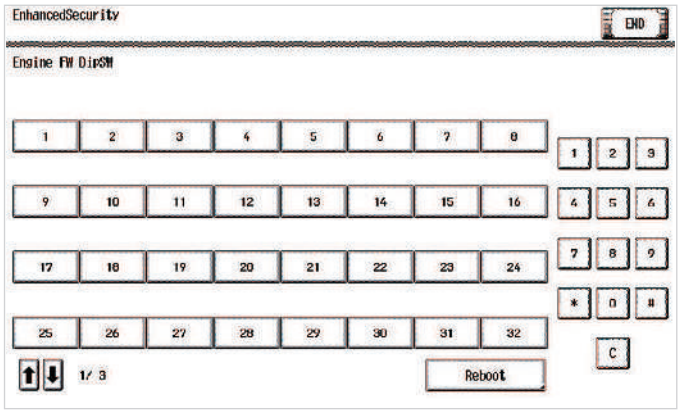
2.9 Administrator unlocking

- 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	Not used
9	Not used
10	Not used
11	Choice of fusing rotation while waiting
12	Not used
13	Choice of securing fusibility
14	Choice of unit simultaneous replacement promotion
15	Choice of FS-533 paper pullout control switching

Switch No.	Function
16	Choice of FS-533 OHP film jam detection control switching
17	Not used
18	Choice of FS-533 tray home position switching
19	Not used
20	USB log option
21	Not used
22	Choice of main scan direction white line correction
23	Choice for transfer belt filming (forced interruption)
24	Choice of continuous temperature control after printing
25	Choice of ACS parameter
26	Choice of printing pause time during temperature increase inside the machine
27	Choice for transfer belt filming (increased frequency)
28	Not used
29	Choice of toner reset mode (Y)
30	Choice of toner reset mode (M)
31	Choice of toner reset mode (C)
32	Choice of toner reset mode (K)
33	First paper size detection option
34	First paper size detection option
35	Transfer belt free rotation option
36	Second paper size detection option
37	Second paper size detection option
38	Choice of improving fusibility strength
39	Choice of upper exit path mismatch detection jam
40	Not used
41	Not used
42	Not used
43	Not used
44	Choice for transfer belt aging
45	Not used
46	Not used
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/K, Imaging unit/Y,M,C
51	Not used
52	Choice of silencing 2-sided print
53	Not used
54	Not used
55	Not used
56	Not used
57	Not used
58 - 64	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 fusing rotation while waiting

- To choose steadiness or fusibility due to rotation of the fusing motor.

Switch No.11	Contents	Default
OFF	The fusing motor stops after 5 seconds in rotation waiting condition. (Priority on steadiness)	○
ON	The fusing motor stops after 30 minutes in rotation waiting condition. (Priority on fusibility)	

NOTE

- **To reflect the adjustment value after change, make sure to exit from the Service Mode.**
- **The adjustment value is not reflected when turning off the power without exiting from the Service Mode.**

(5) 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	

(6) 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."	

(7) Choice of FS-533 paper pullout control switching

- When the JAM code 72-17 occurs, it switches to ON. (When FS-533 installed)

Switch No. 15	Contents	Default
OFF	Controls the main body exit normally.	○
ON	Increases the pullout speed when the main body exiting paper.	

(8) Choice of FS-533 OHP jam detection control switching

- When the OHP is used (mainly black solid printing), when a jam occurs inside the FS-533, it switches to ON. (When FS-533 installed)

Switch No. 16	Contents	Default
OFF	• When feeding each type of paper, detects a jam normally. • When feeding each type of paper, detects the trailing edge of the paper and controls the paper exit.	○
ON	• Only when feeding the OHP, delays the start of monitoring the paper trailing edge and detects a jam. • Only when feeding the OHP, detects the leading edge of the paper and controls the paper exit.	

(9) Choice of FS-533 tray home position switching

- It switches the tray home position for FS-533. (When FS-533 installed)

Switch No. 18	Contents	Default
OFF	Tray home position becomes the low limit position.	○
ON	Tray home position becomes the paper receiving position.	

(10) Choice of custom-size paper detection

- To enable the custom-size paper detection of the tray 1 and tray 2.

Switch No. 19	Contents	Default
OFF	Disable the custom-size paper detection of the tray 1 and tray 2.	
ON	Enable the custom-size paper detection of the tray 1 and tray 2..	○

(11) USB log option

- Choice to enable the USB log option

Switch No. 20	Contents	Default
OFF	To disable function.	○
ON	To enable function.	

(12) 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	

(13) Choice for transfer belt filming (forced interruption)

- When printing is continued with lower coverage, toner is supplied to prevent the transfer belt filming.
- Drives when Engine DIPSW No.27 is set to ON.

Switch No.23	Contents	Default
OFF	-	○
ON	When printing more than 200 sheets of paper, after printing 200 sheets of paper, the printing is interrupted and the toner is supplied.	

(14) 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.	○
ON	The temperature control continues until the next sleep request is sent from the controller.	

(15) Choice of ACS parameter

- It sets the black printing quantity threshold until switching the transfer belt from all press to K press when a few pages of black printing is included in color printing.
- With the initial setting, print productivity has the priority and printing is conducted with all press (the transfer belt being pressed onto the color photoconductors) even when the specified quantity of black printing is included. In that case, the color photoconductors rotate unnecessarily. The color photoconductors deteriorate by the amount of rotation.
- When this setting is ON, black printing quantity threshold until switching to K press (release of color photoconductors) becomes smaller.
- This setting is to be used when the degradation control of the color photoconductors should have priority over printing productivity.

Switch No. 25	Contents	Default
OFF	Print productivity priority	○
ON	Degradation control of the color photoconductors	

(16) 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.	

(17) Choice for transfer belt filming (increased frequency)

- When printing is continued with lower coverage, toner is supplied to prevent the transfer belt filming.
  - The toner consumption increases by using this setting. Choose the setting suitable for the user.

Switch No.27	Contents	Default
OFF	When printing more than 400 sheets of paper, after printing, the toner is supplied.	○
ON	When printing more than 200 sheets of paper, after printing, the toner is supplied.	

(18) Choice of toner reset mode

- Choice to clear the remaining toner in toner cartridge as brand new

Toner cartridge Y

Switch No. 29	Contents	Default
OFF	-	○
ON	Resets the toner Y remaining amount.	

Toner cartridge M

Switch No. 30	Contents	Default
OFF	-	○
ON	Resets the toner M remaining amount.	

Toner cartridge C

Switch No. 31	Contents	Default
OFF	-	○
ON	Resets the toner C remaining amount.	

Toner cartridge K

Switch No. 32	Contents	Default
OFF	-	○
ON	Resets the toner K remaining amount.	

(19) First paper size detection option

- Rounds off the paper size when the A4/A3S and Letter/LedgerS paper size are detected in tray 1.

Switch No. 33	Switch No. 34	Contents	Default
OFF	OFF	A4 -> A4, A3S -> A3S, Letter -> Letter, LedgerS -> LedgerS (initial values)	○
ON	OFF	A4 -> A4, A3S -> A3S, Letter -> A4, LedgerS -> A3S	
OFF	ON	A4 -> Letter, A3S -> LedgerS, Letter -> Letter, LedgerS -> LedgerS	

(20) Transfer belt free rotation option

- Rotates the transfer belt under predetermined conditions to prevent whiteouts and black lines that develop when the machine has not been used for long time.

Switch No. 35	Contents	Default
OFF	Does nothing.	○
ON	When the conditions are satisfied, rotates the transfer belt when the machine is first powered on or while recovering from sleep mode.	

NOTE

- **Be sure to exit the service mode to reflect the adjusted value after the change.**
- **If the power is turned OFF without exiting the service mode, the adjusted value will not be reflected.**

(21) Second paper size detection option

- Rounds off the paper size when the A4/A3S and Letter/LedgerS paper size are detected in tray 2.

Switch No. 36	Switch No. 37	Contents	Default
OFF	OFF	A4 -> A4, A3S -> A3S, Letter -> Letter, LedgerS -> LedgerS (initial values)	○
ON	OFF	A4 -> A4, A3S -> A3S, Letter -> A4, LedgerS -> A3S	
OFF	ON	A4 -> Letter, A3S -> LedgerS, Letter -> Letter, LedgerS -> LedgerS	

(22) Choice of improving fusibility strength

- Choice to raise fusing temperature to secure fusibility for the image erasing problem with eraser test

Switch No. 38	Contents	Default
OFF	-	○
ON	Raise the fusing temperature.	

(23) Choice for transfer belt aging

- Choice for switching the transfer belt aging

Switch No.44	Contents	Default
OFF	Perform the transfer belt aging.	○
ON	Do not perform the transfer belt aging.	

(24) 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	○

(25) 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	○

(26) 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	○

(27) Intelligent Life Control of Drum unit/K, Imaging unit/Y,M,C

- 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	○

(28) Choice of silencing 2-sided print

- Choice to reduce noises during 2-sided printing by reducing the speed for retracting 2-sided plain paper

Switch No.52	Contents	Default
OFF	Normal mode (double speed)	○
ON	Silence mode (system speed)	

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.
OLI 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 [OLI 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 Migration data backup

- Not used

2.14 Data Backup

2.14.1 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	-

Setting item		Contents	Setting value	Default setting
	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 OLI 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.
OLI format	Select to backup of box documents by OLI 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.

Setting item	Contents
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.

2.14.2 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	-

2.15 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.

2.16 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	-
		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	

2.17 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.

2.18 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.

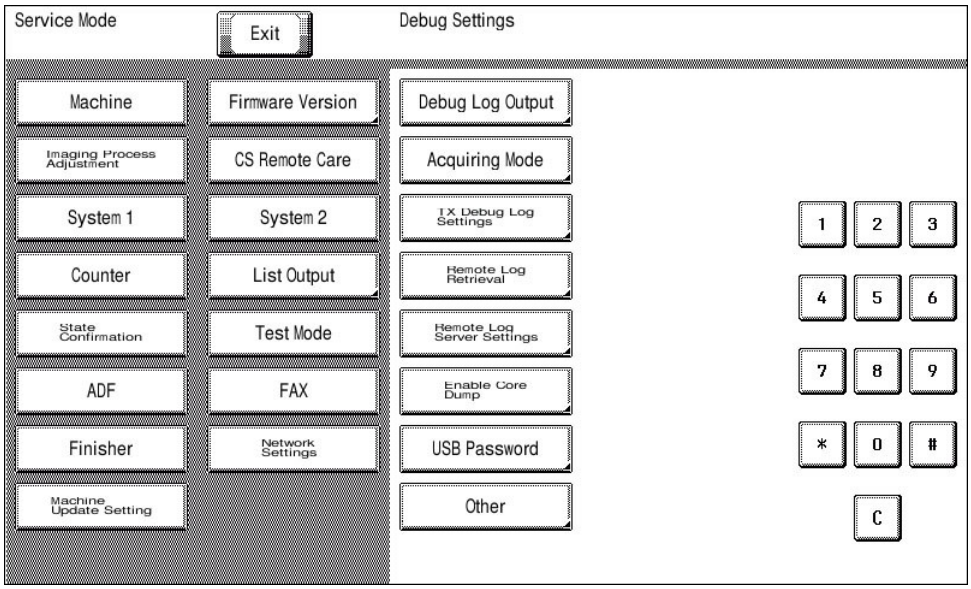
NOTE

- **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 OLI 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. Touch [Reset] ([1]) on the control panel. This saves the screen in memory.
   A "Capture" folder is automatically created 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. Touch [Stop] ([1]) on the control panel.
3. Start the screen operations.
4. When the operations are completed, touch [Stop] ([1]) again.
5. A “Capture” folder is automatically created 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 [Stop] key on the control panel.
3. Start the screen operations to store a series of screens.
4. When the operations are completed, press the [Stop] key again.
5. Go back to the first screen and press the [Reset] key on 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 OLI 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 OLI.

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 OLI 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 OLI.

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 OLI 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 OLI 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 OLI 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 OLI 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.20.2.2 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

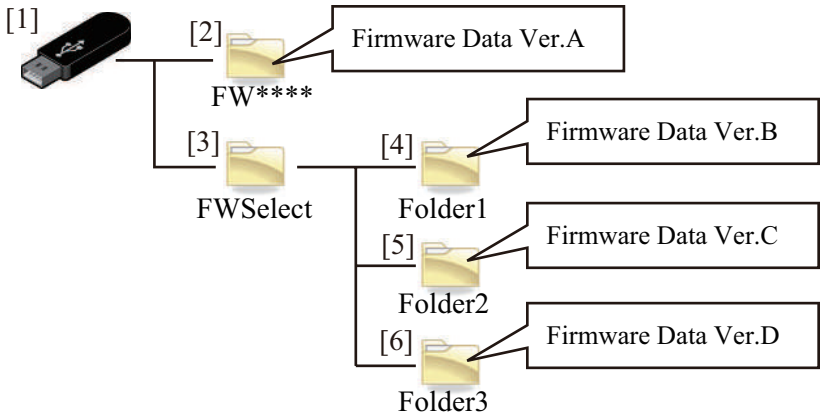
1. Uncompress the firmware file.
2. Connect the USB memory to the computer.
3. Copy the extracted update data folder into the root directory of the USB memory.

Product name	Rewriting data folder name
d-Color MF257	FW0031

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

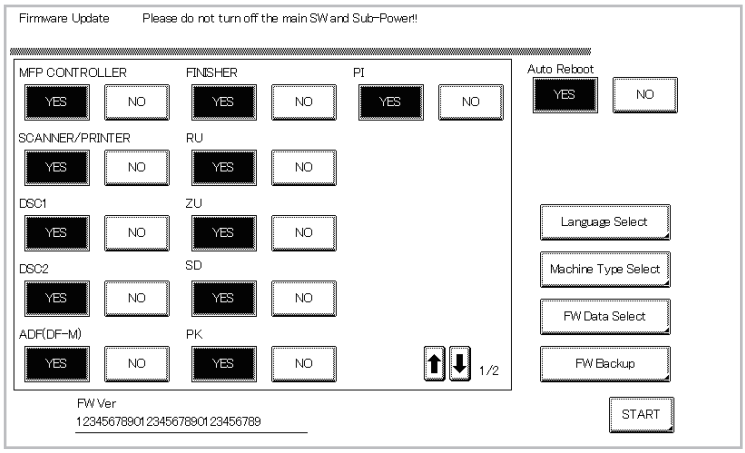
NOTE

- **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. Turn the main power switch ON while pressing the Stop key.
4. 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 "FW0031" 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

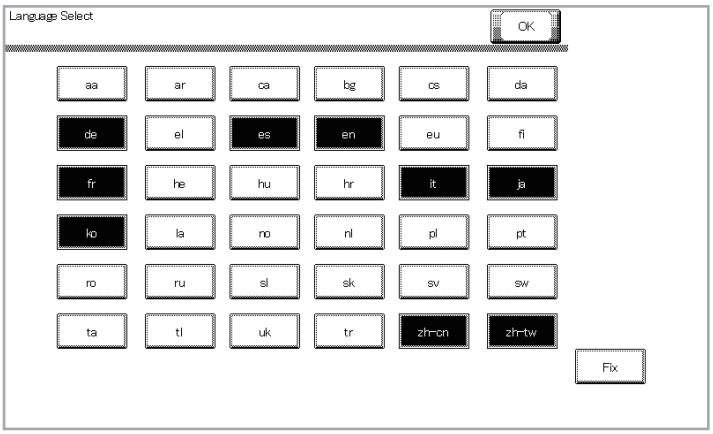
- Select the language data displayed on the Language Selection screen of Utility.
- Select languages as required according to, for example, the use environment of the user.

NOTE

- **Up to 9 languages are selectable. However, Japanese and English are essential options.**

<Procedure>

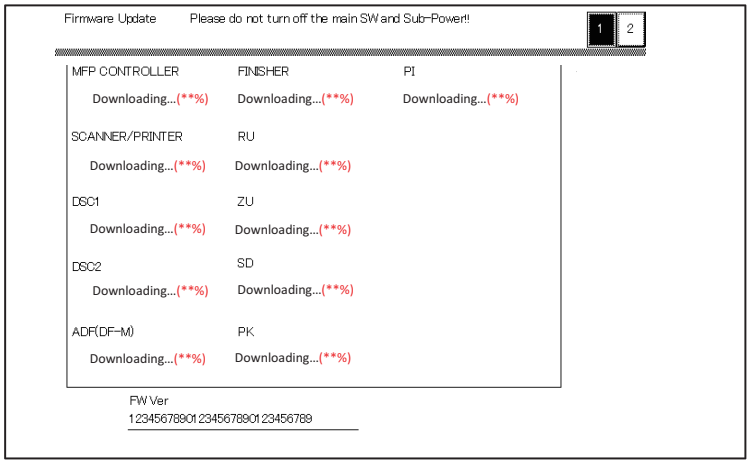
1. Touch [Language Select] on the firmware update selection screen.
2. On the Language Select screen, select a language to be displayed on the LCD area of the control panel, then touch [Fix].



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] key to rewrite the firmware. (The START key is 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. (The START key lights up 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 START key 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	Main body storage (microSD / STRGB)	STRGB: Only when EM-907 is mounted (Standard for Japan)
SCANNER/PRINTER	CPU board (CPUB)	-
ADF (DF-M)	DF control board (DFCB)	Only when the DF is mounted
FINISHER	FS control board (FSCB)	Only when FS-533 or FS-539/539SD is installed
SD	-	Only when FS-539SD is installed
FAX BOARD CONTROLLER1	Fax board/1 (FAXB/1)	Only when FK-513 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.

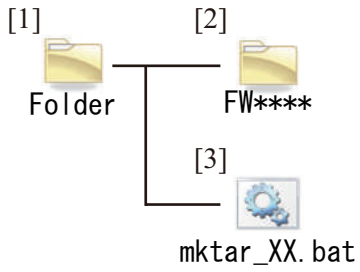
3.2 Preparation

3.2.1 Making the firmware data

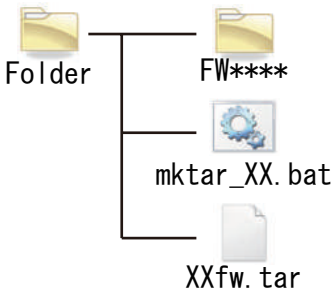
- It is necessary to convert the firmware data and save it in the target directory of the Internet ISW server for upgrading the firmware via Internet ISW.

<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)
d-Color MF257	FW0031	mktar_ACM1.bat	ACM1fw.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.20.1 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.9.1 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.20.2.1 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

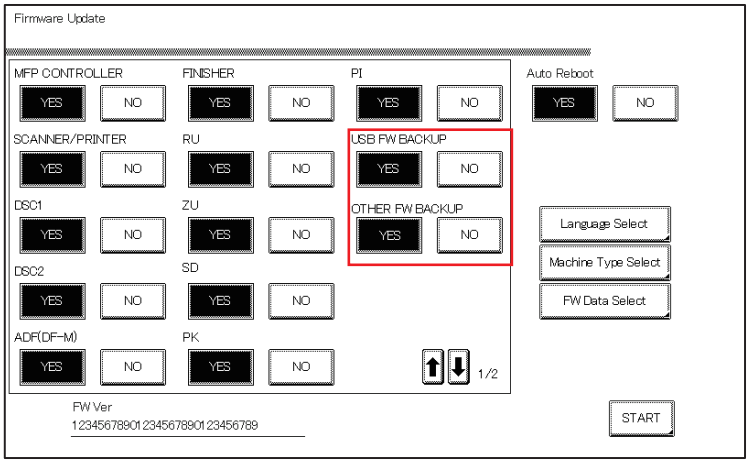
1. Prepare an USB memory.
2. Copy the font data to the root directory of the USB memory.
   - OCR font: download_OCRA-0.pdf
   - Unicode font: download_Andale_J-0.pdf, download_Andale_K-0.pdf, download_Andale_S-0.pdf, download_Andale_T-0.pdf
3. Turn ON the main power switch, and connect the USB memory 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.**

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L TROUBLESHOOTING

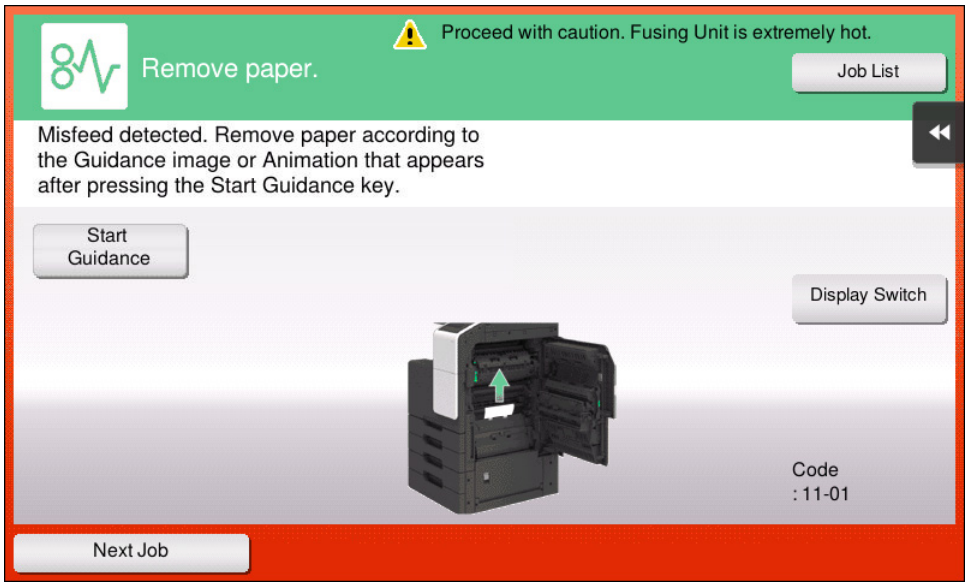
1. JAM CODE

1.1 JAM display

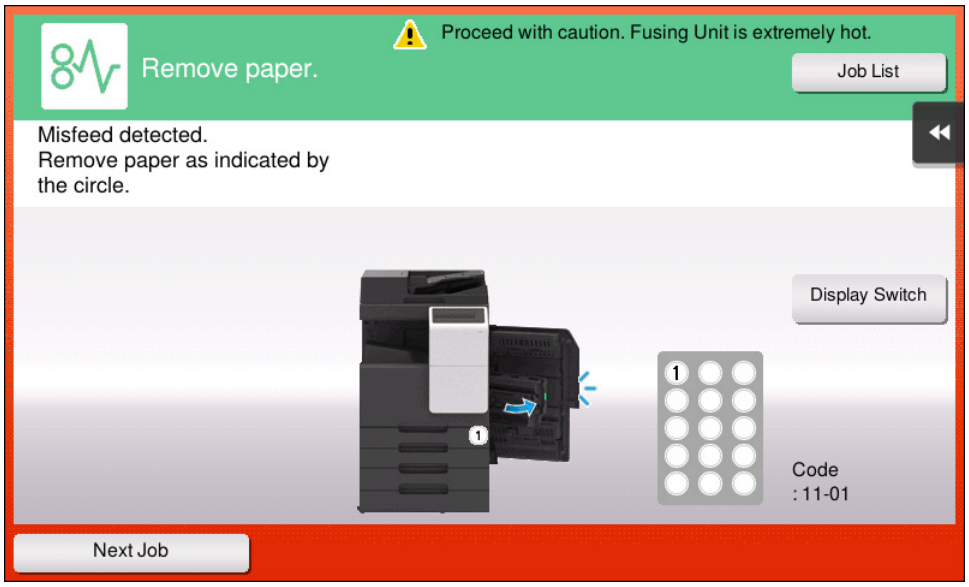
Display procedure

- 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	
10-40	
11-01	Misfeed at tray 1 paper feed section
11-02	
11-05	
11-40	
12-01	Misfeed at tray 2 paper feed section
12-05	
12-40	
13-01	Misfeed at tray 3 feed section <When PC-118 or PC-218 is installed>
13-05	
13-40	
14-01	Misfeed at tray 4 feed section <When PC-218 is installed>
14-05	
14-40	
16-01	Misfeed at LCT feed/vertical transport section <When PC-418 is installed>
16-05	
16-40	
20-01	Misfeed at vertical transport section
20-02	
20-21	Misfeed at vertical transport section <When PC-118, PC-218 or PC-418 is installed>
20-22	Misfeed at vertical transport section <When PC-218 is installed>
30-03	Misfeed at transfer section
32-01	Misfeed at fusing/paper exit section
32-05	
32-06	
66-01	Misfeed at DF turnover section <When DF-633 is installed>
66-11	
66-02	Misfeed at DF paper feed section <When DF-633 is installed>
66-12	
66-03	Misfeed at DF transport section <When DF-633 is installed>
66-13	
66-23	
66-33	
66-04	Misfeed at DF paper exit section <When DF-633 is installed>
66-14	
66-05	Misfeed at DF image reading section <When DF-633 is installed>
66-06	
66-07	Misfeed at DF paper feed/transport/image reading/turnover/paper exit section <When DF-633 is installed>
66-54	DF controller jam <When DF-633 is installed>
72-14	Misfeed at FS transport section <When FS-539 or FS-539SD is installed>
72-15	Misfeed at FS transport section <When FS-539 or FS-539SD is installed>
72-16	Misfeed at FS transport section <When FS-539, FS-539SD, FS-533 or FS-533+PK-519 is installed>
72-17	Misfeed at FS transport section <When FS-539, FS-539SD or FS-533 is installed>
72-18	Misfeed at FS transport section <When FS-539 or FS-539SD is installed>
72-19	Misfeed at FS transport section <When FS-539 or FS-539SD is installed>
72-21	Misfeed at FS transport section <When FS-539, FS-539SD or FS-533 is installed>
72-22	Misfeed at FS transport section <When FS-539 or FS-539SD is installed>
72-23	Misfeed at FS transport section <When FS-539 or FS-539SD is installed>
72-25	Misfeed at SD paper exit section <When FS-539SD is installed>
72-26	Misfeed at SD paper exit section <When FS-539SD is installed>
72-43	Misfeed at PK section <When FS-539+PK-520, FS-539SD+PK-520 or FS-533+PK-519 is installed>
72-70	Misfeed at PK section <When FS-533+PK-519 is installed>
72-75	Misfeed at FS paper exit section <When FS-539 or FS-539SD is installed>

JAM code	JAM type
72-76	
72-77	
72-81	Misfeed at FS staple section <When FS-539, FS-539SD or FS-533 is installed>
72-84	Misfeed at SD staple section <When FS-539SD is installed>
72-85	Misfeed at SD transport section <When FS-539SD is installed>
72-86	Misfeed at SD transport section <When FS-539SD is installed>
72-87	Misfeed at SD transport section <When FS-539SD is installed>
75-42	Misfeed at RU section <When FS-539 or FS-539SD is installed>
75-43	Misfeed at RU section <When FS-539 or FS-539SD is installed>
92-01	Misfeed at duplex pre-registration section
92-02	
92-40	
99-01	Controller JAM (paper size error)
99-02	Controller JAM (controller forced stop command)
99-03	Controller JAM (image processing)
99-04	Controller JAM (finisher pre-drive is not completed)
99-05	Controller JAM (main body not starting a job)
99-06	Controller JAM (finisher internal processing error)
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)

1.4 JAM that do not display the JAM code

JAM type	JAM detection timing	Ref. page
Misfeed at tray 2 paper feed section	Paper jam of a sheet of paper left at the tray 2 feed section results, if the tray 2 vertical transport sensor (PS19) 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.1.5.3 12-01, 12-05, 12-40
	Paper jam of a sheet of paper left at the tray 2 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 feed section results, if the tray 3 vertical transport sensor (PS113) 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 13-01, 13-05, 13-40
	Paper jam of a sheet of paper left at the tray 3 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 4 paper feed section	Paper jam of a sheet of paper left at the tray 4 feed section results, if the tray 4 vertical transport sensor (PS123) 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 14-01, 14-05, 14-40
	Paper jam of a sheet of paper left at the tray 4 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 LCT feed/ vertical transport section	Paper jam of a sheet of paper left at the LCT transport section results, if the LCT vertical transport sensor (PS133) 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 16-01, 16-05, 16-40
	Paper jam of a sheet of paper left at the LCT 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 at vertical transport section	Paper jam of a sheet of paper left at the vertical 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.	L.1.6.2 20-21 L.1.6.3 20-22

JAM type	JAM detection timing	Ref. page
Misfeed at transfer section	Paper jam of a sheet of paper left at the transfer section results, if the registration sensor (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 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 exit section	Paper jam of a sheet of paper left at the 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
	Paper jam of a sheet of paper left at the 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 turnover section <When DF-633 is installed>	Paper jam of a sheet of paper left at DF turnover 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.1.8.1 66-01, 66-11
Misfeed at DF paper feed section <When DF-633 is installed>	Paper jam of a sheet of paper left at DF paper feed section results, if the document feed 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.1.8.2 66-02, 66-12
Misfeed at DF transport section <When DF-633 is installed>	Paper jam of a sheet of paper left at the DF transport section results, if the document registration sensor (PS4) 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.1.8.3 66-03, 66-13, 66-23, 66-33
Misfeed at DF paper exit section <When DF-633 is installed>	Paper jam of a sheet of paper left at the paper DF paper exit section results, if the document exit sensor (PS6) 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.1.8.4 66-04, 66-14
Misfeed at DF image reading section <When DF-633 is installed>	Paper jam of a sheet of paper left at DF image reading section results, if the original reading sensor (PS5) 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.1.8.5 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, 92-40
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 (PS41) 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.1.11 Misfeed at duplex transport section
	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, 10-40

Contents

JAM type	Misfeed at manual bypass paper feed section	
JAM code	10-01, 10-02, 10-40	
JAM detection timing	10-01	The leading edge of the paper is not turned ON (unblocked) the registration sensor (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.
	10-40	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	• Transport motor (M1) • Registration clutch (CL4) • Bypass tray paper feed clutch (CL7) • Registration sensor (PS1) • Base board (BASEB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS1 I/O check, sensor check	BASEB CN13E<A>-9 (ON)	6-C
3	CL4 load check • Check code: 21 • Multi code: 2	BASEB CN13E<A>-11 (ON)	7-C
4	CL7 load check • Check code: 20 • Multi code: 3	BASEB CN30E-2 (ON)	13-C
5	M1 load check • Check code: 40 • Multi code: 1, 3	BASEB CN11E-4 (REM) BASEB CN11E-7 (LOCK)	3-C
6	BASEB F13E, F21E conduction check	-	-
7	Replace BASEB.	-	-

1.5.2 11-01, 11-02, 11-05, 11-40

Contents

JAM type	Misfeed at tray 1 paper feed section	
JAM code	11-01, 11-02, 11-05, 11-40	
JAM detection timing	11-01	The leading edge of the paper is not turned ON (unblocked) the registration sensor (PS1) even after the lapse of a given period of time after the tray 1 starts to feed paper.
	11-02	For paper fed from the tray 1, due to a delay in paper arrival, loop forming in front of the registration roller is not complete before the rise timing of the transport motor (M1).
	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.
Misfeed processing location	• Right door • Tray 1	
Relevant parts	• Transport motor (M1) • Tray 1 paper feed clutch (CL3) • Registration clutch (CL4) • Registration sensor (PS1) • Tray 1 paper feed sensor (PS23) • Base board (BASEB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS1 I/O check, sensor check	BASEB CN13E<A>-9 (ON)	6-C
3	PS23 I/O check, sensor check	BASEB CN5E<A>-3 (ON)	9-C
4	CL3 load check • Check code: 20 • Multi code: 1	BASEB CN5E<A>-11 (ON)	9-C
5	CL4 load check • Check code: 21 • Multi code: 2	BASEB CN13E<A>-11	7-C
6	M1 load check • Check code: 40 • Multi code: 1, 3	BASEB CN11E-4 (REM) BASEB CN11E-7 (LOCK)	3-C
7	BASEB F13E, F21E conduction check	-	-
8	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	The leading edge of the paper is not turned ON (unblocked) the tray 2 vertical transport sensor (PS19) even after the lapse of a given period of time after the tray 2 starts to feed paper.
	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 feed section results, if the tray 2 vertical transport sensor (PS19) 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 tray 2 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	• Transport motor (M1) • Tray 2 paper feed clutch (CL1) • Tray 2 vertical transport clutch (CL2) • 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 CN5E<B>-16 (ON)	12-C
3	PS20 I/O check, sensor check	BASEB CN5E<B>-3 (ON)	10-C
4	CL1 load check • Check code: 20 • Multi code: 2	BASEB CN5E<B>-11 (ON)	11-C
5	CL2 load check • Check code: 21 • Multi code: 1	BASEB CN5E<B>-13 (ON)	11-C
6	M1 load check • Check code: 40 • Multi code: 1, 3	BASEB CN11E-4 (REM) BASEB CN11E-7 (LOCK)	3-C
7	BASEB F13E, F21E conduction check	-	-
8	Replace BASEB.	-	-

1.5.4 13-01, 13-05, 13-40

Contents

JAM type	Misfeed at tray 3 paper feed section	
JAM code	13-01, 13-05, 13-40	
JAM detection timing	13-01	The leading edge of the paper is not turned ON the tray 3 vertical transport sensor (PS113) even after the lapse of a given period of time after the tray 3 starts to feed paper.
	13-05	The leading edge of the paper is not turned ON the tray 3 paper feed sensor (PS112) 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 feed section results, if the tray 3 vertical transport sensor (PS113) 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 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 3	
Relevant parts	• Tray 3 paper feed motor (M111) • Tray 3 vertical transport motor (M112) • Tray 3 paper feed sensor (PS112) • Tray 3 vertical transport sensor (PS113) • PC control board (PCCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS113 I/O check, sensor check	PCCB CN4-14 (ON)	PC-118/PC-218 5-C
3	PS112 I/O check, sensor check	PCCB CN4-11 (ON)	PC-118/PC-218 5-C
4	M111 load check • Check code: 28 • Multi code: 9, 11	PCCB CN5-1 to 8	PC-118/PC-218 4-C
5	M112 load check • Check code: 28 • Multi code: 17, 19	PCCB CN5-9 to 16	PC-118/PC-218 3 to 4-C

Step	Action	Control signal	Location of electrical component
6	Replace PCCB.	-	-

1.5.5 14-01, 14-05, 14-40

Contents

JAM type	Misfeed at tray 4 paper feed section	
JAM code	14-01, 14-05, 14-40	
JAM detection timing	14-01	The leading edge of the paper is not turned ON the tray 4 vertical transport sensor (PS123) even after the lapse of a given period of time after the tray 4 starts to feed paper.
	14-05	The leading edge of the paper is not turned ON the tray 4 paper feed sensor (PS122) 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 feed section results, if the tray 4 vertical transport sensor (PS123) 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 4 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 4	
Relevant parts	• Tray 4 paper feed motor (M121) • Tray 4 vertical transport motor (M122) • Tray 4 paper feed sensor (PS122) • Tray 4 vertical transport sensor (PS123) • PC control board (PCCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS123 I/O check, sensor check	PCCB CN18C-5 (ON)	PC-218 7-K
3	PS122 I/O check, sensor check	PCCB CN18C-2 (ON)	PC-218 7-K
4	M121 load check • Check code: 28 • Multi code: 13, 15	PCCB CN9C-1 to 8	PC-218 6-K
5	M122 load check • Check code: 28 • Multi code: 21, 23	PCCB CN9C-9 to 16	PC-218 6-K
6	Replace PCCB.	-	-

1.5.6 16-01, 16-05, 16-40

Contents

JAM type	Misfeed at LCT feed/vertical transport section	
JAM code	16-01, 16-05, 16-40	
JAM detection timing	16-01	The leading edge of the paper is not turned ON the LCT vertical transport sensor (PS133) even after the lapse of a given period of time after the LCT starts to feed paper.
	16-05	The leading edge of the paper is not turned ON the paper feed sensor (PS132) even after the lapse of a given period of time after the LCT starts to feed paper.
	16-40	For paper fed from the 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 LCT transport section results, if the LCT vertical transport sensor (PS133) 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 LCT 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	• Paper feed motor (M131) • Vertical transport motor (M132) • Paper feed sensor (PS132) • LCT vertical transport sensor (PS133) • PC control board (PCCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS132 I/O check, sensor check	PCCB CN4-11 (ON)	PC-418 7-J
3	PS133 I/O check, sensor check	PCCB CN4-14 (ON)	PC-418 7-J
4	M131 load check • Check code: 28 • Multi code: 1, 3	PCCB CN5-1 to 8	PC-418 5-J
5	M132 load check • Check code: 28 • Multi code: 5, 7	PCCB CN5-9 to 16	PC-418 4-J
6	Replace PCCB.	-	-

1.6 2#-##

1.6.1 20-01, 20-02

Contents

JAM type	Misfeed at vertical transport section	
JAM code	20-01, 20-02	
JAM detection timing	20-01	The registration sensor (PS1) is not turned ON (unblocked) even after the lapse of a given period of time after the paper has turned ON (unblocked) the tray 2 vertical transport sensor (PS19).
	20-02	For paper fed from the tray 2, tray 3, tray 4, or LCT, 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.
Misfeed processing location	Right door	
Relevant parts	• Transport motor (M1) • Tray 2 vertical transport clutch (CL2) • Registration clutch (CL4) • Registration sensor (PS1) • Tray 2 vertical transport sensor (PS19) • Base board (BASEB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS1 I/O check, sensor check	BASEB CN13E<A>-9 (ON)	6-C
3	PS19 I/O check, sensor check	BASEB CN5E<B>-16 (ON)	12-C
4	CL2 load check • Check code: 21 • Multi code: 1	BASEB CN5E<B>-13 (ON)	11-C
5	CL4 load check • Check code: 21 • Multi code: 2	BASEB CN13E<A>-11 (ON)	7-C
6	M1 load check • Check code: 40 • Multi code: 1, 3	BASEB CN11E-4 (REM) BASEB CN11E-7 (LOCK)	3-C
7	BASEB F13E, F21E conduction check	-	-
8	Replace BASEB.	-	-

1.6.2 20-21

(1) When PC-118 or PC-218 is installed

Contents

JAM type	Misfeed at vertical transport section (tray 3)	
JAM code	20-21	
JAM detection timing	20-21	The tray 2 vertical transport sensor (PS19) is not turned ON (unblocked) even after the lapse of a given period of time after the tray 3 vertical transport sensor (PS113) is turned ON by a paper.
	-	Paper jam of a sheet of paper left at the vertical 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	• Transport motor (M1) • Tray 3 vertical transport motor (M112) • Tray 2 vertical transport clutch (CL2)	

	• Tray 2 vertical transport sensor (PS19) • Tray 3 vertical transport sensor (PS113) • Base board (BASEB) • PC control board (PCCB)

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS113 I/O check, sensor check	PCCB CN4-14 (ON)	PC-118/PC-218 5-C
3	PS19 I/O check, sensor check	BASEB CN5E<B>-16 (ON)	12-C
4	CL2 load check • Check code: 21 • Multi code: 1	BASEB CN5E<B>-13 (ON)	11-C
5	M112 load check • Check code: 28 • Multi code: 17, 19	PCCB CN5-9 to 16	PC-118/PC-218 3 to 4-C
6	M1 load check • Check code: 40 • Multi code: 1, 3	BASEB CN11E-4 (REM) BASEB CN11E-7 (LOCK)	3-C
7	BASEB F13E, F21E conduction check	-	-
8	Replace BASEB.	-	-
9	Replace PCCB.	-	-

(2) When PC-418 is installed

Contents

JAM type	Misfeed at vertical transport section (tray 3)	
JAM code	20-21	
JAM detection timing	20-21	The tray 2 vertical transport sensor (PS19) is not turned ON (unblocked) even after the lapse of a given period of time after the LCT vertical transport sensor (PS133) is turned ON by a paper.
	-	Paper jam of a sheet of paper left at the vertical 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	• Transport motor (M1) • Vertical transport motor (M132) • Tray 2 vertical transport clutch (CL2) • Tray 2 vertical transport sensor (PS19) • LCT vertical transport sensor (PS133) • Base board (BASEB) • PC control board (PCCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS133 I/O check, sensor check	PCCB CN4-14 (ON)	PC-418 7-J
3	PS19 I/O check, sensor check	BASEB CN5E<B>-16 (ON)	12-C
4	CL2 load check • Check code: 21 • Multi code: 1	BASEB CN5E<B>-13 (ON)	11-C
5	M132 load check • Check code: 28 • Multi code: 5, 7	PCCB CN5-9 to 16	PC-418 4-J
6	M1 load check • Check code: 40 • Multi code: 1, 3	BASEB CN11E-4 (REM) BASEB CN11E-7 (LOCK)	3-C
7	BASEB F13E, F21E conduction check	-	-
8	Replace BASEB.	-	-
9	Replace PCCB.	-	-

1.6.3 20-22

Contents

JAM type	Misfeed at vertical transport section (tray 4)
JAM code	20-22

JAM detection timing	20-22	The tray 3 vertical transport sensor (PS113) is not turned ON even after the lapse of a given period of time after the tray 4 vertical transport sensor (PS123) has been blocked by a paper.
	-	Paper jam of a sheet of paper left at the vertical 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	• Tray 3 vertical transport motor (M112) • Tray 4 vertical transport motor (M122) • Tray 3 vertical transport sensor (PS113) • Tray 4 vertical transport sensor (PS123) • PC control board (PCCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS123 I/O check, sensor check	PCCB CN18C-5 (ON)	PC-218 7-K
3	PS113 I/O check, sensor check	PCCB CN4-14 (ON)	PC-218 5-C
4	M122 load check • Check code: 28 • Multi code: 21, 23	PCCB CN9C-9 to 16	PC-218 6-K
5	M112 load check • Check code: 28 • Multi code: 17, 19	PCCB CN5-9 to 16	PC-218 3 to 4-C
6	Replace PCCB.	-	-

1.7 3#-##

1.7.1 30-03

Contents

JAM type	Misfeed at transfer section	
JAM code	30-03	
JAM detection timing	30-03	• The leading edge of paper is not turned ON (unblocked) the paper exit sensor (PS3) even after the lapse of a given period of time after the paper feeding is started. • The fusing loop sensor (PS2) is not turned ON (unblocked) even after the lapse of a given period of time after the paper has turned ON (unblocked) the registration sensor (PS1).
	-	Paper jam of a sheet of paper left at the transfer section results, if the registration sensor (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 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 clutch (CL4) • Registration sensor (PS1) • Fusing loop sensor (PS2) • Paper exit sensor (PS3) • Base board (BASEB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS1 I/O check, sensor check	BASEB CN13E<A>-9 (ON)	6-C
3	PS2 I/O check, sensor check	BASEB CN13E<A>-6 (ON)	6-C
4	PS3 I/O check, sensor check	BASEB CN16E-15 (ON)	8-J
5	CL4 load check • Check code: 21 • Multi code: 2	BASEB CN13E<A>-11 (ON)	7-C
6	M1 load check • Check code: 40 • Multi code: 1, 3	BASEB CN11E-4 (REM) BASEB CN11E-7 (LOCK)	3-C
7	BASEB F21E conduction check	-	-
8	Replace BASEB.	-	-

1.7.2 32-01, 32-05, 32-06

Contents

JAM type	Misfeed at fusing/paper exit section	
JAM code	32-01, 32-05, 32-06	
JAM detection timing	32-01	The ADU paper passage sensor (PS41) is not turned ON (blocked) 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 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).
	-	Paper jam of a sheet of paper left at the 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 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	• Transport motor (M1) • Paper exit/reverse motor (M4) • ADU transport motor (M5) • Fusing loop sensor (PS2) • Paper exit sensor (PS3) • ADU paper passage sensor (PS41) • Gate switch solenoid (SD3) • Base board (BASEB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS2 I/O check, sensor check	BASEB CN13E<A>-6 (ON)	6-C
3	PS3 I/O check, sensor check	BASEB CN16E-15 (ON)	8-J
4	PS41 I/O check, sensor check	BASEB CN13E<A>-3 (ON)	6-C
5	SD3 load check • Check code: 83 • Multi code: 0	BASEB CN17E-12 (ON)	11-J
6	M1 load check • Check code: 40 • Multi code: 1, 3	BASEB CN11E-4 (REM) BASEB CN11E-7 (LOCK)	3-C
7	M4 load check • Check code: 84 • Multi code: 1, 3, 5, 7	BASEB CN14E-5 to 8	27-C
8	M5 load check • Check code: 85 • Multi code: 1, 3, 5, 7	BASEB CN14E-1 to 4	27-C
9	BASEB F21E conduction check	-	-
10	Replace BASEB.	-	-

1.8 6#-##

1.8.1 66-01, 66-11

Contents

JAM type	Misfeed at DF document switchback section (When DF-633 is installed)	
JAM code	66-01, 66-11	
JAM detection timing	66-01	The leading edge of the paper is not turned ON (unblocked) the document registration sensor (PS4) even after the lapse of a given period of time after the reverse registration operation started.
	66-11	The document registration sensor (PS4) is not turned OFF (blocked) even after the lapse of a given period of time after PS4 has turned ON (unblocked) after the reverse registration operation started.
	-	Paper jam of a sheet of paper left at the DF document switchback 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	• Left cover • Re-feeding opening	
Relevant parts	• Document feed motor (M1) • Document registration clutch (CL2) • Document registration sensor (PS4)	

	• 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 CN5-11 (ON)	6-C
3	CL2 load check • Check code: 60 • Multi code: 146	DFCB CN5-8 (REM)	6-C
4	M1 load check • Check code: 60 • Multi code: 33, 38	DFCB CN2-1 to 4	6-G
5	Replace DFCB.	-	-

1.8.2 66-02, 66-12

Contents

JAM type	Misfeed at DF paper feed section <When DF-633 is installed>	
JAM code	66-02, 66-12	
JAM detection timing	66-02	The the leading edge of the paper does not turn ON (unblock) the document feed sensor (PS3) even after the lapse of a given period of time after the document feed clutch (CL1) has been energized.
	66-12	The original size that the DF detects on the tray mismatched with the original size the main body identifies.
	-	Paper jam of a sheet of paper left at DF paper feed section results, if the document feed 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.
Misfeed processing location	Left cover	
Relevant parts	• Document transport motor (M1) • Document feed clutch (CL1) • Document feed sensor (PS3) • Document length size sensor/ FD1 (PS7) • Document length size sensor/ FD2 (PS8) • Document width size sensor/ CD1 (PS9) • Document width size sensor/ CD2 (PS10) • Document width size sensor/ CD3 (PS11) • DF control board (DFCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS3 I/O check, sensor check	DFCB CN4-11 (ON)	5-C
3	PS7 I/O check, sensor check	DFCB CN3-9 (ON)	3-C
4	PS8 I/O check, sensor check	DFCB CN3-12 (ON)	3-C
5	PS9 I/O check, sensor check	DFCB CN3-15 (ON)	3-C
6	PS10 I/O check, sensor check	DFCB CN3-3 (ON)	2-C
7	PS11 I/O check, sensor check	DFCB CN3-6 (ON)	3-C
8	CL1 load check • Check code: 60 • Multi code: 145	DFCB CN4-8 (REM)	4-C
9	M1 load check • Check code: 60 • Multi code: 33, 38	DFCB CN2-1 to 4	6-G
10	Replace DFCB.	-	-

1.8.3 66-03, 66-13, 66-23, 66-33

Contents

JAM type	Misfeed at DF document transport section (When DF-633 is installed)	
JAM code	66-03, 66-13, 66-23, 66-33	
JAM detection timing	66-03	The document feed sensor (PS3) is not turned OFF (blocked) even after the lapse of a given period of time after PS3 has turned ON (unblocked).
	66-13	The document registration sensor (PS4) is not turned ON (unblocked) even after the lapse of a given period of time after the document feed sensor (PS3) has turned ON (unblocked).
	66-23	The document registration sensor (PS4) is not turned OFF (blocked) even after the lapse of a given period of time after PS4 has turned ON (unblocked).

	66-33	The document reading sensor (PS5) is not turned ON even after the lapse of a given period of time after the document registration sensor (PS4) has turned ON (unblocked).
	-	Paper jam of a sheet of paper left at the DF document transport section results, if the document registration sensor (PS4) 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.
Misfeed processing location	Left cover	
Relevant parts	• Document feed motor (M1) • Document feed clutch (CL1) • Document registration clutch (CL2) • Document feed sensor (PS3) • Document registration sensor (PS4) • Document reading sensor (PS5) • DF control board (DFCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS3 I/O check, sensor check	DFCB CN4-11 (ON)	5-C
3	PS4 I/O check, sensor check	DFCB CN5-11 (ON)	6-C
4	PS5 I/O check, sensor check	DFCB CN5-2 (ON)	5-C
5	CL1 load check • Check code: 60 • Multi code: 145	DFCB CN4-8 (REM)	4-C
6	CL2 load check • Check code: 60 • Multi code: 146	DFCB CN5-8 (REM)	6-C
7	M1 load check • Check code: 60 • Multi code: 33, 38	DFCB CN2-1 to 4	6-G
8	Replace DFCB.	-	-

1.8.4 66-04, 66-14

Contents

JAM type	Misfeed at DF document exit section (When DF-633 is installed)	
JAM code	66-04, 66-14	
JAM detection timing	66-04	The document exit sensor (PS6) is not turned ON (unblocked) even after the lapse of a given period of time after the document reading sensor (PS5) has turned ON.
	66-14	The document exit sensor (PS6) is not turned OFF (blocked) even after the lapse of a given period of time after the document reading sensor (PS5) has turned OFF.
	-	Paper jam of a sheet of paper left at the DF document exit section results, if the document exit sensor (PS6) 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.
Misfeed processing location	• Left cover • Opening and closing guide	
Relevant parts	• Document feed motor (M1) • Document reading sensor (PS5) • Document exit sensor (PS6) • DF control board (DFCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS5 I/O check, sensor check	DFCB CN5-2 (ON)	5-C
3	PS6 I/O check, sensor check	DFCB CN5-6 (ON)	5-C
4	M1 load check • Check code: 60 • Multi code: 33, 38	DFCB CN2-1 to 4	6-G
5	Replace DFCB.	-	-

1.8.5 66-05, 66-06

Contents

JAM type	Misfeed at DF document reading section (When DF-633 is installed)
JAM code	66-05, 66-06

JAM detection timing	66-05	The document reading sensor (PS5) is not turned OFF even after the lapse of a given period of time after the document registration sensor (PS4) has turned OFF (blocked).
	66-06	The document reading sensor (PS5) is turned ON earlier than a given time after PS5 is turned OFF during original transportation.
	-	Paper jam of a sheet of paper left at the DF document reading section results, if the document reading sensor (PS5) 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	Left cover	
Relevant parts	• Document feed motor (M1) • Document registration sensor (PS4) • Document reading sensor (PS5) • 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	PS4 I/O check, sensor check	DFCB CN5-11 (ON)	6-C
4	PS5 I/O check, sensor check	DFCB CN5-2 (ON)	5-C
5	M1 load check • Check code: 60 • Multi code: 33, 38	DFCB CN2-1 to 4	6-G
6	Replace DFCB.	-	-

1.8.6 66-07

Contents

JAM type	Misfeed at DF document feed/transport/reading/switchback/exit section (When DF-633 is installed)	
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 (PS4) • Document reading sensor (PS5) • Document exit 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	PS4 I/O check, sensor check	DFCB CN5-11 (ON)	6-C
4	PS5 I/O check, sensor check	DFCB CN5-2 (ON)	5-C
5	PS6 I/O check, sensor check	DFCB CN5-6 (ON)	5-C
6	Replace DFCB.	-	-

1.8.7 66-54

Contents

JAM type	DF controller jam (When DF-633 is installed)	
JAM code	66-54	
JAM detection timing	66-54	DF is not operation even 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 feed clutch (CL1) • Document registration clutch (CL2) • Document feed sensor (PS3) • Document registration sensor (PS4) • Document reading sensor (PS5) • Document exit sensor (PS6) • DF control board (DFCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS3 I/O check, sensor check	DFCB CN4-11 (ON)	5-C
3	PS4 I/O check, sensor check	DFCB CN5-11 (ON)	6-C
4	PS5 I/O check, sensor check	DFCB CN5-2 (ON)	5-C
5	PS6 I/O check, sensor check	DFCB CN5-6 (ON)	5-C
6	CL1 load check • Check code: 60 • Multi code: 145	DFCB CN4-8 (REM)	4-C
7	CL2 load check • Check code: 60 • Multi code: 146	DFCB CN5-8 (REM)	6-C
8	M1 load check • Check code: 60 • Multi code: 33, 38	DFCB CN2-1 to 4	6-G
9	Replace DFCB.	-	-

1.9 7#-##

1.9.1 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.	-	-

1.9.2 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.	-	-

1.9.3 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-533 or FS-533+PK519 is installed

Contents

JAM type	Misfeed at FS transport section <When FS-533 or FS-533+PK-519 is installed>		
JAM code	72-16		
JAM detection timing	72-16	<When FS-533 is installed>	The paper feed sensor (PS101) is not turned ON 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).
		<When FS-533+PK-519 is installed>	The paper feed sensor (PS101) 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 paper feed sensor (PS201).
Misfeed processing location	Finisher paper feed section (When FS-533 is installed)		
Relevant parts	<When FS-533 is installed>		• Transport motor (M101) • Paper exit sensor (PS3) • Paper feed sensor (PS101) • FS control board (FSCB) • Base board (BASEB)
	<When FS-533+PK-519 is installed>		• Transport motor (M101) • Paper feed sensor (PS101) • Paper feed sensor (PS201) • FS control board (FSCB) • Base board (BASEB)

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS3 I/O check, sensor check	BASEB CN16E-15 (ON)	8-J
3	PS101 I/O check, sensor check	FSCB CN111	FS-533 7-D to E
4	PS201 I/O check, sensor check	PKCB CN204	FS-533 (PK-519) 5-C
5	M101 operation check	FSCB CN101	FS-533 6-J
6	FSCB CP101 conduction check	-	-
7	Replace FSCB.	-	-
8	Replace BASEB.	-	-

1.9.4 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-533 is installed

Contents

JAM type	Misfeed at FS transport section <When FS-533 is installed>	
JAM code	72-17	
JAM detection timing	72-17	The paper feed sensor (PS101) is not turn OFF even after the lapse of a given period of time after the leading edge of the paper has turned ON PS101.
Misfeed processing location	Finisher paper feed section	
Relevant parts	• Transport motor (M101) • Paper feed sensor (PS101) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS101 I/O check, sensor check	FSCB CN111	FS-533 7-D to E
3	M101 operation check	FSCB CN101	FS-533 6-J
4	FSCB CP101 conduction check	-	-
5	Replace FSCB.	-	-

1.9.5 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.	-	-

1.9.6 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.	-	-

1.9.7 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-533 is installed

Contents

JAM type	Misfeed at FS transport section <When FS-533 is installed>	
JAM code	72-21	
JAM detection timing	72-21	The paper surface detect sensor/1 (PS102) is not turned OFF (unblocked) after the paper exit.
Misfeed processing location	Finisher paper exit section	
Relevant parts	• Paper exit motor (M102) • Paper surface detect sensor/1 (PS102) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS102 I/O check, sensor check	FSCB CN102	FS-533 6-J
3	M102 operation check	FSCB CN109	FS-533 8 to 9-D to E
4	FSCB CP102 conduction check	-	-
5	Replace FSCB.	-	-

1.9.8 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.	-	-

1.9.9 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.	-	-

1.9.10 72-25

(1) When FS-539SD is installed

Contents

JAM type	Misfeed at SD paper exit section (When FS-539SD is installed)	
JAM code	72-25	
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.
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.	-	-

1.9.11 72-26

(1) When FS-539SD is installed

Contents

JAM type	Misfeed at SD paper exit section (When FS-539SD is installed)

JAM code	72-26	
	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.	-	-

1.9.12 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-533+PK-519 is installed

Contents

JAM type	Misfeed at PK section <When FS-533+PK-519 is installed>	
JAM code	72-43	
JAM detection timing	72-43	The punch motor sensor (PS202) does not detect rotation of the punch motor even after the lapse of a given period of time after the punch motor (M201) started operating.
Misfeed processing location	Finisher punch section	
Relevant parts	• Punch motor (M201) • Punch motor sensor (PS202) • PK control board (PKCB) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS202 I/O check, sensor check	PKCB CN204	FS-533 (PK-519) 5-C
3	M201 operation check	PKCB CN203-1 to 2	FS-533 (PK-519) 4-C
4	Replace PKCB.	-	-
5	Replace FSCB.	-	-

1.9.13 72-70

(1) When FS-533+PK-519 is installed

Contents

JAM type	Misfeed at PK section <When FS-533+PK-519 is installed>	
JAM code	72-70	
JAM detection timing	72-70	The paper feed sensor (PS201) is not turned OFF even after the lapse of a given period of time after the leading edge of the paper has turned ON PS201.
Misfeed processing location	Finisher punch section	
Relevant parts	• Transport motor (M1) • Transport motor (M101) • Paper feed sensor (PS201) • FS control board (FSCB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS201 I/O check, sensor check	PKCB CN204	FS-533 (PK-519) 5-C
3	M1 operation check	BASEB CN11E-4 to 7	3-C
4	M101 operation check	FSCB CN101	FS-533 6-J
5	Replace FSCB.	-	-

1.9.14 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.	-	-

1.9.15 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

Step	Action	Control signal	Location of electrical component
4	M10 operation check	FSCB J13-1 to 2	FS-539/FS-539SD 17-C
5	Replace FSCB.	-	-

1.9.16 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
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.	-	-

1.9.17 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-533 is installed

Contents

JAM type	Misfeed at FS staple section <When FS-533 is installed>	
JAM code	72-81	
JAM detection timing	72-81	The stapler home sensor (PS110) is not turned ON (blocked) after the stapler motor is energized.
Misfeed processing location	Finisher staple section	
Relevant parts	• Stapler home sensor (PS110) • Stapler unit • Stapler relay board (STREYB) • 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	PS110 I/O check, sensor check	FSCB CN110	FS-533 8-D to E
3	Replace the stapler unit.	-	-
4	Replace STREYB.	-	-
5	Replace FSCB.	-	-

1.9.18 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.	-	-

1.9.19 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
4	Replace SDCB.	-	-
5	Replace FSCB.	-	-

1.9.20 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.	-	-

1.9.21 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.	-	-

1.9.22 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 CN16E-15 (ON)	8-J
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.	-	-

1.9.23 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.	-	-

1.10 9#-##

1.10.1 92-01, 92-02, 92-40

Contents

JAM type	Misfeed at duplex pre-registration section	
JAM code	92-01, 92-02, 92-40	
JAM detection timing	92-01	The registration sensor (PS1) is not turned ON (unblocked) 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.
	92-40	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 (M5) • Registration sensor (PS1) • Base board (BASEB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS1 I/O check, sensor check	BASEB CN13E<A>-9 (ON)	6-C
3	M5 load check • Check code: 85 • Multi code: 1, 3, 5, 7	BASEB CN14E-1 to 4	27-C
4	Replace BASEB.	-	-

1.10.2 99-01

Contents

JAM type	Controller JAM (paper size error)	
JAM code	99-01	
JAM detection timing	99-01	• As a result of a paper size error, 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, 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 front door of the main body.	-	-

1.10.3 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 front door of the main body.	-	-

1.10.4 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 front door of the main body.	-	-

1.10.5 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 front door of the main body.	-	-

1.10.6 99-05

Contents

JAM type	Controller JAM (main body not starting a job)	
JAM code	99-05	
JAM detection timing	99-05	Paper is not taken up and fed in even with a print start command received. The job is not started 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 front door of the main body.	-	-

1.10.7 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	The print control does not complete even after a lapse of a given time after a print 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 front door of the main body.	-	-

1.10.8 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 front door of the main body.	-	-

1.10.9 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 front door of the main body. Or, open and close the front door of the finisher.	-	-

1.10.10 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 front door of the main body. Or, open and close the front door of the finisher.	-	-

1.11 Misfeed at duplex transport section

Contents

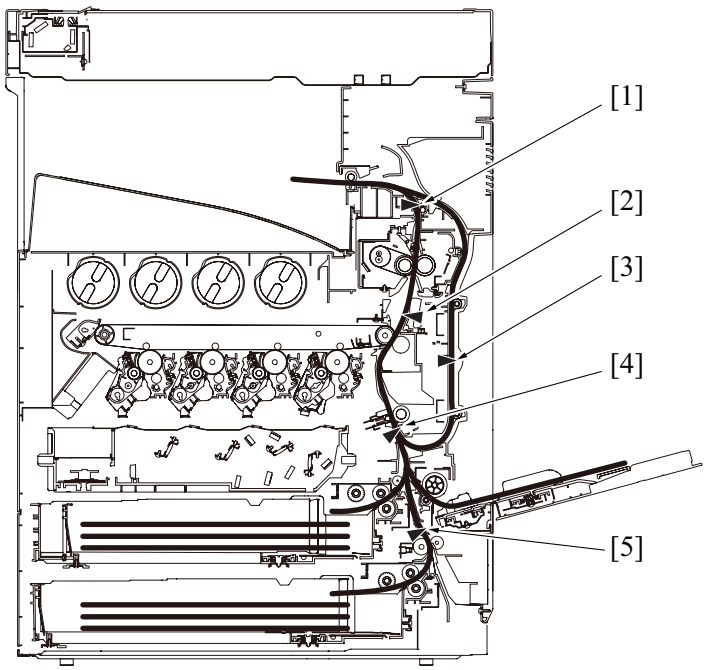
JAM type	Misfeed at duplex transport section	
JAM code	-	
JAM detection timing	-	Paper jam of a sheet of paper left at the duplex transport section results, if the ADU paper passage sensor (PS41) is turned ON when the main power switch is turned ON, a door is opened and closed, or a misfeed or malfunction is reset.
	-	Paper jam of a sheet of paper left at the 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 (M5) • ADU paper passage sensor (PS41) • Base board (BASEB)	

Procedure

Step	Action	Control signal	Location of electrical component
1	Initial check items	-	-
2	PS41 I/O check, sensor check	BASEB CN13E<A>-3 (ON)	6-C
3	M5 load check • Check code: 85 • Multi code: 1, 3, 5, 7	BASEB CN14E-1 to 4	27-C
4	Replace BASEB.	-	-

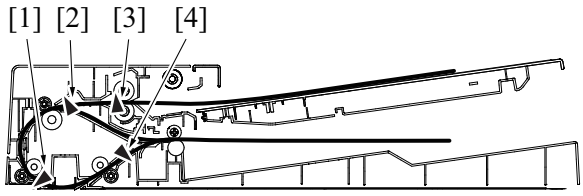
1.12 Sensor layout

1.12.1 Main body



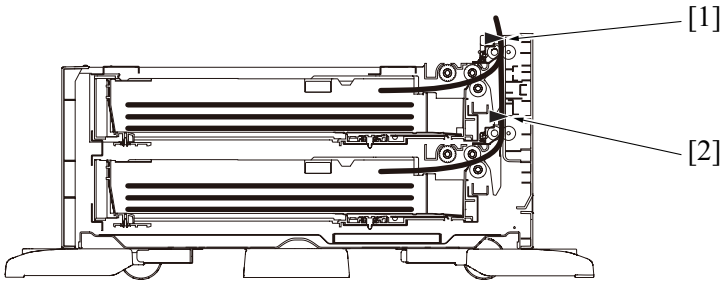
[1]	Paper exit sensor (PS3)	[2]	Fusing loop sensor (PS2)
[3]	ADU paper passage sensor (PS41)	[4]	Registration sensor (PS1)
[5]	Tray 2 vertical transport sensor (PS19)	-	-

1.12.2 DF-633



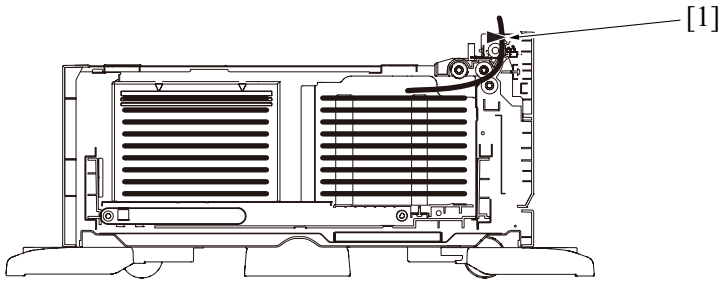
[1]	Document reading sensor (PS5)	[2]	Document registration sensor (PS4)
[3]	Document feed sensor (PS3)	[4]	Document exit sensor (PS6)

1.12.3 PC-118/PC-218



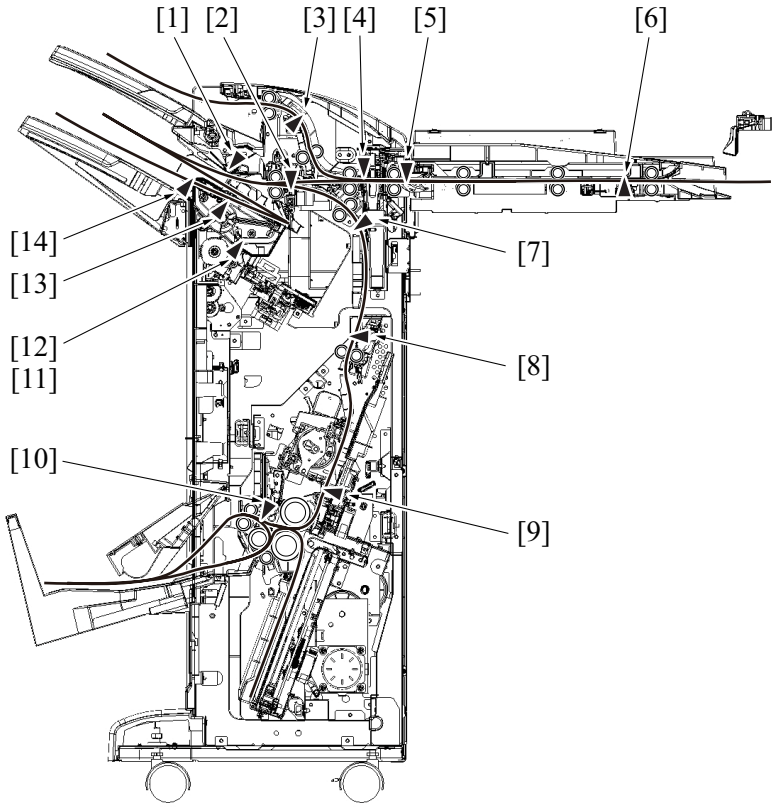
[1]	Tray 3 vertical transport sensor (PS113)	[2]	Tray 4 vertical transport sensor (PS123)

1.12.4 PC-418



[1]	LCT vertical transport sensor (PS133)	-	-

1.12.5 FS-539/FS-539SD/PK-524/RU-514

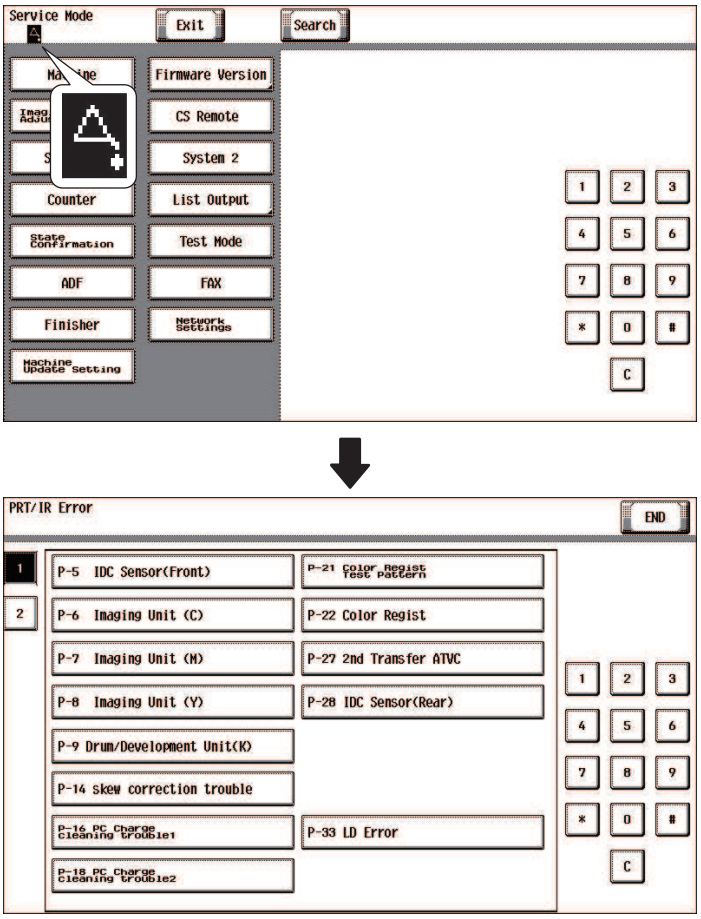


[1]	Upper paddle home sensor (PS14)	[2]	Main tray exit sensor (PS16)
[3]	Sub tray exit sensor (PS8)	[4]	Punch position sensor (PS2): PK-524
[5]	FNS entrance sensor (PS4)	[6]	RU entrance sensor (PS2): RU-514
[7]	Saddle exit sensor (PS5)	[8]	SD entrance sensor (PS101): SD
[9]	Center staple/fold stacker 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)

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
P-5	IDC sensor/Fr failure
P-28	IDC sensor/Rr failure
P-6	Imaging unit (C) failure
P-7	Imaging unit (M) failure
P-8	Imaging unit (Y) failure
P-9	Drum/Development unit (K) failure
P-14	Skew correction trouble
P-21	Color regist test pattern failure
P-22	Color regist adjust failure
P-27	Secondary transfer ATVC failure
P-33	LD malfunction

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	• CIS module (CIS) • Base board (BASEB)

Procedure

1. Correct the harness connection between CIS-BASEB CN2 if faulty.
2. Check for possible extraneous light and correct as necessary.
3. Replace CIS.
4. 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 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 of each color 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 or IDCS/Rr if it is installed or connected improperly.
4. Clean IDCS/Fr or IDCS/Rr if it is dirty.
5. Check the HV connector for proper connection and correct as necessary.
6. Open/close the 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.
7. Replace BASEB.

2.6 P-6, P-7, P-8, P-9

Contents

Malfunction type	Imaging unit (C) failure, Imaging unit (M) failure, Imaging unit (Y) failure, Drum/Development unit (K) failure
Malfunction code	P-6, P-7, P-8, P-9
Malfunction detection timing	• All density readings taken from the density pattern produced on the transfer belt are 1.0 g/m^2 (IDC sensor photo receiver output) or less during max. density adjustment (Vg/Vdc adjustment). • All density readings taken from the density pattern produced on the transfer belt are 4.0 g/m^2 (IDC sensor photo receiver output) or more during max. density adjustment (Vg/Vdc adjustment).
Relevant parts	• Imaging unit/Y,M,C • 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 [Imaging Process Adjustment] and, if it is negative, readjust.
2. Check the drive transmission portion of the imaging unit or 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 imaging unit or drum/developing unit connector if dirty.
5. Check the HV connector for proper connection and correct as necessary.
6. Replace the imaging unit/Y,M,C.
7. Replace the drum unit/K.
8. Replace the developing unit/K.
9. Replace the transfer belt unit.
10. Replace HV.
11. Replace BASEB.

2.7 P-14

Contents

Malfunction type	Skew correction trouble
Malfunction code	P-14
Malfunction detection timing	The difference between the skew default position setting value and the cumulative amount of skew adjustment values goes over the predetermined value.
Relevant parts	• IDC sensor/Fr (IDCS/Fr) • IDC sensor/Rr (IDCS/Rr) • Imaging unit/Y,M,C • Drum unit/K • Base board (BASEB) • PH unit

Procedure

1. Check the drive transmission portion of the imaging unit or drum unit and correct as necessary.
2. Clean the contact of the imaging unit or drum unit connector if dirty.
3. Reinstall or reconnect IDCS/Fr or IDCS/Rr if it is installed or connected improperly.
4. Clean IDCS/Fr or IDCS/Rr if it is dirty.
5. Check the BASEB connector for proper connection and correct as necessary.
6. Replace IDCS/Fr or IDCS/Rr.
7. Replace the imaging unit/Y,M,C.
8. Replace the drum unit/K.
9. Replace the PH unit.
10. Replace BASEB.

NOTE

- **After the PH unit is replaced, reset the skew default position for each color in [Service Mode] -> [Machine] -> [Print Head Skew Adj.] -> [Print Head Skew Adj.]**
- **When this alert code is displayed, according to the list, take actions to address the problem. After the problem is resolved, select [Service Mode] -> [Machine] -> [Print Head Skew Adj.] -> [Print Head Skew Reset] and perform the skew adjustment reset.**

2.8 P-21

Contents

Malfunction type	Color regist test pattern failure
Malfunction code	P-21
Malfunction detection timing	• During pre-pattern detection, pre-pattern edge (start/ end point of effective area) is not detected within the pre-pattern search area. • During detection of regist pattern at vertical/horizontal direction, pattern edge (start/end point of effective area) is not detected within the pattern search area of each unit.
Relevant parts	• Transfer belt unit • PH 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. Replace the PH unit.
4. Replace BASEB.

2.9 P-22

Contents

Malfunction type	Color regist adjust failure
Malfunction code	P-22
Malfunction detection timing	• The gap between maximum and minimum value of deviations among each color (the values before averaging) is over the predetermined value. • Average deviation exceeds the predetermined value.

	• In case the final value of the deviation after stabilization exceeds the predetermined value, it is regarded as failure even if the average deviation is within tolerance.
Relevant parts	• IDC sensor/Fr (IDCS/Fr) • IDC sensor/Rr (IDCS/Rr) • Base board (BASEB)

Procedure

1. Slide out the imaging unit or drum/developing unit and reinstall it in position.
2. Reinstall or reconnect IDCS/Fr or IDCS/Rr if it is installed or connected improperly.
3. Check the vertical transport guide for installed position and correct as necessary.
4. Replace BASEB.

2.10 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 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.

2.11 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/Y (LD/Y) • Laser diode/M (LD/M) • Laser diode/C (LD/C) • Laser diode/K (LD/K) • Laser drive board (LDDB) • PH unit • Base board (BASEB)

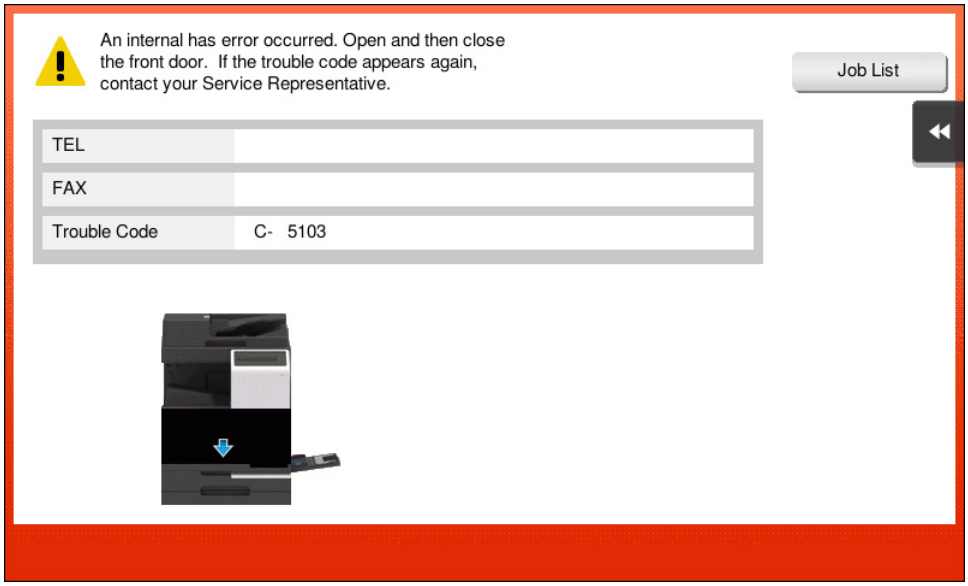
Procedure

1. Replace the PH unit.
2. Replace BASEB.

3. TROUBLE CODE

3.1 Overview of trouble code

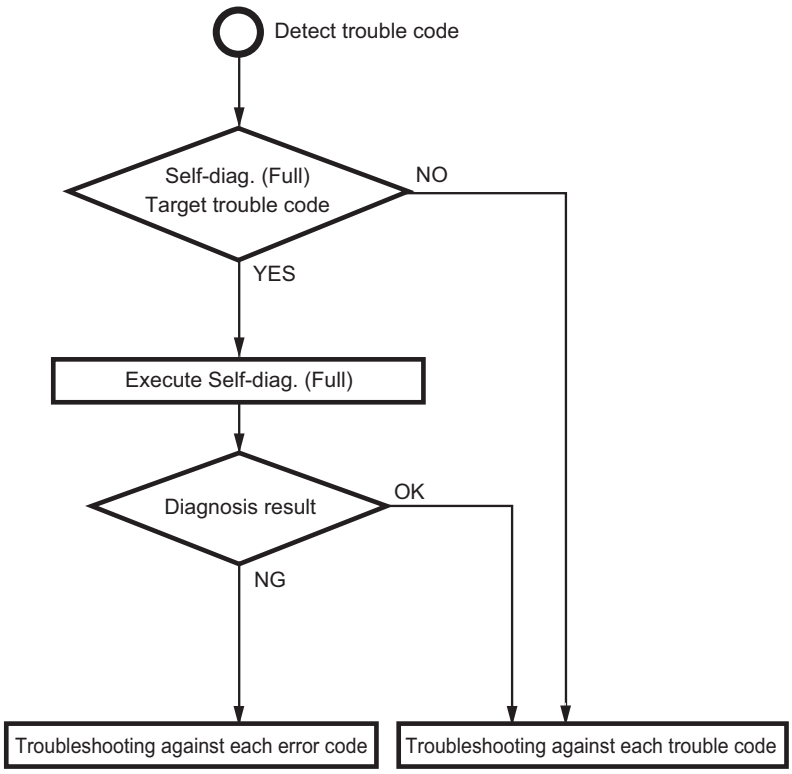
- The machine's CPU performs a self-diagnostics function that, on detecting a malfunction, gives the corresponding trouble code on the control panel.



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. Turn main power switch ON while pressing the Reset key.
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) >

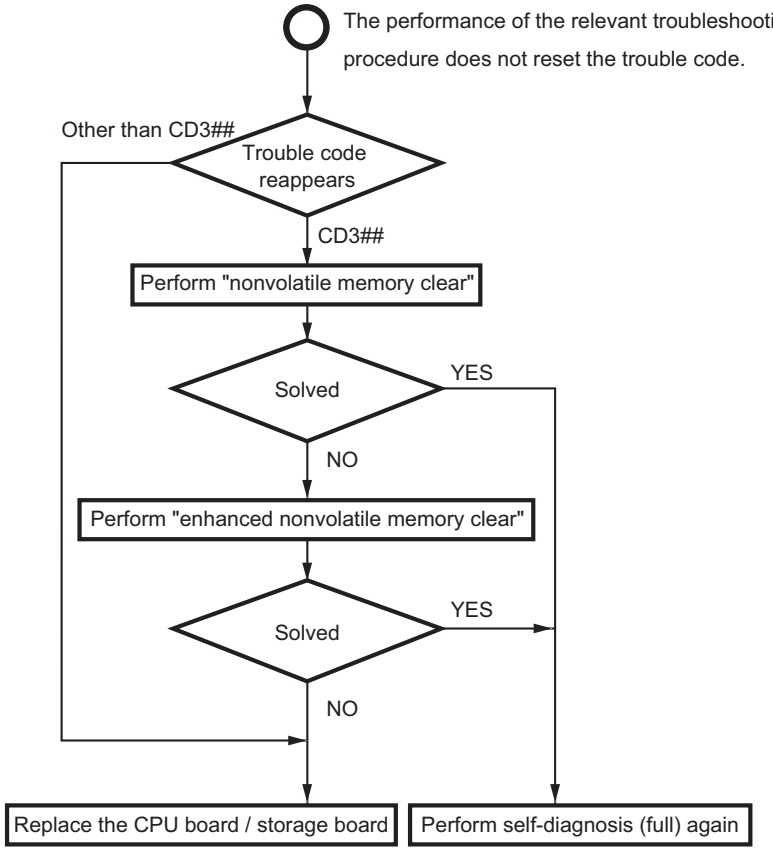
1. Access Enterprise Suite.
2. Select [Device List] -> [Device Management] -> [Device List] -> [Device List] -> [Device].
3. For rank B trouble, click [Trouble Reset]. For rank C trouble, click [Reset].
4. For rank B trouble, click the [Execute] button.
   For rank C trouble, click the [Execute] button 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. Press [State Confirmation] -> [Self-diag.(Full)] to display the "Full Self Diagnostic screen".
3. Press the following keys in this order.
   - Stop -> 2 -> 9 -> 8 -> 2
4. Touch [NVRAM Clear].
5. Touch [Clear the memory] or press the start key.
   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 press the start key.
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 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
  - manual
  - Center Stapling/Half-Fold/Tri-Fold
  - 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	-
C0106	Tray 3/LCT paper feed motor turning at abnormal timing (When PC-118, PC-218 or PC-418 is installed)	B	-
C0107	Tray 3/LCT vertical transport motor turning at abnormal timing (When PC-118, PC-218 or PC-418 is installed)	B	-
C0108	Tray 4 paper feed motor turning at abnormal timing (When PC-218 is installed)	B	-
C0109	Tray 4 vertical transport motor turning at abnormal timing (When PC-218 is installed)	B	-
C0202	Tray 1 feeder up/down abnormality	B	-
C0204	Tray 2 feeder up/down abnormality	B	-
C0206	Tray 3 lift-up failure (When PC-118 or PC-218 is installed)	B	-
C0208	Tray 4 lift-up failure (When PC-218 is installed)	B	-
C0210	LCT lift failure (When PC-418 is installed)	B	-
C0211	Manual feed up/down abnormality	B	-
C0214	LCT shift failure (When PC-418 is installed)	B	-
C1004	Finisher communication error (Engine detection) (When FS-533, FS-539, FS-539SD or JS-506 is installed)	C	-
C1014	Finisher communication error (Finisher detection) (When FS-533, FS-539, FS-539SD or JS-506 is installed)	C	-
C1081	SD communication error (Finisher detection) (When FS-539SD is installed)	C	-
C1082	SD communication error (SD detection) (When FS-539SD is installed)	C	-
C1102	Main tray up/down motor drive malfunction (When FS-533, FS-539 or FS-539SD is installed)	B	-
C1103	Alignment motor/Fr malfunction (When FS-533, FS-539 or FS-539SD is installed)	B	-
C1105	Bundle eject motor drive malfunction (When FS-539 or FS-539SD is installed)	B	-
C1106	Stapler movement motor drive malfunction (When FS-533, FS-539 or FS-539SD is installed)	B	-
C1109	Stapler motor drive malfunction (When FS-533, FS-539 or FS-539SD is installed)	B	-
C1112	Stapler motor malfunction (When FS-539SD is installed)	B	-
C1113	Stopper drive motor malfunction (When FS-539SD is installed)	B	-
C1114	Alignment motor drive malfunction (When FS-539SD is installed)	B	-
C1115	Center fold knife motor malfunction (When FS-539SD is installed)	B	-
C1132	Punch drive motor malfunction (When FS-533+PK-519, FS-539+PK-524 or FS-539SD+PK-524 is installed)	B	-
C1140	Alignment motor/Rr malfunction (When FS-533, FS-539 or FS-539SD is installed)	B	-
C1141	FNS paddle motor drive malfunction (When FS-539 or FS-539SD is installed)	B	-
C1144	Pre-eject drive motor malfunction (When FS-539 or FS-539SD is installed)	B	-
C1145	Trailing edge stopper motor malfunction (When FS-539 or FS-539SD is installed)	B	-
C1156	SD paddle motor malfunction (When FS-539SD is installed)	B	-
C1182	Shift motor drive malfunction (When JS-506 is installed)	B	-
C1184	Paper discharge control motor malfunction (When FS-539 or FS-539SD is installed)	B	-
C1195	Paper discharge control motor malfunction (When FS-539SD is installed)	B	-
C1196	Center fold roller motor malfunction (When FS-539SD is installed)	B	-
C1197	Tri-folding guide motor malfunction (When FS-539SD is installed)	B	-
C11A1	Exit roller pressure/ retraction malfunction (When FS-533 installed)	B	-
C11A2	Accommodation roller pressure/ retraction malfunction (When FS-539SD is installed)	B	-
C11E1	Paper exit switch drive malfunction (When FS-539 or FS-539SD is installed)	B	-
C1402	FS nonvolatile memory error <When FS-533 is installed>	C	-
C2152	Transfer belt fault at initial position return	B	-
C2153	Transfer belt spacing fault at K pressure switching	B	-

Trouble Code	Contents	Rank	Self-diag. (Full)
C2154	Transfer belt contact fault at all pressure switching	B	-
C2155	Transfer belt contact fault after K pressure established	B	-
C2156	Transfer belt spacing fault after all pressure established	B	-
C2253	IU motor failure to turn	B	-
C2254	IU motor turning at abnormal timing	B	-
C2355	Transfer belt cleaner cooling fan failure to turn	B	-
C2414	Developing unit/K new article release	B	-
C2551	Abnormally low toner density detected cyan TCR sensor	B	-
C2552	Abnormally high toner density detected cyan TCR sensor	B	-
C2553	Abnormally low toner density detected magenta TCR sensor	B	-
C2554	Abnormally high toner density detected magenta TCR sensor	B	-
C2555	Abnormally low toner density detected yellow TCR sensor	B	-
C2556	Abnormally high toner density detected yellow TCR sensor	B	-
C2557	Abnormally low toner density detected black TCR sensor	B	-
C2558	Abnormally high toner density detected black TCR sensor	B	-
C2559	Cyan TCR sensor adjustment failure	B	-
C255A	Magenta TCR sensor adjustment failure	B	-
C255B	Yellow TCR sensor adjustment failure	B	-
C255C	Black TCR sensor adjustment failure	B	-
C2561	Cyan TCR sensor failure	B	-
C2562	Magenta TCR sensor failure	B	-
C2563	Yellow TCR sensor failure	B	-
C2564	Black TCR sensor failure	B	-
C2650	Main backup media access error	C	-
C2A11	Imaging unit/C new article release	B	-
C2A12	Imaging unit/M new article release	B	-
C2A13	Imaging unit/Y new article release	B	-
C2A14	Drum unit/K new release failure	B	-
C3201	Fusing motor failure to turn	B	-
C3202	Fusing motor turning at abnormal timing	B	-
C3302	Paper cooling fan 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	-
C3736	Fusing abnormally high temperature detection hard protector (Middle of the heating roller)	A	-
C3739	Fusing abnormally high temperature detection hard protector (Edge of the heating roller)	A	-
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	-
C392C	Fusing sensor wire breaks detection (heating detection)	A	-
C392D	Fusing sensor wire breaks detection (heating compensation)	A	-
C392E	Fusing sensor wire breaks detection (heating GND)	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	Target
C40C5	CTL PF transmission timeout 2	C	Target
C4101	Polygon motor rotation trouble	B	-
C4501	Laser malfunction	B	-

Trouble Code	Contents	Rank	Self-diag. (Full)
C5102	Transport motor failure to turn	B	-
C5103	Transport motor turning at abnormal timing	B	-
C5351	Power supply cooling fan motor's failure to turn	B	-
C5360	Clean unit fan failure to turn (When CU-101 is installed)	B	-
C5370	Rear side cooling fan failure to turn	C	Target
C5372	MFP control board CPU temperature failure	C	Target
C5501	AC signal abnormality	C	-
C5601	Engine control malfunction	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	-
C6103	Slider over running	B	-
C6704	Image input time out	C	Target
C6751	Light intensity adjustment failure	B	Target
C6752	ASIC clock input error (front side)	C	Target
C6756	CIS power-supply voltage malfunction	C	Target
C6F01	Scanner sequence trouble 1	C	-
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
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
C7111	Tray 1 lift-up motor failure	C	-
C7112	Tray 2 lift-up motor failure	C	-
C7151	Skew correction motor/C failure	C	-
C7152	Skew correction motor/M failure	C	-
C7153	Skew correction motor/Y failure	C	-
C7201	Tray 1 paper feed clutch failure	C	-
C7202	Tray 2 paper feed clutch failure	C	-
C7205	Tray 2 vertical transport clutch failure	C	-
C7206	Bypass tray paper feed clutch failure	C	-
C720A	Registration clutch failure	C	-
C720B	1st transfer pressure clutch failure	C	-
C7241	Bypass pick-up solenoid failure	C	-
C7243	Exit path switch solenoid failure	C	-
C7260	Erase failure	C	-
C7301	Power supply cooling fan failure	C	-
C7302	Transfer belt cleaner cooling fan failure	C	-
C7305	Paper cooling fan failure	C	-
C7501	Tray 2 upper limit sensor failure	C	-
C7502	Tray 1 upper limit sensor failure	C	-
C7601	Power line A1 error	C	-
C7602	Power line A2 error	C	-
C7603	Power line A3 error	C	-
C7604	Power line A4 error	C	-
C7605	Power line A5 error	C	-
C7606	Power line A6 error	C	-

Trouble Code	Contents	Rank	Self-diag. (Full)
C7607	Power line A7 error	C	-
C760A	Power line A10 error	C	-
C760B	Power line A11 error	C	-
C760E	Power line A14 error	C	-
C760F	Power line A15 error	C	-
C7631	Supply power line 1 error	C	-
C7633	Supply power line 3 error	C	-
C9401	CIS lighting failure	B	Target
C9402	CIS 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
CC140	Trouble related to security	C	-
CC151	ROM contents error upon startup (MSC)	C	Target
CC152	ROM contents error upon startup (IR)	C	Target
CC155	Finisher ROM error (When FS-533/FS-539, FS-539, FS-539SD or JS-506 is installed)	C	-
CC156	DF ROM error (When DF-633 is installed)	C	Target
CC15B	Flash ROM error (saddle) (When FS-539SD is installed)	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
CC184	Dynamic link error during starting (IMY)	C	Target
CC185	Dynamic link error during starting (SPF)	C	Target

Trouble Code	Contents	Rank	Self-diag. (Full)
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	Target
CD002	JOB RAM save error	C	Target
CD004	Hard disk access error (connection failure)	C	Target
CD00F	Hard disk data transfer error	C	Target
CD010	Hard disk unformat	C	Target
CD011	Hard disk out of specifications mounted	C	Target
CD012	Mount error due to hard disk being unformatted	C	Target
CD020	Hard disk verify error	C	Target
CD030	Hard disk management information reading error	C	Target
CD041	HDD command execution error	C	Target
CD042		C	Target
CD043		C	Target
CD044		C	Target
CD045		C	Target
CD046		C	Target
CD047	HDD SCSI library error	C	Target
CD048		C	Target
CD049		C	Target
CD04A		C	Target
CD04B		C	Target
CD050	Hard disk recovery timeout	C	Target
CD070	Storage data copy uncompleted	C	Target
CD071	microSD startup failure	C	Target
CD072	Second-hand SSD 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 board error	C	Target
CD262	Extension network adapter installation error	C	Target
CD2D1	VLAN setting configuration error	B	-
CD3##	Nonvolatile data error	C	-
CD313	TPM key data error	C	-
CD38E	Nonvolatile data save error (SPI-Flash)	C	-
CD390	Nonvolatile data checksum error	C	-
CD391	Nonvolatile data save error (Storage)	-	-
CD392	Nonvolatile data save error (EEPROM)	C	-
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	Touch panel type mismatch	C	Target
CD603	Electrostatic touch panel operation mode error	C	Target
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-533, FS-539, FS-539SD or JS-506 is installed)	C	-
CDC##	Trouble related to security	-	-
CDF50	ASIC image version failure	C	Target
CDF70	ASIC image access failure	C	Target
CDFA0	ASIC image error	C	Target
CE001	Abnormal message queue	C	-
CE002	Message and method parameter failure	C	-
CE003	Task error	C	-
CE004	Event error	C	-
CE005	Memory access error	C	-
CE006	Header access error	C	-
CE007	DIMM initialize error	C	-
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	Target

3.7 C0###

3.7.1 C0002

(1) When PC-118 or PC-218 is installed

Contents

Trouble type	C0002: Paper feed communication error (When PC-118 or PC-218 is installed)
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 harness connection between the main body and the paper feed cabinet if faulty.
3. Rewrite the firmware.
4. Replace PCCB.
5. Replace CPUB.
6. Replace BASEB.

(2) When PC-418 is installed

Contents

Trouble type	C0002: Paper feed communication error (When PC-418 installed)
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 harness connection between the main body and the paper feed cabinet if faulty.
3. Rewrite the firmware.
4. Replace PCCB.
5. Replace CPUB.
6. Replace BASEB.

3.7.2 C0106

(1) When PC-118 or PC-218 is installed

Contents

Trouble type	C0106: Tray 3 paper feed motor turning at abnormal timing (When PC-118 or PC-218 is installed)
Rank	B
Trouble detection condition	• The motor lock signal remains HIGH for a predetermined continuous period of time while the motor is turning. • The motor lock signal remains LOW for a predetermined continuous period of time while the motor remains stationary.
Trouble isolation	-
Relevant electrical parts	• Tray 3 paper feed motor (M111) • PC control board (PCCB)

Procedure

1. Check the connector between M111-PCCB CN5 for proper connection and correct as necessary.
2. Check the connector of M111 for proper drive coupling and correct as necessary.
3. M111 load check
   - Check code: 28
   - Multi code: 9,11
   - Control signal: PCCB CN5-5 (CW/CCW)
   - Location of electrical component: PC-118/PC-218 4-C
4. Replace M111.
5. Replace PCCB.

(2) When PC-418 is installed

Contents

Trouble type	C0106: LCT paper feed motor turning at abnormal timing (When PC-418 is installed)

Rank	B
Trouble detection condition	• The motor lock signal remains HIGH for a predetermined continuous period of time while the motor is turning. • The motor lock signal remains LOW for a predetermined continuous period of time while the motor remains stationary.
Trouble isolation	-
Relevant electrical parts	• Paper feed motor (M131) • PC control board (PCCB)

Procedure

1. Check the connector between M131-PCCB CN5 for proper connection and correct as necessary.
2. Check the connector of M131 for proper drive coupling and correct as necessary.
3. M131 load check
   - Check code: 28
   - Multi code: 1,3
   - Control signal: PCCB CN5-5 (CW/CCW)
   - Location of electrical component: PC-418 5-J
4. Replace M131.
5. Replace PCCB.

3.7.3 C0107

(1) When PC-118 or PC-218 is installed

Contents

Trouble type	C0107: Tray 3 vertical transport motor turning at abnormal timing (When PC-118 or PC-218 is installed)
Rank	B
Trouble detection condition	• The motor lock signal remains HIGH for a predetermined continuous period of time while the motor is turning. • The motor lock signal remains LOW for a predetermined continuous period of time while the motor remains stationary.
Trouble isolation	-
Relevant electrical parts	• Tray 3 vertical transport motor (M112) • PC control board (PCCB)

Procedure

1. Check the connector between M112-PCCB CN5 for proper connection and correct as necessary.
2. Check the connector of M112 for proper drive coupling and correct as necessary.
3. M112 load check
   - Check code: 28
   - Multi code: 17,19
   - Control signal: PCCB CN5-13 (CW/CCW)
   - Location of electrical component: PC-118/PC-218 3 to 4-C
4. Replace M112.
5. Replace PCCB.

(2) When PC-418 is installed

Contents

Trouble type	C0107: LCT vertical transport motor turning at abnormal timing (When PC-418 is installed)
Rank	B
Trouble detection condition	• The motor lock signal remains HIGH for a predetermined continuous period of time while the motor is turning. • The motor lock signal remains LOW for a predetermined continuous period of time while the motor remains stationary.
Trouble isolation	-
Relevant electrical parts	• Vertical transport motor (M132) • PC control board (PCCB)

Procedure

1. Check the connector between M132-PCCB CN5 for proper connection and correct as necessary.
2. Check the connector of M132 for proper drive coupling and correct as necessary.
3. M132 load check
   - Check code: 28
   - Multi code: 5,7
   - Control signal: PCCB CN5-13 (CW/CCW)
   - Location of electrical component: PC-418 4-J
4. Replace M132.
5. Replace PCCB.

3.7.4 C0108 Contents

Trouble type	C0108: Tray 4 paper feed motor turning at abnormal timing (When PC-218 is installed)
Rank	B
Trouble detection condition	• The motor lock signal remains HIGH for a predetermined continuous period of time while the motor is turning. • The motor lock signal remains LOW for a predetermined continuous period of time while the motor remains stationary.
Trouble isolation	-
Relevant electrical parts	• Tray 4 paper feed motor (M121) • PC control board (PCCB)

Procedure

1. Check the connector between M121-PCCB CN9C for proper connection and correct as necessary.
2. Check the connector of M121 for proper drive coupling and correct as necessary.
3. M121 load check
   - Check code: 28
   - Multi code: 13,15
   - Control signal: PCCB CN9C-5 (CW/CCW)
   - Location of electrical component: PC-218 6-K
4. Replace M121.
5. Replace PCCB.

3.7.5 C0109

Contents

Trouble type	C0109: Tray 4 vertical transport motor turning at abnormal timing (When PC-218 is installed)
Rank	B
Trouble detection condition	• The motor lock signal remains HIGH for a predetermined continuous period of time while the motor is turning. • The motor lock signal remains LOW for a predetermined continuous period of time while the motor remains stationary.
Trouble isolation	-
Relevant electrical parts	• Tray 4 vertical transport motor (M122) • PC control board (PCCB)

Procedure

1. Check the connector between M122-PCCB CN9C for proper connection and correct as necessary.
2. Check the connector of M122 for proper drive coupling and correct as necessary.
3. M122 load check
   - Check code: 28
   - Multi code: 21,23
   - Control signal: PCCB CN9C-13 (CW/CCW)
   - Location of electrical component: PC-218 6-K
4. Replace M122.
5. Replace PCCB.

3.7.6 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-BASEB CN7E 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 CN53-BASEB CN5E 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 CN5E<A>-9 (ON)
   - Location of electrical component: 9-C
7. M12 load check
   - Check code: 23
   - Multi code: 4
   - Control signal: BASEB CN7E<A>-11 to 12
   - Location of electrical component: 24-C

8. Replace M12.
9. Replace CPUB.
10. Replace BASEB.

3.7.7 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-BASEB CN7E 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 CN55-BASEB CN5E 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 CN5E<B>-9 (ON)
   - Location of electrical component: 11-C
7. M13 load check
   - Check code: 23
   - Multi code: 5
   - Control signal: BASEB CN7E<A>-13 to 14
   - Location of electrical component: 23-C
8. Replace M13.
9. Replace CPUB.
10. Replace BASEB.

3.7.8 C0206

Contents

Trouble type	C0206: Tray 3 lift-up failure (When PC-118 or PC-218 is installed)
Rank	B
Trouble detection condition	The tray 3 upper limit sensor (PS116) 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 (M113) • Tray 3 upper limit sensor (PS116) • 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 M113-PCCB CN6C for proper connection and correct as necessary.
3. Check the connector of M113 for proper drive coupling and correct as necessary.
4. Check the connector between PS116-relay CN24-PCCB CN4 for proper connection and correct as necessary.
5. Check CPUB for proper installation and correct as necessary.
6. PS116 I/O check, sensor check
   - Control signal: PCCB CN4-3 (ON)
   - Location of electrical component: PC-118/PC-218 7-C
7. M113 load check
   - Check code: 23
   - Multi code: 6
   - Control signal: PCCB CN6C-8 to 9
   - Location of electrical component: PC-118/PC-218 2-C
8. Replace M113.
9. Replace PCCB.
10. Replace CPUB.
11. Replace BASEB.

3.7.9 C0208

Contents

Trouble type	C0208: Tray 4 lift-up failure (When PC-218 is installed)
Rank	B

Trouble detection condition	The tray 4 upper limit sensor (PS126) 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 (M123) • Tray 4 upper limit sensor (PS126) • 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 M123-PCCB CN8C for proper connection and correct as necessary.
3. Check the connector of M123 for proper drive coupling and correct as necessary.
4. Check the connector between PS126-relay CN47-PCCB CN7C for proper connection and correct as necessary.
5. Check CPUB for proper installation and correct as necessary.
6. PS126 I/O check, sensor check
   - Control signal: PCCB CN7C-3 (ON)
   - Location of electrical component: PC-218 8-K
7. M123 load check
   - Check code: 23
   - Multi code: 7
   - Control signal: PCCB CN8C-8 to 9
   - Location of electrical component: PC-218 5-K
8. Replace M123.
9. Replace PCCB.
10. Replace CPUB.
11. Replace BASEB.

3.7.10 C0210

Contents

Trouble type	C0210: LCT lift failure (When PC-418 is installed)
Rank	B
Trouble detection condition	• The main tray upper limit sensor (PS136) is not turned ON (blocked) even after the set period of time has elapsed after the paper lift-up operation for the main tray began. • The shifter stop / lower limit position sensor (PS138) is not turned OFF (unblocked) even after the set period of time has elapsed after the paper lift-up operation for the drawer began. • The main tray upper limit sensor (PS136) is not turned ON (blocked) even after the set period of time has elapsed after the paper lift-up operating. • The main tray upper limit sensor (PS136) is not turned OFF (unblocked) even after the set period of time has elapsed after the paper lift-down operation began. • The shifter stop / lower limit position sensor (PS138) is not turned ON (blocked) even after the set period of time has elapsed after the paper lift-down operation began.
Trouble isolation	Tray 3
Relevant electrical parts	• Main tray upper limit sensor (PS136) • Shifter stop / lower limit position sensor (PS138) • Elevator motor (M134) • PC control board (PCCB)

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 M134-PCCB CN10L for proper connection and correct as necessary.
3. Check the connector of M134 for proper drive coupling and correct as necessary.
4. Check the connector between PS136-relay CN1-PCCB CN4 for proper connection and correct as necessary.
5. Check the connector between PS138-relay CN16-PCCB CN14L for proper connection and correct as necessary.
6. PS136 I/O check, sensor check
   - Control signal: PCCB CN4-3 (ON)
   - Location of electrical component: PC-418 8-J
7. PS138 I/O check, sensor check
   - Control signal: PCCB CN14L-6 (ON)
   - Location of electrical component: PC-418 4-J
8. M134 load check
   - Check code: 23
   - Multi code: 9, 10
   - Control signal: PCCB CN8C-8 to 9
   - Location of electrical component: PC-418 5-K
9. Replace M134.
10. Replace PCCB.

3.7.11 C0211

Contents

Trouble type	C0211: Manual feed up/down abnormality
Rank	B

Trouble detection condition	• The bypass tray lift-up position sensor (PS26) is not turned OFF (unblock) even after the transport motor (M1) 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 transport motor (M1) rotates for a given period of time after the position is switched from stand by position at lift-up plate to the feed position.
Trouble isolation	Manual
Relevant electrical parts	• Transport motor (M1) • Bypass pick-up solenoid (SD1) • Bypass tray lift-up position sensor (PS26) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between M1-BASEB CN11E 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 PS26-relay CN50-BASEB CN30E for proper connection and correct as necessary.
4. Check the connector between SD1-relay CN123-relay CN50-BASEB CN30E 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 CN30E-7 (ON)
   - Location of electrical component: 13-C
7. SD1 load check
   - Check code: 23
   - Multi code: 3
   - Control signal: BASEB CN30E-4 (ON)
   - Location of electrical component: 13-C
8. M1 load check
   - Check code: 40
   - Multi code: 1,3
   - Control signal: BASEB CN11E-4 (REM), BASEB CN11E-7 (FGP)
   - Location of electrical component: 3-C
9. Replace M1.
10. Replace CPUB.
11. Replace BASEB.

3.7.12 C0214

Contents

Trouble type	C0214: LCT shift failure (When PC-418 is installed)
Rank	B
Trouble detection condition	• The paper removal method and proper paper load method continuously appear on the control panel three times. • The shifter stop / lower limit position sensor (PS138) is not turned ON (blocked) even after the set period of time has elapsed after the shift operation began (shift to the right). • The shifter home sensor (PS139) is not turned OFF (unblocked) even after the set period of time has elapsed after the shift operation began (shift to the right). • The shifter stop / lower limit position sensor (PS138) is not turned OFF (unblocked) even after the set period of time has elapsed after the return operation began (shift to the left). • The shifter home sensor (PS139) is not turned ON (blocked) even after the set period of time has elapsed after the return operation began (shift to the left).
Trouble isolation	Tray 3
Relevant electrical parts	• Shifter stop / lower limit position sensor (PS138) • Shifter home sensor (PS139) • Shifter motor (M133) • PC control board (PCCB)

Procedure

1. Check if paper is loaded properly.
2. Remove the tray and check to see if a piece of paper is not left inside the machine.
3. Check the connector between M133-PCCB CN10L for proper connection and correct as necessary.
4. Check the connector of M133 for proper drive coupling and correct as necessary.
5. Check the connector between PS138-relay CN16-PCCB CN14L for proper connection and correct as necessary.
6. Check the connector between PS139-relay CN16-PCCB CN14L for proper connection and correct as necessary.
7. PS138 I/O check, sensor check
   - Control signal: PCCB CN14L-6 (ON)
   - Location of electrical component: PC-418 4-J
8. PS139 I/O check, sensor check
   - Control signal: PCCB CN14L-3 (ON)
   - Location of electrical component: PC-418 4-J
9. M133 load check
   - Check code: 23
   - Multi code: 11, 12
   - Control signal: PCCB CN10L-3 to 4
   - Location of electrical component: PC-418 6-J

10. Replace M133.
11. Replace PCCB.

3.8 C1###

3.8.1 C1004, C1014

(1) When FS-533 is installed

Contents

Trouble type	• C1004: Finisher communication error (Engine detection) (When FS-533 is installed) • C1014: Finisher communication error (Finisher detection) (When FS-533 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-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.

(3) When JS-506 is installed

Contents

Trouble type	• C1004: Finisher communication error (Engine detection) (When JS-506 is installed) • C1014: Finisher communication error (Finisher detection) (When JS-506 is installed)
Rank	C
Trouble detection condition	When a communication error is detected between the base board (BASEB) and the JS control board (JSCB).
Trouble isolation	-
Relevant electrical parts	JS control board (JSCB)

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 JSCB.

3.8.2 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.

3.8.3 C1102

(1) When FS-533 is installed

Contents

Trouble type	C1102: Tray lift up motor drive malfunction (When or FS-533 is installed)
Rank	B
Trouble detection condition	• While the exit tray is being lifted, the paper exit tray home sensor (PS107) is not turned OFF (unblocked) after the set period of time has elapsed after the tray lift up motor (M109) is energized. • While the exit tray is being lowered, the paper exit tray home sensor (PS107) is not turned ON (blocked) after the set period of time has elapsed after the tray lift up motor (M109) is energized.
Trouble isolation	-
Relevant electrical parts	• Tray lift up motor (M109) • Paper exit tray home sensor (PS107) • FS control board (FSCB)

Procedure

1. Check the connector between M109-FSCB CN108 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 PS107-FSCB CN110 for proper connection and correct as necessary.
4. PS107 I/O check, sensor check
   - Control signal: FSCB CN110
   - Location of electrical component: FS-533 7-D to E
5. M109 operation check
   - Control signal: FSCB CN108
   - Location of electrical component: FS-533 10-E
6. Replace M109.
7. FSCB CP109 conduction check
8. Replace FSCB.

(2) 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.

3.8.4 C1103

(1) When FS-533 is installed

Contents

Trouble type	C1103: Alignment motor/Fr drive malfunction (When FS-533 is installed)
Rank	B
Trouble detection condition	• The alignment plate home sensor/Fr (PS108) 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 (PS108) is not turned ON (blocked) after the set period of time has elapsed after the alignment motor/Fr (M105) is energized when the plate returned to the home position.
Trouble isolation	-
Relevant electrical parts	• Alignment motor/Fr (M105) • Alignment plate home sensor/Fr (PS108) • FS control board (FSCB)

Procedure

1. Check the connector between M105-FSCB CN102 for proper connection and correct as necessary.
2. Check the connector of M105 for proper drive coupling and correct as necessary.
3. Check the connector between PS108-FSCB CN102 for proper connection and correct as necessary.
4. PS108 I/O check, sensor check
   - Control signal: FSCB CN102
   - Location of electrical component: FS-533 7-J
5. M105 operation check
   - Control signal: FSCB CN102
   - Location of electrical component: FS-533 7-J
6. Replace M105.
7. FSCB CP105 conduction check
8. Replace FSCB.

(2) 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.

3.8.5 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.

3.8.6 C1106

(1) When FS-533 is installed

Contents

Trouble type	C1106: Stapler movement motor drive malfunction (When FS-533 is installed)
Rank	B
Trouble detection condition	• The stapler home sensor (PS110) 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 (PS110) is not turned ON (blocked) after the set period of time has elapsed after the stapler movement motor (M107) is energized when the stapler returned to the home position.
Trouble isolation	Staple
Relevant electrical parts	• Stapler movement motor (M107) • Stapler home sensor (PS110) • Stapler relay board (STRYB) • FS control board (FSCB)

Procedure

1. Check the connector between M107-STREYB CN123 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 PS110-FSCB CN110 for proper connection and correct as necessary.
4. PS110 I/O check, sensor check
   - Control signal: FSCB CN110
   - Location of electrical component: FS-533 8-D to E
5. M107 operation check
   - Control signal: STRYB CN123-5 to 8
   - Location of electrical component: FS-533 5-L
6. Replace M107.
7. Replace STRYB.
8. FSCB CP107 conduction check
9. Replace FSCB.

(2) 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.

3.8.7 C1109

(1) When FS-533 is installed

Contents

Trouble type	C1109: Stapler motor drive malfunction (When FS-533 is installed)
Rank	B
Trouble detection condition	The stapler home sensor (PS110) is not turned ON (blocked) even after the set period of time has elapsed after the stapler motor is energized.
Trouble isolation	Staple
Relevant electrical parts	• Stapler unit • Stapler home sensor (PS110) • Stapler relay board (STRYB) • FS control board (FSCB)

Procedure

1. Check the connector between the stapler unit-STRYB CN122, CN123 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 PS110-FSCB CN110 for proper connection and correct as necessary.
4. PS110 I/O check, sensor check
   - Control signal: FSCB CN110
   - Location of electrical component: FS-533 8-D to E
5. Replace the stapler unit.
6. Replace STRYB.
7. Replace FSCB.

(2) 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.

3.8.8 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.

3.8.9 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.

3.8.10 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.

3.8.11 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.

3.8.12 C1132

(1) When FS-533+PK-519 is installed

Contents

Trouble type	C1132: Punch motor drive malfunction (When FS-533+PK-519 is installed)
Rank	B
Trouble detection condition	• The puncher drive cam sensor (PS203) or puncher home sensor (PS204) is not turned ON (blocked) or OFF (unblocked) even after the set period of time has elapsed while the punch motor (M201) is energized. • The punch motor sensor (PS202) is not turned ON when the punch motor (M201) driven. • The holes with other marketing area is set in [Service Mode] -> [Finisher] -> [Punch option setting].
Trouble isolation	-
Relevant electrical parts	• Punch motor (M201) • Punch motor sensor (PS202) • Puncher drive cam sensor (PS203) • Puncher home sensor (PS204) • PK control board (PKCB) • FS control board (FSCB)

Procedure

1. Check the number of the holes in [Service Mode] -> [Finisher] -> [Punch option setting].
2. Check the connector between M201-PKCB CN203 for proper connection and correct as necessary.
3. Check the connector of M201 for proper drive coupling and correct as necessary.
4. Check the connector between PS202-PKCB CN204 for proper connection and correct as necessary.
5. Check the connector between PS203-PKCB CN204 for proper connection and correct as necessary.
6. Check the connector between PS204-PKCB CN204 for proper connection and correct as necessary.
7. PS202 I/O check, sensor check
   - Control signal: PKCB CN204
   - Location of electrical component: FS-533 (PK-519) 5-C
8. PS203 I/O check, sensor check
   - Control signal: PKCB CN204
   - Location of electrical component: FS-533 (PK-519) 6-C
9. PS204 I/O check, sensor check
   - Control signal: PKCB CN204
   - Location of electrical component: FS-533 (PK-519) 6-C
10. M201 operation check
    - Control signal: PKCB CN203-1 to 2
    - Location of electrical component: FS-533 (PK-519) 4-C
11. Replace M201.
12. PKCB F201 conduction check
13. Replace PKCB.
14. Replace FSCB.

(2) 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.

3.8.13 C1140

(1) When FS-533 is installed

Contents

Trouble type	C1140: Alignment motor/Rr drive malfunction (When FS-533 is installed)
Rank	B
Trouble detection condition	• The alignment plate home sensor/Rr (PS109) 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 (PS109) is not turned ON (blocked) after the set period of time has elapsed while the alignment motor/Rr (M106) is energized when the plate returned to the home position.
Trouble isolation	-
Relevant electrical parts	• Alignment motor/Rr (M106) • Alignment plate home sensor/Rr (PS109) • FS control board (FSCB)

Procedure

1. Check the connector between M106-FSCB CN102 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 PS109-FSCB CN102 for proper connection and correct as necessary.
4. PS109 I/O check, sensor check
   - Control signal: FSCB CN102
   - Location of electrical component: FS-533 7-J
5. M106 operation check
   - Control signal: FSCB CN102
   - Location of electrical component: FS-533 8-J
6. Replace M106.
7. FSCB CP105 conduction check
8. Replace FSCB.

(2) 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.

3.8.14 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.

3.8.15 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.

3.8.16 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.

3.8.17 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.

3.8.18 C1182

Contents

Trouble type	C1182: Shift motor drive malfunction	
Rank	B	
Trouble detection condition	<When JS-506 is installed>	• The tray shift home sensor (PS1) is not turned ON (blocked) after the set period of time has elapsed after the tray shift motor (M1) is turned ON (start of moving to the home position.) • The tray shift home sensor (PS1) is not turned OFF (unblocked) after the set period of time has elapsed after the tray shift motor (M1) is turned ON (start of moving to the shift position.)
Trouble isolation	Staple	
Relevant electrical parts	<When JS-506 is installed>	• Tray shift motor (M1) • Tray shift home sensor (PS1) • JS control board (JSCB)

Procedure

1. Check the connector between M1-JSCB CN208 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-JSCB CN208 for proper connection and correct as necessary.
4. PS1 I/O check, sensor check
   - Control signal: JSCB CN208-5 (ON)
   - Location of electrical component: JS-506 5-C
5. M1 operation check
   - Control signal: JSCB CN208-1 (DRV)
   - Location of electrical component: JS-506 4 to 5-C
6. Replace M1.
7. JSCB ICP3 conduction check
8. Replace JSCB.

3.8.19 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.

3.8.20 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.

3.8.21 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.

3.8.22 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.

3.8.23 C11A1

Contents

Trouble type	C11A1: Exit roller pressure/ retraction malfunction	
Rank	B	
Trouble detection condition	<When FS-533 is installed>	The pick up roller position sensor (PS105) is not turned ON (blocked) or OFF (unblocked) even after the set period of time has elapsed after the exit roller lift up motor (M104) is turned ON.
Trouble isolation	-	
Relevant electrical parts	<When FS-533 is installed>	• Exit roller lift up motor (M104) • Pick up roller position sensor (PS105) • FS control board (FSCB)

Procedure

1. Check the connector between M104-FSCB CN109 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 PS105-FSCB CN110 for proper connection and correct as necessary.
4. PS105 I/O check, sensor check
   - Control signal: FSCB CN110
   - Location of electrical component: FS-533 7-D to E
5. M104 operation check
   - Control signal: FSCB CN109
   - Location of electrical component: FS-533 9-D to E
6. Replace M104.
7. FSCB CP104 conduction check
8. Replace FSCB.

3.8.24 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.

3.8.25 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 route change gate home 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 energized.
Trouble isolation	-
Relevant electrical parts	• FNS entry transport motor (M2) • Route change gate home 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.

3.8.26 C1402

Contents

Trouble type	C1402: FS nonvolatile memory error	
Rank	C	
Trouble detection condition	<When FS-533 is installed>	When the main power switch is turned ON, malfunctioning of the nonvolatile memory on the FS control board (FSCB) is detected.
Trouble isolation	-	
Relevant electrical parts	<When FS-533 is installed>	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.

3.9 C2###

3.9.1 C2152, C2153, C2154, C2155, C2156

Contents

Trouble type	• C2152: Transfer belt fault at initial position return • C2153: Transfer belt spacing fault at K pressure switching • C2154: Transfer belt contact fault at all pressure switching • C2155: Transfer belt contact fault after K pressure established • C2156: Transfer belt spacing fault after all pressure established
Rank	B
Trouble detection condition	• C2152: The 1st transfer pressure sensor (PS39) is unable to detect "switch from retraction to pressure" or "switch from pressure to retraction" within a given period time after the 1st transfer pressure clutch (CL5) has stared engagement during an initial position return. • C2153: The 1st transfer pressure sensor (PS39) does not detect “switch from pressure to retraction” within a given period time after 1st transfer pressure clutch (CL5) has stared engagement. • C2154: The 1st transfer pressure sensor (PS39) does not detect “switch from retraction to pressure” within a given period time after 1st transfer pressure clutch (CL5) has stared engagement.

	• C2155: The 1st transfer pressure sensor (PS39) is turned ON (blocked) after the lamps of given time after the 1st transfer pressure clutch (CL5) turned OFF when the release operation is finished. • C2156: The 1st transfer pressure sensor (PS39) is turned OFF (unblocked) after the laps of given time after the 1st transfer pressure clutch (CL5) turned OFF when the pressing operation is finished.
Trouble isolation	-
Relevant electrical parts	• Fusing motor (M3) • 1st transfer pressure clutch (CL5) • 1st transfer pressure sensor (PS39) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between M3-BASEB CN11E 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 PS39-relay CN24-BASEB CN7E for proper connection and correct as necessary.
4. Check the connector between CL5-relay CN29-BASEB CN12E for proper connection and correct as necessary.
5. Check CPUB for proper installation and correct as necessary.
6. PS39 I/O check, sensor check
   - Control signal: BASEB CN7E<B>-13 (ON)
   - Location of electrical component: 22-C
7. CL5 load check
   - Check code: 24
   - Multi code: 1, 2
   - Control signal: BASEB CN12E-12 (ON)
   - Location of electrical component: 5-C
8. M3 load check
   - Check code: 45
   - Multi code: 1, 3, 5
   - Control signal: BASEB CN11E-11 (REM), BASEB CN11E-14 (FGP)
   - Location of electrical component: 3-C
9. Replace M3.
10. Replace CPUB.
11. Replace BASEB.

3.9.2 C2253, C2254

Contents

Trouble type	• C2253: IU motor failure to turn • C2254: IU motor turning at abnormal timing
Rank	B
Trouble detection condition	C2253: The motor lock signal remains HIGH for a predetermined continuous period of time while the motor is turning. C2254: The motor lock signal remains LOW for a predetermined continuous period of time while the motor remains stationary.
Trouble isolation	-
Relevant electrical parts	• IU motor (M2) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between M2-BASEB CN12E for proper connection and correct as necessary.
2. Check the connector of M2 for proper drive coupling and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. M2 load check
   - Check code: 41
   - Multi code: 1, 3
   - Control signal: BASEB CN12E-7 (REM), BASEB CN12E-10 (FGP)
   - Location of electrical component: 5-C
5. Replace M2.
6. Replace CPUB.
7. 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 HIGH for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• Transfer belt cleaner cooling fan (FM2) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM2-relay CN139-relay CN22-BASEB CN15E 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. FM2 load check
   - Check code: 42
   - Multi code: 2
   - Control signal: BASEB CN15E<B>-10 (REM), BASEB CN15E<B>-12 (LOCK)
   - Location of electrical component: 16-J
5. Replace FM2.
6. Replace CPUB.
7. Replace BASEB.

3.9.4 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 • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Reinstall the developing unit/K.
2. Check the connector between the developing unit/K-relay CN161-relay CN15-BASEB CN18E for proper connection and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. Replace the developing unit/K.
5. Replace CPUB.
6. Replace BASEB.

3.9.5 C2551, C2553, C2555, C2557

Contents

Trouble type	• C2551: Abnormally low toner density detected cyan TCR sensor • C2553: Abnormally low toner density detected magenta TCR sensor • C2555: Abnormally low toner density detected yellow TCR sensor • C2557: Abnormally low toner density detected black TCR sensor
Rank	B
Trouble detection condition	A TC ratio of a predetermined value (2.5 %) or less is detected consecutively a predetermined number of times.
Trouble isolation	-
Relevant electrical parts	• Imaging unit/Y,M,C • Developing unit/K • Toner cartridge/Y,M,C,K • Toner empty sensor/Y (PS34) • Toner empty sensor/M (PS33) • Toner empty sensor/C (PS32) • Toner empty sensor/K (PS31) • Toner cartridge motor (M10) • Toner supply motor/Y,M (M9) • Toner supply motor/C,K (M7) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Perform image troubleshooting procedure if image density is low.
2. Reinstall the imaging unit.
3. Reinstall the developing unit/K.
4. Reinstall the toner cartridge.
5. Check the connector between the imaging unit, developing unit/K-relay CN161/CN162/CN163/CN164-relay CN15-BASEB CN18E for proper connection and correct as necessary.
6. Check CPUB for proper installation and correct as necessary.
7. M10 operation check
   - Control signal: BASEB CN26E-1 to 4
   - Location of electrical component: 19-J
8. M7, M9 operation check
   - Control signal: BASEB CN28E-1 to 4 (M7), BASEB CN28E-5 to 8 (M9)
   - Location of electrical component: 18-J
9. If the toner empty sensor and its surroundings inside the sub hopper are dirtied with toner, clean them.
10. Replace the corresponding imaging unit.
11. Replace the developing unit/K.
12. Replace CPUB.

13. Replace BASEB.

3.9.6 C2552, C2554, C2556, C2558

Contents

Trouble type	• C2552: Abnormally high toner density detected cyan TCR sensor • C2554: Abnormally high toner density detected magenta TCR sensor • C2556: Abnormally high toner density detected yellow TCR sensor • 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	• Imaging unit/Y,M,C • Developing unit/K • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Reinstall the imaging unit.
2. Reinstall the developing unit/K.
3. Check the connector between the imaging unit, developing unit/K-relay CN161/CN162/CN163/CN164-relay CN15-BASEB CN18E for proper connection and correct as necessary.
4. Replace the corresponding imaging unit.
5. Check CPUB for proper installation and correct as necessary.
6. Replace the developing unit/K.
7. Replace CPUB.
8. Replace BASEB.

3.9.7 C2559, C255A, C255B, C255C

Contents

Trouble type	• C2559: Cyan TCR sensor adjustment failure • C255A: Magenta TCR sensor adjustment failure • C255B: Yellow TCR sensor adjustment failure • 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	• Imaging unit/Y,M,C • Developing unit/K • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Reinstall the imaging unit.
2. Reinstall the developing unit/K.
3. Check the connector between the imaging unit, developing unit/K-relay CN161/CN162/CN163/CN164-relay CN15-BASEB CN18E for proper connection and correct as necessary.
4. Replace the corresponding imaging unit.
5. Check CPUB for proper installation and correct as necessary.
6. Replace the developing unit/K.
7. Replace CPUB.
8. Replace BASEB.

3.9.8 C2561, C2562, C2563, C2564

Contents

Trouble type	• C2561: Cyan TCR sensor failure • C2562: Magenta TCR sensor failure • C2563: Yellow TCR sensor failure • C2564: Black TCR sensor failure
Rank	B
Trouble detection condition	The input of each color TCR sensor is 0. This detection is used for detecting disconnection of TCR sensor connector.
Trouble isolation	-
Relevant electrical parts	• Imaging unit/Y,M,C • Developing unit/K • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Reinstall the imaging unit.

2. Reinstall the developing unit/K.
3. Check the connector between the imaging unit, developing unit/K-relay CN161/CN162/CN163/CN164-relay CN15-BASEB CN18E for proper connection and correct as necessary.
4. Replace the corresponding imaging unit.
5. Check CPUB for proper installation and correct as necessary.
6. Replace the developing unit/K.
7. Replace CPUB.
8. Replace BASEB.

3.9.9 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 backup 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 [New Release] in the service mode. When the transfer roller has been replaced with a new one, perform [Counter clear].
   - Imaging unit/Y,M,C
   - Developing unit/K
   - Drum unit/K
   - 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 malfunction 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 OLI.

3.9.10 C2A11, C2A12, C2A13, C2A14

Contents

Trouble type	• C2A11: Imaging unit/C new article release • C2A12: Imaging unit/M new article release • C2A13: Imaging unit/Y new article release • C2A14: Drum unit/K new release failure
Rank	B
Trouble detection condition	The status with the new unit is not cleared after the new imaging unit or new drum unit is set.
Trouble isolation	-
Relevant electrical parts	• Imaging unit/Y,M,C • Drum unit/K • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Clean the connection between the imaging unit or drum unit/K and the machine if dirty.
2. Reinstall the imaging unit.
3. Reinstall the drum unit/K.
4. Check the connector between the imaging unit/Y,M,C-relay CN162/CN163/CN164-relay CN15-BASEB CN18E for proper connection and correct as necessary.
5. Check the connector between the drum unit/K-relay CN14-BASEB CN15E for proper connection and correct as necessary.
6. Check CPUB for proper installation and correct as necessary.
7. Replace the corresponding imaging unit.
8. Replace the drum unit/K.
9. Replace CPUB.
10. Replace BASEB.

3.10 C3###

3.10.1 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 motor lock signal remains HIGH for a predetermined continuous period of time while the motor is turning. • C3202: The motor lock signal remains LOW for a predetermined continuous period of time while the motor remains stationary.
Trouble isolation	-
Relevant electrical parts	• Fusing motor (M3) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between M3-BASEB CN11E for proper connection and correct as necessary.
2. Check the loading status of the fusing unit drive, and correct the error as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. M3 load check
   - Check code: 45
   - Multi code: 1, 3, 5
   - Control signal: BASEB CN11E-11 (REM), BASEB CN11E-14 (FGP)
   - Location of electrical component: 3-C
5. Replace M3.
6. Replace CPUB.
7. Replace BASEB.

3.10.2 C3302

Contents

Trouble type	C3302: Paper cooling fan failure to turn
Rank	B
Trouble detection condition	The fan lock signal remains HIGH for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• Paper cooling fan (FM8) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM8-relay CN27-BASEB CN12E 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. FM8 load check
   - Check code: 42
   - Multi code: 4
   - Control signal: BASEB CN12E-1 (REM), BASEB CN12E-3 (LOCK)
   - Location of electrical component: 4-C
5. Replace FM8.
6. Replace CPUB.
7. Replace BASEB.

3.10.3 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 or the post-print color printing-enable wait 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 CN3-DCPU CN2 for proper connection and correct as necessary.
4. Check the connector between the fusing unit-relay CN4-BASEB CN16E 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.

3.10.4 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/1 (TH1) goes beyond a given temperature for a given period of time consecutively. • The hard protector signal remains LOW for a predetermined continuous period of time. • C3725: Detected temperature of the heating roller temperature sensor (TEMS) goes beyond a given temperature for a given period of time consecutively. • C3726: Detected temperature of the heating roller thermistor/2 (TH2) goes beyond a given temperature for a given period of time consecutively. • The hard protector signal remains LOW for a predetermined continuous period of time.
Trouble isolation	-
Relevant electrical parts	• Fusing unit • C3722: Heating roller thermistor/1 (TH1) • C3725: Heating roller temperature sensor (TEMS) • C3726: Heating roller thermistor/2 (TH2) • 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 CN4-BASEB CN16E 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.
8. Replace DCPU.

3.10.5 C3736, C3739

Contents

Trouble type	• C3736: Fusing abnormally high temperature detection hard protector (Middle of the heating roller) • C3739: Fusing abnormally high temperature detection hard protector (Edge of the heating roller)
Rank	A
Trouble detection condition	• C3736: An abnormally high temperature is detected on the hard protector circuit (middle of the heating roller). • C3739: An abnormally high temperature is detected on the hard protector circuit (edge of the heating roller).
Trouble isolation	-
Relevant electrical parts	• Fusing unit • C3736: Heating roller thermistor/2 (TH2) • C3739: Heating roller thermistor/1 (TH1) • 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 CN4-BASEB CN16E 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.

3.10.6 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/2 (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/2 (TH2) • 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 CN4-BASEB CN16E 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.
8. Replace DCPU.

3.10.7 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: After a predetermined period of time after the warm-up stage is started, the heating roller thermistor/1 (TH1) voltage does not decrease by predetermined steps (temperature rise) within a predetermined period of time. • C3925: The maximum value and minimum value of detected temperature of the heating roller temperature sensor (TEMS2) 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 or above given temperatures. • C3926: After a predetermined period of time after the warm-up stage is started, the heating roller thermistor/2 (TH2) voltage does not decrease by predetermined steps (temperature rise) within a predetermined period of time.
Trouble isolation	-
Relevant electrical parts	• Fusing unit • C3922: Heating roller thermistor/1 (TH1) • C3925: Heating roller temperature sensor (TEMS) • C3926: Heating roller thermistor/2 (TH2) • 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 CN4-BASEB CN16E 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.
8. Replace DCPU.

3.10.8 C392B, C392C, C392D, C392E

Contents

Trouble type	• C392B: Fusing sensor wire breaks detection (difference of temperature) • C392C: Fusing Sensor breaks abnormality (heating detection) • C392D: Fusing sensor wire breaks abnormality (heating compensation) • C392E: Fusing sensor wire breaks abnormality (heating GND)
Rank	A
Trouble detection condition	The difference between the temperature corrected by the heating roller thermistor/1 (TH1) and the temperature detected by the heating roller thermistor/2 (TH2) exceeds a predetermined value.
Trouble isolation	• C392B: The difference between temperature corrected by the heating roller thermistor/1 (TH1) and the temperature detected by the heating roller thermistor/2 (TH2) exceeds a predetermined value. • C392C: The heating detection thermistor AD value is higher than the threshold value longer than predetermined period of time. • C392D: The heating compensation thermistor AD value is higher than the threshold value longer than predetermined period of time.

	• C392E: The heating detection thermistor AD value and the heating compensation thermistor AD value are higher than the threshold value longer than predetermined period of time.
Relevant electrical parts	• Fusing unit • Heating roller thermistor/1 (TH1) • Heating roller thermistor/2 (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 CN4-BASEB CN16E for proper connection and correct as necessary.
4. Replace the fusing unit.
5. Replace CPUB.
6. 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 PSW2E 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 • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between the PH unit-relay CN25-BASEB CN9E 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.

3.11.3 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-BASEB CN5 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 motor lock signal remains HIGH for a predetermined continuous period of time while the motor is turning. • C5103: The motor lock signal remains LOW for a predetermined continuous period of time 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 CN11E for proper connection and correct as necessary.
2. Check the loading status of the transfer belt 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, 3
   - Control signal: BASEB CN11E-4 (REM), BASEB CN11E-7 (FGP)
   - Location of electrical component: 3-C
5. Replace M1.
6. Replace CPUB.
7. Replace BASEB.

3.12.2 C5351

Contents

Trouble type	C5351: Power supply cooling fan motor failure to turn
Rank	B
Trouble detection condition	The fan lock signal remains HIGH for a predetermined continuous period of time while the fan is turning.
Trouble isolation	-
Relevant electrical parts	• Power supply cooling fan (FM1) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between FM1-relay CN49-BASEB CN20E 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. FM1 load check
   - Check code: 42
   - Multi code: 1
   - Control signal: BASEB CN20E-1 (REM), BASEB CN20E-3 (LOCK)
   - Location of electrical component: 1-J
5. Replace FM1.
6. Replace CPUB.
7. Replace BASEB.

3.12.3 C5360

Contents

Trouble type	C5360: Clean unit fan failure to turn (When CU-101 is installed)
Rank	B
Trouble detection condition	The fan lock signal remains HIGH 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) • Suction fan (FM16)

	• Clean unit drive board (CUDB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between CUDB CN1-BASEB CN29E for proper connection and correct as necessary.
2. Check the connector between FM14-CUDB CN2, FM15-CUDB CN3, FM16-relay CN81-CUDB CN4 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, FM15, FM16 Load check
   - Check code: 42
   - Multi code: 5
   - Control signal: CUDB CN2 (FM14), CUDB CN3 (FM15), CUDB CN4 (FM16)
   - Location of electrical component: 14-U (FM16), 13-Y (FM14, FM15)
6. Replace the defective fan. (FM14 / FM15 / FM16)
7. Replace CUDB.
8. Replace CPUB.
9. Replace BASEB.

3.12.4 C5370

Contents

Trouble type	C5370: Rear side cooling fan failure to turn
Rank	C
Trouble detection condition	The fan lock signal remains HIGH 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-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 CN17-2 (REM), BASEB CN17-4 (LOCK)
   - Location of electrical component: 2-C
5. Replace FM3.
6. Replace CPUB.
7. Replace BASEB.

3.12.5 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 power supply cooling fan, and correct as necessary.
3. Replace CPUB.

3.12.6 C5501

Contents

Trouble type	C5501: AC signal abnormality
Rank	C
Trouble detection condition	The zero cross signal is not input during fusing phase control.
Trouble isolation	-
Relevant electrical parts	• Fusing unit • 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 connector between the fusing unit-relay CN3-DCPU CN2 for proper connection and correct as necessary.
3. Check the connector between DCPU CN7-BASEB CN2E 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.
8. Replace DCPU.

3.12.7 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.

3.12.8 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.

3.12.9 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 the PH unit-BASEB CN5 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.

3.12.10 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 CN1-relay CN1DF-BASEB CN35E 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 CN1-relay CN1DF-BASEB CN35E 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) • 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. BASEB F15E conduction check
5. Check the connector between M201-relay CN151-BASEB CN25E for proper connection and correct as necessary.
6. Check the connector between PS201-BASEB CN21E 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: BASEB CN21E-15 (ON)
   - Location of electrical component: 22-J
9. M201 operation check
   - Control signal: BASEB CN25E-1 to 4
   - Location of electrical component: 20-J
10. Replace CPUB.
11. Replace BASEB.

3.13.4 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	• CIS module • 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 CIS-BASEB CN2 for proper connection and correct as necessary.
3. Check CPUB for proper installation and correct as necessary.
4. Replace the CIS module.
5. Replace CPUB.
6. Replace BASEB.

3.13.5 C6751

Contents

Trouble type	C6751: Light intensity adjustment failure
Rank	B
Trouble detection condition	• The adjustment value is 0 or 255 during a CIS clamp adjustment. • The peak value of the output data is 64 or less during a CIS gain adjustment.
Trouble isolation	Scanner
Relevant electrical parts	• CIS module • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between CIS-BASEB CN2 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. Light guide or lens array is dirty.
5. Replace the CIS module.
6. Replace CPUB.
7. Replace BASEB.

3.13.6 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 CPU (image processing section) on CPU board (CPUB) was conducted, and verification failure was detected.
Trouble isolation	Scanner
Relevant electrical parts	• CIS module • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Correct the harness connection of CIS if faulty.
2. Check CPUB for proper installation and correct as necessary.
3. Replace the CIS module.
4. Replace CPUB.
5. Replace BASEB.

3.13.7 C6756

Contents

Trouble type	C6756: CIS power-supply voltage malfunction
Rank	C
Trouble detection condition	Power is not supplied to CIS 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	Scanner
Relevant electrical parts	• CIS module • CPU board (CPUB) • Base board (BASEB) • DC power supply (DCPU)

Procedure

1. Correct the harness connection between CIS-BASEB CN2 if faulty.
2. Correct the harness connection between BASEB CN1E-DCPU CN5 if faulty.
3. Check CPUB for proper installation and correct as necessary.
4. Replace the CIS module.
5. Replace CPUB.
6. Replace BASEB.
7. Replace DCPU.

3.13.8 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 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-BASEB CN7E for proper connection and correct as necessary.
2. Check the connector of M12 for proper drive coupling and correct as necessary.
3. M12 load check
   - Check code: 23
   - Multi code: 4
   - Control signal: BASEB CN7E<A>-11 to 12
   - Location of electrical component: 24-C

4. Replace M12.
5. Replace BASEB.

3.14.2 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- BASEB CN7E for proper connection and correct as necessary.
2. Check the connector of M13 for proper drive coupling and correct as necessary.
3. M13 load check
   - Check code: 23
   - Multi code: 5
   - Control signal: BASEB CN7E<A>-13 to 14
   - Location of electrical component: 23-C
4. Replace M13.
5. Replace BASEB.

3.14.3 C7151, C7152, C7153

Contents

Trouble type	• C7151: Skew correction motor/C failure • C7152: Skew correction motor/M failure • C7153: Skew correction motor/Y failure
Rank	C
Trouble detection condition	After starting the motor, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• PH unit • Base board (BASEB)

Procedure

1. Check the connector between the PH unit-relay CN58-BASEB CN10E for proper connection and correct as necessary.
2. PH unit conduction check
   - Control signal: BASEB CN10E-1 to 6 (C7153), BASEB CN10E-7 to 12 (C7152), BASEB CN10E-13 to 18 (C7151)
   - Location of electrical component: 18 to 21-P
3. Replace the PH unit.
4. Replace BASEB.

3.14.4 C7201

Contents

Trouble type	C7201: Tray 1 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 1
Relevant electrical parts	• Tray 1 paper feed clutch (CL3) • Base board (BASEB)

Procedure

1. Check the connector between CL3-relay CN130-relay CN53-BASEB CN5E for proper connection and correct as necessary.
2. Check the connector of CL3 for proper drive coupling and correct as necessary.
3. CL3 load check
   - Check code: 20
   - Multi code: 1
   - Control signal: BASEB 5E<A>-11 (ON)
   - Location of electrical component: 9-C
4. Replace CL3.
5. Replace BASEB.

3.14.5 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 CN134-relay CN55-BASEB CN5E for proper connection and correct as necessary.
2. Check the connector of CL1 for proper drive coupling and correct as necessary.
3. CL1 load check
   - Check code: 20
   - Multi code: 2
   - Control signal: BASEB 5E<B>-11 (ON)
   - Location of electrical component: 11-C
4. Replace CL1.
5. Replace BASEB.

3.14.6 C7205

Contents

Trouble type	C7205: Tray 2 vertical transport 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 vertical transport clutch (CL2) • Base board (BASEB)

Procedure

1. Check the connector between CL2-relay CN135-relay CN55-BASEB CN5E for proper connection and correct as necessary.
2. Check the connector of CL2 for proper drive coupling and correct as necessary.
3. CL2 load check
   - Check code: 21
   - Multi code: 1
   - Control signal: BASEB CN5E<B>-13 (ON)
   - Location of electrical component: 11-C
4. Replace CL2.
5. Replace BASEB.

3.14.7 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 CN122-relay CN50-BASEB CN30E for proper connection and correct as necessary.
2. Check the connector of CL7 for proper drive coupling and correct as necessary.
3. CL7 load check
   - Check code: 20
   - Multi code: 3
   - Control signal: BASEB CN30E-2 (ON)
   - Location of electrical component: 13-C
4. Replace CL7.
5. Replace BASEB.

3.14.8 C720A

Contents

Trouble type	C720A: Registration clutch failure
Rank	C
Trouble detection condition	After starting the clutch, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• Registration clutch (CL4) • Base board (BASEB)

Procedure

1. Check the connector between CL4-relay CN116-relay CN33-BASEB CN13E for proper connection and correct as necessary.
2. Check the connector of CL4 for proper drive coupling and correct as necessary.
3. CL4 load check
   - Check code: 21

- Multi code: 2
- Control signal: BASEB CN13E<A>-11 (ON)
- Location of electrical component: 7-C

4. Replace CL4.
5. Replace BASEB.

3.14.9 C720B

Contents

Trouble type	C720B: 1st transfer pressure clutch failure
Rank	C
Trouble detection condition	After starting the clutch, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	• 1st transfer pressure clutch (CL5) • Base board (BASEB)

Procedure

1. Check the connector between CL5-relay CN29-BASEB CN12E for proper connection and correct as necessary.
2. Check the connector of CL5 for proper drive coupling and correct as necessary.
3. CL5 load check
   - Check code: 24
   - Multi code: 1, 2
   - Control signal: BASEB CN12E-12 (ON)
   - Location of electrical component: 5-C
4. Replace CL5.
5. Replace BASEB.

3.14.10 C7241

Contents

Trouble type	C7241: Bypass pick-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 pick-up solenoid (SD1) • Base board (BASEB)

Procedure

1. Check the connector between SD1-relay CN123-relay CN50-BASEB CN30E for proper connection and correct as necessary.
2. Check the connector of SD1 for proper drive coupling and correct as necessary.
3. SD1 load check
   - Check code: 23
   - Multi code: 3
   - Control signal: BASEB CN30E-4 (ON)
   - Location of electrical component: 13-C
4. Replace SD1.
5. Replace BASEB.

3.14.11 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	• Gate switch solenoid (SD3) • Base board (BASEB)

Procedure

1. Check the connector between SD3-relay CN67-BASEB CN17E for proper connection and correct as necessary.
2. Check the connector of SD3 for proper drive coupling and correct as necessary.
3. SD3 load check
   - Check code: 83
   - Multi code: 0
   - Control signal: BASEB CN17E-12 (ON)
   - Location of electrical component: 11-J
4. Replace SD3.
5. Replace BASEB.

3.14.12 C7260

Contents

Trouble type	C7260: Erase failure
Rank	C
Trouble detection condition	After starting the erase, an error is detected for the malfunction detection signal.
Trouble isolation	-
Relevant electrical parts	Erase LED/Y,M,C,K

Procedure

1. Check the connector between erase LED/Y,M,C,K-relay CN69-BASEB CN17E for proper connection and correct as necessary.
2. Erase LED/Y,M,C,K conduction check
   - Control signal: BASEB CN17E-1,2(K)/3,4(C)/5,6(M)/7,8(Y)
   - Location of electrical component: 9 to 10-J
3. Replace erase LED/Y,M,C,K.
4. Replace BASEB.

3.14.13 C7301

Contents

Trouble type	C7301: 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	• Power supply cooling fan (FM1) • Base board (BASEB)

Procedure

1. Check the connector between FM1-relay CN49-BASEB CN20E 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: BASEB CN20E-1 (REM), BASEB CN20E-3 (LOCK)
   - Location of electrical component: 1-J
4. Replace FM1.
5. Replace BASEB.

3.14.14 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) • Base board (BASEB)

Procedure

1. Check the connector between FM2-relay CN139-relay CN22-BASEB CN15E 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: BASEB CN15E<B>-10 (REM), BASEB CN15E<B>-12 (LOCK)
   - Location of electrical component: 16-J
4. Replace FM2.
5. Replace BASEB.

3.14.15 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) • Base board (BASEB)

Procedure

1. Check the connector between FM8-relay CN27-BASEB CN12E for proper connection and correct as necessary.
2. Check the connector of FM8 for proper drive coupling and correct as necessary.
3. FM8 load check
   - Check code: 42
   - Multi code: 4

- Control signal: BASEB CN12E-1 (REM), BASEB CN12E-3 (LOCK)
- Location of electrical component: 4-C

4. Replace FM8.
5. Replace BASEB.

3.14.16 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 CN55-BASEB CN5E for proper connection and correct as necessary.
2. Replace PS22.
3. Replace BASEB.

3.14.17 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 C0202 (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 CN53-BASEB CN5E for proper connection and correct as necessary.
2. Replace PS25.
3. Replace BASEB.

3.14.18 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 F21E conduction check
2. Check the connector between M1-BASEB CN11E for proper connection and correct as necessary.
3. M1 load check
   - Check code: 40
   - Multi code: 1, 3
   - Control signal: BASEB CN11E-1 to 7
   - Location of electrical component: 3-C
4. Replace M1.
5. Replace BASEB.

3.14.19 C7602

Contents

Trouble type	C7602: Power line A2 error
Rank	C
Trouble detection condition	The fuse detection unit detected an error for a predetermined time.
Trouble isolation	-
Relevant electrical parts	• IU motor (M2) • Base board (BASEB)

Procedure

1. BASEB F22E conduction check
2. Check the connector between M2-BASEB CN12E for proper connection and correct as necessary.

3. M2 load check
   - Check code: 41
   - Multi code: 1, 3
   - Control signal: BASEB CN12E-4 to 10
   - Location of electrical component: 5-C
4. Replace M2.
5. Replace BASEB.

3.14.20 C7603

Contents

Trouble type	C7603: Power line A3 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 F23E 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, 3, 5
   - Control signal: BASEB CN11E-8 to 14
   - Location of electrical component: 3-C
4. Replace M3.
5. Replace BASEB.

3.14.21 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	• High voltage unit (HV) • Base board (BASEB)

Procedure

1. BASEB F24E conduction check
2. Check the connector between HV CN1-BASEB CN4E for proper connection and correct as necessary.
3. Replace HV.
4. Replace BASEB.

3.14.22 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	Base board (BASEB)

Procedure

1. BASEB F25E conduction check
2. Replace BASEB.

3.14.23 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	• Clean unit drive board (CUDB) • Base board (BASEB)

Procedure

1. BASEB F16E conduction check
2. Check the connector between CUDB CN1-BASEB CN29E for proper connection and correct as necessary.

3. Replace CUDB.
4. Replace BASEB.

3.14.24 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	• 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 CN1, CN2-relay CN66-BASEB CN8E for proper connection and correct as necessary.
3. Replace PCCB.
4. Replace BASEB.

3.14.25 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	-
Relevant electrical parts	• Polygon motor (M14) • Total counter (TCT) (Japan models only) • Key counter (KCT) • Base board (BASEB)

Procedure

1. BASEB F12E conduction check
2. Check the connector between TCT-BASEB CN17E for proper connection and correct as necessary. (Japan models only)
3. Check the connector between KCT-relay CN31-BASEB CN14E for proper connection and correct as necessary.
4. Check the connector between the PH unit-relay CN25-BASEB CN9E for proper connection and correct as necessary.
5. Replace the key counter.
6. Replace the PH unit.
7. Replace BASEB.

3.14.26 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	• Skew correction motor/C • Skew correction motor/M • Skew correction motor/Y • Base board (BASEB)

Procedure

1. BASEB F14E conduction check
2. Check the connector between the PH unit-relay CN58-BASEB CN10E for proper connection and correct as necessary.
3. Replace the PH unit.
4. Replace BASEB.

3.14.27 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	• Tray 1 lift-up motor (M12) • Tray 2 lift-up motor (M13) • Tray 2 paper feed clutch (CL1) • Tray 2 vertical transport clutch (CL2) • Tray 1 paper feed clutch (CL3)

	• Bypass tray paper feed clutch (CL7) • Bypass pick-up solenoid (SD1) • Base board (BASEB)

Procedure

1. BASEB F13E conduction check
2. Check the connector between M12-BASEB CN7E for proper connection and correct as necessary.
3. Check the connector between M13-BASEB CN7E for proper connection and correct as necessary.
4. Check the connector between CL1-relay CN134-relay CN55-BASEB CN5E for proper connection and correct as necessary.
5. Check the connector between CL2-relay CN135-relay CN55-BASEB CN5E for proper connection and correct as necessary.
6. Check the connector between CL3-relay CN130-relay CN53-BASEB CN5E for proper connection and correct as necessary.
7. Check the connector between CL7-relay CN122-relay CN50-BASEB CN30E for proper connection and correct as necessary.
8. Check the connector between SD1-relay CN123-relay CN50-BASEB CN30E for proper connection and correct as necessary.
9. Replace BASEB.

3.14.28 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	• Front door switch (SW2) • Right door switch (SW3) • Base board (BASEB)

Procedure

1. BASEB F1E conduction check
2. Check the connector between SW2-relay CN70-BASEB CN19E for proper connection and correct as necessary.
3. Check the connector between SW3-relay CN70-BASEB CN19E for proper connection and correct as necessary.
4. Replace SW2 or SW3.
5. Replace BASEB.

3.14.29 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) • Base board (BASEB)

Procedure

1. BASEB F11E, F12E, F13E, F14E, F16E conduction check
2. Check the connector between DCPU CN5-BASEB CN1E for proper connection and correct as necessary.
3. Replace BASEB.
4. Replace DCPU.

3.14.30 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 F21E, F22E, F23E, F24E, F25E conduction check
2. Check the connector between DCPU CN5-BASEB CN1E for proper connection and correct as necessary.
3. Replace BASEB.
4. Replace DCPU.

3.15 C9###

3.15.1 C9401, C9402

Contents

Trouble type	• C9401: CIS LED lighting failure (front side) • C9402: CIS LED lighting abnormally (front side)

Rank	B
Trouble detection condition	• C9401: At the CIS gain adjustment, the machine detected that the output of the CIS LED is lower than the specified value. • C9402: The average output value of the CIS LED 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	• Flat cable • CIS module (CIS) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between CIS-BASEB CN2 for proper connection and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Replace the flat cable.
4. Replace CIS.
5. Replace CPUB.
6. Replace BASEB.

3.15.2 C9701

Contents

Trouble type	C9701: Front 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	• Flat cable • CIS module (CIS) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between CIS-BASEB CN2 for proper connection and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Replace the flat cable.
4. Replace CIS.
5. Replace CPUB.
6. Replace BASEB.

3.15.3 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	• Flat cable • CIS module (CIS) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between CIS-BASEB CN2 for proper connection and correct as necessary.
2. Check CPUB for proper installation and correct as necessary.
3. Replace the flat cable.
4. Replace the CIS module.
5. Replace CPUB.
6. Replace BASEB.

3.16 CA###

3.16.1 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 [Service Mode] -> [System 2] -> [Image Controller Setting] has been set to “Controller 0.” 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.

3.17 CB###

- For details, see “ L.9 FAX TROUBLE CODE”.

3.18 CC###

3.18.1 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 CN23E 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.

3.18.2 CC140

Contents

Trouble type	CC140: Trouble related to security
Rank	C
Trouble detection condition	-
Trouble isolation	-
Relevant electrical parts	-

Procedure

NOTE

- **Contact the responsible people of OLI before taking some countermeasures.**

3.18.3 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.

3.18.4 CC155

(1) When FS-533, FS-539 or FS-539SD is installed

Contents

Trouble type	CC155: Finisher ROM error (When FS-533, FS-539 or FS-539SD 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-533 / FS-539/FS-539SD)

(2) When JS-506 is installed

Contents

Trouble type	CC155: Finisher ROM error (When JS-506 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	JS control board (JSCB)

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 JSCB.

3.18.5 CC156

Contents

Trouble type	CC156: DF ROM error (When DF-633 is installed)
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.

3.18.6 CC15B

Contents

Trouble type	CC15B: Flash ROM error (saddle) (When FS-539SD 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, unplug and plug the power cord. Plug the power cord, wait for 10 sec. or more, and turn ON the main power switch.
2. Rewrite the firmware.
3. Replace SDCB.

3.18.7 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.

3. Replace BASEB.
4. If the above actions do not solve the problem, contact OLI.

3.18.8 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 OLI.

3.18.9 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 malfunction code “C-C172” has occurred, access [Service Mode] -> [System 2] -> [Image Controller Setting] and check to see if “Controller 1,” or “Others” is set for [Image Controller Setting].
   If any of these is set, select “Controller 0”.
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 OLI.

3.18.10 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.

3.18.11 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.

3.18.12 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.

3.18.13 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.

3.18.14 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.

3.18.15 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.

3.18.16 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.

3.18.17 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.

3.18.18 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.

3.18.19 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.

3.19 CD###

3.19.1 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.

3.19.2 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.

3.19.3 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.

3.19.4 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.

3.19.5 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.

3.19.6 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.

3.19.7 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.

3.19.8 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.

3.19.9 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.

3.19.10 CD070

Contents

Trouble type	CD070: Storage data copy uncompleted
Rank	C
Trouble detection condition	When copying data from the microSD to the storage board (STRGB), the MFP is restarted from the storage board after an interruption of the copying by turning off the main power switch.
Trouble isolation	-
Relevant electrical parts	• microSD • Storage board (STRGB) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Rewrite the firmware of STRGB.
2. Replace STRGB.

3.19.11 CD071

Contents

Trouble type	CD071: microSD startup failure
Rank	C
Trouble detection condition	After copying data from the microSD to the storage board (STRGB), the MFP is restarted up from the microSD.
Trouble isolation	-
Relevant electrical parts	• CPU board (CPUB) • Base board (BASEB)

Procedure

1. After copying data, mount the STRGB to the origin position.
2. Replace CPUB.
3. Replace BASEB.

3.19.12 CD072

Contents

Trouble type	CD072: Second-hand SSD 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.

3.19.13 CD073

Contents

Trouble type	CD073: Storage type mismatch
Rank	C
Trouble detection condition	The installed storage mismatched with the preset storage.
Trouble isolation	-
Relevant electrical parts	• Storage board (STRGB) • microSD

Procedure

1. Check the storage type setting, and fix the wrong setting.

3.19.14 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.

3.19.15 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.

3.19.16 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.

3.19.17 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.

3.19.18 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.

3.19.19 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.

3.19.20 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.

- 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".

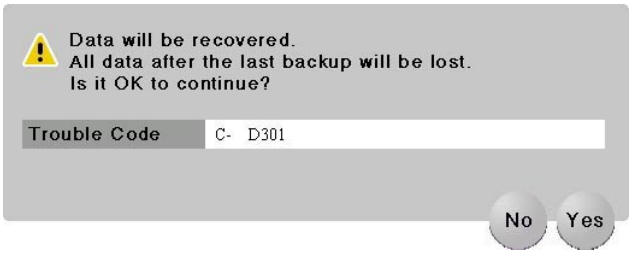
3.19.21 CD3##

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]**

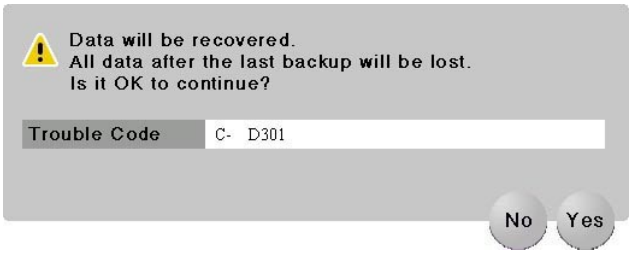
3.19.22 CD313

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 the current CPUB with a new one.
8. Replace the current BASEB with a new one.

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]**

3.19.23 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.

3.19.24 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, it may take 5 minutes.) Touch the “Recover Data” button and follow the instructions that appear on the control panel to restore (backup) data.

3.19.25 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 OLI before taking some countermeasures.**

3.19.26 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].
   - Imaging unit/Y,M,C
   - Developing unit/K

- Drum unit/K
- Toner cartridge/Y,M,C,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 OLI.

3.19.27 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.

3.19.28 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, it may take 5 minutes.) Touch the “Recover Data” button and follow the instructions that appear on the control panel to restore (backup) data.

3.19.29 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.

3.19.30 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 OLI.

3.19.31 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.

3.19.32 CD704

(1) When FS-533, FS-539 or FS-539SD is installed

Contents

Trouble type	CD704: Finisher Flash ROM device error (When FS-533, FS-539 or FS-539SD 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-533 / FS-539/FS-539SD)

(2) When JS-506 is installed

Contents

Trouble type	CD704: Finisher Flash ROM device error (When JS-506 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	JS control board (JSCB)

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 JSCB.

3.19.33 CD705, CD706

Contents

Trouble type	• CD705: Mechanical controller sub-CPU flash ROM device error • CD706: Mechanical controller sub-CPU flash ROM error
Rank	C
Trouble detection condition	• CD705: An erase error or other device fault occurs during mechanical controller sub-CPU flash ROM writing. • CD706: A data error is determined to exist in the mechanical controller sub-CPU flash ROM during starting.
Trouble isolation	-
Relevant electrical parts	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 BASEB.

3.19.34 CDC##

Contents

Trouble type	CDC##: Trouble related to security
Rank	-
Trouble detection condition	-
Trouble isolation	-

Procedure

NOTE

- **Contact the responsible people of OLI before taking some countermeasures.**

3.19.35 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 CIS module (CIS).
Trouble isolation	-
Relevant electrical parts	• CIS module (CIS) • CPU board (CPUB) • Base board (BASEB)

Procedure

1. Check the connector between CIS-BASEB 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 CIS module.
5. Replace CPUB.
6. Replace BASEB.

3.20 CE###

3.20.1 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.

3.20.2 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.

3.20.3 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.

3.20.4 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.

3.20.5 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.

3.20.6 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.

3.20.7 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.

3.20.8 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.

3.20.9 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.

3.20.10 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.

3.20.11 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.

3.20.12 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. When the trouble code "C-E301" occurs, check that if the combination of the version of the MFP firmware and the version of the installed authentication unit loadable device driver is proper.
   If the combination of the MFP firmware and the loadable device driver is improper, install the latest MFP firmware, then install the latest loadable device driver.
2. Execute [Self-diag. (Full)].
   For details, see “ L.4 Troubleshooting using Self-diag. (Full)”.
3. 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 OLI also with the information.
   For details, see “ I.13 List Output”.

3.20.13 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.

3.20.14 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 OLI.

3.20.15 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.

3.20.16 CEEE2

Contents

Trouble type	CEEE2: Scanner section malfunction
Rank	A
Trouble detection condition	A scanner part is faulty.
Trouble isolation	-
Relevant electrical parts	CIS module (CIS)

Procedure

1. Replace CIS.

3.21 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.

3.21.1 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 OLI also with the information.
   For details, see " I.13 List Output".

3.21.2 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 OLI also with the information.
   For details, see “ I.13 List Output”.

3.21.3 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 OLI also with the information.
   For details, see “ I.13 List Output”.

3.21.4 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 OLI also with the information.
   For details, see “ I.13 List Output”.

3.21.5 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 OLI also with the information.
   For details, see “ I.13 List Output”.

3.21.6 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 OLI also with the information.
   For details, see " I.13 List Output".

4. Troubleshooting using Self-diag. (Full)

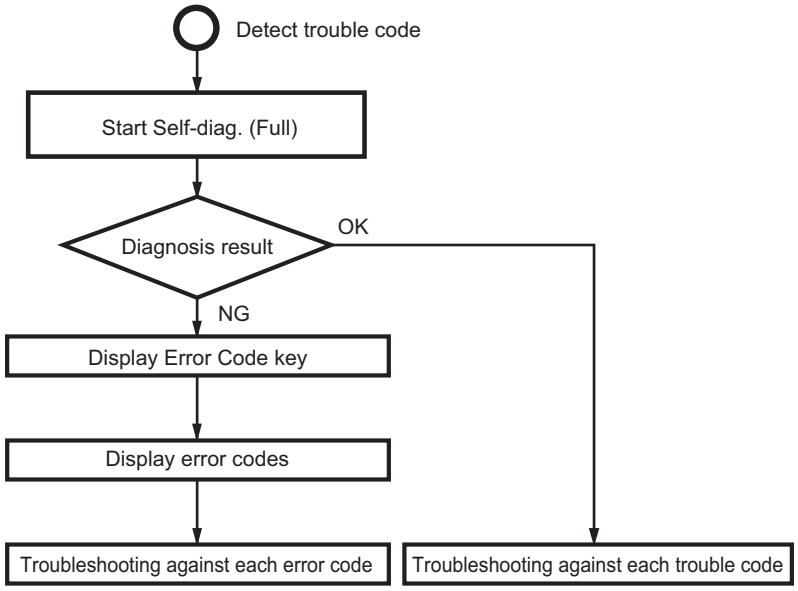
4.1 Overview of Self-diag. (Full) function

- 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.14.12.2 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	NVMeSSD	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)
E3-3		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)
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)
E5-7		Fax board (line 1)	Connection failure Parts defect	Fax board/1 (FAXB/1) Base board (BASEB)
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	CIS module	I/P image bus check	Image bus failure	CIS cable CIS module (CIS) CPU board (CPUB) Base board (BASEB)
E6-2		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)
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 NVMeSSD		Storage board (STRGB) 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.

4.4 E1-1

Contents

Error code	E1-1
Target device	NVMeSSD
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	NVMeSSD
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	NVMeSSD
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	NVMeSSD
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	NVMeSSD
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 E3-3

Contents

Error code	E3-3	
Target device	I2C	
	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 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.

4.18 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.

4.19 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.

4.20 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.

4.21 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.

4.22 E5-7

Contents

Error code	E5-7	
Target device	Various USB devices	
	E5-7	Fax board (line 1)
Reason of error	Connection failure Parts defect	
Relevant electrical parts	Fax board/1 (FAXB/1) 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 BASEB or the connection of connectors if faulty.
4. Replace the fax board.
5. Replace BASEB.

4.23 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.

4.24 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.

4.25 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	CIS module	
Diagnosis item	E6-1	I/P image bus check
	E6-2	Line RAM comparison
Reason of error	E6-1	Image bus failure
	E6-2	CIS sensor failure
Relevant electrical parts	E6-1	CIS cable CIS module (CIS) CPU board (CPUB) Base board (BASEB)
	E6-2	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.

4.26 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.

4.27 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.

4.28 E12-1, E12-2, E12-3

Contents

Error code	E12-1, E12-2, E12-3	
Target device	PCIe	
Diagnosis item	E12-1	PCIe device check IRIS(0)
	E12-2	PCIe device check IRIS(1)
	E12-3	PCIe device check NVMeSSD
Reason of error	PCIe device error	
Relevant electrical parts	E12-1, E12-2	CPU board (CPUB)
	E12-3	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.

5. Troubleshooting when NG is displayed on the Self-diag. (Individual)

5.1 Various USB Check

5.1.1 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.

5.1.2 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.

5.2 CPU board check

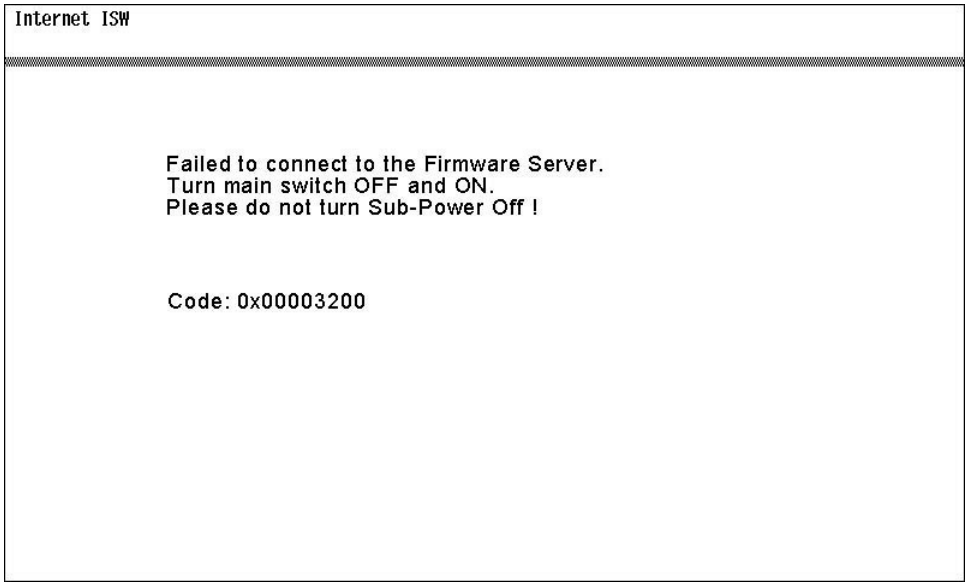
5.2.1 Troubleshooting when NG is displayed for Ping Test

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 Olivetti.
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 Olivetti.
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 Olivetti.
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 OLI 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 OLI 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 OLI 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 OLI 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 OLI and inform the error code.
R84	NVRAM writing error.	Contact OLI 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 OLI 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 OLI 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 OLI and inform the error code
3054 to 30FE	SOAP request result problem (Server side error)	Contact OLI 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 OLI 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 OLI 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 OLI 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 OLI, an error message is displayed.

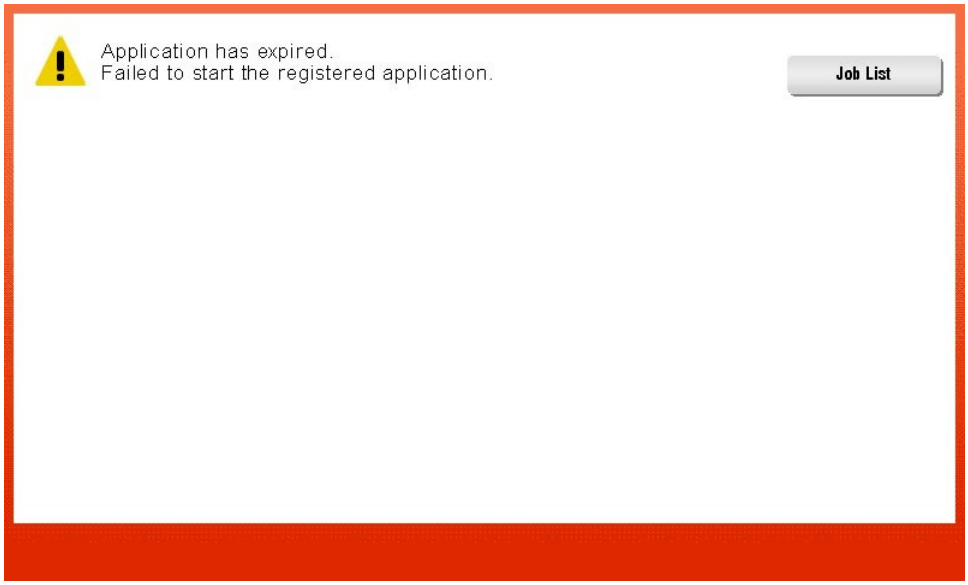
12.2 Types of Trouble

- The Certification Management System provided by OpenAPI certificates and manages communication between main body and non-OLI 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.	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.
	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.	
2	When starting an application, the following message is displayed: Failed to start the registered application. 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.
	When starting the machine, the following message is displayed: The enhanced server authentication application cannot be used. Please contact your service representative.	
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.

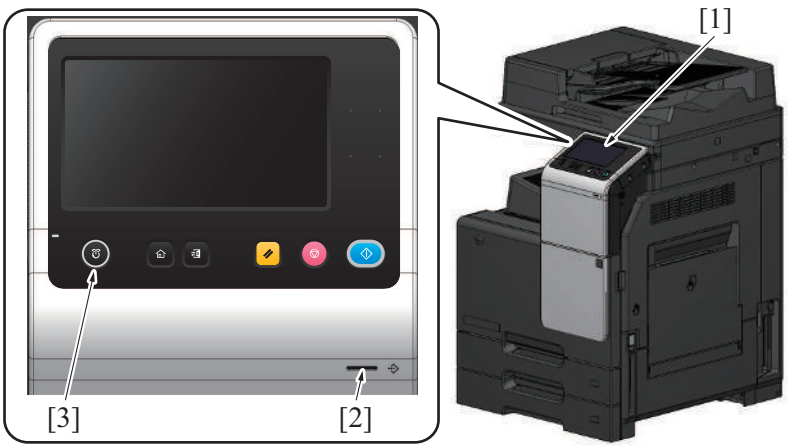
12.3.2 After rewriting the firmware of the machine

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)

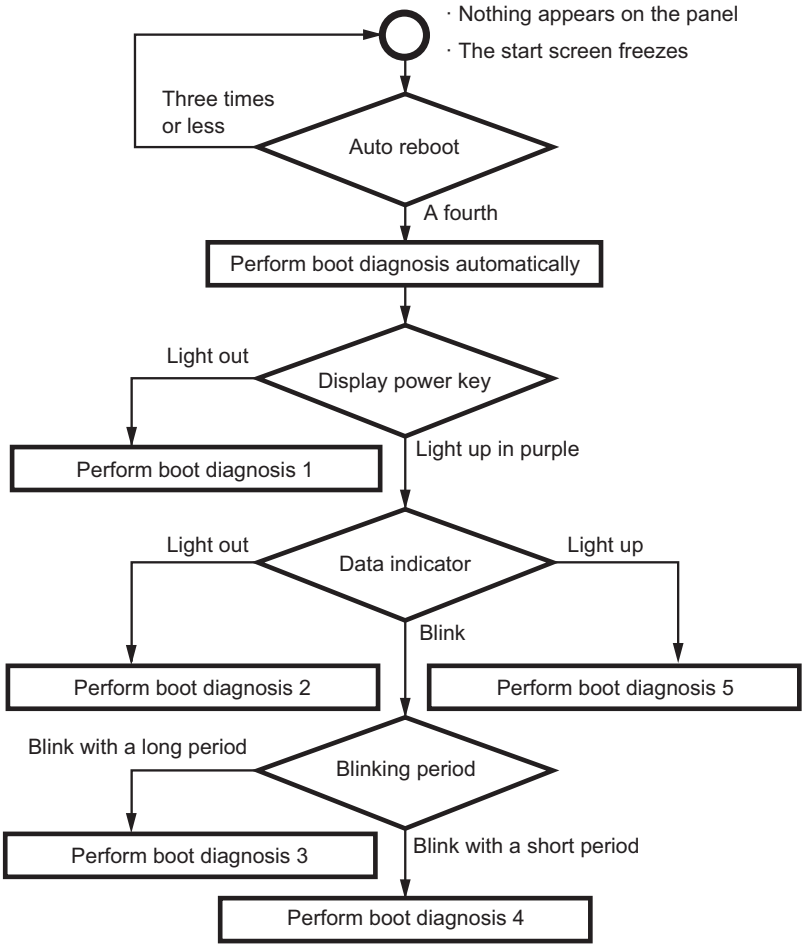
13.1 Boot diagnosis function

- 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, 2 on DCPU?	18 to 20-T	NO	Check the wiring from power outlet to CN1 to SW1.
2	Are the fuses on DCPU conducting?	-	NO	Replace DCPU.
3	Is DC5 V being output to CN5-7, 8 on DCPU?	18-R	NO	Replace DCPU.
4	Is DC24 V being output from CN5-1 on DCPU?	18-R	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 from CN5-5 on DCPU?	18-R	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 CN7-7, 10 on DCPU? During this time, the right door should be closed.	19-R	NO	Check wiring from power outlet to SW1 to CN7 to SW3.
2	Is the power source voltage applied across BASEB CN16E-1, 9?	7-G	YES	Replace the fusing unit.
			NO	• Replace DCPU. • Replace BASEB.

14.3 DF-633

Contents

Trouble type	Power is not supplied to DF-633
Rank	-
Trouble detection condition	-
Trouble isolation	-
Relevant electrical parts	• DF control board (DFCB) • Base board (BASEB) • DC power supply (DCPU)

Procedure

Step	Check item	Location of electrical component	Result	Action
1	Is DC24 V being output to CN2DF-4, 5, 6 on DFCB?	DF-633 2-F	YES	Malfunction in DF-633.
2	Is DC24 V being output to CN34E-9, 10, 11 on BASEB?	24-G	NO	Check wiring from DCPU to BASEB to DF-633.
3	Are the fuses on DCPU conducting?	-	YES	Replace DCPU.
			NO	Malfunction in DF-633.

14.4 Power is not supplied to option

14.4.1 PC-118/PC-218/PC-418

Contents

Trouble type	Power is not supplied to PC-118/PC-218/PC-418.
Rank	-
Trouble detection condition	-
Trouble isolation	-
Relevant electrical parts	• DC power supply (DCPU) • Base board (BASEB) • PC-118/PC-218/PC-418

Procedure

Step	Check item	Location of electrical component	Result	Action
1	Is DC24 V being output from CN66-13?	16-C	NO	Malfunction in cabinet.
2	Is DC24 V being output from CN5-1 on DCPU?	18-R	NO	Check wiring from DCPU to BASEB to cabinet.
3	Are the fuses on DCPU conducting?	-	YES	Replace DCPU.
			NO	Malfunction in cabinet.

14.4.2 FS-533/FS-539/FS-539SD

Contents

Trouble type	Power is not supplied to FS-533/FS-539/FS-539SD.
Rank	-
Trouble detection condition	-
Trouble isolation	-
Relevant electrical parts	• DC power supply (DCPU) • FS-533/FS-539/FS-539SD

Procedure

Step	Check item	Location of electrical component	Result	Action
1	Is DC24 V being output from CN1FN-1?	18-I	NO	Malfunction in finisher.
2	Is DC24 V being output from CN5-3 on DCPU?	23-R	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.

15.3 Progress bar stops halfway when the main power switch is turned on

- Communication between the storage board and the CPU board is not working properly and the progress bar stops at 25%.

Action

1. Rewrite the firmware.
2. Update Boot Program.
3. Replace the storage board.
4. Replace the CPU board.

NOTE

- **Obtain the procedures for updating Boot Program from Knova.**
  ID-No. RFKM_BT2117665JP (Japanese), ID-No. RFKM_BT2117665EN (English)

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

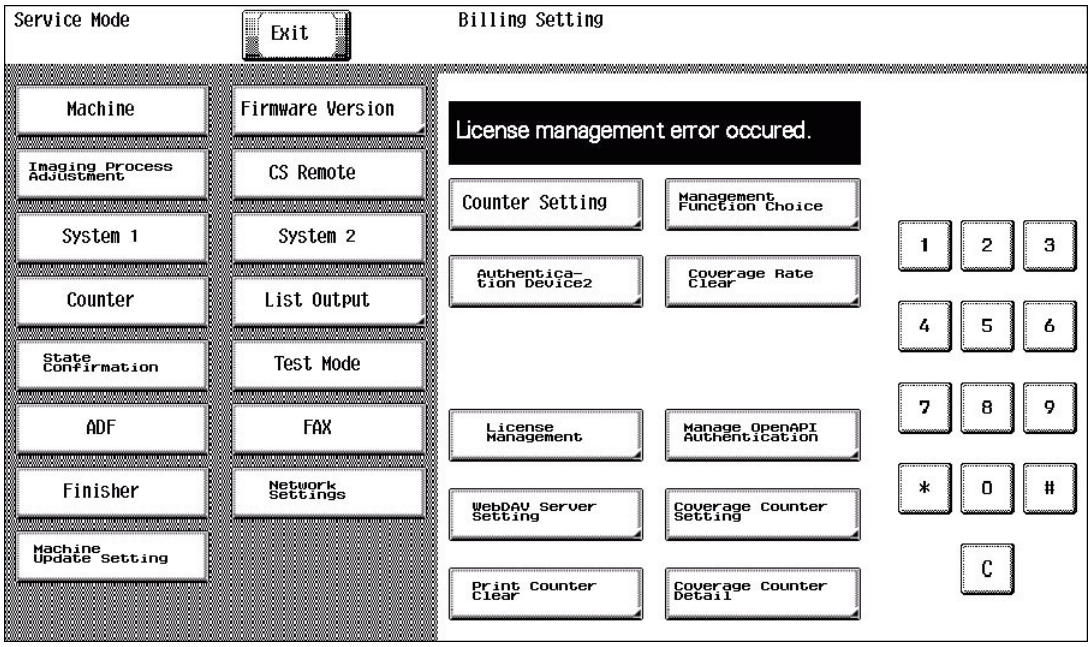
- Since license code needs to identify each main body, it is issued using the serial number of main body and “unique value” that is generated inside the main body.
- The “unique value” is stored to the memory region on the CPU board and at the same time some parts of it are memorized by storage board. 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

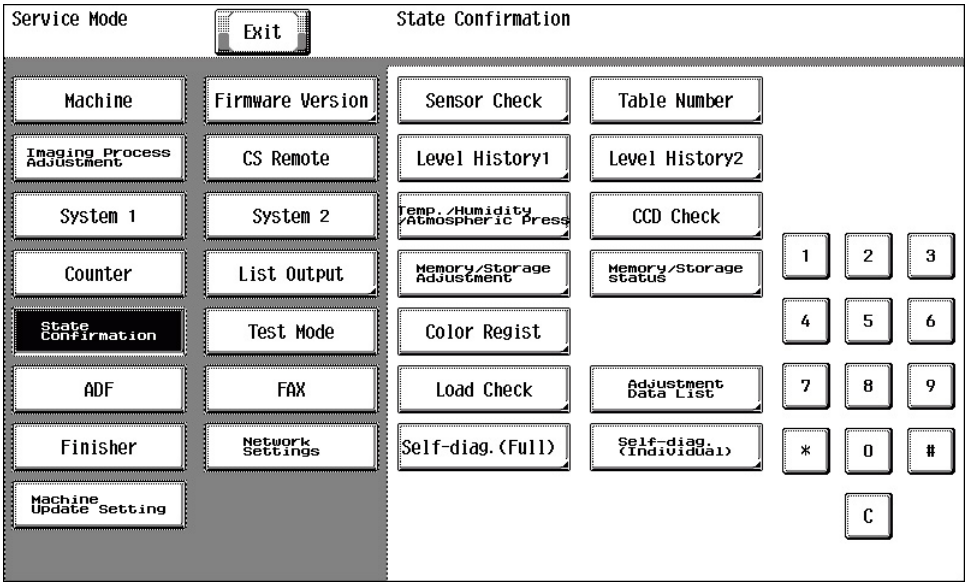
- The following shows the possible trouble factors and their countermeasure.

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.

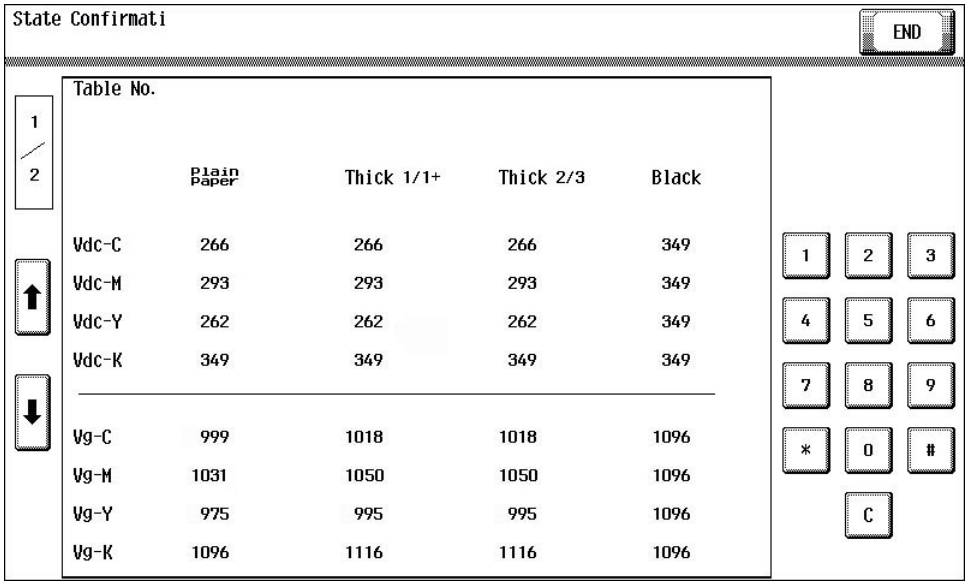
17. IMAGE QUALITY PROBLEM

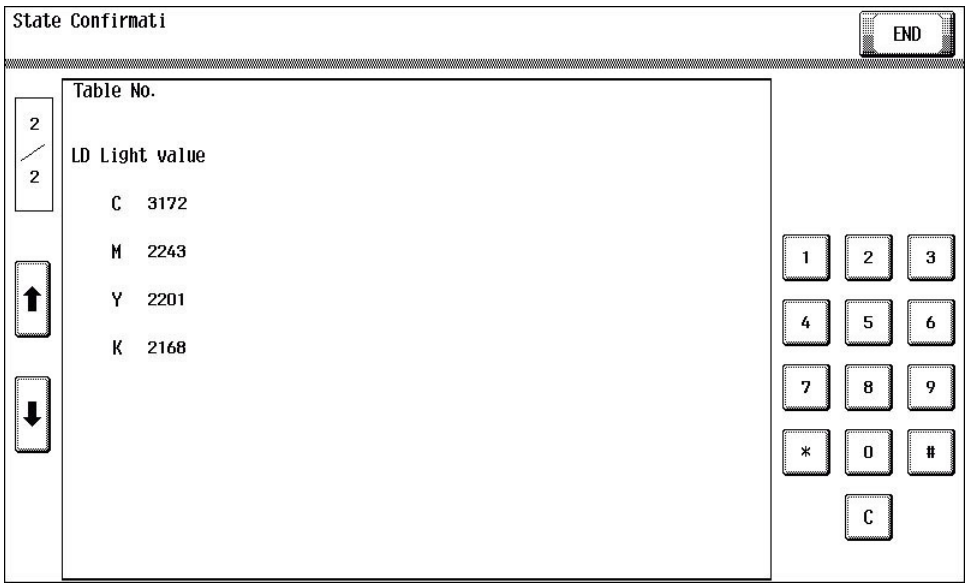
17.1 How to read element data

- 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.



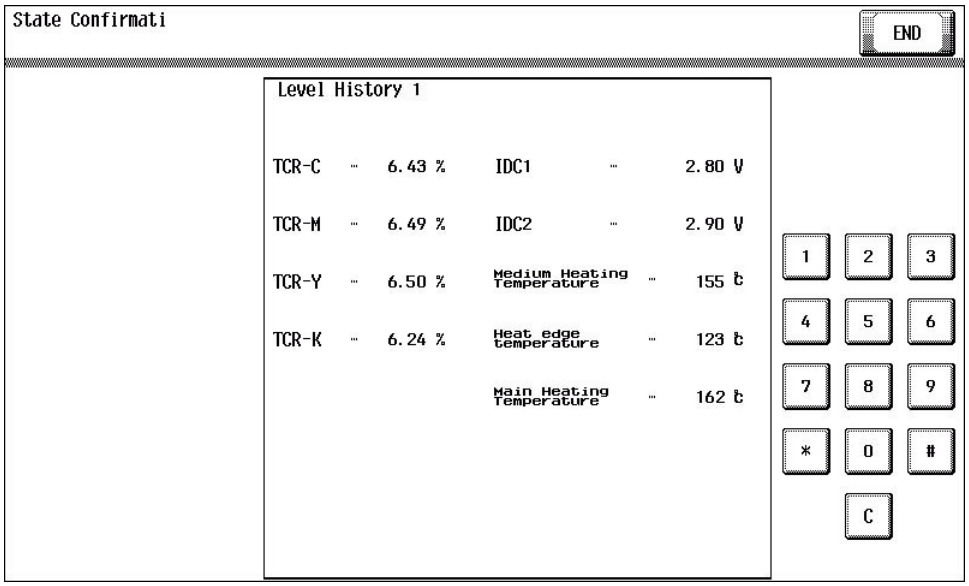
17.1.1 Table Number





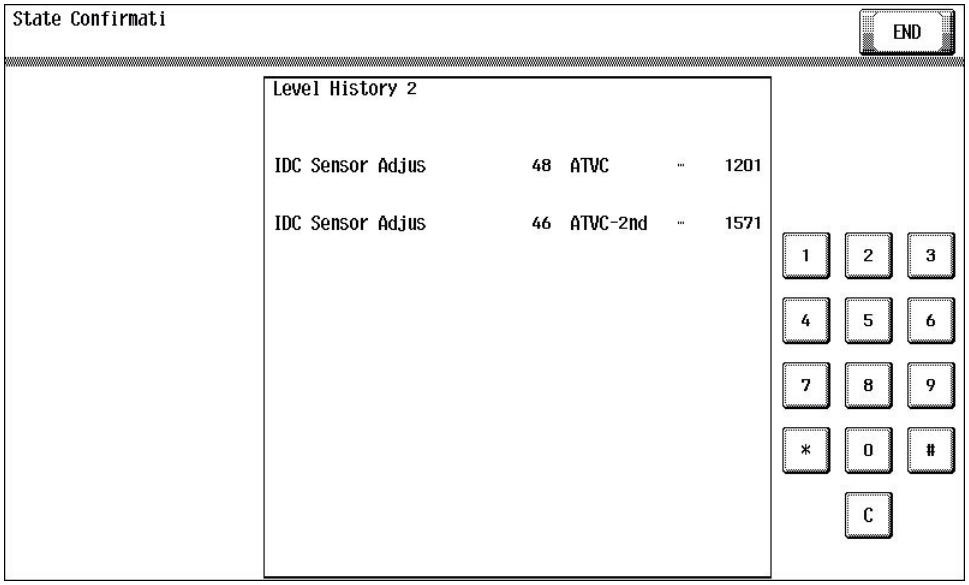
Vdc-C Vdc-M Vdc-Y Vdc-K	• Shows the developing bias value of toner when an image is produced. • Standard values: around 400 V (100 V to 720 V) • The specific numeric values vary with different imaging units or developing units. (The values incorporate corrections to match the proper density after image stabilization.) * As a guide, the image density tends to be higher with large numeric values and lower with small numeric values. • Relevant components: Imaging unit, developing unit, drum unit, high voltage unit (HV)
Vg-C Vg-M Vg-Y Vg-K	• Shows the grid voltage value of each color of toner when an image is produced. • Standard values: around 1100 V (800 V to 1600 V) • The specific numeric values vary with different imaging units or developing units. (The values incorporate corrections to match the proper density after image stabilization.) * As a guide, the image density tends to be higher with large numeric values and lower with small numeric values. • Relevant components: Imaging unit, developing unit, drum unit, high voltage unit (HV)
LD Light Value (C, M, Y, K)	• Shows the LD light value of each color of toner during print image formation. • Standard values: around 1741 to 2300 (1741 to 3300) • For your information, photoconductor durability tends to be aggravated and fine line width tends to be broader at higher values and characters tend to be faint at lower values. • Relevant components: PH unit, imaging unit, drum unit

17.1.2 Level History 1



TCR-C TCR-M TCR-Y TCR-K	• Shows the T/C ratio. (in 0.01 % increments) • Standard value: 5 to 8 % • For your information, foggy background tends to occur at higher values and low image densities tend to occur at lower values. • 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
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 ATVC-2nd	• Shows the latest ATVC level (which varies according to the paper type). • ATVC: 600 V to 2,700 V • ATVC-2nd: 300 V to 5,000 V • Relevant components: Transfer belt unit, High voltage unit (HV), transfer roller

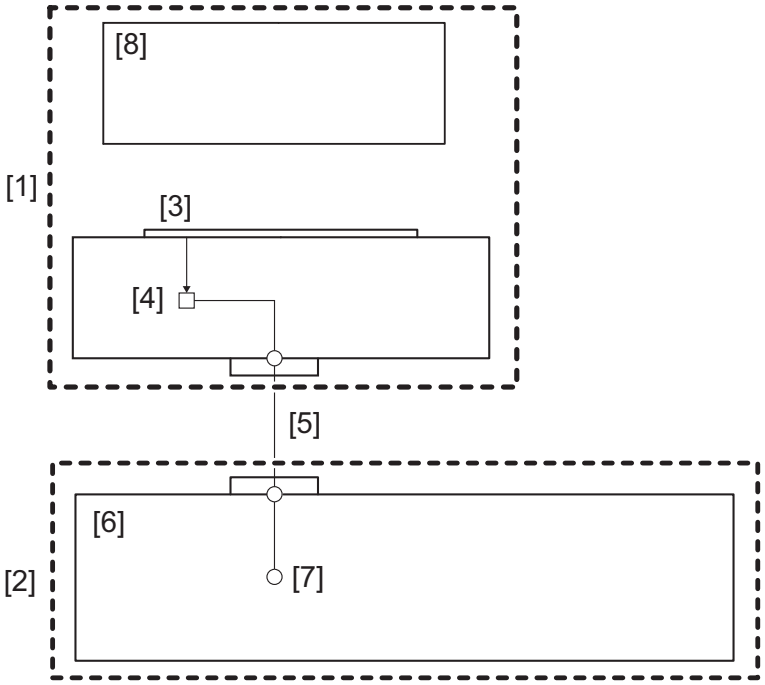
17.2 Troubleshooting procedure overview

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 and determining which color of toner, Y, M, C, or K, has the trouble.

(1) Scanner system image trouble

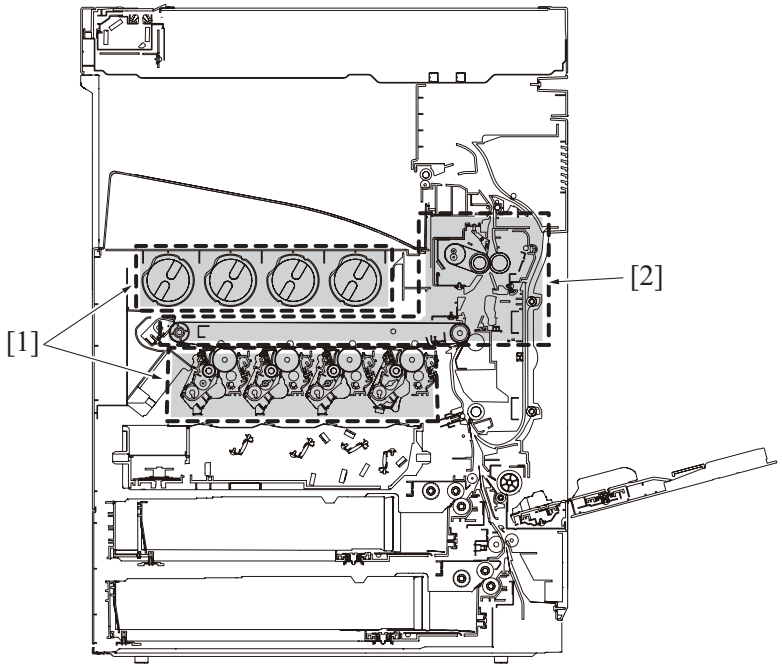
- If an image trouble occurs during a copy cycle, use the image trouble that may be evident on the test pattern printed to determine whether the trouble is attributable to the scanner or the printer system.
- If no image trouble occurs on a test pattern produced following a print cycle, the image trouble is determined to be attributable to the scanner system.



[1]	Scanner system	[2]	Printer system
[3]	Document scan	[4]	CIS module (CIS)
[5]	I/F cable	[6]	Base board (BASEB)
[7]	Print output	[8]	DF

(2) Printer system image trouble

- If the image trouble is attributable to the printer system, determine whether the image trouble occurs with one to three colors, or with four colors of Y, M, C, and K.
- If the same image trouble occurs with four colors, the image trouble is determined to be that of the four-color system.



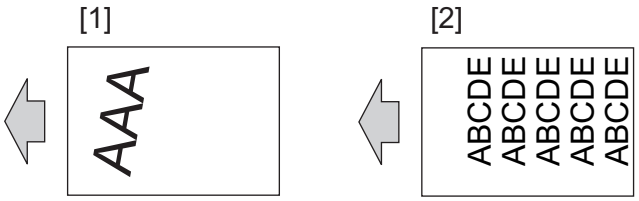
[1]	Faulty spot responsible for an image trouble of the single-to- three-color system	[2]	Faulty spot responsible for an image trouble of the four-color system

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.

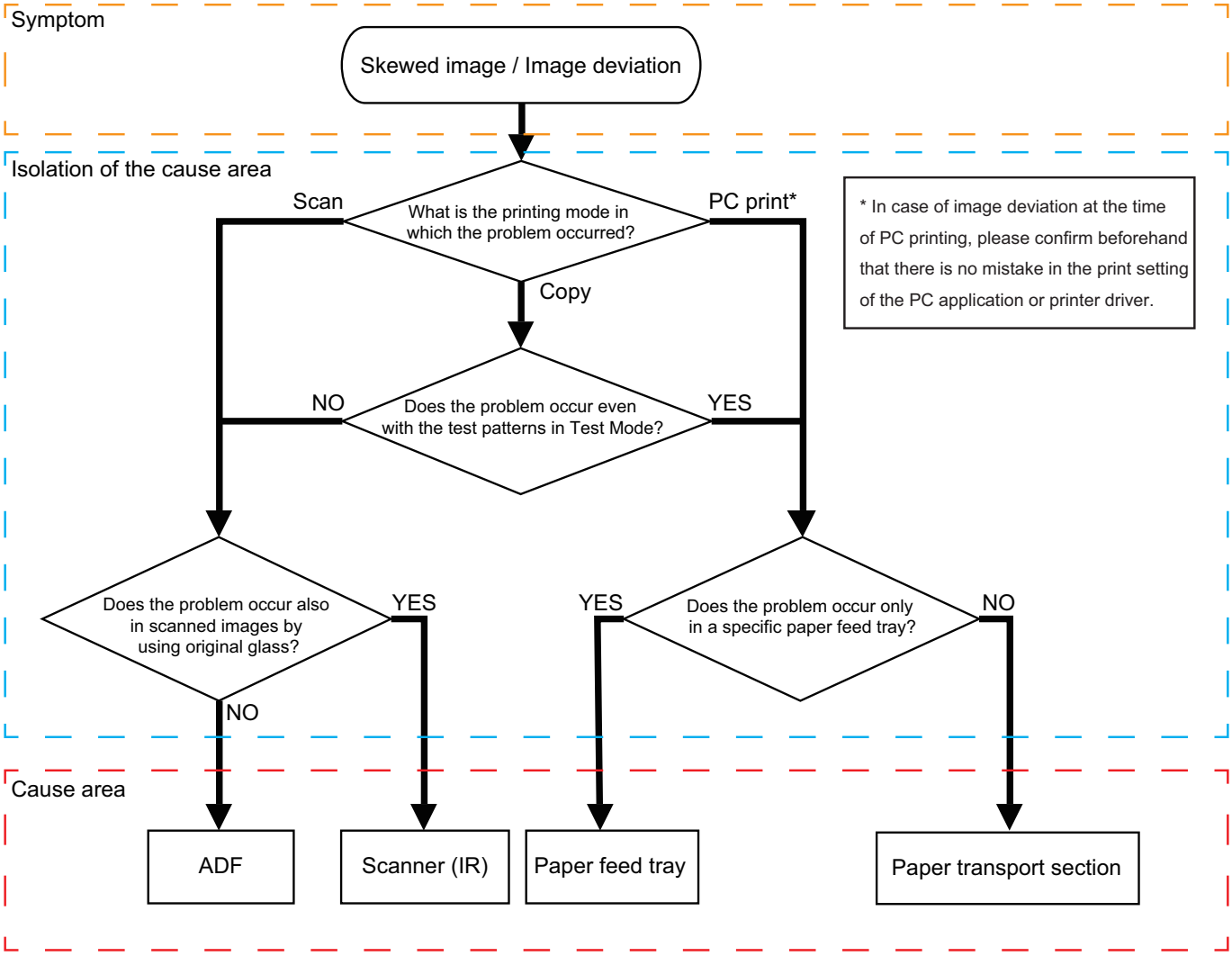


[1]	Skewed image	[2]	Image deviation

(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. Skew Measurement
	2. Registration Loop Adj. (Perform this item only if the problem is not resolved by adjustment 1.)
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 CIS module (CIS).**

< Scanner (IR) >

(1) First steps of troubleshooting

Step	Contents
1	Check the set position of original, and correct it if needed.
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.

Step	Contents
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

Skewed image	Mechanical adjustment: Adjusting the scanner skew
Image deviation	Scanner Area

NOTE
If the trouble can not be solved by the above adjustment, replace the CIS module (CIS).

< 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
	Mechanical adjustment: Paper reference position (PC-118/CP-218) / Paper reference position (PC-418)

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 / Inner door 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

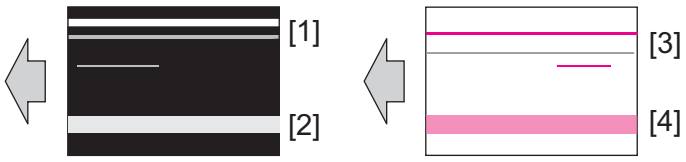
Skewed image	Printer Reg. Loop Adj.

NOTE
If the trouble can not be solved by the above adjustment, reinstall the Right door unit / Inner door unit.

17.3.2 White line 1, White band 1, Color line 1, Color band 1

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



[1]	White line	[2]	White band
[3]	Color line	[4]	Color band

(2) 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", "Gradation", "1-Sided", "CMYK", and "Full Bleed", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle for C, M, Y, and K in that order. • Check the image after printing to determine which color causes the abnormal image.	1 to 3 colors	Go to the 1-color troubleshooting procedure.
			4 colors	Go to the 4-color troubleshooting procedure.
			None	Go to scanner troubleshooting procedure.

(3) 1-color troubleshooting procedure

Step	Section	Check item for the faulty color	Result	Action for the faulty color
1	Service Mode -> Table Number	Select [Service Mode] -> [State Confirmation] -> [Table Number]. The measured value is close to the standard value. • Developing bias: Vdc-C, Vdc-M, Vdc-Y, Vdc-K: close to the standard value of 400 V (100 V to 720 V) • Grid voltage: Vg-c, Vg-M, Vg-Y, Vg-K: close to the standard value of 1100 V (800 V to 1600 V)	NO	• Check the high voltage unit, imaging unit, developing unit, and the drum unit for wiring and connection. • Replace the high voltage unit.
2	Write section	Sharp white line or colored line is blurry.	YES	Clean the PH window.
3	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.
4	Photoconductor section	There is a positive contact between the electrostatic charger application terminals and the high voltage unit connection terminals (Y: C4, M: C3, C: C2, K: C1).	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 (Y: B4; M: B3; C: B2; K: B1).	NO	Clean or correct the terminal.
6	Photoconductor section	Scratches on photo conductor.	YES	• Clean. • Replace the imaging unit/ Y,M,C. • Replace the drum unit/K.
7	Photoconductor section	Toner line or dirt on photo conductor. (improper cleaning)	YES	• Replace the imaging unit/ Y,M,C. • Replace the drum unit/K.
8	Photoconductor section	Faint lines evident on the entire surface as if the surface were brushed off.	YES	• Select [Service Mode] -> [Counter] -> [Life] and check the counter value of the Imaging Unit or Drum Unit. • Replace the imaging unit/ drum unit having the greatest counter value with a new one. (Not the imaging unit/ drum unit of the color that has developed the lines, but the imaging unit/drum unit having the greatest counter value)
9	1st transfer section	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1).	NO	Clean or correct the terminal.
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 imaging unit/ Y,M,C.

Step	Section	Check item for the faulty color	Result	Action for the faulty color
				• Replace the developing unit/ K.
			NO	Replace the PH unit.

(4) 4-color troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper path	There is dirty or foreign matter on paper path.	YES	Check and clean the paper path including the duplex section.
2	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.
3	Transfer belt unit	Dirt, scratches, or foreign matter on the transfer belt.	YES	• Clean. • Replace the transfer belt unit.
4	Transfer belt unit	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1).	NO	Clean or correct the terminal.
5	2nd transfer section	Dirt or foreign matter on the transfer roller.	YES	• Remove the foreign matter. • Replace the transfer roller unit.
6	2nd transfer section	There is a positive contact between the application terminals of the 2nd transfer and the connection terminals (T2) and ground terminal of the high voltage unit.	NO	Clean or correct the terminal.
7	Fusing unit	There is dirty or foreign matter on paper path of fusing unit.	YES	Clean. (Disassembling the fusing unit is prohibited.)
8	Fusing unit	Scratches on belt and roller in fusing unit.	YES	Replace the fusing unit.
			NO	• Replace the high voltage unit. • Replace the base board.

(5) Scanner troubleshooting procedure

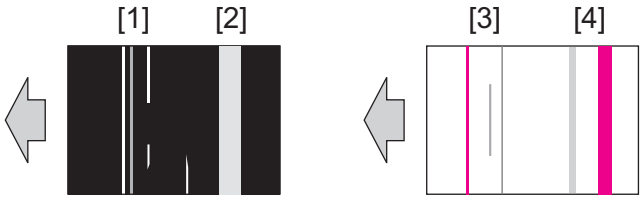
Step	Section	Check item	Result	Action
1	Original	Original is damaged or dirty.	YES	Change the original.
2	When original glass is being used	A fault occurs in the image read through the original glass.	YES	Go to step 5.
3	When DF is being used: 1st side	A fault occurs in the image read from the 1st side 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 11.
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	Light guide or lens array is dirty.	YES	Clean.
			NO	Replace the CIS module.
Main body side_DF original reading section				
11	Main body side_reading section	Document reading glass of main body is dirty.	YES	Clean.
12	Main body side_shading sheet	Shading sheet of main body is dirty.	YES	Clean.
13	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.
14	When DF is 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.

Step	Section	Check item	Result	Action
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	Light guide or lens array is dirty.	YES	Clean.
			NO	Replace the CIS module.

17.3.3 White line 2, White band 2, Color line 2, Color band 2

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



[1]	White line	[2]	White band
[3]	Color line	[4]	Color band

(2) 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", "Gradation", "1-Sided", "CMYK", and "Full Bleed", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle for C, M, Y, and K in that order. • Check the image after printing to determine which color causes the abnormal image.	1 to 3 colors	Go to the 1-color troubleshooting procedure.
			4 colors	Go to the 4-color troubleshooting procedure.
			None	Go to scanner troubleshooting procedure.

(3) 1-color troubleshooting procedure

Step	Section	Check item for the faulty color	Result	Action for the faulty color
1	Service Mode -> Table Number	Select [Service Mode] -> [State Confirmation] -> [Table Number]. The measured value is close to the standard value. • Developing bias: Vdc-C, Vdc-M, Vdc-Y, Vdc-K: close to the standard value of 400 V (100 V to 720 V) • Grid voltage: Vg-c, Vg-M, Vg-Y, Vg-K: close to the standard value of 1100 V (800 V to 1600 V)	NO	• Check the high voltage unit, imaging unit, developing unit, and the drum unit for wiring and connection. • Replace the high voltage unit.
2	Write section	Sharp white line or colored line is blurry.	YES	Clean the PH window.
3	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.
4	Photoconductor section	There is a positive contact between the electrostatic charger application terminals and the high voltage unit connection terminals (Y: C4, M: C3, C: C2, K: C1).	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 (Y: B4; M: B3; C: B2; K: B1).	NO	Clean or correct the terminal.

Step	Section	Check item for the faulty color	Result	Action for the faulty color
6	Photoconductor section	Scratches on photo conductor.	YES	• Clean. • Replace the imaging unit/ Y,M,C. • Replace the drum unit/K.
7	Photoconductor section	Toner line or dirt on photo conductor. (improper cleaning)	YES	• Replace the imaging unit/ Y,M,C. • Replace the drum unit/K.
8	1st transfer section	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1).	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 imaging unit/ Y,M,C. • Replace the developing unit/ K.
			NO	Replace the PH unit.

(4) 4-color troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper path	There is dirty or foreign matter on paper path.	YES	Check and clean the paper path including the duplex section.
2	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.
3	Transfer belt unit	Dirt, scratches, or foreign matter on the transfer belt.	YES	• Clean. • Replace the transfer belt unit.
4	Transfer belt unit	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1).	NO	Clean or correct the terminal.
5	2nd transfer section	Dirt or foreign matter on the transfer roller.	YES	• Remove the foreign matter. • Replace the transfer roller unit.
6	2nd transfer section	There is a positive contact between the application terminals of the 2nd transfer and the connection terminals (T2) and ground terminal of the high voltage unit.	NO	Clean or correct the terminal.
7	Fusing unit	Dirt or foreign matter on paper path or separation claw of the fusing unit.	YES	Clean. (Disassembling the fusing unit is prohibited.)
8	Fusing unit	Scratches on belt and roller in fusing unit.	YES	Replace the fusing unit.
			NO	• Replace the high voltage unit. • Replace the base board.

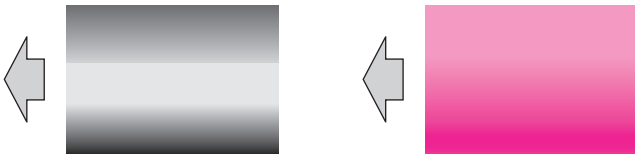
(5) Scanner troubleshooting procedure

Step	Section	Check item	Result	Action
1	Original	Original is damaged or dirty.	YES	Change the original.
2	Original Type	Select [Copy setting] -> [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 CIS module.
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	Original reading glass or original reading glass cleaning brush is dirty.	YES	Clean.
			NO	Replace the CIS module.

17.3.4 Uneven density 1

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



(2) 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	Image check	• Select [Service Mode] -> [Test Mode] -> [Halftone Pattern]. Select "SINGLE", "HYPER", "Gradation", "1-Sided", "CMYK", and "Full Bleed", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle for C, M, Y, and K in that order. • Check the image after printing and the abnormal image occurs only with one color.	YES	Go to the 1-color troubleshooting procedure.
			NO	Go to the 4-color troubleshooting procedure.

(3) 1-color troubleshooting procedure

Step	Section	Check item for the faulty color	Result	Action for the faulty color
1	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 imaging unit/developing unit fails to keep up with a high demand for toner.
2	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.
3	Write section	Dirt or foreign matter on the dust-proof glass of the PH.	YES	Clean the PH window.
4	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.
5	Photoconductor section	Dirt, scratches, or foreign matter on the photoconductor.	YES	• Clean. • Replace the imaging unit/ Y,M,C. • Replace the drum unit/K.
6	1st transfer section	Dirt, scratches, or foreign matter on the 1st transfer roller.	YES	• Clean. • Replace the transfer belt unit.
7	1st transfer section	Faulty pressure/retraction operation of the 1st transfer roller.	YES	• Correct or replace the drive system. • Replace the transfer belt unit.
8	Developing section	Toper hopper operates improperly or contains foreign matter.	YES	• Correct or remove. • Replace the sub hopper unit.
9	Developing section	Toner bristles not even on the developing roller, resulting in a line or band.	YES	• Replace the imaging unit/ Y,M,C. • Replace the developing unit/ K.
			NO	• Replace the PH unit. • Replace the high voltage unit.

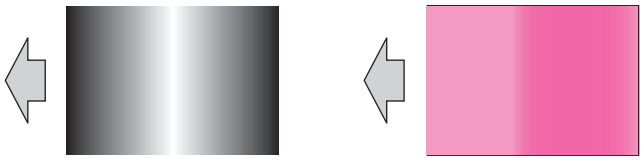
(4) 4-color troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper path	There is dirty or foreign matter on paper path.	YES	Check and clean the paper path including the duplex section.
2	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.
3	Transfer belt unit	Dirt, scratches, or foreign matter on the transfer belt.	YES	• Clean. • Replace the transfer belt unit.
4	Transfer belt unit	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1).	NO	Clean or correct the terminal.
5	Transfer belt unit	Transfer belt rotates faultily.	YES	Replace the transfer belt unit.
6	2nd transfer section	Dirt or foreign matter on the transfer roller.	YES	• Remove the foreign matter. • Replace the transfer roller unit.
7	2nd transfer section	Faulty pressure/retraction operation of the transfer roller.	YES	• Correct. • Replace the transfer roller unit.
8	2nd transfer section	There is a positive contact between the application terminals of the 2nd transfer and the connection terminals (T2) and ground terminal of the high voltage unit.	NO	Clean or correct the terminal.
9	Fusing unit	There is dirty or foreign matter on paper path of fusing unit.	YES	Clean. (Disassembling the fusing unit is prohibited.)
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 fusing unit. • Replace the high voltage unit. • Replace the base board.

17.3.5 Uneven density 2

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



(2) 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	Image check	• Select [Service Mode] -> [Test Mode] -> [Halftone Pattern]. Select "SINGLE", "HYPER", "Gradation", "1-Sided", "CMYK", and "Full Bleed", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle for C, M, Y, and K in that order. • Check the image after printing and the abnormal image occurs only with one color.	YES	Go to the 1-color troubleshooting procedure.
			NO	Go to the 4-color troubleshooting procedure.

(3) 1-color troubleshooting procedure

Step	Section	Check item for the faulty color	Result	Action for the faulty color
1	Write section	Dirt or foreign matter on the dust-proof glass of the PH.	YES	Clean the PH window.

Step	Section	Check item for the faulty color	Result	Action for the faulty color
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 imaging unit/ Y,M,C. • Replace the drum unit/K.
4	Photoconductor section	Photoconductor drives faultily.	YES	• Correct. • Replace the imaging unit/ Y,M,C. • Replace the drum unit/K.
5	1st transfer section	Scratches or dirt on 1st transfer roller.	YES	• Clean. • Replace the transfer belt unit.
6	Developing section	Toner bristles not even on the developing roller, resulting in a line or band.	YES	• Replace the imaging unit/ Y,M,C. • Replace the developing unit/ K.
			NO	• Replace the PH unit. • Replace the high voltage unit.

(4) 4-color troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper path	There is dirty or foreign matter on paper path.	YES	Check and clean the paper path including the duplex section.
2	Transfer belt unit	Dirt, scratches, or foreign matter on the transfer belt.	YES	• Clean. • Replace the transfer belt unit.
3	Transfer belt unit	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1).	NO	Clean or correct the terminal.
4	Transfer belt unit	Transfer belt rotates faultily.	YES	• Correct. • Replace the transfer belt unit.
5	2nd transfer section	Dirt or foreign matter on the transfer roller.	YES	• Remove the foreign matter. • Replace the transfer roller unit.
6	2nd transfer section	Faulty pressure/retraction operation of the transfer roller.	YES	• Correct. • Replace the transfer roller unit.
7	2nd transfer section	There is a positive contact between the application terminals of the 2nd transfer and the connection terminals (T2) and ground terminal of the high voltage unit.	NO	Clean or correct the terminal.
8	Fusing unit	There is dirty or foreign matter on paper path of fusing unit.	YES	Clean. (Disassembling the fusing unit is prohibited.)
9	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 high voltage unit. • Replace the base board.

17.3.6 Faint image, low image density (ID lowering)

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.

(2) 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", "Gradation", "1-Sided", "4 Color", "Full Bleed", and "12 gradations", and load tray 2 with A3 paper. Press the start key. This runs a print cycle for C, M, Y, and K in that order. • Check the image after printing to determine which color causes the abnormal image.	1 to 3 colors	Go to the 1-color troubleshooting procedure.
			4 colors	Go to the 4-color troubleshooting procedure.
			None	Go to scanner troubleshooting procedure.

(3) 1-color troubleshooting procedure

Step	Section	Check item for the faulty color	Result	Action for the faulty color
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 (No Code). Note: Do not apply a strong force to the surface of the charging roller. As doing so can damage the surface.
3	Service Mode -> Table Number	Select [Service Mode] -> [State Confirmation] -> [Table Number]. The measured value is close to the standard value. • Developing bias: Vdc-C, Vdc-M, Vdc-Y, Vdc-K: close to the standard value of 400 V (100 V to 720 V) • Grid voltage: Vg-c, Vg-M, Vg-Y, Vg-K: close to the standard value of 1100 V (800 V to 1600 V)	NO	• Check the high voltage unit, imaging unit, developing unit, and the drum unit for wiring and connection. • Replace the high voltage unit.
4	Photoconductor section	There is a positive contact between the electrostatic charger application terminals and the high voltage unit connection terminals (Y: C4, M: C3, C: C2, K: C1).	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 (Y: B4; M: B3; C: B2; K: B1).	NO	Clean or correct the terminal.
6	Hopper drive unit section	Faulty connector connection between the toner supply motor (M7, M9) and base board (CN28E).	YES	Reconnect the connector.
7	Hopper drive unit section	Faulty in the drive of sub hopper.	YES	• Correct. • Replace the sub hopper unit.
8	Service Mode -> TCR data	Select [Service Mode] -> [State Confirmation] -> [Level History 1] and the measured value is correct. TCR-C, TCR-M, TCR-Y, TCR-K: normal value 5 to 8 %	NO	Select [Service Mode] -> [Imaging Process Adjustment] -> [Manual Toner Add] and perform the function.
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 imaging unit/ Y,M,C. • Replace the drum unit/K. • Replace the developing unit/ K. • Replace the PH unit.

Step	Section	Check item for the faulty color	Result	Action for the faulty color
				• Replace the high voltage unit. • Replace the base board.

(4) 4-color troubleshooting procedure

Step	Section	Check item	Result	Action
1	Transfer belt unit	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1).	NO	Clean or correct the terminal.
2	2nd transfer section	There is a positive contact between the application terminals of the 2nd transfer and the connection terminals (T2) and ground terminal of the high voltage unit.	NO	Clean or correct the terminal.
3	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.
4	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 transfer belt unit. • Replace the high voltage unit. • Replace the base board.

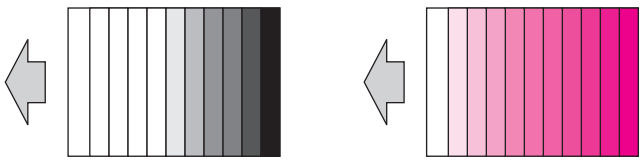
(5) Scanner troubleshooting procedure

Step	Section	Check item	Result	Action
1	Original Type	Select [Copy setting] -> [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	Light guide or lens array is dirty.	YES	Clean.
4	Main body side_shading sheet	Shading sheet of main body is dirty.	YES	Clean.
			NO	Replace the CIS module.
5	When DF is being used	Original reading glass or original reading glass cleaning brush is dirty.	YES	Clean.
			NO	Replace the CIS module.

17.3.7 Gradation reproduction failure

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



(2) Troubleshooting procedure

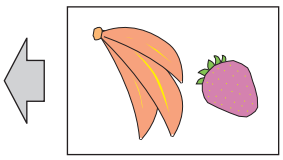
Step	Section	Check item	Result	Action
1	Malfunction code	The maintenance call mark is displayed on the panel.	YES	Perform the relevant troubleshooting procedure corresponding to the malfunction code.
2	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting 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", "Gradation", "1-Sided", "CMYK", "Full Bleed", and "12 gradations", and load tray 2 with A3 paper. Press the start key. This runs a print cycle for C, M, Y, and K in that order. • Check the image after printing to determine which color causes the abnormal image.	-	Go to the next step.

Step	Section	Check item	Result	Action
4	Write section	Dirt or foreign matter on the dust-proof glass of the PH of the color which is responsible for the abnormal image.	YES	Clean the PH window.
5	Charging section	Foreign matter on charging roller of the color which is responsible for the abnormal image.	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 imaging unit/ Y,M,C that is responsible for the abnormal image. • Replace the drum unit/K. • Replace the developing unit/ K. • Replace the PH unit. • Replace the high voltage unit. • Replace the base board.

17.3.8 Color reproducibility error

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



(2) Troubleshooting procedure

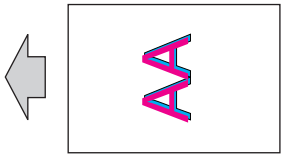
Step	Section	Check item	Result	Action
1	Damp paper	Paper is damp.	YES	Change paper to one just unwrapped from its package.
2	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
3	Expert Adjustment -> PS Designer Settings	Select [Utility] -> [Expert Adjustment] -> [PS Designer Settings] and change the setting, and the image trouble is eliminated.	NO	Go to the next step.
4	Image check	• Select [Service Mode] -> [Test Mode] -> [8 Color Solid Pattern]. Select "SINGLE", "HYPER", "Gradation", and "1-Sided", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle of 8 colors on one sheet of paper. • Check the image after printing and the abnormal image is evident.	YES	Go to the next step.
5	Write section	Dirt or foreign matter on the dust-proof glass of the PH.	YES	Clean the PH window.
6	Charging section	Foreign matter on charging roller.	YES	Lightly wipe the surface clean of foreign matter using hydro-wipe (65AA-99##).

Step	Section	Check item	Result	Action
				Note: Do not apply a strong force to the surface of the charging roller. As doing so can damage the surface.
7	Transfer belt unit	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1).	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) and ground terminal of the high voltage unit.	NO	Clean or correct the terminal.
9	IDC sensor	IDC sensor is dirty.	YES	Clean.
10	Service Mode -> Stabilizer	Select [Service Mode] -> [Imaging Process Adjustment] -> [Stabilizer] -> [Stabilization Only] and the image trouble is eliminated.	NO	Go to the next step.
11	Service Mode -> Gradation Adjust	Select [Service Mode] -> [Imaging Process Adjustment] -> [Gradation Adjust] and the image trouble is eliminated.	NO	Go to the next step.
12	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.
13	Connector connection	Faulty connector connection the high voltage unit (CN1) and base board (CN4E).	YES	Reconnect the connector.
14	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 transfer belt unit. • Replace the high voltage unit. • Replace the base board.

17.3.9 Incorrect color image registration

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



(2) 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	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] -> [8 Color Solid Pattern]. Select "SINGLE", "HYPER", "Gradation", and "1-Sided", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle of 8 colors on one sheet of paper. • Check the image after printing and the abnormal image is evident.	YES	Go to engine troubleshooting procedure.
			NO	Go to scanner troubleshooting procedure.

(3) Engine troubleshooting procedure

Step	Section	Check item	Result	Action
1	Connector connection	Faulty connector connection the base board (CN18).	YES	Reconnect the connector.
2	Service Mode -> Color Registration Adjustment	Select [Service Mode] -> [Machine] -> [Color Registration Adjustment] and the image trouble is eliminated.	NO	Go to the next step.
3	Service Mode -> Print Head Skew Reset	Select [Service Mode] -> [Machine] -> [Print Hear Skew Adj.] -> [Print Head Skew Reset] and the image trouble is eliminated.	NO	Go to the next step.
4	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.

(4) Scanner troubleshooting procedure

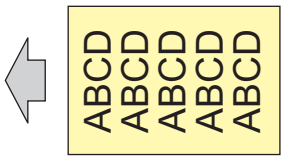
Step	Section	Check item	Result	Action
1	Original	Original contains incorrect color registration.	YES	Change the original.
2	Original Type	Select [Copy setting] -> [Original Type] and change the setting, and the image trouble is eliminated.	NO	Go to the next step.
3	When DF is being used	DF does not lie flat.	YES	Replace DF if it is deformed or hinges are broken.
4	Scanner rails	Foreign matter on scanner rails.	YES	Clean and apply lubricant. *
5	When original glass is being used	Scanner moves smoothly.	YES	Replace the CIS module.
			NO	• Replace the belt of scanner motor. • Replace the scanner motor.
6	When DF is being used: Registration Loop Adj.	Select [Service Mode] -> [ADF] -> [Registration Loop Adj.] and make the necessary adjustment, and the image trouble is eliminated.	YES	Readjust.
			NO	Replace the CIS module.

*: 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/).

17.3.10 Foggy background

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



(2) 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 -> 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.

Step	Section	Check item	Result	Action
8	Image check	• Select [Service Mode] -> [Test Mode] -> [Lattice Pattern]. Select "SINGLE", "HYPER", "Gradation", "1-Sided", "CMYK", "600dpi", and "Normal", enter "20" for 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 for C, M, Y, and K in that order. • Check the image after printing to determine which color causes the abnormal image.	1 to 3 colors	Go to the 1-color troubleshooting procedure.
			4 colors	Go to the 4-color troubleshooting procedure.
			None	Go to scanner troubleshooting procedure.

(3) 1-color troubleshooting procedure

Step	Section	Check item for the faulty color	Result	Action for the faulty color
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 (Y: C4, M: C3, C: C2, K: C1).	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 (Y: B4; M: B3; C: B2; K: B1).	NO	Clean or correct the terminal.
5	Service Mode -> TCR data	Select [Service Mode] -> [State Confirmation] -> [Level History 1] and the measured value is correct. TCR-C, TCR-M, TCR-Y, TCR-K: normal value 5 to 8 %	NO	Select [Service Mode] -> [Imaging Process Adjustment] -> [Manual Toner Add] and perform the function.
6	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.
7	Connector connection	Faulty connector connection the high voltage unit (CN1) and base board (CN4E).	YES	Reconnect the connector.
8	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 imaging unit/ Y,M,C. • Replace the drum unit/K. • Replace the PH unit. • Replace the high voltage unit.

(4) 4-color troubleshooting procedure

Step	Section	Check item	Result	Action
1	Transfer belt unit	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1).	NO	Clean or correct the terminal.
2	2nd transfer section	There is a positive contact between the application terminals of the 2nd transfer and the connection terminals (T2) and ground terminal of the high voltage unit.	NO	Clean or correct the terminal.
3	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.
4	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 transfer belt unit. • Replace the high voltage unit. • Replace the base board.

(5) 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 setting] -> [Original Type] and change the setting, and the image trouble is eliminated.	NO	Go to the next step.

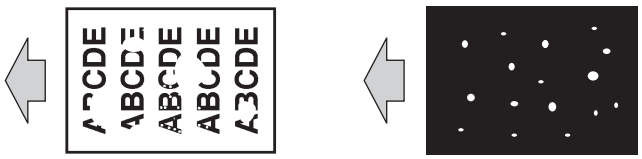
Step	Section	Check item	Result	Action
3	Basic -> Density	Change the density setting, and the image trouble is eliminated.	NO	Go to the next step.
4	When DF is being used	DF does not lie flat.	YES	Replace DF if it is deformed or hinges are broken.
5	When original glass is being used	Original glass or original pad is dirty.	YES	Clean.
6	Parts along scanning path	Light guide or lens array 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	Original reading glass is dirty.	YES	Clean.
			NO	Replace the CIS module.

17.3.11 Void areas, White spots

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.

[1] [2]



[1]	Void areas	[2]	White spots

(2) 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	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 -> 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.
7	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.
8	Service Mode -> TCR Level Setting	Select [Service Mode] -> [Imaging Process Adjustment] -> [TCR level] and set the adjustment value of all colors to "+3". Next, select [Service Mode] -> [Imaging Process Adjustment] -> [Manual Toner Add], select all colors, 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.

Step	Section	Check item	Result	Action
9	Image check	• Select [Service Mode] -> [Test Mode] -> [Halftone Pattern]. Select "SINGLE", "HYPER", "Gradation", "1-Sided", "CMYK", and "Full Bleed", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle for C, M, Y, and K in that order. • 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 occurs only with one color.	YES	Go to the 1-color troubleshooting procedure.
			NO	Go to the 4-color troubleshooting procedure.

(3) 1-color troubleshooting procedure

Step	Section	Check item for the faulty color	Result	Action for the faulty color
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 imaging unit/ Y,M,C. • Replace the drum unit/K.
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	Toner bristles not even on the developing roller, resulting in a void area.	YES	• Replace the imaging unit/ Y,M,C. • Replace the developing unit/ K.
6	1st transfer section	There is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1).	NO	Clean or correct the terminal.
7	Connector connection	Faulty connector connection the high voltage unit (CN1) and base board (CN18, CN4E).	YES	Reconnect the connector.
8	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 imaging unit/ Y,M,C. • Replace the drum unit/K. • Replace the PH unit. • Replace the high voltage unit.

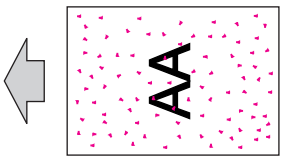
(4) 4-color troubleshooting procedure

Step	Section	Check item	Result	Action
1	Transfer belt unit	Dirt, scratches, or foreign matter on the transfer belt.	YES	• Clean. • Replace the transfer belt unit.
2	2nd transfer section	Dirt or foreign matter on the transfer roller.	YES	• Remove the foreign matter. • Replace the transfer roller unit.
3	Paper path	There is dirty or foreign matter on paper path.	YES	Check and clean the paper path including the duplex section.
4	Connector connection	Faulty connector connection the high voltage unit (CN1) and base board (CN4E).	YES	Reconnect the connector.
5	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 high voltage unit.

17.3.12 Color spot

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



(2) 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 -> Transfer Voltage Fine Adj	Select [Service Mode] -> [Imaging Process Adjustment] -> [Transfer Voltage Fine Adj] and the image trouble is eliminated. * Decrease the setting value for color spots.	NO	Return the setting value to the original one and go to the next step.
6	Image check	• Select [Service Mode] -> [Test Mode] -> [Solid Pattern]. Select "SINGLE", "HYPER", "Gradation", and "1-Sided", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle of 4 colors on one sheet of paper. • Check the image after printing to determine which color causes the abnormal image.	1 to 3 colors	Go to the 1-color troubleshooting procedure.
			4 colors	Go to the 4-color troubleshooting procedure.
			None	Go to scanner troubleshooting procedure.

(3) 1-color troubleshooting procedure

Step	Section	Check item for the faulty color	Result	Action for the faulty color
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 imaging unit/ Y,M,C. • Replace the drum unit/K.
4	Photoconductor section	There is a positive contact between the electrostatic charger application terminals and the high voltage unit connection terminals (Y: C4, M: C3, C: C2, K: C1).	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 (Y: B4; M: B3; C: B2; K: B1).	NO	Clean or correct the terminal.
6	Connector connection	Faulty connector connection the high voltage unit (CN1) and base board (CN18, CN4E).	YES	Reconnect the connector.
7	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 imaging unit/ Y,M,C. • Replace the drum unit/K. • Replace the PH unit. • Replace the high voltage unit.

(4) 4-color troubleshooting procedure

Step	Section	Check item	Result	Action
1	Transfer belt unit	Dirt, scratches, or foreign matter on the transfer belt.	YES	• Clean. • Replace the transfer belt unit.
2	2nd transfer section	Dirt or foreign matter on the transfer roller.	YES	• Remove the foreign matter.

Step	Section	Check item	Result	Action
				• Replace the transfer roller unit.
3	Paper path	There is dirty or foreign matter on paper path.	YES	Check and clean the paper path including the duplex section.
4	Connector connection	Faulty connector connection the high voltage unit (CN1) and base board (CN4E).	YES	Reconnect the connector.
5	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 high voltage unit.

(5) 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 setting] -> [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 CIS module.
4	When DF is being used	Original reading glass is dirty.	YES	Clean.
			NO	Replace the CIS module.

17.3.13 Blurred image

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.

(2) 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", "Gradation", "1-Sided", "CMYK", "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 for C, M, Y, and K in that order. • Check the image after printing and the abnormal image is evident.	YES	Go to engine troubleshooting procedure.
			NO	Go to scanner troubleshooting procedure.

(3) Engine troubleshooting procedure

Step	Section	Check item	Result	Action
1	Write section	Dirt or foreign matter on the dust-proof glass of the PH of the color which is responsible for the abnormal image.	YES	Clean the PH window.
2	Charging section	Foreign matter on charging roller of the color which is responsible for the abnormal image.	YES	Lightly wipe the surface clean of foreign matter using hydro-wipe (65AA-99##).

Step	Section	Check item	Result	Action
				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 or foreign matter on the photoconductor of the PH of the color which is responsible for the abnormal image.	YES	• Clean. • Replace the imaging unit/ Y,M,C. • Replace the drum unit/K.
			NO	Replace the PH unit.

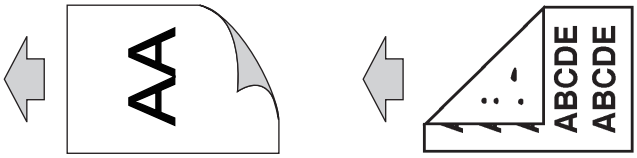
(4) Scanner troubleshooting procedure

Step	Section	Check item	Result	Action
1	Original	Original is folded, bent, or raised.	YES	Change the original.
2	Original Type	Select [Copy setting] -> [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	Light guide or lens array is dirty.	YES	Clean.
5	When DF is being used	DF does not lie flat.	YES	Replace DF if it is deformed or hinges are broken.
6	When DF is being used	Document reading glass tilts.	YES	Corrected to the correct position.
			NO	Replace the CIS module.

17.3.14 Back marking

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



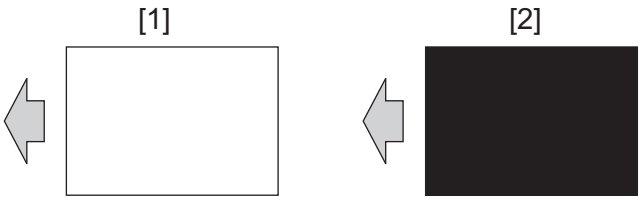
(2) Troubleshooting procedure

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 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 and roller in fusing unit.	YES	Replace the fusing unit.
			NO	Replace the high voltage unit.

17.3.15 Blank copy, Black copy

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



[1]	Blank copy	[2]	Black copy

(2) 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", "Gradation", and "1-Sided", enter "120" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle of 4 colors on one sheet of paper. • Check the image after printing and the abnormal image is evident.	YES	Go to engine troubleshooting procedure.
			NO	Go to scanner troubleshooting procedure.

(3) 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) and ground terminal of the high voltage unit.	NO	Clean or correct the terminal.
2	Transfer belt unit	With the color of toner responsible for the abnormal image, there is a positive contact between the transfer belt application terminals and the high voltage unit connection terminals (T1).	NO	Clean or correct the terminal.
3	Photoconductor section	The imaging unit or drum unit of the color of toner responsible for the abnormal image is installed properly.	NO	Reinstall.
4	Photoconductor section	With the color of toner responsible for the abnormal image, there is a positive contact between the drum charge corona bias application terminals and the high voltage unit connection terminals (Y: C4, M: C3, C: C2, K: C1).	NO	Clean or correct the terminal.
5	Developing section	With the color of toner responsible for the abnormal image, there is a positive contact between the developing bias application terminals and the high voltage unit connection terminals (Y: B4; M: B3; C: B2; K: B1).	NO	Clean or correct the terminal.
6	Connector connection	Faulty connector connection the high voltage unit (CN1) and base board (CN4E).	YES	Reconnect the connector.
7	Write section	Faulty connector connection the base board (CN9E, CN10E).	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 base board. • Replace the PH unit.

(4) Scanner troubleshooting procedure

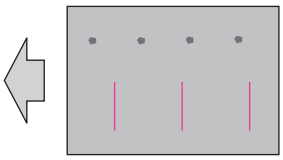
Step	Section	Check item	Result	Action
1	Black copy: Scanner section	Foreign matter on scanner rails. Faulty the drive shaft and pulley shaft.	YES	Clean and apply lubricant. *
2		Scanner moves smoothly.	NO	• Replace the belt of scanner motor. • Replace the scanner motor.
3	• When original glass is being used • When DF is being used: 1st side	None of the terminal pins of the connection cable between the CIS module and the base board (CN7) is bent and a positive connection is made.	NO	Reconnect the connector.
4	• When original glass is being used • When DF is being used	Replace the connection cable between the machine and the DF. This eliminates the trouble.	YES	Replace the connection cable.
5	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 base board.

*: 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/).

17.3.16 Uneven pitch

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



(2) 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", "Gradation", "1-Sided", "CMYK", and "Full Bleed", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle for C, M, Y, and K in that order. • Check the image after printing and the abnormal image occurs only with one color.	YES	Go to the 1-color troubleshooting procedure.
			NO	Go to the 4-color troubleshooting procedure.

(3) 1-color troubleshooting procedure

Step	Section	Check item for the faulty color	Result	Action for the faulty color
1	Uneven pitch at 94 mm interval	Dirt, scratches, or foreign matter on the photoconductor.	YES	• Clean. • Replace the imaging unit/ Y,M,C. • Replace the drum unit/K.
2	Uneven pitch at 28 mm interval	Dirt, scratches, or foreign matter on the developing roller.	YES	• Clean. • Replace the imaging unit/ Y,M,C. • Replace the developing unit/ K.
3	Write section	Dirt or foreign matter on the dust-proof glass of the PH.	YES	Clean the PH window.
4	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.
5	Connector connection	Faulty connector connection the high voltage unit (CN1) and base board (CN4E).	YES	Reconnect the connector.
			NO	• Replace the high voltage unit. • Replace the base board.

(4) 4-color troubleshooting procedure

Step	Section	Check item	Result	Action
1	Uneven pitch	Dirt, scratches, or foreign matter on the transfer belt.	YES	• Clean. • Replace the transfer belt unit.
2	Uneven pitch at 64 mm interval	Dirt or foreign matter on the transfer roller.	YES	• Remove the foreign matter. • Replace the transfer roller unit.
3	Uneven pitch at 141 mm interval	Dirt, scratches, or foreign matter on the fusing belt.	YES	• Clean. • Replace the fusing unit.
4	Uneven pitch at 78 mm interval	Dirt, scratches, or foreign matter on the fusing pressure roller.	YES	• Clean. • Replace the fusing unit.

Step	Section	Check item	Result	Action
5	Paper path	There is dirty or foreign matter on paper path.	YES	Check and clean the paper path including the duplex section.
			NO	• Replace the transfer belt unit. • Replace the high voltage unit. • Replace the base board.

17.3.17 Uneven gloss, Rough gloss

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.

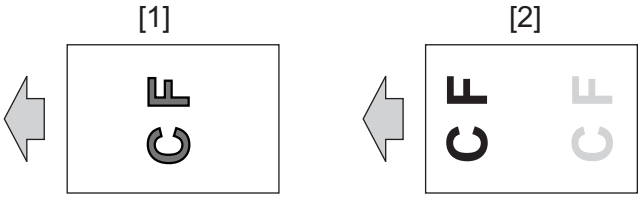
(2) Troubleshooting procedure

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", "Gradation", "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 and roller in fusing unit.	YES	Replace the fusing unit.
			NO	• Replace the high voltage unit. • Replace the base board.

17.3.18 Poor fusing performance, Offset

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



[1]	Poor fusing performance	[2]	Offset

(2) Troubleshooting procedure

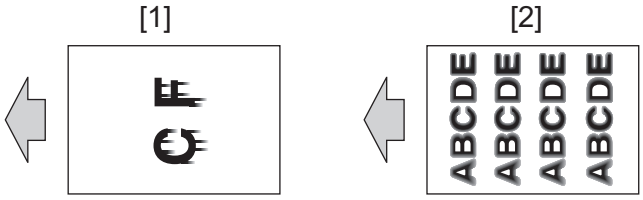
Step	Section	Check item	Result	Action
1	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
2	Image check: Poor fusing performance	• Select [Service Mode] -> [Test Mode] -> [Halftone Pattern]. Select "SINGLE", "HYPER", "Gradation", "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", "Gradation", "1-Sided", "8 Color", "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 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 and roller in fusing unit.	YES	Replace the fusing unit.
			NO	• Replace the high voltage unit. • Replace the base board.

17.3.19 Brush effect, Image bleeding

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



[1]	Brush effect	[2]	Image bleeding

(2) Initial troubleshooting procedure

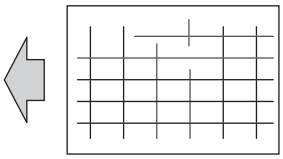
Step	Section	Check item	Result	Action
1	Paper Setting	The paper to be used for printing does not match the paper type and size of paper setting selected on the machine.	YES	Make the paper setting again on the machine.
2	Damp paper	Paper is damp.	YES	Change paper to one just unwrapped from its package.
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", "Gradation", "1-Sided", "CMYK", "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 for C, M, Y, and K in that order. • 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 transfer roller.	YES	• Remove the foreign matter. • Replace the transfer roller unit.

Step	Section	Check item	Result	Action
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.
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: 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 and roller in fusing unit.	YES	Replace the fusing unit.
			NO	• Replace the high voltage unit. • Replace the base board.

17.3.20 Blurred fine lines

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



(2) 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", "CMYK", "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 for C, M, Y, and K in that order. • Check the image after printing and the abnormal image is evident.	YES	Go to engine troubleshooting procedure.
			NO	Go to scanner troubleshooting procedure.

(3) Engine troubleshooting procedure

Step	Section	Check item	Result	Action
1	Write section	Dirt or foreign matter on the dust-proof glass of the PH of the color which is responsible for the abnormal image.	YES	Clean the PH window.
2	Charging section	Foreign matter on charging roller of the color which is responsible for the abnormal image.	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 or foreign matter on the photoconductor of the PH of the color which is responsible for the abnormal image.	YES	• Clean. • Replace the imaging unit/ Y,M,C.

Step	Section	Check item	Result	Action
				• Replace the drum unit/K.
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.

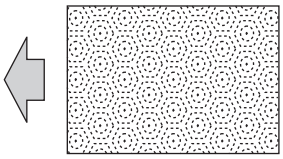
(4) Scanner troubleshooting procedure

Step	Section	Check item	Result	Action
1	Original	Original is folded, bent, or raised.	YES	Change the original.
2	Original Type	Select [Copy setting] -> [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	Replace DF if it is deformed or hinges are broken.
5	When DF is being used	Document reading glass tilts.	YES	Corrected to the correct position.
			NO	Replace the CIS module.

17.3.21 Moire

(1) Typical faulty images

The arrow in the exemplary image troubles indicates the paper feeding direction.



(2) 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 setting] -> [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", "Gradation", "1-Sided", "CMYK", and "Full Bleed", enter "64" for Density, and load tray 2 with A3 paper. Press the start key. This runs a print cycle for C, M, Y, and K in that order. • Check the image after printing and the abnormal image is evident.	YES	Go to engine troubleshooting procedure.
			NO	Go to scanner troubleshooting procedure.

(3) 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.

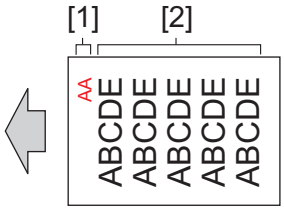
(4) Scanner troubleshooting procedure

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 CIS module.
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 CIS module.

17.3.22 ACS malfunction

(1) 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

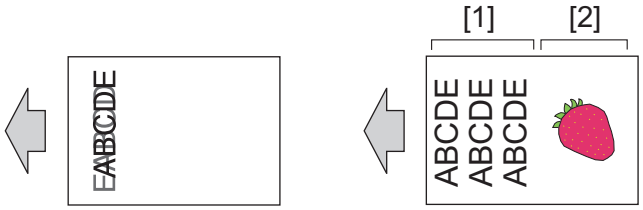
(2) Troubleshooting procedure

Procedure	Section	Check item	Result	Action
1	Original Type	Select [Copy setting] -> [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	User Settings -> Auto Color Level Adjust.	Select [Utility] -> [User Settings] -> [System Settings] -> [Auto Color Level Adjust.] 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.)

17.3.23 Abnormal image

(1) 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

(2) 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 CIS module and the base board (CN7) 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 CIS module and the base board. This eliminates the trouble.	YES	Replace the connection cable.
			NO	• Replace the CIS module. • Replace the base board.
3	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 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 d-Color MF257

18.2.1 Base board

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
F1	FM	Rear side cooling fan	Rear side cooling fan failure to turn	C5370
F1E	SW2	Front door switch	Detects power line A15 error	C760F
	SW3	Right door switch		
	-	Power relay		
F11E	-	LCT, cabinet	Detects power line A7 error	C7607
F12E	M14	Polygon motor	Detects power line A10 error	C760A
	-	Key counter		
	TCT *1	Total counter		
F13E	M12	Tray 1 lift-up motor	Detects power line A14 error	C760E
	M13	Tray 2 lift-up motor		
	CL1	Tray 2 paper feed clutch		
	CL2	Tray 2 vertical transport clutch		
	CL3	Tray 1 paper feed clutch		
	CL7	Bypass paper feed clutch		
	SD1	Bypass pick-up solenoid		
F14E	M15	Skew correction motor/C	Detects power line A11 error	C760B
	M16	Skew correction motor/M		
	M17	Skew correction motor/Y		
F15E	M201	Scanner motor	Drive system home sensor malfunction	C6102
F16E	-	Clean unit *2	Detects power line A6 error	C7606
F21E	M1	Transport motor	Detects power line A1 error	C7601
F22E	M2	IU motor	Detects power line A2 error	C7602
F23E	M3	Fusing motor	Detects power line A3 error	C7603
F24E	HV	High voltage unit	Detects power line A4 error	C7604
F25E	-	24V clamp circuit in mechanical controller of base board	Detects power line A5 error	C7605
F30E	-	DF	DF jam display	-

- *1: Japan only
- *2: When CU-101 is installed

ICP No.	Symbol	Target part name	When the poly-switch blocked the current	
			Symptom in each load	Trouble code and others
PSW1E	-	Scanner sensors	Unable to start up normally, and repeats automatic reboot.	-
PSW2E	-	DC to DC converter for 5V power supply	Mechanical controller ASIC communication error	C40A6

18.3 JS-506

18.3.1 JS control board

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
ICP1	-	CPU power supply	No operation (Due to no power supply to CPU, FS connection not detected)	-

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
ICP2	-	DC to DC converter input section 24V line	Unable to produce DC24V in FS and MFP unable to detect FS	-
ICP3	M1	Tray shift motor	Shift motor drive malfunction	C1182

18.4 FS-539/FS-539SD

18.4.1 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
	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		

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
	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		

18.4.2 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	-

18.5 FS-533

18.5.1 FS control board

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
F1	-	All ICs and actuators	No operation (Due to no power supply to CPU, FS connection not detected)	-
CP1	-	DC to DC converter input section 5 V line	No operation (Due to no power supply to CPU, FS connection not detected)	-
CP2	-	Regulator	No operation (Due to no power supply to CPU, FS connection not detected)	-
CP3	-	DC to DC converter input section 24 V line	No operation (Due to no power supply to CPU, FS connection not detected)	-
CP21	SD101	Paper surface detect solenoid	No operation	-
CP22	SD102	Batch solenoid	No operation	-
CP23	SD103	Paper exit roller solenoid	No operation	-
CP101	M101	Paper conveyance motor	Misfeed at transport section	-
CP102	M102	Paper exit motor	Misfeed at transport section	-
CP103	M103	Alignment roller motor	Misfeed at transport section	-
CP104	M104	Exit roller lift up motor	Exit roller pressure/ retraction drive malfunction	C11A1
CP105	M105	Alignment motor/Fr	Alignment motor/Fr drive malfunction	C1103
	M106	Alignment motor/Rr	Alignment motor/Rr drive malfunction	C1140
CP107	M107	Stapler movement motor	Stapler movement motor drive malfunction	C1106
CP109	M109	Tray lift up motor	Tray lift up motor drive malfunction	C1102

18.6 PK-519

18.6.1 PK control board

ICP No.	Symbol	Target part name	When ICP trips	
			Symptom in each load	Trouble code and others
F201	M201	Punch motor	Punch motor drive malfunction	C1132

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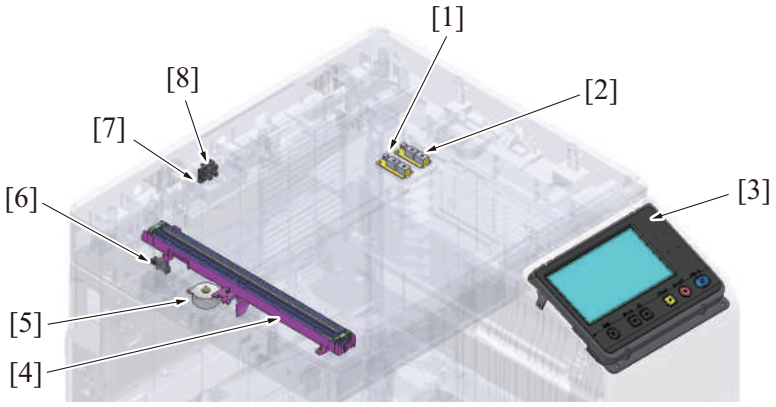
M PARTS/CONNECTOR LAYOUT DRAWING

1. PARTS LAYOUT DRAWING

1.1 d-Color MF257

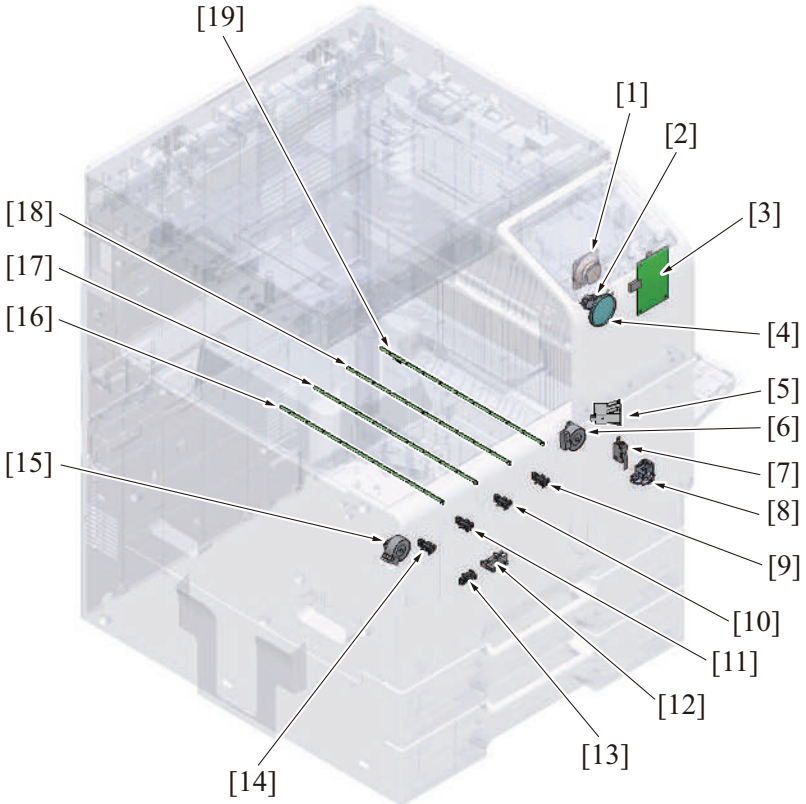
1.1.1 Scanner section



[1]	Original size sensor/1 (PS204)	[2]	Original size sensor/2 (PS205) *
[3]	Control panel unit	[4]	CIS module (CIS)
[5]	Scanner motor (M201)	[6]	Scanner home sensor (PS201)
[7]	Original cover sensor (PS203)	[8]	Angle sensor (PS202)

*: Excluding Japan models

1.1.2 Front side



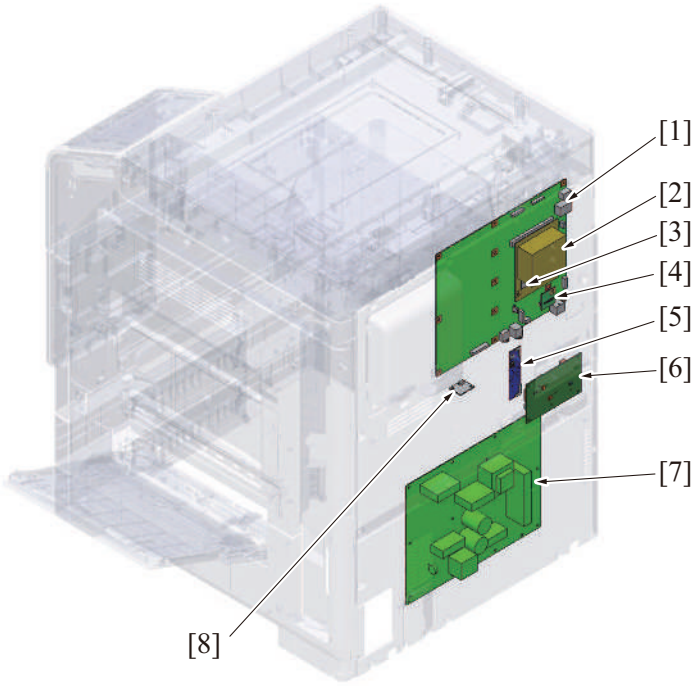
[1]	FAX speaker (SP1)	[2]	Right door switch (SW3)
[3]	USB board (USBB)	[4]	Speaker/2 (SP2) *1
[5]	Total counter (TCT) *2	[6]	Toner supply motor/C,K (M7)
[7]	Front door switch (SW2)	[8]	Main power switch (SW1)
[9]	Toner empty sensor/K (PS31)	[10]	Toner empty sensor/C (PS32)
[11]	Toner empty sensor/M (PS33)	[12]	Waste toner full sensor (PS101)
[13]	Waste toner box set sensor (PS100)	[14]	Toner empty sensor/Y (PS34)

[15]	Toner supply motor/Y,M (M9)	[16]	Erase LED/Y (EL/Y)
[17]	Erase LED/M (EL/M)	[18]	Erase LED/C (EL/C)
[19]	Erase LED/K (EL/K)	-	-

*1: Option
*2: Japan only

1.1.3 Back side

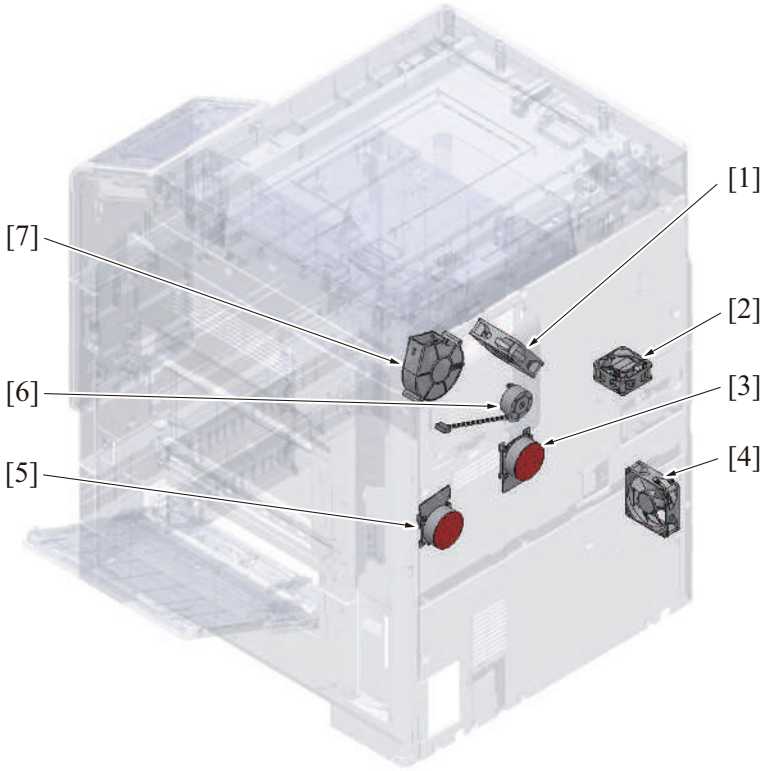
(1) Board



[1]	Base board (BASEB)	[2]	CPU board (CPUB)
[3]	Storage board (STRGB) *2	[4]	TPM board (TPMB)
[5]	Wireless LAN board (PWB-WLAN)	[6]	FAX board (FAXB) *1
[7]	DC power supply (DCPU)	[8]	Backup board (ERB)

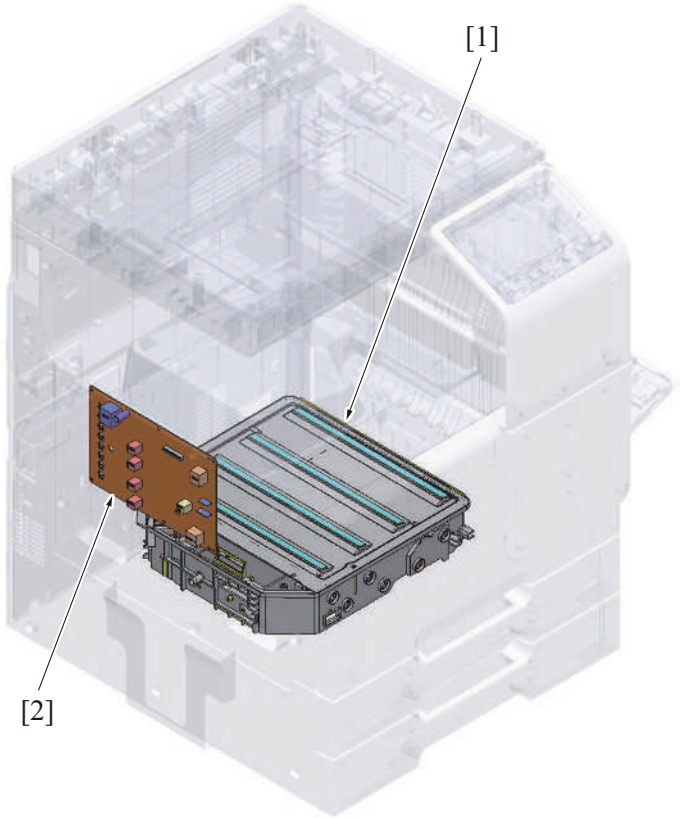
*1: Option
*2: Standard equipment in Japan, Europe. Optional for all other regions.

(2) Load



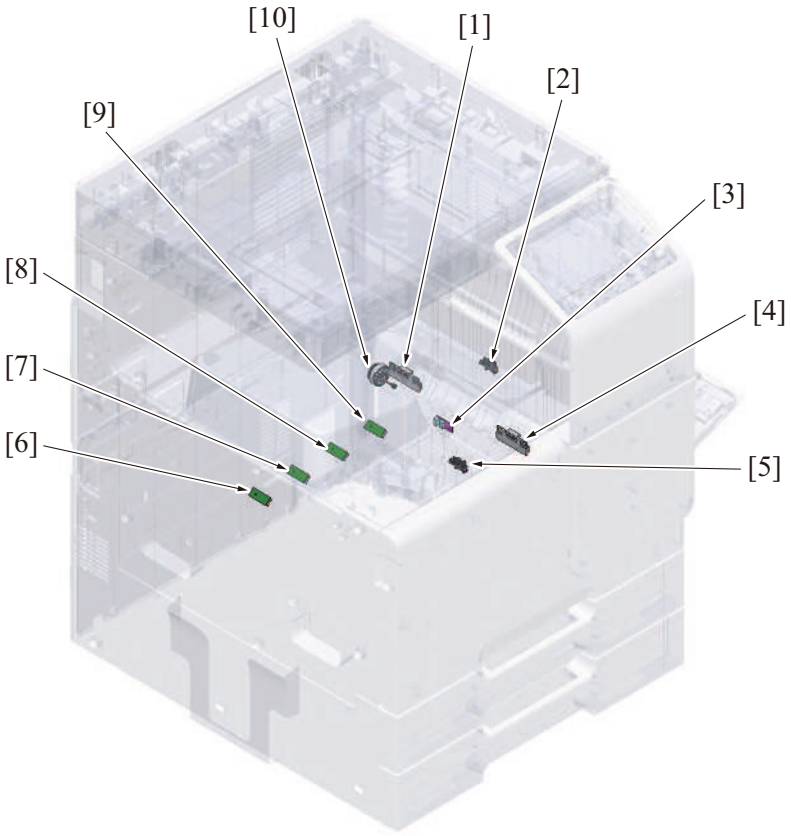
[1]	Transfer belt cleaner cooling fan (FM2)	[2]	Rear side cooling fan (FM3)
[3]	IU motor (M2)	[4]	Power supply cooling fan (FM1)
[5]	Transport motor (M1)	[6]	Toner cartridge motor (M10)
[7]	Paper cooling fan (FM8)	-	-

1.1.4 Left side



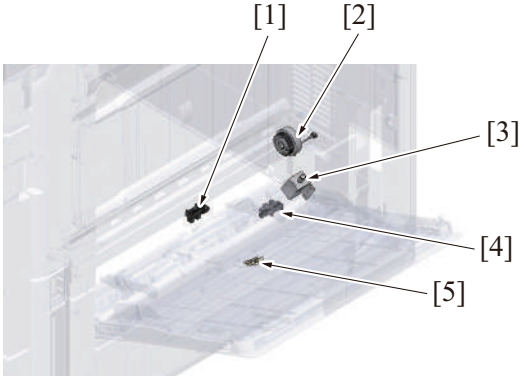
[1]	PH unit	[2]	High voltage unit (HV)

1.1.5 Right side



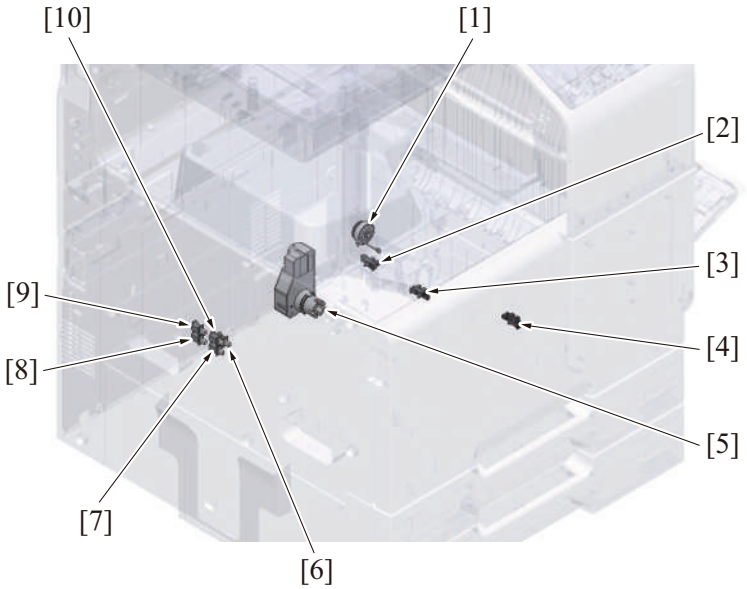
[1]	IDC sensor/Rr (IDCS/Rr)	[2]	Fusing loop sensor (PS2)
[3]	Temperature/humidity sensor (TEM/HUMS)	[4]	IDC sensor/Fr (IDCS/Fr)
[5]	Registration sensor (PS1)	[6]	TCR sensor/Y (TCRS/Y)
[7]	TCR sensor/M (TCRS/M)	[8]	TCR sensor/C (TCRS/C)
[9]	TCR sensor/K (TCRS/K)	[10]	Registration clutch (CL4)

1.1.6 Manual bypass tray



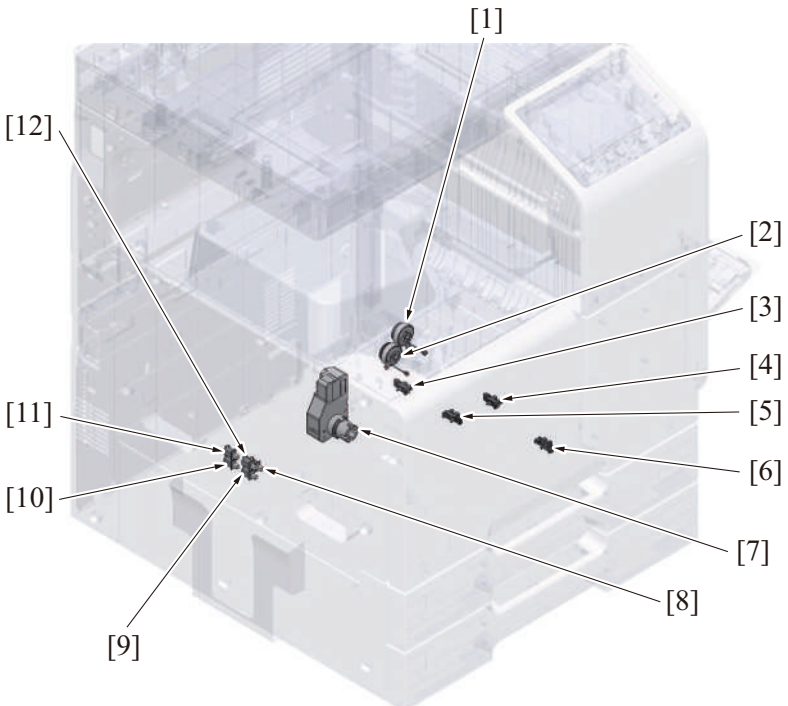
[1]	Bypass paper empty sensor (PS27)	[2]	Bypass paper feed clutch (CL7)
[3]	Bypass pick-up solenoid (SD1)	[4]	Bypass lift-up position sensor (PS26)
[5]	Bypass CD paper size VR (VR1)	-	-

1.1.7 Tray 1



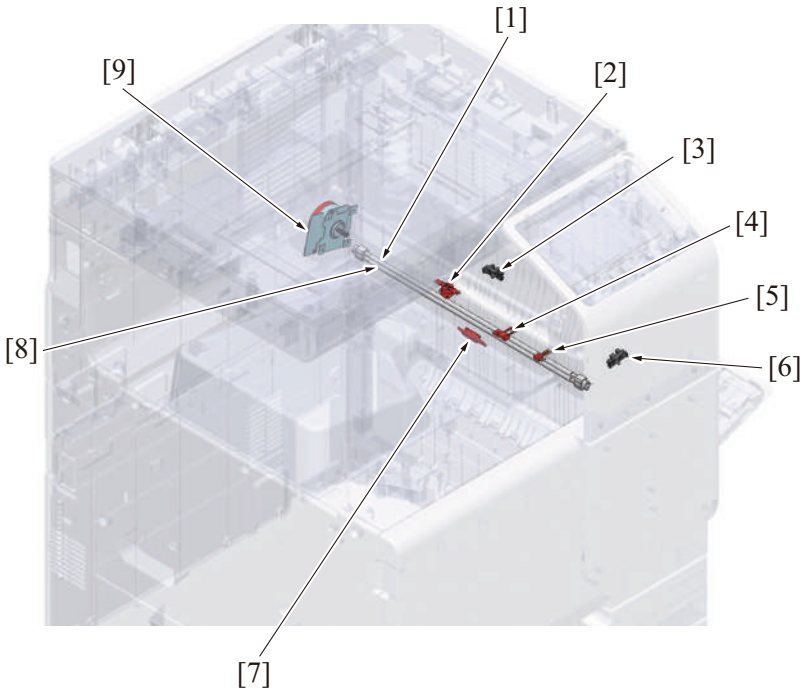
[1]	Tray 1 paper feed clutch (CL3)	[2]	Tray 1 upper limit sensor (PS25)
[3]	Tray 1 paper empty sensor (PS24)	[4]	Tray 1 paper feed sensor (PS23)
[5]	Tray 1 lift-up motor (M12)	[6]	Tray 1 FD paper size switch/3 (SW12)
[7]	Tray 1 FD paper size switch/2 (SW11)	[8]	Tray 1 CD paper size switch/2 (SW14)
[9]	Tray 1 CD paper size switch/1 (SW13)	[10]	Tray 1 FD paper size switch/1 (SW10)

1.1.8 Tray 2



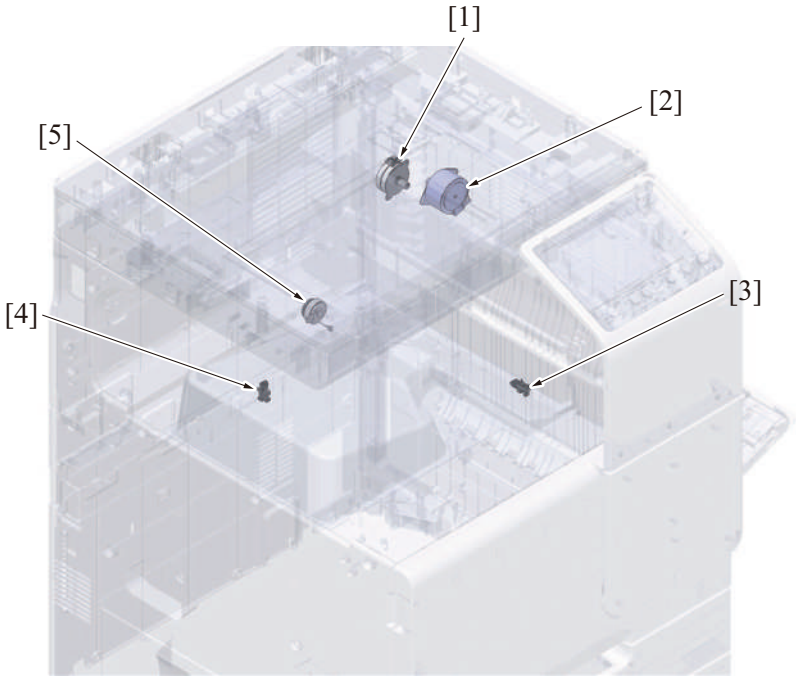
[1]	Tray 2 vertical transport clutch (CL2)	[2]	Tray 2 paper feed clutch (CL1)
[3]	Tray 2 upper limit sensor (PS22)	[4]	Tray 2 vertical transport sensor (PS19)
[5]	Tray 2 paper empty sensor (PS21)	[6]	Tray 2 paper feed sensor (PS20)
[7]	Tray 2 lift-up motor (M13)	[8]	Tray 2 FD paper size switch/3 (SW17)
[9]	Tray 2 FD paper size switch/2 (SW16)	[10]	Tray 2 CD paper size switch/2 (SW19)
[11]	Tray 2 CD paper size switch/1 (SW18)	[12]	Tray 2 FD paper size switch/1 (SW15)

1.1.9 Fusing/paper exit section



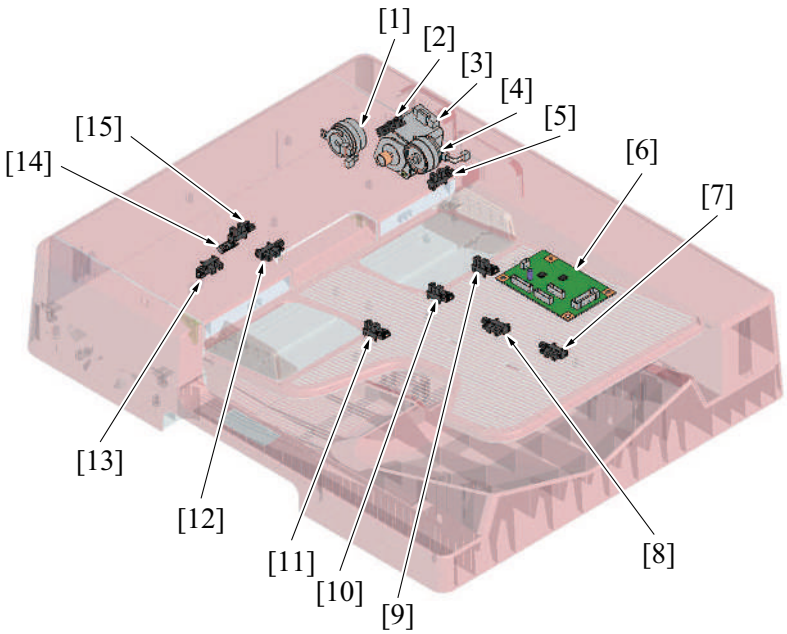
[1]	Fusing heater lamp/1 (FH1)	[2]	Thermostat (TS1)
[3]	Paper exit sensor (PS3)	[4]	Heating roller thermistor/2 (TH2)
[5]	Heating roller thermistor/1 (TH1)	[6]	Envelope sensor (PS38)
[7]	Heating roller temperature sensor (TEMS)	[8]	Fusing heater lamp/2 (FH2)
[9]	Fusing motor (M3)	-	-

1.1.10 Duplex section



[1]	Paper exit/reverse motor (M4)	[2]	ADU transport motor (M5)
[3]	ADU paper passage sensor (PS41)	[4]	1st transfer pressure sensor (PS39)
[5]	1st transfer pressure clutch (CL5)	-	-

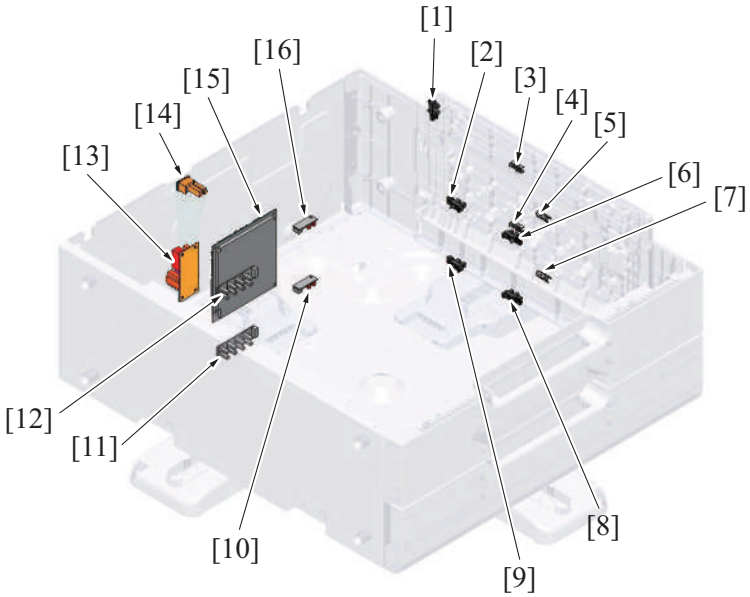
1.2 DF-633



[1]	Document registration clutch (CL2)	[2]	Upper door sensor (PS1)
[3]	Document feed motor (M1)	[4]	Document feed clutch (CL1)
[5]	Document set sensor (PS2)	[6]	DF control board (DFCB)
[7]	Document size sensor/FD2 (PS8)	[8]	Document size sensor/FD1 (PS7)
[9]	Document size sensor/CD1 (PS9)	[10]	Document size sensor/CD3 (PS11)
[11]	Document size sensor/CD2 (PS10)	[12]	Document exit sensor (PS6)
[13]	Document feed sensor (PS3)	[14]	Document reading sensor (PS5)
[15]	Document registration sensor (PS4)	-	-

1.3 PC-118/PC-218

1.3.1 Board/switch/sensor/others

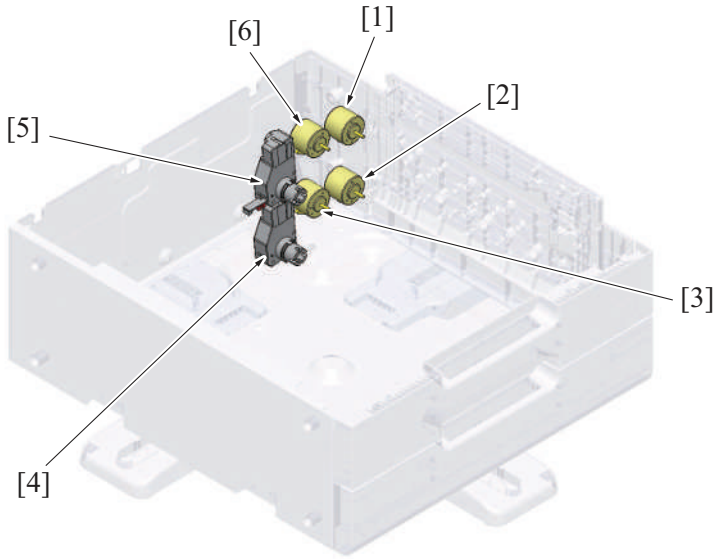


[1]	Right bottom door sensor (PS111)	[2]	Tray 3 upper limit sensor (PS116)
[3]	Tray 3 vertical transport sensor (PS113)	[4]	Tray 4 vertical transport sensor (PS123)
[5]	Tray 3 paper feed sensor (PS112)	[6]	Tray 3 paper empty sensor (PS114)
[7]	Tray 4 paper feed sensor (PS122)	[8]	Tray 4 paper empty sensor (PS124)
[9]	Tray 4 upper limit sensor (PS126)	[10]	Tray 4 CD paper size board (CDPSB/4)
[11]	Tray 4 FD paper size board (FDPSB/4)	[12]	Tray 3 FD paper size board (FDPSB/3)
[13]	Dehumidifier relay board (PCRYB)*	[14]	Dehumidification heater switch (SW4) *

[15]	PC control board (PCCB)	[16]	Tray 3 CD paper size board (CDPSB/3)

*: Japan only

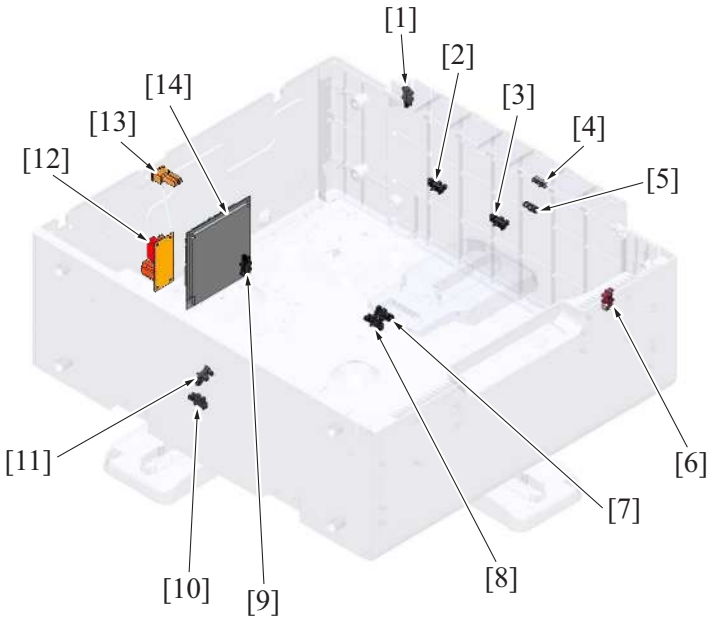
1.3.2 Load



[1]	Tray 3 vertical transport motor (M112)	[2]	Tray 4 vertical transport motor (M122)
[3]	Tray 4 paper feed motor (M121)	[4]	Tray 4 lift-up motor (M123)
[5]	Tray 3 lift-up motor (M113)	[6]	Tray 3 paper feed motor (M111)

1.4 PC-418

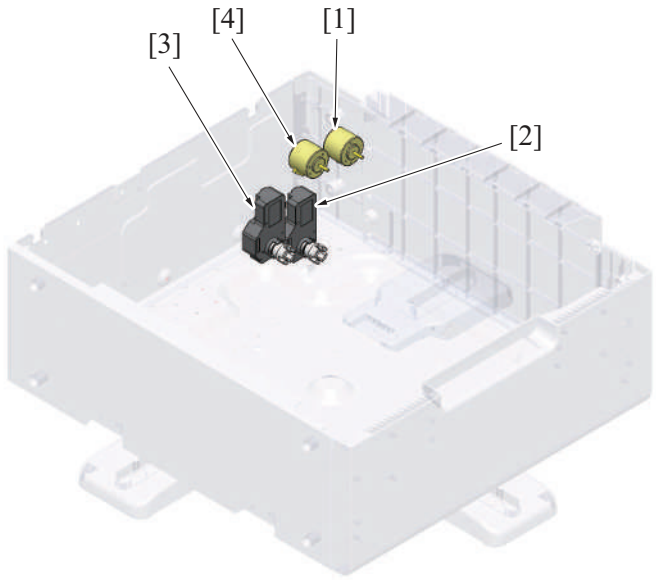
1.4.1 Board/switch/sensor/others



[1]	Right bottom door sensor (PS131)	[2]	Main tray upper limit sensor (PS136)
[3]	Main tray upper paper empty sensor (PS137)	[4]	LCT vertical transport sensor (PS133)
[5]	Paper feed sensor (PS132)	[6]	Cassette set sensor (PS143)
[7]	Main tray paper empty sensor (PS134)	[8]	Shifter stop/lower limit position sensor (PS138)
[9]	Division board sensor (PS142)	[10]	Shifter home sensor (PS139)
[11]	Sub tray paper empty sensor (PS140)	[12]	Dehumidifier relay board (PCRYB)*
[13]	Dehumidification heater switch (SW4) *	[14]	PC control board (PCCB)

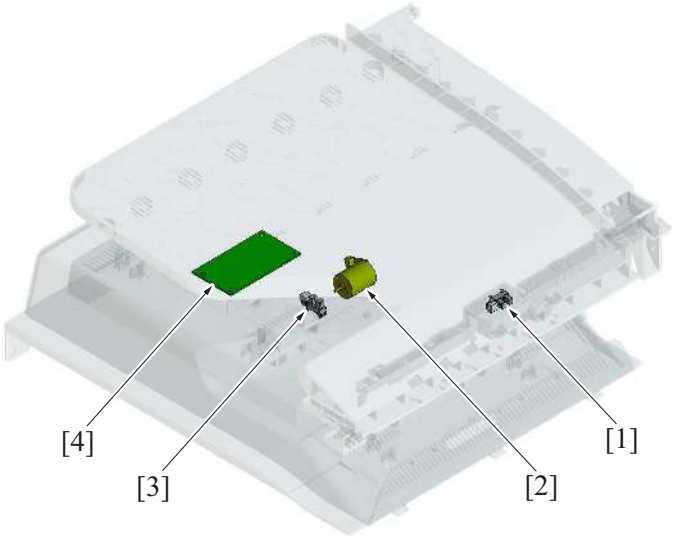
*: Japan only

1.4.2 Load



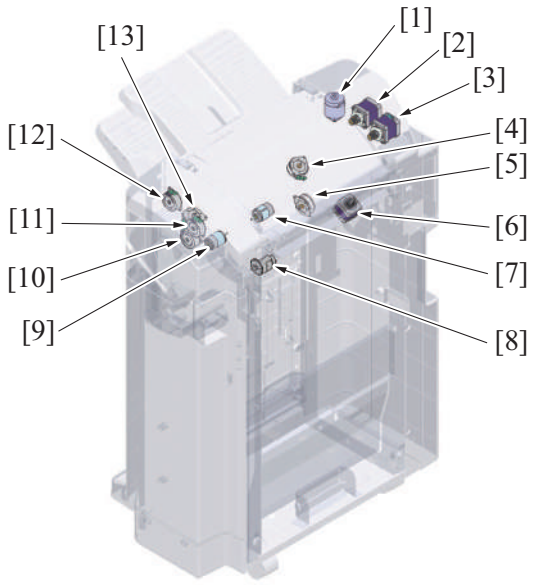
[1]	Vertical transport motor (M132)	[2]	Elevator motor (M134)
[3]	Shifter motor (M133)	[4]	Paper feed motor (M131)

1.5 JS-506

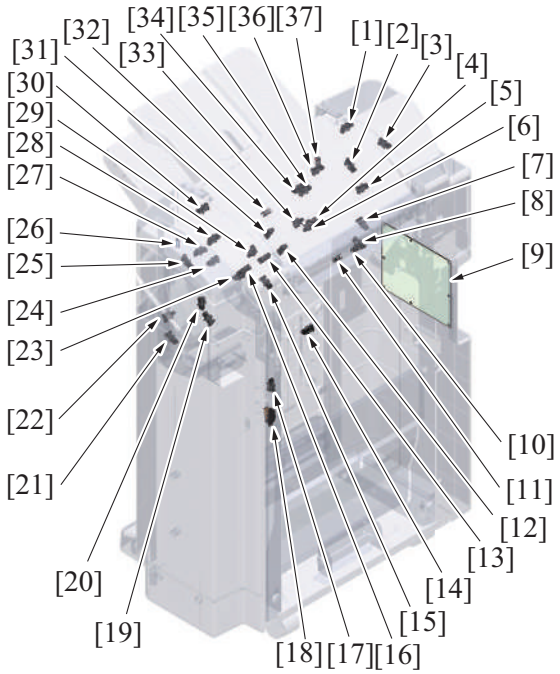


[1]	Exit tray 1 full sensor (PS2)	[2]	Tray shift motor (M1)
[3]	Tray shift home sensor (PS1)	[4]	JS control board (JSCB)

FS-539/FS-539SD



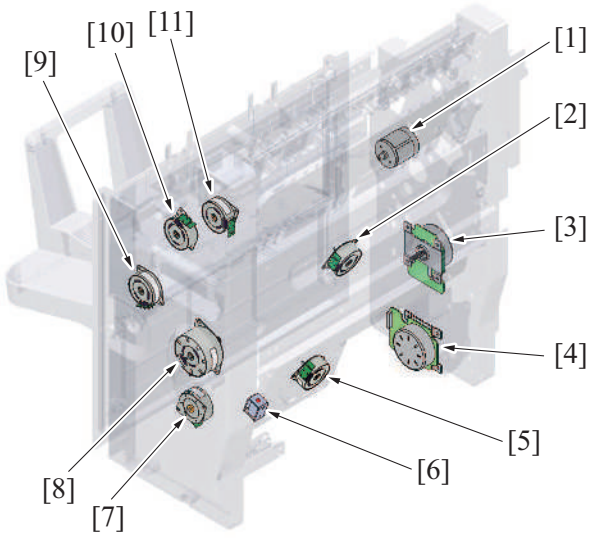
[1]	Main tray up/down motor (M11)	[2]	FNS discharge motor (M3)
[3]	FNS entry transport motor (M2)	[4]	Alignment motor/Rr (M8)
[5]	Paper delivery control motor (M12)	[6]	Stapler movement motor (M13)
[7]	Pre-eject drive motor (M9)	[8]	Stapler motor (M14)
[9]	Bundle eject motor (M10)	[10]	Trailing edge stopper motor (M6)
[11]	Receiving roller retraction motor (M4)	[12]	FNS paddle motor (M5)
[13]	Alignment motor/Fr (M7)	-	-



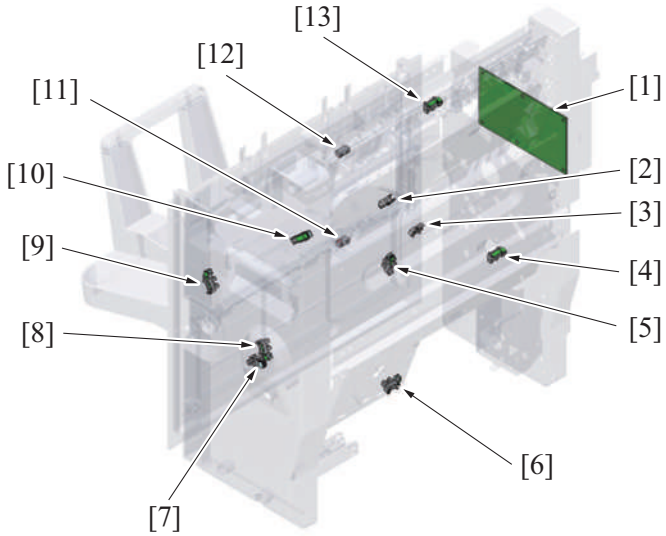
[1]	Sub tray full sensor (PS38)	[2]	Alignment plate home sensor/Rr (PS13)
[3]	Main tray up/down motor sensor (PS25)	[4]	Main tray exit sensor (PS16)
[5]	Main tray middle position sensor (PS10)	[6]	Gripper home sensor (PS18)
[7]	Corner staple position sensor/Rr (PS23)	[8]	Flat staple position sensor/Rr (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



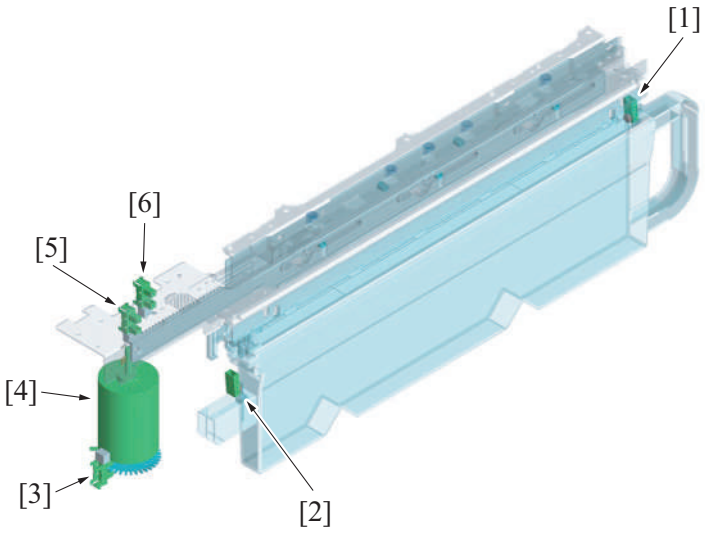
[1]	Center stapler motor (M110)	[2]	Alignment motor (M103)
[3]	Center fold roller motor (M105)	[4]	Center fold knife motor (M109)
[5]	Stopper drive motor (M104)	[6]	Stopper solenoid (SD101)
[7]	SD paddle motor (M107)	[8]	Center fold guide motor (M106)
[9]	Tri-folding guide motor (M108)	[10]	Paper discharge 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)

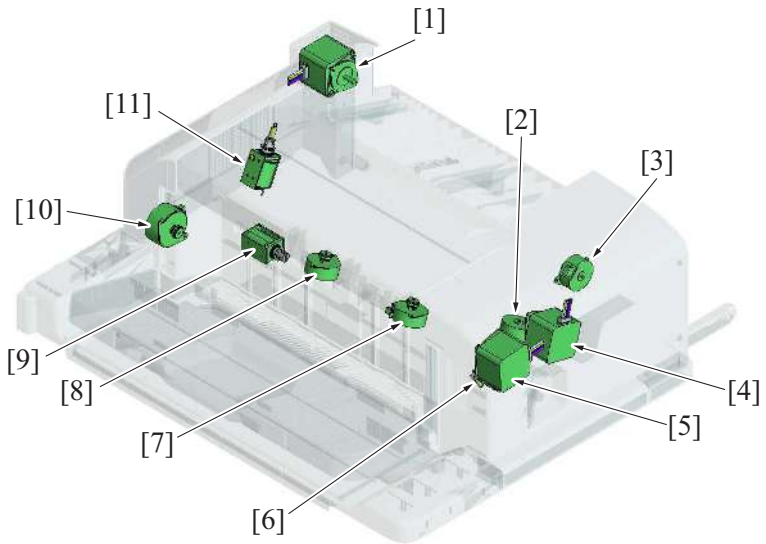
[9]	Tri-folding gate home sensor (PS111)	[10]	Curl cover detection sensor (PS102)
[11]	Booklet tray empty detection sensor/out (PS114)	[12]	Booklet tray empty detection sensor/in (PS113)
[13]	SD entrance sensor (PS101)	-	-

1.8 PK-524

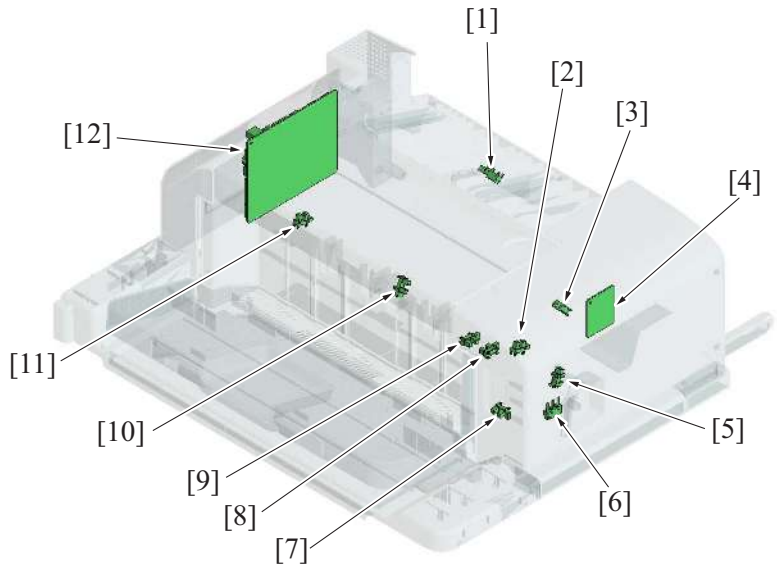


[1]	Punch dust full sensor/out (PS4)		[2]	Punch dust full sensor/in (PS5)
[3]	Punch motor sensor (PS3)		[4]	Punch drive motor (M1)
[5]	Punch position sensor (PS2)		[6]	Punch home sensor (PS1)

1.9 FS-533 (Option)

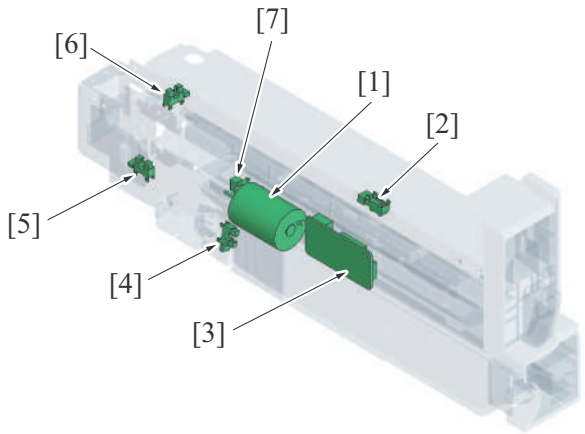


[1]	Paper conveyance motor (M101)	[2]	Stapler movement motor (M107)
[3]	Alignment roller motor (M103)	[4]	Paper exit motor (M102)
[5]	Exit roller lift up motor (M104)	[6]	Paper exit roller solenoid (SD103)
[7]	Alignment motor/F (M105)	[8]	Alignment motor/R (M106)
[9]	Paper surface detect solenoid (SD101)	[10]	Tray lift up motor (M109)
[11]	Batch solenoid (SD102)	-	-



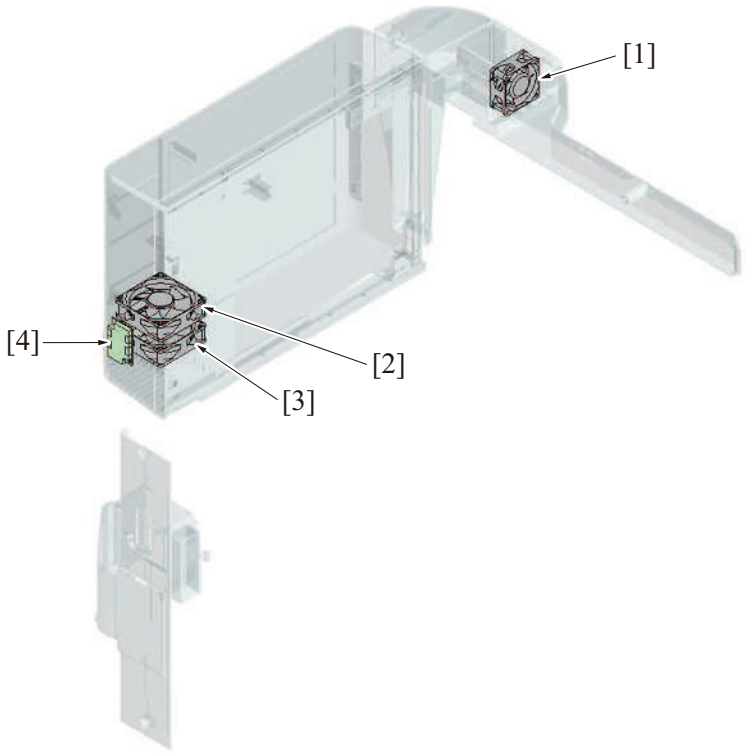
[1]	Paper feed sensor (PS101)	[2]	Alignment plate home sensor/F (PS108)
[3]	Pick up roller position sensor (PS105)	[4]	Stapler relay board (STREYB)
[5]	Stapler home sensor (PS110)	[6]	Finisher lock switch (SW1)
[7]	Paper exit tray home sensor (PS107)	[8]	Paper surface detect sensor/2 (PS104)
[9]	Paper weight lever sensor (PS103)	[10]	Paper surface detect sensor/1 (PS102)
[11]	Alignment plate home sensor/R (PS109)	[12]	FS control board (FSCB)

1.10 PK-519 (Option)



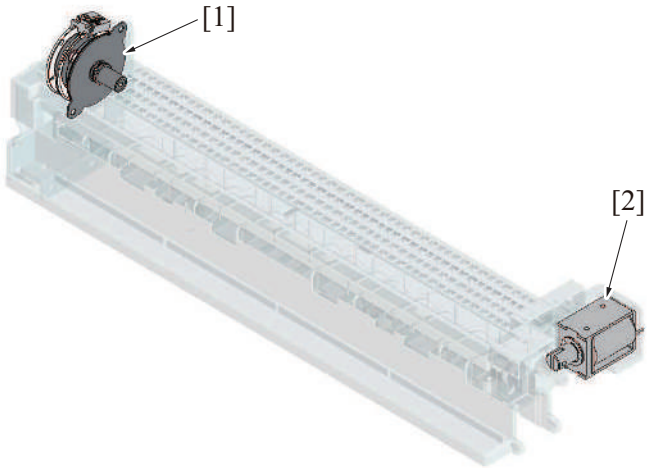
[1]	Punch motor (M201)	[2]	Paper feed sensor (PS201)
[3]	PK control board (PKCB)	[4]	Punch dust full sensor (PS205)
[5]	Puncher drive cam sensor (PS203)	[6]	Puncher home sensor (PS204)
[7]	Punch motor sensor (PS202)	-	-

1.11 CU-101 (Option)



[1]	Suction fan (FM16)	[2]	Exhaust fan/1 (FM14)
[3]	Exhaust fan/1 (FM15)	[4]	Clean unit drive board (CUDB)

1.12 MK-603 (Option)



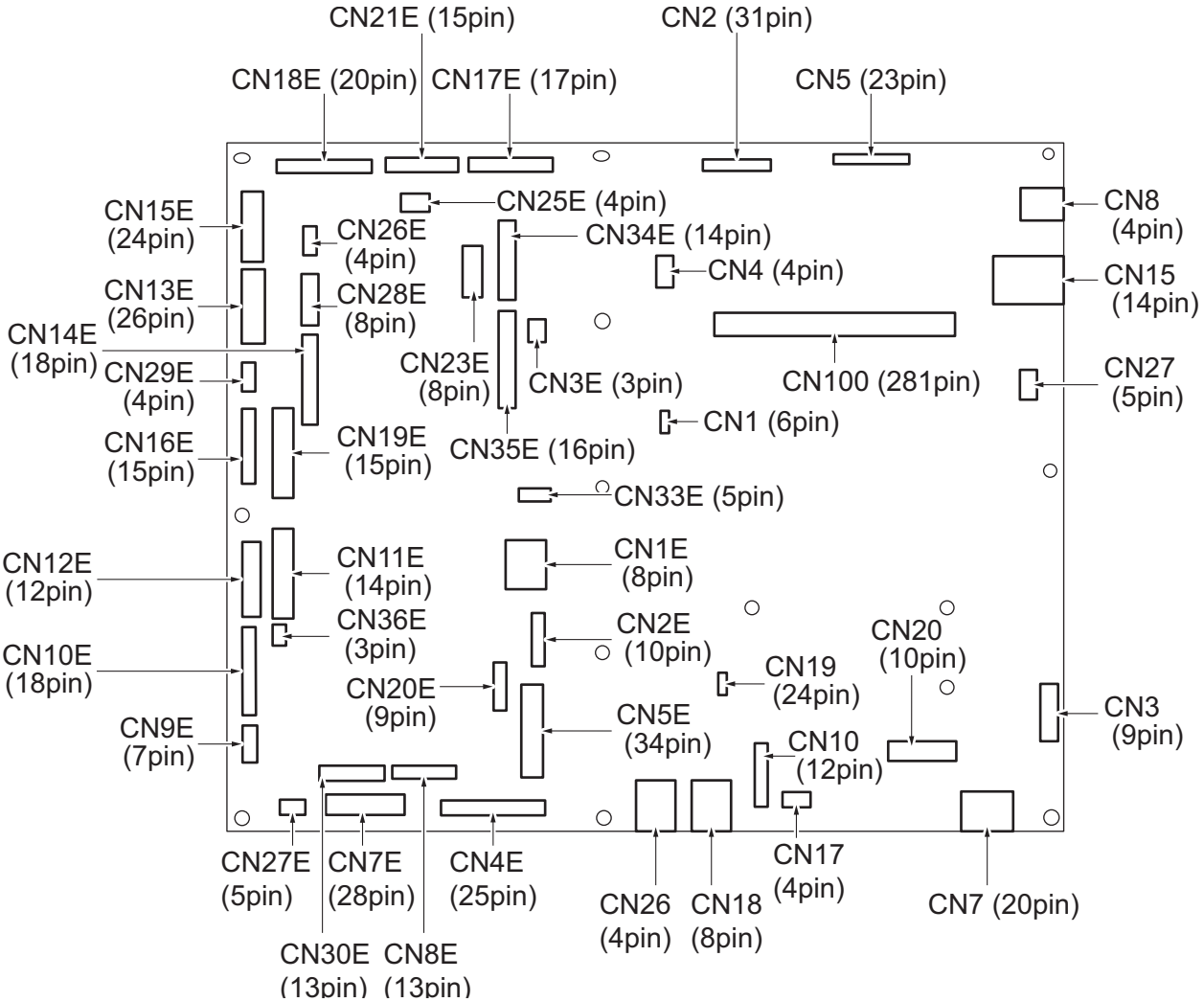
[1]	Upper paper exit motor (M6)	[2]	Gate switch solenoid (SD3)

2. CONNECTOR LAYOUT DRAWING

2.1 BOARD CONNECTOR LAYOUT DRAWING

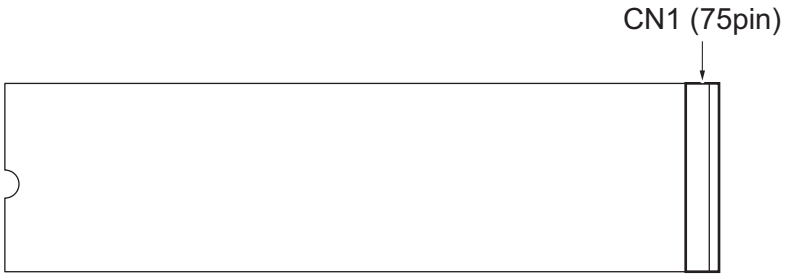
2.1.1 d-Color MF257

(1) Base board (BASEB)

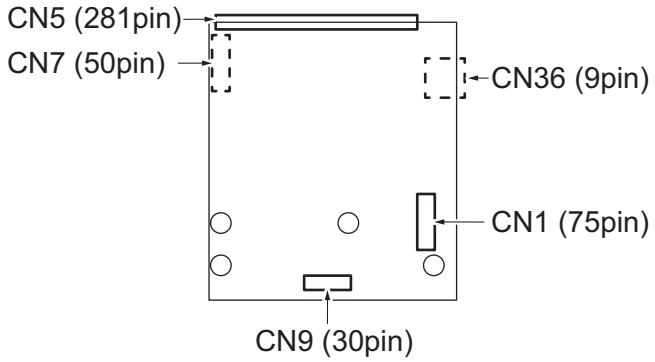


(2) Storage board (STRGB)

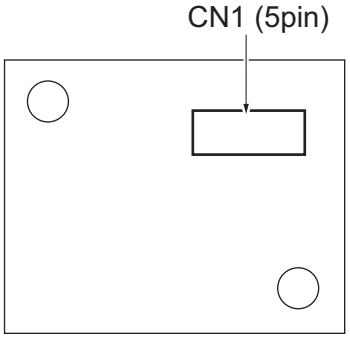
(Standard equipment in Japan, Europe.)



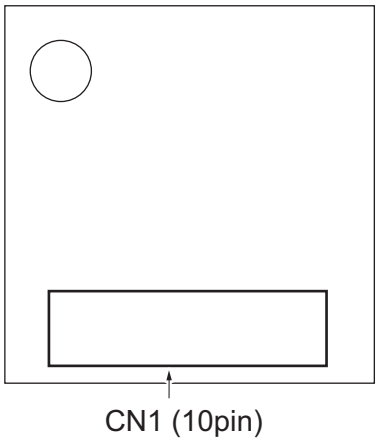
(3) CPU board (CPUB)



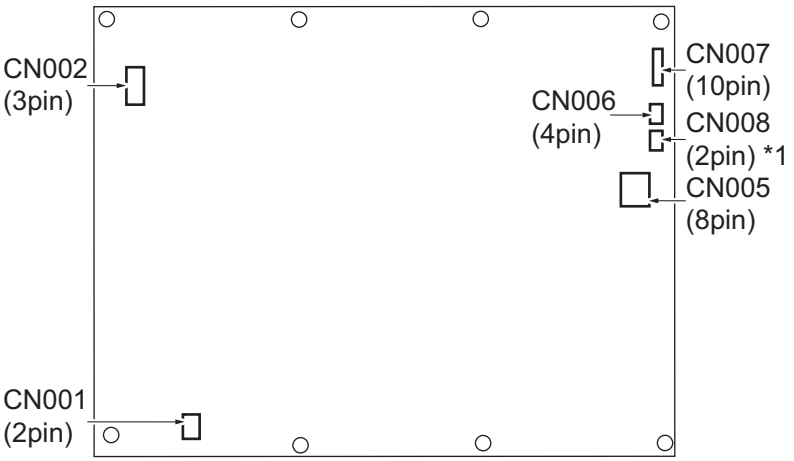
(4) Backup board (ERB)



(5) TPM board (TPMB)

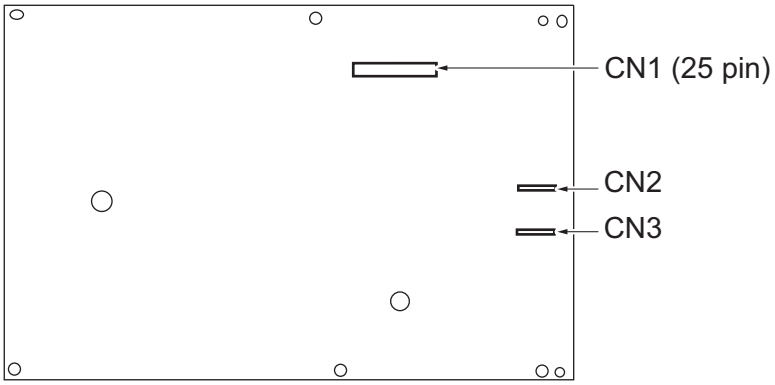


(6) DC power supply (DCPU)

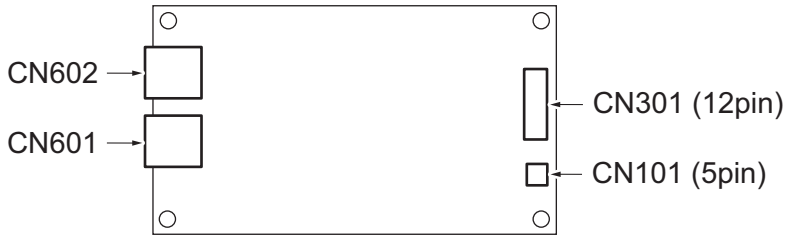


*1: Japan only

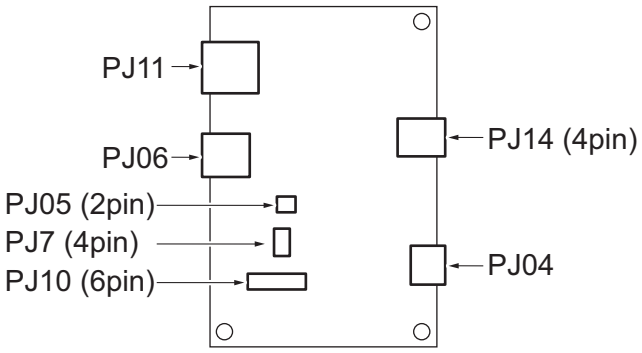
(7) High voltage unit (HV)



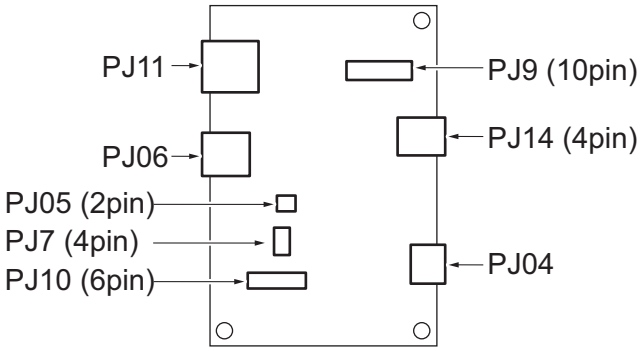
(8) FAX board (FAXB) (Option)



(9) USB board (USBB) (Option: EK-608)

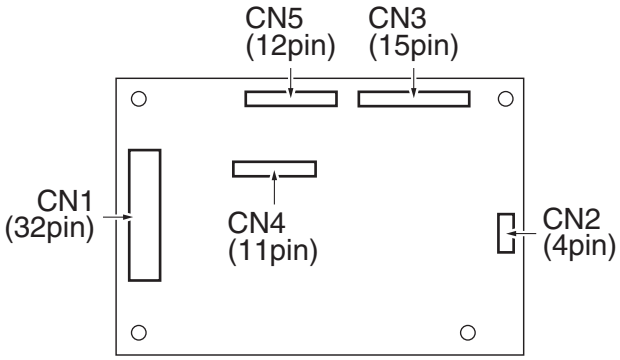


(10) USB board (USBB) (Option: EK-609)



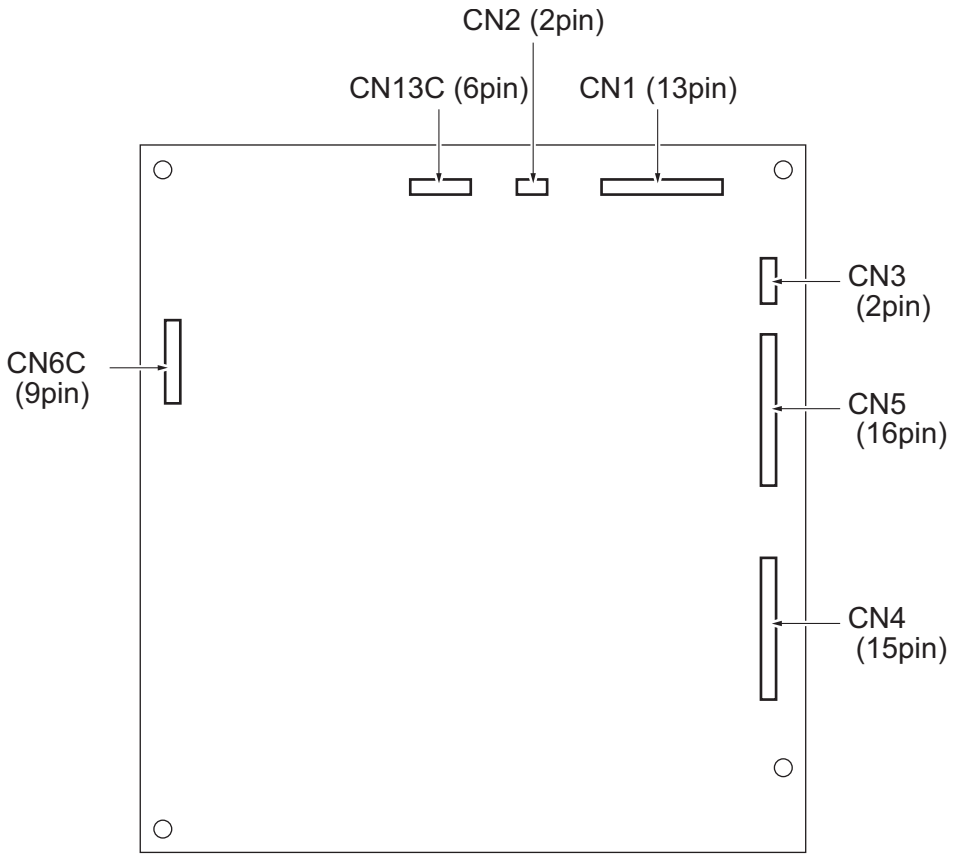
2.1.2 Reverse automatic document feeder (DF-633)

DF control board (DFCB)



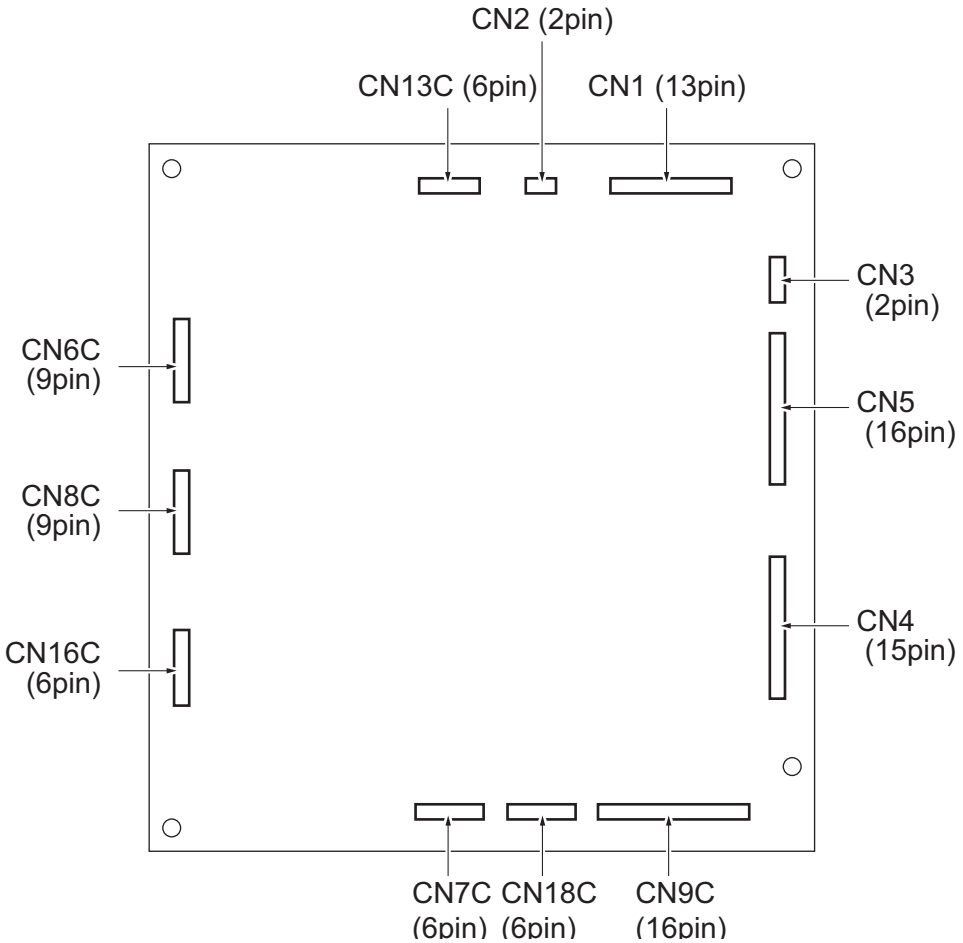
2.1.3 PC-118

PC control board (PCCB)



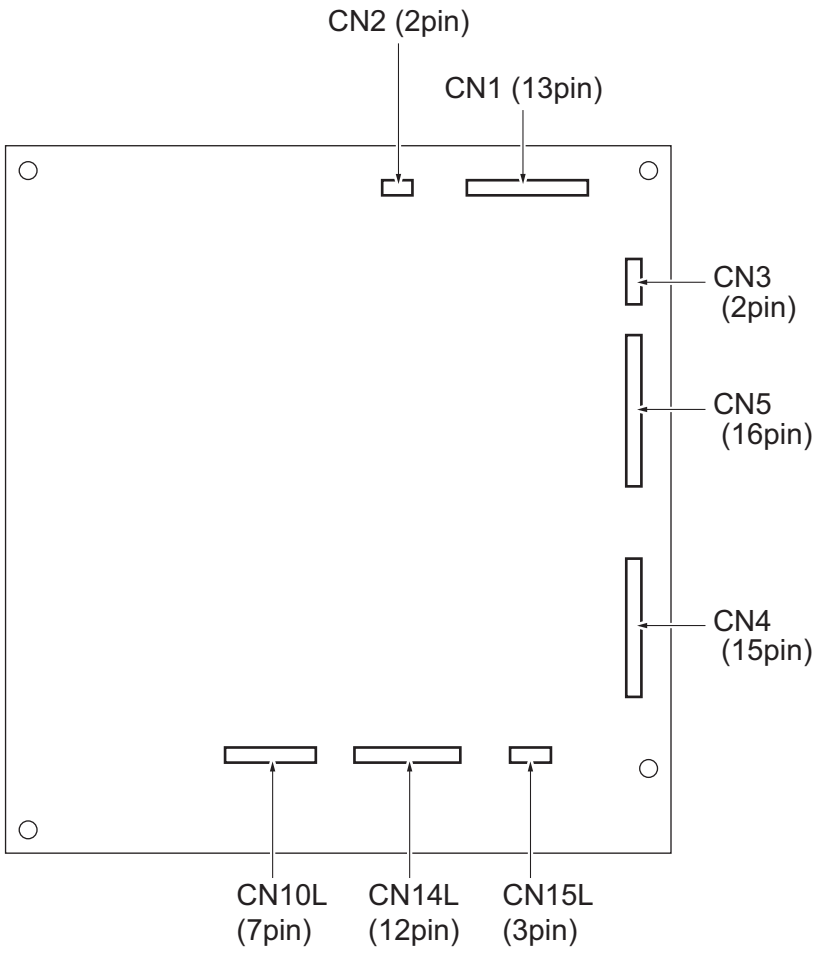
2.1.4 PC-218

PC control board (PCCB)



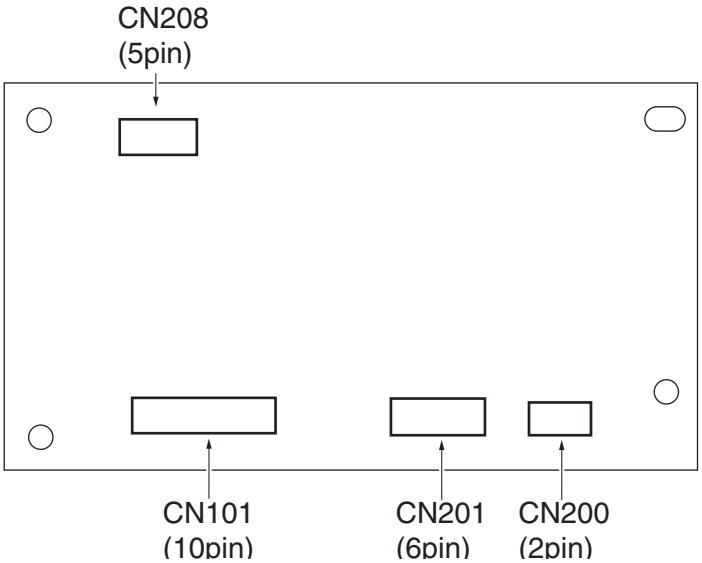
2.1.5 PC-418

PC control board (PCCB)



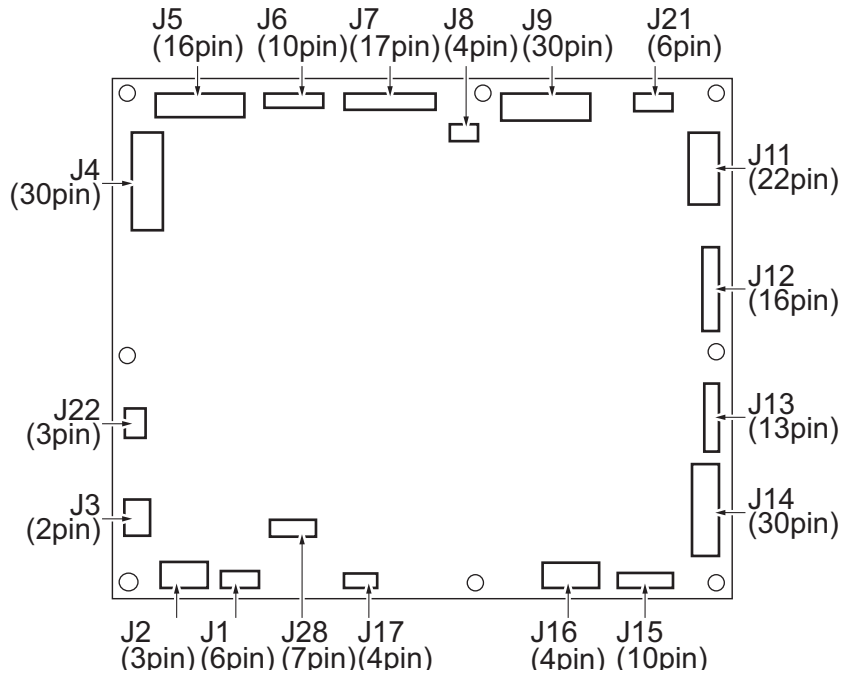
2.1.6 JS-506

JS control board (JSCB)



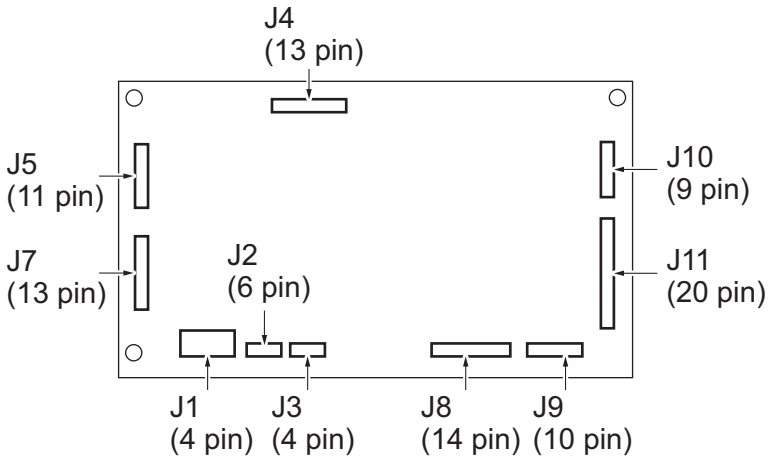
2.1.7 FS-539/FS-539SD

FS control board (FSCB)



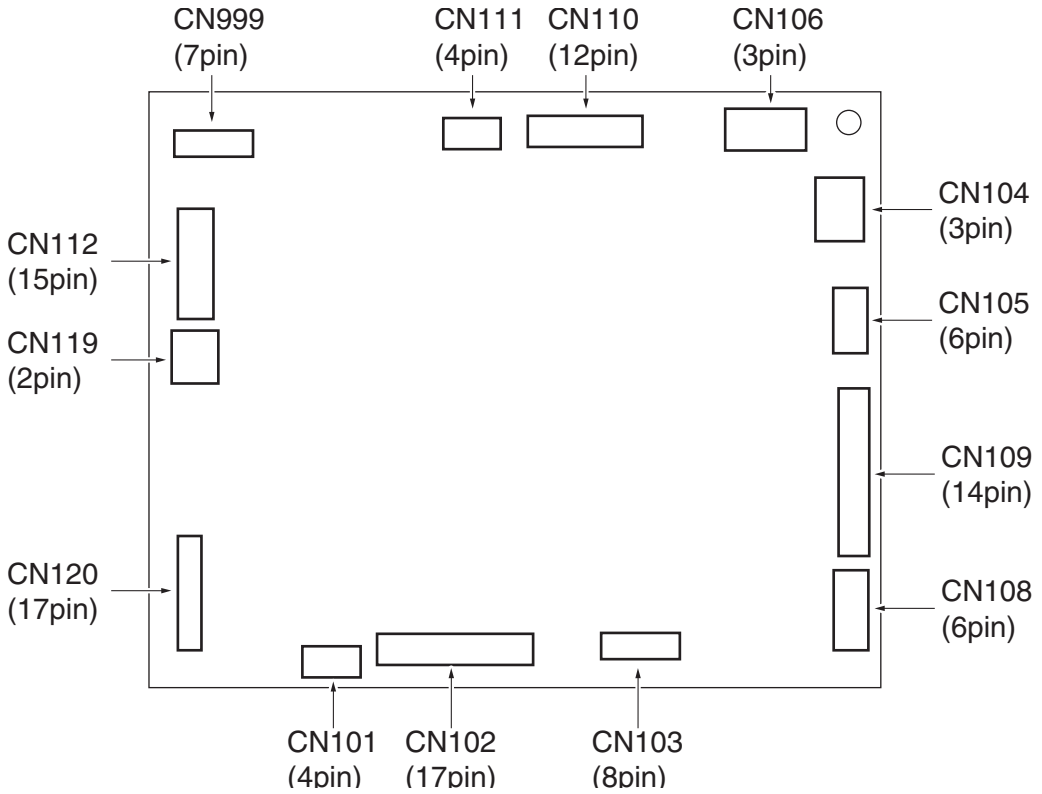
2.1.8 FS-539SD saddle section

SD control board (SDCB)

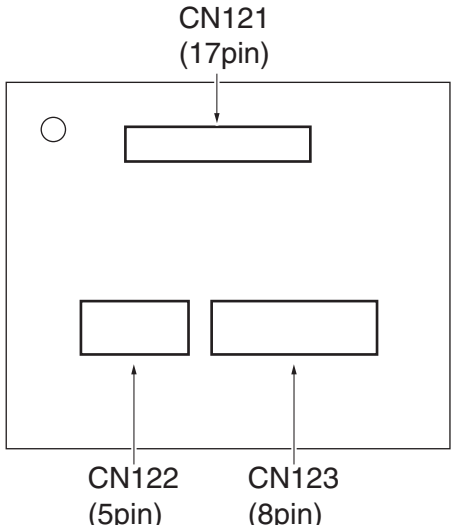


2.1.9 FS-533

FS control board (FSCB)

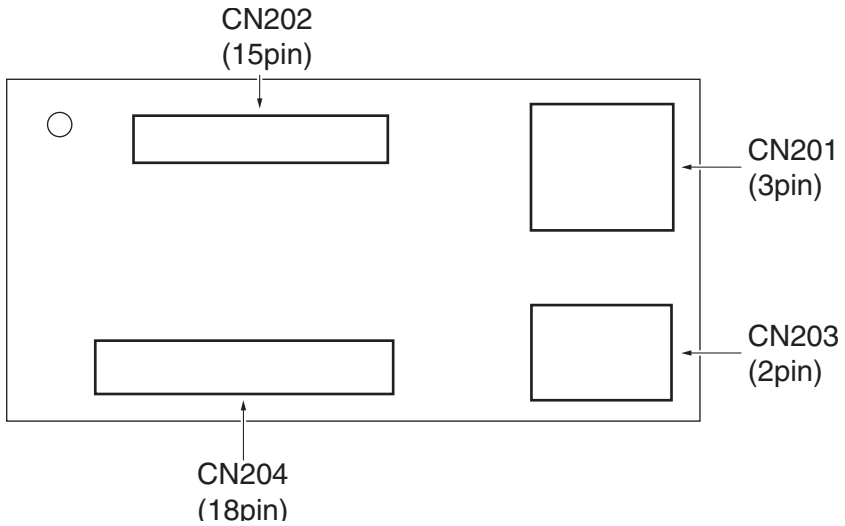


Stapler relay board (STREYB)



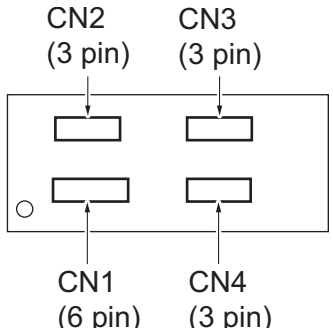
2.1.10 PK-519

PK control board (PKCB)



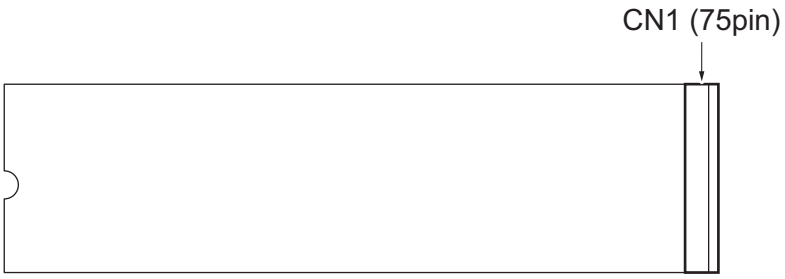
2.1.11 CU-101

Clean unit drive board (CUDB)



2.1.12 EM-907

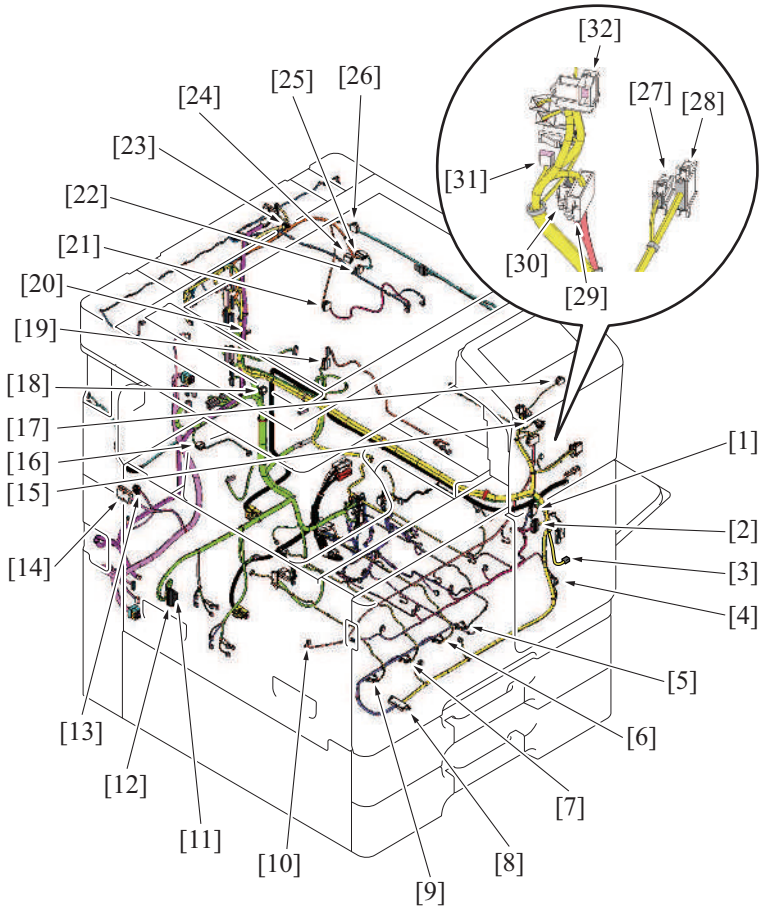
Storage board (STRGB)



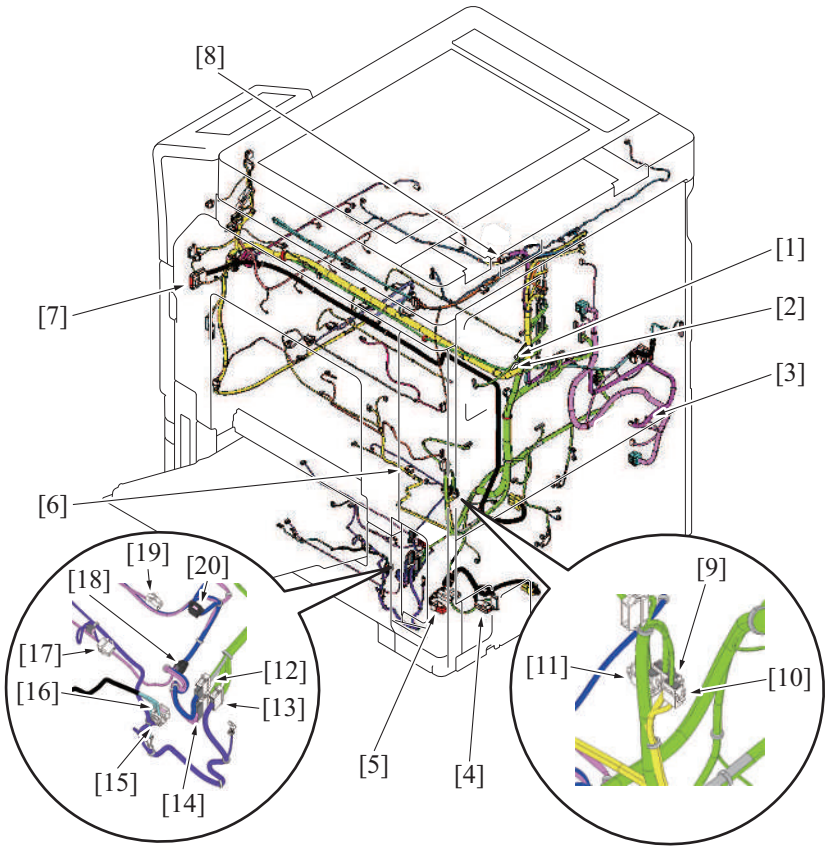
2.2 RELAY CONNECTOR LAYOUT DRAWING

2.2.1 d-Color MF257

(1) Main body



No.	CN No.	Pin	Location	No.	CN No.	Pin	Location
[1]	CN66	8 Pin	18-H	[2]	CN19	12 Pin	16-H
[3]	CN36	3 Pin	8-H	[4]	CN14	3 Pin	15-H
[5]	CN161	5 Pin	12-I	[6]	CN162	5 Pin	13-I
[7]	CN163	5 Pin	13-I	[8]	CN15	20 Pin	13-H
[9]	CN164	5 Pin	13-I	[10]	CN139	3 Pin	16-I
[11]	CN25	7 Pin	19-D	[12]	CN58	18 Pin	20-D
[13]	CN1FN	3 Pin	2-I	[14]	CN2FN	6 Pin	2-I
[15]	CN36	3 Pin	8-I	[16]	CN24	3 Pin	21-D
[17]	CN67	2 Pin	11-I	[18]	CN29	2 Pin	5-C
[19]	CN34	6 Pin	6-D	[20]	CN27	3 Pin	4-C
[21]	CN35	4 Pin	27-D	[22]	CN142	4 Pin	26-C
[23]	CN81	3 Pin	14-V	[24]	CN28	4 Pin	27-D
[25]	CN30	6 Pin	26-D	[26]	CN31	4 Pin	26-D
[27]	CN5	3 Pin	7-I	[28]	CN4	9 Pin	7-I
[29]	CN69	8 Pin	10-H	[30]	CN22	3 Pin	16-H
[31]	CN11	2 Pin	10-I	[32]	CN68	3 Pin	12-I



No.	CN No.	Pin	Location	No.	CN No.	Pin	Location
[1]	CN23	4 Pin	18-H	[2]	CN70	10 Pin	4-U, 6-U, 7-U
[3]	CN49	3 Pin	1-I	[4]	CN2	2 Pin	15-D
[5]	CN1	2 Pin	17-V, 19-U	[6]	CN116	2 Pin	7-C
[7]	CN3	3 Pin	6-I	[8]	CN2DH	2 Pin	21-Q
[9]	CN32	8 Pin	7-D	[10]	CN65	4 Pin	7-D
[11]	CN33	5 Pin	6-D	[12]	CN53	11 Pin	9-D
[13]	CN50	13 Pin	13-D	[14]	CN55	16 Pin	10-D
[15]	CN51	3 Pin	14-C	[16]	CN122	2 Pin	12-C
[17]	CN123	2 Pin	13-C	[18]	CN134	2 Pin	11-C
[19]	CN135	2 Pin	11-C	[20]	CN130	2 Pin	9-C

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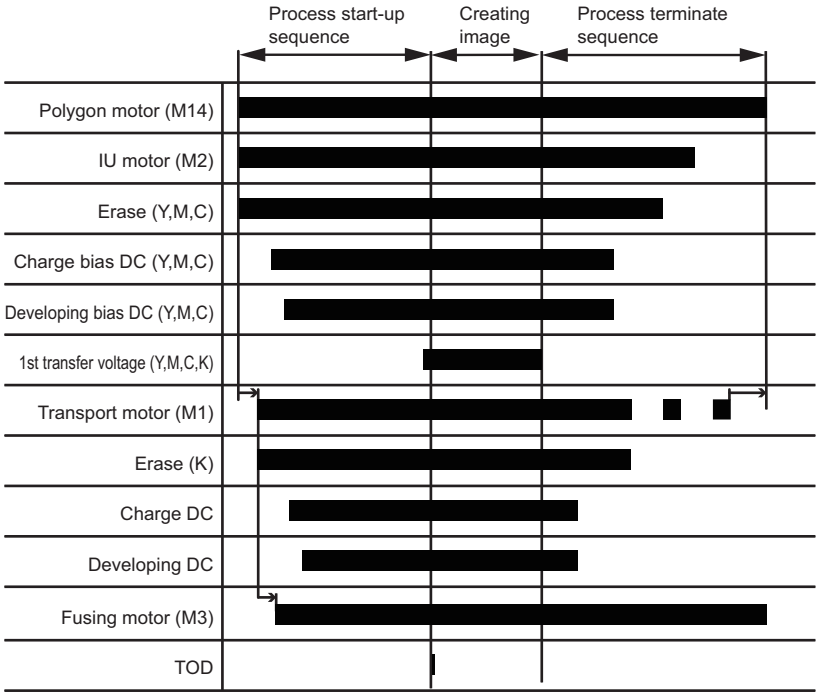
N TIMING CHART

1. 28ppm No Olivetti

1.1 Timing chart when color printing



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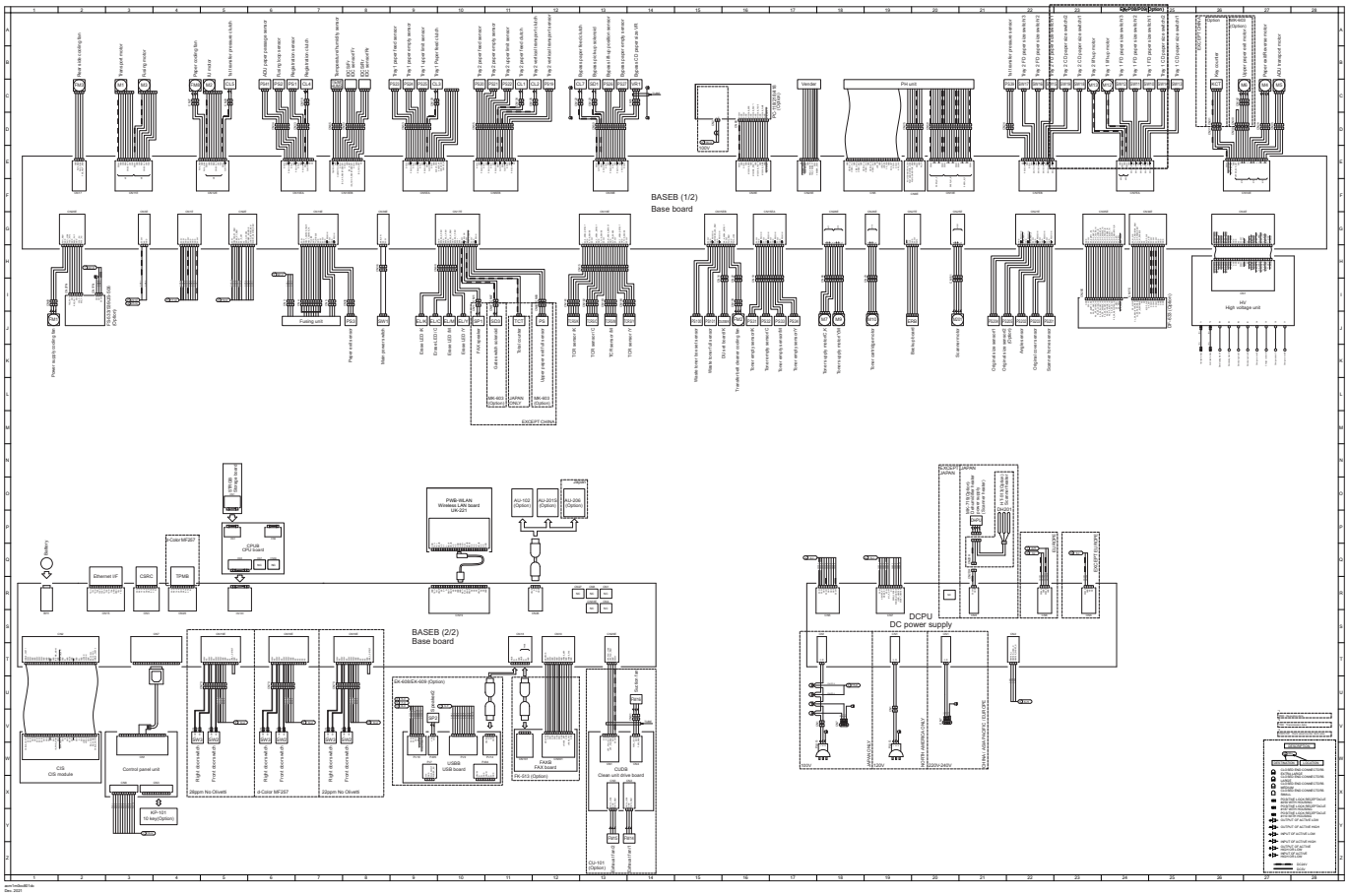
O WIRING DIAGRAM

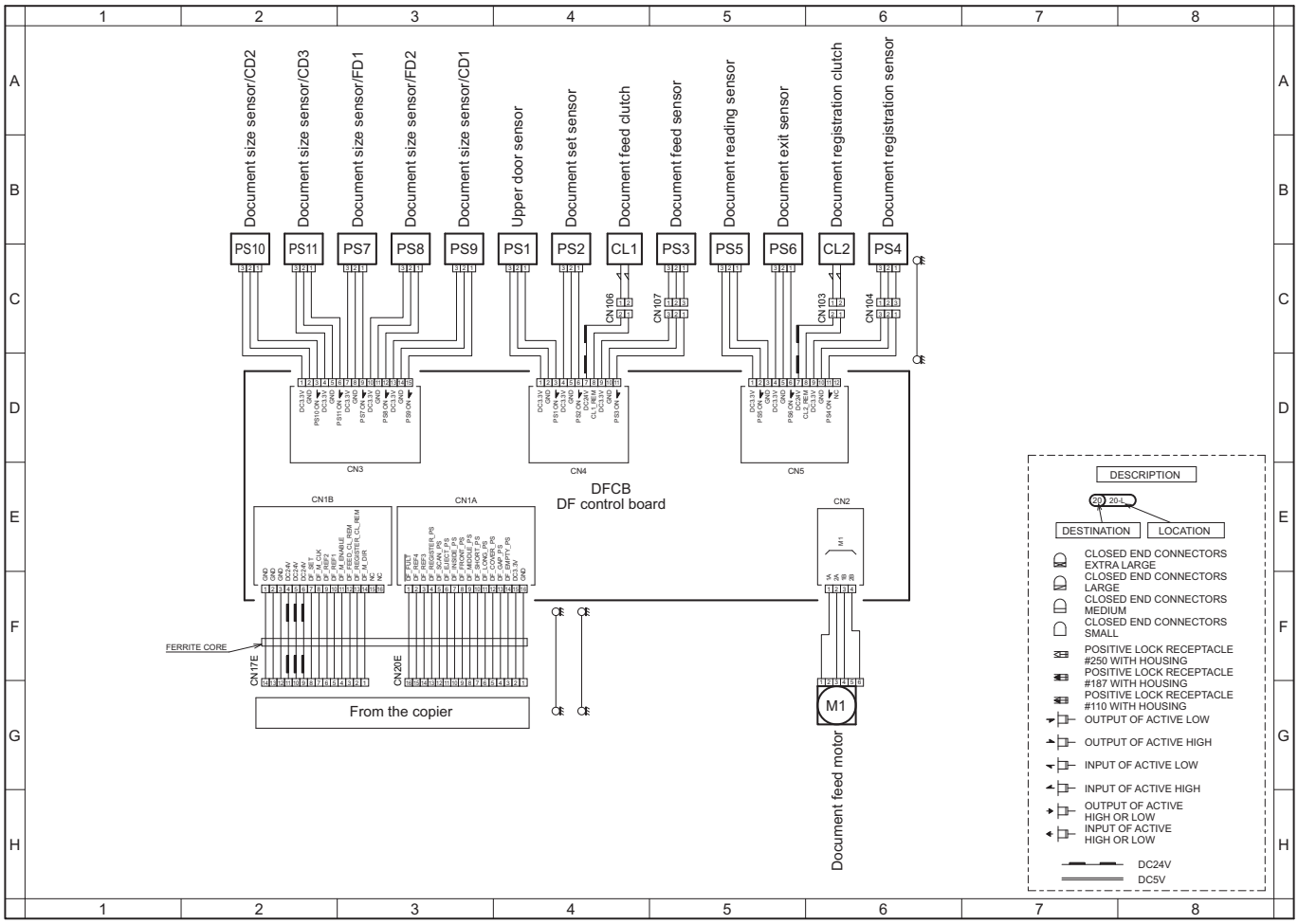
1. d-Color MF257



- d-Color MF257 Wiring diagram (acm1m0oc801db.pdf 132 KB)
- d-Color MF257 Wiring diagram A3 size (1/4) (acm1m0oc811da.pdf 96 KB)
- d-Color MF257 Wiring diagram A3 size (2/4) (acm1m0oc812da.pdf 96 KB)
- d-Color MF257 Wiring diagram A3 size (3/4) (acm1m0oc813db.pdf 86 KB)
- d-Color MF257 Wiring diagram A3 size (4/4) (acm1m0oc814da.pdf 80 KB)

2. DF-633

DF-633 Overall wiring diagram

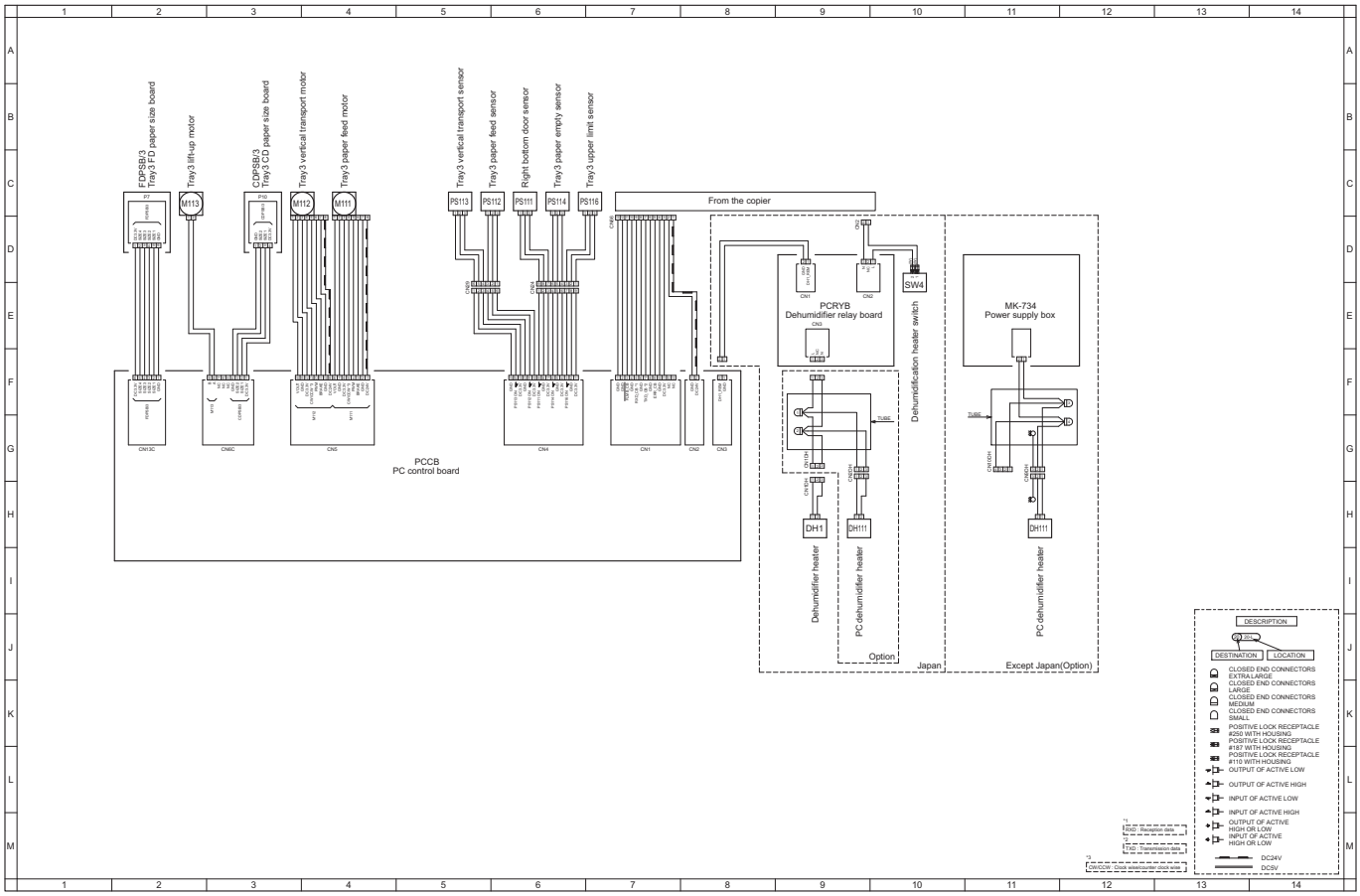


aaj4m0oc801da
Mar.2019

- DF-633 Wiring diagram (aaj4m0oc801da.pdf 704 KB)

3. PC-118

PC-118 Overall wiring diagram

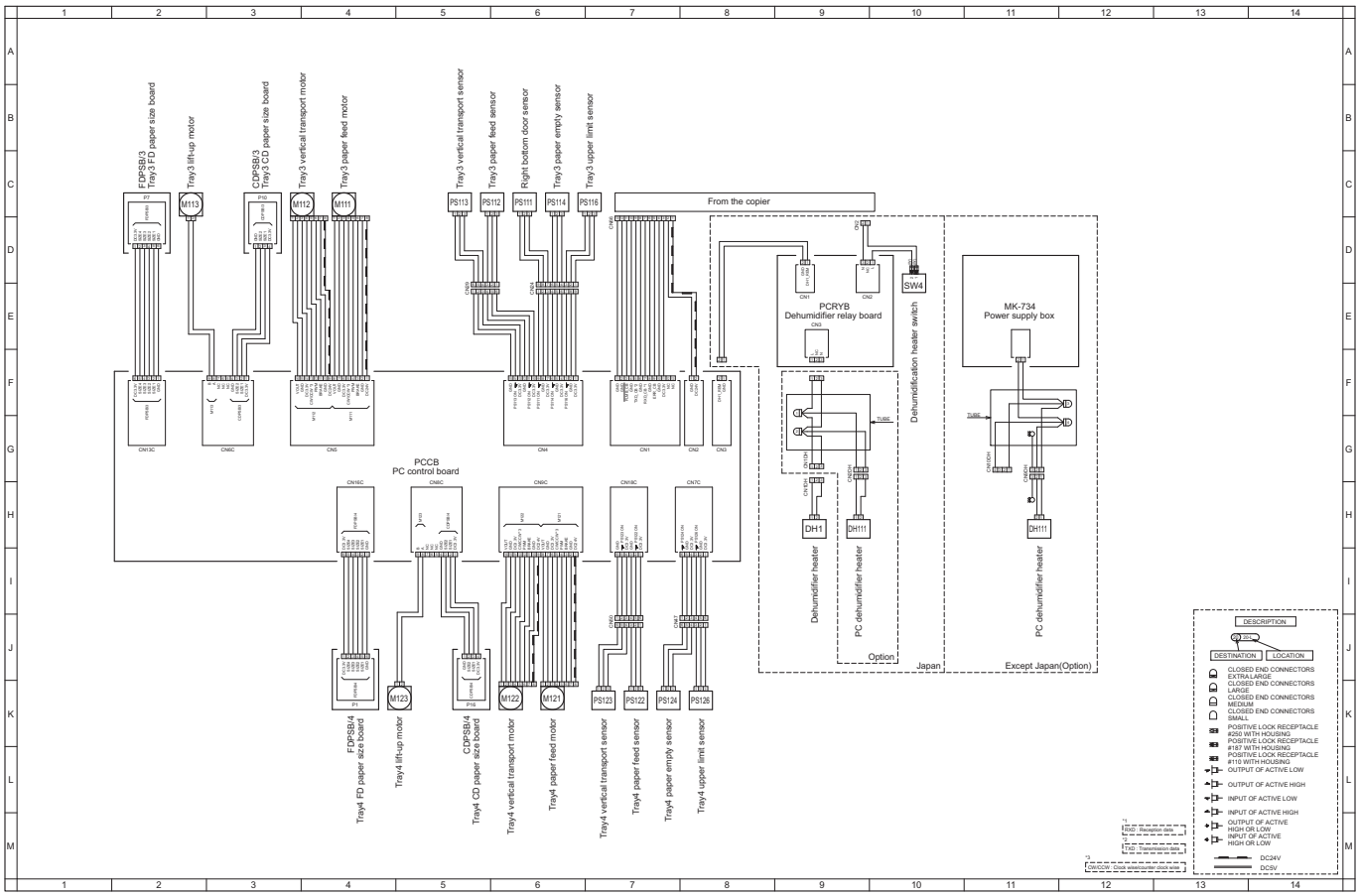


acvgm0oc801da
Jul. 2020

- PC-118 Wiring diagram (acvgm0oc801da.pdf 80 KB)

4. PC-218

PC-218 Overall wiring diagram

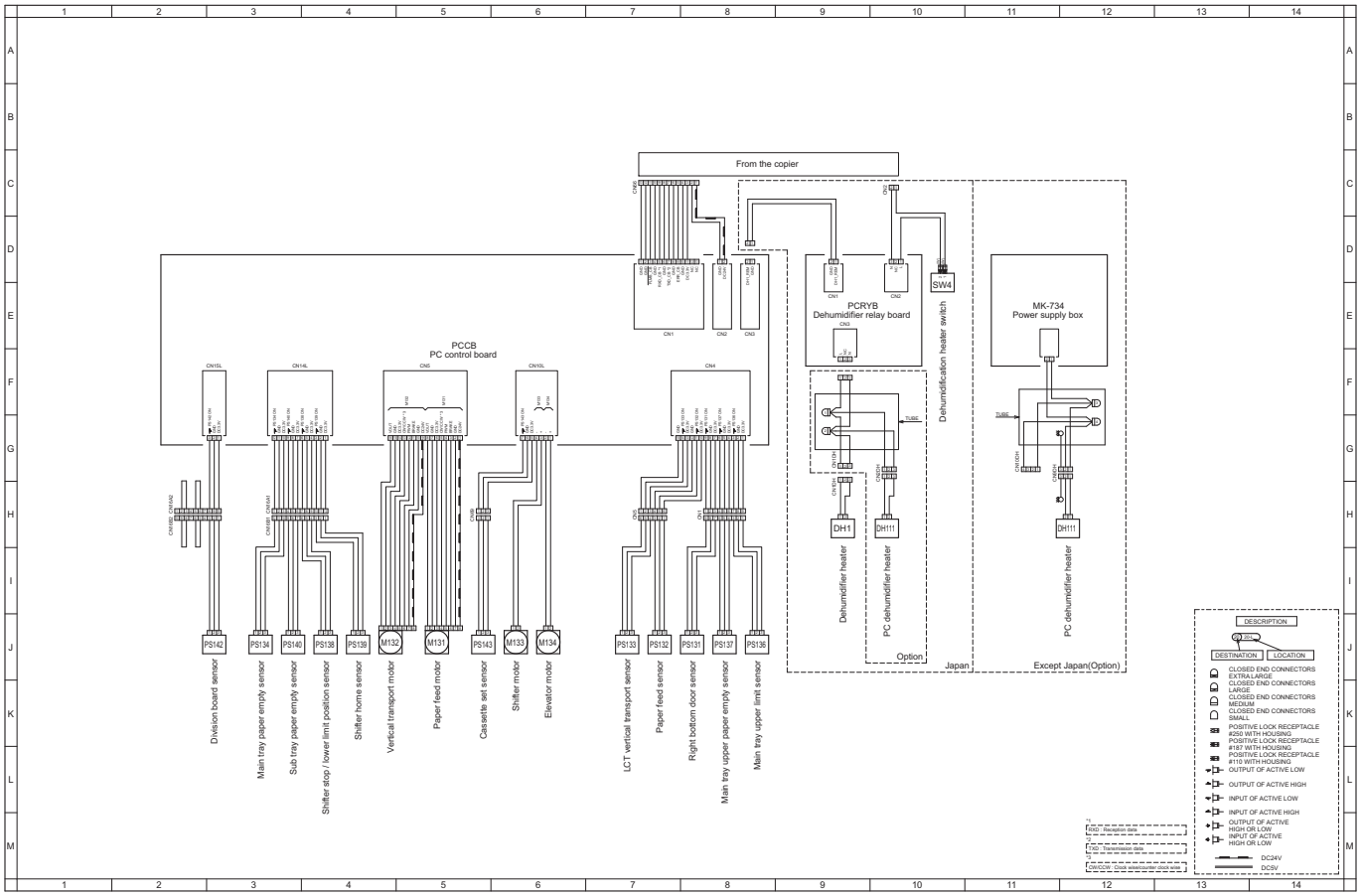


acvgm0oc811da
Jul. 2020

- PC-218 Wiring diagram (acvgm0oc811da.pdf 86 KB)

5. PC-418

PC-418 Overall wiring diagram

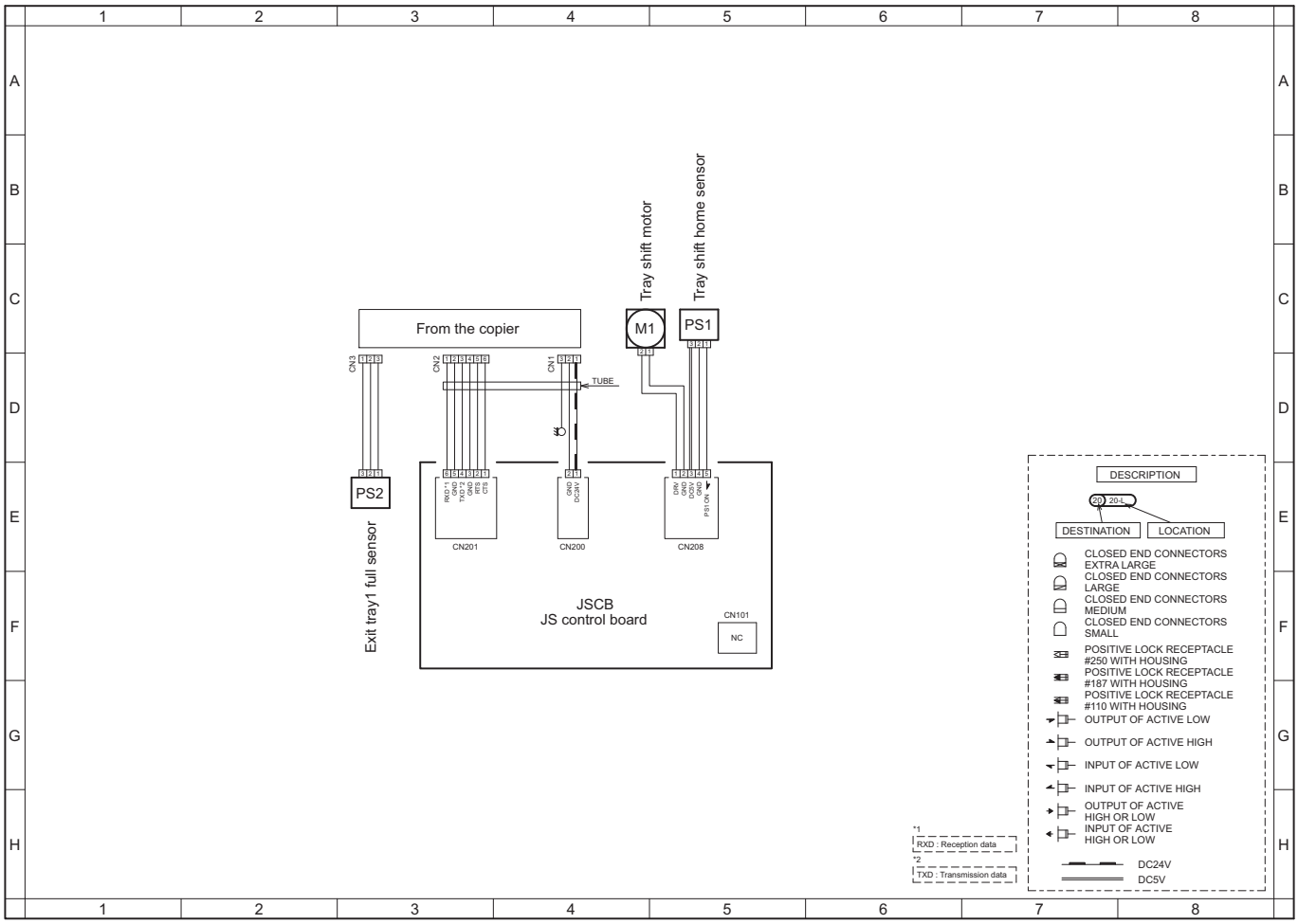


acvgm0oc821da
Jul. 2020

- PC-418 Wiring diagram (acvgm0oc821da.pdf 81 KB)

6. JS-506

JS-506 Overall wiring diagram

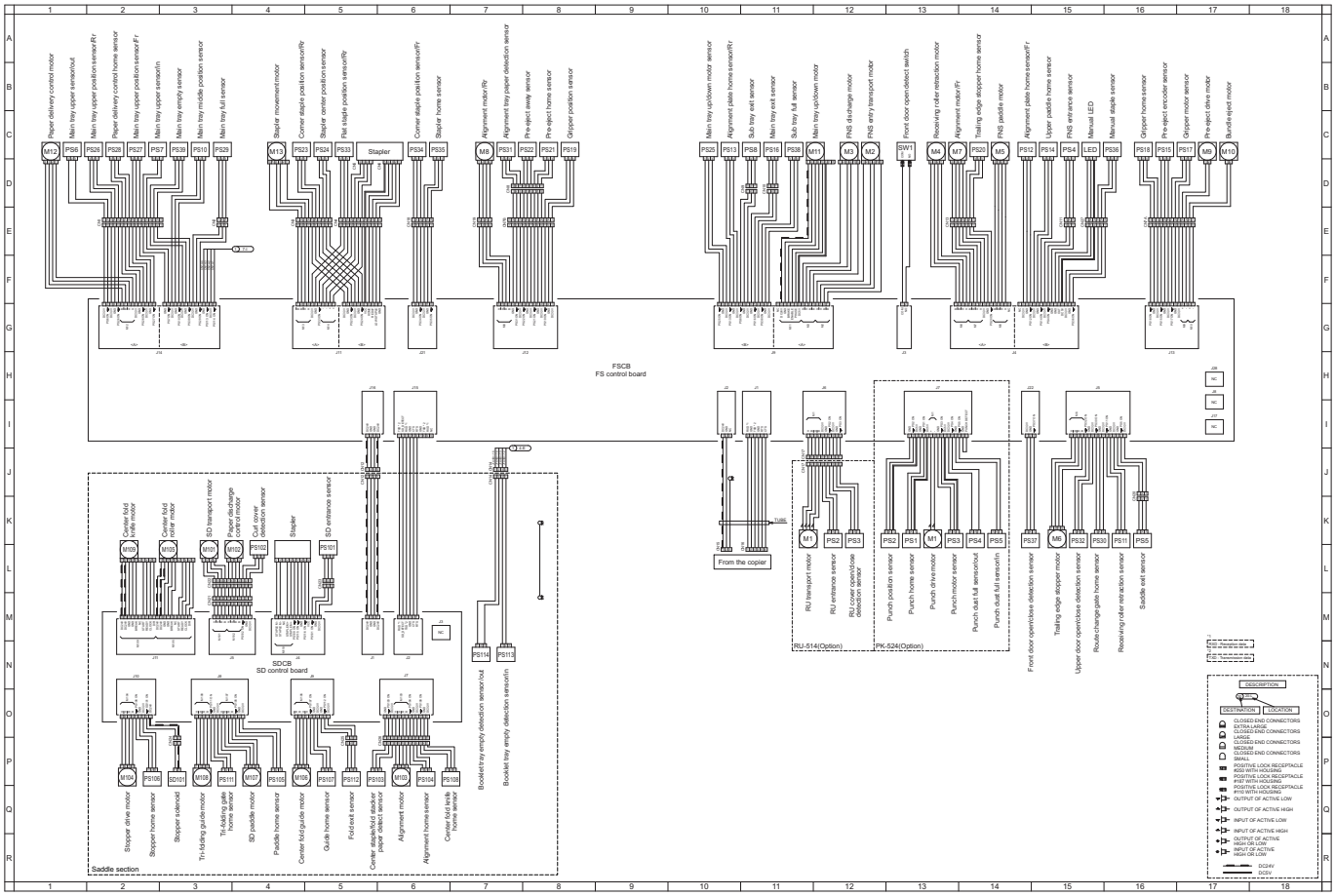


a2yvm0nc810da
Apr.2012

- JS-506 Wiring diagram (a2yvm0nc810da.pdf 0.7 MB)

7. FS-539/FS-539SD

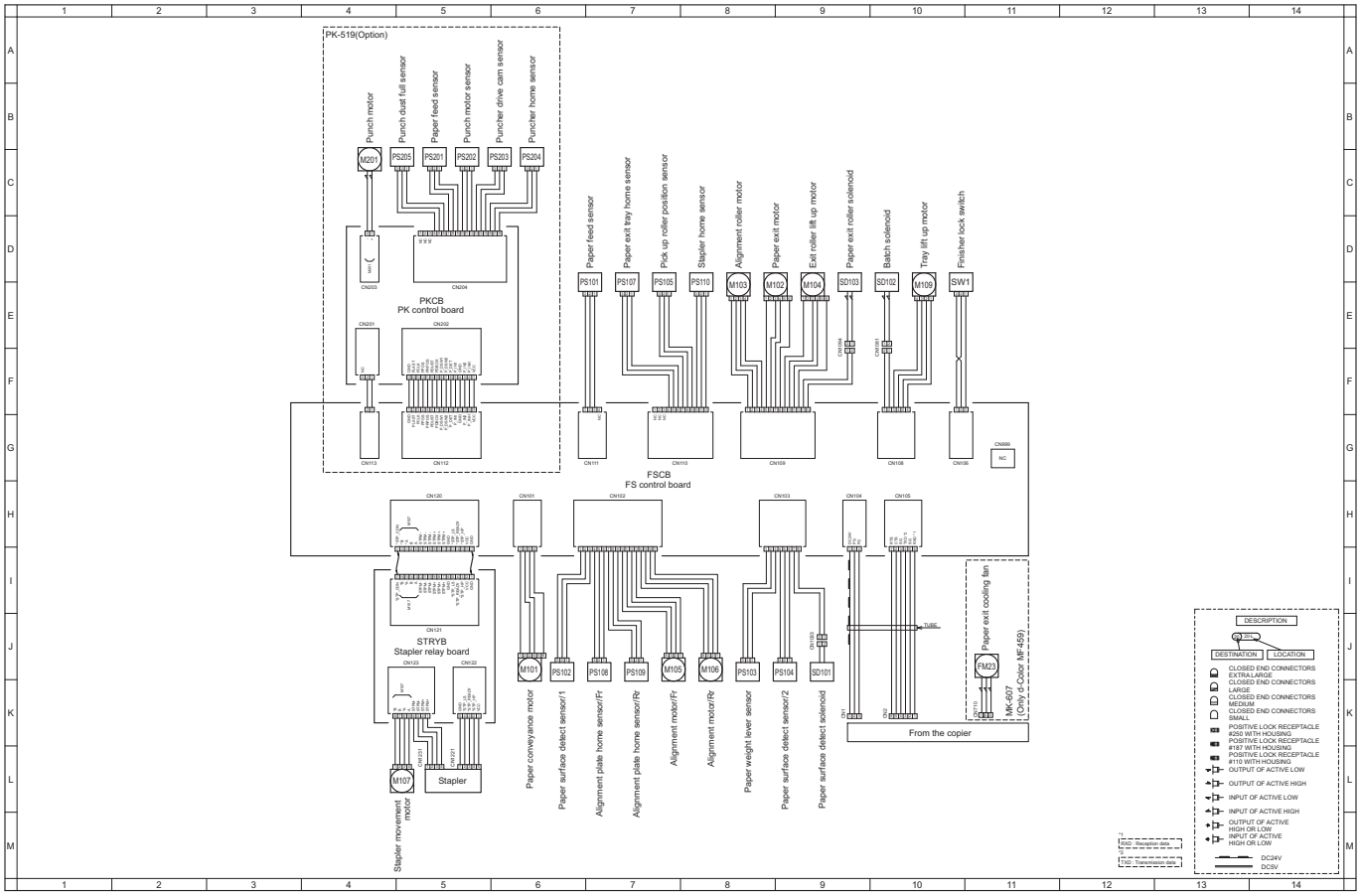
FS-539/FS-539SD Overall wiring diagram



- FS-539/FS-539SD Wiring diagram (aar4m0oc831da.pdf 115 KB)
- FS-539/FS-539SD Wiring diagram A3 size (1/2) (aar4m0oc832da.pdf 93 KB)
- FS-539/FS-539SD Wiring diagram A3 size (2/2) (aar4m0oc833da.pdf 87 KB)

8. FS-533

FS-533 Overall wiring diagram



a2yum0nc810dd
May 2020

- FS-533 Wiring diagram (a2yum0nc810dd.pdf 1.19 MB)

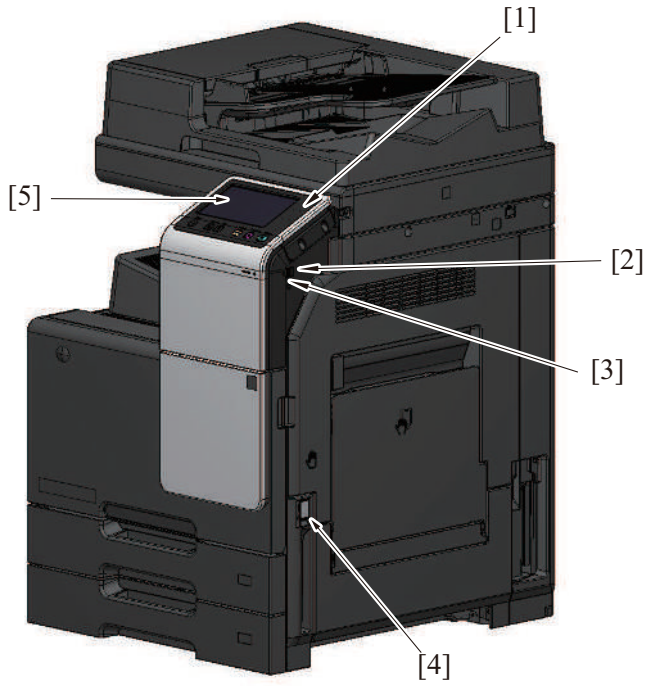
P THEORY OF OPERATION

1. 28ppm No Olivetti

1.1 INTERFACE SECTION

1.1.1 Configuration (d-Color MF257)

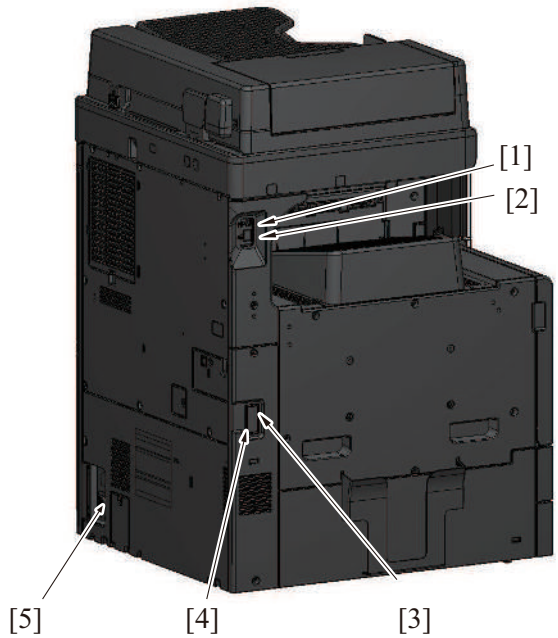
(1) Front side / Right side



[1]	NFC (Near field communication) area	[2]	USB port (Type A) USB2.0/1.1 *1
[3]	USB port (Type A) USB2.0/1.1	[4]	Main power switch
[5]	Control panel (7-inch TFT color LCD WVGA: resistive touch panel)	-	

- *1: When the local interface kit (EK-608/EK-609) is mounted.

(2) Rear side / left side

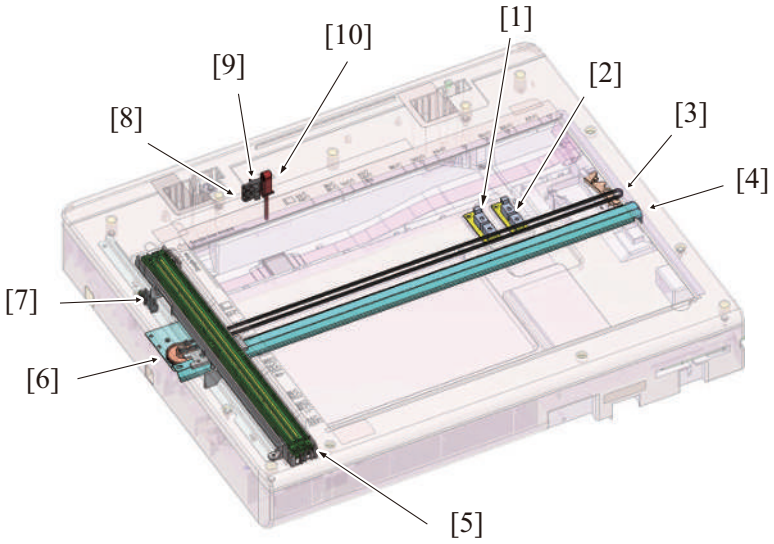


[1]	USB port (Type B) USB2.0/1.1	[2]	Network port (10 Base-T/100 Base-TX/1000 Base-T)
[3]	External telephone connector (TEL PORT1) *1	[4]	Port 1 line connector (LINE PORT) *1
[5]	Power cable	-	

- *1: Installed with the fax kit (FK-513).

1.2 SCANNER SECTION

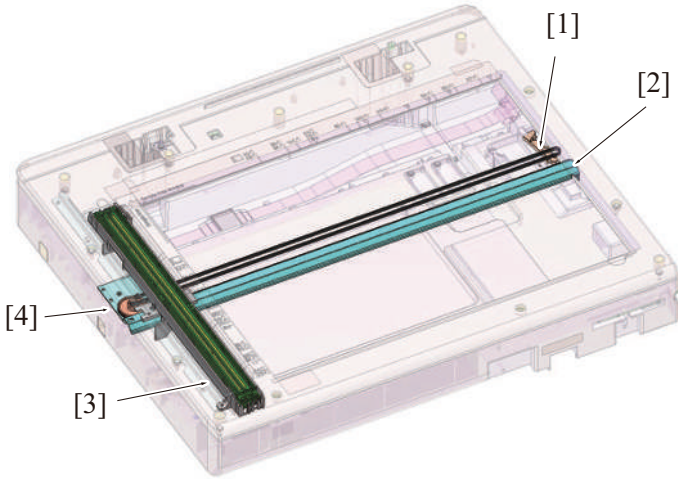
1.2.1 Configuration



[1]	Original size sensor/1 (PS101)	[2]	Original size sensor/2 (PS102) *
[3]	Drive belt	[4]	Guide rail
[5]	CIS module	[6]	Scanner motor (M201)
[7]	Scanner home sensor (PS105)	[8]	Original cover sensor (PS104)
[9]	Angle sensor (PS103)	[10]	Detection lever

- *: Option (Except Japan models)

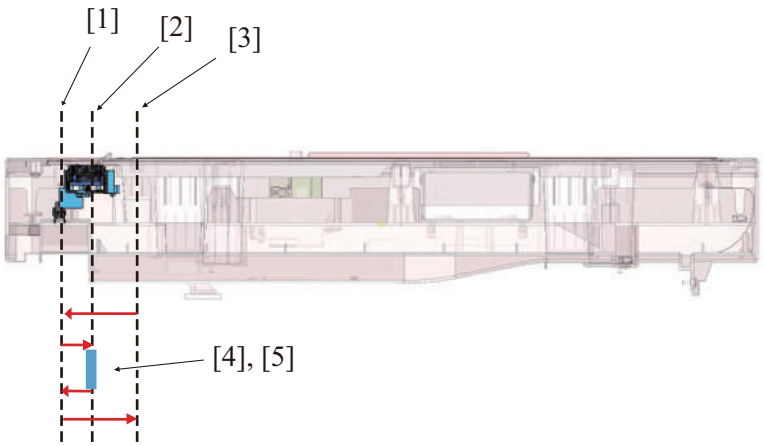
1.2.2 Drive



[1]	Drive belt	[2]	Guide rail
[3]	CIS	[4]	Scanner motor (M101)

1.2.3 When the power turns ON

1. When the power is turned ON, the CIS unit moves to the home position.
2. The CIS unit moves from the home position to the shading position (under the shading correction sheet).
3. The LED of the CIS unit turns ON.
4. The gain value of the CIS output voltage to R, G, and B is adjusted.
5. After adjusting the gain value, a shading correction is performed.
6. The CIS unit moves from the shading position to the home position.
7. Then the CIS unit moves from the home position and stops at the original size detection position.



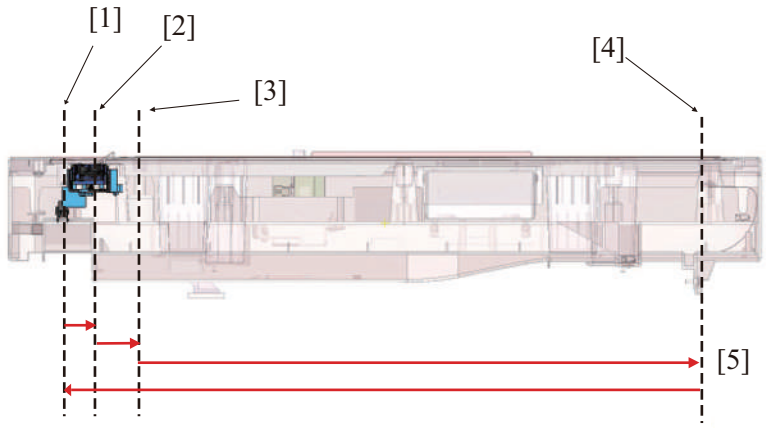
[1]	Home position	[2]	Shading position
[3]	Original size detection position	[4]	Shading correction
[5]	The LED turns ON	-	-

1.2.4 Control when the Start key is pressed

(1) Original cover mode

1. The CIS unit moves from the home position to the shading position.
2. At the shading position, the gain adjustment is made.
3. The CIS unit moves from the shading position to the scan start position.
4. The CIS unit will start reading the original image from the scan start position.
5. The CIS unit will finish reading the original image at the trailing edge of the original.

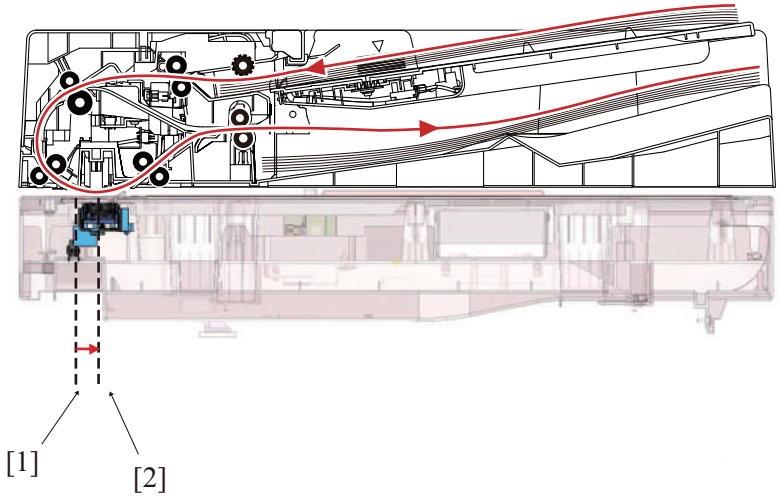
6. The CIS unit moves from the image trailing edge to the home position.



[1]	Home position	[2]	Shading position
[3]	Scan start position	[4]	Trailing edge of the image
[5]	Read original	-	-

(2) DF mode (DF-633 installed)

- The original fed by the reverse automatic document feeder will be read at the DF original glass.
  The CIS unit will move to the reading position and stop.
  The original will be read as the paper is transferred.



[1]	Home position	[2]	Original reading position

(3) Original scanning control

- The light reflected off the exposed original reaches the CCD sensor via the 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 CCD board (CCDB), becoming individual digital signals.
- Analog-to-digital conversion is made according to an instruction given by the MFP board (MFPB).

1.2.5 Original scanning area

- Original scanning areas vary depending on a scanning mode.

(1) Original cover mode

- Main scanning direction: Max. 297.0 mm (11 11/16 inches)
- Sub scanning direction: Max. 431.8 mm (17 inches)

(2) DF mode

(a) Scanning at 400 dpi or less

- Main scanning direction: Max. 297.0 mm (11 11/16 inches)
- Sub scanning direction: Max. 1,000.0 mm (39 3/8 inches)

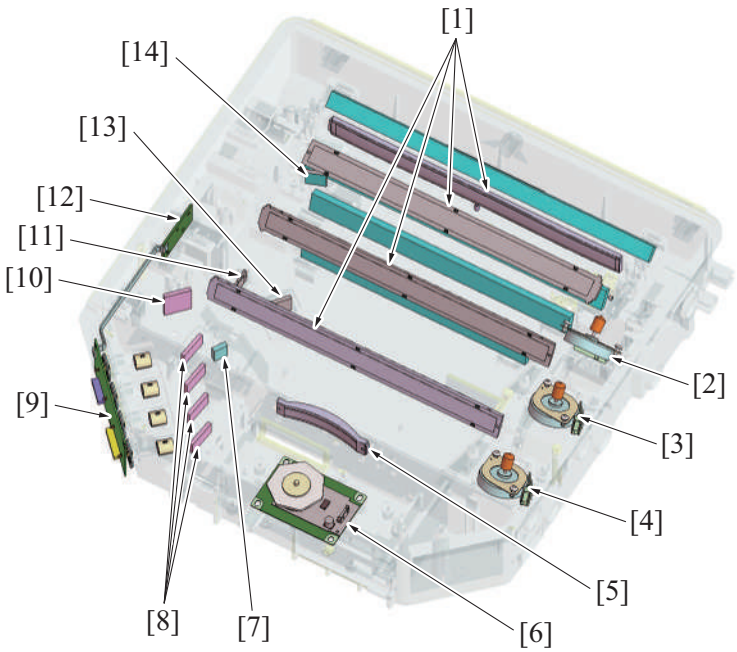
(b) Scanning at 600 dpi

- Main scanning direction: Max. 297.0 mm (11 11/16 inches)
- Sub scanning direction: Max. 431.8 mm (17 inches)

1.3 WRITE SECTION (PH SECTION)

1.3.1 Configuration

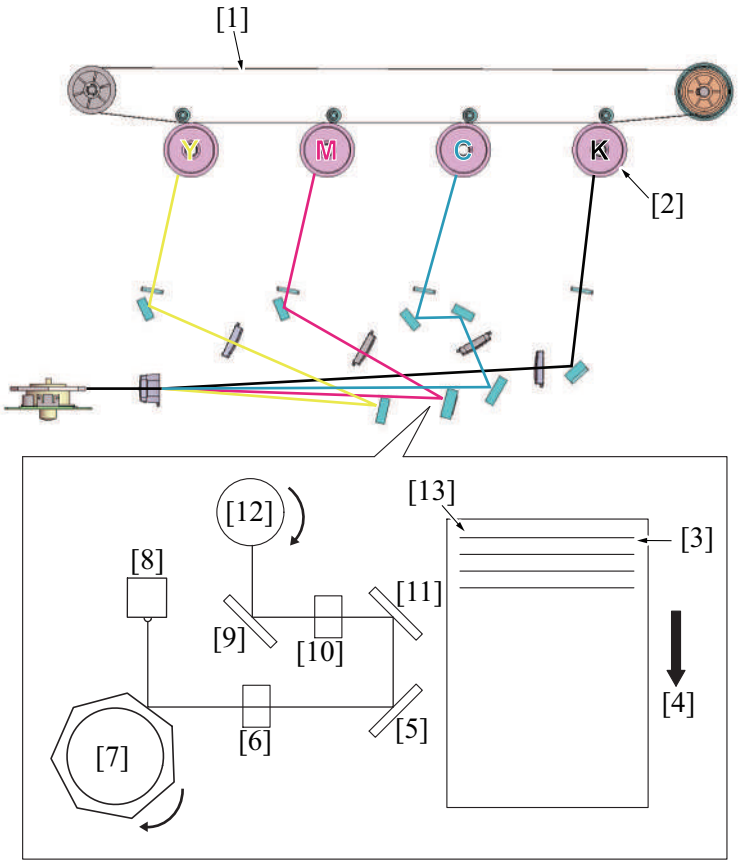
PH unit



[1]	G2 lens	[2]	Skew correction motor/C (M15)
[3]	Skew correction motor/M (M16)	[4]	Skew correction motor/Y (M17)
[5]	G1 lens	[6]	Polygon motor (M14)
[7]	Cylindrical lens	[8]	Synthetic mirror (Y,M,C,K)
[9]	Laser drive board (LDDB)	[10]	Return mirror (light source)
[11]	Index lens	[12]	Index board (INDEXB)
[13]	Return mirror (Index)	[14]	Index mirror

1.3.2 Outline

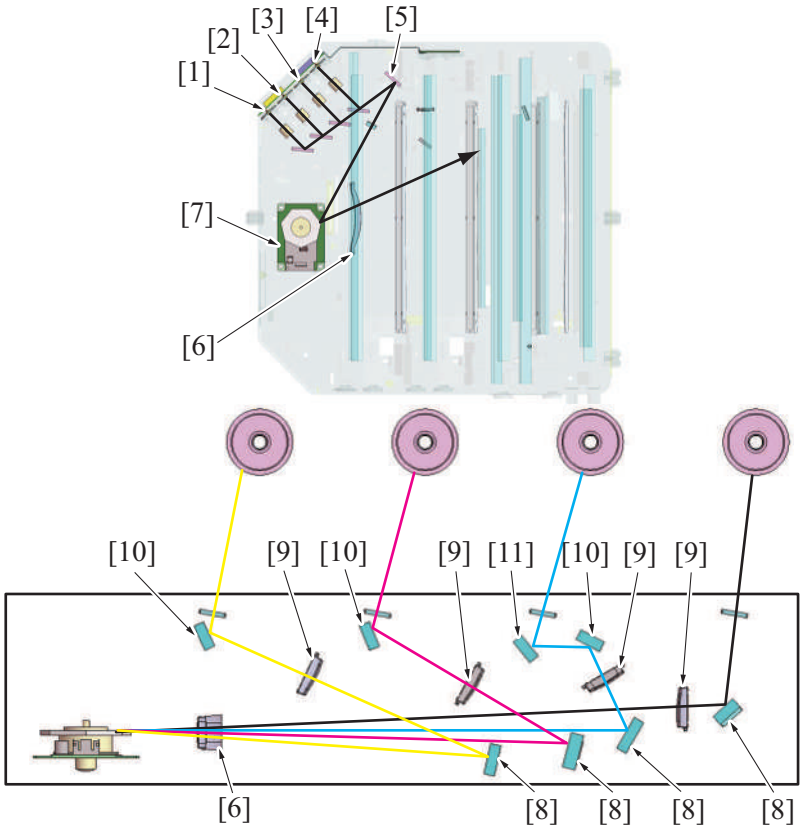
- The surface of the photo conductor is irradiated with a laser light and an electrostatic latent image is thereby formed.
- The PH unit has a four color exposure unit single-piece configuration. A semiconductor laser is provided for each of four different colors. A single polygon motor is used to make a scan.
- 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.



[1]	Transfer belt	[2]	Photo conductor/K
[3]	One line, One scan	[4]	Photo conductor rotation direction
[5]	Return mirror/1	[6]	G1 lens
[7]	Polygon mirror	[8]	Laser diode
[9]	Return mirror/3	[10]	G2 lens
[11]	Return mirror/2	[12]	Photo conductor
[13]	Beam	-	-

1.3.3 Laser exposure process

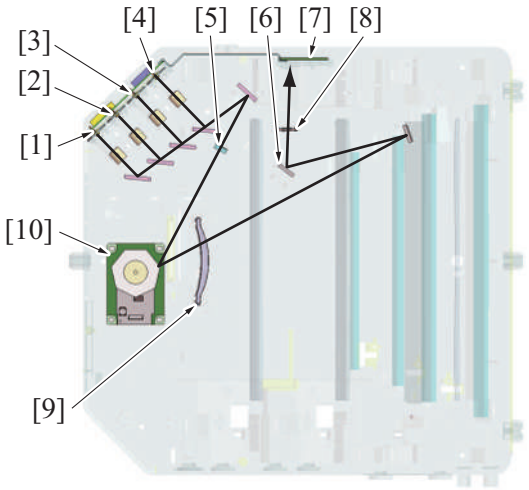
1. The laser light of each color enters the cylindrical lens via the synthetic mirror and return mirror (light source).
2. At the cylindrical lens, each laser light is condensed in the vicinity of the polygon mirror.
3. Since the angle of incidence for each color of laser light varies, the laser light reflected by the polygon mirror is reflected in a different angle for each color.
4. The condensing angle of each color of laser light is corrected by the G1 lens and then reaches each return mirror.
5. The K laser light is condensed on the photo conductor surface via the G2 lens and return mirror/1. The Y laser light is condensed on the photo conductor surface via the return mirror/1, G2 lens, and return mirror/2. The M laser light is condensed on the photo conductor surface via the return mirror/1, G2 lens, and return mirror/2. The C laser light is condensed on the photo conductor surface via the return mirror/1, G2 lens, return mirror/2, and return mirror/3.



[1]	Laser diode/K (LD/K)	[2]	Laser diode/C (LD/C)
[3]	Laser diode/M (LD/M)	[4]	Laser diode/Y (LD/Y)
[5]	Return mirror (light source)	[6]	G1 lens
[7]	Polygon motor (M14)	[8]	Return mirror/1
[9]	G2 lens	[10]	Return mirror/2
[11]	Return mirror/3	-	-

1.3.4 Laser emission timing

- After a print cycle has been started, when the stable rotation signals of photo conductor and polygon motor are detected, a laser ON signal is output from the MFP board.
- The laser ON signal causes each laser diode to turn ON and emit a laser beam.
- The K 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.
- The index signal is generated with the K laser light only. The laser light emission timing for other colors is determined with reference to K.
- 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]	Laser diode/K (LD/K)	[2]	Laser diode/C (LD/C)
[3]	Laser diode/M (LD/M)	[4]	Laser diode/Y (LD/Y)

[5]	Cylindrical lens	[6]	Return mirror (Index)
[7]	Index board (INDEXB)	[8]	Index lens
[9]	G1 lens	[10]	Polygon motor (M14)

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
- Laser emission of Y, M, and C is stopped if the print mode is changed from color to black during printing.
- The front door or any other door is opened.
- A misfeed occurs.
- A malfunction occurs.

1.3.6 Laser emission area

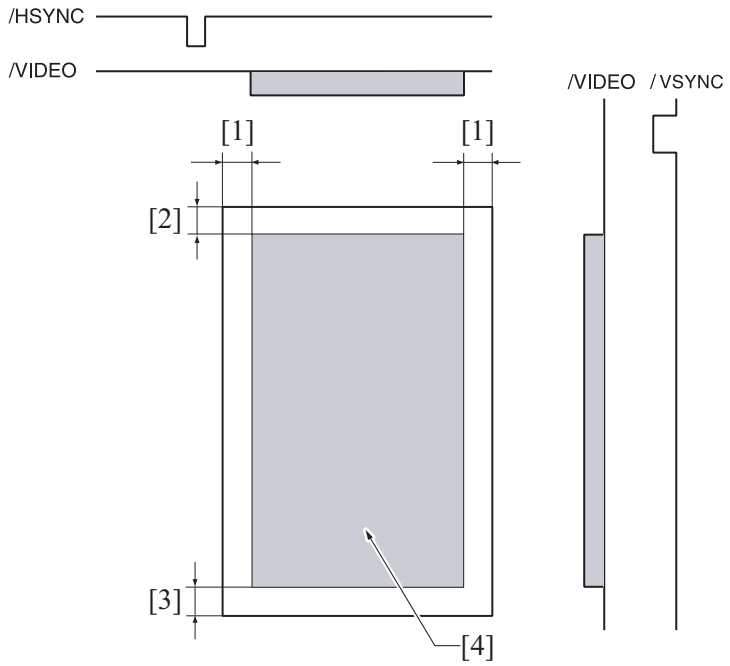
(1) Main scanning direction

- 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 (VSYNC). 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



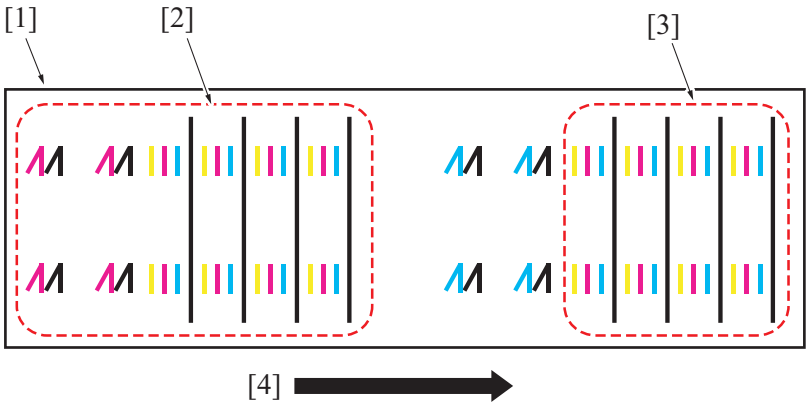
[1]	Void image area at edge of paper	[2]	Void image area at leading edge of paper
[3]	Void image area at trailing edge of paper	[4]	Laser emission area

1.3.7 Color registration control (color shift correction) system

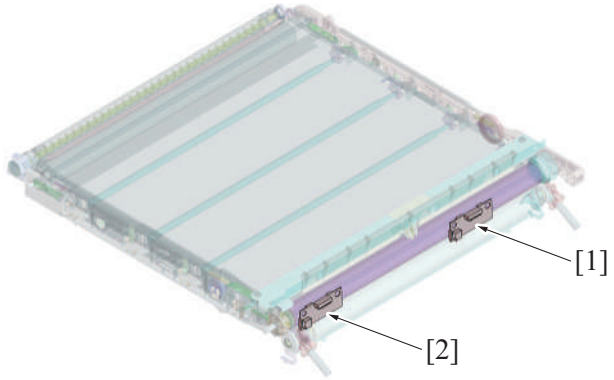
(1) Overview of the registration control

- In a tandem engine, each four different color has an independent image reproduction process. Color shift may occur because of variations in part accuracy of the PH unit. The color registration control system automatically detects color shift and correct color shift in the main and sub scanning directions.
- The color shift detection sequence proceeds as follows. A pattern each is produced at the front and rear on the transfer belt. Each of IDC sensors at the front and rear reads the corresponding pattern. The amount of color shift in each of the sub scanning and main scanning directions is then calculated and stored in memory.
- The amount of color shift in the sub scanning direction is read from the pattern falling within the sub scanning detection range. That in the main scanning direction is read from the entire pattern.

- From data readings, the machine calculates how much the position of each of the different colors should be corrected. Based on the calculated data, the machine controls each dot during image output, thereby correcting the color shift amount.



[1]	Transfer belt	[2]	Detection area for main scanning direction
[3]	Detection area for sub scanning direction	[4]	Rotational direction of the transfer belt



[1]	IDC sensor/Rr (IDCS/Rr)	[2]	IDC sensor/Fr (IDCS/Fr)

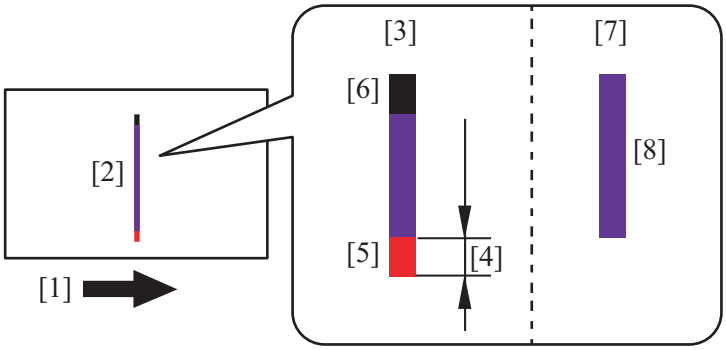
(2) Types of color shift

- Color shift is misalignment of the images of three different colors, yellow (Y), magenta (M), and cyan (C), with respect to the image of black (K).
- Four different types of color shift can occur: color shift in the main scan direction, color shift due to overall scaling error in the main scan direction, color shift in the sub scan direction, and image skew.

(3) Correction of color shift in the main scan direction

- If the image of each color (Y, M, C) is misaligned with respect to the image of black (K) in the main scan direction, changing the write start timing in the main scan direction can correct the color shift. Color shift correction needs to be performed separately for the respective colors (Y, M, C).
- Color shift correction control is activated when the image stabilization sequence is started.

* When the image of magenta is misaligned with respect to the image of black (K) in the sub scan direction

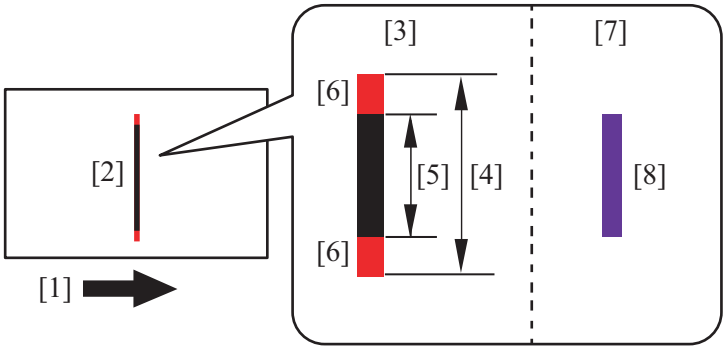


[1]	Rotational direction of the transfer belt	[2]	Transfer belt
[3]	Before correction	[4]	Color shift
[5]	Magenta (M)	[6]	Black (K)
[7]	After correction	[8]	No color shift

(4) Correction of color shift due to overall scaling error in the main scan direction

- If the image of each color (Y, M, C) and the image of black (K) vary in length in the main scan direction, changing the clock frequency of the laser diode can correct the length difference in the main scan direction. Color shift correction needs to be performed separately for the respective colors (Y, M, C).
- Color shift correction control is activated when the image stabilization sequence is started.

* When the image of magenta is longer than the image of black (K)

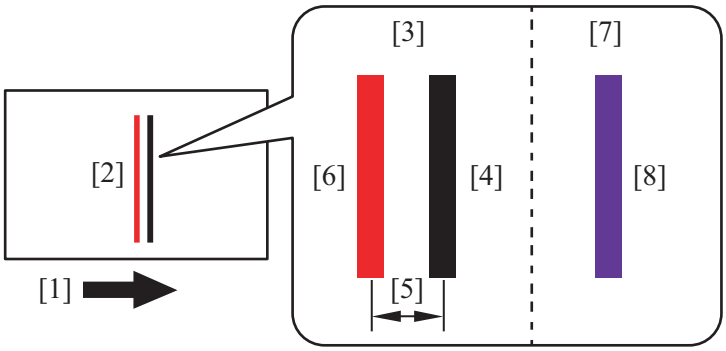


[1]	Rotational direction of the transfer belt	[2]	Transfer belt
[3]	Before correction	[4]	Magenta (M)
[5]	Black (K)	[6]	Color shift
[7]	After correction	[8]	No color shift

(5) Correction of color shift in the sub scan direction

- If the image of each color (Y, M, C) is misaligned with respect to the image of black (K) in the sub scan direction, changing the write start timing in the sub scan direction can correct the color shift. Color shift correction needs to be performed separately for the respective colors (Y, M, C).
- Color shift correction control is activated when the image stabilization sequence is started.

* When the image of magenta is misaligned with respect to the image of black (K) in the sub scan direction

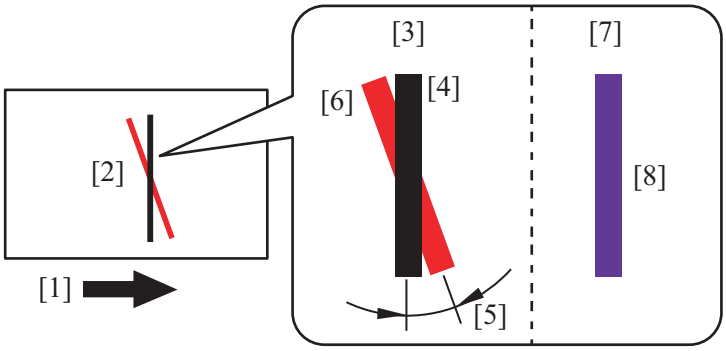


[1]	Rotational direction of the transfer belt	[2]	Transfer belt
[3]	Before correction	[4]	Black (K)
[5]	Color shift	[6]	Magenta (M)
[7]	After correction	[8]	No color shift

(6) Skew (image skew)

- If the image of each color (Y, M, C) is tilted against the image of black (K) in the sub scanning direction, the image skew can be corrected by tilting the G2 lens of the PH unit. Image skew correction needs to be performed separately for the respective colors (Y, M, C).
- Image skew is adjusted at timing when the image stabilization sequence is started.

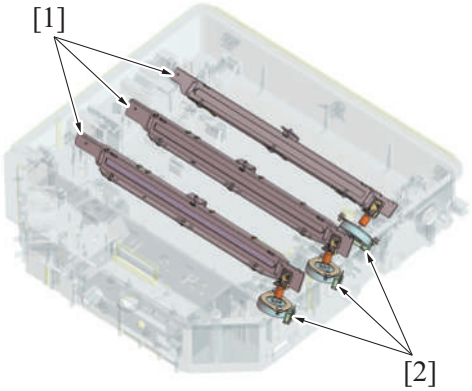
* When the image of magenta is tilted against the image of black (K)



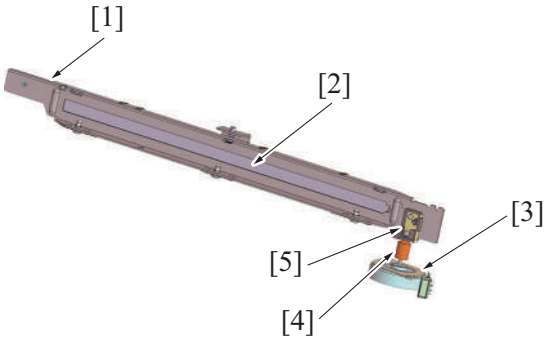
[1]	Rotational direction of the transfer belt	[2]	Transfer belt
[3]	Before correction	[4]	Black (K)
[5]	Color shift	[6]	Magenta (M)
[7]	After correction	[8]	No color shift

1.3.8 Color skew correction control

- Temperature may change inside the PH unit and the components can change over time. These phenomena may cause color skew problems. To prevent the problems, individual G2 lenses that correspond to Y, M, and C respectively have a color skew auto adjustment mechanism.
- When the skew correction motor runs, the G2 lenses move up and down to perform an automatic color skew correction.



[1]	G2 lens	[2]	Skew correction motor

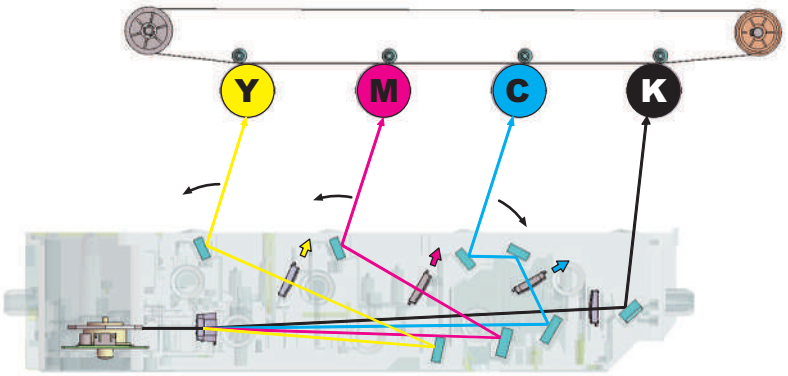


[1]	G2 lens tilting shaft	[2]	G2 lens: The lens is tilted to correct color skew.
[3]	Skew correction motor	[4]	Drive gear
[5]	G2 lens drive cam	-	-

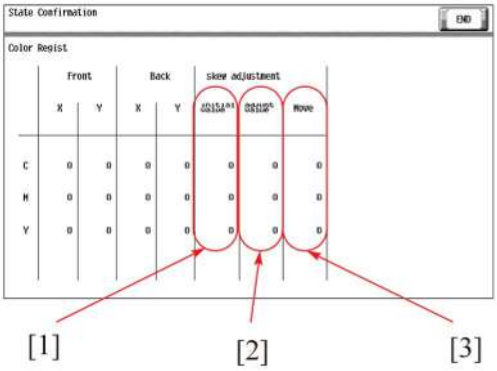
(1) Skew adjustment method

- The following describe the direction in which the beam moves by the skew correction motors.
- When the skew correction motors rotate, the G2 lens moves in the direction of the arrow that is illustrated below, the beam moves.

Skew adjustment direction: Direction in which the beam moves when the skew correction motor/Y, M, C rotates clockwise



(2) Skew correction motor adjustment value panel display



[1]	Select [Service Mode] -> [Machine] -> [Print Head Skew Adj.] and call [Adjust Value] (default adjustment value unique to the print head) to the screen, in steps.	[2]	Shows the skew correction value after the image stabilization process, in steps.
[3]	Shows the skew correction value after the image stabilization process relative to that of the last image stabilization process, in steps.	-	-

(3) Operation timing

- The color registration control (color shift correction) and the color skew correction control operate at one time.
- The color skew amount is calculated for each color using the numeric value calculated with the sub scanning registration pattern detected and based on the previous correction data.

1.3.9 Skew adjustment/skew adjustment reset

- There are cases where the “color skew correction control” cannot be executed for some reason. The machine provides functions that allow you to reset the “skew adjustment data” against these situations.
- For details of the Service Mode, see “Print Head Skew Adj.”.

(1) Possible conditions and causes

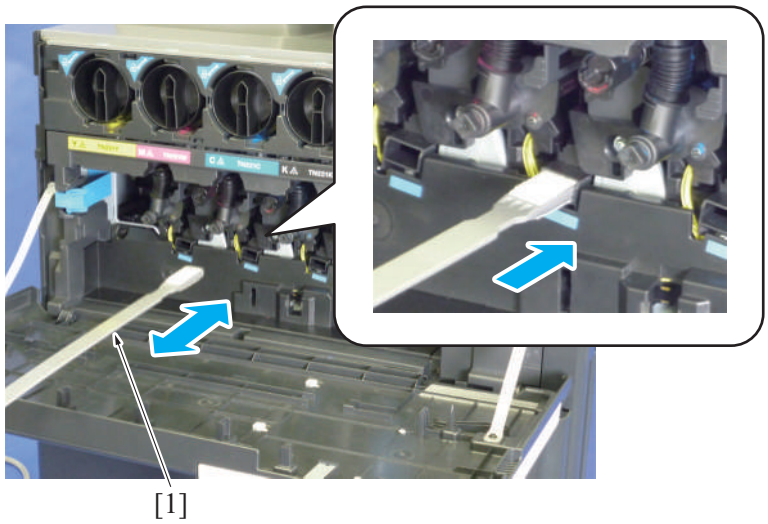
- The PH unit has been replaced with a new one.
- The alarm code “P-14: skew correction trouble” is displayed.
- A door is opened or the main power switch is turned OFF during color skew correction control, causing the skew correction sequence to be halted; as a result, the current position of the skew correction motor is unknown.
- The backup position information of the skew adjustment motor settings in the machine is lost operations such as replacement of the storage board.

1.3.10 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 information is stored as part of the environment information data.

1.3.11 PH window cleaning

- The PH window, if contaminated, blocks the path of the laser beam and the surface of the photo conductor 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]	PH window cleaning tool	-	-

(1) PH window cleaning procedures

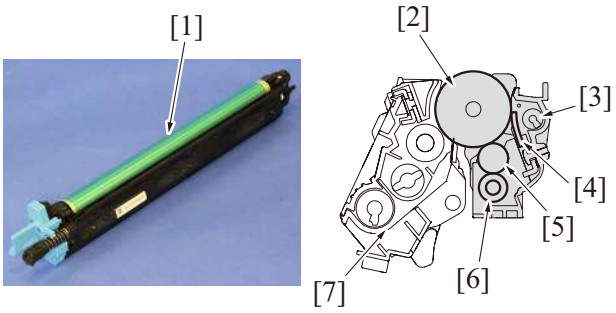
- The machine is not equipped with any mechanism that automatically cleans the PH window. This makes it necessary to clean the PH window manually at regular intervals.
- Slowly pull to the front the PH window cleaning tool and push it back into the original position. This allows the cleaning material mounted on the PH window cleaning tool to remove any foreign matter from the surface of the PH window.

(2) PH window cleaning timing

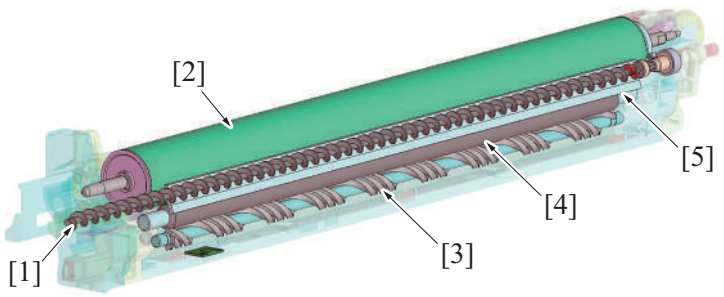
- Clean the PH window of each color when the drum unit/K is replaced with a new one.

1.4 PHOTO CONDUCTOR SECTION

1.4.1 Configuration

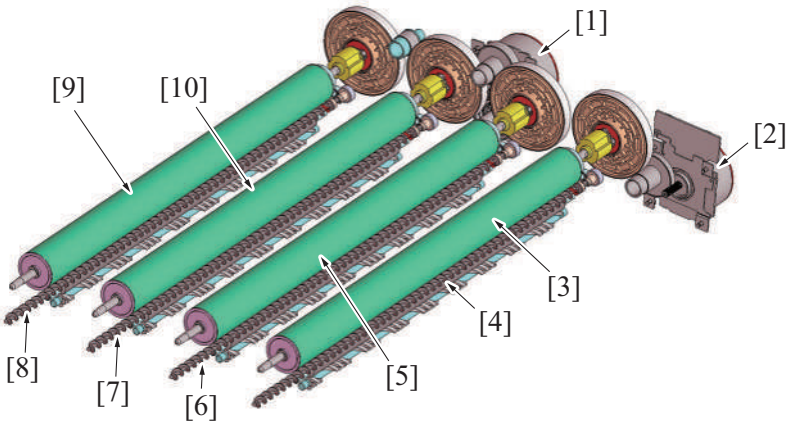


[1]	Drum unit	[2]	Photo conductor
[3]	Toner collecting screw	[4]	Cleaning blade
[5]	Charging roller	[6]	Cleaning roller
[7]	Developing unit (K)	-	-



[1]	Toner collecting screw	[2]	Photo conductor
[3]	Cleaning roller	[4]	Charging roller
[5]	Cleaning blade	-	-

1.4.2 Drive



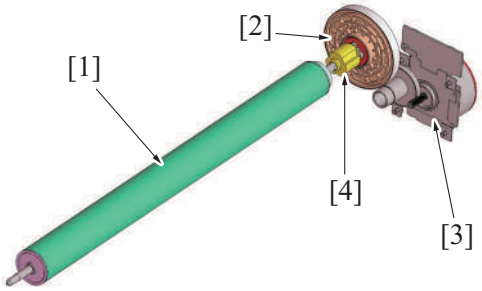
[1]	IU motor (M2)	[2]	Transport motor (M1)
[3]	Photo conductor/K	[4]	Toner collecting screw/K
[5]	Photo conductor/C	[6]	Toner collecting screw/C
[7]	Toner collecting screw/M	[8]	Toner collecting screw/Y
[9]	Photo conductor/Y	[10]	Photo conductor/M

1.4.3 Photo conductor drive mechanism

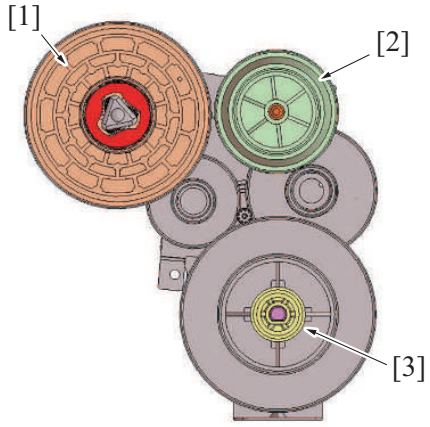
- By utilizing color and black photo conductor drives, the photo conductor is driven in accordance with user usage conditions to reduce consumption of each photo conductor.

(1) Photo conductor/K drive mechanism

- The transport motor drives the photo conductor/K.
- The transport motor is the common source that provides drive to manual bypass feed, tray feed, registration roller, transfer belt, and others.
- Drive is transmitted to the photo conductor when the triangular-prism-shaped shaft is engaged with the mating coupling part.



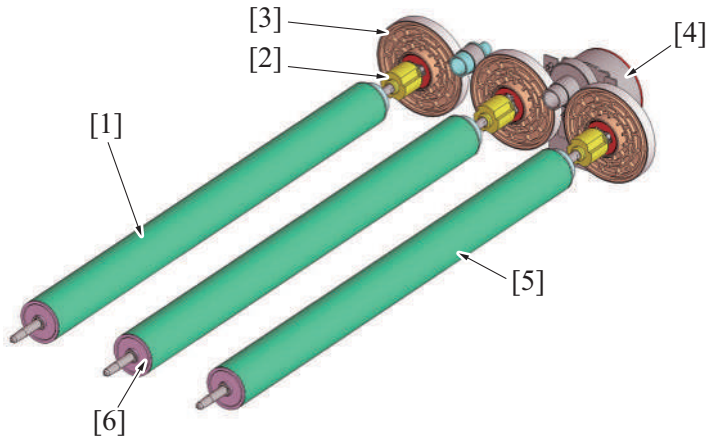
[1]	Photo conductor/K	[2]	Photo conductor drive gear/K
[3]	Transport motor (M1)	[4]	Coupling



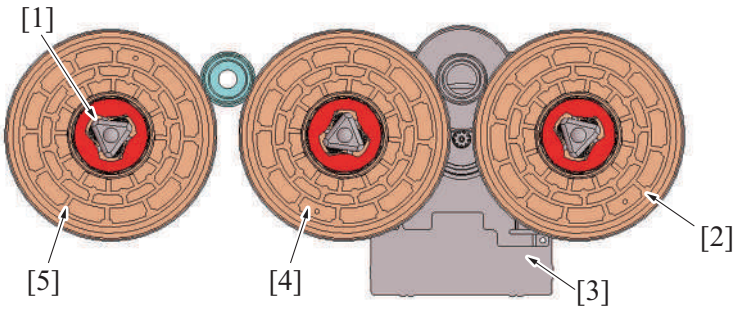
[1]	Photo conductor drive gear/K	[2]	Transfer belt drive gear
[3]	Registration roller drive gear	-	-

(2) Photo conductor/Y, M, C drive mechanism

- The photo conductors/Y, M, C are driven by the IU motor.
- Drive is transmitted to the photo conductor when the triangular-prism-shaped shaft is engaged with the mating coupling part.



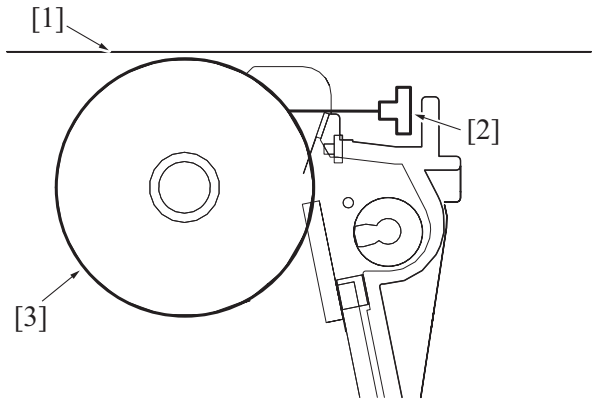
[1]	Photo conductor/Y	[2]	Coupling
[3]	Color photo conductor drive gear/Y	[4]	IU motor (M2)
[5]	Photo conductor/C	[6]	Photo conductor/M



[1]	Triangular-prism-shaped coupling part	[2]	Color photo conductor drive gear/C
[3]	IU motor (M2)	[4]	Color photo conductor drive gear/M
[5]	Color photo conductor drive gear/Y	-	-

1.4.4 Erase LED control

- The potential remaining in the photo conductor is removed when the erase LED turns on.
- The neutralization of any residual potential on the photo conductor helps improve cleaning performance of toner left on the surface of the photo conductor.



[1]	Transfer belt	[2]	Erase LED
[3]	Photo conductor	-	-

(1) Erase LED ON timing

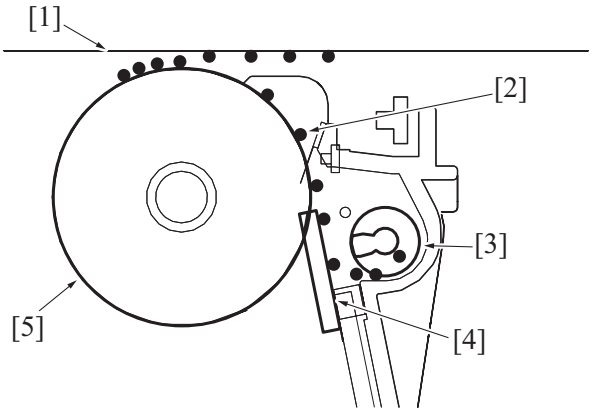
- The erase LED is turned ON when the photo conductor starts rotating.

(2) 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 photo conductor is neutralized.)

1.4.5 Photo conductor cleaning

- Part of the toner image that is not transferred is left on the surface of the photo conductor. The residual toner is scraped off by the cleaning blade.
- Toner, which has been scraped off the surface of the photo conductor, is conveyed by the toner collecting screw toward to the front of the machine. It is discharged in the waste toner box.



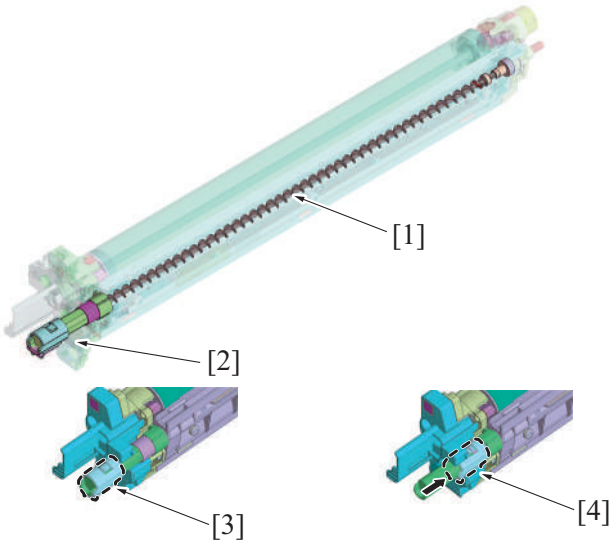
[1]	Transfer belt	[2]	Waste toner
[3]	Toner collecting screw	[4]	Cleaning blade
[5]	Photo conductor	-	-

(1) Cleaning blade

- The cleaning blade is pressed up against the surface of the photo conductor at all times. No cleaning blade retraction mechanism is provided.
- The cleaning blade scrapes residual toner off the surface of the photo conductor as the photo conductor is rotated.

(2) Toner conveyance/collection mechanism

- The toner collecting screw is rotated by the driving force transmitted from the photo conductor. (The toner collecting screw rotates in time with the rotation of the photo conductor.)
- Rotation of the toner collecting screw conveys toner scraped off the surface of the photo conductor 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 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.

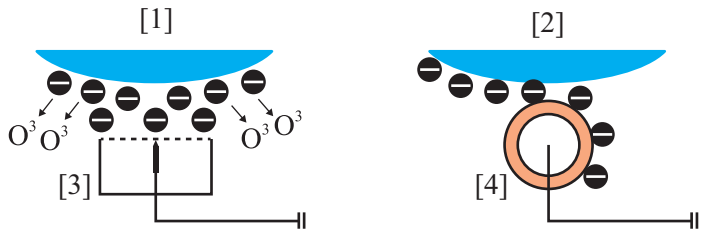


[1]	Toner collecting screw	[2]	Shutter
[3]	Shutter close	[4]	Shutter open

1.4.6 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.



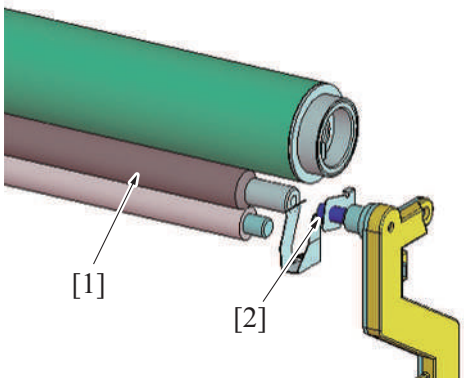
[1]	Comb electrode charge	[2]	Roller charging
[3]	Comb electrode	[4]	Charging roller

(1) Charge application start timing

- Charge is applied to the electrostatic charger application terminal when the photo conductor (transport motor and IU motor) drive motor starts rotating at a steady speed.

(2) Charge application end timing

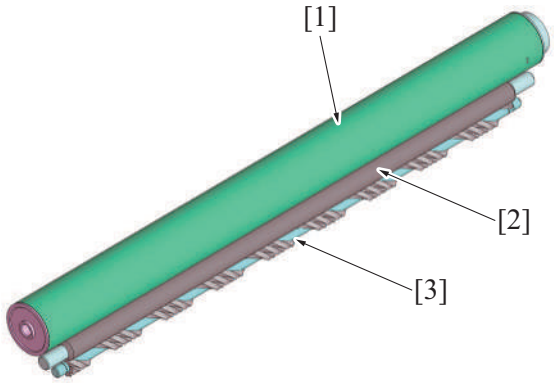
- Application of the charge to the electrostatic charger application terminal is terminated when the surface of the photo conductor which faces the transfer belt as the 1st transfer output is turned OFF moves past the charging position.



[1]	Charging roller	[2]	Electrostatic charger application terminal

1.4.7 Charging roller cleaning

- If the charging roller becomes contaminated, the surface of the photo conductor can no longer be charged uniformly, so that uneven charge occurs. Uneven charge of the photo conductor 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.

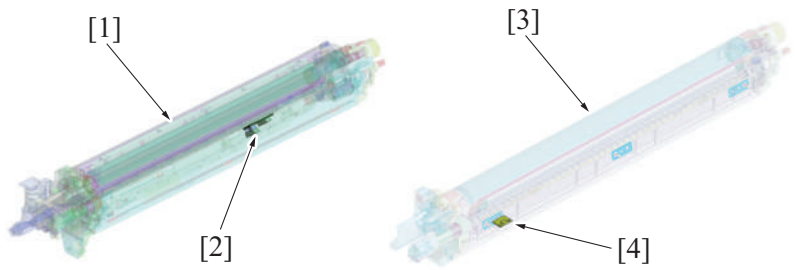


[1]	Photo conductor	[2]	Charging roller
[3]	Cleaning roller	-	-

1.4.8 Unit detection

- The drum unit/K is provided with a DU set board. The board detects set of the corresponding drum unit.

- The drum unit/Y, M, C is integrated with the developing unit (hereinafter, referred to as the "imaging unit"). The imaging unit/Y, M, C detects the unit installation state via the TCR sensor for each color.



[1]	Imaging unit/Y,M,C	[2]	TCR sensor/Y,M,C
[3]	Drum unit/K	[4]	DU set board/K

(1) Unit mounting detection

(a) 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”

(b) Detection method

- The detection methods (boards) used by imaging unit/Y, M, C and the drum unit/K are different.

Unit name	Unit detection (board)
Imaging unit/Y,M,C	TCR sensor
Drum unit/K	DU set board

(c) 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.

(2) New article detection

(a) Detection timing

- The new article detection control is performed if “unit mounting detection” determines that the drum unit or imaging unit is correctly mounted.

(b) Operation when the drum unit is determined not to be new

- The new article detection control is terminated.

(c) Operation when the drum unit is determined to be new

- The life counter of the drum unit or imaging 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.
- A life counter is prepared for each color in the drum unit and imaging unit. The counter value is recorded in the storage board of the main body.

(3) New release disabled mode

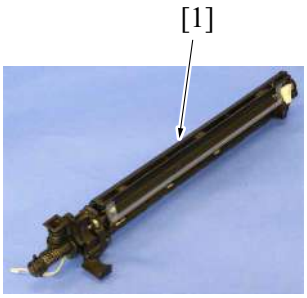
- New article detection is not executed when the new article detection-disabled mode is selected.
- The new article detection-disabled mode should be used only for troubleshooting purposes.

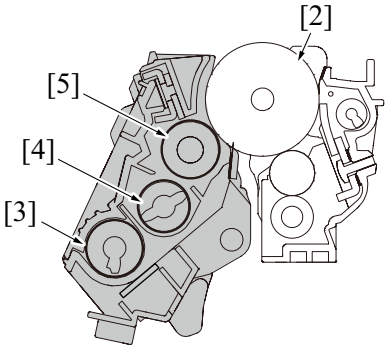
NOTE

- **See “New Release Disable mode” for more detailed operating precautions.**

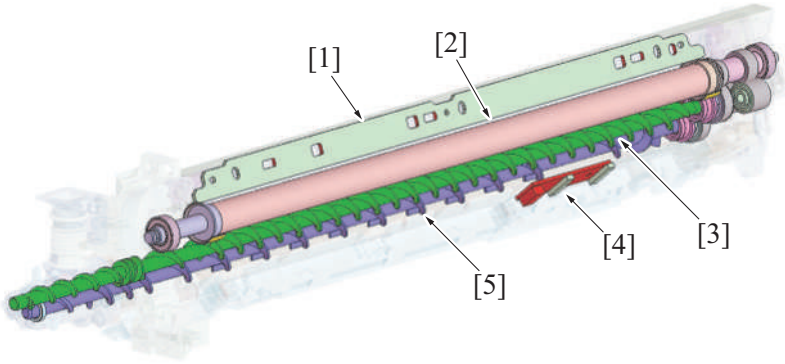
1.5 DEVELOPING SECTION

1.5.1 Configuration





[1]	Developing unit	[2]	Photo conductor
[3]	Toner supply screw 1	[4]	Toner supply screw 2
[5]	Developing roller	-	-



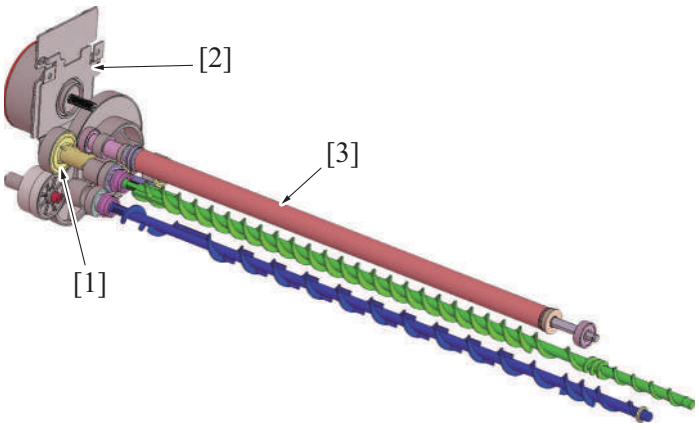
[1]	Doctor blade	[2]	Developing roller
[3]	Toner supply screw 2 *	[4]	TCR sensor
[5]	Toner supply screw 1	-	-

- *: Because only the developing unit/K incorporates the auto refining developing system, the length of the toner supply screw mounted on the developing unit/K is different from those mounted on the imaging unit/Y, M, C.

1.5.2 Drive

(1) Developing section/K drive mechanism

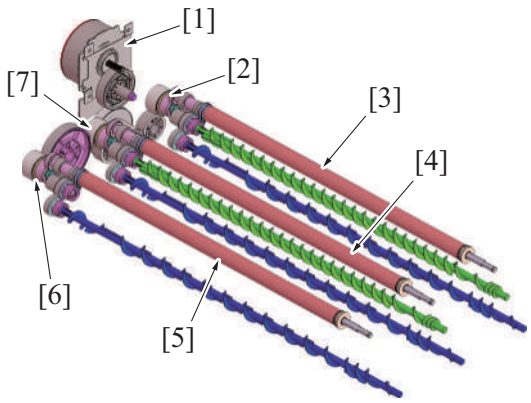
- Drive force from the transport motor is transmitted to each gears so that the developing roller/K is driven.



[1]	Developing drive gear/K	[2]	Transport motor (M1)
[3]	Developing roller/K	-	-

(2) Developing section/Y, M, C drive mechanism

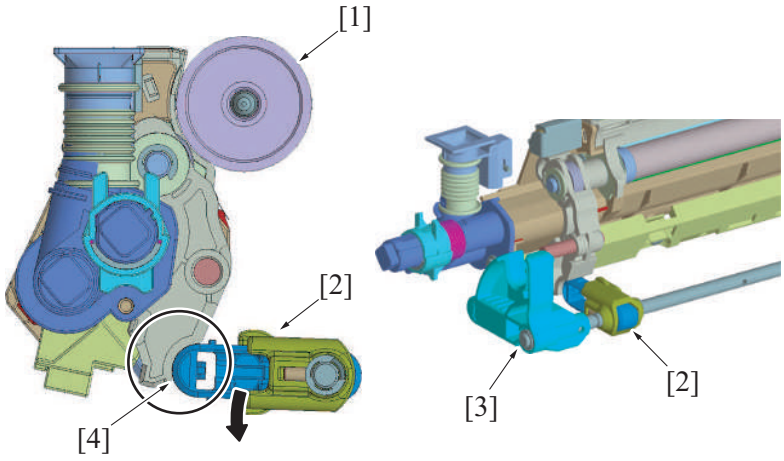
- Drive force from the IU motor is transmitted to each gear so that the developing roller/Y,M,C is driven.



[1]	IU motor (M2)	[2]	Developing drive gear/C
[3]	Developing roller/C	[4]	Developing roller/M
[5]	Developing roller/Y	[6]	Developing drive gear/Y
[7]	Developing drive gear/M	-	-

1.5.3 Developing unit/K pressure/releases mechanism

- A mechanism is provided that releases the developing unit from the PC drum to prevent the photo conductor 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]	Photo conductor	[2]	Rib
[3]	Release lever	[4]	Groove

1.5.4 Developer flow

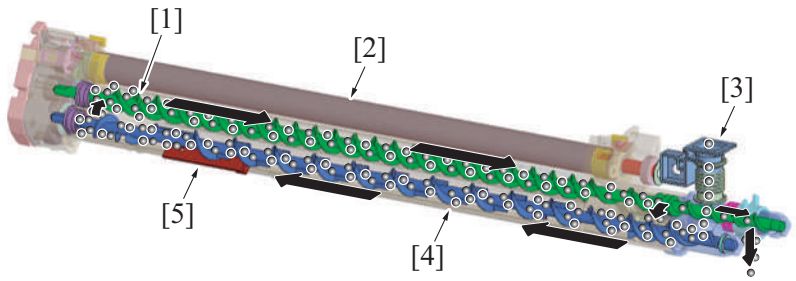
(1) Developing unit/K

1. Toner replenished via the toner replenishing port located at the front side of the main body is fed to the toner supply screw 1.
2. The developer is conveyed toward the rear of the unit, while being agitated and electrically charged, by the toner supply screw 1.
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 supply screw 2.
5. The developer fed to the toner supply screw 2 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 photo conductor. The developer that is left on the developing roller is returned to the toner supply screw 2 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 supply screw 2. 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. Removing the waste toner box, on the other hand, closes the shutter and toner is thereby prevented from spilling from the toner collecting port. (For more details, see P.1.5.5 Auto refining developing system and P.1.9.7 Waste toner spillage prevention shutter.)

NOTE

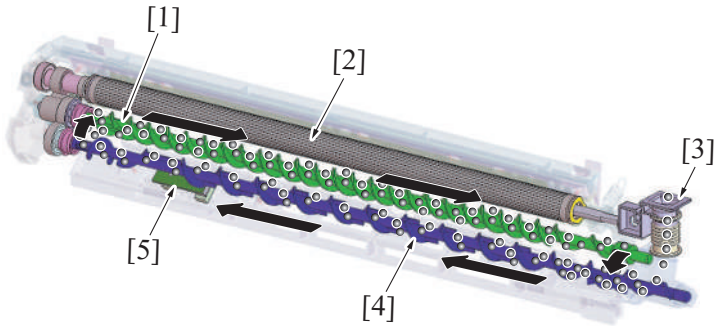
- **The toner replenishing port of the developing unit is not provided with a shutter mechanism. (The toner hopper section is equipped with a shutter.)**
- **When removing the developing unit, the developing unit must be held in a horizontal position with care not to allow toner to spill from the toner replenishing port.**



[1]	Toner supply screw 2	[2]	Developing roller
[3]	Toner replenishing port	[4]	Toner supply screw 1
[5]	TCR sensor	-	-

(2) Imaging unit/Y,M,C

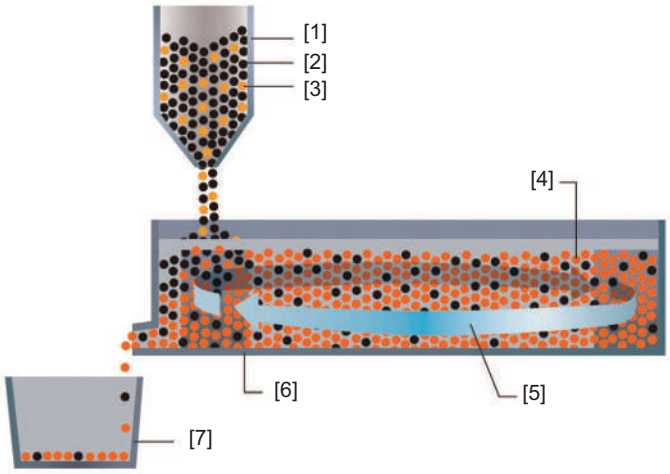
1. Toner replenished via the toner replenishing port located at the front side of the main body is fed to the toner supply screw 1.
2. The toner supply screw 1 conveys toner toward the rear of the unit while being agitated and electrically charged with developer in the imaging unit.
3. The TCR sensor 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 supply screw 2.
5. The developer fed to the toner supply screw 2 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 photo conductor. The developer that is left on the developing roller is returned to the toner supply screw 2 by the magnetic pole positioning of the developing roller.
8. Developer that returned to the toner supply screw 2 is conveyed to the toner supply screw 1 and then agitated with toner again.



[1]	Toner supply screw 2	[2]	Developing roller
[3]	Toner replenishing port	[4]	Toner supply screw 1
[5]	TCR sensor	-	-

1.5.5 Auto refining developing system

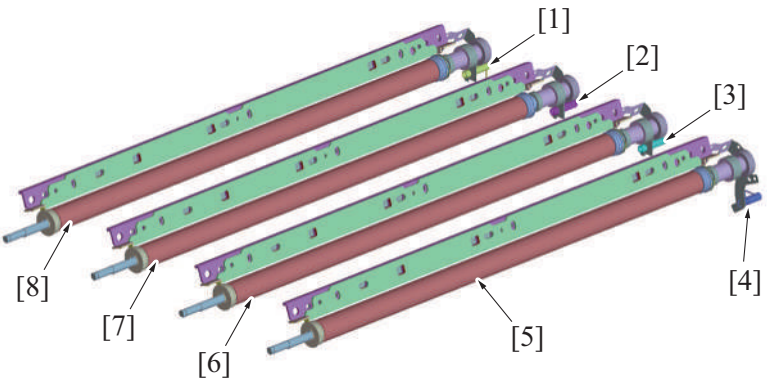
- The developing unit/K incorporates the auto refining developing system.
- The cartridge of toner cartridge is packed with both toner and carrier and the developing unit is replenished with fresh carrier at the same time that it is replenished with toner.
- Excess carrier in the developing unit is discharged, 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 photo conductor.
- 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 photo conductor. 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 of each color of toner via the developing bias voltage application terminal.
- See "IMAGE FORMING CONTROL" for the timing to apply the bias voltage.

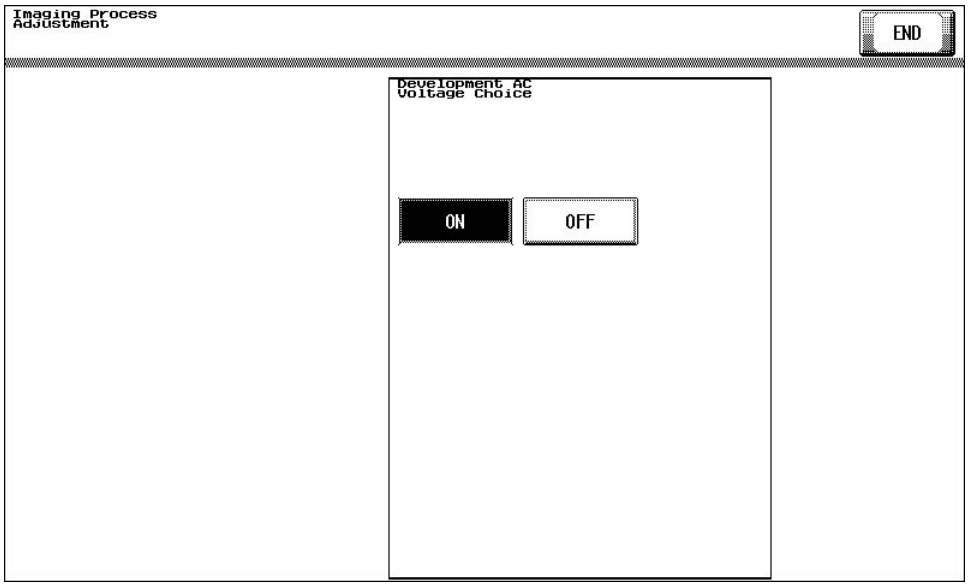


[1]	Developing bias voltage application terminal/Y	[2]	Developing bias voltage application terminal/M
[3]	Developing bias voltage application terminal/C	[4]	Developing bias voltage application terminal/K
[5]	Developing roller/K	[6]	Developing roller/C
[7]	Developing roller/M	[8]	Developing roller/Y

(1) Grad/Dev AC Bias V Selection

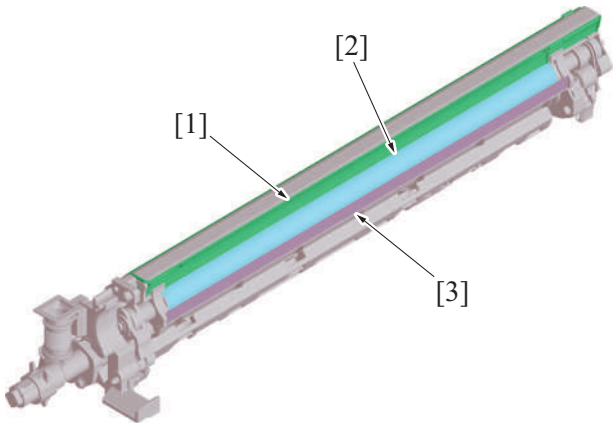
- The “Grad/Dev AC Bias V” can be changed by changing the setting of “Imaging Process Adjustment/ Grad/Dev AC Bias V Selection” of the Service Mode. This provides development performance that responds to various types of environment of the users.
- Turning ON the “Grad/Dev AC Bias V Selection” allows 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 “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.



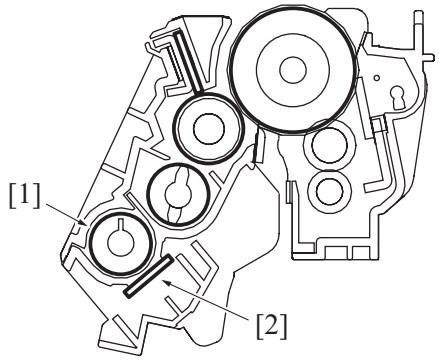
[1]	Toner scattering prevention plate	[2]	Developing roller
[3]	Toner scattering prevention sheet	-	-

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.
- See "FAN CONTROL" for air path and detailed information

1.5.9 Toner density control

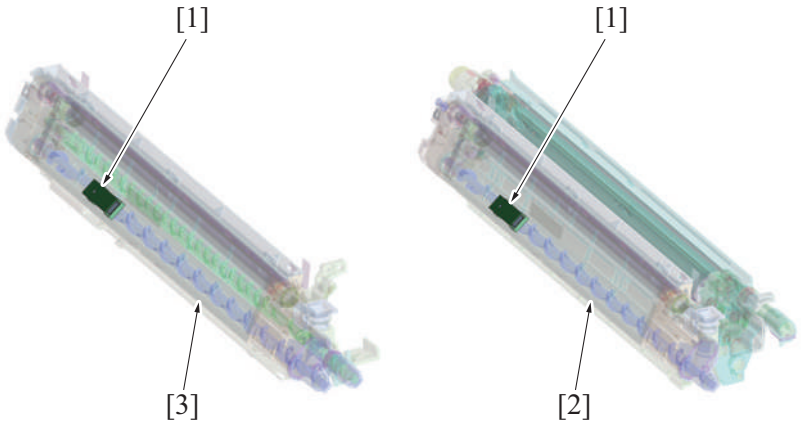
- The TCR sensor is mounted on the underside of each of the developing sections. The TCR sensor for C, M, Y and K is a non-contact magnetic type. Each of these sensors detects toner-to-carrier ratio (TC) of the developer. The reading is used for determining the amount of toner supplied.
- Only when a new developing unit is installed in the machine, an automatic adjustment (calibration) is made of each of these TCR sensors. The automatic adjustment of TCR sensors cannot be done at your own discretion.
- The target TC ratio is 6.5 ± 1.5%.
- The magnetic permeability (powder density) of the carrier in the developer is measured to determine the TC.
- For replenishment of toner to the developing unit, see “ P.1.6.6 Auxiliary toner replenishing control for toner hopper”.



[1]	Toner supply screw 1	[2]	TCR sensor

1.5.10 Unit detection

- Each unit is provided with a TCR sensor. These sensors detect different states.



[1]	TCR sensor	[2]	Imaging unit/Y,M,C
[3]	Developing unit/K	-	-

(1) Unit mounting detection

- The TCR sensor detects the mounting condition of the developing unit.
- When developing unit is detected in the mounted condition, control now proceeds to the “new article detection control”.

(a) 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”

(2) New article detection

- The TCR sensor detects whether the developing unit is new or not.

(a) Detection timing

- The new article detection control is performed if “unit mounting detection” determines that the developing unit is correctly mounted.

(b) Operation when the developing unit is determined not to be new

- The new article detection control is terminated.

(c) 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.
- A zero reset of the life counter values for the imaging unit/Y, M, C or the developing unit/K is performed.
- 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.
- A life counter is prepared for each color. The counter value is recorded in the storage board of the main body.

(3) New release disabled mode

- The new article detection-disabled 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 article detection-disabled mode is used.
- The new article detection-disabled mode should be used only for troubleshooting purposes.

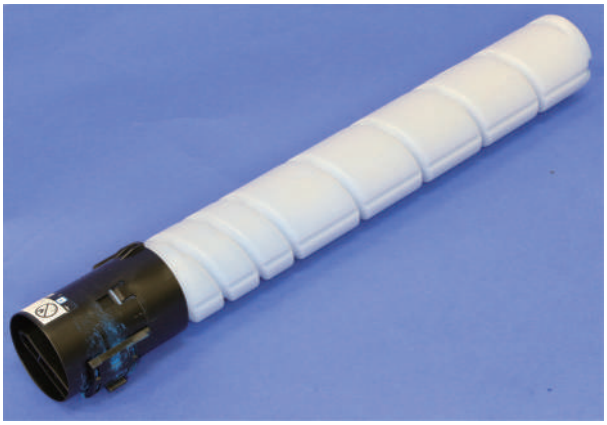
NOTE

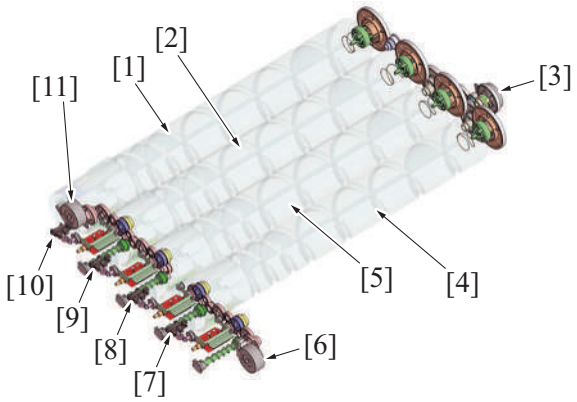
- **See " J.2.10.1 (1) New Release Disable mode" for more detailed operating precautions.**

1.6 TONER SUPPLY SECTION

1.6.1 Configuration

Toner cartridge



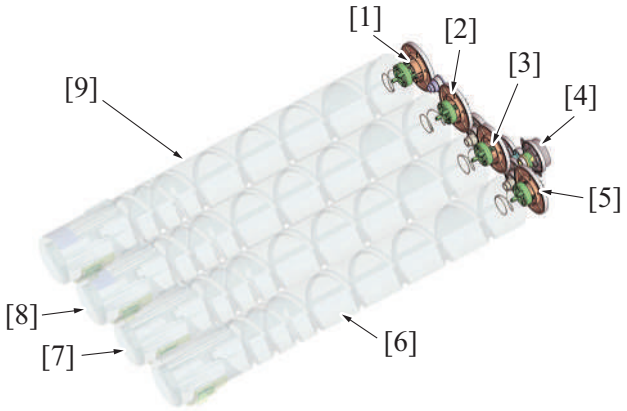


[1]	Toner cartridge/Y	[2]	Toner cartridge/M
[3]	Toner cartridge motor (M10)	[4]	Toner cartridge/K
[5]	Toner cartridge/C	[6]	Toner supply motor/C,K (M7)
[7]	Toner empty sensor/K (PS31)	[8]	Toner empty sensor/C (PS32)
[9]	Toner empty sensor/M (PS33)	[10]	Toner empty sensor/Y (PS34)
[11]	Toner supply motor/Y,M (M9)	-	-

1.6.2 Drive

(1) Toner cartridge drive

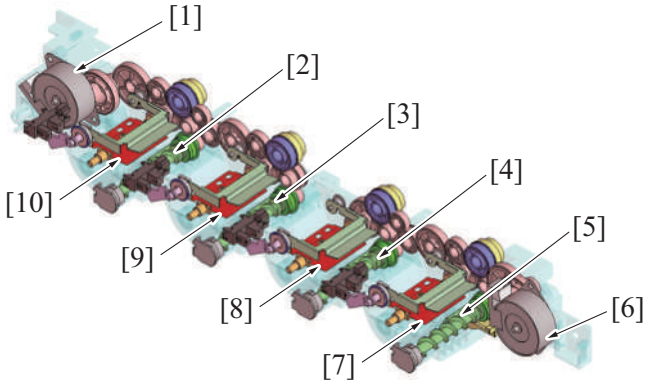
- The toner cartridge motor rotates to drive the toner cartridge. The interior of the toner cartridge is in spiral form. As the toner cartridge rotates, toner inside the toner cartridge is conveyed toward the toner replenishing port that is located at the front side. So that the toner hopper is replenished with the toner from the toner cartridge.
- One motor drives the four-color toner cartridges, which causes the toner cartridge/Y, M, C and toner cartridge/K to rotate in the direction of motor rotation.
  The toner cartridge drive is switched depending on the color and monochrome print applications.
- All color toner cartridges cannot be rotated at the same time.



[1]	Toner cartridge drive gear/Y	[2]	Toner cartridge drive gear/M
[3]	Toner cartridge drive gear/C	[4]	Toner cartridge motor (M10)
[5]	Toner cartridge drive gear/K	[6]	Toner cartridge/K
[7]	Toner cartridge/C	[8]	Toner cartridge/M
[9]	Toner cartridge/Y	-	-

(2) Toner hopper drive

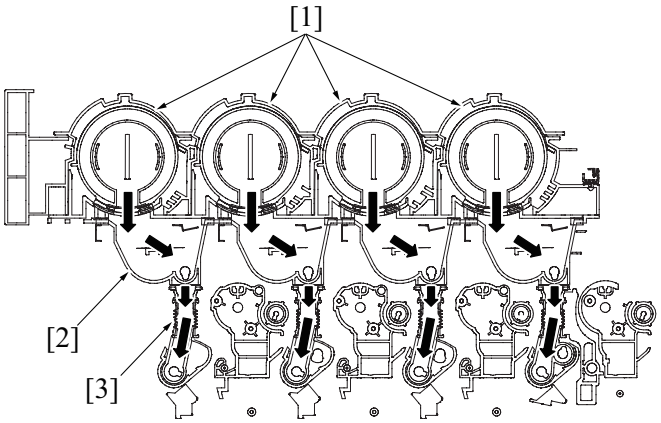
- Two toner supply motors drive the toner conveying screws and the toner agitating blades provided in the four-color toner hoppers.
- Rotation of the toner supply motor causes the toner agitating blade and toner conveying screw inside the toner hopper to rotate.
- The toner supply motor/Y, M controls the toner hopper/Y, M. The toner supply motor/C, K controls the toner hopper/C, K.
  The drive within toner hoppers for each color changes following the direction of rotation of the toner supply motor.



[1]	Toner supply motor/Y,M (M9)	[2]	Toner conveying screw/Y
[3]	Toner conveying screw/M	[4]	Toner conveying screw/C
[5]	Toner conveying screw/K	[6]	Toner supply motor/C,K (M7)
[7]	Toner agitating blade/K	[8]	Toner agitating blade/C
[9]	Toner agitating blade/M	[10]	Toner agitating blade/Y

1.6.3 Toner replenishing overview

- The toner replenishing mechanism in this machine 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.
- Only the toner cartridge/K incorporates the auto refining developing system.
- The interior of the toner cartridge/K is packed with both toner and carrier. The developing unit/K is replenished with fresh carrier at the same time of replenishing the toner. Discharging excess carrier in the developing unit/K prevents the carrier that is left in the developing unit/K from deteriorating. Due to this process, stable image quality is maintained for a long time.
- The toner cartridge/Y, M, C is packed only with toner.
- For details of the auto refining developing system, see “ P.1.5.5 Auto refining developing system”.

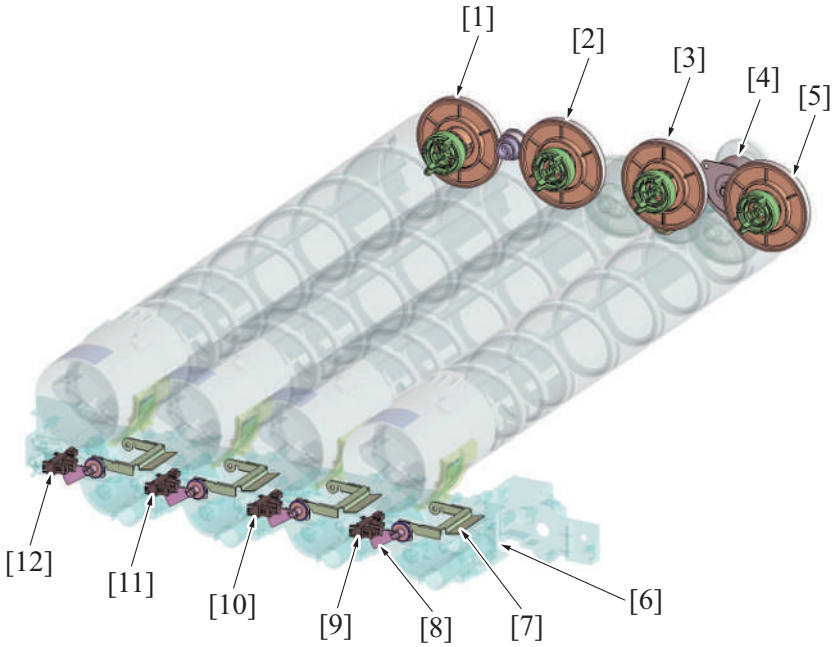


[1]	Toner cartridge	[2]	Toner hopper
[3]	Toner replenishing pipe	-	-

1.6.4 Toner replenishing from toner cartridge 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.
- The output of the toner empty sensor is monitored during the toner supply motor drive.
  A low toner condition is determined when the toner empty sensor is blocked. The toner cartridge motor is driven for a certain amount of time to fill the toner hopper section with toner from the toner cartridge.
- If the toner empty sensor is blocked a predetermined number of times, the machine determines that it is in a near empty condition. So that, the toner cartridge motor is energized and a toner replenishing sequence is started.
- The toner hopper for each color of toner is provided with a toner empty sensor.
- Each toner empty sensor is blocked or unblocked by an actuator dedicated to it. The detection plate is moved up and down by a cam that is mounted coaxially with the toner agitating blade. The actuator that is mounted on the detection plate is operatively associated with the up-and-down movement that is detected using the toner empty sensor.

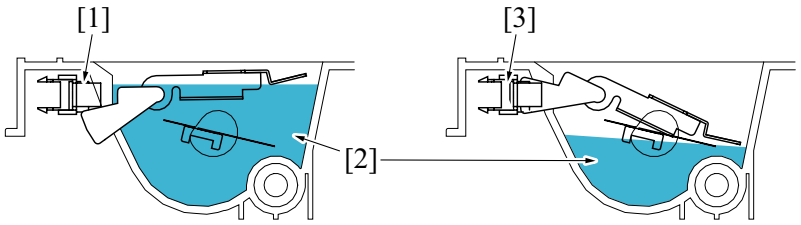


[1]	Toner cartridge drive gear/Y	[2]	Toner cartridge drive gear/M
[3]	Toner cartridge drive gear/C	[4]	Toner cartridge motor (M10)
[5]	Toner cartridge drive gear/K	[6]	Toner hopper
[7]	Detection plate/K	[8]	Actuator/K
[9]	Toner empty sensor/K (PS31)	[10]	Toner empty sensor/C (PS32)
[11]	Toner empty sensor/M (PS33)	[12]	Toner empty sensor/Y (PS34)

(2) Toner replenishing control

- The toner replenishing control is started when the drive of the toner cartridge 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 near 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.

- If the toner empty sensor remains OFF, the machine determines that “toner is still available for use in the toner hopper”, resetting the near empty counter to zero.
- These operations are repeated and, when the near empty counter reaches 4 or more, the machine determines that the toner hopper is in the near empty condition.



[1]	Toner empty sensor: OFF	[2]	Toner
[3]	Toner empty sensor: ON	-	-

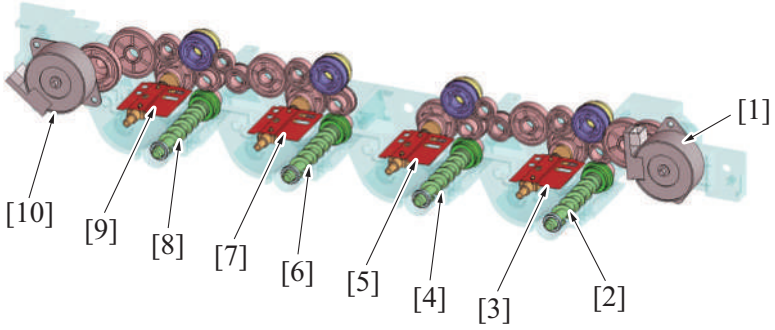
1.6.5 Toner replenishing from toner hopper to developing unit

(1) Toner replenishing 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 for each color of toner 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.
- For details of the TCR sensor, see “ P.1.5.9 Toner density control”.

(2) Toner replenishing mechanism

- Two toner supply motors drive the toner conveying screws and the toner agitating blades provided in the four-color toner hoppers.
- The toner supply motor of each color 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.
- Rotation of the toner supply motor causes the toner agitating blade and toner conveying screw inside the toner hopper to rotate.
- The toner supply motor/Y, M controls the toner hopper/Y, M. The toner supply motor/C, K controls the toner hopper/C, K. The drive within toner hoppers for each color changes following the direction of rotation of the toner supply motor.
- 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.

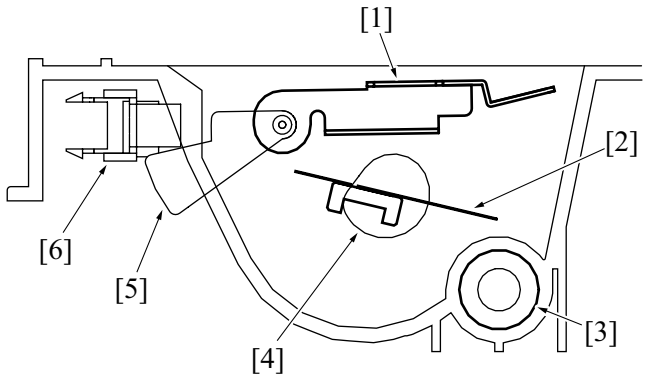


[1]	Toner supply motor/C,K (M7)	[2]	Toner conveying screw/K
[3]	Toner agitating blade/K	[4]	Toner conveying screw/C
[5]	Toner agitating blade/C	[6]	Toner conveying screw/M
[7]	Toner agitating blade/M	[8]	Toner conveying screw/Y
[9]	Toner agitating blade/Y	[10]	Toner supply motor/Y,M (M9)

(3) 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.

*: For details of the toner empty sensor , see “ P.1.6.11 Toner cartridge life detection”.



[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

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) Toner hopper auxiliary toner replenishing control execution 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:
  "The toner cartridge is replaced with a new one after a toner near empty or toner empty condition is detected in the toner cartridge"
  "The toner replenishing menu is manually performed from the Service Mode"

(2) Toner hopper auxiliary toner replenishing control end timing

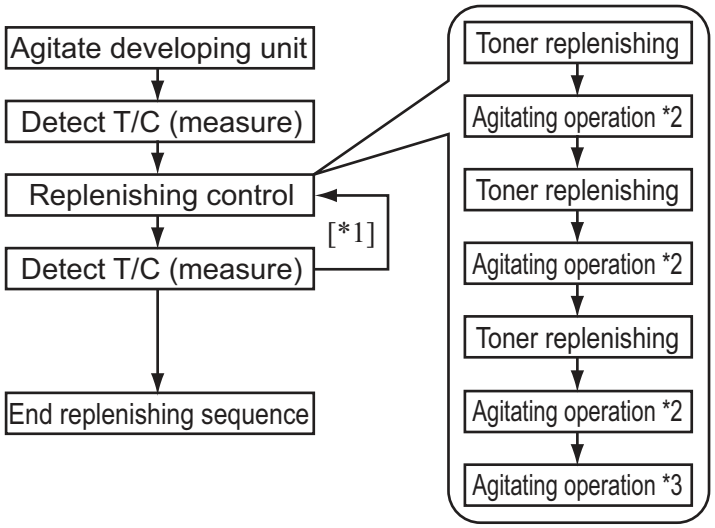
- The auxiliary toner replenishing control is terminated under any of the following conditions:
  "A predetermined period of time elapses after the toner cartridge motor starts rotating"
  "The front door is opened and closed"
  "An error or malfunction occurs"
  "The machine enters the power save or sleep mode"

1.6.7 Auxiliary toner replenishing control for developing unit

- When [Manual Toner Add] in the Service Mode is performed or T/C ratio that is detected by TCR sensor is less than a predetermined value, printing is prohibited and the developing unit is replenished with toner from the toner hopper until the ratio reaches the value. (for a period of about 4 min. maximum)
- 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 for each color, and replenish toner from toner cartridge to the toner hopper are performed.
- The auxiliary toner replenishing control is performed for a maximum of about 4 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

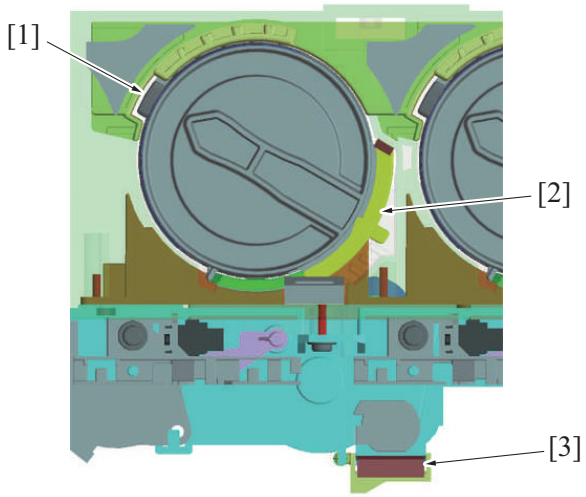
(1) Toner cartridge

(a) Mounting

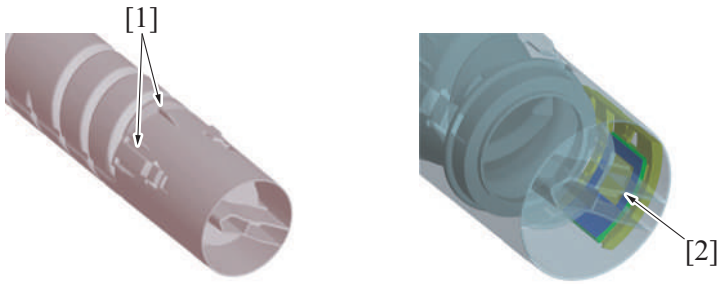
- The shutter of the toner replenishing port is opened when the handle of the toner cartridge is rotated clockwise to the toner replenishing position after the toner cartridge has been inserted into the toner cartridge mounting portion.
- The toner cartridge motor rotates to drive the toner cartridge.
- As the toner cartridge rotates, toner inside the toner cartridge is conveyed toward the toner replenishing port, so that the toner hopper is replenished with toner.

(b) Removal

- The shutter at the toner replenishing port must be closed when the toner cartridge is to be removed.
- Rotating the handle of the toner cartridge counterclockwise to the cartridge removal position closes the shutter of the toner replenishing port. The toner cartridge can be removed when the toner replenishing port of the toner cartridge is closed.



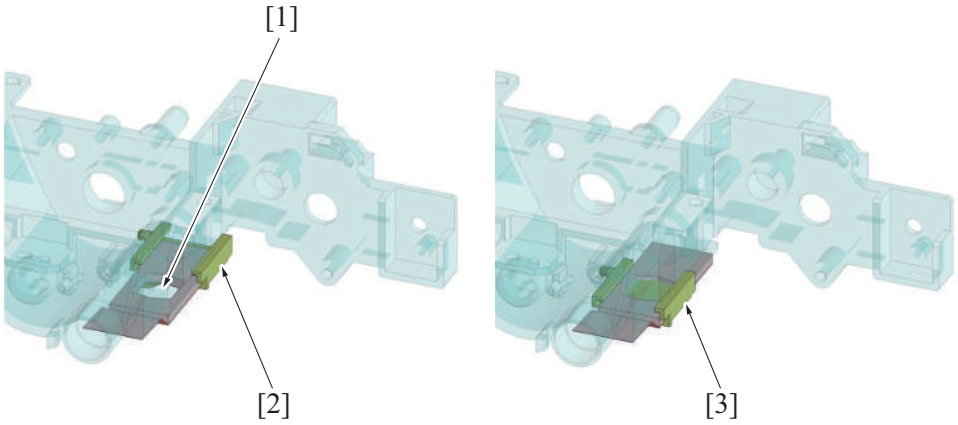
[1]	Toner cartridge positioning protrusion	[2]	Toner cartridge toner spillage prevention shutter
[3]	Toner hopper toner spillage prevention shutter	-	-



[1]	Toner cartridge positioning protrusion	[2]	Toner cartridge toner replenishing port (toner cartridge removal position)

(2) Toner hopper

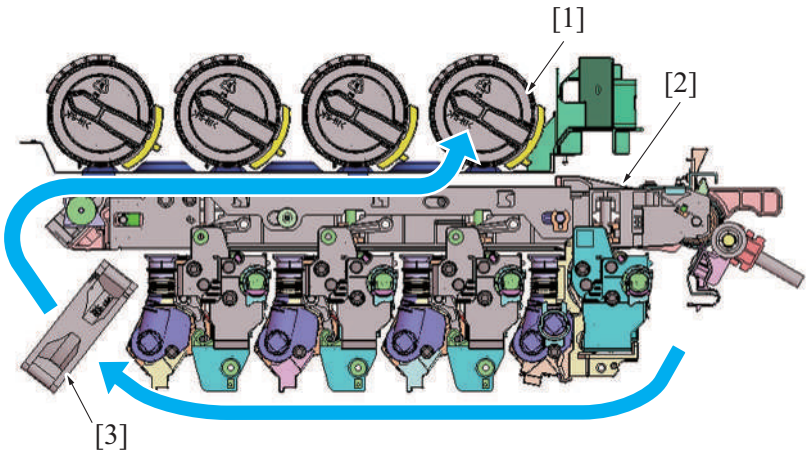
- The toner replenishing port of the toner hopper of each color of toner is provided with a toner spillage prevention shutter that prevents toner from spilling during removal or reinstallation of the developing unit.
- Mounting the developing unit pushes the shutter at the toner replenishing port, opening 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 supply position)
[3]	Toner hopper toner spillage prevention shutter (closed: developing unit removal position)	-	-

1.6.9 Toner cartridge cooling mechanism

- The transfer belt cleaner cooling fan (FM2) is equipped to cool the toner cartridge/K and fusing section.
- Air that was taken from the photo conductor unit or developing unit on the right side of the PH area cools each part.
- 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.



[1]	Toner cartridge/K	[2]	Transfer belt unit
[3]	Transfer belt cleaner cooling fan (FM2)	-	-

1.6.10 Front door mechanism

(1) Front door locking mechanism

- The front door is provided with a locking mechanism.

(a) Unlocking the front door

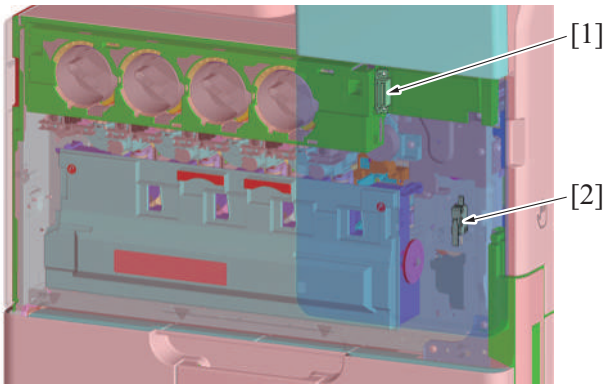
- Pulling the front door to the front will release the door lock magnet that is provided at the upper portion of the front door.

(b) Locking the front door

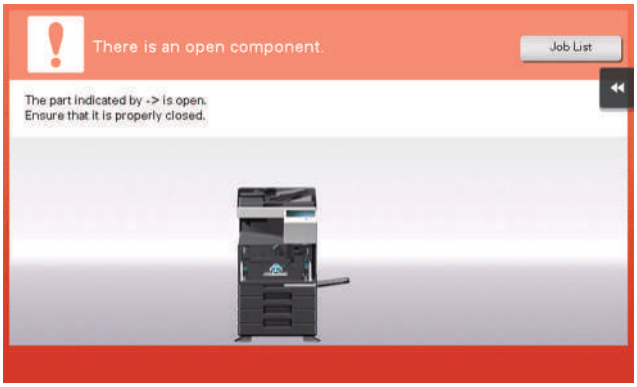
- Close the front door. When the front door is closed in its correct position, the door lock magnet that is provided at the upper portion of the front door locks the front door.
- The front door is provided with a protrusion that detects the correct mounting of the toner cartridge. (No parts to detect a device condition are installed.)
- It prevents operation of the machine, when the toner replenishing shutter of the toner cartridge is closed.

(2) Front door open/close detection mechanism

- The front door switch detects that the front door is opened or closed.
- When the front door is closed, the open/close detection protrusion provided at the upper portion on the left side of the front door presses the actuator of the front door switch. This turns ON the front door switch and the machine determines that the front door is closed.
- When the front door is opened, the front door switch actuator is released, which turns OFF the front door switch. The machine then determines that the front door is open and shows a message that prompts the operator to close the front door.
- When it is determined that the front door is open, use of all jobs but the fax reception job is prohibited. In addition, a paper misfeed results if the front door is opened during a print job.



[1]	Door lock magnet	[2]	Front door switch (SW2)



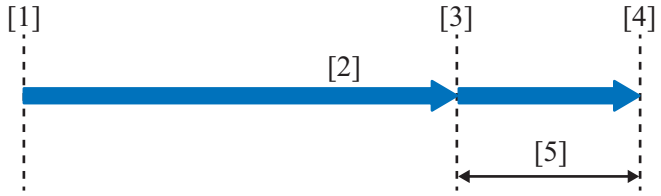
1.6.11 Toner cartridge life detection

NOTE

- **On this machine, "Display" is specified by default for the toner near empty warning display.**
- **The toner empty warning display is set to "Display". This machine stops when toner is empty and prompts the user to replace the toner cartridge.**
  The setting of the toner empty warning display cannot be changed to "Do not display".

(1) Toner cartridge life determination

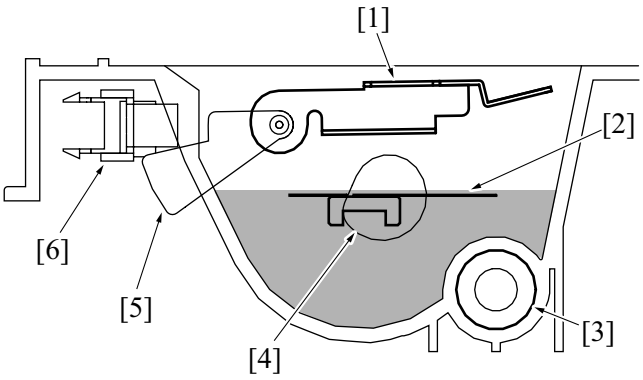
- Toner cartridge life is determined by detecting the life via the empty sensor in the sub hopper. A determination of a transition in the toner cartridge state is made when the near empty counter has reached a threshold.



[1]	New article (starts to be used)	[2]	Image guaranteed range
[3]	Near empty display	[4]	Empty display (life stop)
[5]	Near empty display period	-	-

(2) Toner near empty detection

- The toner empty sensor provided for the toner hopper of each color of toner is used to determine the amount of the remaining toner in the toner hopper.
- The cam that is mounted coaxially with the toner agitating blade moves detection plate up and down depending on the amount of the remaining toner, to thereby allow the toner empty sensor to detect a condition.
- If the near empty counter exceeds 6 during control of replenishing the toner hopper with toner, a toner near empty condition is considered. As a result, it prompts to perform the toner empty control.
- For details of the toner replenishing control, see “ P.1.6.4 Toner replenishing from toner cartridge to toner hopper”.



[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

(a) Toner near empty display

- The warning screen to be displayed when a toner near empty is detected can be enabled or disabled in the “System 2/ Unit Change” in the Service Mode.
- When the warning screen display is set to “Yes”, the message notifying the user that the toner cartridge needs replacing soon is displayed. (Toner is low. Replace when indicated) Printing can be continued even after the message appears.
- When the warning screen display is set to “No”, the message notifying the user that the toner cartridge needs replacing soon is not displayed. Printing can be continued without having the message displayed.

(b) Toner near empty display timing

- By setting the toner near empty display timing, the toner near empty display can be displayed earlier than normal.
  Configure from [Service Mode] -> [System 2] -> [Unit Change] -> [Near Empty Life Display Timing].
- When the setting is [0] (default value), the near empty appears when the toner cartridge usage reaches approximately 95%.

NOTICE

- Setting the near empty display timing to [+25] causes the near empty to appear when the toner cartridge usage reaches approximately 70%.

(3) Toner empty detection

- The machine determines a toner empty condition when any of the following conditions is detected after a toner near empty condition has been detected. It then gives the message “Toner has been depleted. (snip)” on the control panel.
  - The rotation time of the toner supply motor (amount of toner replenished) exceeds the predetermined value.
    Note, however, that the cumulative rotation time of the toner supply motor is reset to zero, if the event that “the toner hopper runs out of toner (or there is only a small amount of toner left in the toner hopper)” is not detected by the toner empty sensor within a predetermined period of time after the toner near empty condition has been detected.
  - The TCR sensor detects a T/C ratio that is lower than a predetermined value.

(a) Toner empty display

- The screen mode to be displayed when a toner empty is detected can be selected by specifying the person who replaces the unit in the “System 2/ Unit Change” in the Service Mode.
- When User is selected as the person, the message requesting toner cartridge replacement by user is displayed when a toner empty condition is detected. (Toner has been depleted. Replace the toner cartridge.)
- When Service is selected as the person, the message prompting service engineer to replace the toner cartridge is displayed. (Out of toner. Contact your service representative.)

(4) Resetting the toner near empty and toner empty conditions

- Either the “auxiliary toner replenishing control for toner hopper” or “auxiliary toner replenishing control for developing unit” is performed (both may be performed in some cases) after a toner near empty condition and a toner empty condition have been detected.
- 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”.
- See the relevant pages for more details 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	Control to be executed	Printing after the end of the control

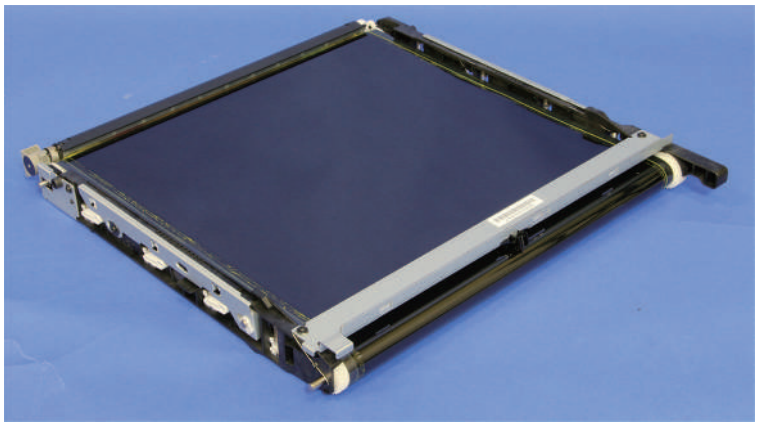
	Developing unit	Toner hopper		
Near empty	Available	Decreasing	Auxiliary toner replenishing control for toner hopper	Empty display is reset if the amount of toner in the toner hopper is recovered.
Empty 1	Available	Not available		Empty display stays put if the amount of toner in the toner hopper is not recovered.
Empty 2	Not available	Not available	Auxiliary toner replenishing control for toner hopper + auxiliary toner replenishing control for developing unit	Empty display is reset if the T/C ratio is recovered.
				Empty display stays put if the T/C ratio is not recovered.

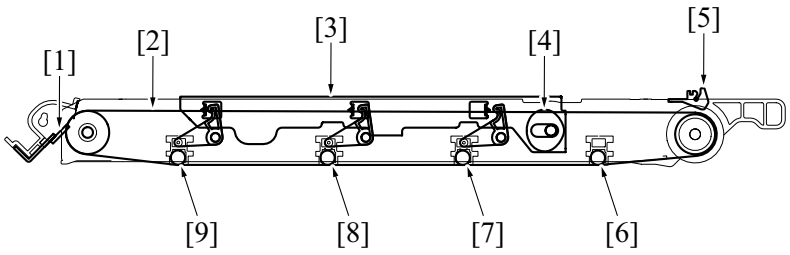
Toner empty condition resetting timing

- 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” “The front door or the like is opened and closed”

1.7 1ST TRANSFER SECTION

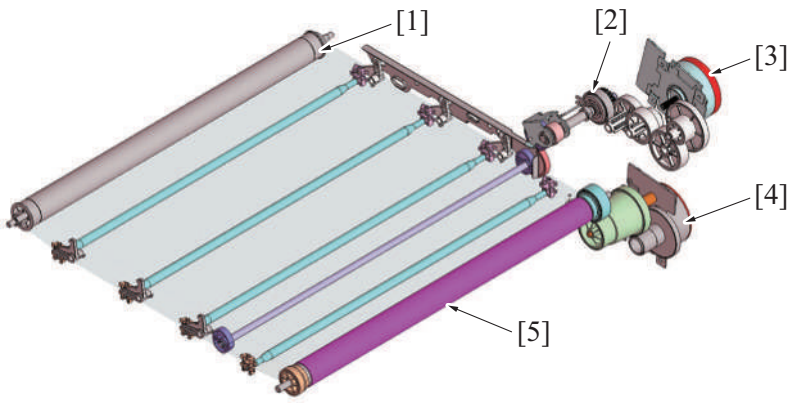
1.7.1 Configuration





[1]	Cleaning blade	[2]	Transfer belt
[3]	1st transfer roller pressure mechanism	[4]	1st transfer roller pressure cam
[5]	Separation claw	[6]	1st transfer roller/K
[7]	1st transfer roller/C	[8]	1st transfer roller/M
[9]	1st transfer roller/Y	-	-

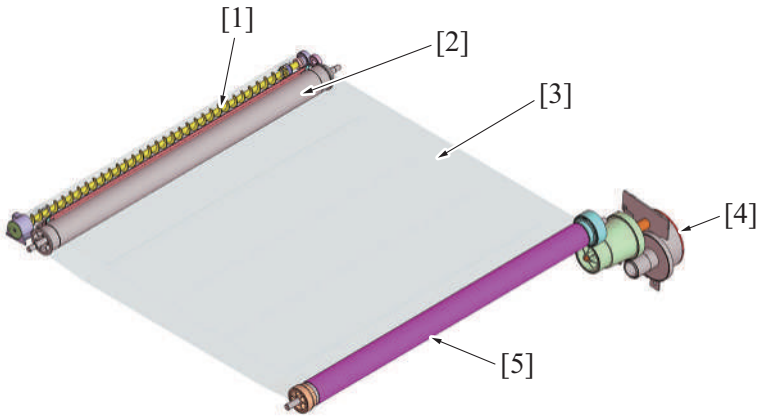
1.7.2 Drive



[1]	Transfer belt driven roller	[2]	1st transfer pressure clutch (CL5)
[3]	Fusing motor (M3)	[4]	Transport motor (M1)
[5]	Transfer belt drive roller	-	-

1.7.3 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.



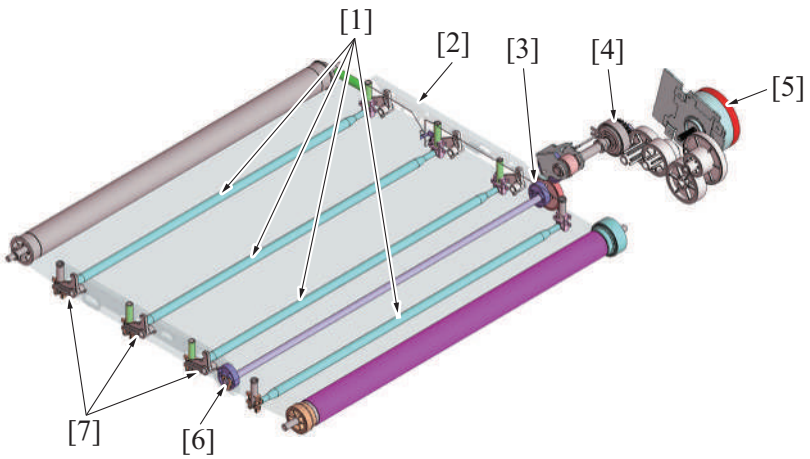
[1]	Waste toner conveying screw	[2]	Transfer belt driven roller
[3]	Transfer belt	[4]	Transport motor (M1)
[5]	Transfer belt drive roller	-	-

1.7.4 1st transfer roller control

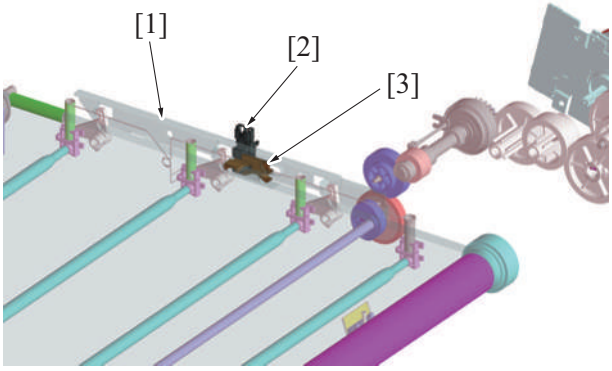
- Pressure mechanism is equipped for pressing the 1st transfer rollers (Y, M, C) to inside the transfer belt at the 1st transfer.
- The 1st transfer roller (K) does not have pressure retraction mechanism. The 1st transfer roller (K) always presses the transfer belt to the PC drum (K).
- The driving force of the fusing motor is transmitted to the fusing drive gear and transfer belt retraction clutch, thereby pressing the 1st transfer roller.

(1) 1st transfer roller pressure

- Rotation of the fusing motor is transmitted to the transfer belt retraction clutch via the fusing drive gear.
- When the 1st transfer pressure clutch is turned ON, the rotation of the fusing motor is transmitted to the drive gear.
- Rotation of the drive gear rotates the pressure cam, so that the position of contact between the slide plate and the cam is varied.
- The 1st transfer roller pressure spring provided for the slide plate causes the slide plate to move to the pressure position. (Toward the transfer belt driven roller side.)
- The movement of the slide plate results in the 1st transfer roller drive arm being rotated. The rotation of the 1st transfer roller drive arm lowers the 1st transfer roller (Y, M, C), so that the transfer belt is pressed against the PC drum.
- When the slide plate moves to the pressure position, the leading edge of the slide plate pushes the actuator of the 1st transfer pressure sensor.
- The actuator blocks the 1st transfer pressure sensor and the slide plate movement is detected.
- The 1st transfer pressure clutch is turned OFF.
- The cam will stop rotating and the siding plate will stop.
- The 1st transfer roller (Y, M, and C) will stay being pressed.



[1]	1st transfer roller/Y,M,C,K	[2]	Slide plate
[3]	Pressure cam	[4]	1st transfer pressure clutch (CL5)
[5]	Fusing motor (M3)	[6]	Pressure cam
[7]	1st transfer roller drive arm/Y,M,C	-	-



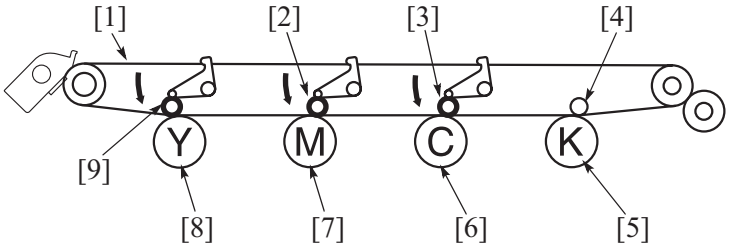
[1]	Slide plate	[2]	1st transfer pressure sensor (PS39)
[3]	Actuator	-	-

1.7.5 Pressure/retraction control by print mode

- To extend the service life of the PC drum/Y, M, C, the transfer belt is retracted from the color PC drum in the black mode.
- In the black mode, the 1st transfer roller/Y, M, C is retracted and the color drum unit and color developing unit are stopped.
- The 1st transfer roller/K is pressed against the PC drum/K at all times in both black and color modes.

(1) Color mode

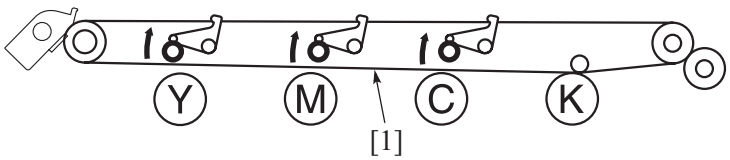
- In the color mode, the 1st transfer roller is where the PC drum is pressed against the transfer belt for all four colors of toner.



[1]	Transfer belt	[2]	1st transfer roller/M
[3]	1st transfer roller/C	[4]	1st transfer roller/K
[5]	Photo conductor/K	[6]	Photo conductor/C
[7]	Photo conductor/M	[8]	Photo conductor/Y
[9]	1st transfer roller/Y	-	-

(2) Black mode

- In the black mode, the 1st transfer roller/Y, M, C is where the PC drum/Y, M, C leaves the transfer belt, while the 1st transfer roller/K is where the PC drum/K is pressed against the transfer belt. This allows the PC drum/Y, M, C to stop rotating in this mode.



[1]	Transfer belt (retraction position)	-	-

(3) ACS mode

(a) ACS mode overview

- When making a copy, any desired copy mode can be selected from the control panel.
  (The default setting is the “auto color mode”.)
  The auto color mode is called the ACS (auto color selection) mode. (In PC print job, auto color as the setting item in the printer driver corresponds to the ACS.)
- In ACS mode, the machine analyzes the image data of the original scanned by the “scanner section” to determine whether the image data is colored or in black.
- Determining that it is a color original, the machine presses the 1st transfer roller and runs a color print job.
- Determining that it is a black original, the machine retracts the 1st transfer roller and runs a black print job.

(b) Control of 1st transfer roller in ACS mode

- The number of sheets of continuous series of black originals is counted when color originals are changed to black originals.
- Pressure of the 1st transfer roller is controlled according to the number of sheets of continuous series of black originals during a multi-print cycle, thereby achieving both high print productivity and extended service life of consumables.
- “Control of 1st transfer roller in ACS mode” is executed only when a copy is made with “Auto Color” selected from the control panel. It is not executed when “Full Color”, “Black”, “2 Color”, or “Single Color” is selected.
- The control is executed, for “PC print”, only if the print cycle is run with “Auto Color” selected from the printer driver screen. It is not executed when “Full Color” or “Grayscale” is selected.
- The 1st transfer roller/Y,M,C is in the pressed position (color mode) in its initial state.

NOTE

- **The control of 1st transfer roller in the ACS mode is enabled only after the number of sheets of continuous series of black originals has been counted. It is therefore not an effective control for a copy print job involving only one copy set/stack. The control is effectively operable for the following print jobs: Since on the first copy, the control can be performed only for where the original is read and counted.**
  “Copy print of the second copy set/stack and onward”
  “Copy print from a registered job”
  “PC print job”

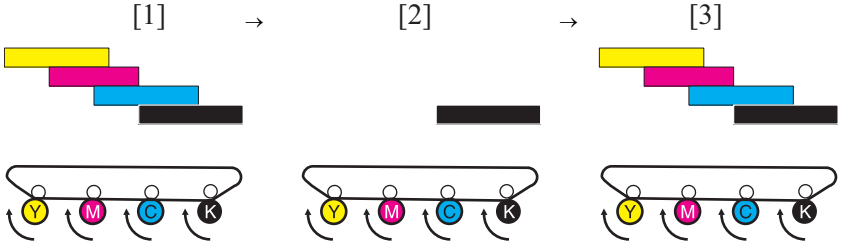
(c) When the number of multi-copies is as specified or under

- ACS control starts counting the number of multi-copies of the black original when switched from the color original to the black original.
- The black printing will start with color mode. (with the 1st transfer roller/Y,M,C being pressed) Developing or transfer does not take place with the imaging unit/Y,M,C. However, since the transfer belt is pressed, the PC drum and the developing roller rotats as the transfer belt rotates. An advantage during pressure the 1st transfer roller/Y,M,C is that the loss time related to print productivity that generates due to retraction of the 1st transfer roller can be reduced.

(d) When the number of multi-copies is as specified or over

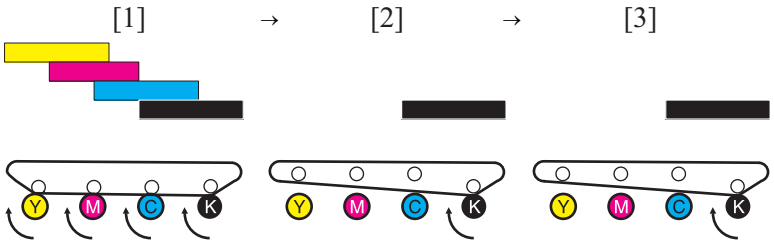
- The black printing will start when the color mode is complete and the 1st transfer roller/Y,M,C is retracted to be switched to the black mode. The benefit of this retraction time is the reduction of needless consumption of the imaging unit/Y, M, C due to rotation.

When printing in black with color mode (effecting black printing with the four PC drums rotating)



[1]	Color mode	[2]	Color mode
[3]	Color mode	-	-

Printing after switched to black mode



[1]	Color mode	[2]	Black mode
[3]	Black mode	-	-

(e) Black original specified values

- Number of multiple black originals during plain paper printing

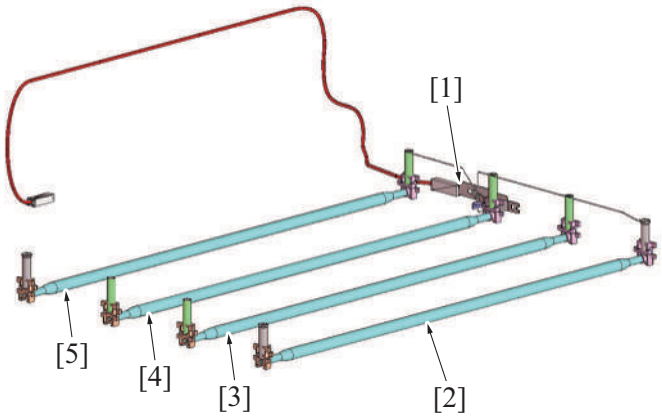
Paper length	Black printing in color mode	Black printing after switched to black mode
216 mm or less	4 sheets or less	5 sheets or more
Over 216 mm and up to 297 mm	2 sheets or less	3 sheets or more
Over 297 mm and up to 381 mm	2 sheets or less	3 sheets or more
Over 381 mm and up to 432 mm	2 sheets or less	3 sheets or more
Over 432 mm and up to 457 mm	2 sheets or less	3 sheets or more
Over 457 mm	Switched to black mode	

(4) ACS mode control change with the Engine FW DipSW

- By changing the Engine FW DipSW “25” setting from “OFF (default)” to “ON”, you can change the pressure control of the 1st transfer rollers on the ACS mode. Refer to “choice of ACS parameter”
- When “OFF” is selected, productivity has the priority and printing is conducted with the transfer belt being pressed onto the color photo conductors even when the specified quantity of black printing is included.
- When “ON“ is selected, black printing quantity threshold until switching to K press (release of color photo conductors) becomes smaller.
- This setting is to be used when the degradation control of the color photo conductors should have priority over printing productivity.

1.7.6 1st transfer control

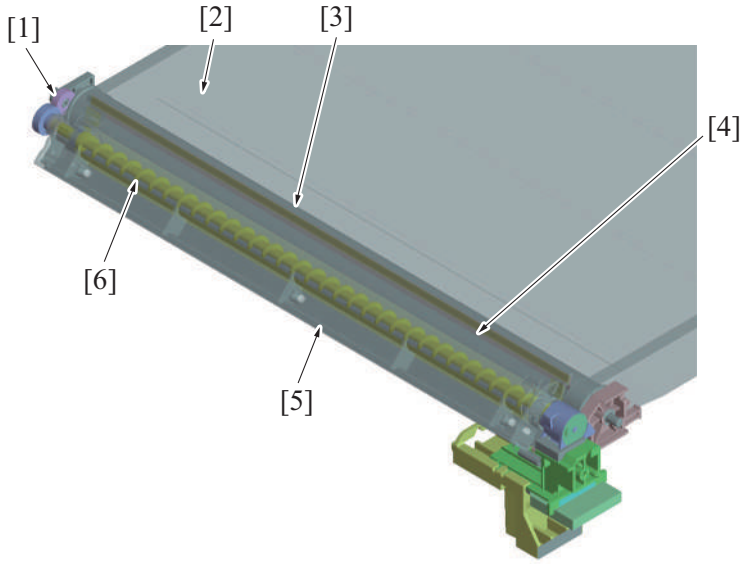
- To transfer the toner image that is formed on the surface of the PC drum onto the transfer belt, the transfer voltage that the high voltage unit supplies is applied to the 1st transfer roller of each color.



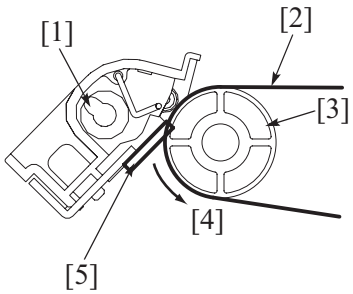
[1]	1st transfer current application terminal	[2]	1st transfer roller/K
[3]	1st transfer roller/C	[4]	1st transfer roller/M
[5]	1st transfer roller/Y	-	-

1.7.7 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



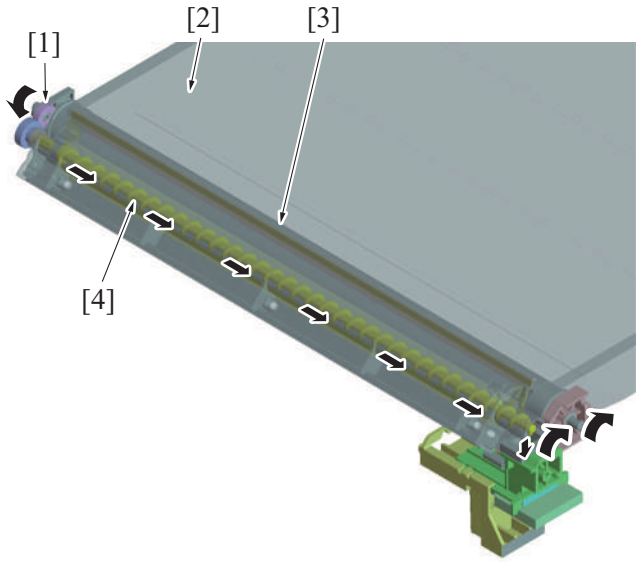
[1]	Toner collecting screw	[2]	Transfer belt
[3]	Transfer belt driven roller	[4]	Transfer belt rotative direction (forward rotation)
[5]	Cleaning blade	-	-

(1) Cleaning blade

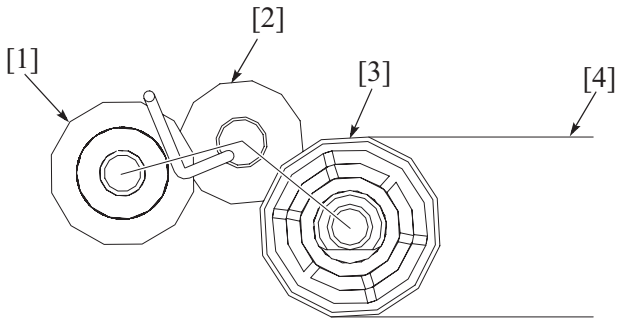
- The cleaning blade, of a fixed blade type, is pressed up against the surface of the transfer belt at all times. No cleaning blade retraction mechanism is provided.
- The waste toner on the surface of the transfer belt is scraped off as the transfer belt is rotated.

(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.
- The waste toner is disposed of when a waste toner box which is detected to be full of waste toner is replaced with a new one and the used waste toner box is discarded.



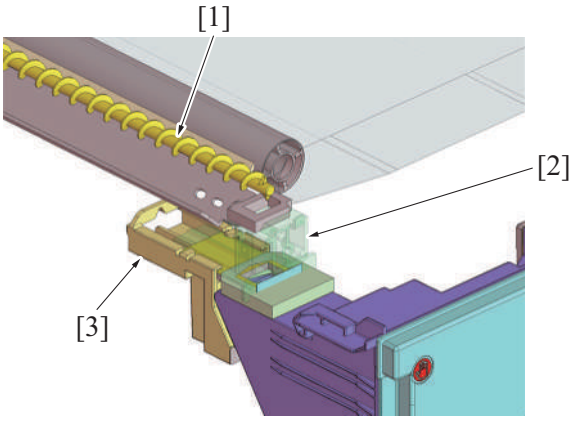
[1]	Drive connecting gear	[2]	Transfer belt
[3]	Transfer belt driven roller	[4]	Toner collecting screw



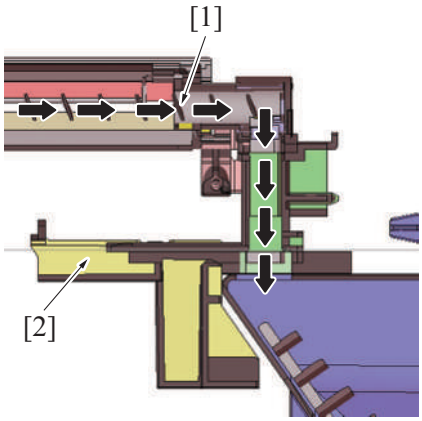
[1]	Toner collecting screw	[2]	Drive connecting gear
[3]	Transfer belt driven roller	[4]	Transfer belt

1.7.8 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	-	-



[1]	Toner collecting screw	[2]	Shutter (open)

1.7.9 Transfer belt 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) Air flow path

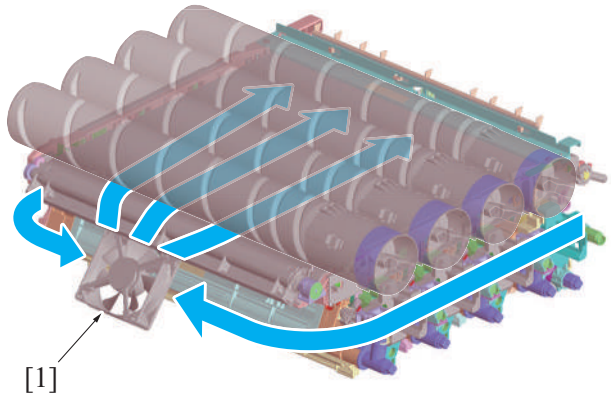
- Air around the developing unit and drum unit is drawn in.
- The air drawn in flows between the toner cartridge and the transfer belt unit and is blown against the toner cartridge/K.

(2) Transfer belt cleaner cooling fan rotation start timing

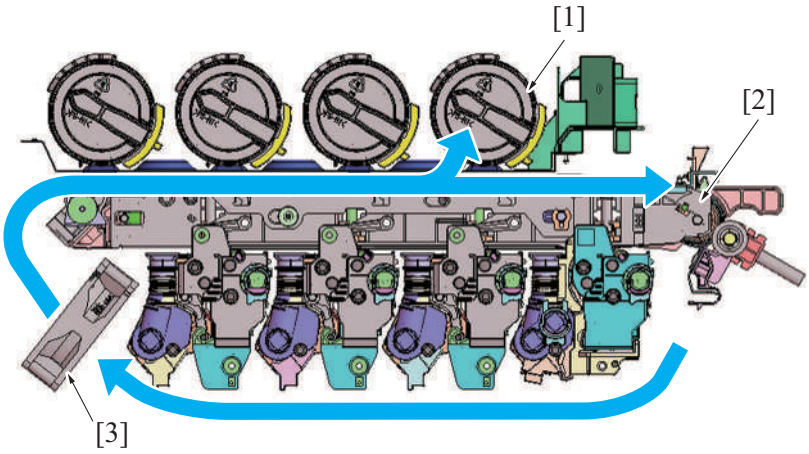
- The transfer belt cleaner cooling fan rotates at full speed under any of the following conditions:
  “During a print cycle”
  “During predrive after the power is turned ON”
  “During execution of image stabilization control”

(3) Transfer belt cleaner cooling fan rotation stop timing

- The transfer belt cleaner cooling fan stops rotating under any of the following conditions:
  “Upon completion of a print cycle”
  “Upon completion of predrive performed when the power is turned ON”
  “Upon completion of image stabilization control”



[1]	Transfer belt cleaner cooling fan (FM2)	-	-



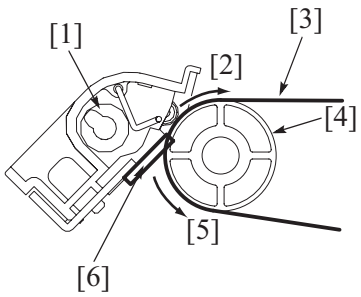
[1]	Toner cartridge/K	[2]	Transfer belt unit
[3]	Transfer belt cleaner cooling fan (FM2)	-	-

1.7.10 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.

(1) Operation timing

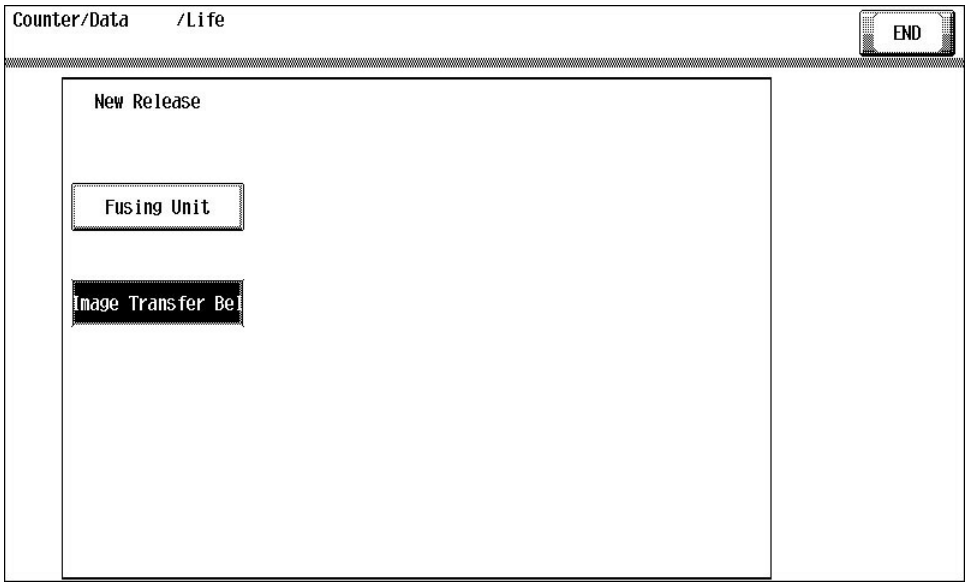
- Backward rotation control is performed at the end of a print job following the lapse of a predetermined period of rotation time. If a predetermined temperature is not reached, the backward rotation control is performed by interrupting the job each lapse of a predetermined period of rotation time.



[1]	Toner collecting screw	[2]	Backward rotation
[3]	Transfer belt	[4]	Transfer belt driven roller
[5]	Forward rotation	[6]	Cleaning blade

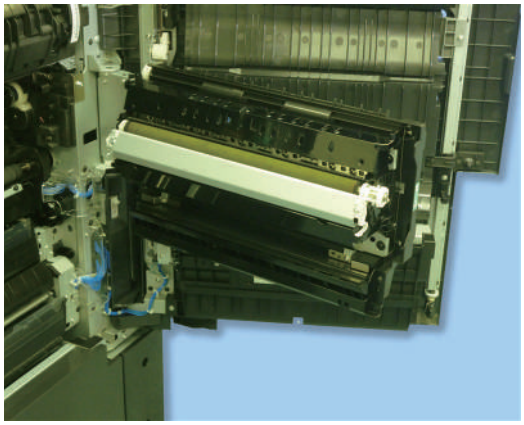
1.7.11 Transfer belt new article detection

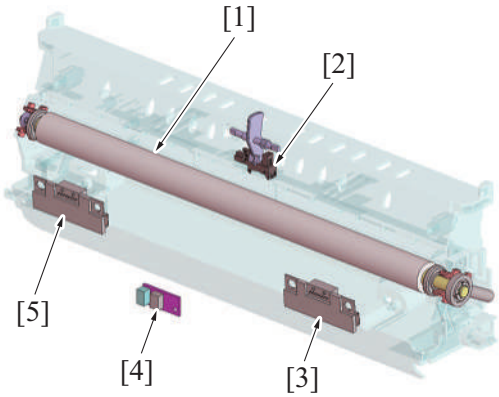
- The transfer belt unit is not provided with any new article detection mechanism. If the transfer belt is replaced with a new one, therefore, “New Release” must be performed in “Counter/ Life” of the Service Mode. For detailed operating procedures, see “Life”.



1.8 2ND TRANSFER SECTION

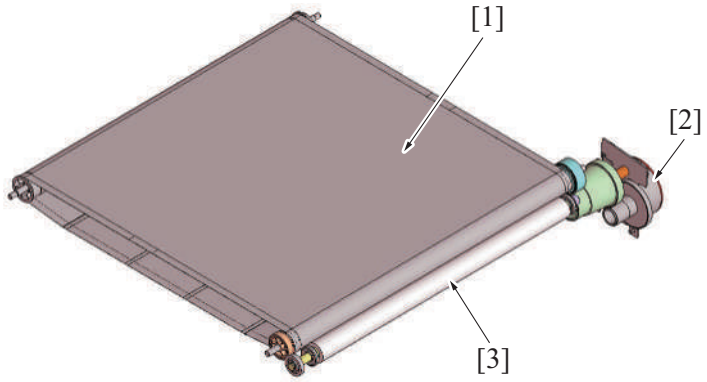
1.8.1 Configuration





[1]	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)	-	-

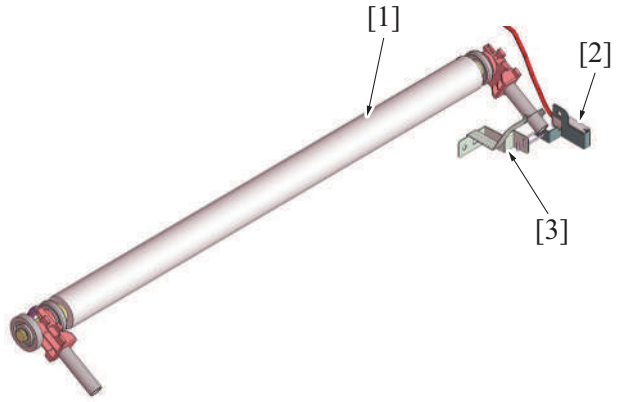
1.8.2 Drive



[1]	Transfer belt	[2]	Transport motor (M1)
[3]	Transfer roller	-	-

1.8.3 2nd transfer control

- To transfer the toner image that is formed on the transfer belt onto the paper, the 2nd transfer voltage that the high voltage unit supplies is applied to the transfer roller.
- Resistance of the transfer roller changes with an environmental change, durability, and other factors. To maintain an optimum output voltage, fixed current is passed through the 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”, “color mode or black mode”, and “1-sided/2-sided”.



[1]	Transfer roller	[2]	2nd transfer voltage conductive plate
[3]	2nd transfer voltage application terminal	-	-

(1) 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."

(2) 2nd transfer control during image stabilization control

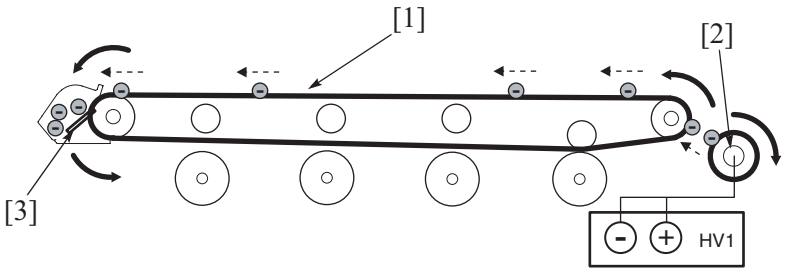
- In this machine, the transfer roller does not have a retraction mechanism, so that the transfer belt and transfer roller are pressed up against each other at all times.
- During image stabilization control, a toner image for adjustment purpose is formed on the surface of the transfer belt. A negative voltage is therefore applied to the transfer roller during image stabilization control. The amount of toner sticking to the transfer roller is thereby reduced.

1.8.4 Control of toner application to transfer roller

- In this machine, the transfer roller does not have a retraction mechanism, so that the transfer belt and transfer roller are pressed up against each other constantly.
- After the newly replaced transfer roller is left to stand idle for a long time, substance that is 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 that is contained in the transfer roller from sticking to the transfer belt, Y toner is applied to the surface of a new transfer roller at the replacement. (The Y toner image that corresponds to two complete revolutions of the transfer roller is formed on the surface of the transfer belt and is then transferred onto the surface of the transfer roller.)
- The Y toner that is less noticeable is used for the toner to be applied, in consideration of back marking.

1.8.5 Transfer roller cleaning

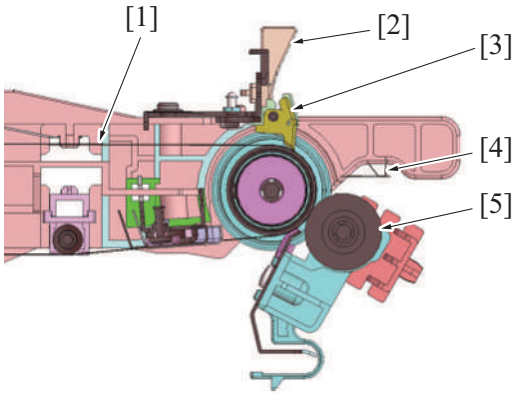
- In order to remove the remaining toner on the transfer roller, -/+ (DC) charge is applied alternately to transfer the remaining toner on the transfer roller to the transfer belt. (The number of times that electrical charge is applied to the transfer roller is different depending on each situation.)
- The cleaning blade then scrapes off the toner on the surface of the transfer belt.



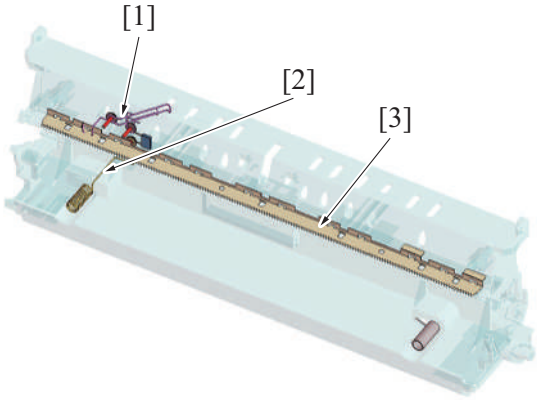
[1]	Transfer belt	[2]	Transfer roller
[3]	Cleaning blade	-	-

1.8.6 Charge neutralization and separation of paper

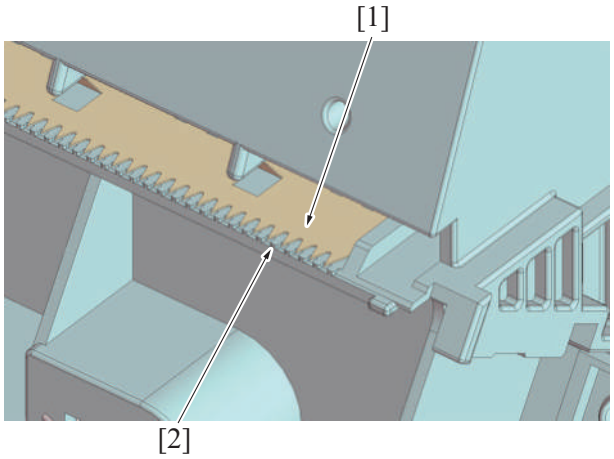
- To neutralize any residual potential on the paper which has undergone the 2nd transfer process, there is a charge neutralizing needle mounted on the guide plate after the transfer roller. There is a resin guide that prevents the electrode from directly contacting the paper.
- The residual potential 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.)



[1]	Transfer belt	[2]	Paper winding prevention guide
[3]	Separation claw	[4]	Charge neutralizing needle
[5]	Transfer roller	-	-



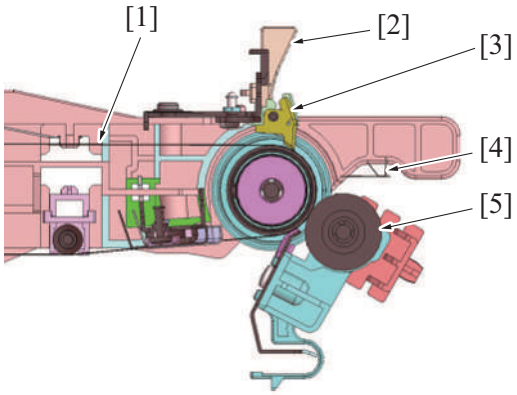
[1]	Charge neutralizing needle conductive plate (ground)	[2]	Transfer paper guide conductive plate (ground)
[3]	Charge neutralizing needle	-	-



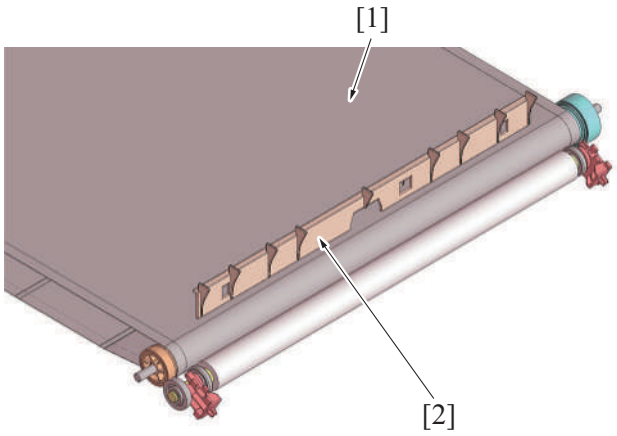
[1]	Charge neutralizing needle	[2]	Resin guide

1.8.7 Paper winding prevention guide

- 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]	Transfer belt	[2]	Paper winding prevention guide
[3]	Separation claw	[4]	Charge neutralizing needle
[5]	Transfer roller	-	-



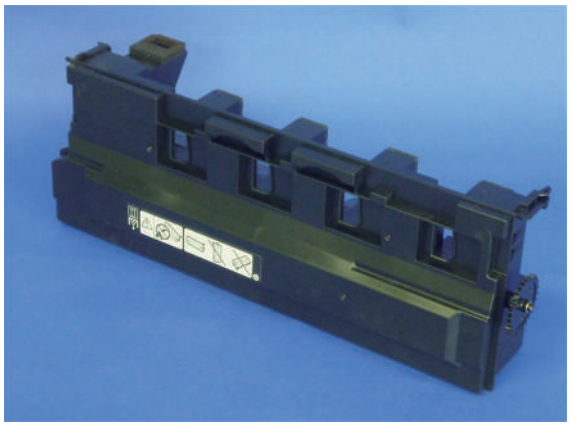
[1]	Transfer belt	[2]	Paper winding prevention guide

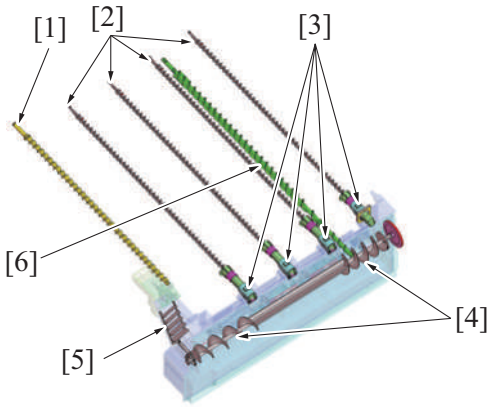
1.8.8 Transfer roller new article detection

- The transfer roller is not provided with any new article detection mechanism. If the transfer roller is replaced with a new one, therefore, “New Release” must be performed of the “Transfer Belt Unit” in “Counter/ Life” of the Service Mode. Performing “New Release” of the “Transfer Belt Unit” in life counter of the Service Mode will also reset the life counter of the transfer roller to zero.

1.9 TONER COLLECTING SECTION

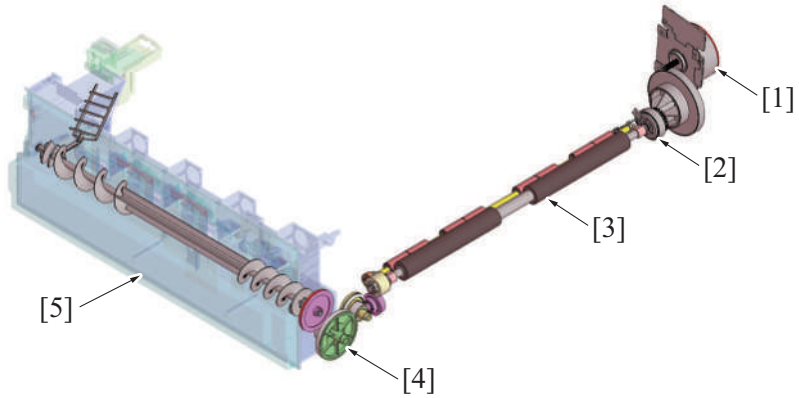
1.9.1 Configuration





[1]	Toner collecting screw (Transfer belt section)	[2]	Toner collecting screw (Imaging unit/Y,M,C, dram unit/K)
[3]	Toner collecting port (Imaging unit/Y,M,C, dram unit/K)	[4]	Toner collecting screw (Waste toner box)
[5]	Toner agitating blade	[6]	Toner supply screw (Developing unit/K)

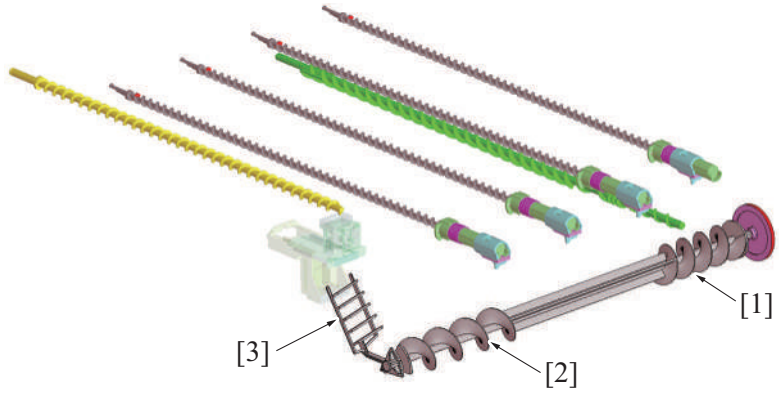
1.9.2 Drive



[1]	Transport motor (M1)	[2]	Registration clutch (CL4)
[3]	Registration roller	[4]	Waste toner box drive gear
[5]	Waste toner box	-	-

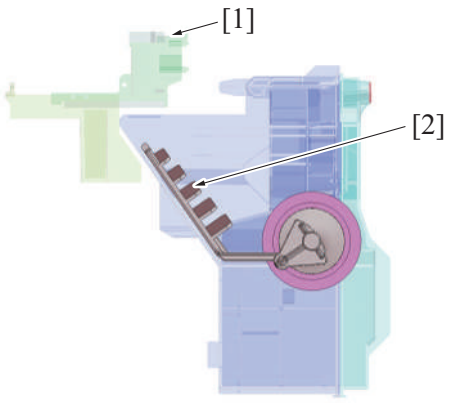
1.9.3 Control of waste toner conveyance through waste toner box

- Waste toner in the transfer belt unit and drum units, and excess toner in the developing unit/K are conveyed onto the waste toner box by the toner collecting screw.
- The waste toner collecting port is provided with a toner agitating blade that prevents toner from stagnating.
- The toner agitating blade is moved up and down as the toner collecting screw rotates. * The toner collecting port for the developing unit is not provided with any toner agitating blade.
- Toner collecting screw 1 and toner collecting screw 2 (dedicated to the transfer belt toner collecting port) are installed in the waste toner box.
- The screws provided on toner collecting screw 1 function to convey waste toner stagnant in the box uniformly onto the central portion of the box.
- Toner collecting screw 2 functions to convey toner conveyed from the transfer belt unit uniformly onto the central portion of the box.
- There is a detection window for detecting a waste toner full condition provided at the central portion of the box. When the waste toner conveyed onto the central portion of the box exceeds a predetermined height, waste toner spills over the waste toner full condition detection section. For details, see “ P.1.9.5 Waste toner box full detection”.

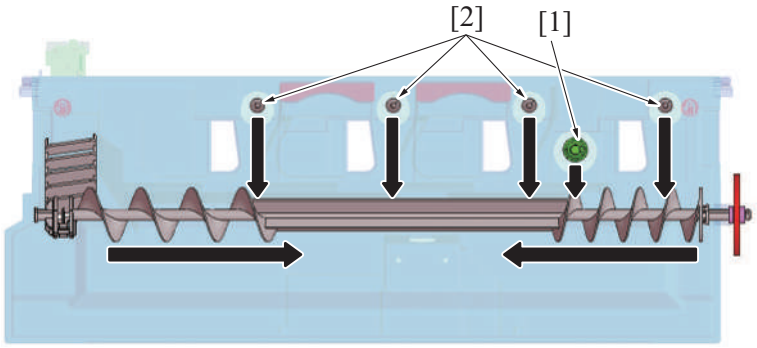


[1]	Toner collecting screw 1 (Waste toner box)	[2]	Toner collecting screw 2 (dedicated to the transfer belt toner collecting port)

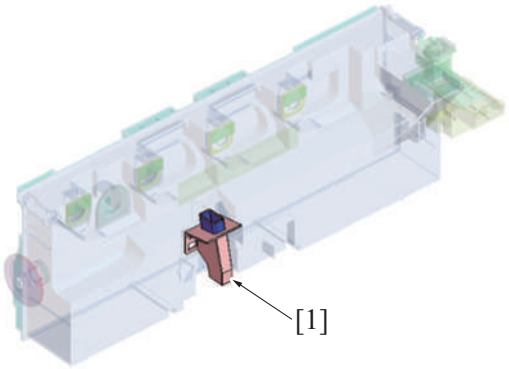
[3]	Toner agitating blade	-	-



[1]	Toner collecting port (Transfer belt unit)	[2]	Toner agitating blade



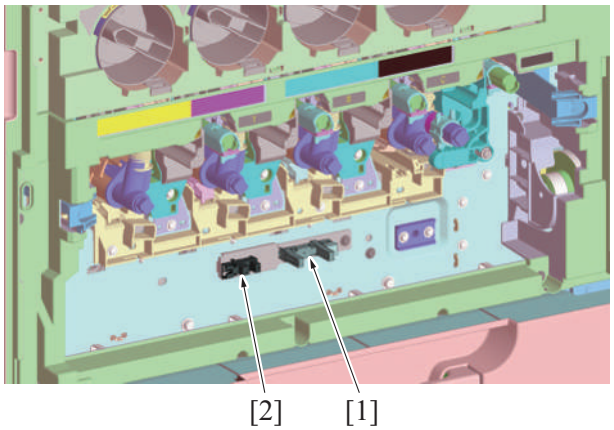
[1]	Toner collecting port (Developing unit/K)	[2]	Toner collecting port (Imaging unit/Y,M,C, dram unit/K)



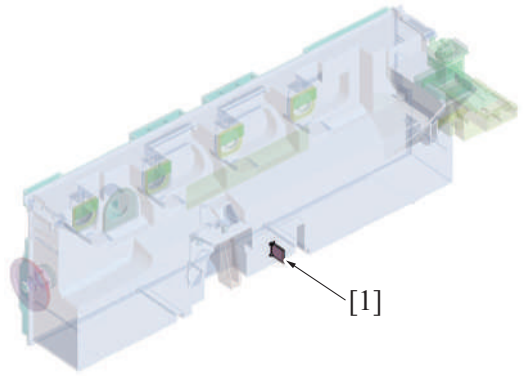
[1]	Waste toner full condition detection window	-	-

1.9.4 Waste toner box-in-position detection

- The waste toner box set sensor provided on the front side board 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 removed, the waste toner box set sensor is unblocked, which causes the machine to determine that the waste toner box is yet to be mounted.
- The machine, on determining that the waste toner box is yet to be mounted in place, prohibits initiation of a new print cycle.
- When the waste toner box is mounted, the waste toner box set sensor is blocked, which causes the machine to determine that the waste toner box is mounted in place.
- The machine, on determining that the waste toner box is mounted in place, resets the waste toner box yet-to-be-mounted display, enabling initiation of a new print cycle.



[1]	Waste toner full sensor (PS101)	[2]	Waste toner box set sensor (PS100)



[1]	Waste toner box detection plate	-	-

- The waste toner box detection control is performed under any of the following conditions:
  “The power switch is turned ON”
  “The front door or right door is closed”

1.9.5 Waste toner box full detection

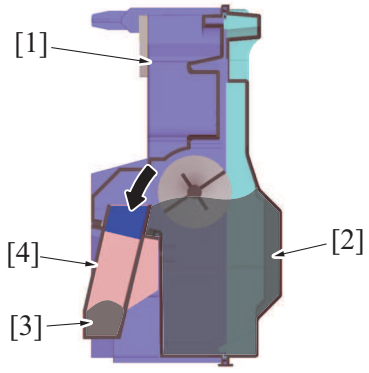
- The waste toner full sensor provided on the front side board is used to determine the amount of waste toner accumulated in the waste toner box.

(1) Waste toner near-full

- The toner collecting screw provided in the waste toner box conveys waste toner in the box onto the central portion of the box. For details, see “ P.1.9.3 Control of waste toner conveyance through waste toner box”.
- A detection window for detecting a waste toner full condition is equipped at the central portion of the waste toner box. When the waste toner conveyed onto the central portion of the box exceeds a predetermined height, waste toner spills over the waste toner full condition detection section.
- The waste toner near-full condition is determined when the waste toner accumulated in the waste toner full condition detection section blocks the waste toner full sensor for a predetermined time or longer and a predetermined number of paper are printed.

(a) 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”



[1]	Waste toner box	[2]	Waste toner

[3]	Waste toner	[4]	Waste toner full condition detection window

(2) Waste toner full condition

- When a waste toner near-full condition is detected, 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 full condition.

(a) 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.”
  “The waste toner full sensor detects a waste toner near-full condition.”
  “During a print cycle”
  “During execution of image stabilization control”

1.9.6 Waste toner box new article detection

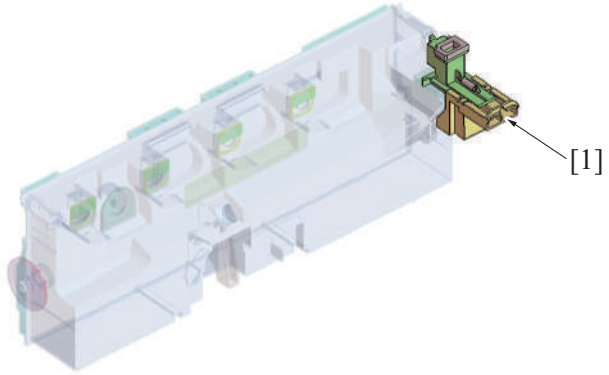
- The waste toner box is not provided with any new article detection mechanism. Detection made by the waste toner full sensor is used for detecting a new waste toner box.
- Replace the waste toner box with a new one after the waste toner near full and waste toner full appear. When the waste toner full 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.

(1) 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 power switch is turned ON”
  “The front door is closed”

1.9.7 Waste toner spillage prevention shutter

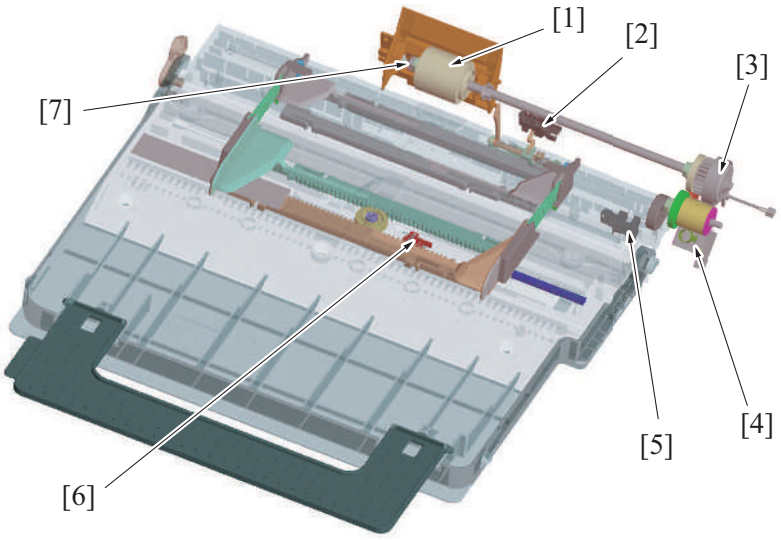
- The toner collecting port for the transfer belt unit is provided with a waste toner spillage prevention shutter that prevents waste toner that is transported from the transfer belt from spilling during removal or reinstallation of the waste toner box.
- Inserting the waste toner box into its mounting 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]	Toner collecting port	-	-

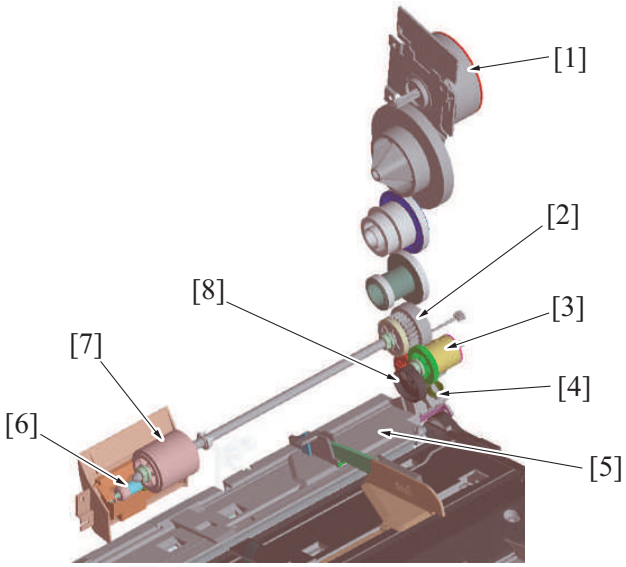
1.10 PAPER FEED SECTION (MANUAL BYPASS TRAY)

1.10.1 Configuration



[1]	Manual bypass tray feed roller	[2]	Bypass paper empty sensor (PS27)
[3]	Bypass paper feed clutch (CL7)	[4]	Bypass pick-up solenoid (SD1)
[5]	Bypass lift-up position sensor (PS26)	[6]	Bypass CD paper size VR (VR1)
[7]	Manual bypass tray separation roller	-	

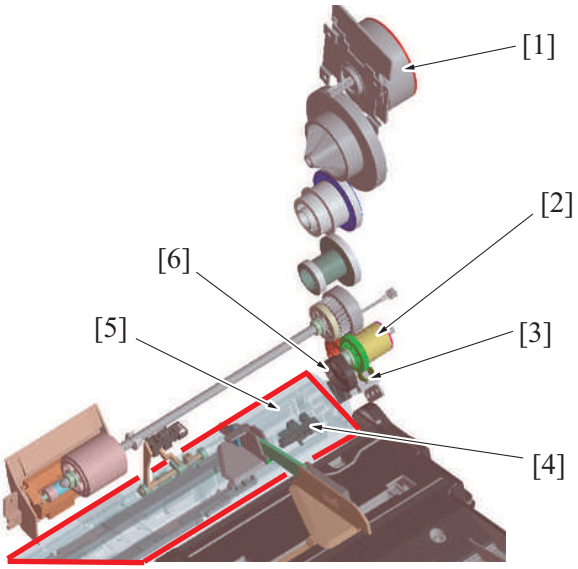
1.10.2 Drive



[1]	Transport motor (M1)	[2]	Bypass paper feed clutch (CL7)
[3]	Paper lift-up plate clutch (mechanical)	[4]	Bypass pick-up solenoid (SD1)
[5]	Paper lift-up plate	[6]	Manual bypass tray separation roller
[7]	Manual bypass tray feed roller	[8]	Paper lift-up cam

1.10.3 Up/down control

- The paper lift-up plate is moved up and down by the transport motor.



[1]	Transport motor (M1)	[2]	Paper lift-up plate clutch (mechanical)
[3]	Bypass pick-up solenoid (SD1)	[4]	Bypass lift-up position sensor (PS26)
[5]	Paper lift-up plate	[6]	Paper lift-up cam

(1) Move to paper feed position (up)

(a) Up operation

- When the bypass pick-up solenoid is energized at a predetermined time as the transport motor rotates, the paper lift-up plate clutch lock is released. Thus the driving force of the transport 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.

(b) Up operation timing

- At the start of a manual bypass paper feed sequence, the paper lift-up plate is raised to the paper feed position.
- The bypass pick-up solenoid stops when the predetermined time has elapsed and the paper lift-up plate stops at the feed position.
- A bypass lift-up position sensor actuator is equipped in the paper lift-up plate.
- If the paper lift-up plate rises and bypass lift-up position sensor becomes unblocked, the paper lift-up plate is detected to rise to the paper feed position.
- If the bypass lift-up position sensor remains unblocked even after the bypass pick-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.

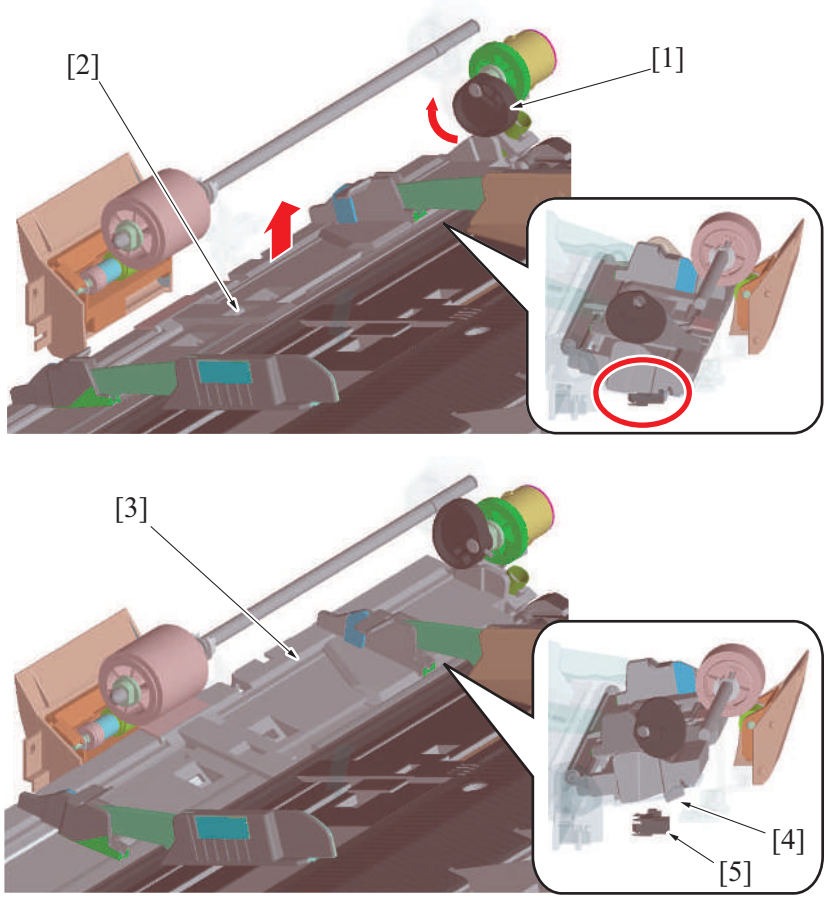
(2) Move to standby position (down)

(a) Down operation

- When the bypass pick-up solenoid is energized at a predetermined time as the transport motor rotates, the paper lift-up cam rotates. The cam pushes up the paper lift-up plate to the standby position.

(b) Down operation timing

- 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 transport motor rotates stably after the misfeed is cleared, the paper lift-up plate is lowered to the standby position.
- The bypass pick-up solenoid stops when the predetermined time has elapsed and the paper lift-up plate stops at the standby position.
- When the paper lift-up plate is lowered down, the actuator that is equipped in the paper lift-up plate blocks the bypass lift-up position sensor.
- If the bypass lift-up position sensor is blocked even after the bypass pick-up solenoid has been deenergized, the machine determines that the paper lift-up plate is at the standby position based on the fact.

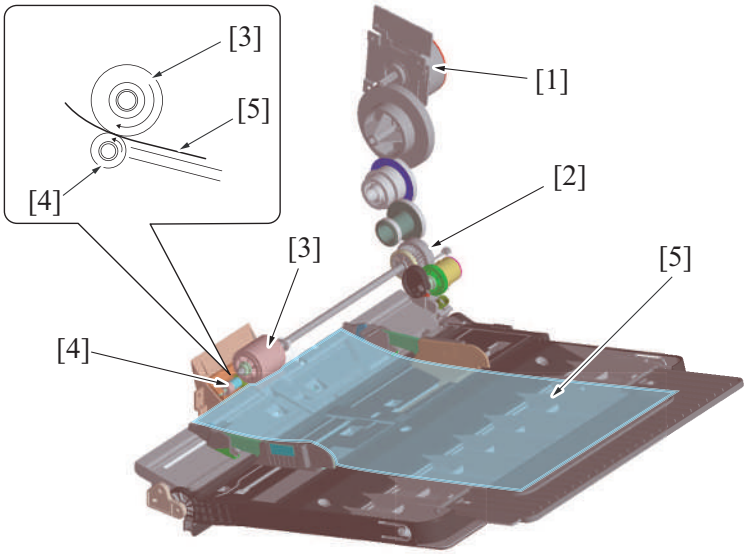


[1]	Paper lift-up cam	[2]	Paper lift-up plate (standby position)
[3]	Paper lift-up plate (paper feed position)	[4]	Actuator
[5]	Bypass lift-up position sensor (PS26)	-	-

1.10.4 Paper feed control

(1) Pick-up control

- Paper feed operations of the manual bypass tray are driven by the transport motor.
- The bypass pick-up solenoid is energized by a print start signal and the paper is raised to the paper feed position.
- After the paper is raised to the paper feed position, the bypass paper feed clutch is energized.
- When the bypass paper feed clutch is energized, the drive from the transport motor is transmitted to the 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 paper feed clutch is deenergized to stop the manual bypass tray paper feed roller from rotating.
- The bypass pick-up solenoid is energized and the paper is lowered to the standby position.



[1]	Transport motor (M1)	[2]	Bypass paper feed clutch (CL7)

[3]	Manual bypass tray feed roller	[4]	Manual bypass tray separation roller
[5]	Paper	-	-

(2) Separation control

- The manual bypass tray separation roller is pressed up against, and driven by, the manual bypass tray feed roller. A torque limited 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.

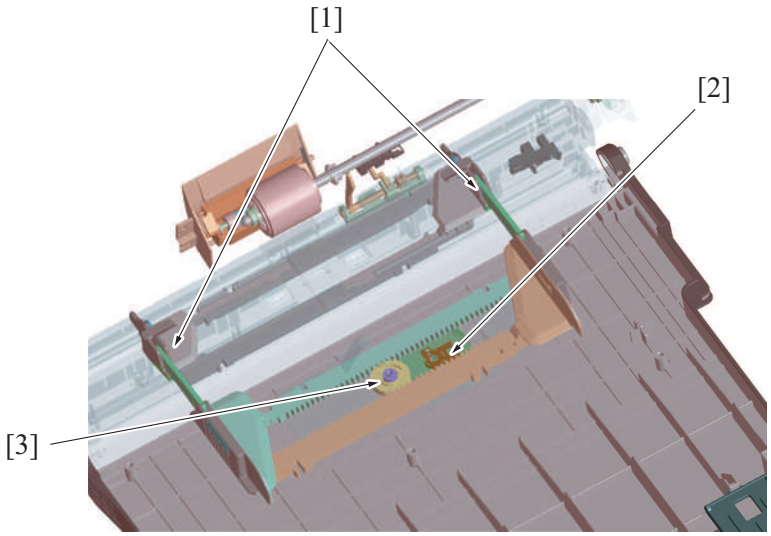
(3) Paper feed retry control

- A paper misfeed is considered if the sensor cannot detect the paper at the paper feed port, even after a predetermined time from starting paper feed.
- If a paper misfeed is detected, the feed roller is again rotated after being temporarily stopped and the paper feed is repeated (retry).
- If the corresponding sensor is still unable to detect the paper, it will be considered as a paper misfeed at paper feed section.
- The paper feed retry is performed only once.

Paper port	Corresponding sensor name	Paper feed retry control	
		Black mode	Color mode
Manual bypass tray	Registration sensor	Execute	Not execute
Tray 1		Not execute	Not execute
Tray 2	Tray 2 vertical transport sensor	Execute	Not execute
Tray 3 (Option: PC-118/218)	Tray 3 vertical transport sensor	Execute	Execute
Tray 4 (Option: PC-218)	Tray 4 vertical transport sensor	Execute	Execute
LCT (Option: PC-418)	LCT vertical transport sensor	Execute	Execute

1.10.5 Paper size detection control

- The length of the paper feeding direction is not detected.
- The bypass CD paper size VR detects the standard size paper in the paper width direction.
- Through the movement of the paper guide, the size detection gear rotates and the bypass CD paper size VR rotates together with the gear.
- The paper width is calculated depending on the value that is obtained from the rotation of the bypass CD paper size VR.



[1]	Paper guide	[2]	Bypass CD paper size VR (VR1)
[3]	Size detection gear		-

(1) Paper size setting

- The candidate paper size which corresponds to the detected paper width by the bypass CD paper size VR is displayed on the control panel.
  The candidate paper size is displayed when the paper is placed and the bypass paper empty sensor becomes unblocked.
- Select and determine the size of paper that you have loaded, from the paper sizes that are displayed on the control panel.
- Select the paper size from the control panel to reduce paper misfeed due to misfitting of the paper guide or mismatched paper sizes.
- Irregular paper sizes can be used by entering the custom size.

(2) Paper size candidate

(a) For Japan models

Bypass CD paper size VR detection width Unit: mm	Paper size options
Under 90.0	No size candidate
90.0 or above and under 95.0	Postcard
95.0 to 110.0	Postcard, A6 S
Above 110.0 and 115.0 or below	A6S
Above 115.0 and under 118.0	No size candidate
118.0 or above and under 138.0	B6S
138.0	B6S, A5S
Above 138.0 and 158.0 or below	A5S
Above 158.0 and under 172.0	No size candidate
172.0 to 192.0	B5S
Above 192.0 and under 200.0	No size candidate
200.0 to 220.0	A5, A4S
Above 220.0 and under 247.0	No size candidate
247.0 to 267.0	B5, B4S
Above 267.0 and under 287.0	No size candidate
287.0 to 307.0	A4, A3S
Over 307.0	No size candidate

(b) For North America models

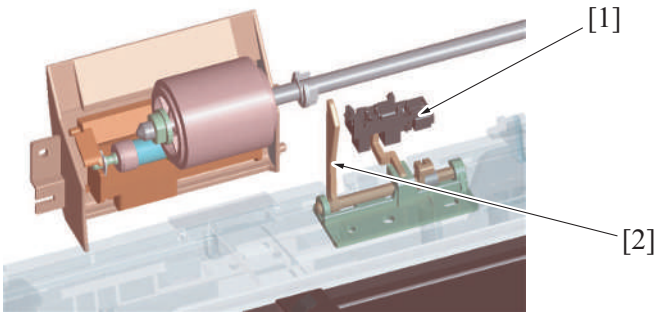
Bypass CD paper size VR detection width Unit: mm	Paper size options
Under 91.6	No size candidate
91.6 to 111.6	4×6 S
Above 111.6 and under 129.7	No size candidate
129.7 to 149.7	5 $^{1}/_{2}$×8 $^{1}/_{2}$ S (Invoice S)
Above 149.7 and under 174.2	No size candidate
174.2 to 194.2	7 $^{1}/_{4}$×10 $^{1}/_{2}$ S (Executive S)
Above 194.2 and under 205.9	No size candidate
205.9 to 225.9	5 $^{1}/_{2}$×8 $^{1}/_{2}$ (Invoice), 8 $^{1}/_{2}$×11 S (Letter S), 8 $^{1}/_{2}$×14 S (Legal S)
Above 225.9 and under 256.7	No size candidate
256.7 or above and under 269.4	7 $^{1}/_{4}$×10 $^{1}/_{2}$ (Executive)
269.4 to 276.7	7 $^{1}/_{4}$×10 $^{1}/_{2}$ (Executive), 8 $^{1}/_{2}$×11 (Letter), 11×17 S (Ledger S)
Above 276.7 and 289.4 or below	8 $^{1}/_{2}$×11 (Letter), 11×17 S (Ledger S)
Over 289.4	No size candidate

(c) For Europe models

Bypass CD paper size VR detection width Unit: mm	Paper size options
Less than 95.0	No size candidate
95.0 to 115.0	A6 card, A6 S
Above 115.0 and under 118.0	No size candidate
118.0 or above and under 138.0	B6S
138.0	B6S, A5S
Above 138.0 and 158.0 or below	A5S
Above 158.0 and under 172.0	No size candidate
172.0 to 192.0	B5S
Above 192.0 and under 200.0	No size candidate
200.0 to 220.0	A5, A4S
Above 220.0 and under 247.0	No size candidate
247.0 to 267.0	B5, B4S
Above 267.0 and under 287.0	No size candidate
287.0 to 307.0	A4, A3S
Over 307.0	No size candidate

1.10.6 Paper empty detection control

- When the paper is loaded in the manual bypass tray, the leading edge of the paper press the paper empty detection actuator.
- The paper empty detection actuator is pressed to unblock the bypass paper empty sensor.
- When there is no paper on the manual bypass 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.

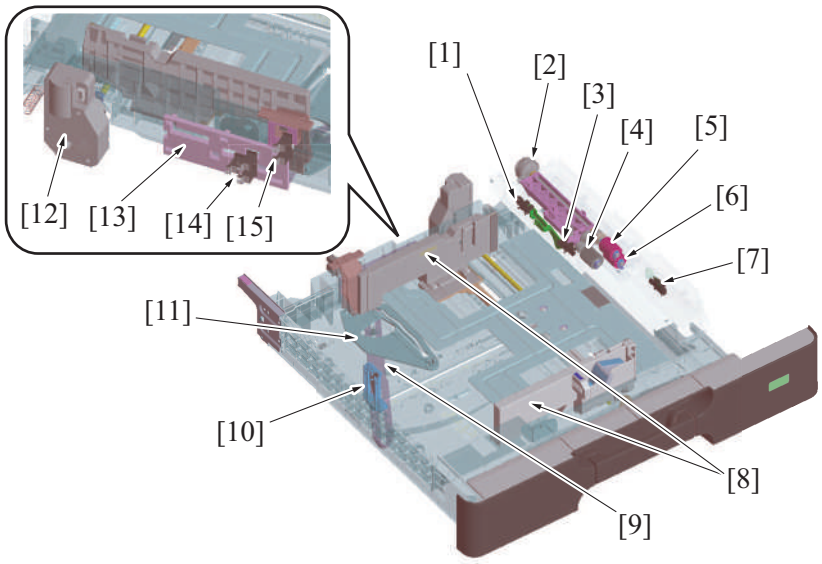


[1]	Bypass paper empty sensor (PS27)	[2]	Actuator

1.11 PAPER FEED SECTION_28ppm No Olivetti

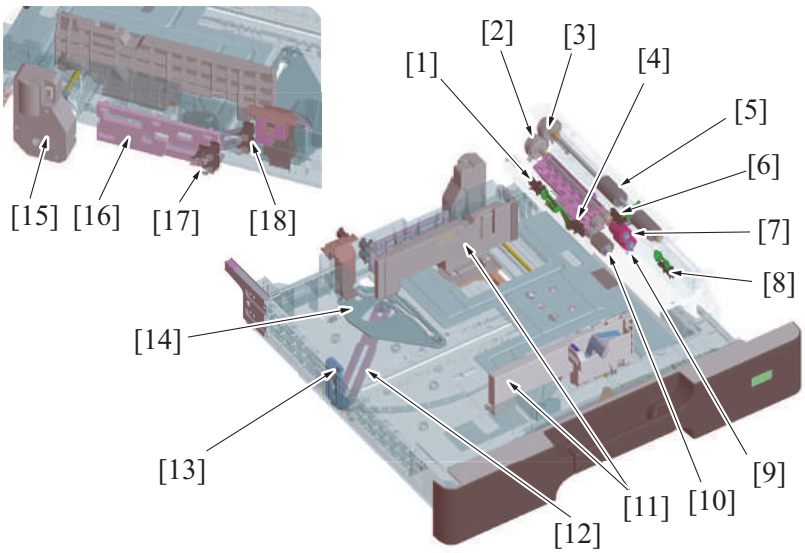
1.11.1 Configuration

(1) Tray 1



[1]	Tray 1 paper empty sensor (PS24)	[2]	Tray 1 paper feed clutch (CL3)
[3]	Tray 1 upper limit sensor (PS25)	[4]	Tray 1 pick-up roller
[5]	Tray 1 feed roller	[6]	Tray 1 separation roller
[7]	Tray 1 paper feed sensor (PS23)	[8]	Paper width guide
[9]	FD size detection lever/1	[10]	Paper length guide
[11]	CD size detection lever	[12]	Tray 1 lift-up motor (M12)
[13]	FD size detection lever/2	[14]	Tray 1 FD paper size switch
[15]	Tray 1 CD paper size switch	-	-

(2) Tray 2

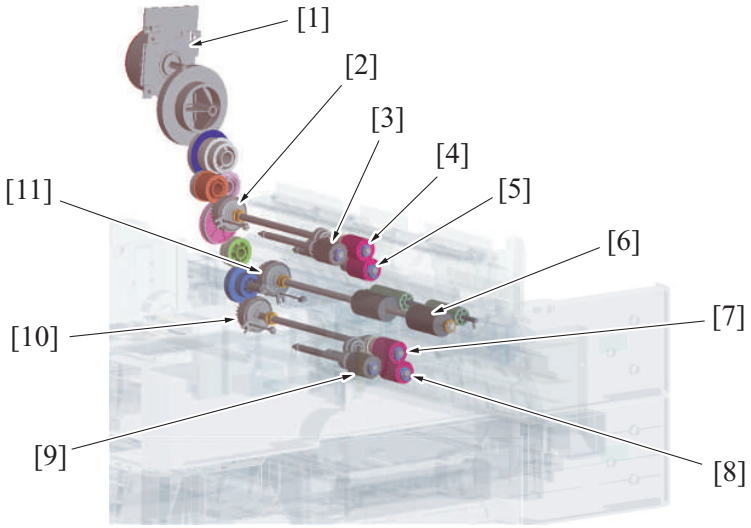


[1]	Tray 2 paper empty sensor (PS21)	[2]	Tray 2 paper feed clutch (CL1)
[3]	Tray 2 vertical transport clutch (CL2)	[4]	Tray 2 upper limit sensor (PS22)
[5]	Vertical transport roller	[6]	Tray 2 vertical transport sensor (PS19)
[7]	Tray 2 feed roller	[8]	Tray 2 paper feed sensor (PS20)
[9]	Tray 2 separation roller	[10]	Tray 2 pick-up roller
[11]	Paper width guide	[12]	FD size detection lever/1
[13]	Paper length guide	[14]	CD size detection lever
[15]	Tray 2 lift-up motor (M13)	[16]	FD size detection lever/2
[17]	Tray 2 FD paper size switch	[18]	Tray 2 CD paper size switch

1.11.2 Drive

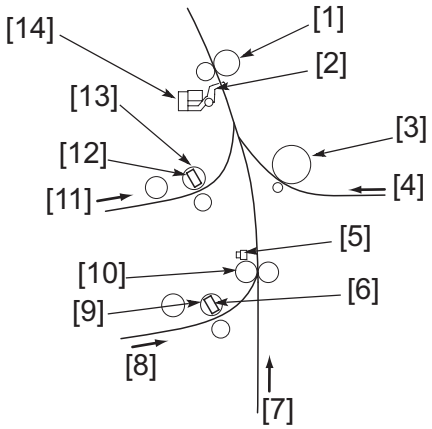
(1) Drive

- 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]	Tray 1 paper feed clutch (CL3)
[3]	Tray 1 pick-up roller	[4]	Tray 1 feed roller
[5]	Tray 1 separation roller	[6]	Vertical transport roller
[7]	Tray 2 feed roller	[8]	Tray 2 separation roller
[9]	Tray 2 pick-up roller	[10]	Tray 2 paper feed clutch (CL1)
[11]	Tray 2 vertical transport clutch (CL2)	-	-

(2) Layout of sensors and rollers



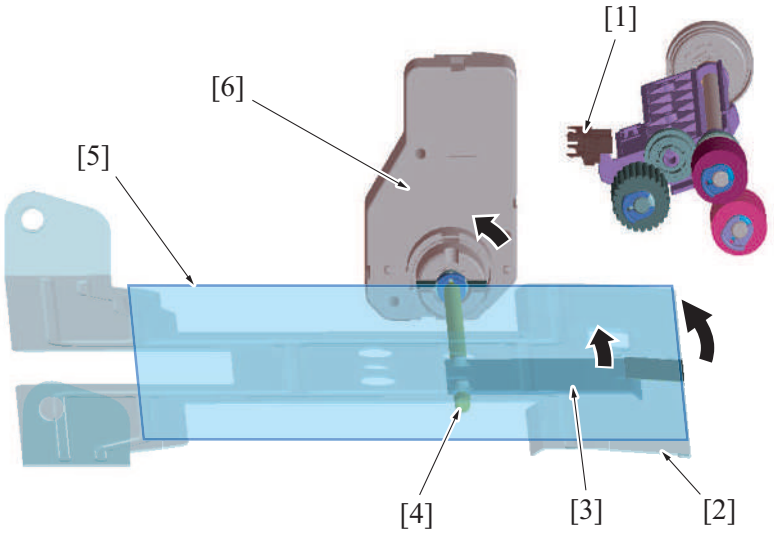
[1]	Registration roller	[2]	Actuator of registration roller
[3]	Manual bypass tray feed roller	[4]	Paper feeding from manual bypass tray
[5]	Tray 2 vertical transport sensor (PS19)	[6]	Tray 2 paper feed sensor (PS20)
[7]	Paper feeding from optional paper feed unit	[8]	Paper feeding from tray 2
[9]	Tray 2 feed roller	[10]	Tray 2 vertical transport roller
[11]	Paper feeding from tray 1	[12]	Tray 1 paper feed sensor (PS23)
[13]	Tray 1 paper feed roller	[14]	Registration sensor (PS1)

1.11.3 Up/down control

- Tray 1 and tray 2 are controlled in the same control procedure.

(1) Up operation

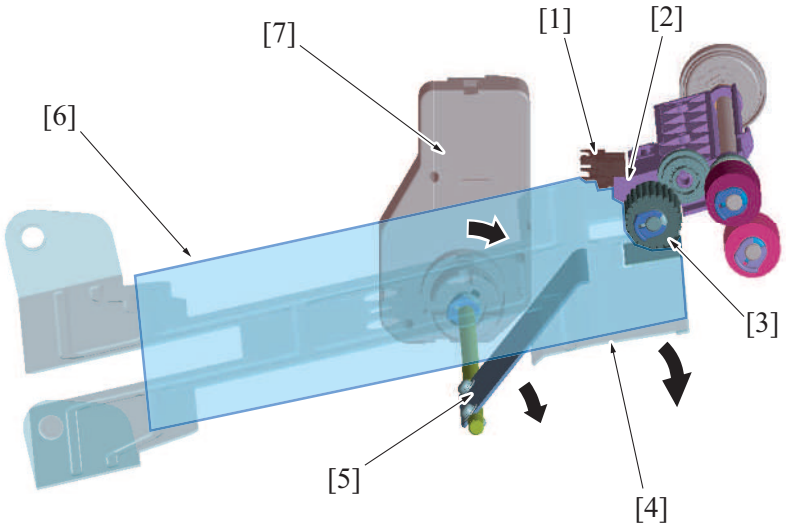
- The paper lift-up plate B is located under the paper lift-up plate A.
- The lift-up plate drive shaft of the tray 1/2 lift-up motor is connected to paper lift-up plate B.
- When the drive shaft of the tray 1/2 lift-up motor rotates, paper lift-up plate B raises paper lift-up plate A.



[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, either of the tray 1/2 FD/CD paper size switches turns ON. 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 paper lift-up plate up operation starts, 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, all the tray 1/2 FD/CD paper size switches will turn OFF. As a result, the up operation 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.

1.11.4 Paper feed control

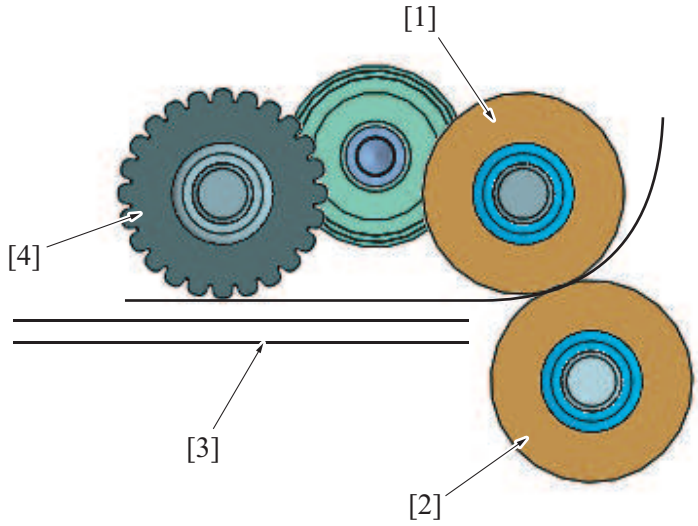
- Tray 1 and tray 2 are controlled in the same control procedure.

(1) 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.

(2) 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

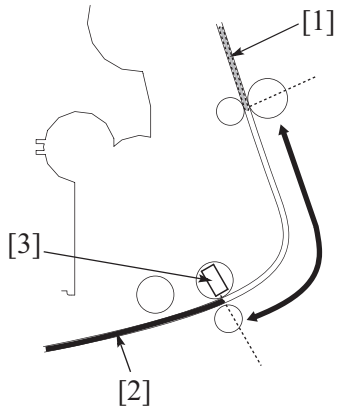
(3) Paper feed retry control

- A paper misfeed is considered if the sensor cannot detect the paper at the paper feed port, even after a predetermined time from starting paper feed.
- If a paper misfeed is detected, the feed roller is again rotated after being temporarily stopped and the paper feed is repeated (retry).
- If the corresponding sensor is still unable to detect the paper, it will be considered as a paper misfeed at paper feed section.
- The paper feed retry is only performed once.

Paper port	Corresponding sensor name	Paper feed retry control	
		Black mode	Color mode
Manual bypass tray	Registration sensor	Execute	Not execute
Tray 1		Not execute	Not execute
Tray 2	Tray 2 vertical transport sensor	Execute	Not execute
Tray 3 (Option: PC-114/214)	Tray 3 vertical transport sensor	Execute	Execute
Tray 4 (Option: PC-214)	Tray 4 vertical transport sensor	Execute	Execute
LCT (Option: PC-414)	LCT vertical transport sensor	Execute	Execute

(4) 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.
- The feed roller speed reduction control is performed during paper feed from tray 1 and tray 2.
- 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.



[1]	Preceding sheet	[2]	Sheet of paper being controlled
[3]	Paper feed sensor	-	-

(5) 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.
- The vertical transport roller speed reduction control is performed during paper feed from tray 3, tray 4, or LCT.

- 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.

(6) Paper feed control

(a) 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.
- The paper is fed from the feed roller, moves past the registration roller and reaches a predetermined position, the tray 1 paper feed clutch turns off. It disconnects 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 cannot detect paper even after the lapse of a predetermined time, it will be considered as a paper misfeed in tray 1.

(b) 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.
- The tray 2 vertical transport sensor that is located downstream of the tray 2 vertical transport roller along the paper path turns ON and reaches a predetermined position. The tray 2 paper feed clutch will turn off and it disconnects 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 cannot detect the leading edge of paper even after a predetermined time, it will be considered as a paper misfeed in tray 2.

(7) Downstream exit control during multi-print cycle

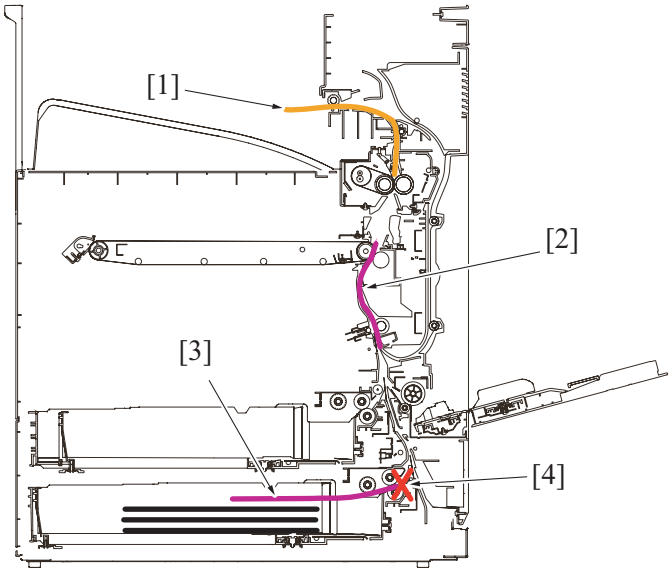
- The following terms are used for convenience' sake throughout this chapter.
  Upstream: Refers to the source side of paper supply relative to the paper feeding direction
  Downstream: Refers to the destination side of paper transport relative to the paper feeding direction
- If a paper misfeed occurs at the paper feed section which is upstream in paper transport, the print cycle is not brought to an immediate stop; rather, the machine allows a sheet of paper, for which the print cycle is to be completed at a downstream side, to continue undergoing the current print cycle and feeds the printed page out after completion of the current print cycle.

(a) Types of paper misfeed governed by downstream exit control

Misfeed at tray 1 paper feed section	Misfeed at LCT paper feed section
Misfeed at tray 2 paper feed section	Misfeed at vertical transport section
Misfeed at tray 3 paper feed section	Misfeed at duplex pre-registration section
Misfeed at tray 4 paper feed section	Misfeed at 2nd transfer section
Misfeed at manual bypass tray paper feed section	-

(b) 1-sided printing

- In consecutive 1-sided printing, the paper causes a jamming at the paper feed tray section.
- 1st sheet after an image transfer is remained at the paper exit section.
- 2nd sheet before an image transfer is remained at the transfer section and the vertical transport section.

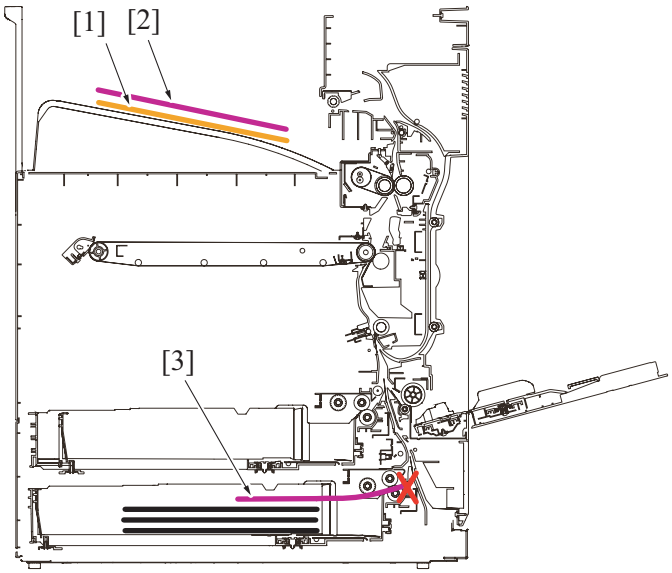


[1]	Sheet after a 1-sided image transfer	[2]	Sheet before a 1-sided image transfer
[3]	Jamming paper	[4]	Jamming

Operation

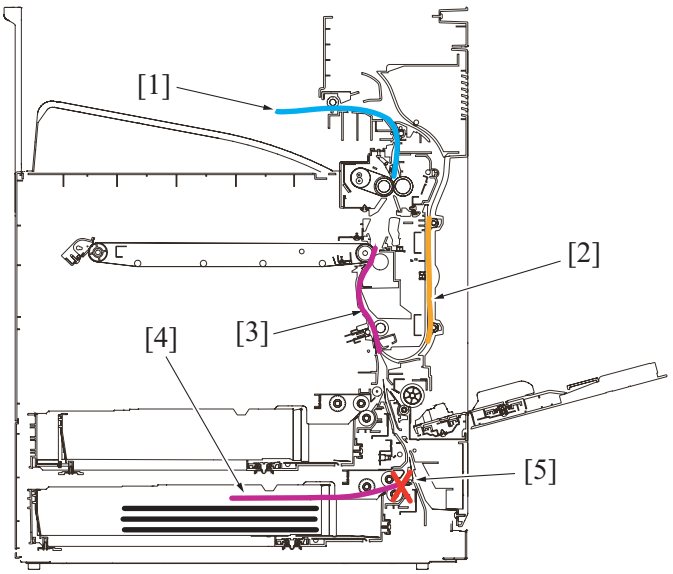
1. Stop feed/transport operation for jamming paper [3].
2. Exit paper [1].

3. Transfer and fuse image onto, and exit, sheet [2].



(c) 2-sided printing

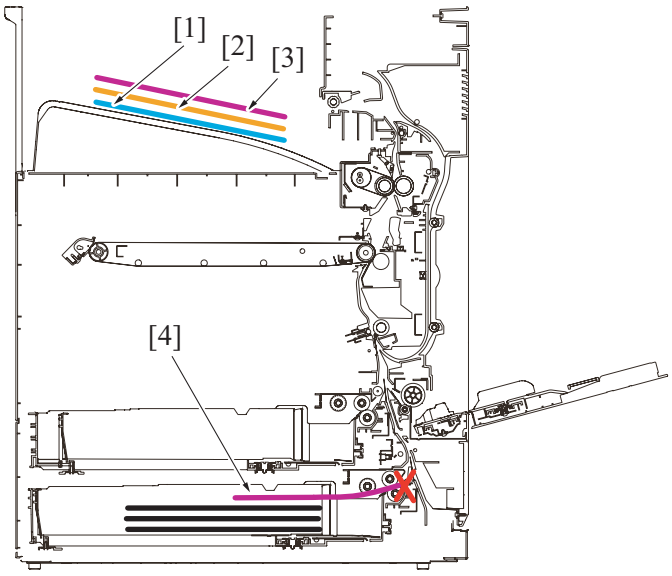
- In consecutive 2-sided printing, the paper causes a jamming at the paper feed tray section.
- One sheet after a 2-sided image transfer is remained at the paper exit section.
- One sheets before a 1-sided image fusing is remained at the duplex section.
- One sheet before an image transfer is remained at the vertical transport section and the registration section.



[1]	Sheet after a 2-sided image transfer	[2]	Sheet after a 1-sided image transfer
[3]	Sheet before a 1-sided image transfer	[4]	Jamming paper
[5]	Paper jam occurrence	-	-

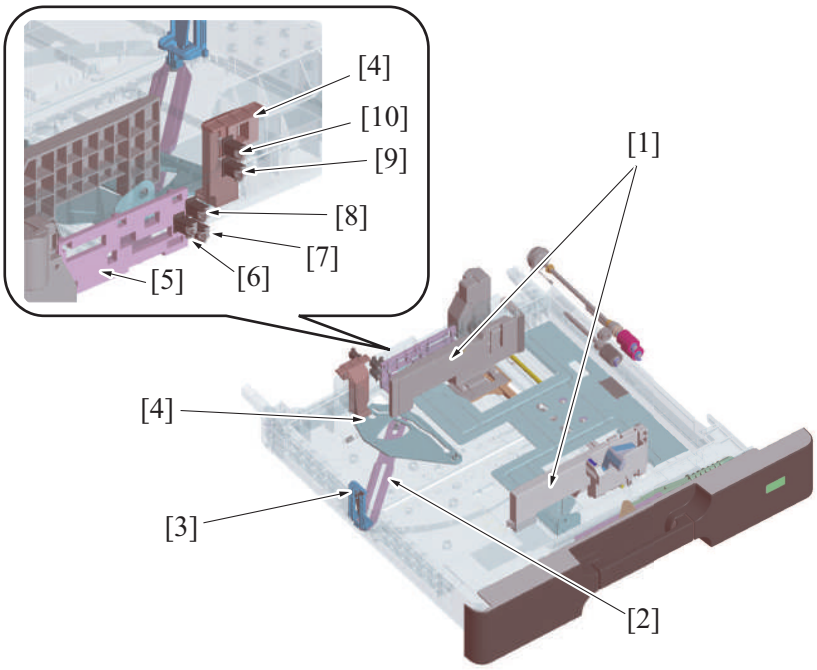
Operation

1. Stop feed/transport operation for jamming paper [4].
2. Exit paper [1].
3. Transfer and fuse 2-side image onto, and exit, sheet [2] located at the duplex section.
4. Print 2-side image onto, and exit, sheet [3] located before image transfer.



1.11.5 Paper size detection control

- Tray 1 and tray 2 are controlled in the same control procedure.
- Paper size is determined based on the combination of the paper width that is detected by the 2 CD paper size switches and the paper length that is detected by the 3 FD paper size switches.

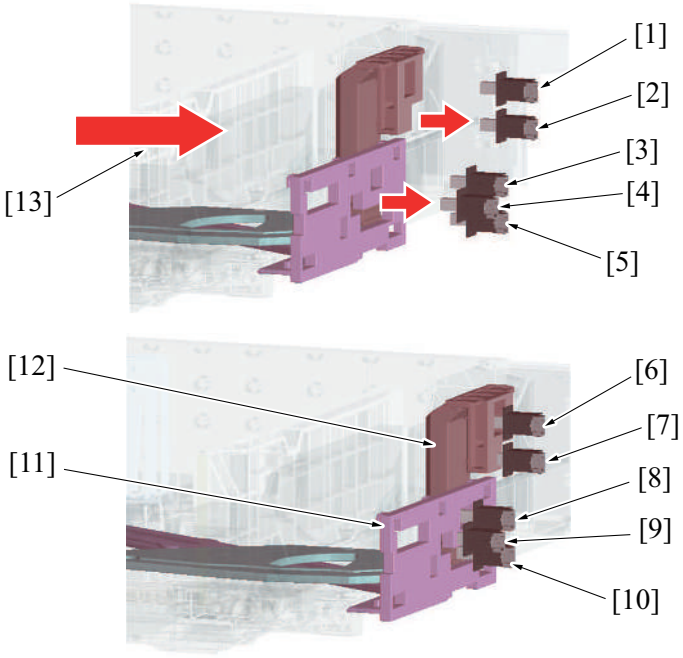


[1]	Paper width guide	[2]	FD size detection lever/1
[3]	Paper length guide	[4]	CD size detection lever
[5]	FD size detection lever/2	[6]	Tray 1 FD paper size switch/3 (SW12) Tray 2 FD paper size switch/3 (SW17)
[7]	Tray 1 FD paper size switch/2 (SW11) Tray 2 FD paper size switch/2 (SW16)	[8]	Tray 1 FD paper size switch/1 (SW10) Tray 2 FD paper size switch/1 (SW15)
[9]	Tray 1 CD paper size switch/2 (SW14) Tray 2 CD paper size switch/2 (SW19)	[10]	Tray 1 CD paper size switch/1 (SW13) Tray 2 CD paper size switch/1 (SW18)

(1) Detection method

1. Open the tray and load the paper.
2. Adjust the paper width guide and paper length guide according to the loaded paper.
3. The position of the CD size detection lever will change with the paper width guide. The position of the FD size detection lever/2 will change with the paper length guide.
4. When the tray is slid into the machine, the CD size detection lever pushes the CD paper size switches. The FD size detection lever/2 pushes the FD paper size switches to turn them ON.
5. A slit is equipped to each size detection lever. If the position of the slits and the paper size switches overlapped, the switches are turned OFF without pressing the paper size switch.

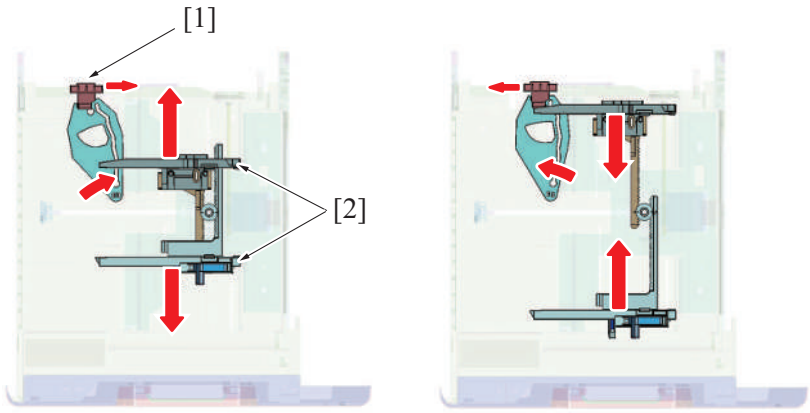
6. The status of the CD paper size switch changes and the size in paper width direction is detected with the CD size detection lever position. The status of the FD paper size switch changes and the size in paper feeding direction is detected with the FD size detection lever/2 position.
7. The size of the loaded paper is determined based on the detected size in paper width direction and the length in paper feeding direction.



[1]	CD paper size switch/1 (OFF)	[2]	CD paper size switch/2 (OFF)
[3]	FD paper size switch/1 (OFF)	[4]	FD paper size switch/3 (OFF)
[5]	FD paper size switch/2 (OFF)	[6]	CD paper size switch/1 (OFF)
[7]	CD paper size switch/2 (ON)	[8]	FD paper size switch/1 (OFF)
[9]	FD paper size switch/3 (ON)	[10]	FD paper size switch/2 (OFF)
[11]	FD size detection lever/2	[12]	CD size detection lever
[13]	Sliding the paper feed tray into the machine	-	-

(2) Paper width direction

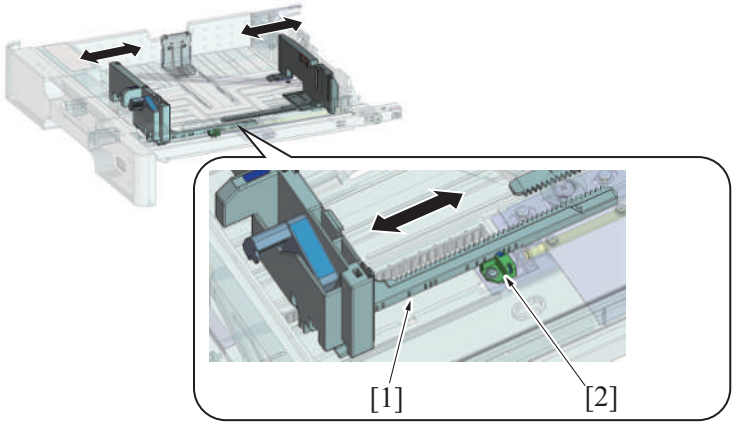
- The size in paper width direction is detected with the ON/OFF combination of push switch 1 and 2 that are equipped behind the tray.
- The status of the CD paper size switch is changed through the CD size detection lever that is linked with the paper width guide.
- The CD paper size switch also detects whether the tray is mounted or not.



[1]	CD size detection lever	[2]	Paper width guide

(a) Paper Width Guide

- A latching positioning method is used to prevent the paper width guide from misalignment due to shock that is generated during inserting trays.



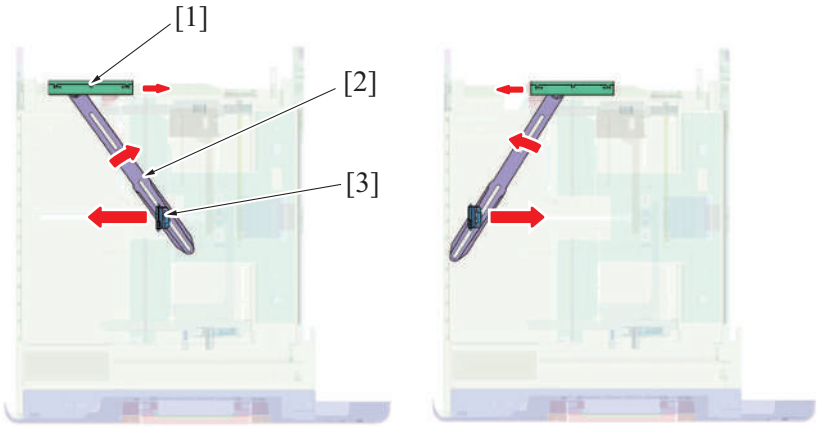
[1]	Paper width guide	[2]	Positioning latch

(b) Adjustment of the installation position of the paper width detection adjustment plate

- Adjust the installation position of the paper width detection adjustment plate of the tray 1/2. How to adjust the paper width detection adjustment plate

(3) Paper feeding direction

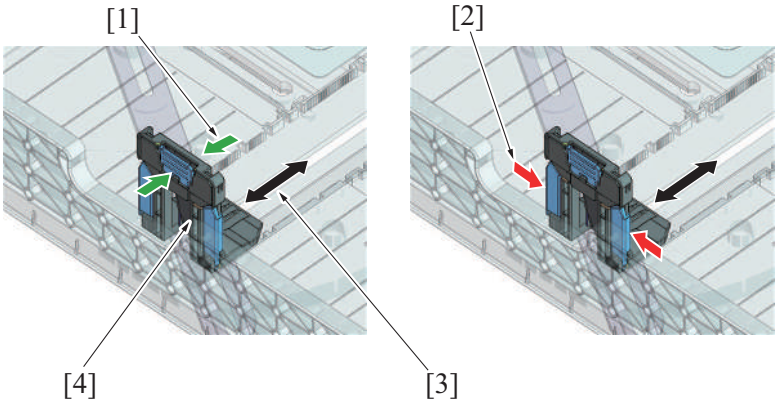
- The length of the paper is detected with the ON/OFF combination of push switch 1 to 3 that are equipped behind the tray.
- The status of FD paper size switch 1 to 3 is changed through the FD size detection lever that is linked with the paper length guide.
- The FD paper size switch also detects whether the tray is mounted or not.



[1]	FD size detection lever/2	[2]	FD size detection lever/1
[3]	Paper length guide	-	-

(a) Paper Length Guide

- Two methods are provided to operate the paper length guide.
  - Squeeze the paper length guide to operate it in the direction orthogonal to the direction of movement.
  - Squeeze the paper length guide to operate it in the same direction as the direction of movement.
- Paper length guide positioning employs grooves corresponding to each standard size and a free-stop method of movement using latches between each pair of grooves.



[1]	Squeezing in the same direction as the direction of movement	[2]	Squeeze in the direction orthogonal to the direction of movement
[3]	Direction of movement of the paper length guide	[4]	Paper length guide

(4) Paper size determination

Detected sizes list

Paper size	FD paper size switch			CD paper size switch	
	Switch/3	Switch/2	Switch/1	Switch/2	Switch/1
A3 (*1)	H	H	H	L	H
B4	H	L	L	H	H
A4S	H	H	H	H	L
A4	H	H	L	L	H
B5S	H	H	L	H	L
B5	L	H	H	H	H
A5S, 5 $^1/_2$×8 $^1/_2$ S (Invoice S) (*2)	H	H	L	L	L
11×17 (Ledger) (*1)	H	H	H	H	H
8$^1/_2$×14 (Legal)	H	L	L	H	L
8$^1/_2$×11 S (Letter S)	H	L	H	H	L
8$^1/_2$×11 (Letter)	H	H	L	H	H
FLS S (*3)	L	L	H	H	L
8K S (*1) (270 mm x 390 mm)	H	L	H	H	H
16K (270 mm x 195 mm)	L	H	L	H	H

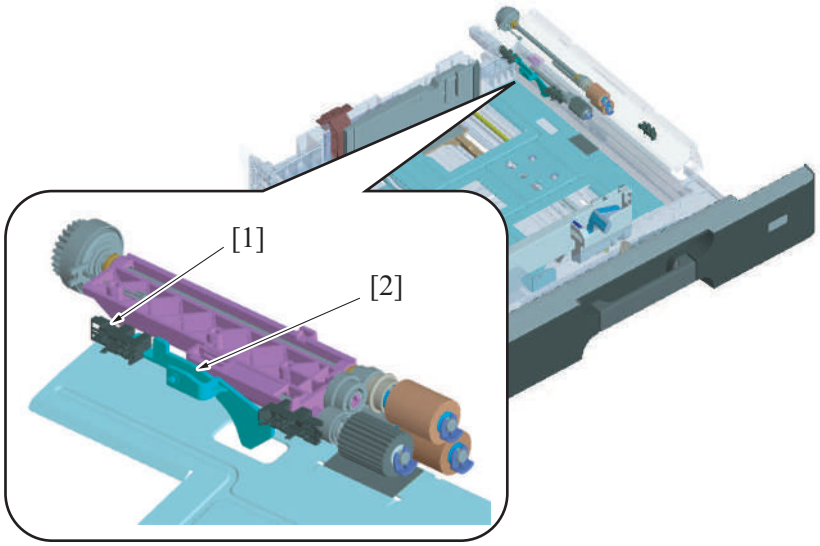
*1: 11x17, A3, 8KS are only available for tray 2.
*2: For regions using inches, Invoice S size is detected. For other regions, A5S size is detected.
*3: From the service mode, one of the following paper sizes can be selected to be set for FLS. 8 $^1/_2$×13 $^1/_2$, 8×13, 8 $^1/_4$×13, 8 $^1/_2$×13.

Sensor states

Sensor	Physical state	
	HIGH signal	LOW signal
FD paper size switch/1 to 3	Pressed	Released
CD paper size switch/1 or 2		

1.11.6 Paper empty detection control

- Tray 1 and tray 2 work with the same paper empty detection control.
- The empty paper detection control is performed under either of the following conditions:
  - Trays are closed correctly.
  - The up/down control of the paper lift-up plate is complete.
- The actuator blocks the paper empty sensor when paper runs out.



[1]	Tray 1 paper empty sensor (PS24) Tray 2 paper empty sensor (PS21)	[2]	Actuator

1.11.7 Paper feed tray locking mechanism

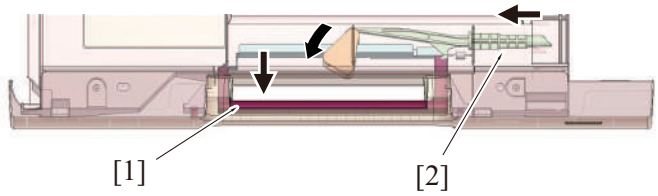
- The paper feed tray is provided with a locking mechanism.

(1) Unlocking the paper feed tray

- When moving the lever of the paper feed tray to the front, will disengage the tray lock lever equipped on the right side of the paper feed tray.
- The paper feed tray can be pulled out of the machine by continuing pulling the lever with the tray lock lever disengaged.
- Rollers are equipped for the right and left tray rails which reduce the operating force required for sliding in/out the paper feed tray.

(2) Locking the paper feed tray

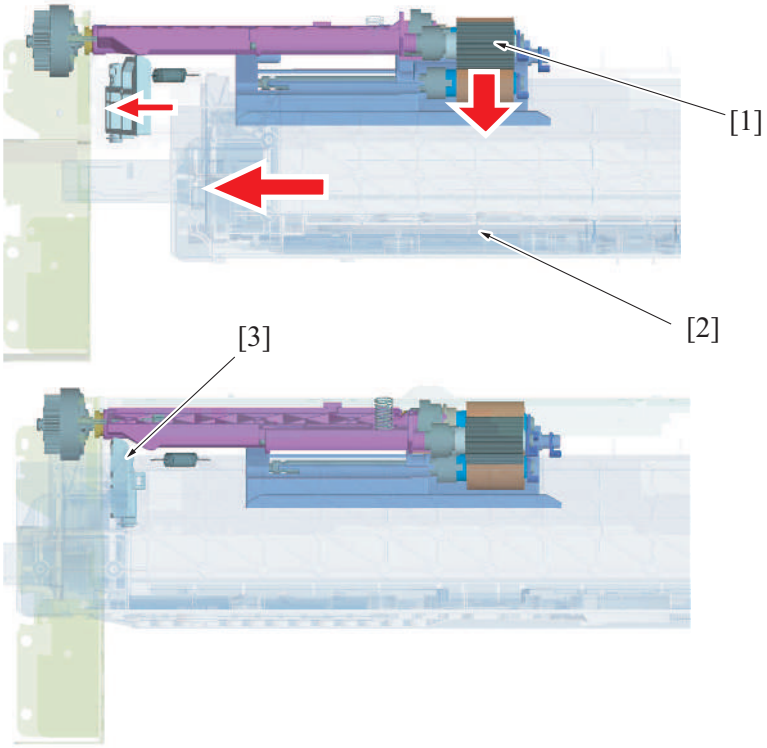
- Pushing the lever of the paper feed tray all the way toward the rear will allow the paper feed tray to be slid into the machine.
- When the paper feed tray is inserted all the way in place, the tray lock lever equipped on the right side of the paper feed tray locks the tray in place.
- To prevent false 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.



[1]	Lever of the paper feed tray	[2]	Lock lever

1.11.8 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 that moves the pick-up roller to the position that it can supply paper.

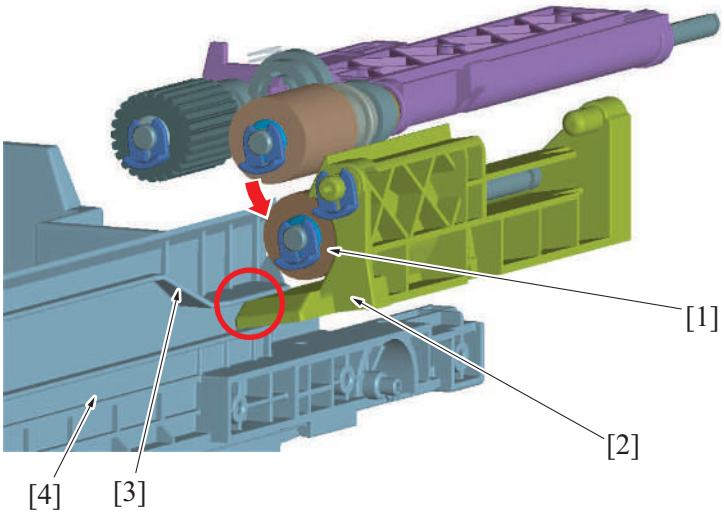


[1]	Pick-up roller	[2]	Paper feed tray
[3]	Retraction lever	-	-

1.11.9 Separation roller retract mechanism

- A mechanism to pressure/release the separation roller is provided. It prevents the paper that remains 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 then releases the separation roller and feed roller.
- Paper that is caught between the rollers is released by releasing the separation roller and feed roller. This 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 presses the separation roller and the feed roller to supply paper.



[1]	Separation roller	[2]	Separation roller holder
[3]	Rib	[4]	Paper feed tray

1.11.10 Tray detachment mechanism

- A mechanism is provided to easily remove the paper feed tray if paper falls behind the back of the paper feed tray, to access any paper.

(1) Removing the paper feed tray

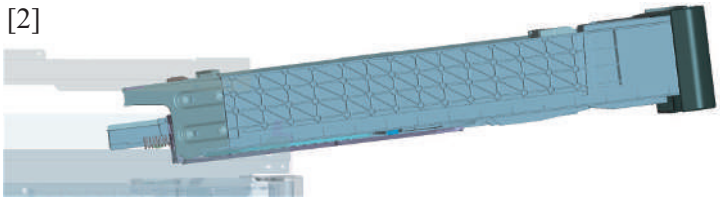
- Stoppers are equipped on the main body and the paper feed tray rails to prevent the tray from being removed during the normal opening and closing operations.
- Pull out the paper feed tray until it makes contact with the stoppers, then lift the front of the tray to release the stoppers and remove the tray.

(2) Reinstalling the paper feed tray

- Lift up the front of the paper feed tray and insert it.
- After inserting the paper feed tray until the position of the stoppers are on the main body rails, then lower the front of the tray and push the tray straight towards the rear of the machine.

[1]

[2]



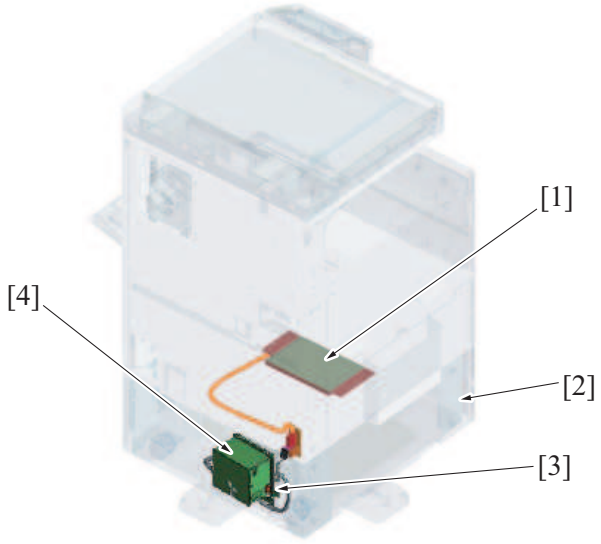
[1]	Normal opening and closing of the tray	[2]	Detaching the tray

1.11.11 Heater HT-509

- Paper curl, paper feed errors, paper misfeeds, and abnormal images may occur when paper in the tray absorbs the damp. To prevent the above troubles from occurring, the optional heater (HT-509) is required.
- The following configuration is required to install the heater.
  - The optional paper feed cabinet (PC-118/PC-218/PC-418) or the desk (DK-518)

NOTE

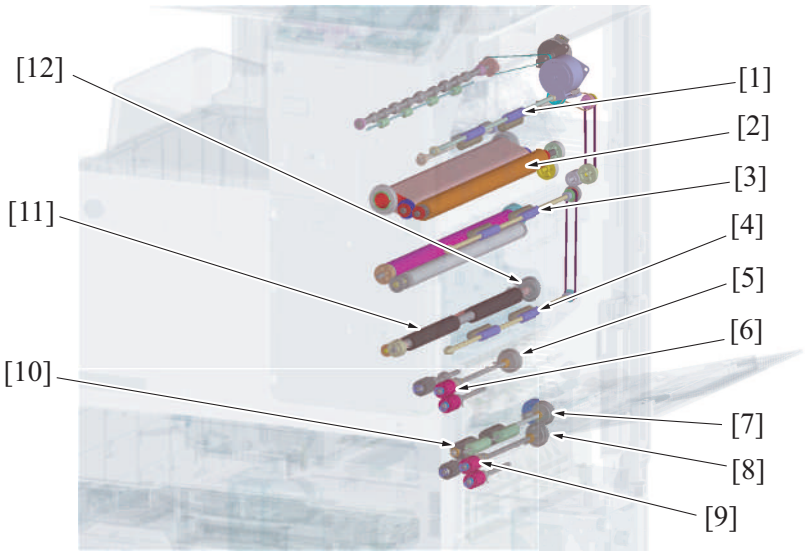
- **The heater is standard equipment on the DK-518.**
- **The heater is installed to the bottom of the PC-118/PC-218/PC-418 as standard equipment.**
- **The HT-509 can also be installed to the upper of the PC-118/PC-218/PC-418 as optional equipment.**



[1]	Dehumidification heater switch	[2]	Heater (HT-509)
[3]	Paper feed cabinet (PC-118/PC-218/PC-418) or the desk (DK-518)	-	-

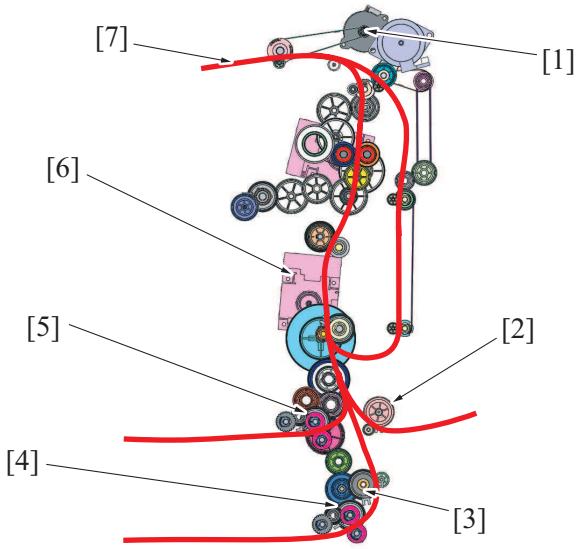
1.12 VERTICAL TRANSPORT SECTION

1.12.1 Configuration



[1]	ADU transport roller/1	[2]	Pressure roller
[3]	ADU transport roller/2	[4]	ADU transport roller/3
[5]	Tray 1 paper feed clutch (CL3)	[6]	Tray 1 paper feed roller
[7]	Tray 2 vertical transport clutch (CL2)	[8]	Tray 2 paper feed clutch (CL1)
[9]	Tray 2 feed roller	[10]	Vertical transport roller
[11]	Registration roller	[12]	Registration clutch (CL4)

1.12.2 Drive



[1]	Paper exit/reverse motor (M4)	[2]	Bypass paper feed clutch (CL7)
[3]	Tray 2 vertical transport clutch (CL2)	[4]	Tray 2 paper feed clutch (CL1)
[5]	Tray 1 paper feed clutch (CL3)	[6]	Transport motor (M1)
[7]	Paper path	-	-

1.12.3 Vertical transport control

- The vertical transport section transports paper fed from tray 1, 2, or optional paper feed unit onto the registration section.
- The paper fed from tray 1 is transported onto the registration section by the tray 1 feed roller.
- The paper fed from the manual bypass tray is transported onto the registration section by the manual bypass tray feed roller.
- The paper fed from tray 2 is transported onto the registration section by the tray 2 vertical transport roller.

(1) Tray 2 vertical transport clutch

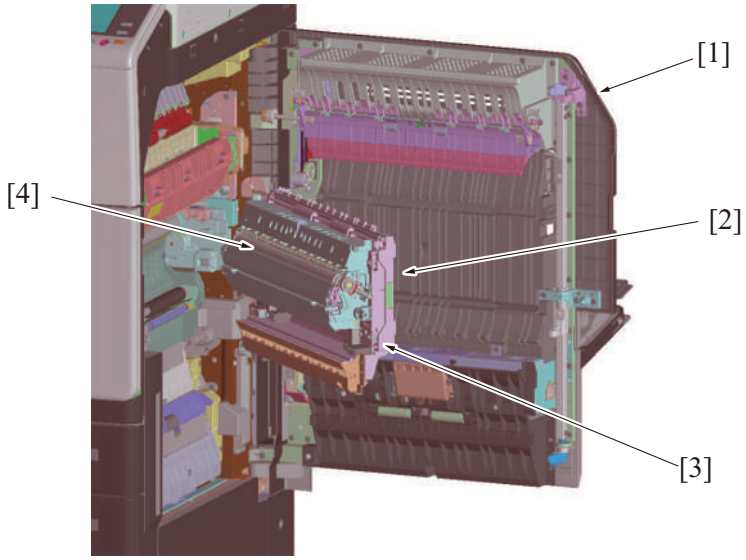
- The tray 2 vertical transport clutch is connected to the tray 2 vertical transport roller. When the tray 2 vertical transport clutch is energized, the driving force of the transport motor is transmitted, so that the tray 2 vertical transport roller is rotated.

(2) 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.

1.12.4 Right door mechanism

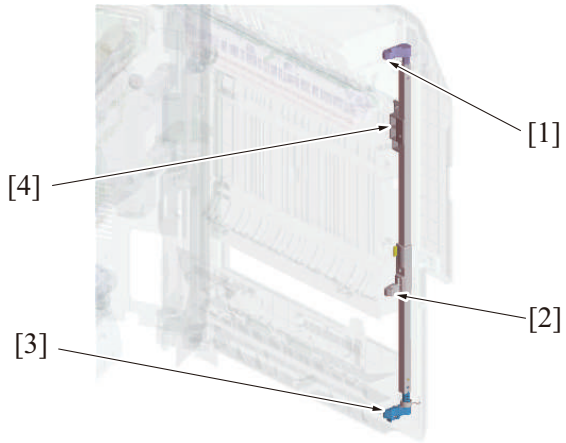
- The machine has the right door to enable easy access into the inside of the machine for clearing a paper misfeed or performing other service jobs.
- The right door is mounted with the mechanisms of the vertical transport section, paper feed section (manual bypass tray), and the duplex section.
- The inner door unit (2nd transfer section and duplex section) is found inside the right door when the right door is opened.
- A locking mechanism or open/close detection mechanism are not provided on the inner door unit. Therefore, the locking mechanism and open/close detection mechanism that are provided on the right door are used also for the inner door.



[1]	Right door section	[2]	Duplex section
[3]	Inner door unit	[4]	2nd transfer section

(1) Locking the right door

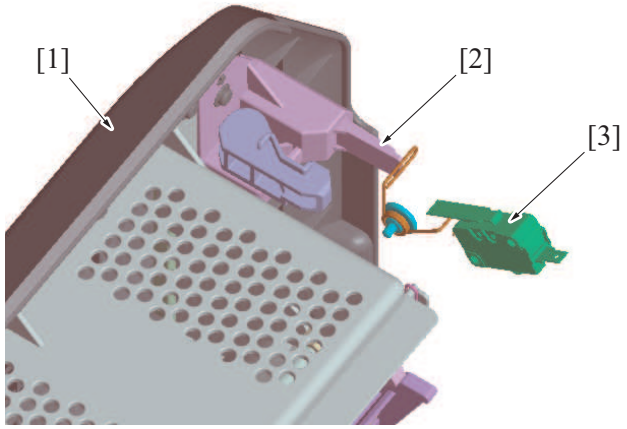
- Close the inner door unit and then close the right door. When the right door is closed in its correct position, the door lock pawls (three) equipped at the front side of the right door lock the right door in place.



[1]	Door lock pawl (upper)	[2]	Door lock pawl (center)
[3]	Door lock pawl (lower)	[4]	Right door lever

(2) Right door open/close detection mechanism

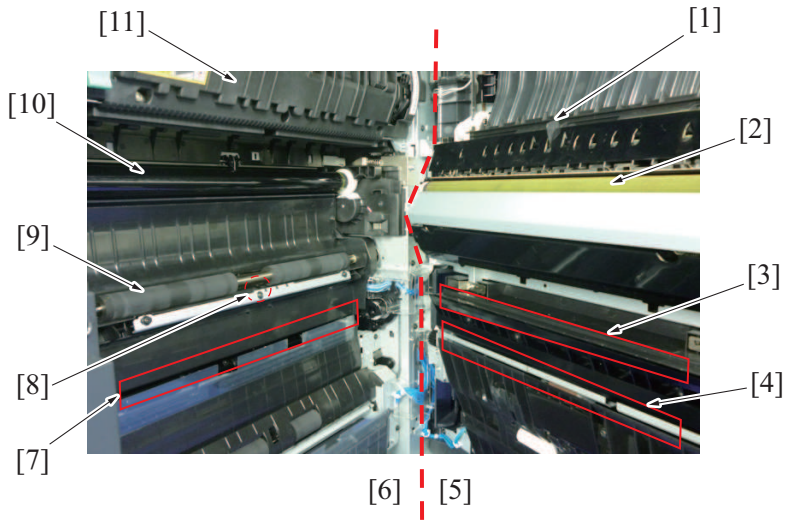
- The right door switch detects that the right door is opened or closed.
- When the right door is closed, the open/close detection plate equipped at an upper portion at the front of the right door presses the actuator of the right door switch. This turns ON the right door switch and the machine determines that the right door is closed.
- When the right door is opened, the actuator of the right door switch is released. This turns OFF the right door switch and the machine determines that the right door is opened, giving a message that prompts the operator to close the right door.
- On determining that the right door is open, the machine prohibits the use of all jobs but the fax reception job. A paper misfeed results if the right door is opened during a print cycle.



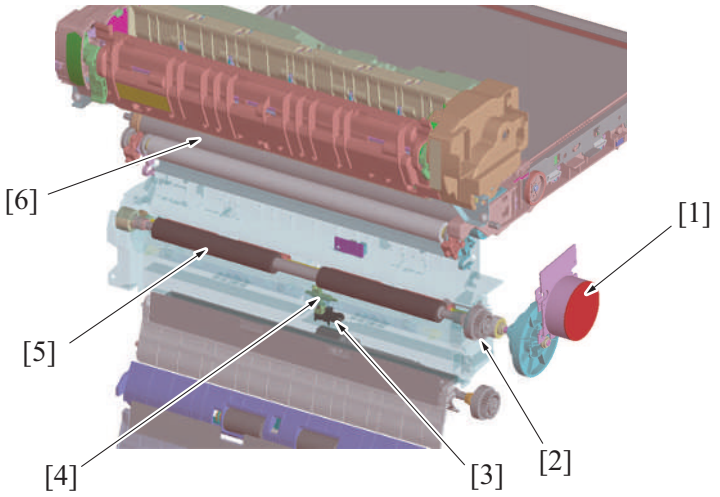
[1]	Right door	[2]	Open/Close detection plate
[3]	Right door switch (SW3)	-	-

1.13 REGISTRATION SECTION

1.13.1 Configuration

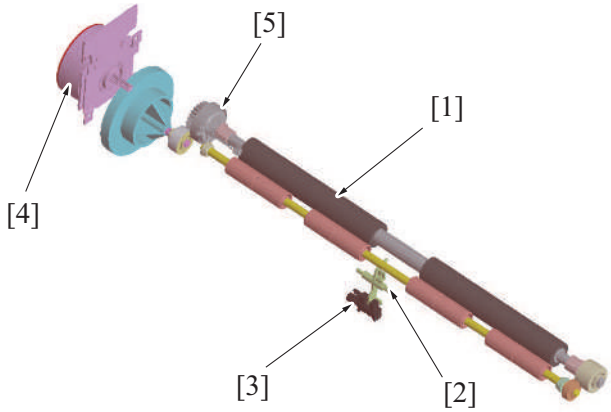


[1]	Fusing loop actuator	[2]	Transfer roller
[3]	Duplex section re-feed paper	[4]	Manual bypass tray feed paper
[5]	Right door side	[6]	Main body side
[7]	Tray 1 feed paper	[8]	Registration sensor (inside)
[9]	Registration roller	[10]	Transfer belt
[11]	Fusing unit	-	-



[1]	Transport motor (M1)	[2]	Registration clutch (CL4)
[3]	Registration sensor (PS1)	[4]	Registration sensor actuator
[5]	Registration roller	[6]	Transfer belt

1.13.2 Drive



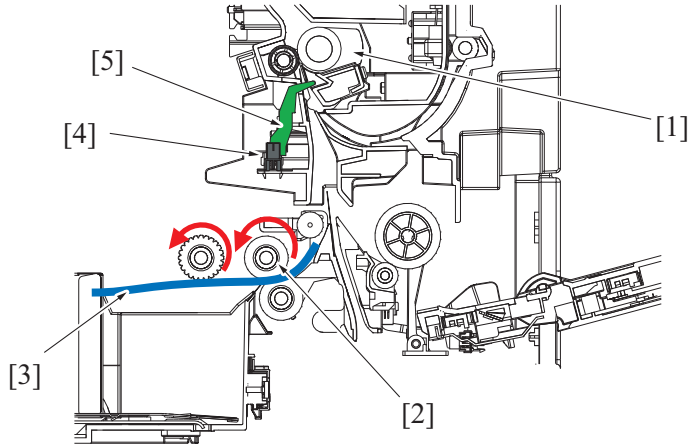
[1]	Registration roller	[2]	Registration sensor actuator
[3]	Registration sensor (PS1)	[4]	Transport motor (M1)
[5]	Registration clutch (CL4)	-	-

1.13.3 Registration control

- When paper is transported, a loop is formed in the paper between the tray 1 paper feed roller (or tray 2 vertical transport roller or bypass paper feed roller) and the registration roller to thereby reduce skew in the paper.
- The registration roller is controlled to synchronize the timing of the image start and paper transport.

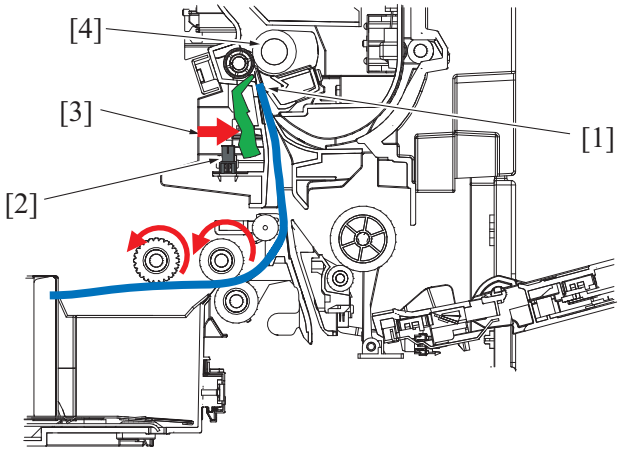
(1) Control

1. Start feeding paper. At this time, registration roller is at a stop.



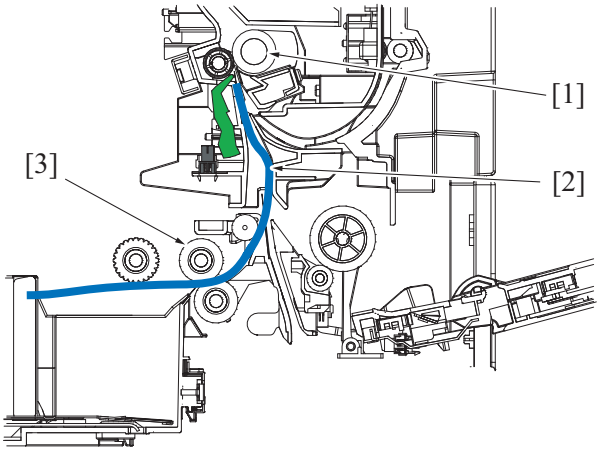
[1]	Registration roller	[2]	Tray 1 feed roller
[3]	Paper	[4]	Registration sensor (PS1)
[5]	Actuator	[6]	

2. The output of the registration sensor changes when the paper reaches the registration sensor actuator.



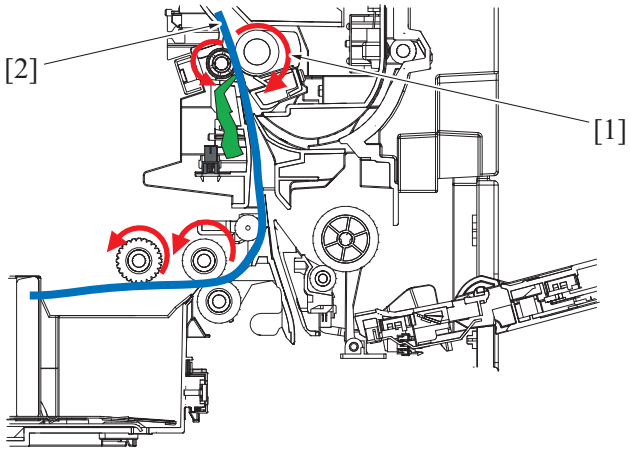
[1]	Paper reaching registration sensor	[2]	Registration sensor (PS1)
[3]	Registration sensor unblocked	[4]	Registration roller

3. After a predetermined time elapses after the registration sensor detects the paper, the tray 1 feed roller (or tray 2 vertical transport roller or bypass paper feed roller) stops. A loop is formed in the paper, which reduces skew in the paper.



[1]	Registration roller	[2]	Loop formed in paper
[3]	Tray 1 feed roller stops	[4]	

4. The registration roller starts rotating at timing at which to synchronize the image start position with paper position.



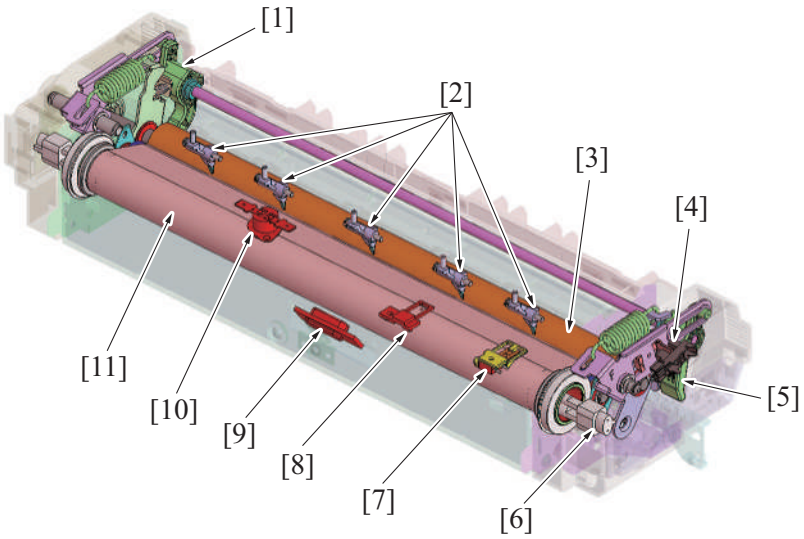
1	Registration roller rotates	2	Transporting paper to 2nd transfer section

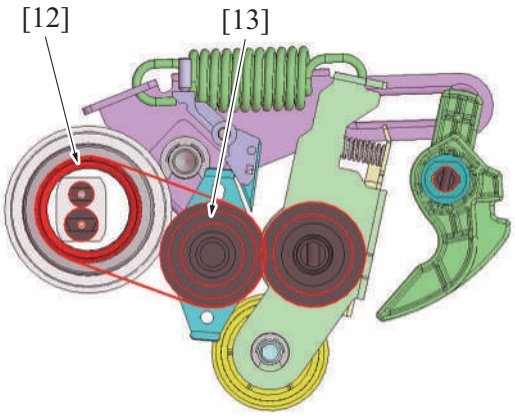
(2) Adjustment

- 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 vary timing at which the tray 1 paper feed clutch (or tray 2 vertical transport clutch) is deenergized, which results in the length of loop being varied.

1.14 FUSING SECTION

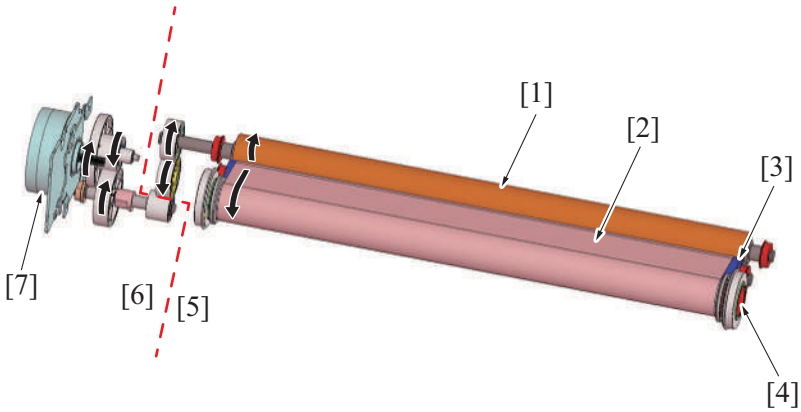
1.14.1 Configuration





[1]	Pressure/retraction lever/rear side	[2]	Paper separator claws (noncontact type)
[3]	Pressure roller	[4]	Envelope sensor (PS38)
[5]	Pressure/retraction lever/front side	[6]	Fusing heater lamp assy
[7]	Heating roller thermistor/1 (TH1)	[8]	Heating roller thermistor/2 (TH2)
[9]	Heating roller temperature sensor (TEMS)	[10]	Thermostat (TS1)
[11]	Fusing belt	[12]	Heating roller
[13]	Fusing roller	-	-

1.14.2 Drive



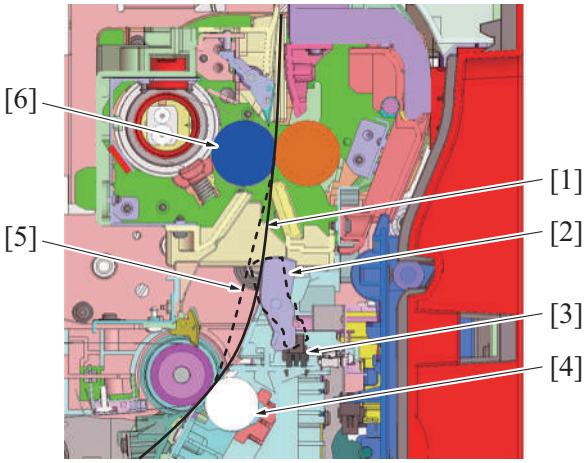
[1]	Pressure roller	[2]	Fusing belt
[3]	Fusing roller	[4]	Heating roller
[5]	Fusing unit side	[6]	Main body side
[7]	Fusing motor (M3)	-	-

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	Fussing speed
Unblocked	Large	Speed-up
Blocked	Small	Slowdown



[1]	Loop length: large	[2]	Actuator
[3]	Fusing loop sensor (PS2)	[4]	Transfer roller
[5]	Loop length: small	[6]	Fusing roller

(a) 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 transfer roller and the fusing roller.
- When the paper loop amount is small, the fusing loop sensor is blocked, and the fusing speed is increased.
- When the paper loop amount is large, the fusing loop sensor is unblocked, 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 transfer roller.

(b) 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].
- For detailed adjustment method, see “Fusing Transport Speed”.

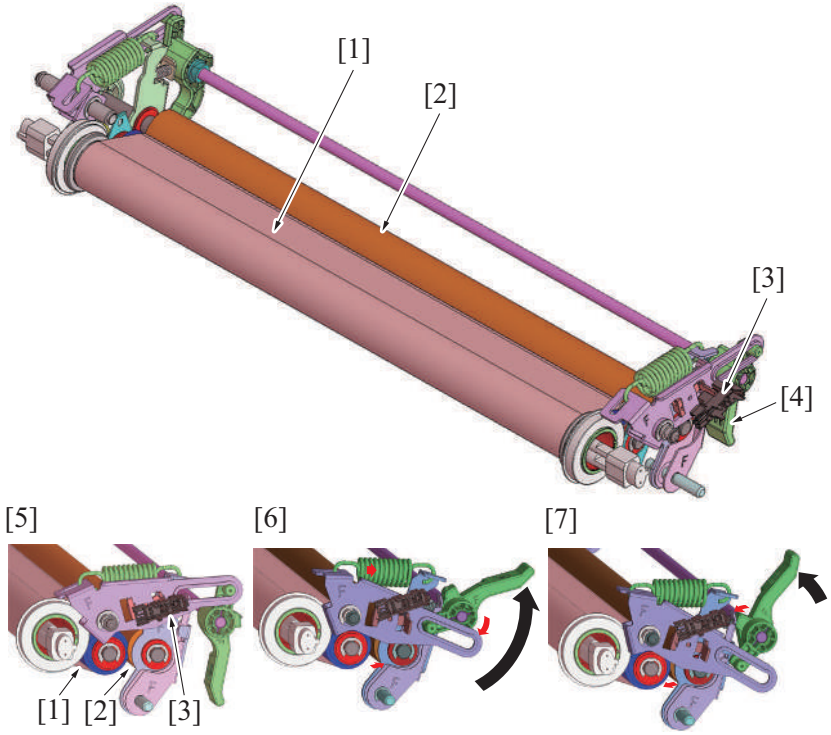
1.14.4 Fusing pressure/retraction mechanism

- The fusing belt and pressure roller normally are pressed each other.

- When a paper jam or envelope is output, the fusing belt and pressure roller retract by operating the pressure/retraction lever.
- The pressure roller retracts by moving the pressure/retraction lever upward.
- A light pressure is applied by continuing to move the pressure/retraction lever upward from the pressure roller release position, which is used to output envelopes.

NOTE

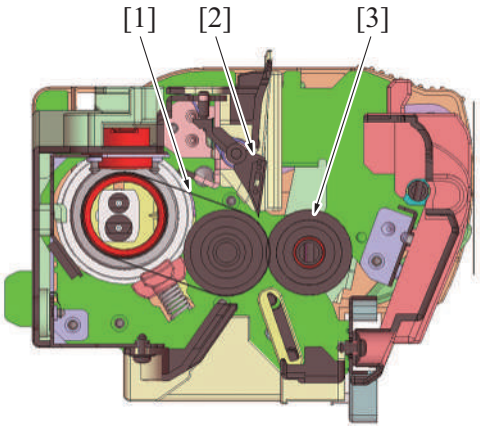
- **Return the pressure/retraction lever to its original position after an envelope has been output.**



[1]	Fusing belt	[2]	Pressure roller
[3]	Envelope sensor (PS38)	[4]	Pressure lever/front side
[5]	Pressuring pressure roller	[6]	Retracting pressure roller
[7]	Printing envelopes	-	-

1.14.5 Paper separation mechanism

- Paper separator claws are provided on the fusing belt side in order to separate the sheet of paper reliably after the fusing process.
- Five noncontact type paper separator claws are installed on the fusing belt side.



[1]	Fusing belt	[2]	Paper separator claws (noncontact type)
[3]	Pressure roller	-	-

1.14.6 Fusing belt deformation prevention control

- The fusing belt is rotated to prevent the fusing belt from remaining placed on the same side for long periods of time, preventing deformation.
- Prevents uneven gloss due to fusing belt deformation.

(1) Specific controls

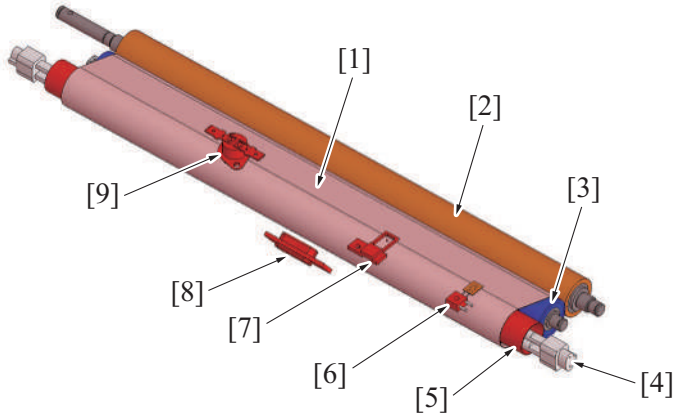
- Select Mode 2 in the Service Mode settings to enable the fusing belt deformation prevention control.
- Configured from [Service Mode] -> [System 2]- > [Fuser roll deform].

Mode	Specific controls

OFF	No control
Mode 1	• When the main body has been in standby mode for 6 hours, the fusing roller is rotated for a specified distance. • When the main body has been in power save mode for 13 days, the fusing roller is rotated for a specified distance. Afterwards, the main body returns to the power save mode.
Mode 2	• When the main body has been in standby mode for 6 hours, the fusing roller is rotated for a specified distance. Then, the fusing roller is rotated for approximately 30 seconds with the fusing temperature heated to a predetermined level before the start of a print cycle. • When the main body has been in power save mode for 13 days, the fusing roller is rotated for a specified distance. Afterwards, the main body returns to the power save mode. Then, the fusing roller is rotated for approximately 30 seconds with the fusing temperature heated to a predetermined level after the warm-up cycle, which starts when the power save mode is canceled.

1.14.7 Fusing temperature control

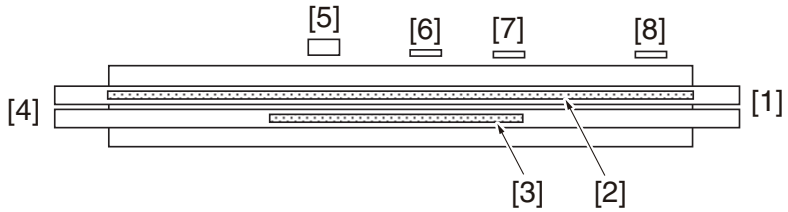
- Fusing temperature control uses the heating roller temperature sensor and the heating roller thermistor that detect the surface temperature of the fusing belt to turn ON or OFF the fusing heater lamp as necessary.
  The fusing heater lamp when turned ON heats the fusing belt to a set temperature.



[1]	Fusing belt	[2]	Pressure roller
[3]	Fusing roller	[4]	Fusing heater lamp assy
[5]	Heating roller	[6]	Heating roller thermistor/1 (TH1)
[7]	Heating roller thermistor/2 (TH2)	[8]	Heating roller temperature sensor (TEMS)
[9]	Thermostat (TS1)	-	-

(1) Fusing heater lamp

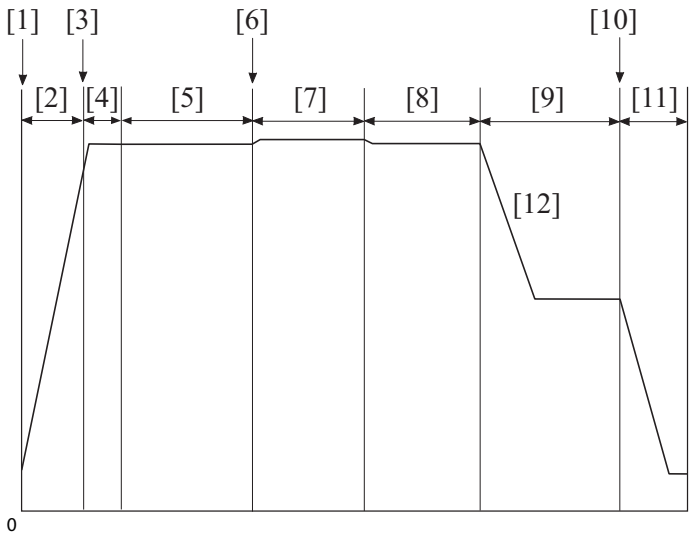
- The heating roller contains a fusing heater lamp assy in it. The fusing heater lamp turns ON to generate heat, which heats the heating roller and fusing belt.
- The fusing heater lamp assy consists of two heaters, each having a unique heating range different from each other.
  - The fusing heater lamp/1 (long) uniformly heats the entire area of the heating roller.
  - The fusing heater lamp/2 (short) heats only the central portion 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/2 is used to heat the central portion.
  - For a paper width exceeding 209 mm, the surface temperature of the fusing belt is measured and the fusing heater lamp/1 and the fusing heater lamp/2 are alternately turned ON.



[1]	Front of machine	[2]	Fusing heater lamp/1 (FH1)
[3]	Fusing heater lamp/2 (FH2)	[4]	Rear of machine
[5]	Thermostat (TS1)	[6]	Heating roller temperature sensor (TEMS)
[7]	Heating roller thermistor/2 (TH2)	[8]	Heating roller thermistor/1 (TH1)

(2) Temperature control chart

* An example when a machine is warmed up under a normal ambient condition



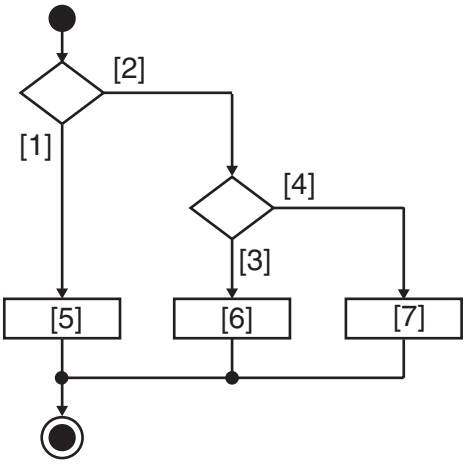
[1]	Main power switch ON	[2]	Warm-up control
[3]	Warm-up completed	[4]	Pre-standby control
[5]	Standby control (including a countermeasure against overshoot)	[6]	Print request
[7]	Print control	[8]	Standby
[9]	Low power mode	[10]	Entry in sleep mode
[11]	Sleep mode	[12]	Fusing belt temperature

(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, three different warm-up modes are incorporated for fusing temperature control.
- The warm-up mode is performed “at low temperatures”, “at ordinary temperatures”, or “under high humidity condition”.
- In the warm-up mode under high humidity condition, the warm-up time is extended to prevent paper from curling and the difference in temperature between the fusing belt and fusing pressure roller is minimized.
- When the temperature of the fusing belt reaches the warm-up completion temperature, control is passed onto the pre-standby process.

Warm up mode	Environment	
	Machine interior temperature	Machine interior humidity (absolute humidity *1)
Warm-up at low temperatures	Less than 18 degrees	Not judged by absolute humidity
Warm-up at ordinary temperatures	18 degrees or more to 32 degrees or less	Less than a predetermined value
Warm-up under high humidity condition	More than 32 degrees	Predetermined value or more

- *1: Absolute humidity: water content contained in the air (1 m3) as steam regardless of the temperature



[1]	Machine interior temperature less than 18 °C	[2]	Machine interior temperature 18 °C or more
[3]	Absolute humidity, specified value or more	[4]	Absolute humidity, less than the specified value
[5]	Warm-up at low temperatures	[6]	Warm-up under high humidity condition
[7]	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 level lower than the temperature that enables printing.
- 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.
- After standby starts, the fusing motor rotates (low speed) and stops after 5 seconds.
  The rotation time of the fusing motor after standby starts can be changed with EngineDipSW.

(6) Temperature control during the print cycle

- 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 in the low power mode, the surface temperature of the fusing belt is made lower than the controlled temperature under “temperature control during the standby state”.
- In the low power mode, the printable temperature can be recovered within a period of time shorter than warm-up.

(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]

1.14.8 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].
  For details on how to configure the settings, see “Smart Fusing Control”.

(1) Smart fusing control execution conditions

Function		Execution conditions
Temp-Inside		18 degrees or more
Print mode		Only for PC printing, BOX printing, and direct printing (USB)*1
Basic Settings	Paper type	Plain paper only
Image quality	Select color	Black mode only
	Minimum black density	More than 90%
	Line width	1.5pt or less
	Character decoration	Normal characters only
	Character size	16pt or less
	Image object	No

- *1: Copies are not included in the control

1.14.9 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/1 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/2 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 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 C3731: 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.

1.14.10 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 less than 18 degrees	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% 90% 80% 70%: default 60% 5 0%
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% 70% 50%: default
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% 50%: default

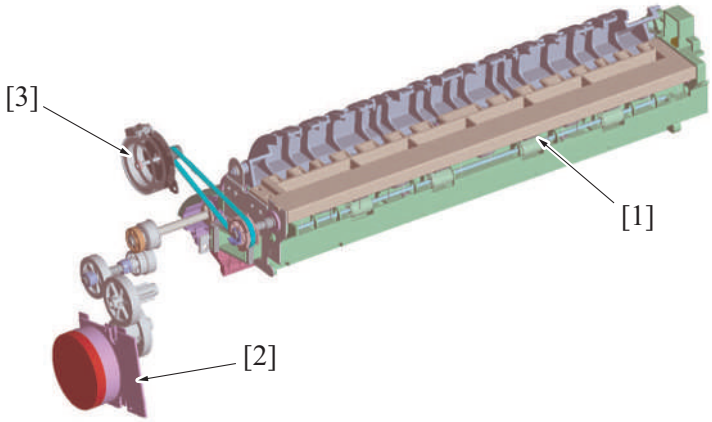
Heating roller end temperature rise suppression mode	• Print request is received for paper with a paper width of 209 mm or less • Temperature of the heating roller ends becomes a predetermined value or more	To suppress inordinate rise in temperature on heating roller ends in a print cycle using paper 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.	100%: default value 70% 50%
Recycled paper correspondence mode	“100%” is selected for “PPM Control Choice” of the service mode	To increase the print productivity of recycled paper. * Paper curling can increase if 100% is selected.	Paper-to-paper distance is narrowed to thereby increase productivity.	100% 70%: default value *3

- *1: Exemplary calculation of print speed: If 28 ppm can be achieved at a print productivity of 100 % on A4 plain paper, a change in print productivity to 90% results in 25.2 ppm.
- *2: Execution of the control for the high humidity environment mode can be prohibited by turning ON "No. 5 PPM control (high humidity environment mode) prohibited" of Engine FW DIP switch of Enhanced Security of the service mode.
- *3: For recycled paper, the print productivity will be set to 70% when “Mode 3” is selected for warm-up choice.

1.15 PAPER EXIT/REVERSE SECTION

1.15.1 Configuration

(1) Standard form

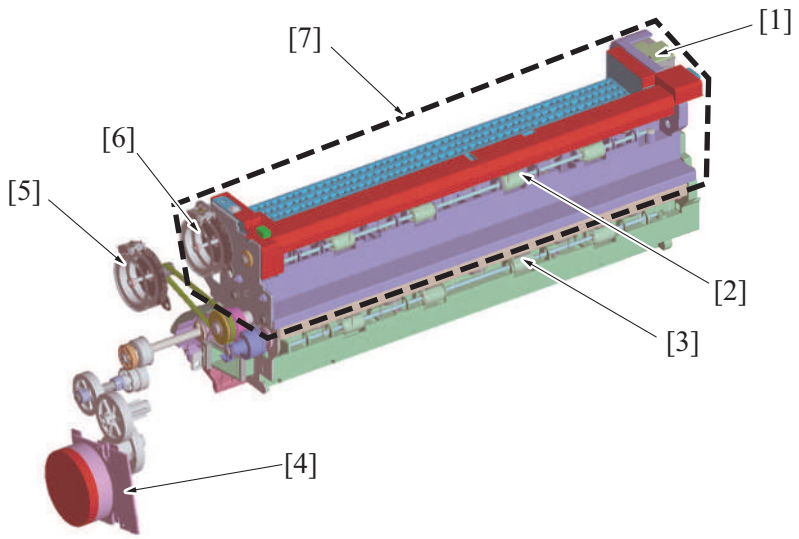


[1]	Paper exit roller	[2]	Fusing motor (M3)
[3]	Paper exit/reverse motor (M4)	-	-

(2) When the mount kit (MK-603) is mounted

NOTE

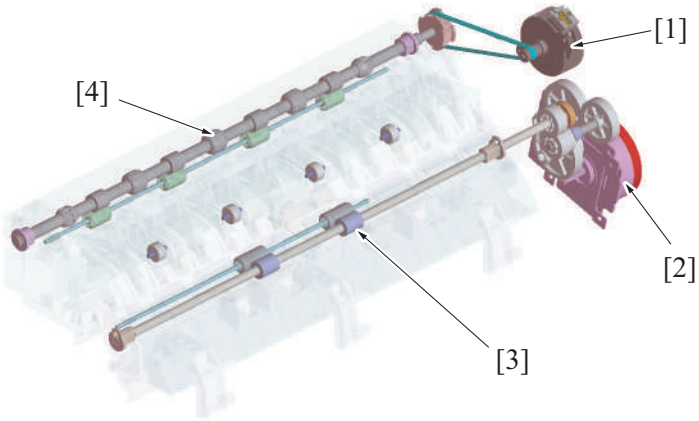
- **The optional mount kit (MK-603) must be used to mount paper exit options.**



[1]	Gate switch solenoid (SD3)	[2]	Reverse roller
[3]	Paper exit roller	[4]	Fusing motor (M3)
[5]	Paper exit/reverse motor (M4)	[6]	Upper paper exit motor (M6)
[7]	Mount Kit (MK-603) * Option	-	-

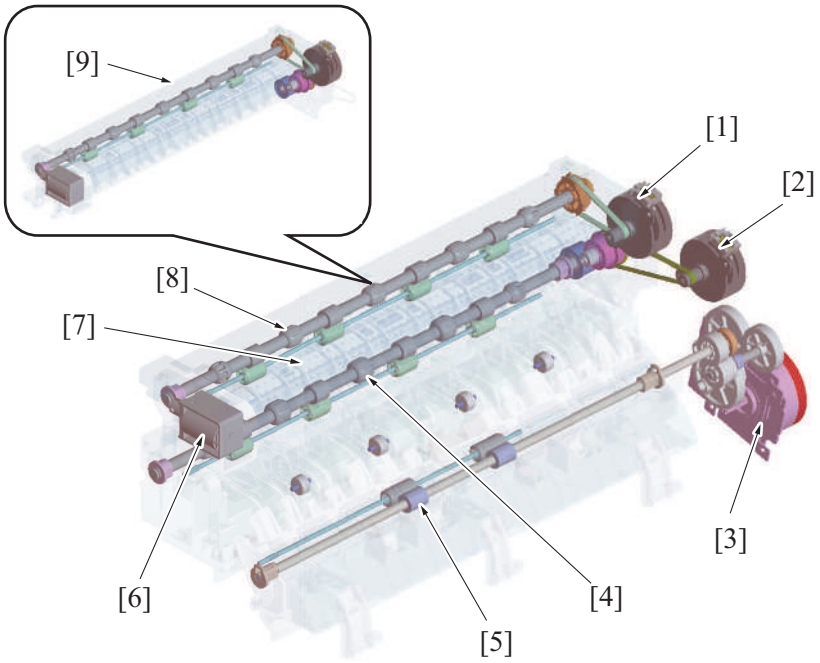
1.15.2 Drive

(1) Standard form



[1]	Paper exit/reverse motor (M4)	[2]	Fusing motor (M3)
[3]	Exit tray front roller	[4]	Exit roller

(2) When the mount kit (MK-603) is mounted



[1]	Upper paper exit motor (M6)	[2]	Paper exit/reverse motor (M4)
[3]	Fusing motor (M3)	[4]	Exit roller
[5]	Exit tray front roller	[6]	Gate switch solenoid (SD3)
[7]	Paper exit/reverse switch gate	[8]	Reverse roller
[9]	Mount Kit (MK-603) * Option	-	-

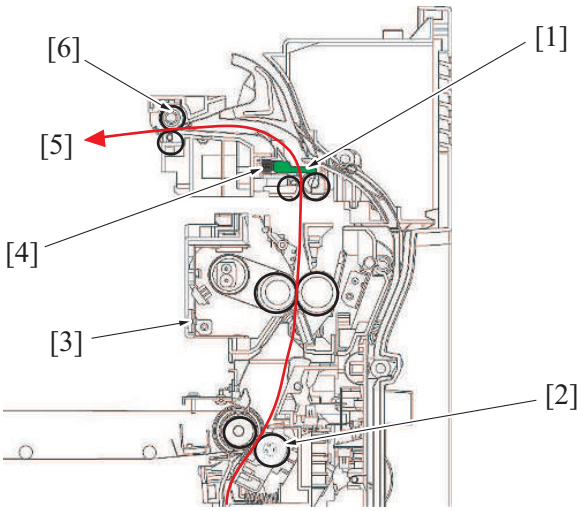
1.15.3 Operation

(1) Transport control

(a) Standard form

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 paper exit roller rotates with the drive of the paper exit/reverse motor.

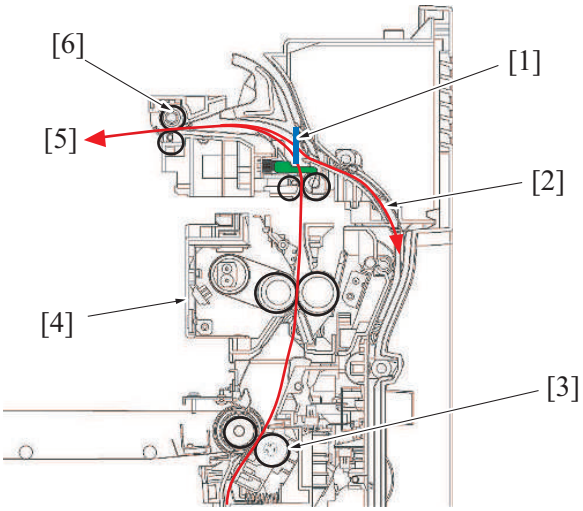


[1]	Actuator	[2]	Transfer roller
[3]	Fusing unit	[4]	Paper exit sensor (PS3)
[5]	Transported to exit tray	[6]	Paper exit roller

Duplex section transport

- When the paper is to be fed into the duplex section, the paper exit roller is rotated forward to transport the paper to the reverse position and then rotated backward, thereby transporting the paper onto the duplex section.
- The paper exit roller starts rotating forward when the leading edge of the paper arrives to a predetermined distance from the paper exit roller.

- The paper exit roller stops rotating forward after a predetermined amount of time elapses after the paper exit sensor turns off.
- The paper exit roller starts rotating backward at timing at which the preceding paper moves past a predetermined position of the duplex section.
- The paper exit roller stops rotating backward at timing at which the trailing edge of the paper enters the duplex section.

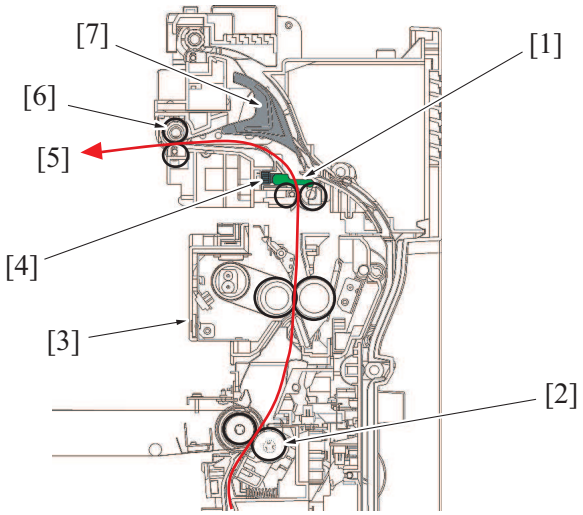


[1]	Reverse stop position	[2]	Transporting to duplex section
[3]	Transfer roller	[4]	Fusing unit
[5]	Transporting to reverse stop position	[6]	Paper exit roller

(b) When the mount kit (MK-603) is mounted

Paper exit by paper exit roller

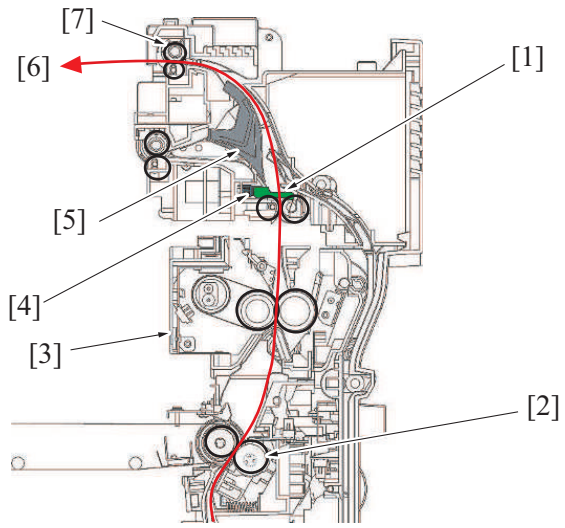
- If the paper is fed out by way of the paper exit roller, the paper exit roller is rotated forward to transport the paper.
- The initial position of the paper exit/reverse switch gate establishes a paper path through the paper exit roller, so that its position is not changed.
- The paper exit roller rotates with the drive of the paper exit/reverse motor.



[1]	Actuator	[2]	Transfer roller
[3]	Fusing unit	[4]	Paper exit sensor (PS3)
[5]	Transported to paper exit tray or finisher	[6]	Paper exit roller
[7]	Paper exit/reverse switch gate: solenoid OFF position	-	-

Paper exit by reverse roller

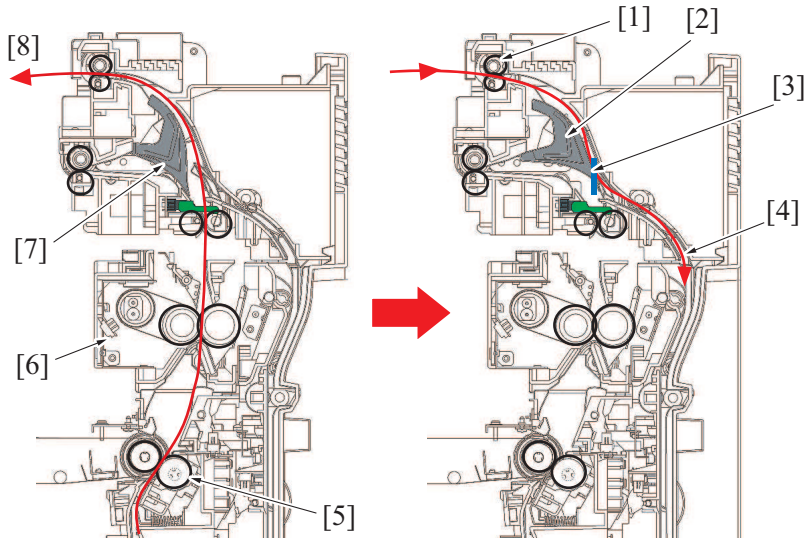
- The paper is fed from the reverse roller to the paper exit tray, only if FS-539/JS-506 capable of feeding paper out through the reverse roller is mounted.
- When the paper is fed via the reverse roller, the upper paper exit motor rotates forward to thereby transport the paper.
- The gate switch solenoid 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 starts at timing at which the leading edge of the paper enters the paper exit/reverse section.
- The reverse roller stops after paper travels a predetermined distance from the reverse roller.



[1]	Actuator	[2]	Transfer roller
[3]	Fusing unit	[4]	Paper exit sensor (PS3)
[5]	Paper exit/reverse switch gate: solenoid ON position	[6]	Paper exit to paper exit tray
[7]	Reverse roller	-	-

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 gate 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 starts rotating forward at timing at which the leading edge of the paper enters the paper exit/reverse section.
- The reverse roller stops rotating forward after a predetermined amount of time elapses after the paper exit sensor detects the trailing edge of the paper.
- The reverse roller starts rotating backward at timing at which the preceding paper moves past a predetermined position of the duplex section.
- The reverse roller stops rotating backward at timing at which the trailing edge of the paper enters the duplex section.

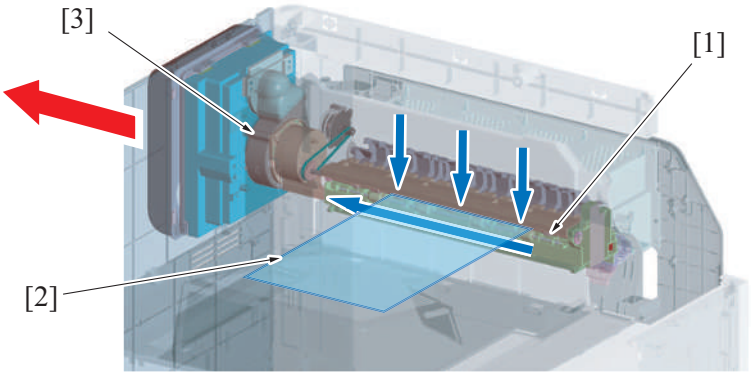


[1]	Reverse roller	[2]	Paper exit/reverse switch gate: solenoid OFF position
[3]	Reverse stop position	[4]	Transporting to duplex section
[5]	Transfer roller	[6]	Fusing unit
[7]	Paper exit/reverse switch gate: solenoid ON position	[8]	Transporting to reverse stop position

(2) Paper cooling mechanism

(a) Paper cooling of the paper exit section

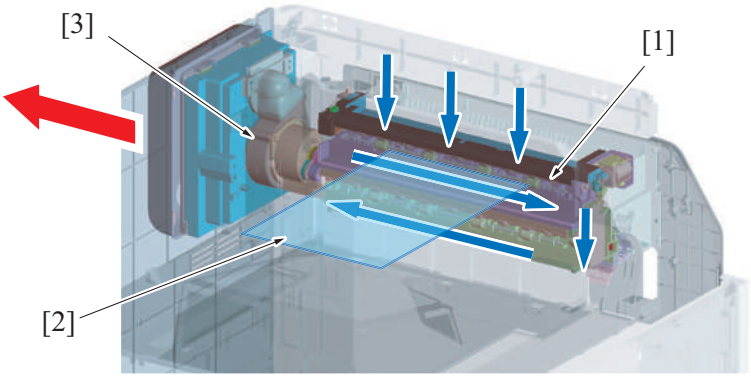
- The machine is provided with a paper cooling fan to cool down paper passing through the paper exit section after fusing.
- The paper cooling fan cools down paper passing through the paper exit section, thus preventing toner from sticking to the paper.



[1]	Paper exit section	[2]	Paper
[3]	Paper cooling fan (FM8)	-	-

(b) Paper cooling of the reverse section

- The machine is provided with a paper cooling fan to cool down paper passing through the reverse section after fusing.
- The paper cooling fan cools down the second side of paper passing through the reverse path. It prevents the temperature of the drum unit and developing unit from rising during 2-sided printing.



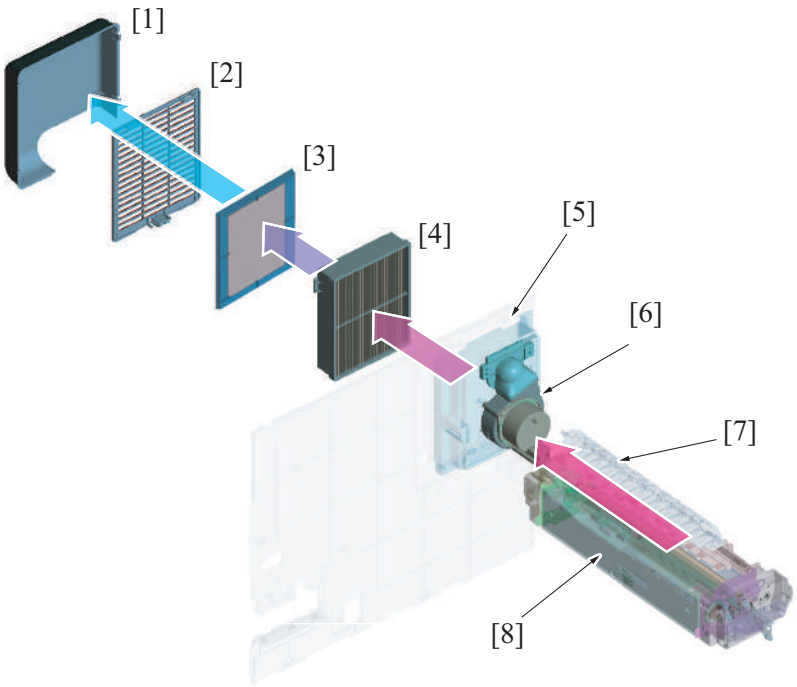
[1]	Reverse section	[2]	Paper
[3]	Paper cooling fan (FM8)	-	-

(3) Air filtering system

- The paper cooling fan sucks ultrafine particles (UFPs) and odors that are generated from the fusing unit, and the main body rear side removes them.

NOTE

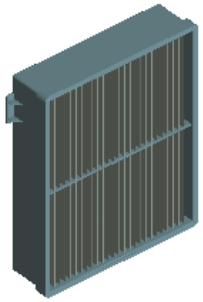
- **The UFP filter is fitted as standard equipment on models that are destined for Europe only.**
- **The UFP and deodorant filters can be used together. When these filters are used together, the deodorant filter is mounted to the rear of the UFP filter.**



[1]	Ventilation cover	[2]	Filter cover
[3]	Deodorant filter	[4]	UFP filter
[5]	Upper rear cover	[6]	Paper cooling fan (FM8)
[7]	Paper exit/reverse section	[8]	Fusing unit

(a) UFP removal function

- The UFP filter removes UFPs in the air.

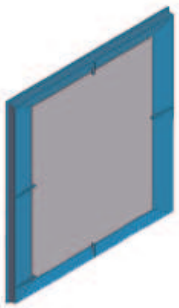


NOTE

- **The UFP filter does not requires a periodic replacement.**
- **A higher air cleaning performance can be achieved through installing the optional cleaning unit CU-101.**

(b) Deodorization function

- The deodorant filter removes odors in the air.

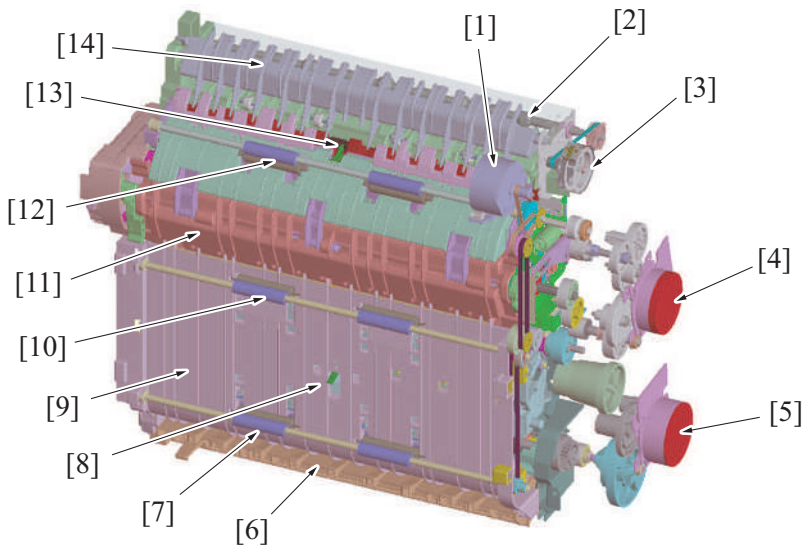


NOTE

- **The deodorant filter does not requires a periodical replacement.**

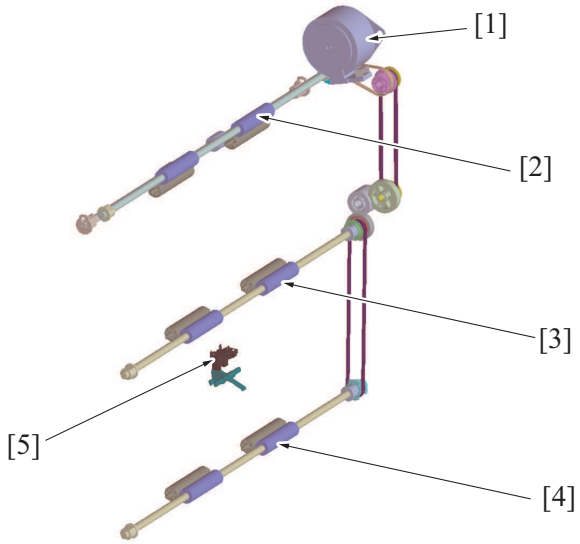
1.16 DUPLEX SECTION

1.16.1 Configuration



[1]	ADU transport motor (M5)	[2]	Paper exit roller
[3]	Paper exit/reverse motor (M4)	[4]	Fusing motor (M3)
[5]	Transport motor (M1)	[6]	Duplex pre-registration section
[7]	ADU transport roller/3	[8]	ADU paper passage sensor (PS41)
[9]	Inner door unit (Duplex section)	[10]	ADU transport roller/2
[11]	Fusing unit	[12]	ADU transport roller/1
[13]	Paper exit sensor (PS3)	[14]	Paper exit/reverse switch gate

1.16.2 Drive



[1]	ADU transport motor (M5)	[2]	ADU transport roller/1
[3]	ADU transport roller/2	[4]	ADU transport roller/3
[5]	ADU paper passage sensor (PS41)	-	-

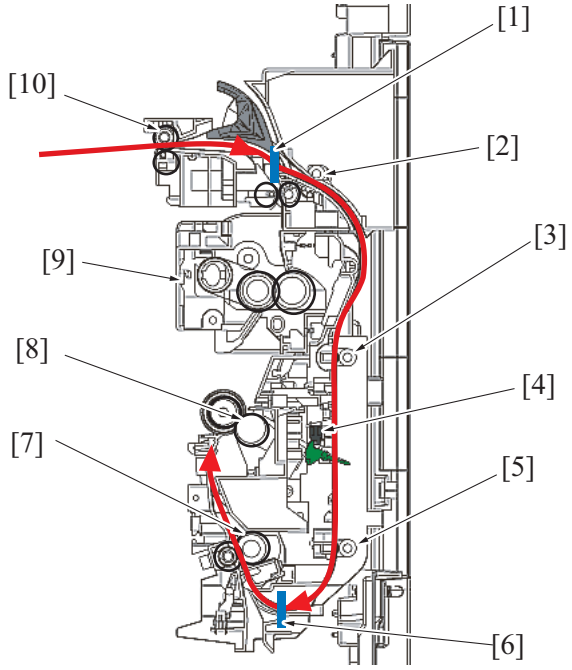
1.16.3 Operation

(1) Paper transport control

(a) Duplex transport path

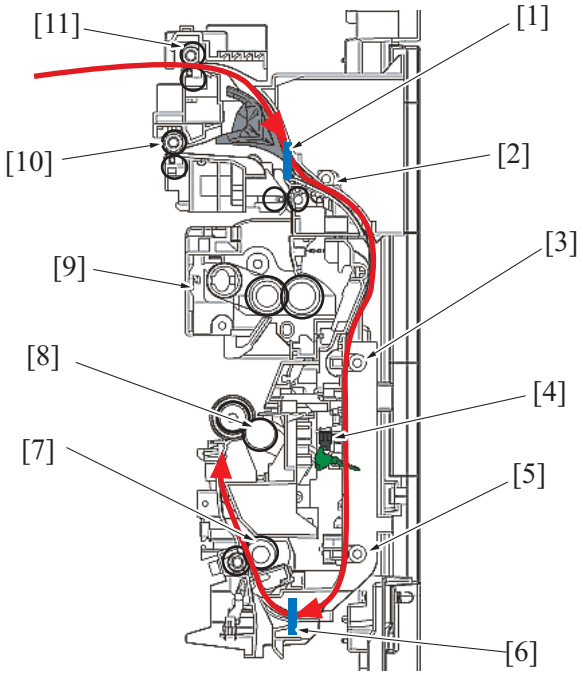
- In duplex transport, the ADU transport roller/1 transports paper inside the duplex section that paper exit roller (standard) or reverse roller (mount kit (MK-603)) transports.
- In the duplex pre-registration, the ADU transport roller/2 and ADU transport roller/3 transport the paper to the registration roller at the vertical transport section.

Standard form



[1]	Stop position 1	[2]	ADU transport roller/1
[3]	ADU transport roller/2	[4]	ADU paper passage sensor (PS41)
[5]	ADU transport roller/3	[6]	Stop position 2
[7]	Registration roller	[8]	Transfer roller
[9]	Fusing unit	[10]	Paper exit roller

When the mount kit (MK-603) is mounted



[1]	Stop position 1	[2]	ADU transport roller/1
[3]	ADU transport roller/2	[4]	ADU paper passage sensor (PS41)
[5]	ADU transport roller/3	[6]	Stop position 2
[7]	Registration roller	[8]	Transfer roller
[9]	Fusing unit	[10]	Paper exit roller
[11]	Reverse roller	-	-

(b) Transport roller control

- The ADU transport motor drives the ADU transport roller/1, ADU transport roller/2, and ADU transport roller/3.

(c) Paper entrance control

- In the standard, the paper exit/reverse motor in the paper exit section stops, which stops transport of the paper temporarily. (stop position 1)
  When the condition for starting reverse into the duplex section is met, the paper exit/reverse motor rotates backward to transport the paper into the duplex section.
- If the mount kit (MK-603) is installed, the upper paper exit motor in the paper exit/reverse section stops, which stops transport of the paper temporarily. (stop position 1)
  When the condition for starting reverse into the duplex section is met, the upper paper exit motor rotates backward to transport the paper into the duplex section.
- Concurrently with the backward rotation of the paper exit/reverse motor or upper paper exit motor, the ADU transport motor is energized and the ADU transport roller/1, ADU transport roller/2 and ADU transport roller/3 start rotating.
- The ADU paper passage sensor that is located at the downstream of the ADU transport roller/2 detects the leading edge of the paper that is transported to the duplex section.
- Paper jams in the duplex transport section are determined if the ADU paper passage sensor does not detect the leading edge of the paper after a predetermined time elapses since the reversal starts to the duplex section.

(d) Duplex paper feed control

- After a predetermined amount of time elapses after the ADU paper passage sensor detects the leading edge of the paper that is transported to the duplex section is detected, the ADU transport motor is turned off, which pauses the paper transport process. (stop position 2)
- At a predetermined paper feed timing, the ADU transport motor is turned on, which resumes paper transport process.
- The paper is fed from the ADU transport roller/3 onto the registration roller at the vertical transport part.

(2) Duplex circulation control

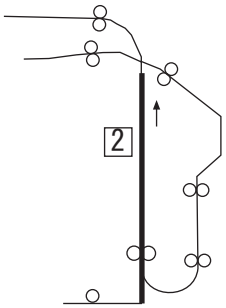
- The duplex circulation control is performed differently according to the length of the paper.

Paper length	One-sheet circulation operation	Two-sheet circulation operation
148 mm to 216 mm	Allow	Allow
217 mm to 297 mm	Allow	Allow *
298 mm to 381 mm	Allow	Restrict
382 mm to 431.8 mm	Allow	Restrict
Less than 148 mm More than 431.8 mm	Can not print 2-sided	

- Only when Mount Kit (MK-603) is installed

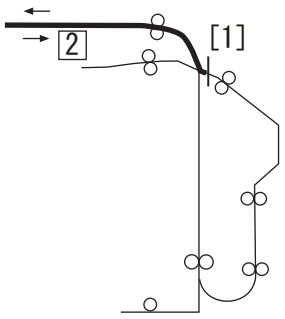
(a) One-sheet circulation operation

Operation 1



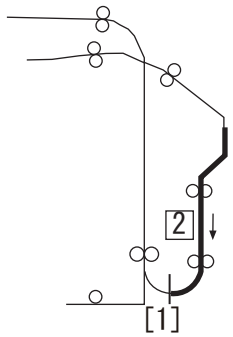
- One sheet of paper is supplied and the image of the second page is printed.

Operation 2



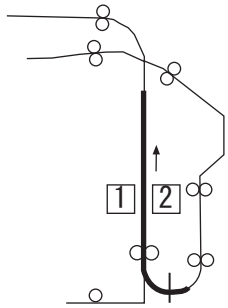
- After stopping at the stop position 1 [1], paper that is transported to the paper exit/reverse section is transported to the duplex section by the paper exit roller (when the mount kit MK-603 is not mounted) or reverse roller (when the mount kit MK-603 is mounted) both of which rotate reversely. (paper reversed)

Operation 3



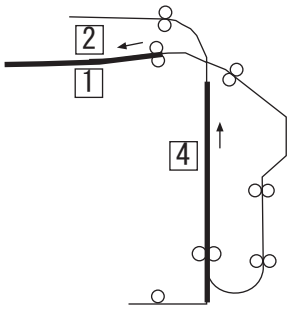
- The paper transported to the duplex section is transported onto, and stopped at the stop position 2 [1] (ADU transport roller/3).

Operation 4



- The image of the first page is printed on the paper re-supplied from the duplex section.

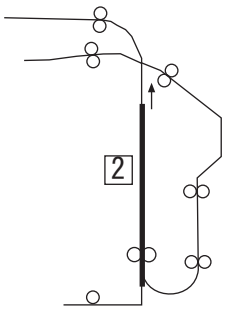
Operation 5



- The first sheet of the paper is fed out.
- The image of fourth page is printed on the second sheet.
- Steps 2 through 5 are repeated.

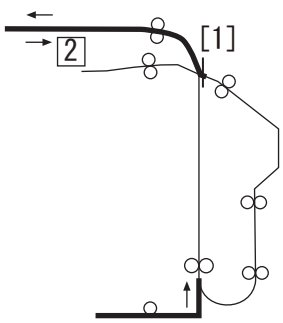
(b) Two-sheet circulation operation

Operation 1



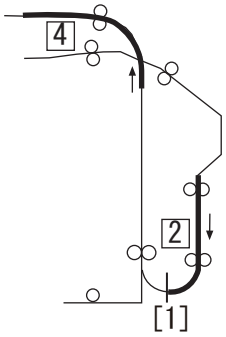
- The first sheet of paper is supplied and the image of the second page is printed.

Operation 2



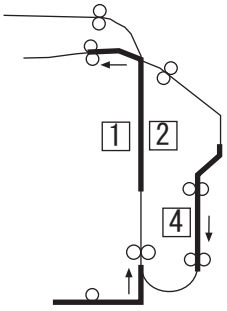
- After stopping at the stop position 1 [1], first sheet of paper is transported to the duplex section by the paper exit roller (when the mount kit MK-603 is not mounted) or reverse roller (when the mount kit MK-603 is mounted) both of which rotate reversely. (paper reversed)
- The second sheet of paper is supplied.

Operation 3



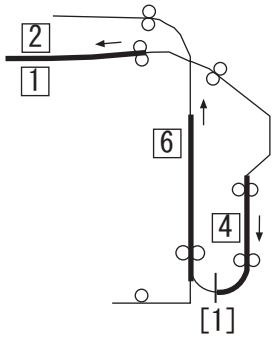
- The first sheet of the paper is sent trough the duplex section and stops at the stop position 2 [1] (ADU transport roller/3).
- The image of the fourth page is printed on the second sheet of paper.

Operation 4



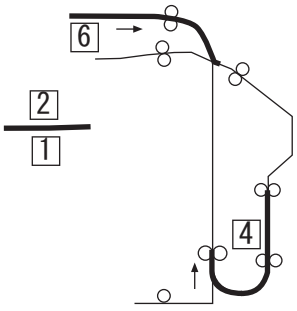
- The first sheet of the paper is re-supplied and an image of the first page is printed on.
- The second sheet of paper is reversed at the paper exit/reverse section and transported onto the duplex section.
- The third sheet of paper is supplied.

Operation 5



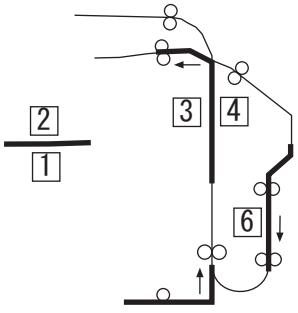
- The first sheet of the paper is fed out.
- The second sheet of the paper is transported onto, and stopped at stop position 2 [1].
- The image of the sixth page is printed on the third sheet of paper.

Operation 6



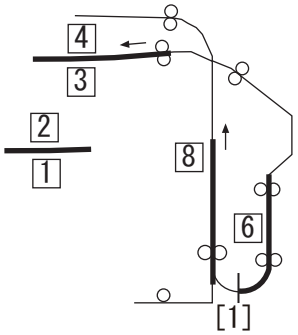
- The second sheet of the paper is re-supplied.
- The third sheet of paper is reversed at the paper exit/reverse section and transported onto the duplex section.

Operation 7



- The image of the third page is printed on the second sheet of paper.
- The third sheet of paper is transported in the duplex section.
- The fourth sheet of paper is supplied.

Operation 8



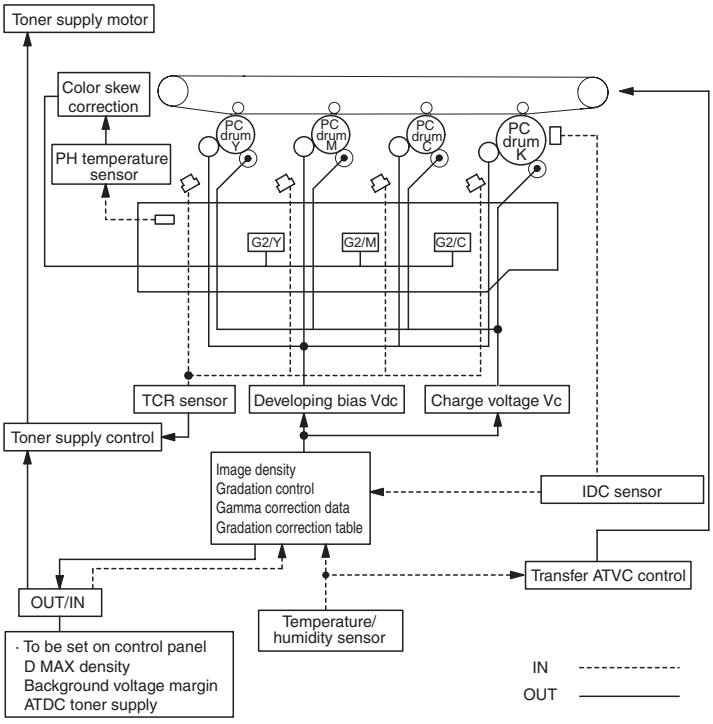
- The second sheet of the paper is fed out.
- The third sheet of the paper is stopped and waited at stop position 2 [1].
- The image of eighth page is printed on the fourth sheet of the paper.
- Steps 6 through 8 are repeated.

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 Registration control (color shift correction) Gamma correction control	IDC sensor Temperature/humidity sensor PH temperature sensor
To stabilize toner density	TCR control (Y, M, C, K)	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 variations in developing characteristics and IDC sensor intensity, variations in sensitivity of the photo conductor, and changes in the environment, durability, and the amount of charge in toner.
- 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.
- Thereafter, the grid voltage (Vg) value, including the background margin adjustment value, 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 photo conductor, 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) Color registration control (color shift correction)

- Color shift occurs on the tandem engine including image forming units for each color, due to the variations in internal parts and mounting accuracies. The color registration control system automatically detects color shift and correct color shift in the main and sub scanning directions.
- The color shift is detected as follows. A pattern is produced at each of front and rear ends of the transfer belt. The IDC sensors at the front and rear ends read respective patterns to thereby calculate and store color shift amounts in the sub scanning and main scanning directions.
- From data readings, the machine calculates how much the position of each of the different colors should be corrected. Based on the calculated data, the machine controls each dot during image output, thereby correcting the color shift amount.

(5) Gamma correction control

- The gamma correction value is adjusted to correct changes in gamma characteristics to a linear one. The changes in gamma characteristics are caused with variations in the photo conductor sensitivity, developing characteristics, durability, environment, and parts variations in manufacturing.
- It produces gradation patterns on the transfer belt and calculates gradation characteristics output by the current engine with the IDC sensor.
- An optimum gamma correction value is determined for each color by calculating gamma correction data from the detected data of each of the colors of C, M, Y, and K.

1.17.3 Control contents

(1) Image stabilization type (mode)

- Seven different modes of image stabilization are available.
- A specific mode is selected according to the environmental conditions and print requirements, thereby achieving stabilized image at all times.

Stabilization type	Contents
Mode 1 (initialization and image stabilization)	Executed when “Initialize + Image Stabilization” is selected from the control panel.
Mode 1 (long image stabilization)	Executed when there is a change in environmental condition. Executed when the last image stabilization has been abnormally terminated.
Mode 2 (short image stabilization)	Executed after the main power switch is turned ON. (when color priority is selected) Executed when the gamma correction (density) fluctuates.
Mode 4 (color registration control)	Executed when there is a change in machine interior temperature.
Mode 5 (monochrome, long image stabilization)	Executed in the monochrome-only mode when the environment is changed in the monochrome mode or the last image stabilization has been abnormally terminated.
Mode 6 (monochrome, short image stabilization)	Executed in the monochrome-only mode when the printed number of pages during a print cycle is 1000, the machine interior temperature changes, or when the gamma correction (density) fluctuates.
Mode 7 (monochrome, gamma correction)	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	Mode 4	Mode 5 *4	Mode 6 *4
1	IDC sensor adjustment	IDC sensor detection *1	IDC sensor detection *1	IDC sensor adjustment	IDC sensor detection *5
2	Dmax density adjustment	Dmax density adjustment	Color registration adjustment *2	Dmax density adjustment	Dmax density adjustment
3	LD light intensity adjustment	Color registration adjustment *2	-	LD light intensity adjustment	LD light intensity adjustment
4	Color registration adjustment	LD light intensity adjustment	-	Dmax density adjustment	Gamma correction *3

5	Dmax density adjustment	Gamma correction *3	-	LD light intensity adjustment	-
6	LD light intensity adjustment	-	-	Gamma correction *3	-
7	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.
- *2: Unlike the color registration adjustment of mode 1, simplified color registration control is performed.
- *3: Unlike the gamma correction of mode 1, simplified gamma correction control is performed.
- *4: Monochrome-only mode
- *5: 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 5 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	Image stabilization setting
Mode 1	• A new imaging unit/Y,M,C is detected. • A new transfer belt is detected. • The machine recovers from a toner empty condition. • While a warning 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 light intensity adjustment. • After skew adjustment reset (service mode). • 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. • There is a change in temperature after the lapse of a predetermined period of time after a developing drive stop. • A change in temperature which is a predetermined value or more after the color registration adjustment (when exiting from the sleep mode). • A change in temperature which is less than a predetermined value after a color registration adjustment (when exiting from the sleep mode).	• Not specified
Mode 2		• Not specified
Mode 4		• Only Color priority selection
Mode 5	• A new drum unit/K or a new developing unit/K is detected. • 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 light intensity adjustment.	• Only Black priority selection
Mode 6	• 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.	• Only Black priority selection

(a) Stabilization mode setting

- Optimum image stabilization control can be selected using the administrator mode or service mode according to user's use condition.
- Three options available are the standard, color priority, and black priority modes.
- Mode of image stabilization setting is provided to maintain image quality and achieve the following purposes.
  1. To reduce frequency at which the stabilization control is performed in order to reduce cost per print for users who have a low print volume and low color ratio
  2. To shorten time between when the machine is turned ON and when it is ready for printing
  3. To maintain convenience for users having a high color frequency

Mode	Control
Standard	• Color stabilization is executed if image adjustments are necessary for color print or black print during predrive.
Color priority	• Color stabilization is executed if image adjustments are necessary for color print or black print during predrive. • Stabilization is executed unconditionally when the main power switch is turned ON. Warm-up time takes about 60 sec. when the main power switch is turned ON.

Black priority	• Black stabilization is executed if image adjustments are necessary for black print during predrive. • Color stabilization is executed before color print if image adjustments are necessary for color print.

(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.

(a) During a color print cycle

1. Stabilization execution condition 1
   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 intensity adjustment.
2. Stabilization execution condition 2
   In the last image stabilization, the value of IDC sensor detection was out of the specified range.
   The last warning code is displayed.

Operation conditions							Stabilization (mode)	Operation timing during print
Stabilization execution condition 1	Print count after gamma correction	Stabilization execution condition 2	Dmax adjustment request based on last gamma correction result	Change of a predetermined value or more in temperature after last stabilization *1	The number of pages yet to be printed of the current print job	Print count after last stabilization *2		
Any of the conditions is met	-	-	-	Change	A predetermined number of pages or more	-	Mode 1 is executed	Executed by interrupting the print cycle
					Less than a predetermined number of pages	-		Executed after a print cycle
				No change	-	1000 sheets or more		Executed by interrupting the print cycle
					-	800 sheets or more		
					-	400 sheets or more		Executed after a print cycle
None of the conditions is met	400 sheets or more	Any of the conditions is met	-	Change	A predetermined number of pages or more	-		Executed by interrupting the print cycle
					Less than a predetermined number of pages	-		Executed after a print cycle
				No change	-	1000 sheets or more		Executed by interrupting the print cycle
					-	800 sheets or more		
					-	400 sheets or more		Executed after a print cycle
		None of the conditions is met	Yes	Change	A predetermined number of pages or more	-	Mode 2 is executed	Executed by interrupting the print cycle
					Less than a predetermined number of pages	-		Executed after a print cycle
				No change	-	1000 sheets or more		Executed by interrupting the print cycle
					-	800 sheets or more		
					-	400 sheets or more		Executed after a print cycle

	400 sheets or less	-	-	Change	A predetermined number of pages or more	-	Mode 4 is executed	Executed by interrupting the print cycle
					Less than a predetermined number of pages	-		Executed after a print cycle
				No change	-	-	Stabilization is not performed	

- *1: Detected by both the PH temperature sensor and temperature/humidity sensor
- *2: Counting method of printed pages

Paper length in the sub scanning direction	Count	
	Color mode	Monochrome mode
216 mm or less	2	1
More than 216 mm	4	2

(b) During a monochrome print cycle

1. Stabilization execution condition 1
   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 light intensity adjustment.
2. Stabilization execution condition 2
   In the last image stabilization, the value of IDC sensor detection was out of the specified range.
   The last warning code occurs.

Operating conditions				Stabilization (mode)	Operation timing during print
Stabilization execution condition 1	Print count after gamma correction	Stabilization execution condition 2	Dmax adjustment request based on last gamma correction result		
Any of the conditions is met	-	-	-	Mode 5 is executed	Executed by interrupting the print cycle
None of the conditions is met	1000 sheets or more	Any of the conditions is met	-		
		None of the conditions is met	Yes	Mode 6 is executed	Executed by interrupting the print cycle
			No	Mode 7 is executed	Executed by interrupting the print cycle
	1000 sheets or less			Stabilization is not performed	

(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

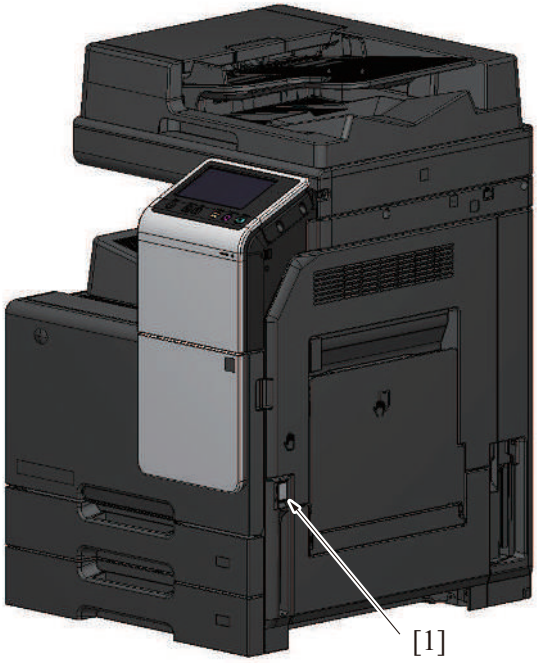
(4) Expert Adjustment

- 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

1.18 POWER SUPPLY SECTION

1.18.1 Main power switch



[1]	Main power swich	-	-

NOTE

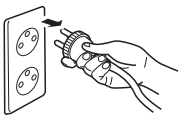
- **To turn OFF and ON the main power switch, first turn OFF the main power switch and wait for 10 sec. or more before turning it ON again. If a setting value or values in the service mode are changed, it takes 10 sec. or more to incorporate the setting changes properly in the machine.**

(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 • DC power supply unit • Dehumidifier drive board • Paper feed cabinet • Large Capacity Unit

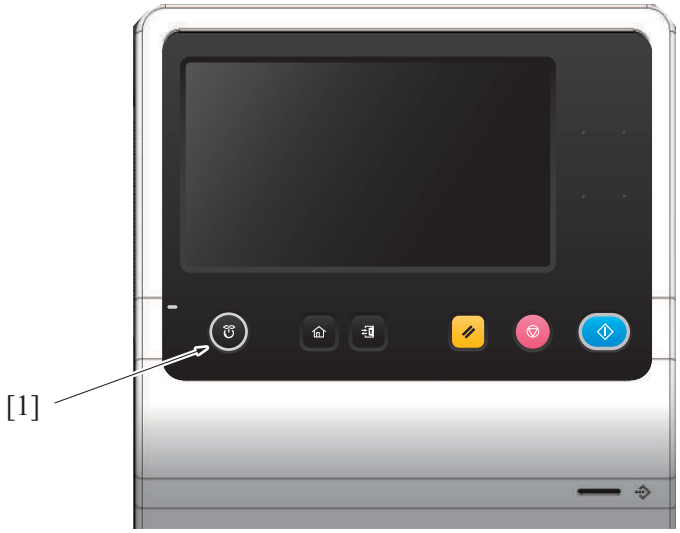
(2) Quick start up function

- 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.**

1.18.2 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

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.	
	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)	• Power is supplied only to the base board.	

Mode		State	Power key LED
	(High)	• 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.

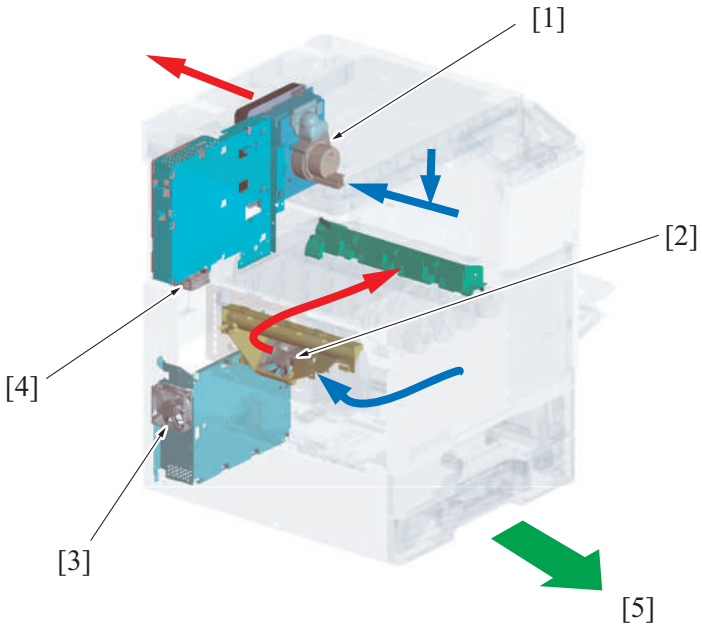
5.1V	• MFP controller • FAX CPU • Main body storage (*1) • USB board
	• Angle sensor (*2) • Original cover sensor (*2) • Control panel key

- *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.

1.19 FAN CONTROL

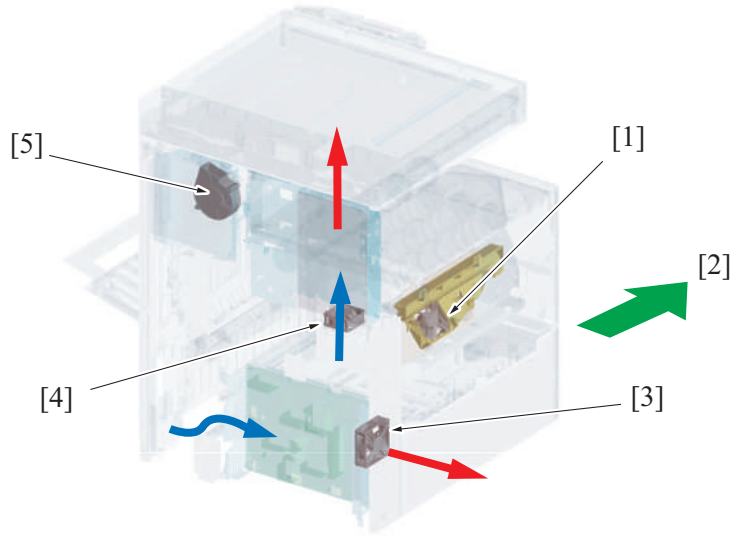
1.19.1 Configuration

(1) Front view



[1]	Paper cooling fan (FM8)	[2]	Transfer belt cleaner cooling fan (FM2)
[3]	Power supply cooling fan (FM1)	[4]	Rear side cooling fan (FM3)
[5]	Front of main body	-	-

(2) Rear view



[1]	Transfer belt cleaner cooling fan (FM2)	[2]	Front of main body
[3]	Power supply cooling fan (FM1)	[4]	Rear side cooling fan (FM3)
[5]	Paper cooling fan (FM8)	-	-

1.19.2 Function

Motor name	Function
Power supply cooling fan (FM1)	• Blows outside air against around the board and discharges heat outside of the machine to prevent the temperature of DC power supply from rising.
Transfer belt cleaner cooling fan (FM2)	• Prevent the temperature of the transfer cleaner section, 1st/2nd transfer section, photo conductor unit, developing unit, and toner cartridge from rising. • Air that is taken from the photo conductor unit and developing unit on the right side of the PH area cools each part.
Rear side cooling fan (FM3)	• Blows outside air against around the MFP board to prevent the temperature of the board from rising.
Paper cooling fan (FM8)	• When the paper with toner heated at fusing section exit while still at high temperature, toner may be transferred to other paper on the exit tray. To prevent the toner adhesion (tacking), the internal residual heat is discharged outside of the unit. • To prevent the temperature from rising inside the fusing section, the internal residual heat is discharged outside of the unit. • Ultrafine particles (UFPs) in the air are sucked and removed through the UFP filter. *1 • Odors in the air are sucked and removed through the deodorant filter. *2

- *1: The UFP filter is fitted as standard equipment on models that are destined for Europe only.
- *2: The deodorant filter is fitted as standard equipment on model of the 28ppm No Olivetti that is destined for China

only. **1.19.3 Control**

Status	Power supply cooling fan (FM1)	Transfer belt cleaner cooling fan (FM2)	Rear side cooling fan (FM3)	Paper cooling fan (FM8)
Initial operation	Full speed rotation	Full speed rotation	Full speed rotation	Stop
At warm-up	Full speed rotation	Stop	Full speed rotation	Stop *1
In standby	Half speed rotation *3	Stop *2	Half speed rotation	Stop *2
When printing	Full speed rotation	Full speed rotation	Full speed rotation	Full speed rotation
In sleep mode	Stop	Stop	Stop *4	Stop
In low power mode	Half speed rotation	Stop	Stop *4	Stop
In a trouble	Half speed rotation	Stop	Half speed rotation	Stop
Checking machine status	Full speed rotation	Full speed rotation	Full speed rotation	Stop
Statuses other than the above	Stop	Stop	Stop	Stop

- *1: When the clean unit is mounted, full speed rotation operates due to UFP control.
- *2: If the machine enters the “standby” state from the print status, the fan motor turns at full speed for a predetermined time, and stops.

- *3: If the machine enters the “standby” state from the print status, the fan motor turns at full speed for a predetermined time, and turns at half speed.
- *4: When the following FAX Settings is set to “ON”, half speed rotation operates.
  - 1300Hz Detection

1.20 COUNTER CONTROL

Name	Function/system
Electronic counter	• Number of total in copy/print/fax/scan mode will be displayed on the screen as described below. • Black, full color, single color, and 2 color • Total counter, large size counter, color total (copy + print), scan counter, fax TX counter, fax RX counter, No. of originals counter, No. of paper counter, total duplex counter • Count 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] of Service Mode. For details, see “Counter Setting”.**

1.21 INDICATOR FUNCTION

1.21.1 Control panel section

[1]	Start key	[2]	Data indicator
[3]	Power key	[4]	Warning indicator

(1) Start key indicator section

Status	Start key indicator section
During warm-up	Lit up orange
During stand-by	Lit up blue
During copying or printing	Lit up blue or orange
Paper misfeed or trouble	Lit up orange
Lower power mode, sleep mode	Unlit
ErP auto power off mode	Unlit
Sub power off mode	Unlit

(2) Data indicator section

Status	Operation status indicator section
Job is currently	Lit up blue
Receiving a job	Blinking in blue
Other status	Unlit

(3) Power key LED

Status	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

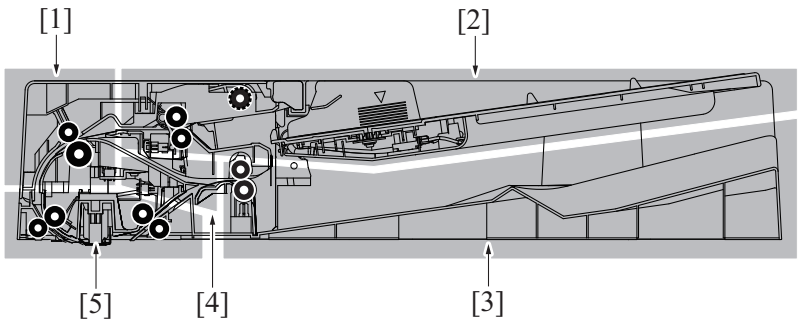
(4) Warning status indicator section

Status	Warning status indicator section
When machine stops	Lit up orange
When warning occurs	Blinking in orange
Other status	Unlit

2. DF-633

2.1 CONFIGURATION

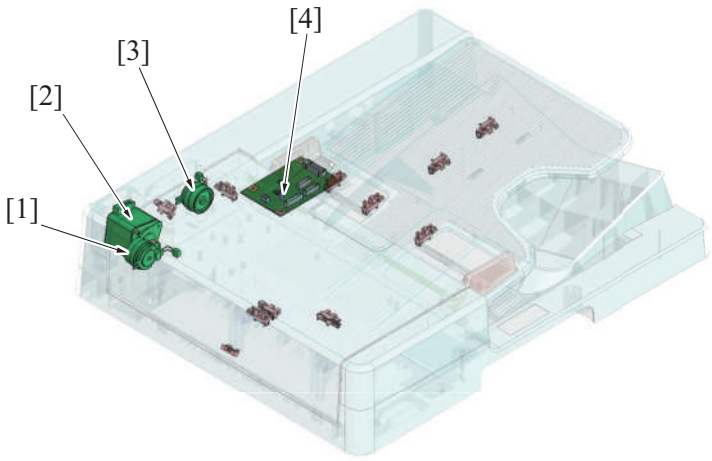
2.1.1 Section configuration



[1]	Document registration section	[2]	Document feed section
[3]	Document exit section	[4]	Document switchback section
[5]	Document reading section	-	-

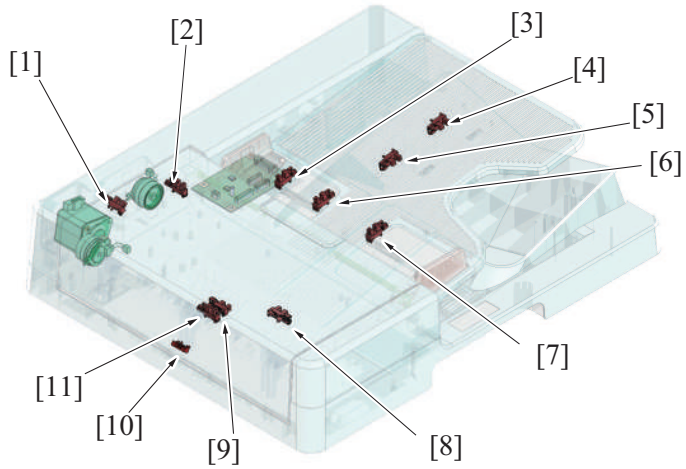
2.1.2 Main part configuration

(1) Main electrical part



[1]	Document registration clutch (CL2)	[2]	Document feed motor (M1)
[3]	Document feed clutch (CL1)	[4]	DF control board (DFCB)

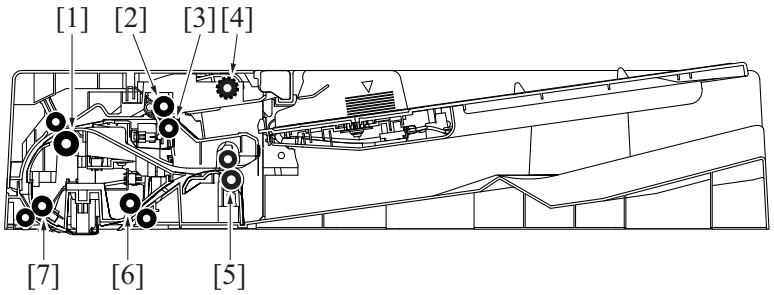
(2) Sensor



[1]	Upper door sensor (PS1)	[2]	Document set sensor (PS2)
[3]	Document size sensor/CD1 (PS9)	[4]	Document size sensor/FD2 (PS8)
[5]	Document size sensor/FD1 (PS7)	[6]	Document size sensor/CD3 (PS11)
[7]	Document size sensor/CD2 (PS10)	[8]	Document feed sensor (PS3)

[9]	Document exit sensor (PS6)	[10]	Document reading sensor (PS5)
[11]	Document registration sensor (PS4)	-	-

(3) Roller placement

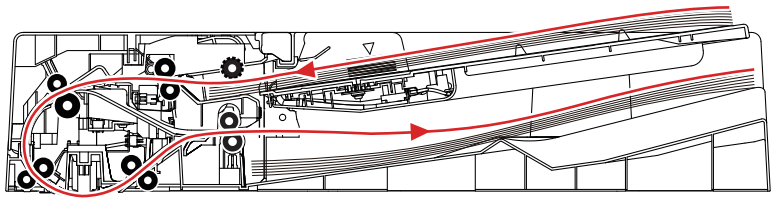


[1]	Registration roller	[2]	Document feed roller
[3]	Document separation roller	[4]	Document pick-up roller
[5]	Switchback/exit roller	[6]	Document reading roller/2
[7]	Document reading roller/1	-	-

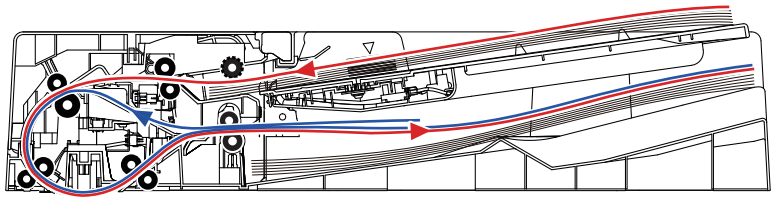
2.2 OVERVIEW

2.2.1 Paper path

(1) 1-sided paper path



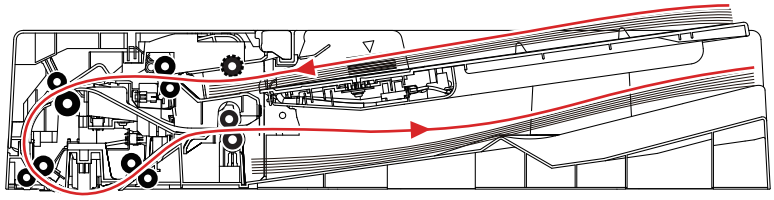
(2) 2-sided paper path



2.2.2 Paper path operation

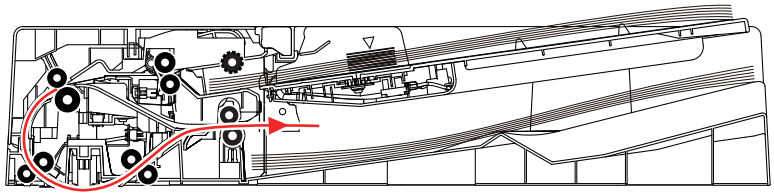
(1) 1-sided mode

1. Pressing the start key will lower the document pick-up roller and press the original.
2. The document pick-up roller, document feed roller and document separation roller will start rotating to start feeding the first sheet of paper.
3. When the paper reaches the registration roller, a loop is formed in the paper. Then, the document registration clutch is energized, so that the registration roller transports the paper.
4. It starts reading from the leading edge of the original when the document reading sensor turned ON and the predetermined period of time has passed.
5. The original will be exit by document reading roller/2 and the document exit roller.
6. The document feed motor will turn OFF after the trailing edge of the original turns OFF the document exit sensor and the predetermined period of time is passed.

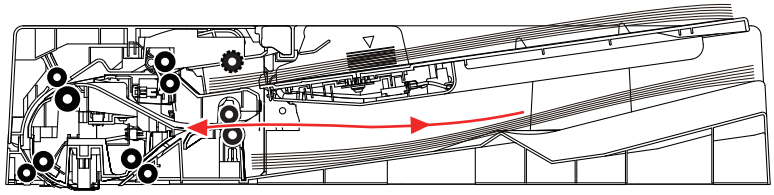


(2) 2-sided mode

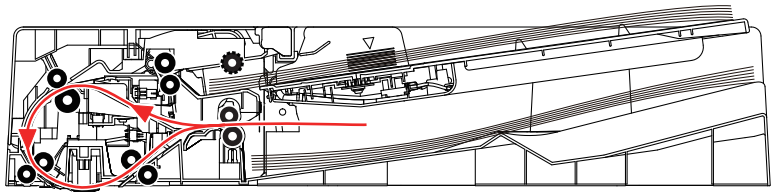
1. In the same manner as in the 1-side mode, the first side of the original is read.



2. After the original moves past document reading roller/2, the document feed motor is rotated backward and the original is transported to the switchback section.



3. It starts reading from the leading edge of the original when the document reading sensor turned ON and the specified period of time has passed.

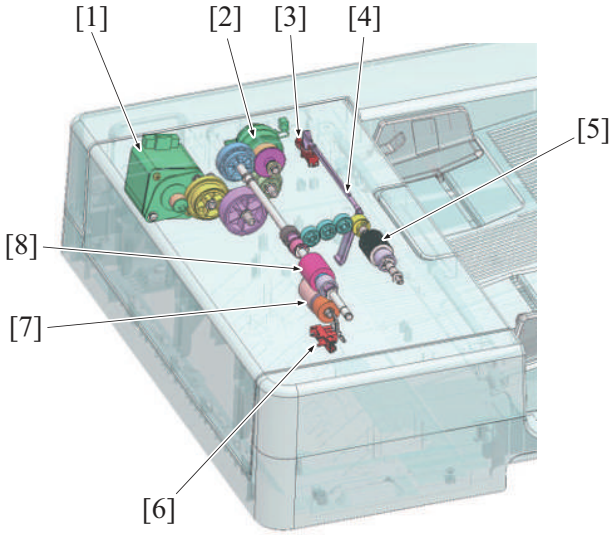


4. To ensure that the front and back sides of the originals are in correct order, the original undergoes the similar switchback operation again before being fed into the tray.

2.3 DOCUMENT FEED SECTION

2.3.1 Document feed drive

- The document feed section is composed of the document pick-up roller, document feed roller and document separation roller.
- When the start key is pressed, the document pick-up roller lowers to press the original, and the original is taken up and fed in. The original is transported to the registration roller by the document pick-up roller and document feed roller.
- After the take-up and feeding sequence, the document feed motor is rotated backward, which raises the document pick-up roller.

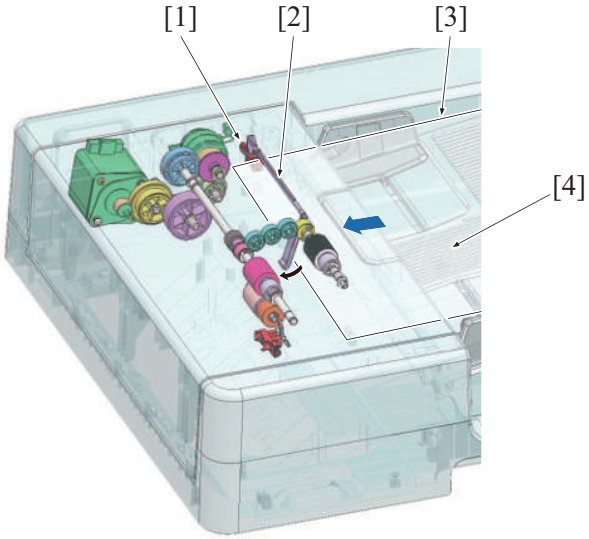


[1]	Document feed motor (M1)	[2]	Document feed clutch (CL1)
[3]	Document set sensor (PS2)	[4]	Actuator
[5]	Document pick-up roller	[6]	Document feed sensor (PS3)
[7]	Document separation roller	[8]	Document feed roller

2.3.2 Document set/empty detection

- When an original is loaded on the document feed tray, the document set sensor detects that there is original.
- If no original is loaded when the document pick-up roller is in the standby position, the actuator blocks the document set sensor and it is detected that no original is loaded.

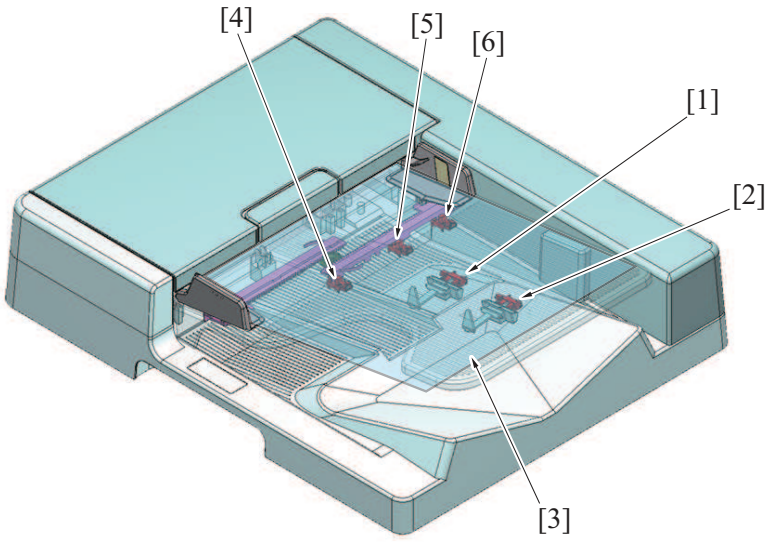
- When an original is loaded on the document feed tray, the leading edge of the original pushes the actuator so that the document set sensor is unblocked. It is detected that an original is loaded.
- When all pages of the original are fed in, the document set sensor detects that there is no original on the document feed tray.



[1]	Document set sensor	[2]	Actuator
[3]	Original	[4]	Document feed tray

2.3.3 Document size detection mechanism

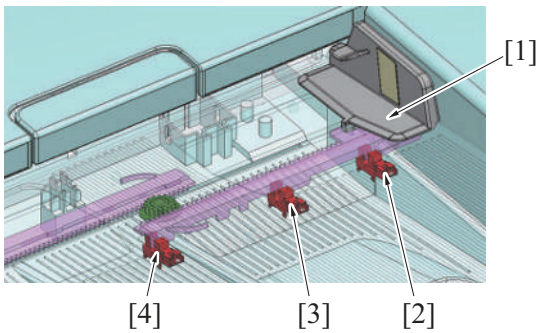
- Combination of 5 document size sensors detects the size of paper set in the document feed tray.



[1]	Document size sensor/FD1 (PS7)	[2]	Document size sensor/FD2 (PS8)
[3]	Original	[4]	Document size sensor/CD2 (PS10)
[5]	Document size sensor/CD3 (PS11)	[6]	Document size sensor/CD1 (PS9)

Detecting the width of the document

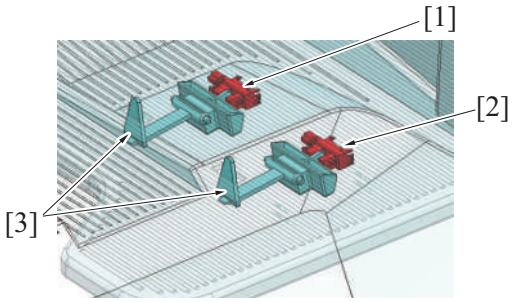
- The width of a document is detected by the combination of document size sensor/CD1, CD2 and /CD3.
- The document size sensor/CD1, /CD2 and /CD3 are transmission type.



[1]	Original edge guide	[2]	Document size sensor/CD1 (PS9)
[3]	Document size sensor/CD3 (PS11)	[4]	Document size sensor/CD2 (PS10)

Detecting the length of the document

- The length of the document is set on the document feed tray will be detected by the document size sensor/FD1 and /FD2.
- The document size sensor/FD1 and /FD2 are transmission type.
- When the document feed tray is not loaded with any documents, document size sensor/FD1 and /FD2 are unblocked.
- When a document is loaded and actuator is pressed, document size sensor is blocked.



[1]	Document size sensor/FD1 (PS7)	[2]	Document size sensor/FD2 (PS8)
[3]	Actuator	-	-

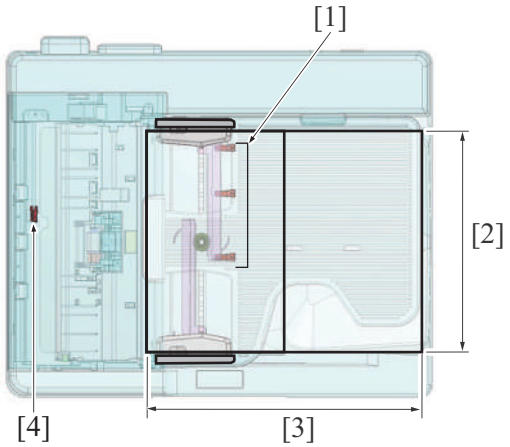
2.3.4 Document size detection table

Document size	width (mm)	length (mm)	Document size sensor H: Blocking, L: Unblocking					Remark
			CD2 (PS10)	CD3 (PS11)	CD1 (PS9)	FD1 (PS7)	FD2 (PS8)	
5.5" x 8.5" S	139.7	215.9	H	H	L	L	L	-
A5 S	148	210	L	H	L	L	L	-
B5 S	182	257	L	H	L	H	L	-
16K S	195	270	H	H	L	H	L	-
8.5" x 13"	203.2	330.2	L	L	L	H	H	FLS*
8.125" x 13.25"	206.4	336.6						FLS*
8.25" x 13"	209.6	330.2						FLS*
A5	210	148	L	L	L	L	L	-
A4 S	210	297	L	L	L	H	L	-
8.5" x 5.5"	215.9	139.7	H	L	L	L	L	-
8.5" x 11" (Letter) S	215.9	279.4	H	L	L	H	L	-
8.5" x 13"	215.9	330.2	H	L	L	H	H	FLS*
8.5" x 14" (Legal)	215.9	355.6						FLS*
220mm x 330.0mm	220.0	330.0						FLS*
8.5" x 13.5"	215.9	355.6						-
B5	257	182	L	L	H	L	L	-
B4	257	364	L	L	H	H	H	-
16K	270	195	H	L	H	L	L	-
8K S	270	390	H	L	H	H	H	-
11" x 8.5" (Letter)	279.4	215.9	L	H	H	L	L	-
11" x 17" (Ledger)	279.4	431.8	L	H	H	H	H	-
A4	297	210	H	H	H	L	L	-
A3	297	420	H	H	H	H	H	-

- *: The size of FLS (Foolscap) is specified by setting [Service Mode] -> [System 1] -> [Foolscap Size].

2.3.5 Mixed original detection

On the mixed original mode, only the originals with the same width can be fed.
The original width is detected by the document size sensors/CD1, CD2 and CD3, and the original length is detected by the document reading sensor.

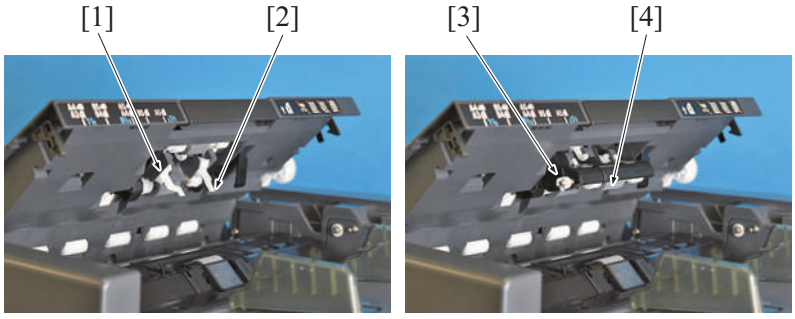


[1]	Document size sensors/CD1, /CD2, /CD3	[2]	Original width
[3]	Original length	[4]	Document reading sensor

2.3.6 Pick-up roller up/down control

Up control

- When a job is completed, the document feed motor starts rotating backward. Then, the swing arm mounted on the same shaft as the document feed roller is rotated backward to thereby raise the document pick-up roller to the standby position.
- The document pick-up roller is fixed at the raised position by a torque limiter of the paper drive section.
- When the swing arm is raised to the standby position, the document stopper is lowered by its own weight and fixed by the lock pawl of the swing arm. The document stopper is unlocked when the swing arm lowers.
- The document stopper has two functions: one, to align the leading edges of the originals loaded in the standby state; and, two, to prevent the leading edge of the original from advancing over the pick-up position into the feed section.



[1]	Swing arm (standby position)	[2]	Document stopper
[3]	Swing arm (feed position)	[4]	Document pick-up roller

Down control

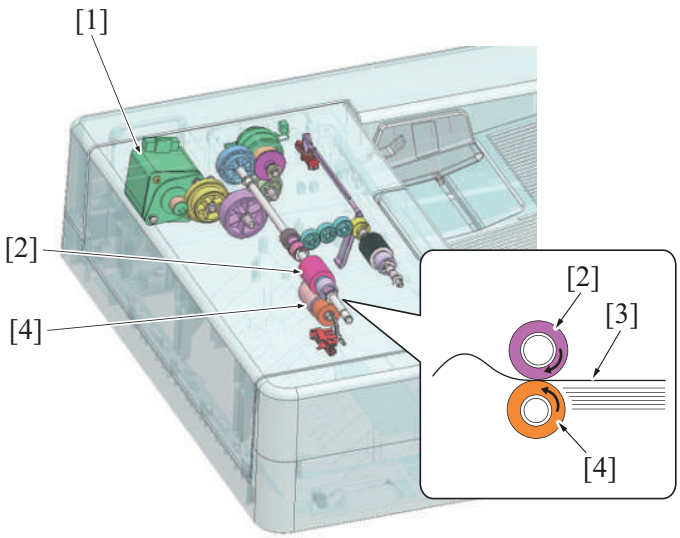
- When the start key is pressed, the drive of the document feed motor is transmitted to the document feed roller via the document feed clutch. The swing arm mounted on the same shaft as the document feed roller is rotated forward, so that the document pick-up roller is lowered to the feed position.
- The document stopper is unlocked when the swing arm lowers.

2.3.7 Document feed/separation control

- When the start key is pressed, the document feed motor starts rotating forward, so that the document feed roller rotates forward.
- The rotation shaft of the swing arm mounted on the same shaft as the document feed roller is rotated forward, so that the document pick-up roller is lowered to the feed position. The document pick-up roller is rotated by a drive belt to thereby feed the original onto the document feed roller.

Separation/feed operation

1. The document separation roller is pressed up against, and driven by, the document feed roller. A torque limiter is mounted on the shaft of the document separation roller.
2. The acting pressure of the document feed roller/document separation roller/torque limiter serves as the limit torque for preventing double feed.
3. When there is no original or only one sheet of original between the document separation roller and the document feed roller, the limit torque is exceeded and the document separation roller follows the rotation of the document feed roller.
4. If there are two or more sheets of original between the document separation roller and the document feed roller, the limit torque is greater than the friction force of the original, so that the document separation roller stops rotating.
5. Because of the stationary document separation roller, the lower sheet of original in contact with the document separation roller is not fed in, so that the first sheet of original is document separated from the second sheet of original.



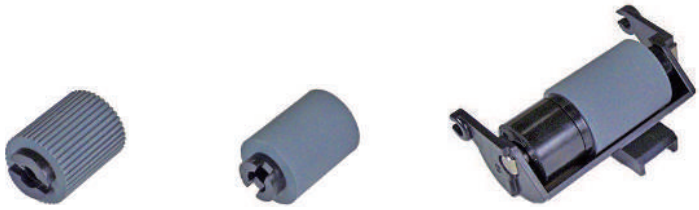
[1]	Document feed motor (M1)	[2]	Document feed roller
[3]	Original	[4]	Document separation roller

Periodically replaced parts

- The document pick-up roller, document feed roller, and document separation roller are periodically replaced parts. These three rollers must be replaced with new ones at the same time.
- None of the document pick-up rollers, document feed rollers, and document separation roller are provided with a new article detection mechanism. Also, no mechanism is provided to zero set the life counter of the roller.
- The number of times the DF has been subjected to paper feed operations can be checked with the “ADF Paper Pages” counter of the Management List.

Periodical replacement cycle	Paper feed operations 200,000 times

- For details of the applicable replacement procedures for the document pick-up roller, document feed roller, and document separation roller.

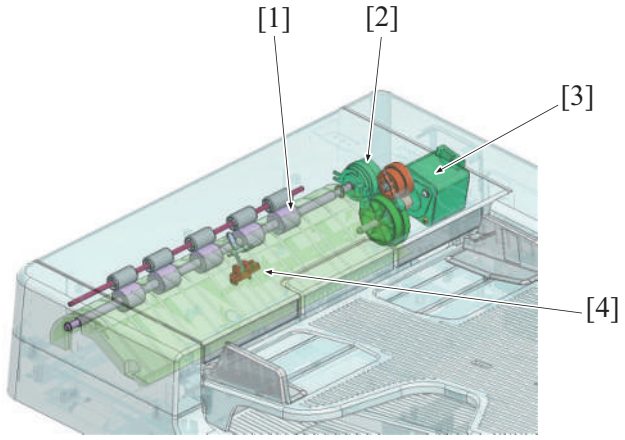


[1]	Document pick-up roller	[2]	Document feed roller
[3]	Document separation roller	-	-

2.4 DOCUMENT REGISTRATION SECTION

2.4.1 Document registration drive

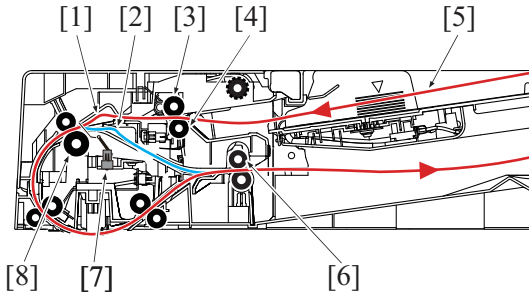
- The document feed motor is working as the source of the registration roller driving, which is controlled by the document registration clutch.
- The original will create a loop between the document feed roller and the registration roller when the original is being transported in order to correct the skew.



[1]	Registration roller	[2]	Document registration clutch (CL2)
[3]	Document feed motor (M1)	[4]	Document registration sensor (PS4)

2.4.2 Document registration loop formation process

1. The registration sensor detects the leading edge of the original.
2. The registration roller remains stationary.
3. Because the document feed roller (switchback/exit roller for the 2nd side of the original) continues rotating to feed the original, a loop is formed at the leading edge of the original.
4. The loop corrects skew in the original.
5. The registration roller is started to rotate to transport the original.

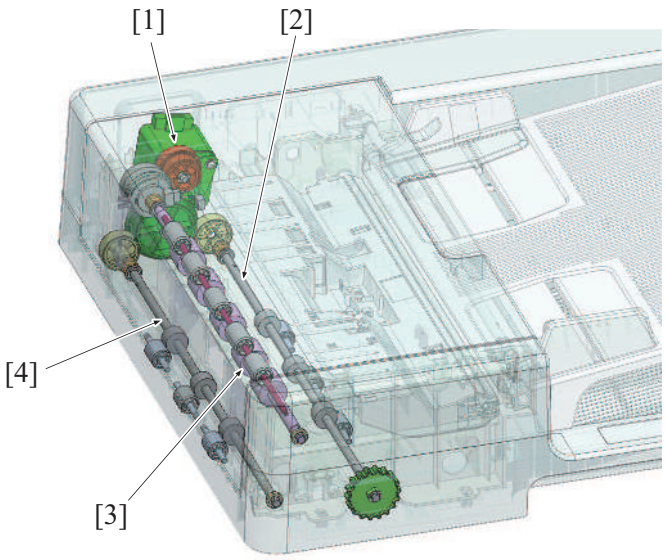


[1]	Loop formation (1st side)	[2]	Loop formation (2nd side)
[3]	Document feed roller	[4]	Document separation roller
[5]	Original	[6]	Switchback/exit roller
[7]	Document registration sensor (PS4)	[8]	Registration roller

2.5 DOCUMENT READING SECTION

2.5.1 Document reading drive

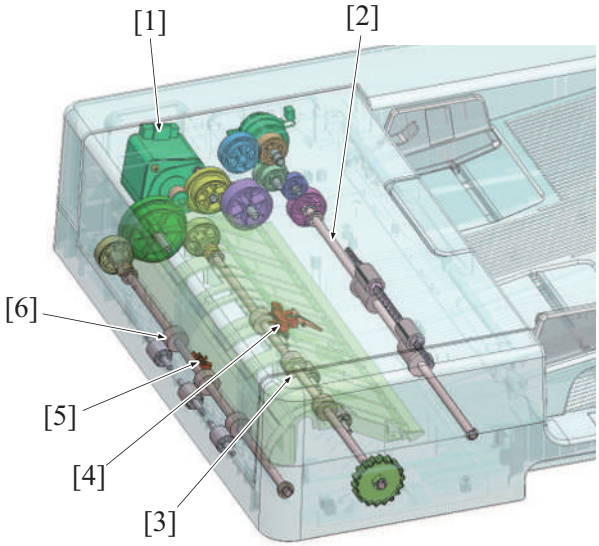
- The document feed motor drives the document reading section.
- The document feed motor rotates backward to allow the second feed of the original to be performed during switchback in the 2-sided mode.



[1]	Document feed motor (M1)	[2]	Document reading roller/2
[3]	Registration roller	[4]	Document reading roller/1

2.5.2 Transport mechanism

- The original transported from the document feed section will be transported to the document reading section by the registration roller, the document reading roller/1 and /2, and the switchback/exit roller.
- The registration roller, document reading roller/1 and /2 are driven by the document feed motor.

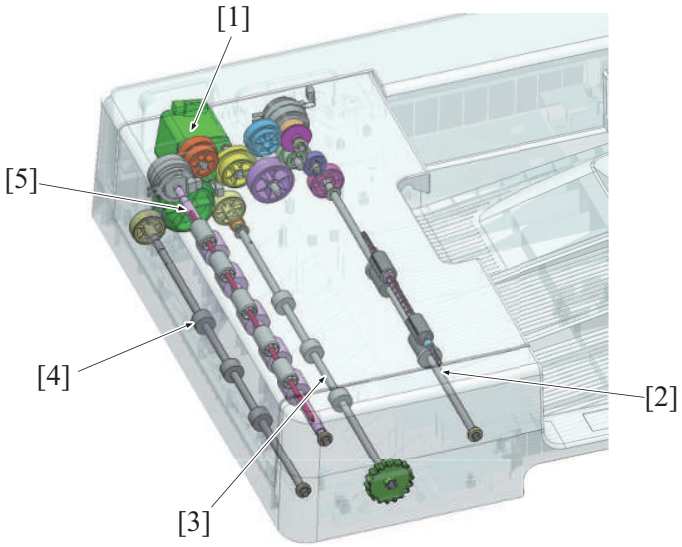


[1]	Document feed motor (M1)	[2]	Document exit roller
[3]	Document reading roller/2	[4]	Document exit sensor (PS6)
[5]	Document reading sensor (PS5)	[6]	Document reading roller/1

2.6 DOCUMENT SWITCHBACK/EXIT SECTION

2.6.1 Document switchback/exit drive

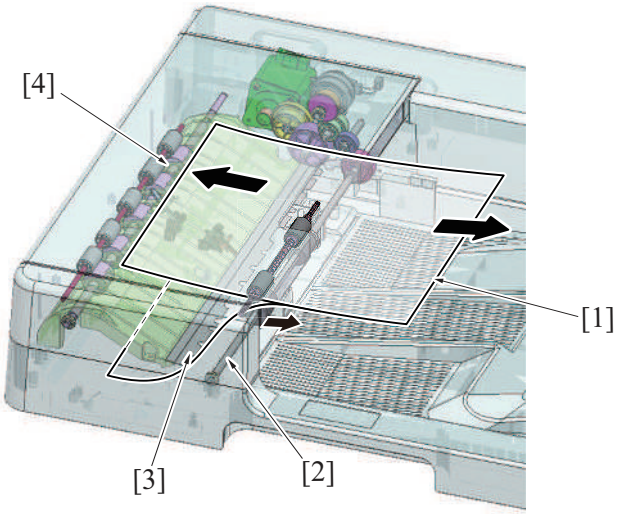
- The original transported from the transport section will exit by the document reading roller/1, /2 and switchback/exit roller.
- In the 2-sided mode, the switchback/exit roller is rotated backward and the original is fed to the registration roller again.
- The switchback/exit roller is driven by the document feed motor.



[1]	Document feed motor (M1)	[2]	Switchback/exit roller
[3]	Document reading roller/2	[4]	Document reading roller/1
[5]	Registration roller	-	-

2.6.2 Switching mechanism for document switchback/exit

- The switchback path switching guide film provides a route toward the switchback path.
- In the 2-sided mode, the switchback/exit roller is rotated backward. This allows the trailing edge of the original to move along the upper side of the switchback path switching guide film to be fed to the switchback path, so that the original is fed to the registration roller.
- The switchback path switching guide film is fixed at all times.



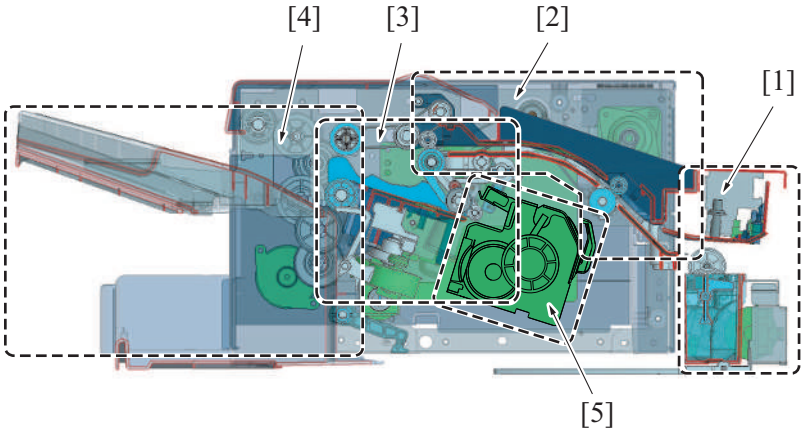
[1]	Original	[2]	Switchback/exit roller
[3]	Switching guide film	[4]	Registration roller

3. FS-533/PK-519

3.1 CONFIGURATION

3.1.1 Section configuration

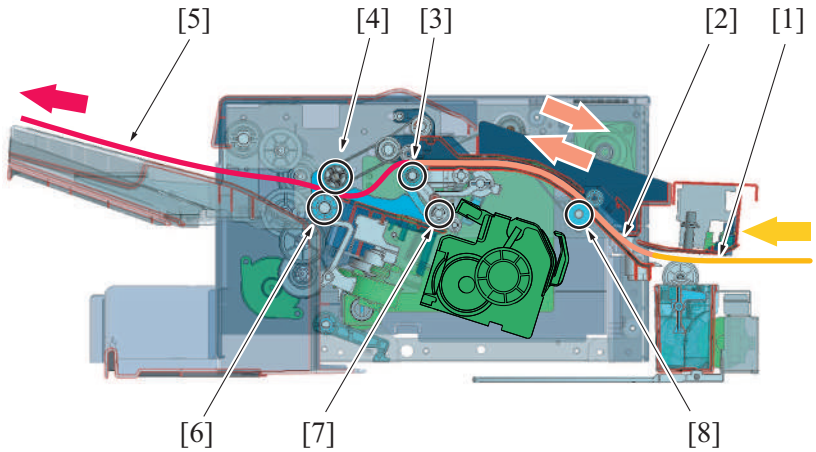
- FS-533 has the finisher main unit that is installed on the paper exit section of the main body.
- Optional punch kit PK-519 can be installed between the right face of the finisher and the paper exit section of the main body.
- Slide out the finisher main unit to access the finisher operation section and the punch kit (when mounted only).



[1]	Punch section (only when PK-519 is installed)	[2]	Transport section
[3]	Alignment section	[4]	Paper exit tray section
[5]	Staple section	-	-

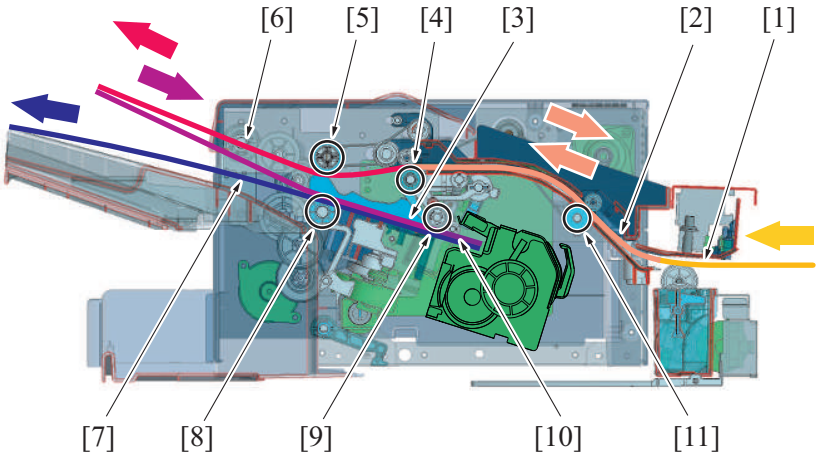
3.2 PAPER PATH

3.2.1 No offset/No staple/Punch mode



[1]	Paper transport/Paper punching (punch mode)	[2]	Paper transport/Skew correction (punch mode)
[3]	Receiving roller	[4]	Paper exit roller/upper
[5]	Paper exit	[6]	Paper exit roller/lower
[7]	Alignment roller	[8]	Transport roller

3.2.2 Sort/staple/punch mode

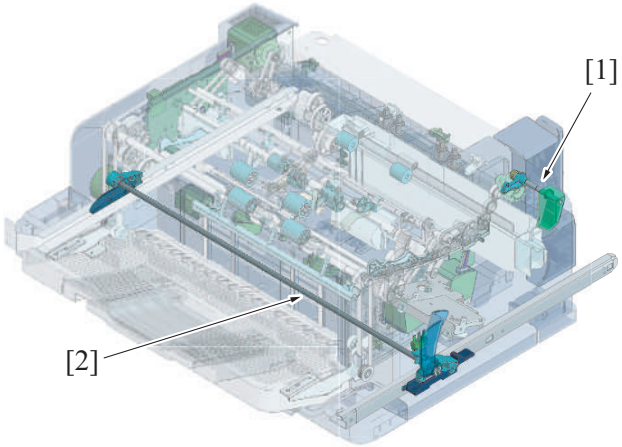


[1]	Paper transport/Paper punching (punch mode)	[2]	Paper transport/Skew correction (punch mode)
[3]	Paper alignment (offset/staple mode)	[4]	Receiving roller
[5]	Paper exit roller/upper	[6]	Paper transport
[7]	Paper batch exit (offset/staple mode)	[8]	Paper exit roller/lower
[9]	Alignment roller	[10]	Staple (staple mode)
[11]	Transport roller	-	-

3.3 Finisher section

3.3.1 Unit lock mechanism

- The finisher unit and punch kit (PK-519) are provided in the each unit lock mechanism.

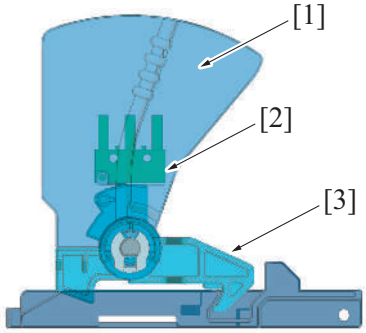


[1]	Punch unit lock mechanism	[2]	Finisher unit lock mechanism

(1) Finisher unit lock mechanism

- Releasing the finisher release lever at the front side of the finisher releases the locking claws at the front and rear sides of the finisher from the finisher slide rail. The finisher and the main body will be disconnected to enable the finisher to slide to the left.
- When the finisher is slid, the finisher lock switch turns off to detect that the finisher is opened.
- When the finisher opening is detected, a warning screen display on the control panel of the main body and printing subsequent jobs is prohibited.
- Closing the finisher releases the warning screen to releases the job prohibition.

Front view



[1]	Finisher release lever	[2]	Finisher lock switch (SW1)
[3]	Lock claw	-	-

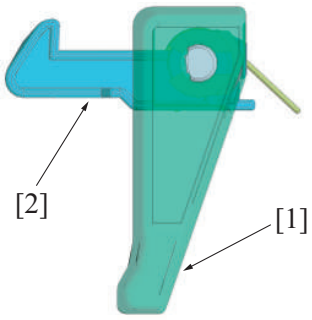
(2) Punch unit lock mechanism (PK-519)

- When the finisher is opened, the release lever for the punch unit will be exposed. (only when PK-519 is installed)
- The punch unit does not have a mechanism to detect open/close of the unit.

NOTE

- **The function to detect open/close of the punch unit is not installed since the finisher needs to be opened to open the punch unit.**

Front view

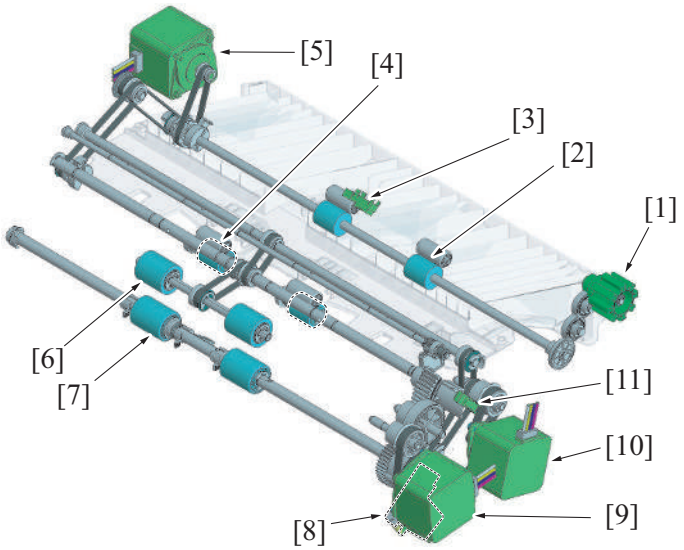


[1]	Punch unit release lever	[2]	Lock claw

3.4 TRANSPORT SECTION

3.4.1 Configuration

- At the transport section, paper that is transported from the main body paper exit section is transported into the finisher and alignment section.

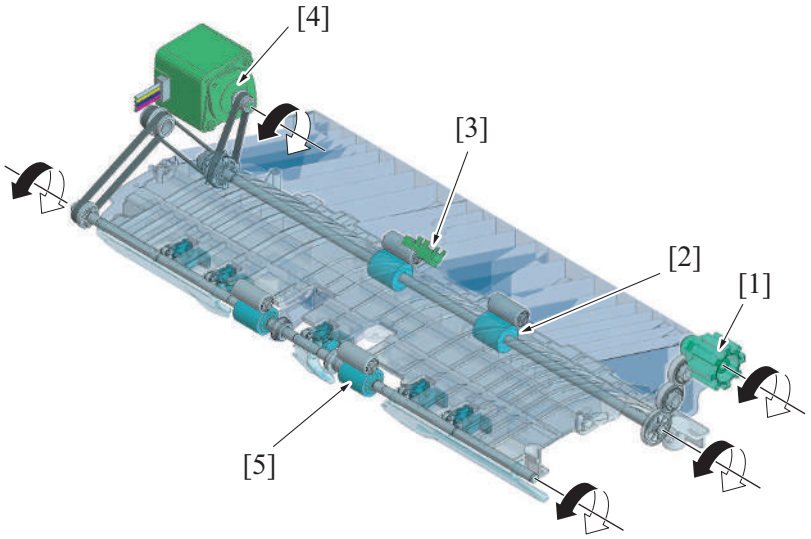


[1]	Jam removal dial	[2]	Paper conveyance roller
[3]	Paper feed sensor (PS101)	[4]	Receiving roller
[5]	Paper conveyance motor (M101)	[6]	Paper exit roller/upper
[7]	Paper exit roller/lower	[8]	Paper exit roller solenoid (SD103)
[9]	Exit roller lift up motor (M104)	[10]	Paper exit motor (M102)
[11]	Pick up roller position sensor (PS105)	-	-

3.4.2 Drive

(1) Paper conveyance/receiving roller section

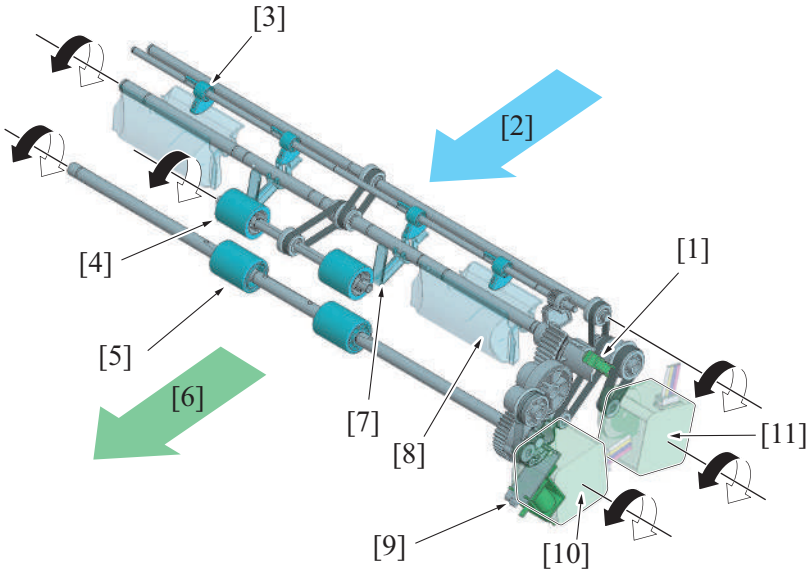
- The paper conveyance motor drives the paper conveyance roller and the receiving roller.
- The paper conveyance roller and the receiving roller can be manually rotated (forward/reverse) by manually rotate the jam removal dial.



[1]	Jam removal dial	[2]	Paper conveyance roller
[3]	Paper feed sensor (PS101)	[4]	Paper conveyance motor (M101)
[5]	Receiving roller	-	-

(2) Paper exit roller section

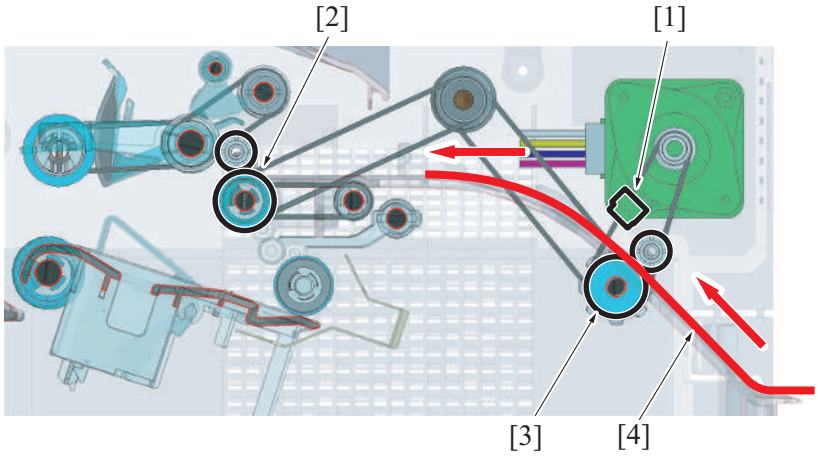
- The paper exit motor drives the paper exit roller/upper and the paper exit roller/lower.
- The connection of the paper exit roller/lower and the paper exit motor is released while waiting. Turn on/off of the paper exit roller solenoid connects the paper exit roller/lower drive gear and then rotation starts.
- The exit roller lift up motor drives the up/down operation of the paper exit roller/upper. It also drives the paper guide.



[1]	Pick up roller position sensor (PS105)	[2]	Direction of the paper transport (paper transport section)
[3]	Paper lift up cam	[4]	Paper exit roller/upper
[5]	Paper exit roller/lower	[6]	Direction of the paper exit (receive section)
[7]	Paper guide	[8]	Paper guide
[9]	Paper exit roller solenoid (SD103)	[10]	Exit roller lift up motor (M104)
[11]	Paper exit motor (M102)	-	-

3.4.3 Paper conveyance/receiving roller section paper transport control

- The paper conveyance roller sends the paper that is transported from the main body paper exit section to the receiving roller.
- The receiving roller sends the paper transported from the paper conveyance roller to the paper exit tray section or the alignment section.
- The paper feed sensor detects the leading edge and the trailing edge of paper, and detects the transportation and path of the paper.
- When in punch mode, the paper conveyance roller and the receiving roller rotate in reverse direction to switchback the paper and punch the holes at the punch section. When the holes are punched, the paper conveyance roller and the receiving roller rotate in the forward direction to send the paper to the paper exit tray section or to the alignment section.

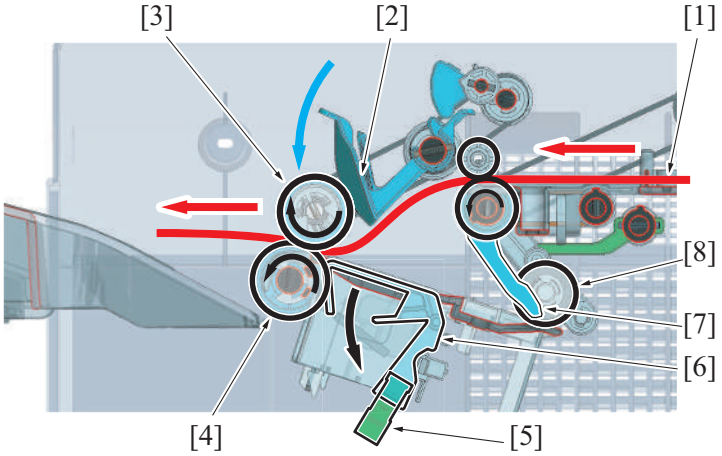


[1]	Paper feed sensor (PS101)	[2]	Receiving roller
[3]	Transport roller	[4]	Paper

3.4.4 Paper exit roller section paper transport control

(1) No offset/no staple mode

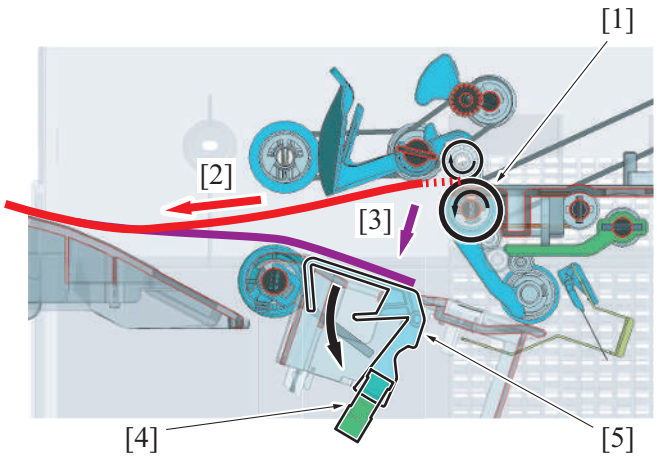
- The paper guide waits at the upper position by the paper pressed down cam.
- When the paper pressed down cam rotates by the exit roller lift up motor, the paper guide will be unlocked and moves down to the lower position.
- The paper sent from the transport section will be led to the paper exit roller by the paper guide.
- The paper exit roller/upper moves down to hold the paper from the transport section with the paper exit roller/lower to discharge it to the paper exit tray.
- The paper surface detect sensor/1 detects that the paper is discharged to the paper exit tray by the actuator being pushed down while the paper passes through and then returned to the original position.



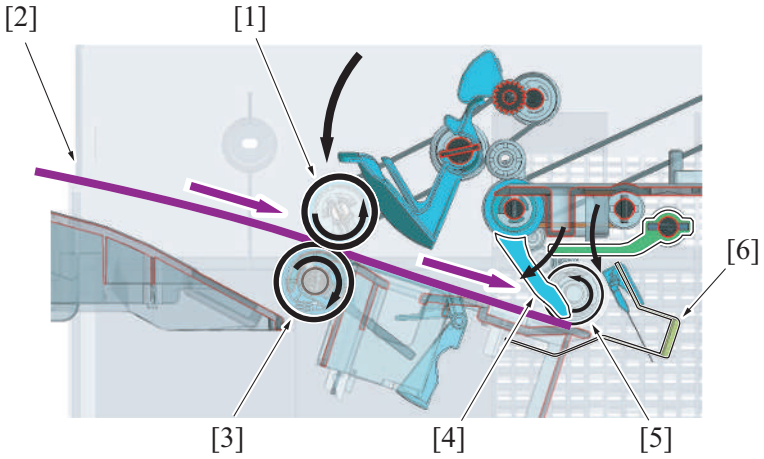
[1]	Paper	[2]	Paper guide
[3]	Paper exit roller/upper	[4]	Paper exit roller/lower
[5]	Paper surface detect sensor/1 (PS102)	[6]	Actuator
[7]	Batch guide	[8]	Alignment roller

(2) Offset/staple mode

1. The paper exit roller/upper stops rotating at the upper position and waits. The paper exit roller/lower waits at the halt status.
2. The first paper is discharged [2] by the receiving roller [1], and moves down to the alignment tray by its own weight. [3]
   The paper surface detect sensor/1 [4] detects that the paper is discharged to the alignment tray when the actuator [5] is pressed down by the paper.



3. The paper exit roller/upper [1] moves down to hold the first paper [2] on the alignment tray with the paper exit roller/lower [3] to rotate rollers in reverse direction and transport the paper to the alignment roller [5].*

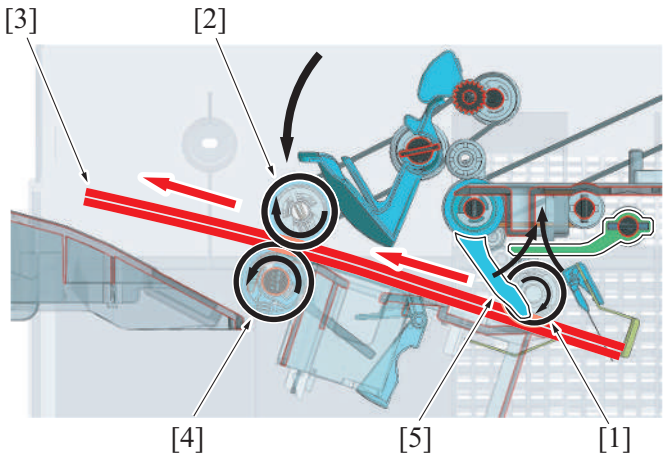


4. The paper exit roller/upper [1] moves up and stops rotating.
5. Transported paper is aligned at the alignment section. (Paper alignment control)
6. The batch weight guide [4] moves down to hold the rear end [2] of the aligned paper.
7. The second paper will be discharged over the first paper on the alignment tray.
8. The batch guide [4] moves up to release the trailing edge of the paper.
9. Paper batch is aligned on the alignment tray and the batch guide [4] holds the trailing edge of the paper batch.

NOTE

- **The batch guide [4] prevent the second paper and after to misalign the aligned paper [2].**

10. Following paper is transported in the same manner.
11. When the last paper is aligned, the paper exit roller/upper [2] will move down to hold all the paper [3] on the alignment tray with the paper exit roller/lower [4].



NOTE

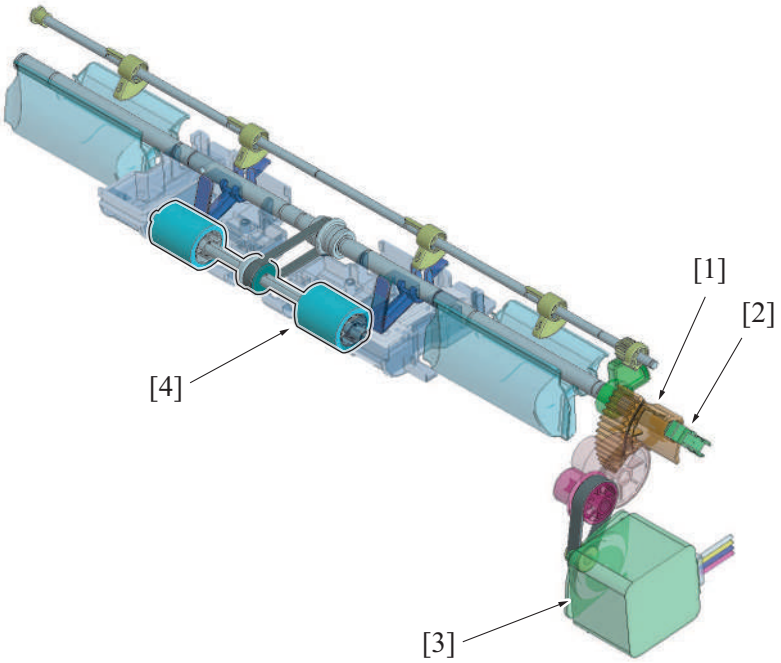
- **When in staple mode, stapling is conducted after paper alignment is finished.**

12. The batch guide [5] moves up to release the trailing edge of the paper [2].
13. The paper exit roller/upper [2], paper exit roller/lower [4], and the alignment roller [1] rotate to discharge the paper [3] to the paper exit tray.

3.4.5 Paper exit roller up/down control

- The paper exit roller moves up/down when transporting the paper from the paper conveyance or receiving roller section to the receiving section or to the alignment section.

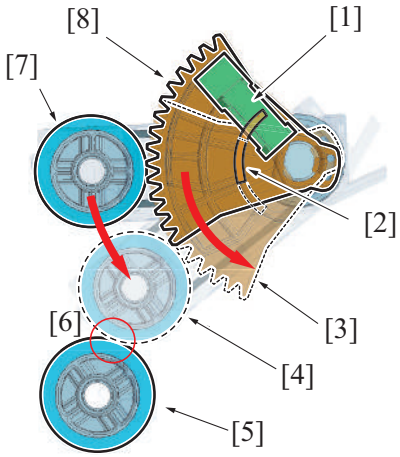
- Rotation of the exit roller lift up motor rotates the exit roller lift up gear that is provided at the drive shaft of the paper exit roller/upper, raising the paper exit roller/upper.
- The pick up roller position sensor detects the position of the paper exit roller/upper.



[1]	Exit roller lift up gear	[2]	Pick up roller position sensor (PS105)
[3]	Exit roller lift up motor (M104)	[4]	Paper exit roller/upper

(1) Paper exit roller position detection control

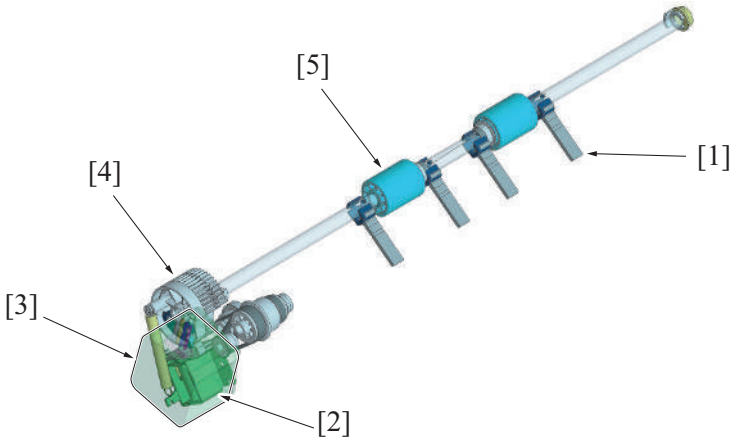
- The light shield plate that is mounted at the exit roller lift up gear changes the state of the pick up roller position sensor.
- The pick up roller position sensor is blocked when the paper exit roller/upper is located at the upper position (home position).
- The rotation of the exit roller lift up gear rotates the light shield plate, unblocking the pick up roller position sensor. This process detects that the paper exit roller/upper position is at the press position.



[1]	Pick up roller position sensor (PS105)	[2]	Light shield plate
[3]	Rotate from home position to pressure position	[4]	Paper exit roller/upper (pressure position)
[5]	Paper exit roller/lower	[6]	Pressure
[7]	Paper exit roller/upper (home position)	[8]	Exit roller lift up gear

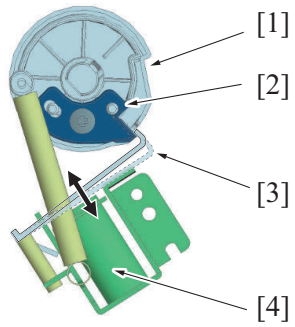
3.4.6 Paper exit roller/lower drive connecting control

- It rotates the paper exit roller/lower when transporting the paper from the transport section to the paper exit tray section or to the alignment section.
- The connection of the paper exit roller/lower and the paper exit motor is released by the paper exit roller solenoid when waiting.
- Turn on/off of the paper exit roller solenoid establishes connection with the paper exit motor that provides the drive.
- When the paper exit roller/lower and the paper exit paddle rotate one revolution clockwise (forward direction), the connection with the paper exit motor will be released and stop.

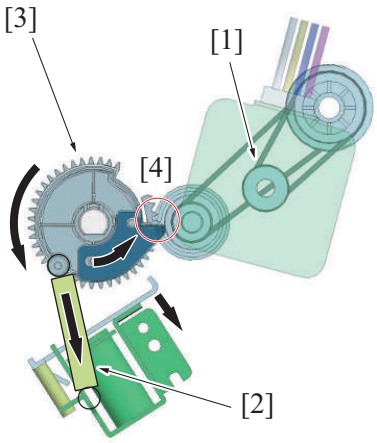


[1]	Paper exit paddle	[2]	Paper exit roller solenoid (SD103)
[3]	Paper exit motor (M102)	[4]	Paper exit roller/lower drive gear
[5]	Paper exit roller/lower	-	-

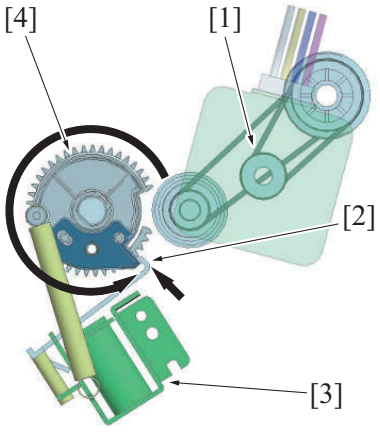
(1) Paper exit roller/lower drive connecting process



1. The connection of the paper exit roller/lower and the paper exit motor is released while waiting. On/off of the paper exit roller solenoid [4] operates the rotation lock claw [3] for the paper exit roller solenoid to release the lock plate [2] installed on the paper exit roller/lower drive gear [1].



2. By the paper exit roller/lower drive gear [3] being rotated by the spring force [2], it will be connected to the drive mechanism [4] of the paper exit motor [1]. This process transfers drive force to the paper exit roller/lower drive gear to rotate the paper exit roller/lower.



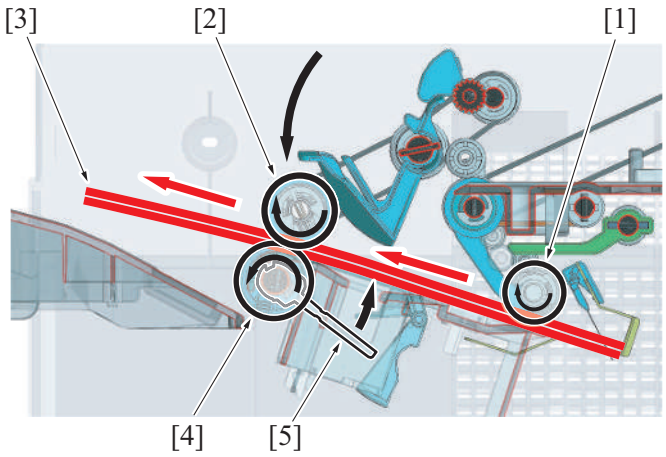
3. The paper exit roller/lower will be released from the paper exit motor [1] drive mechanism by the shape of the paper exit roller/lower drive gear [4] after rotating about one revolution.
4. The rotation lock claw [2] of the paper exit roller solenoid [3] will lock the rotation of the paper exit roller/lower drive gear [4], stopping the paper exit roller/lower.

3.4.7 Paper exit paddle control

- Paper exit paddles (four) are mounted coaxially with the paper exit roller/lower.
- When paper is fed out, the paper exit paddles rotate while holding the trailing edge of paper to feed the paper into the paper exit tray without fail.

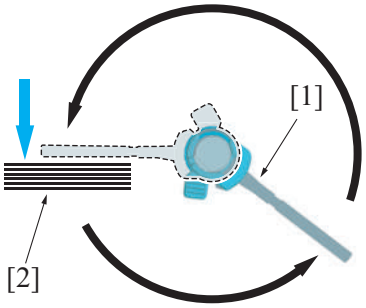
(1) Paper discharge process

1. When the last paper is aligned, the paper exit roller/upper, the paper exit roller/lower, and the alignment roller feed the paper out into the paper exit tray.



[1] Alignment roller
[2] Paper exit roller/upper
[3] Paper
[4] Paper exit roller/lower
[5] Paper exit paddle

2. The paper exit paddle pushes out the trailing edge of the paper which passed through the paper exit roller/lower to press the paper over the paper exit tray.
3. The paper exit paddle presses the paper and returns to the home position.



[1] Paper exit paddle (home position)
[2] Paper on the paper exit tray

NOTE

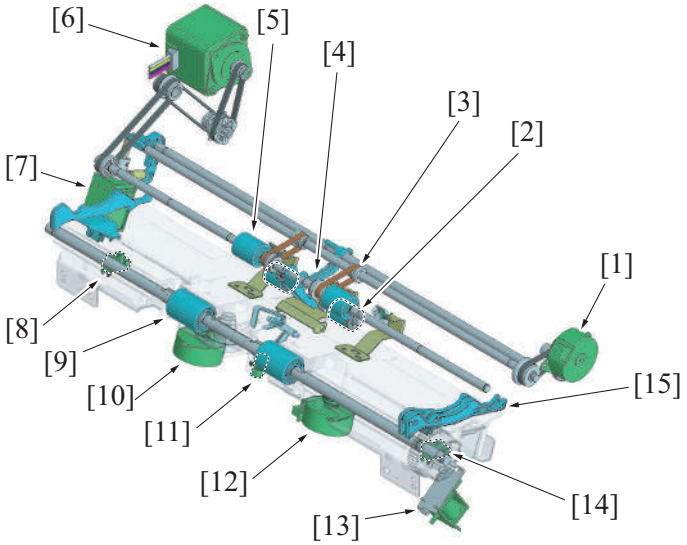
- **The paper exit paddle is made from soft rubber. It curves after discharging the paper to the paper exit tray to return to the home position inside the machine.**

4. After the paper exit paddle is retracted, the paper surface detect lever rotates to press the trailing edge of the discharged paper.

3.5 ALIGNMENT SECTION

3.5.1 Configuration

- In the alignment section, paper transported from the transport section is aligned and delivered to the paper exit tray.



[1]	Alignment roller motor (M103)	[2]	Alignment roller
[3]	Drive connecting belt	[4]	Batch guide
[5]	Receiving roller	[6]	Paper conveyance motor (M101)
[7]	Batch solenoid (SD102)	[8]	Alignment plate home sensor/Rr (PS109)
[9]	Paper exit roller/lower	[10]	Alignment motor/Rr (M106)
[11]	Paper surface detect sensor/1 (PS102)	[12]	Alignment motor/Fr (M105)
[13]	Paper exit roller solenoid (SD103)	[14]	Alignment plate home sensor/Fr (PS108)
[15]	Alignment plate/Fr	-	-

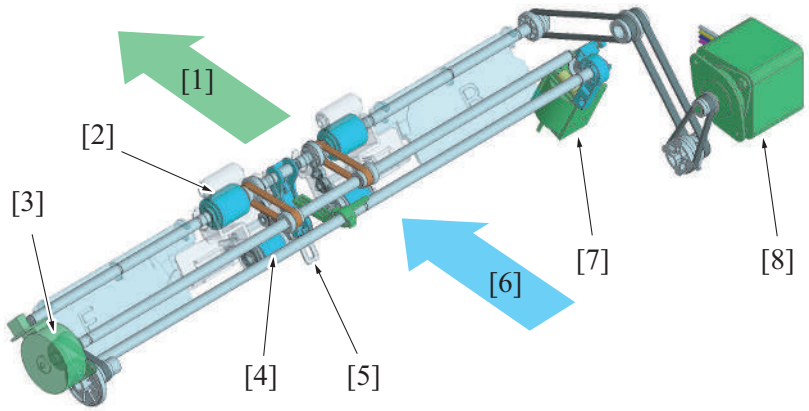
3.5.2 Drive

(1) Alignment roller section

- The drive force of the paper conveyance motor rotates the receiving roller.
- The alignment roller rotates by the drive force of the alignment roller motor through the drive transmission pulley on the drive shaft for the receiving roller.
- Energizing and de-energizing the batch solenoid move the batch guide up and down.

NOTE

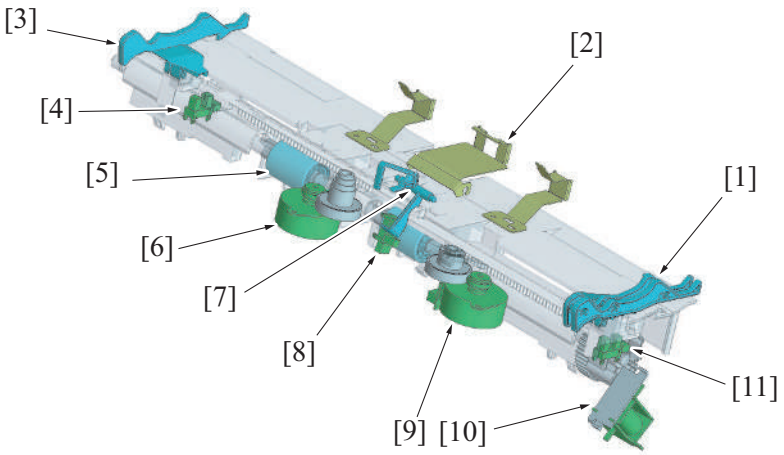
- **The drive transmission pulley is not fixed to the receiving roller's drive shaft. Thus, the alignment roller does not rotate even when the paper conveyance motor rotates. The receiving roller does not rotate, either, even when the alignment roller motor rotates.**



[1]	Direction of the paper exit (receive section)	[2]	Receiving roller
[3]	Alignment roller motor (M103)	[4]	Alignment roller
[5]	Paper weight guide	[6]	Direction of the paper transport (paper transport section)
[7]	Batch solenoid (SD102)	[8]	Paper conveyance motor (M101)

(2) Alignment tray section

- The alignment motor drives the alignment plate back and forth.
- The alignment plate/Fr and the alignment plate/Rr are each provided with a dedicated alignment motor and independently driven.

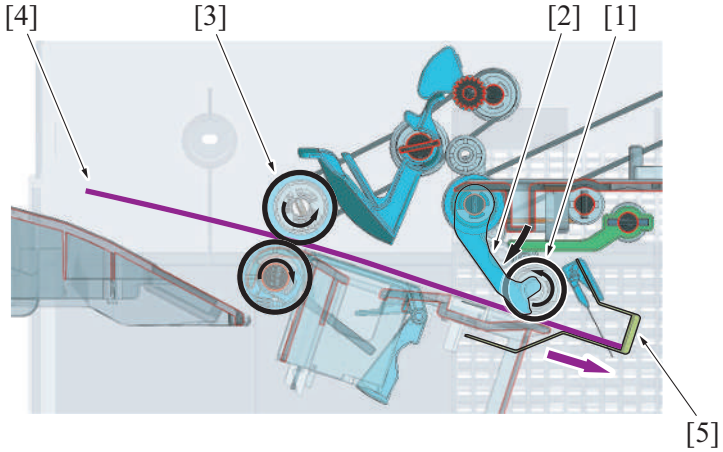


[1]	Alignment plate/Fr	[2]	Paper stopper
[3]	Alignment plate/Rr	[4]	Alignment plate home sensor/Rr (PS109)
[5]	Paper exit roller/lower	[6]	Alignment motor/Rr (M4)
[7]	Actuator	[8]	Paper surface detect sensor/1 (PS102)
[9]	Alignment motor/Fr (M3)	[10]	Paper exit roller solenoid (SD103)

[11]	Alignment plate home sensor/Fr (PS108)	-	-

3.5.3 Paper FD alignment control

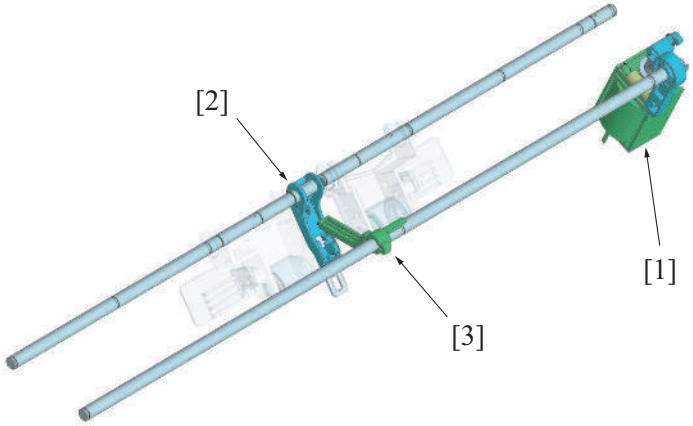
- The operation to align trailing edge of the paper in transportation direction is called "paper FD alignment".
- The paper from the transport section will be transported to the alignment tray by the alignment roller. The trailing edge of the paper then is aligned by contacting the trailing edge of the paper to the paper stopper.
- The batch guide moves down to hold the trailing edge of the aligned paper.
  NOTE
  - **It prevents the aligned paper from being jumbled from when the 2nd sheet of paper is discharged in the alignment tray.**
  - **The batch guide moves up when the next sheet of paper is transported to the alignment tray, as well as when the paper is discharged from the alignment tray to release the paper.**



[1]	Alignment roller	[2]	Batch guide
[3]	Paper exit roller/upper	[4]	Paper
[5]	Paper stopper	-	-

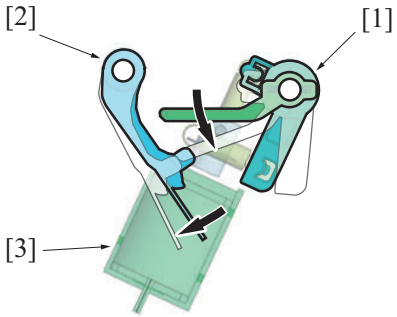
(1) Batch guide up/down mechanism

- The batch lever is driven by the batch solenoid.
- The batch lever and the batch guide wait at the upper position by the spring force. (home position)
- When the batch solenoid turns on, the drive shaft for the batch lever rotates to rotate the batch lever downward.
- The batch guide is pressed down by the batch lever moving downward.
- When the batch solenoid turns off, the drive shaft for the batch lever rotates by the spring force to return the batch lever and the batch guide to the upper position.



[1]	Batch solenoid (SD102)	[2]	Batch guide
[3]	Batch lever	-	-

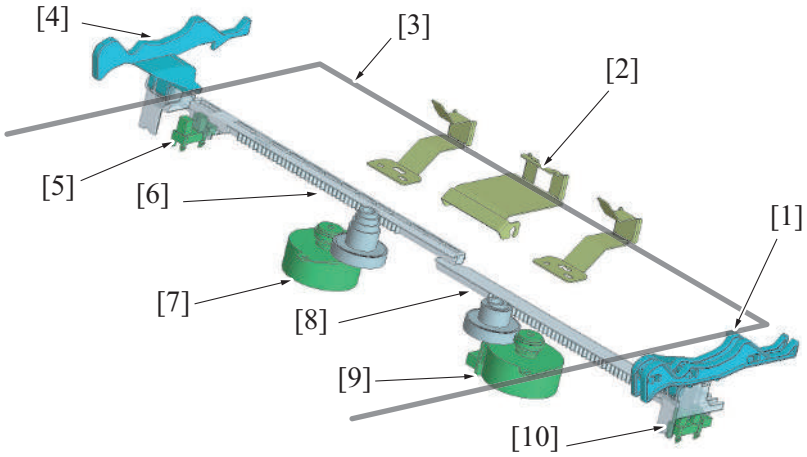
Batch guide drive section front view



[1]	Batch lever	[2]	Batch guide
[3]	Batch solenoid (SD102)	-	-

3.5.4 Paper CD alignment control

- The operation to align both sides of the paper in the width direction is called "paper CD alignment".
- The paper from the transport section will be transported to the alignment tray by the alignment roller.
- The paper is aligned by contacting the alignment plate/Fr and /Rr to both sides (forward-backward direction) of the paper.
- The alignment plate home sensor/Fr and alignment plate home sensor/Rr detect the home position of the alignment plate.



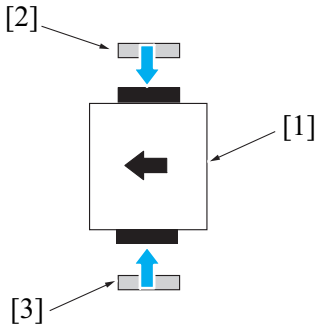
[1]	Alignment plate/Fr	[2]	Paper stopper
[3]	Paper	[4]	Alignment plate/Rr
[5]	Alignment plate home sensor/Rr (PS109)	[6]	Slide gear/Rr
[7]	Alignment motor/Rr (M106)	[8]	Slide gear/Fr
[9]	Alignment motor/Fr (M105)	[10]	Alignment plate/Fr home sensor (PS108)

(1) Alignment plate control when in staple mode

- When the staple mode is commended, the alignment plate/Fr and the alignment plate/Rr shift according to the paper width. The paper is aligned by the alignment plates contacting from both front and rear sides.
- The above alignment operation will be conducted for the paper for every job to align the edges of the paper batch. When the alignment is finished, stapling process will be conducted.

NOTE

- **When printed in staple mode, paper batch will be stapled and be discharged to the paper exit tray without being shifted.**



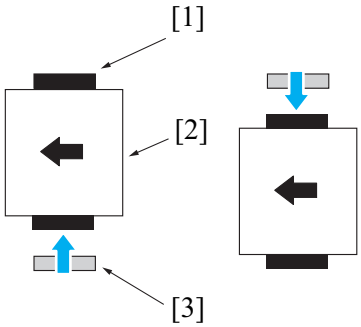
[1]	Paper	[2]	Alignment plate/Rr (shifting to the front side)
[3]	Alignment plate/Fr (shifting to the rear side)	-	-

(2) Alignment plate control when in offset mode

- When commanding offset in sort mode or group mode, the alignment plate/Fr (or the alignment plate/Rr) presses the paper from one side to the far side (or front side) depending on the paper width. This process shifts the paper position.
- The paper batches will be sorted out by repeating the process above.

NOTE

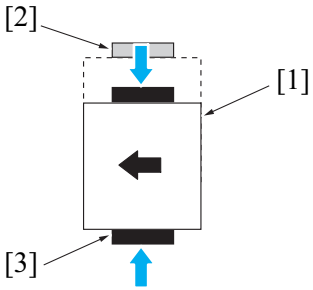
- **When "Offset" is not commanded in the sort mode or the group mode, only the sort print/group print will be conducted, and the paper will be discharged to the paper exit tray without being shifted.**



[1]	Alignment plate/Rr	[2]	Paper
[3]	Alignment plate/Fr	-	-

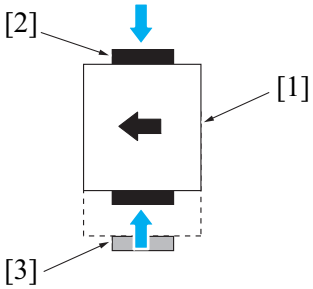
(a) Operation when shifting the paper to the front side

1. The alignment plate/Fr [3] will shift to the reference position at the front side. (The reference position differs depending on the paper size.)
2. The alignment plate/Rr [2] shifts according to the paper width. The paper [1] is pressed by the alignment plate/Rr [2] to be shifted to the front side.



(b) Operation when shifting the paper to the rear side

1. The alignment plate/Rr [2] will shift to the reference position at the rear side. (The reference position differs depending on the paper size.)
2. The alignment plate/Fr [3] shifts according to the paper width. The paper [1] is pressed by the alignment plate/Fr [3] to be shifted to the rear side.



(c) Paper receiving quantity

- When the quantity of the paper that is received into the alignment tray in offset mode reaches the specified value, the paper batch in the alignment tray will be discharged to the paper exit tray.

NOTE

Sample process for sort out:

1. When the job requires making of two copies with 10 sheets A4 size document in sort offset mode, the paper batch is discharged when the sheet quantity reached 5 for the first copy.

2. The remaining 5 sheets will be aligned to be discharged with the same shift position. This will make 10 aligned and discharged sheets on the paper exit tray.

3. Then the shift position will be changed from the 1st copy to sort out the 2nd copy.

4. The process for the second copy leaves 2 sets with 10 sheets each on the paper exit tray.

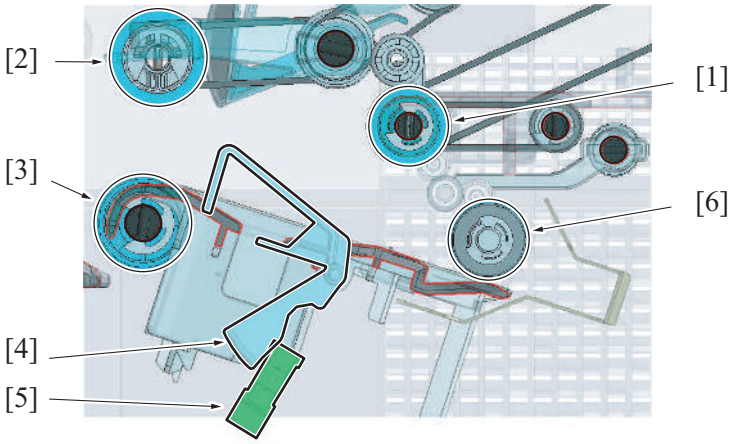
Maximum batch discharge quantity for sort out

Paper size	Paper type	
	• Thin paper (52 g/m^2 to 59 g/m^2 (13 13/16 lb to 15 11/16 lb)) • Plain paper (60 g/m^2 to 90 g/m^2 (15 15/16 lb to 23 15/16 lb)) • Recycled paper (52 g/m^2 to 90g/m^2 (13 13/16 lb to 23 15/16 lb))	Thick paper (91 g/m^2 to 300 g/m^2 (24 3/16 lb to 79 13/16 lb))
216 mm or less	5 sheets	3 sheets
More than 216 mm	4 sheets	

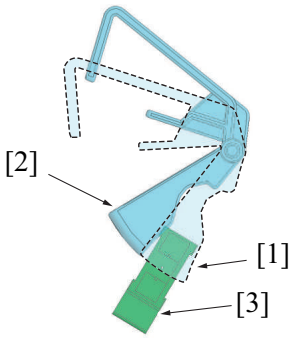
- When the "Number of stacked sheets" or "Height of stacked sheets" of the paper in the paper exit tray reaches to the specified value during offset mode, the paper exit tray is judged to be full.
  NOTE
  - **The height of stacked sheets is detected by the paper level detection function.**

3.5.5 Alignment tray paper detect control

- The alignment tray is provided with paper surface detect sensor/1.
- The paper surface detect sensor/1, using the actuator that is pressed down by the paper being transported, detects that paper has been transported.
- The paper surface detect sensor/1 detects that paper has been fed into the paper exit tray when the actuator that is pressed down returns to its original position.



[1]	Receiving roller	[2]	Paper exit roller/upper
[3]	Paper exit roller/lower	[4]	Actuator
[5]	Paper surface detect sensor/1 (PS102)	[6]	Alignment roller

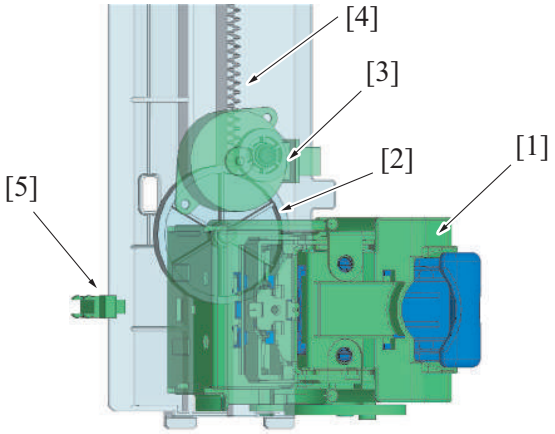


[1]	Actuator: The paper is stored (blocked)	[2]	Actuator: The paper is not stored (unblocked)
[3]	Paper surface detect sensor/1 (PS102)	-	-

3.6 STAPLER SECTION

3.6.1 Configuration/Drive

- The stapler waits at the home position at the front side.
- The stapler movement motor moves the stapler.
- When the stapler movement motor installed on the stapler mounting table rotates, the drive connecting gear rotates.
- When the drive connecting gear rotates, the stapler mounting plate and the stapler, shifts back and forth along the slide gear.



[1]	Stapler unit	[2]	Stapler drive connecting gear
[3]	Stapler movement motor (M107)	[4]	Slide gear
[5]	Stapler home sensor (PS110)	-	

3.6.2 Stapler positioning control

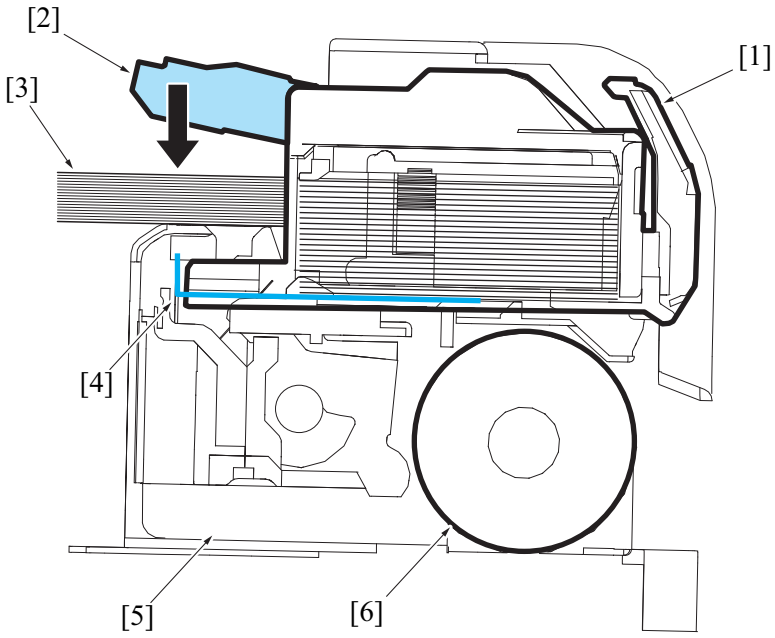
- The home position of the stapler is detected by the stapler home sensor.
- When in corner staple mode, the stapler waits at the home position and staples when the paper alignment is finished.
- When in 2 points staple mode, the stapler shifts to the first stapling position to conduct stapling. Then the stapler shifts to the second stapling position to conduct stapling. When the stapling is finished, the stapler returns to the home position.
- The stapling position is controlled based on the number of pulses generated by the stapler movement motor. No position sensors are provided for the corner staple and two-point staple functions.

3.6.3 Staple control

(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 side, so that the sheets are fastened together.
- When the sheets are stapled together, the stapler motor raises the clincher staple arm and lowers the staple arm.
- The staple operation completes when the staple arm returns to the home position.

Front view



[1]	Staple cartridge	[2]	Clincher staple arm
[3]	Paper bunch	[4]	Staple sheet (staple)
[5]	Stapler	[6]	Stapler motor

(2) Maximum stapling quantity

- The number of sheets that user wishes to staple are placed into the alignment tray and the stapling operation is performed.
- However, if the number exceeds the upper limit, the set of sheets is delivered to the exit tray without being stapled.

Maximum stapling quantity

Paper size	Maximum stapling quantity
A4S or less (small size)	50 sheets (*)
Foolscap or more (large size)	30 sheets

- *: When there are small size sheets and large size sheets with same width at the same time, they are judged as large size sheets, and the maximum staple quantity becomes 30.
  Example: When there are A4 LEF and A3 SEF, the maximum stapling quantity is 30.

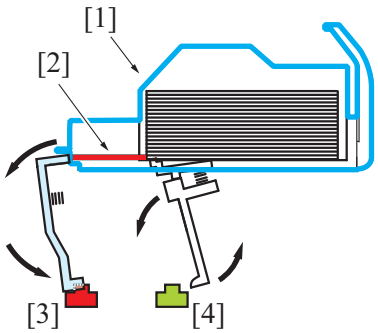
(3) Clogged staple detection

- 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.

3.6.4 Staple empty detection control

(1) Staple empty detection

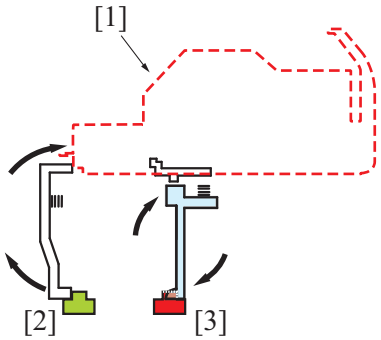
- The stapler includes the self-priming sensor and staple empty sensor to detect the status of the staple cartridge and staples.
- If the trailing edge of the last staple sheet in the cartridge passes the actuator of the staple empty sensor, the staple empty sensor is blocked and machine determines that 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 stapler home position.



[1]	Staple cartridge	[2]	Staple sheet
[3]	Self-priming sensor	[4]	Staple empty sensor

(2) Cartridge installation detection

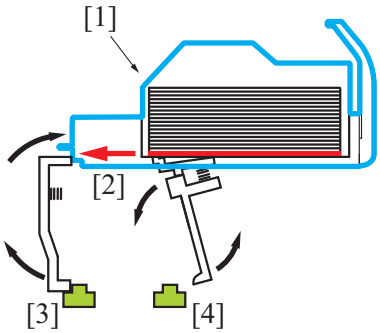
- When a cartridge is not installed, the staple empty sensor is blocked and the self-priming sensor is unblocked.
- The control panel displays to warn of the staple empty message.



[1]	Staple cartridge (not mounted)	[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 is unable to 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.

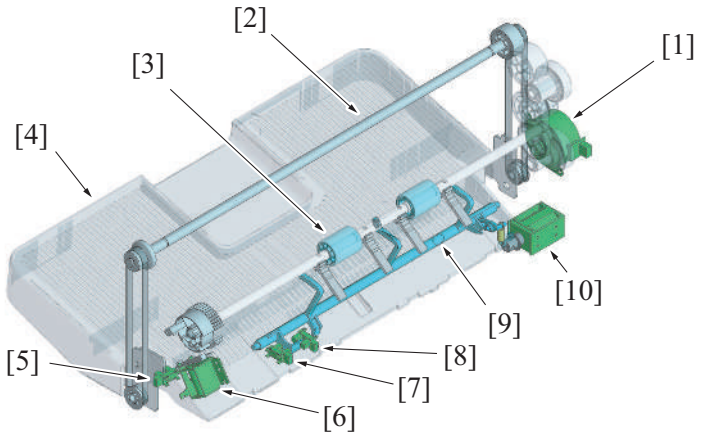


[1]	Staple cartridge (loaded with staple sheets)	[2]	Staple sheet is fed by clinch operation
[3]	Self-priming sensor (unblocked)	[4]	Staple empty sensor (unblocked)

3.7 PAPER EXIT TRAY SECTION

3.7.1 Configuration

- In the paper exit tray section, paper transported into the finisher is placed into paper exit tray.

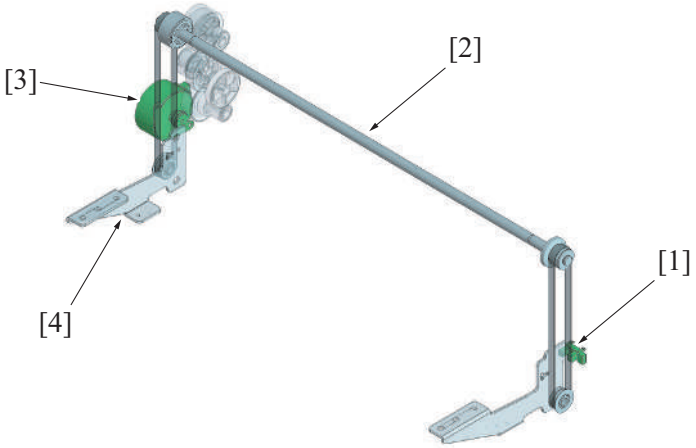


[1]	Tray lift up motor (M109)	[2]	Shaft
[3]	Paper exit roller/lower	[4]	Paper exit tray
[5]	Paper exit tray home sensor (PS107)	[6]	Paper exit roller solenoid (SD103)
[7]	Paper surface detect sensor/2 (PS104)	[8]	Paper weight lever sensor (PS103)
[9]	Paper surface detect lever	[10]	Paper surface detect solenoid (SD101)

3.7.2 Drive

(1) Tray lift up section

- The drive source is the tray lift up motor which moves the exit tray up/down.

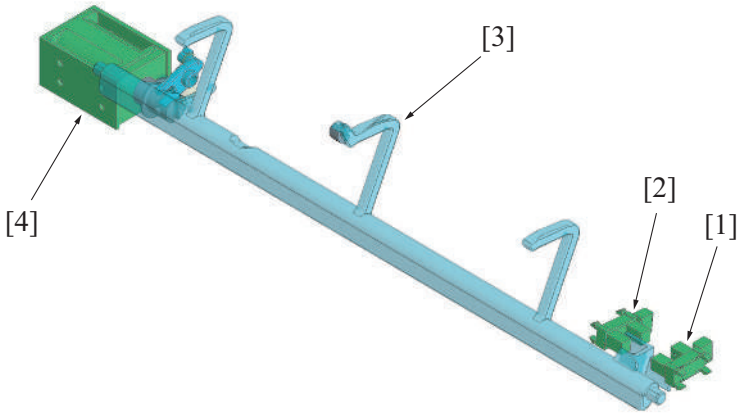


[1]	Paper exit tray home sensor (PS107)	[2]	Shaft
[3]	Tray lift up motor (M109)	[4]	Tray lifter

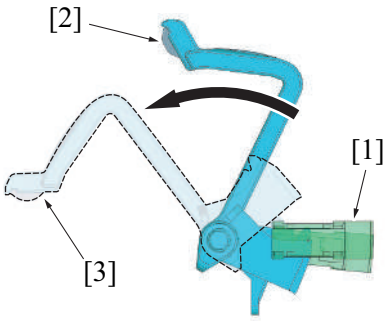
(2) Paper level detect section

- The paper surface detect solenoid drives the paper surface detect lever.
- The paper surface detect solenoid turns on to rotate the paper surface detect lever downward.

- The paper surface detect solenoid turns off to allow the paper surface detect lever to return to the upward position via spring force.



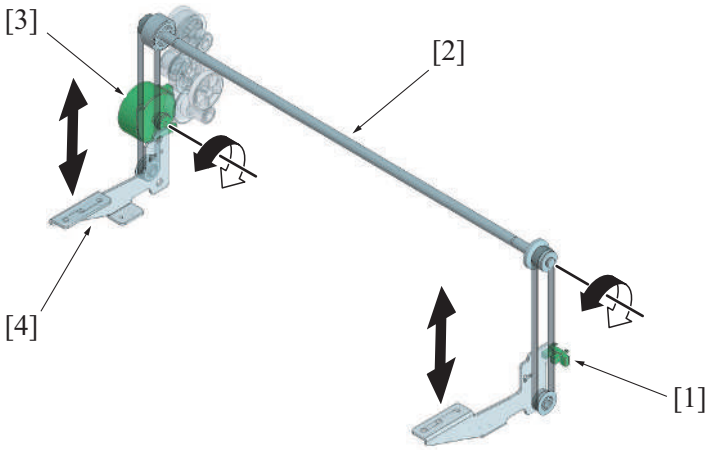
[1]	Paper surface detect sensor/2 (PS104)	[2]	Paper weight lever sensor (PS103)
[3]	Paper surface detect lever	[4]	Paper surface detect solenoid (SD101)



[1]	Paper surface detect sensor/2 (PS104)	[2]	Paper surface detect lever (upper position: when solenoid is turned OFF)
[3]	Paper surface detect lever (lower position: when solenoid is turned ON)	-	-

3.7.3 Paper exit tray lift up control

- The up/down motion of the paper exit tray is conducted by the tray lift up motor.
- When the tray lift up motor rotates forward, the tray drive belt rotates forward through the gear to lift up the paper exit tray.
- When the tray lift up motor rotates in a reverse direction, the tray drive belt rotates in a reverse direction through the gear to lower the paper exit tray.
- The paper exit tray home sensor detects the home position of the paper exit tray.
- The height of the paper exit tray is detected by the paper level detect mechanism. When a job is commanded, the paper surface detect lever operates to move the paper exit tray up/down according to the detected result.



[1]	Paper exit tray home sensor (PS107)	[2]	Shaft
[3]	Tray lift up motor (M109)	[4]	Tray lifter

3.7.4 Paper level detect control

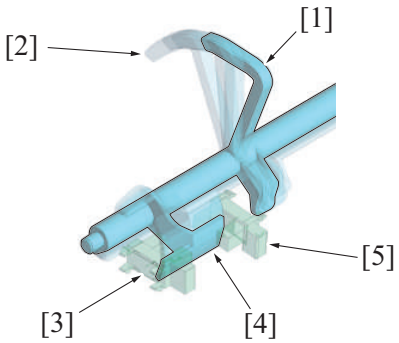
- The paper level is detected by the paper weight lever sensor and paper surface detect sensor/2. The height of the paper exit tray is controlled according to the detected result.

- The paper surface detect actuator rotates when the paper surface detect solenoid turns on, to hold the rear top face of the paper on the paper exit tray. The rotation value of the paper surface detect lever changes at this point, according to the paper load and the height of the paper exit tray.
- The paper weight lever sensor and paper surface detect sensor/2 are installed at different heights. (Paper weight lever sensor: High, Paper surface detect sensor/2: Low) The paper surface detect lever has two light shield plates with different lengths.
- Which provides different detection result for each sensor with the rotation value found by the paper surface detect lever. The current paper level is judged according to the result so that the paper exit tray will be controlled to move up/down to the suitable height.

Paper level detect table

Paper surface detect sensor/2	Paper weight lever sensor	Paper level	Paper exit tray lift up control
Unblocked	Blocked	High	• The paper exit tray is at the higher position than the reference position. The tray lift up motor will be rotated in reverse direction and move the paper exit tray down to the reference position. • When the paper exit tray home sensor detects the paper exit tray while the paper exit tray is moving down, the paper exit tray is judged to be full, and the following printing job will be prohibited.
Blocked	Blocked		
Blocked	Unblocked	Reference position	• Reference position. The paper exit tray will not move up/down.
Unblocked	Unblocked	Low	• The paper exit tray is at the lower position than the reference position. The tray lift up motor will rotate to move the exit tray up to the reference position.

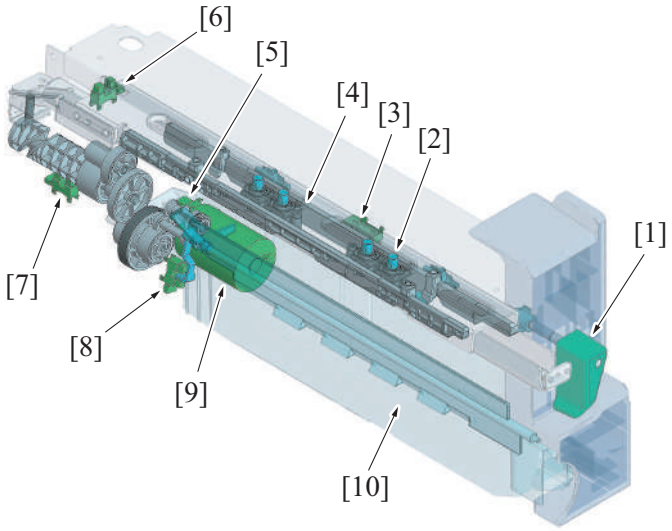
- The paper level detect control is detected every time the paper is discharged to monitor the paper height. For consecutive printing, it also prevents discharged paper from being misaligned by the following paper being discharged.
- When the paper exit tray home sensor detects the paper exit tray while the paper exit tray is moving down, the paper exit tray is judged to be full and the warning message will be displayed on the control panel, informing that the paper exit tray is full.
- The paper surface detect lever moves down when the paper is removed from the paper exit tray. When the lever moves down, the paper is detected to be removed, and the paper exit tray full display will be released.



[1]	Paper surface detect lever (Paper level: home position)	[2]	Paper surface detect lever (Paper level: low)
[3]	Paper surface detect sensor/2 (PS104) (unblocked)	[4]	Light shield plate
[5]	Paper weight lever sensor (PS103) (blocked)	[6]	

3.8 PK-519

3.8.1 Configuration



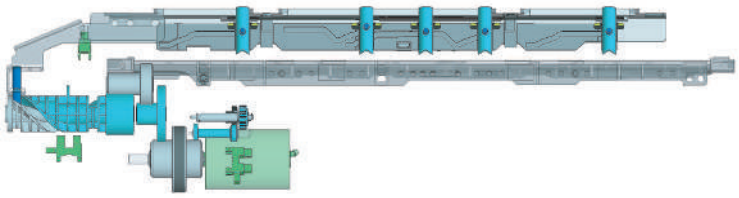
[1]	Punch unit release lever	[2]	Puncher (*1)
[3]	Paper feed sensor (PS201)	[4]	Puncher frame (*2)

[5]	Punch motor sensor (PS202)	[6]	Puncher home sensor (PS204)
[7]	Puncher drive cam sensor (PS203)	[8]	Punch dust full sensor (PS205)
[9]	Punch motor (M201)	[10]	Punch dust box

- *1: The number of the puncher is varied depending on the type of punch kit.
- *2: The shape of the puncher frame is varied depending on the type of punch kit.

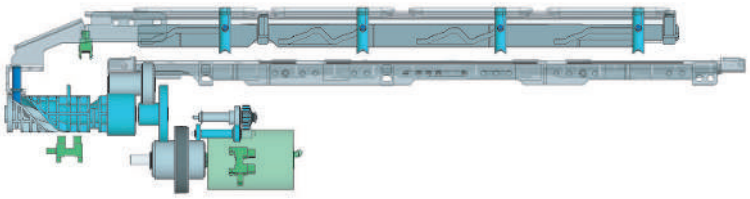
(1) Punch kit type

2 holes/3 holes kit (Selectable the hole number)



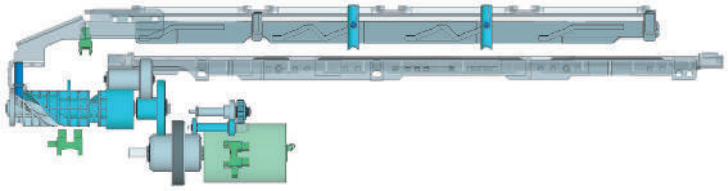
- Attachable marketing area: Europe, US, Others 1 to 5

2 holes/4 holes kit (Selectable the hole number)



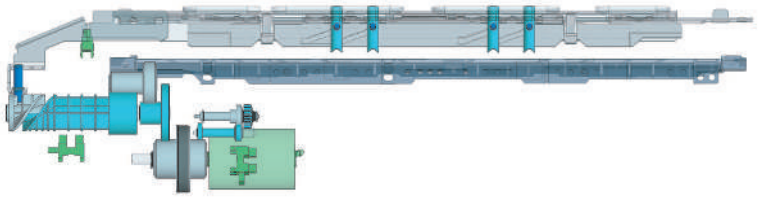
- Attachable marketing area: Europe, US, Others 1 to 5

2 holes punch kit



- Attachable marketing area: Japan

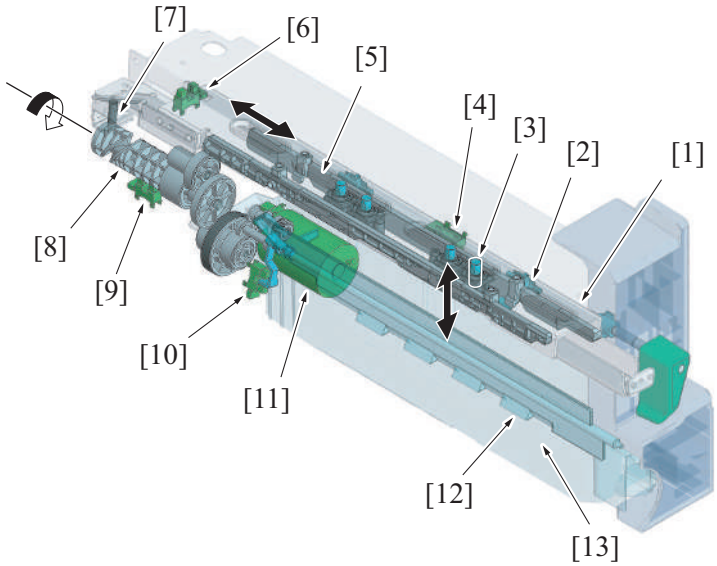
4 holes punch kit



- Attachable marketing area: Europe

3.8.2 Drive

- The drive source for the punch section is a punch motor. It drives the puncher and the punch dust agitating blade.
- The puncher is driven via the puncher drive cam.
- The punch dust agitating blade is driven via the agitating blade drive connecting lever. The agitating blade drive connecting lever has the function to detect punch dust full.

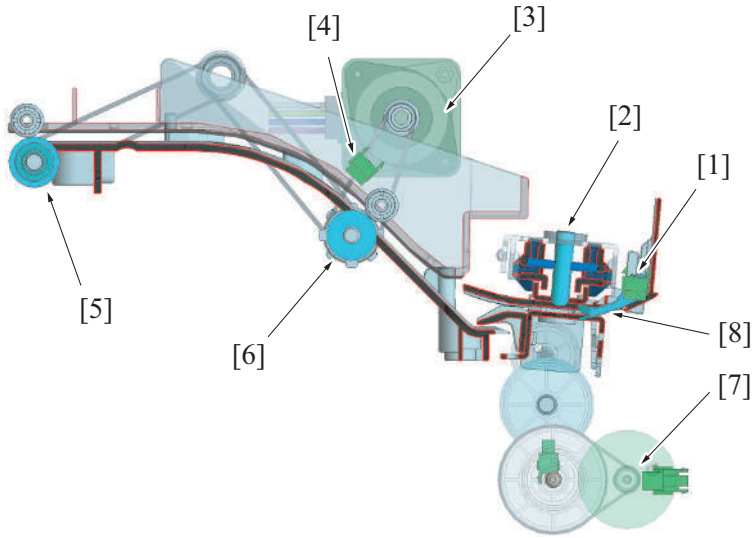


[1]	Puncher frame (*1)	[2]	Registration guide
[3]	Puncher (*2)	[4]	Paper feed sensor (PS201)
[5]	Slide cam	[6]	Puncher home sensor (PS204)
[7]	Cam slide shaft	[8]	Puncher drive cam
[9]	Puncher drive cam sensor (PS203)	[10]	Punch dust full sensor (PS205)
[11]	Punch motor (M201)	[12]	Punch dust agitating blade
[13]	Punch dust box	-	-

- *1: The shape of the puncher frame is varied depending on the type of punch kit.
- *2: The number of the puncher is varied depending on the type of punch kit.

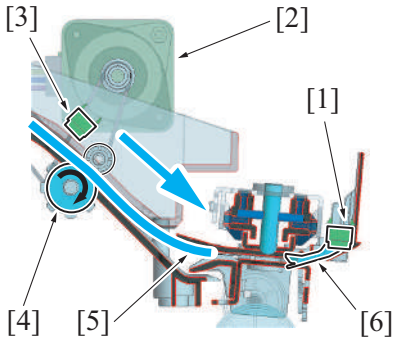
3.8.3 Skew correction mechanism

- When in punch mode, the paper is transported to the paper transport section of the finisher once and switched back to make the paper contact the registration guide.
- This process will correct the skew at the trailing edge of the paper (tilt) to enable punching at the proper position.

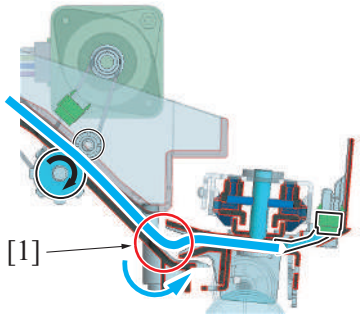


[1]	Paper feed sensor (PS201)	[2]	Puncher
[3]	Paper conveyance motor (M101)	[4]	Paper feed sensor (PS101)
[5]	Receiving roller	[6]	Paper conveyance roller
[7]	Punch motor (M201)	[8]	Registration guide

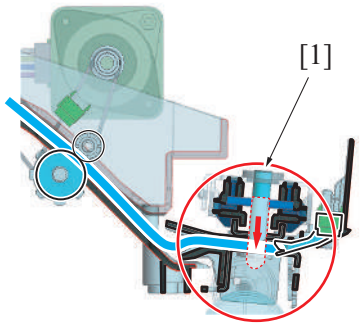
(1) Skew correction process



1. The paper conveyance motor [2] of the finisher will rotate forward, and the paper conveyance roller [4] will rotate forward. The paper will be transported for the punch section to the transport section.
2. The paper feed sensor [3] will detect the leading edge of the paper, and the paper feed sensor [1] will detect the trailing edge of the paper.
3. When the paper feed sensor [1] detects the trailing edge of the paper and the specified period of time has passed, the transportation motor will rotate in reverse direction.
4. The paper will be switchbacked [5] once, and the trailing edge of the paper contacts the registration guide [6].



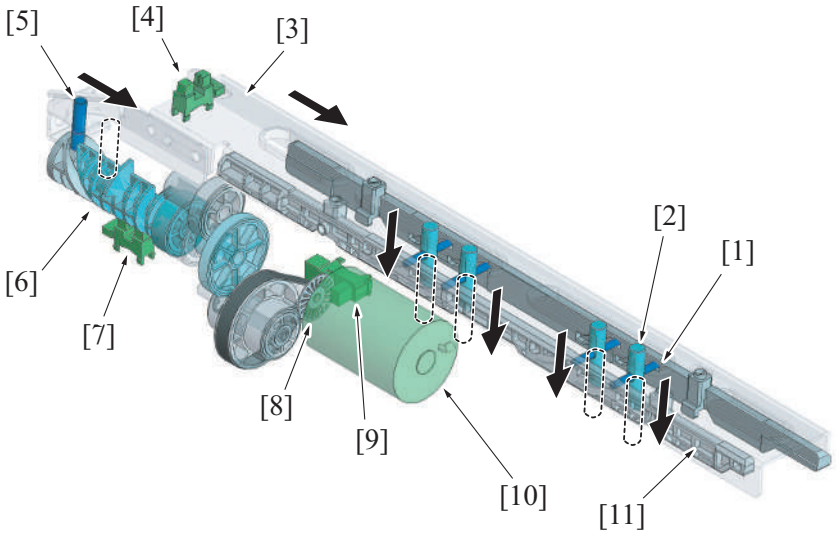
5. When the paper is switchbacked, the paper forms a loop [1] between the paper conveyance roller and the registration guide, and corrects the paper skew (tilt).
6. The paper feed sensor at the punch section detects the trailing edge of the paper, and the paper conveyance motor stops after the specified period of time to stop the switchback of the paper.



7. The switchback of the paper stops, and the puncher [1] moves down to punch the hole on the paper.
8. After punching the hole, the conveyor motor rotates forward to transport the paper into the finisher.

3.8.4 Punch control

- The holes are punched on the paper by switchback of the paper into the punch unit and by moving the puncher up/down by the punch motor.



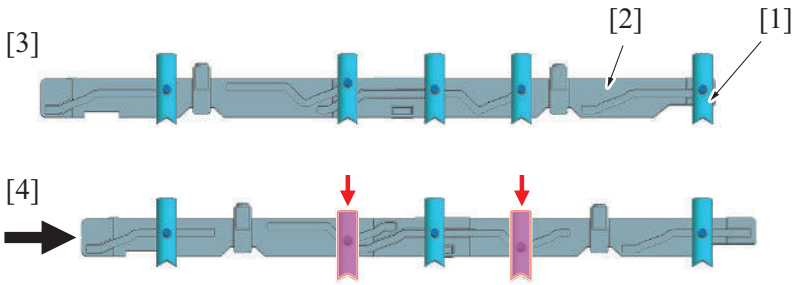
[1]	Puncher slide pin	[2]	Puncher
[3]	Puncher frame	[4]	Puncher home sensor (PS204)
[5]	Puncher frame slide pin	[6]	Puncher drive cam
[7]	Puncher drive cam sensor (PS203)	[8]	Encoder
[9]	Punch motor sensor (PS202)	[10]	Punch motor (M201)
[11]	Slide cam	-	-

(1) Paper punching process

1. The puncher frame waits at the home position to make the puncher waits at the upper position.
   Position of the puncher frame is detected by the puncher home sensor.

2. Paper feed sensor at the punch section detects the trailing edge of the paper, and stops switchback of the paper after a specified period of time.
3. The punch motor rotates forward to rotate the puncher drive cam forward. The punch frame then will move towards the front side. The movement of the puncher frame to the front side allows the slide cam (cam profile) to push the puncher down. Thereby punching the holes at the trailing edge portion of the paper. (The holes are punched paper by paper.)
   The rotation amount of the punch motor is detected corresponding to the number of times that the light shielding plate blocks the punch encoder sensor. So that the position of the puncher can be determined. The rotating position of the puncher driven cam is detected by the puncher drive cam sensor.
4. When the holes are punched, the punch motor rotates in reverse direction, and the puncher drive cam rotates in reverse direction. This process leads the puncher frame to return to the home position to move the puncher up.

Example: Figure for 2 holes punching operation for 2 holes/3 holes kit



[1]	Puncher	[2]	Slide cam
[3]	Puncher frame (standby position: home position)	[4]	Puncher frame (punching position)

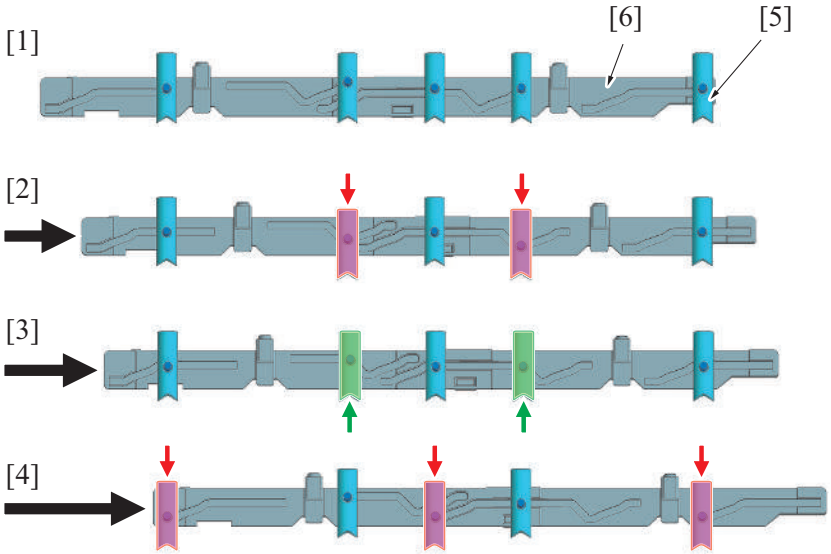
3.8.5 Punch holes switch control

- 2 holes/3 holes punch kit as well as 2 holes/4 holes punch kit have mechanisms to switch the number of punch holes.

(1) Number of punch holes switch mechanism

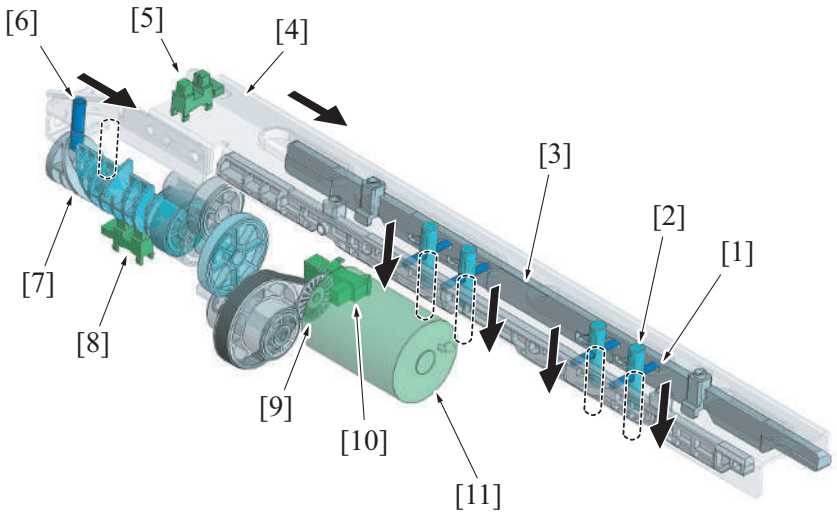
- The slide cam has a guide. With the shape of the guide and the difference shift value of the puncher frame, only the specified puncher can be moved down.
- The shift value of the puncher frame is judged by the rotation value of the punch motor. The rotation value of the punch motor is detected by the punch motor sensor.
- The number of the punch holes can be selected when selecting the punch mode.
  NOTE
  - **When the second type of punch hole (3 holes on the illustration) is selected, the puncher frame shifts to the waiting position 2 from the waiting position 1 (home position) and waits prior to the job.**
- The number of the puncher and the guide shape of the slide cam differ depending on the type of the punch kit.

Example: 2 holes/3 holes kit



[1]	Waiting position 1 (home position)	[2]	Puncher frame shift value: Small (Example: 2 holes punching position)
[3]	Waiting position 2 (puncher frame shift value: medium)	[4]	Puncher frame shift value: Large (Example: 3 holes punching position)
[5]	Puncher	[6]	Slide cam

(2) Puncher frame position detect mechanism



[1]	Puncher slide pin	[2]	Puncher
[3]	Slide cam	[4]	Puncher frame
[5]	Puncher home sensor (PS204)	[6]	Puncher frame slide pin
[7]	Puncher drive cam	[8]	Puncher drive cam sensor (PS203)
[9]	Encoder	[10]	Punch motor sensor (PS202)
[11]	Punch motor (M201)	-	-

(a) Puncher position detect control

- The waiting position 1 (home position) and the waiting position 2 are judged by the assembly of the detecting result of the punch home sensor and the puncher drive cam sensor.

Puncher retract position	Puncher home sensor	Puncher drive cam sensor
Waiting position 1 (puncher retract position)	Blocking	1st light block
Punching position 1 (Example: 2 holes punching)	Unblocking	1st light unblock
Waiting position 2 (puncher retract position)		2nd light block
Punching position 2 (Example: 3 holes punching)		2nd light unblock

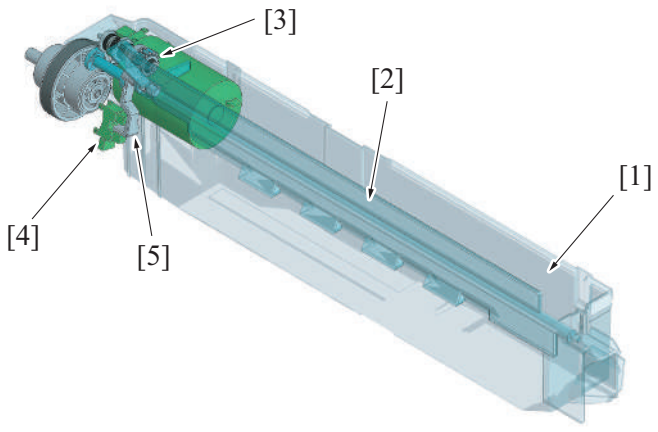
(b) Puncher shift value detect mechanism

- The shift value of the puncher frame is judged by the number of times the encoder blocks the punch motor sensor.

3.8.6 Punch dust full detection control

- The punch dust box section has the punch dust full sensor. When the job is commanded with the punch dust exceeding the specified value, a warning message for the punch dust full is displayed on the control panel.
- The punch dust full sensor detects the volume of the punch dust with the position of the agitating blade drive connecting lever.
- The punch dust full sensor also detects if the punch dust box is installed.
  If the punch dust box is not installed when the punch job is commanded, the warning message for the punch dust full will be displayed on the control panel.
- Even when the "punch dust full" is detected, printing is not prohibited. All the jobs except punch holes will be conducted until finished.

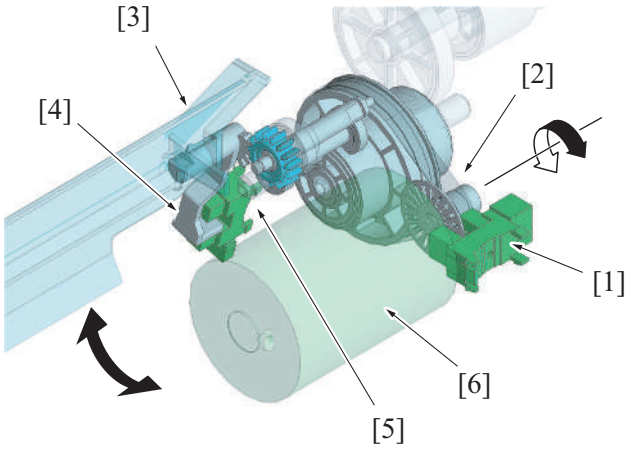
Punch dust box over view



[1]	Punch dust box	[2]	Punch dust agitating blade

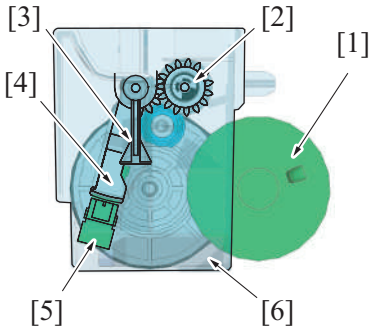
[3]	Drive transmission gear	[4]	Punch dust full sensor (PS205)
[5]	Agitating blade drive connecting lever	-	-

Enlarged view of the punch dust full sensor section

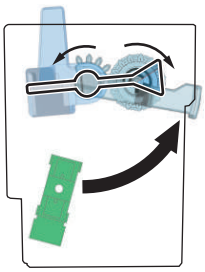


[1]	Punch motor sensor (PS202)	[2]	Encoder
[3]	Punch dust agitating blade	[4]	Agitating blade drive connecting lever
[5]	Punch dust full sensor (PS205)	[6]	Punch motor (M201)

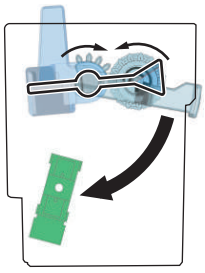
(1) Punch dust full detect operation



1. The drive transmission gear [2] stops while the punch motor [1] is in halt. The punch dust agitating blade [3] in the punch dust box [6] waits at the home position.
   The agitating blade drive connecting lever [4] blocks the punch dust full sensor [5] during that time.

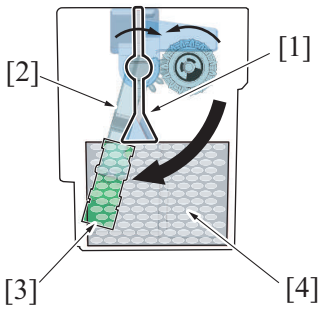


2. When the punch motor rotates forward, the drive transmission gear rotates forward.
3. When the drive transmission gear rotates forward, the agitating blade drive connecting lever rotates forward to rotate the punch dust agitating blade forward.
   When the agitating blade drive connecting lever rotates, the punch dust full sensor is unblocked.
   The punch dust agitating blade rotates to level the punch dust in the punch dust box.

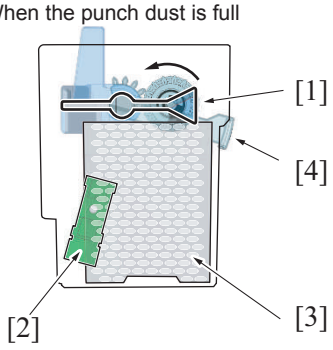


4. When punch holes is complete, the punch motor starts rotating in reverse direction.
   When the punch motor rotates in reverse direction, the punch dust agitating blade rotates in reverse direction and tries to return to the home position.

In normal operation



When the punch dust is full



5. **NOTE**
In normal operation:
- **The agitating blade drive connecting lever [2] and the punch dust agitating blade [1] return to their home positions by the punch motor's drive force.**
- **By the agitating blade drive connecting lever [2] returning to the home position, the punch dust full sensor [3] will block the light. The punch dust [4] then is judged not to be full.**

6. **NOTE**
When the punch dust is full:
- **The agitating blade drive connecting lever [4] and the punch dust agitating blade [1] cannot return to their home positions due to the punch dust [3].**
- **The torque limiter function is installed to the drive transmission gear to prohibit transmission of the drive force more than specified.**
- **With the agitating blade drive connecting lever [4] not returning to the home position, the punch dust full sensor [2] keeps being unblocked. When the transmission status is detected for 10 consecutive times during punching operation, the punch dust [3] is detected to be full to display the message warning that the punch dust is at full level.**

(2) Punch dust box not installed detect control

1. When the punch dust box is installed, the agitating blade drive connecting lever waits at the home position. (blocks the punch dust full sensor)
2. When the punch dust box is removed, the punch dust full sensor is unblocked.
3. When the finisher is closed and the punch job is commanded with the above status, the punch dust box is detected as uninstalled. So that the message appears on the control panel to warn that the punch dust box is full.

(3) Unit change function

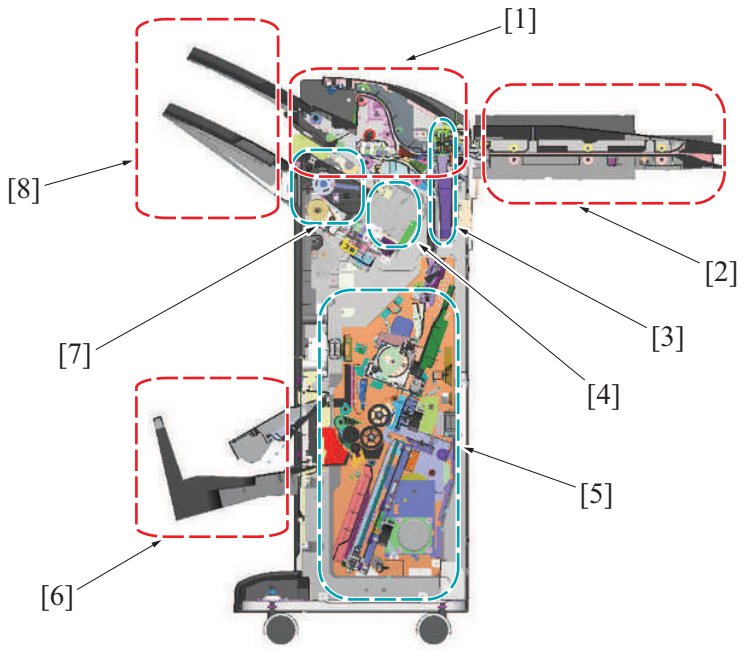
- The screen to be displayed when a punch dust full is detected can be enabled or disabled in the “Unit Change” in the Service Mode.

NOTE
- **The Service Mode screen display, details, menus, and default settings are changed when a finisher is installed to the main body.**

4. FS-539/FS-539SD/PK-524

4.1 Configuration

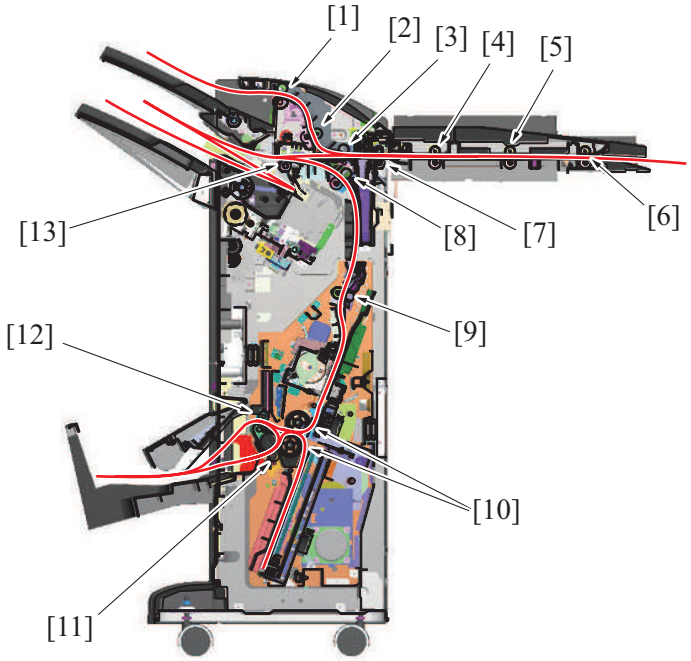
- FS-539 is composed of the horizontal transport section, transport section, alignment section, output tray section and stapler section.
- The FS-537SD is the model of a finisher that the saddle section is added to FS-539.
- Installation of the optional PK-524 enables you to add punch function.



[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

4.2 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	-	-

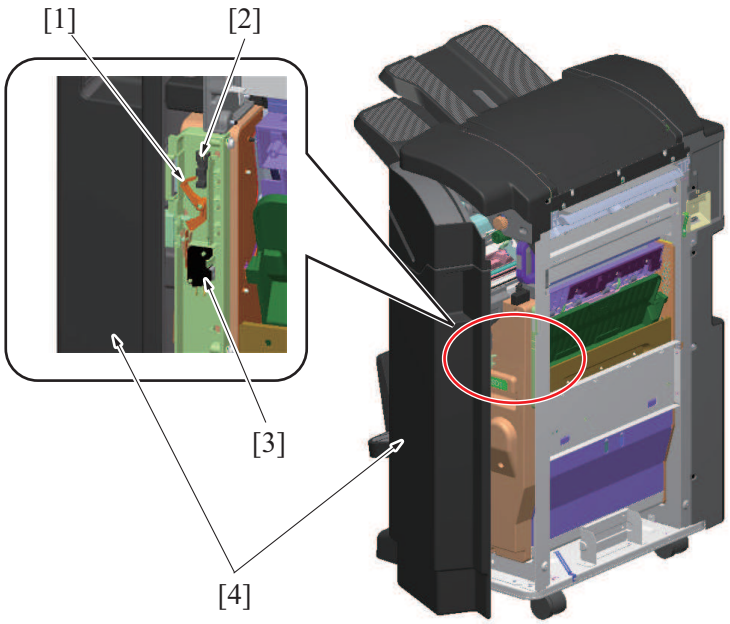
- *: Option

4.3 FINISHER SECTION

4.3.1 Door open/close detection mechanism

(1) Front door open/close detection mechanism

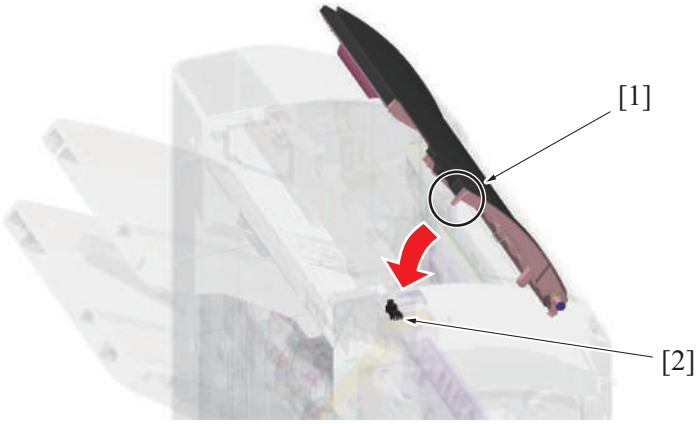
- The front door open detect switch is installed on the right front side of the finisher section. The front door open/close detection sensor is installed on the top of the front door open detect switch.
- The front door open detect switch and the front door open/close detection sensor detect the open/close 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

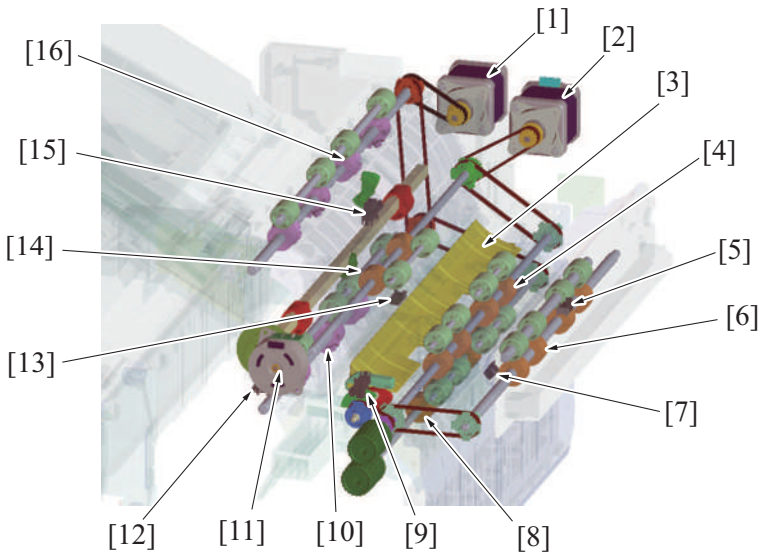
- The upper door open/close detection sensor is installed at the front left of the finisher section to detect the open/close of the upper door.
- Open the upper door, the warning screen will display on the control panel. All the setting operations and jobs are disabled while the warning screen is displayed. 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)

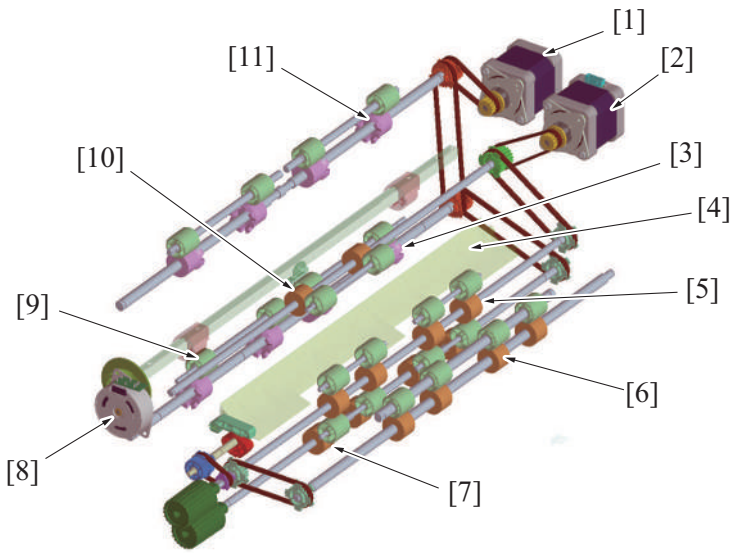
4.4 TRANSPORT SECTION

4.4.1 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

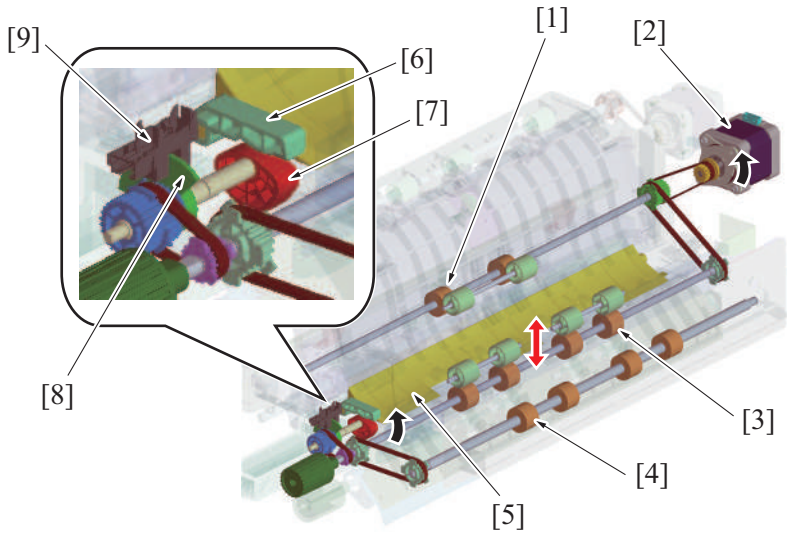
4.4.2 Drive



[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	-	-

4.4.3 Paper path switching mechanism

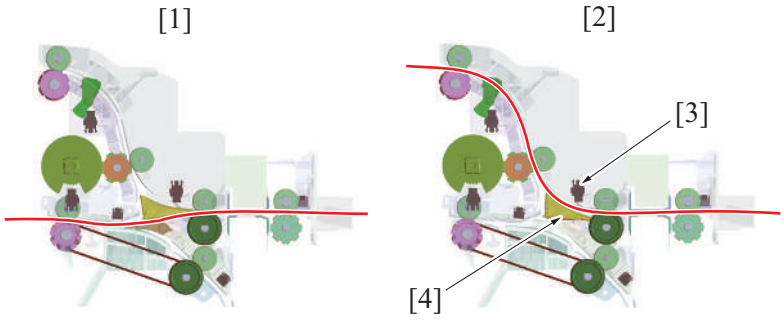
- Paper path is switched by the up/down operations of the paper path switching gate to transport paper to the main tray or the sub tray.
- The FNS entry transport motor drives the paper path switching gate to move up and down.
- The route change gate home sensor detects the position of the paper path 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

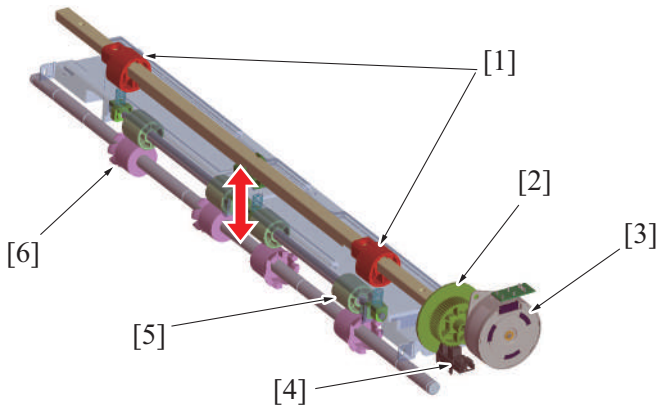
- Rotation of the cam raises or lowers the lever to change the position of the paper path switching gate.
- When the paper path switching gate is in the bottom position, paper is transported to the sub tray. When the gate is in the top position, paper is transported to the main tray.
- The detection 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

4.4.4 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.



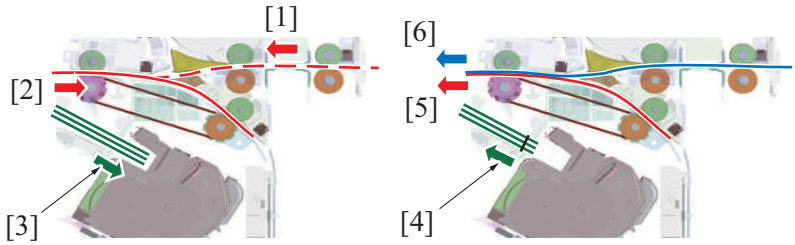
[1]	Cam	[2]	Detection plate
[3]	Receiving roller retraction motor (M4)	[4]	Receiving roller retraction sensor (PS11)
[5]	Receiving roll	[6]	Receiving roller

(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.

4.4.5 Buffer control

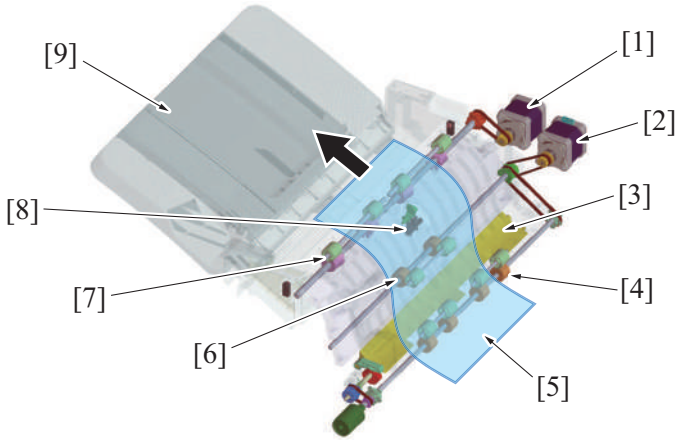
- The receiving roller section up/down mechanism is provided to eliminate the time loss for the next sheet of paper and achieve high productivity during the offset and staple operations.
- This allows handling a print job without reducing the paper transport speed even under the condition where the preceding 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

4.4.6 Sub tray exit mechanism

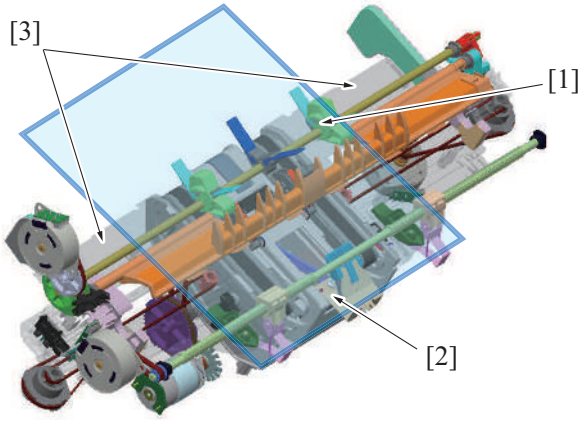
- The sub tray exit roller discharges paper from the horizontal transport section to the sub tray passing through the FNS entry roller, transport roller and sub tray transport roller.
- To transport the paper to the sub tray, the paper path switching gate also operates.
- The sub tray exit roller is 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	-	-

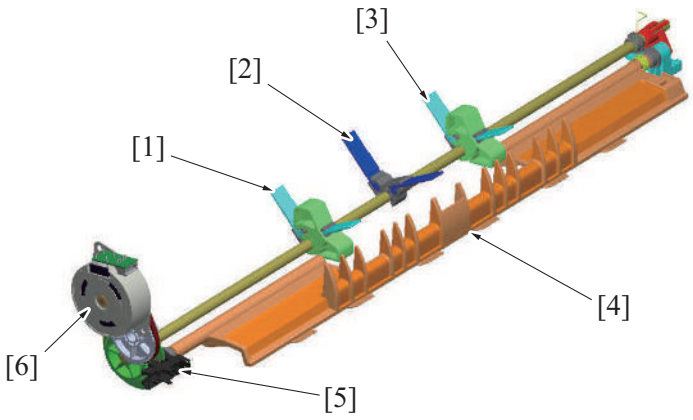
4.5 ALIGNMENT SECTION

4.5.1 Configuration



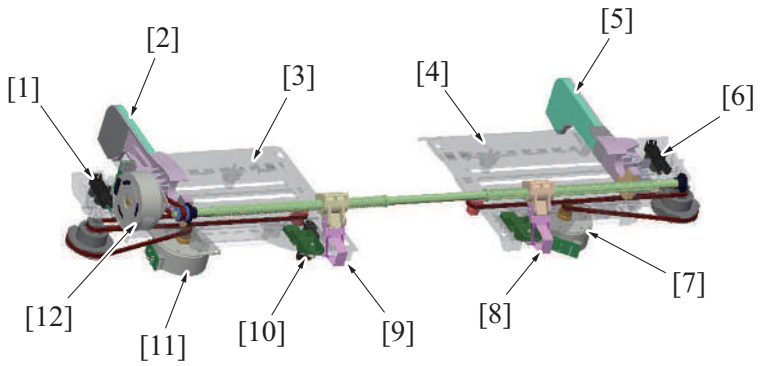
[1]	Upper paddle section	[2]	Document exit section
[3]	Alignment tray section	-	-

(1) Upper paddle section



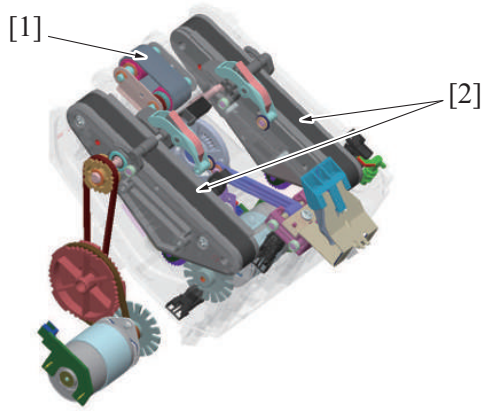
[1]	Upper paddle/Fr	[2]	Upper paddle/Ctr
[3]	Upper paddle/Rr	[4]	Paper guide
[5]	Upper paddle home sensor (PS14)	[6]	FNS paddle motor (M5)

(2) Alignment tray section



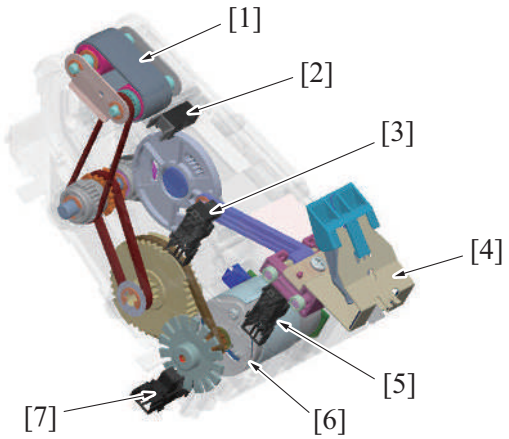
[1]	Alignment plate home sensor/Fr (PS12)	[2]	Alignment plate/Fr
[3]	Alignment tray/Fr	[4]	Alignment tray/Rr
[5]	Alignment plate/Rr	[6]	Alignment plate home sensor/Rr (PS13)
[7]	Alignment motor/Rr (M8)	[8]	Trailing edge stopper /Rr
[9]	Trailing edge stopper /Fr	[10]	Trailing edge stopper home sensor (PS20)
[11]	Alignment motor/Fr (M7)	[12]	Trailing edge stopper motor (M6)

(3) Exit section



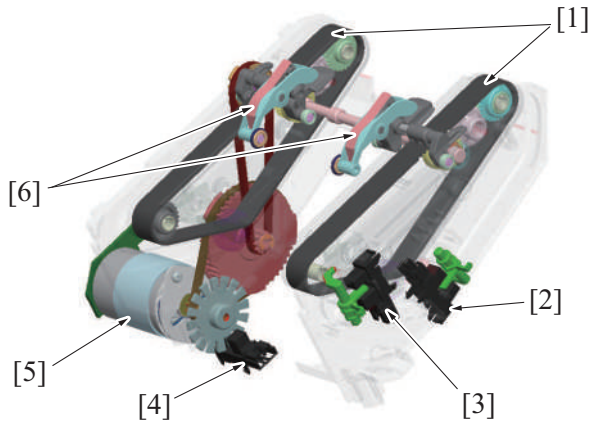
[1]	Lower paddle section	[2]	Gripper section

(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)	-	-

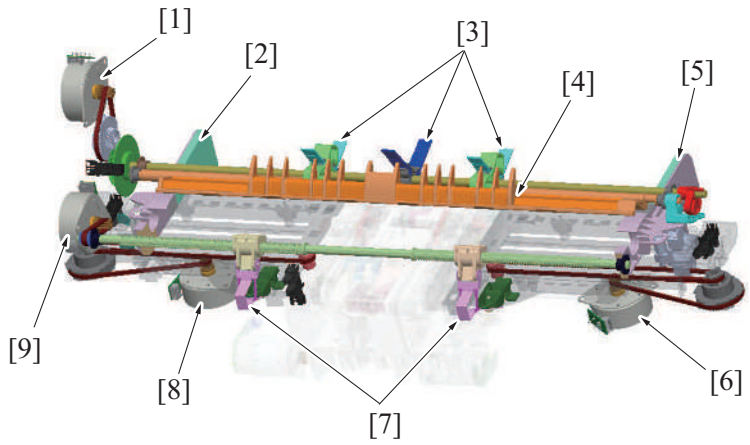
(b) Gripper section



[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

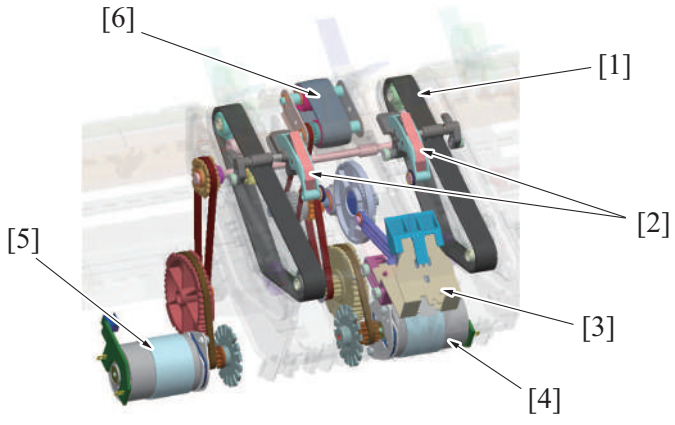
4.5.2 Drive

(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

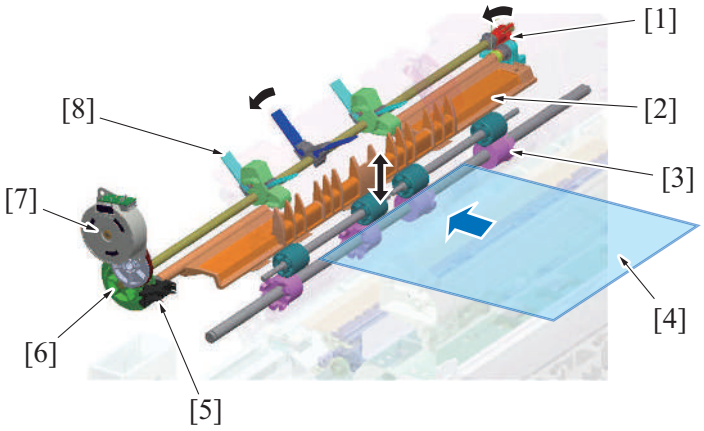


[1]	Paper transport belt	[2]	Gripper
[3]	Trailing edge stopper/C	[4]	Pre-eject drive motor (M9)

[5]	Bundle eject motor (M10)	[6]	Lower paddle

4.5.3 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.

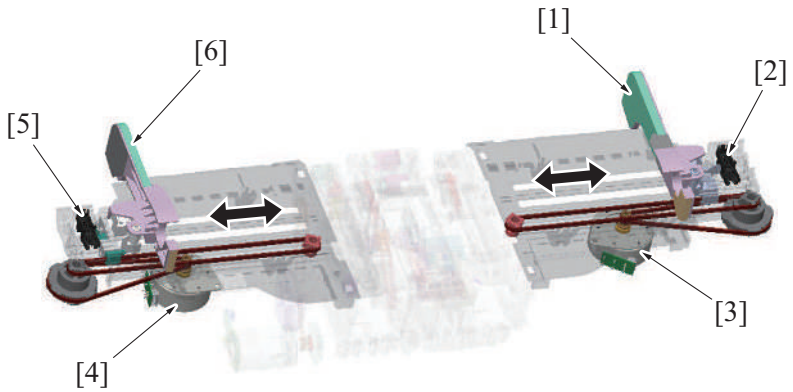


[1]	Cam	[2]	Paper guide
[3]	Receiving roller	[4]	Paper
[5]	Upper paddle home sensor (PS14)	[6]	Detection plate
[7]	FNS paddle motor (M5)	[8]	Upper paddle

4.5.4 Paper alignment control

(1) Alignment plate

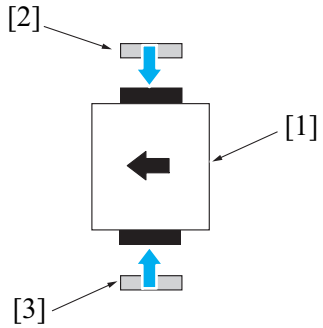
- The alignment plate/Fr and alignment plate/Rr align the paper in the width orientation and shift paper sheets.
- The alignment motor and drive belt drives the alignment plates.
- The alignment plates move forward and backward by the forward and reverse rotation of the alignment motor.
- Alignment plate/Fr 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

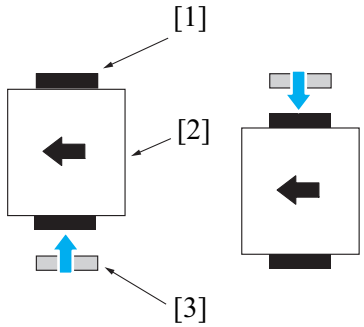
(a) Alignment operation

- 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.



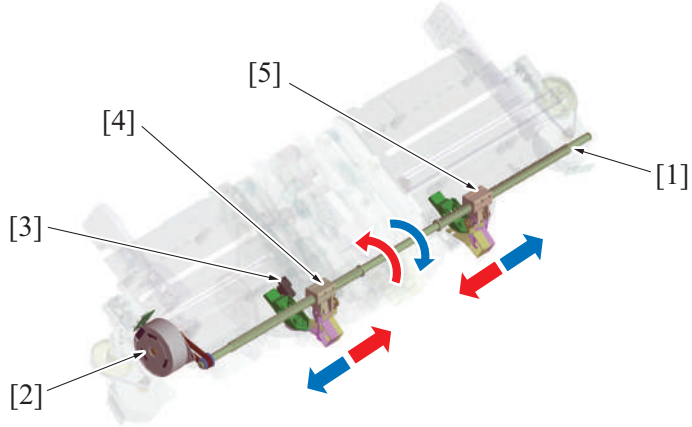
(b) Shift operation

- 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

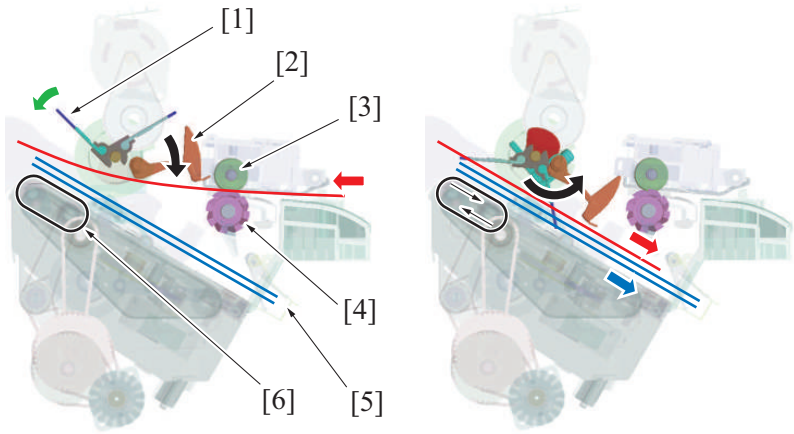
- The trailing edge stopper/Fr and trailing edge stopper/Rr align paper in the feed orientation.
- The trailing edge stopper motor drives the trailing edge stoppers.



[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

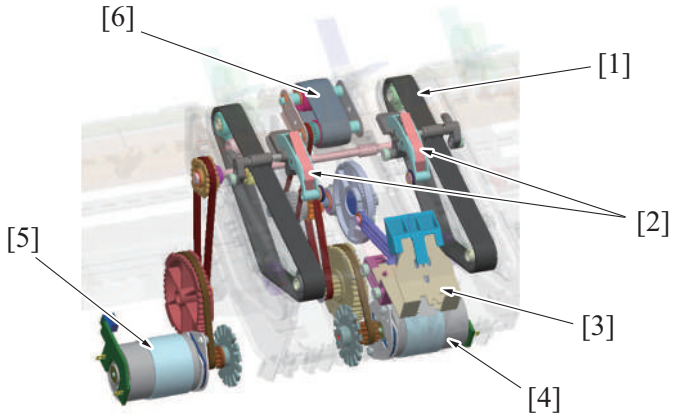
- The shaft for stopper movement has a different spiral between the front and rear sides.
- The trailing edge stopper/Fr to move forward and the trailing edge stopper/Rr to move backward when the trailing edge stopper motor rotates in the normal direction.
- Trailing edge stopper/Fr and the trailing 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

4.5.5 Paper exit control

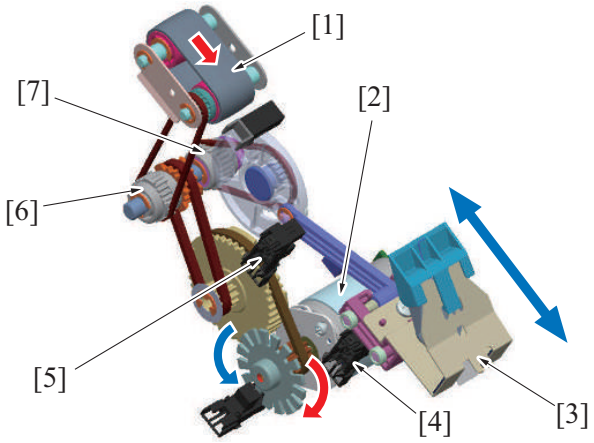
- When the pre-eject drive motor rotates counterclockwise, the bottom edge stopper/C pushes paper to the position at which it can be gripped by the gripper.
- The gripper grips the trailing edges of the sets of paper in the alignment tray and transports them to the paper exit position.
- The gripper 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

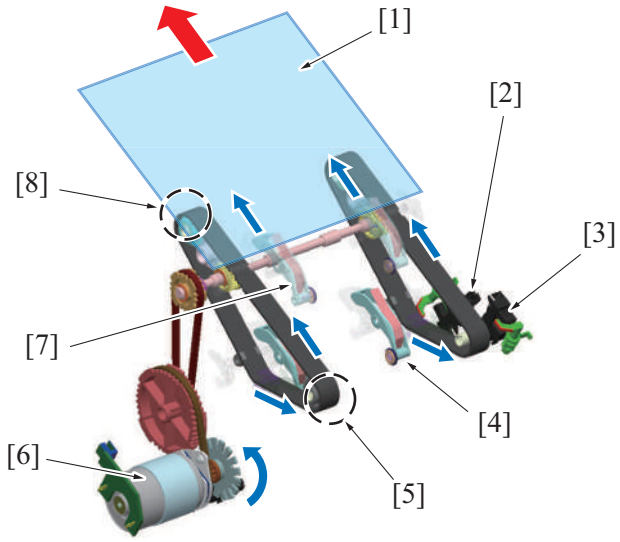
- When the pre-eject drive motor rotates clockwise, the lower paddle rotates to press the paper against the trailing edge stopper.
- When the pre-eject drive motor rotates counterclockwise, the trailing edge stopper moves from the home position to the paper exit position to discharge paper to the main 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

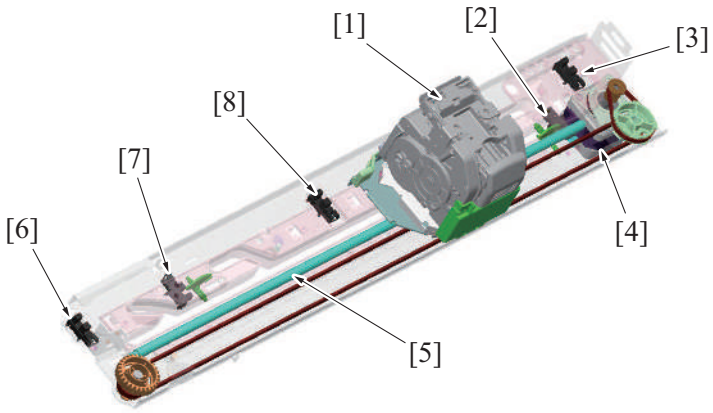
- The bundle eject motor rotates to turn the paper transport belt. It rotates the gripper that has been fixed to the paper transport belt.
- The gripper stays at the home position (inside the exit section) and rotates at the position [5] shown in the illustration to grip the trailing edge of paper. Paper 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)

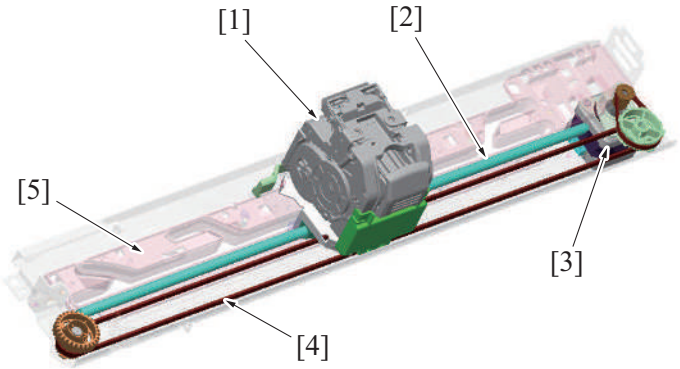
4.6 STAPLER SECTION

4.6.1 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)

4.6.2 Drive

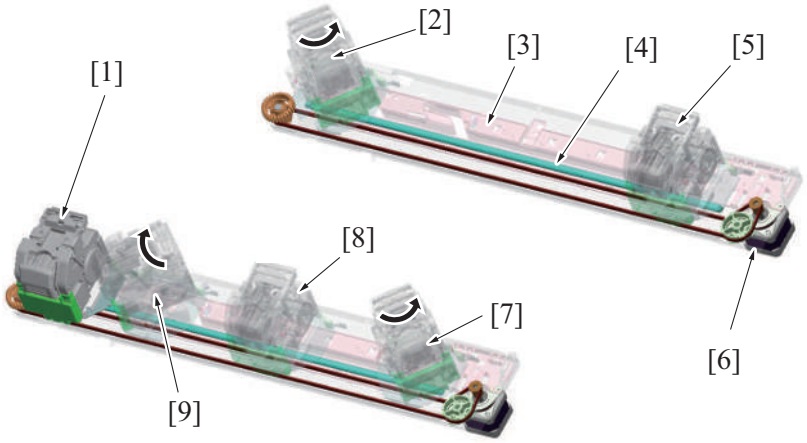


[1]	Stapler unit	[2]	Shaft
[3]	Stapler movement motor (M13)	[4]	Drive belt
[5]	Slide guide plate	-	-

4.6.3 Stapler movement control

(1) Stapler movement

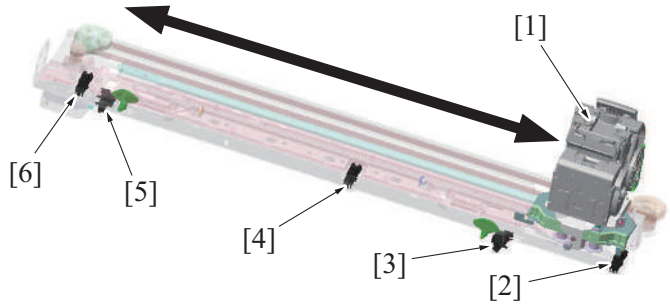
- When the stapler movement motor rotates, the belt is driven. So, the stapler holder that is attached to the belt moves back and forth along the shaft.
- When the stapler unit moves to the manual staple position, the corner rear staple position, and the staple cartridge replacement position, the staple 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

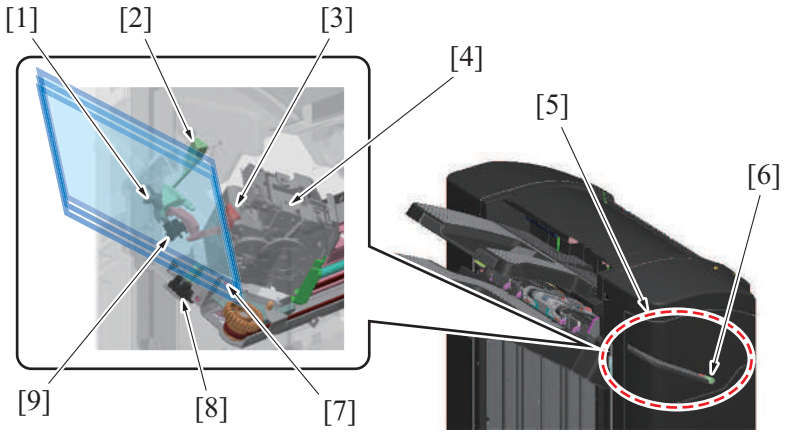
- The stapler home sensor detects the home position/manual staple position of the stapler.
- The flat staple position sensor/Rr detects the corner rear (parallel) staple position of the stapler.
- The corner staple position sensor/Rr detects the corner rear staple position of the stapler.
- The corner 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)

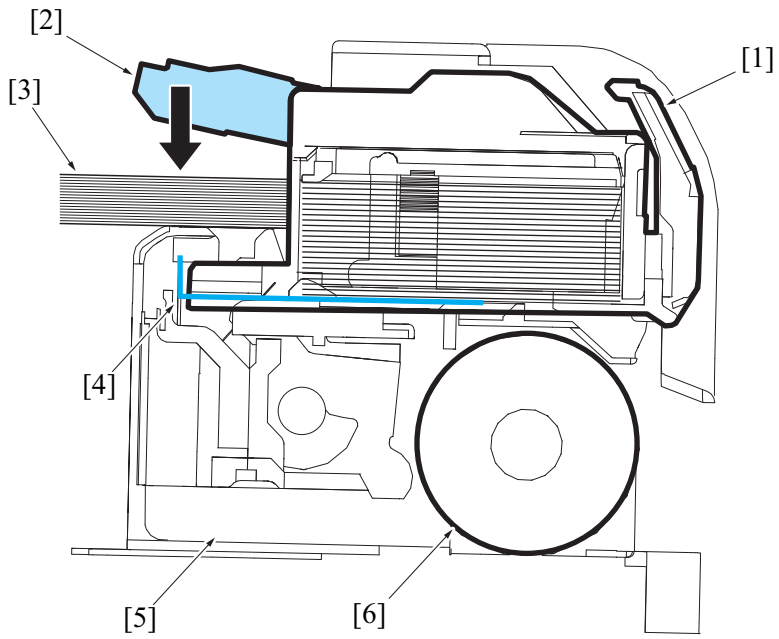
4.6.4 Manual staple mechanism

- 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)	-	-

4.6.5 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.

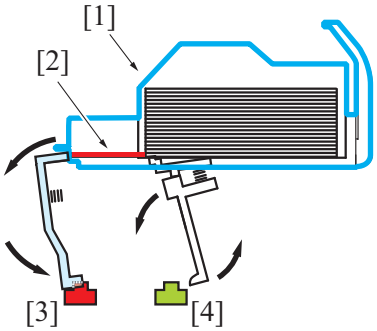
(2) Clogged staple detection

- 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.

4.6.6 Staple empty detection control

(1) Staple empty detection

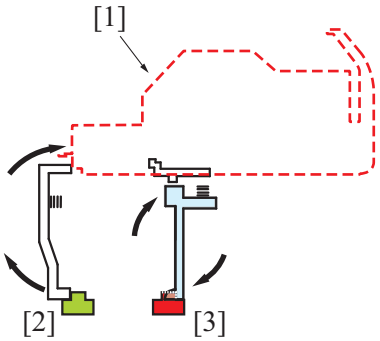
- The stapler includes the self-priming sensor and staple empty sensor to detect the status of the staple cartridge and staples.
- If the trailing edge of the last staple sheet in the cartridge passes the actuator of the staple empty sensor, the staple empty sensor is blocked. The machine determines 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

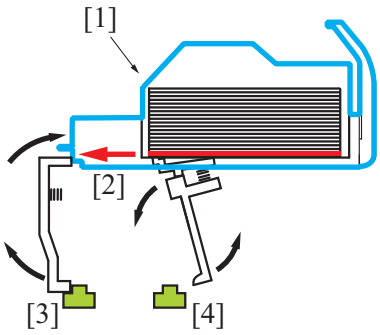
- When a cartridge is not installed, the staple empty sensor is blocked and the self-priming sensor is unblocked.
- The control panel displays a message to warn of the staple empty.



[1]	Staple cartridge (unset)	[2]	Self-priming sensor (unblocked)
[3]	Staple empty sensor (blocked)	-	-

(3) Staple sheet setting errors

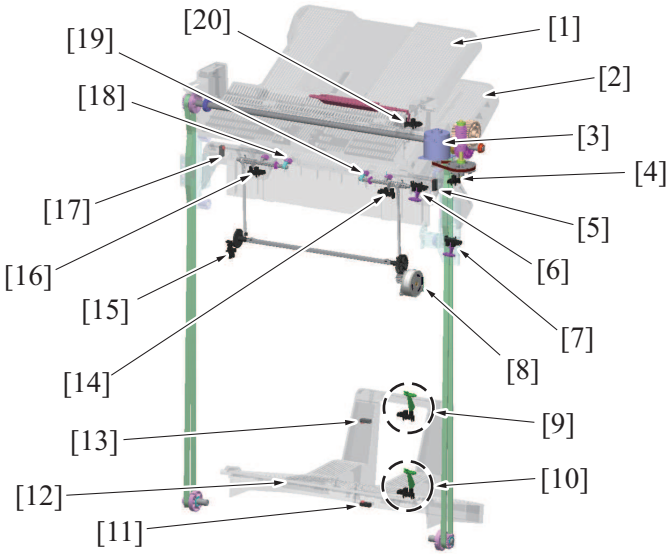
- When a staple sheet is placed, the staple empty sensor is unblocked, and the empty-staple status clears.
- The staple empty sensor detects (unblocked) a staple sheet. When the self-priming sensor does not detect (unblocked) the leading edge of the staple sheet, a clinch operation is performed.
- If 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)

4.7 OUTPUT TRAY SECTION

4.7.1 Configuration

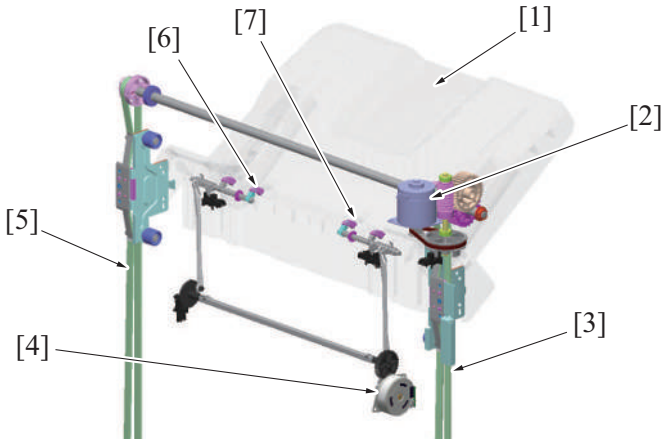


[1]	Sub tray	[2]	Main tray
[3]	Main tray up/down motor (M11)	[4]	Main tray up/down motor sensor (PS25)
[5]	Main tray upper sensor/out (PS6)	[6]	Main tray empty sensor (PS39)
[7]	Main tray middle position sensor (PS10)	[8]	Paper delivery control motor (M12)
[9]	Main tray full detection sensor (PS29) (*1) (*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

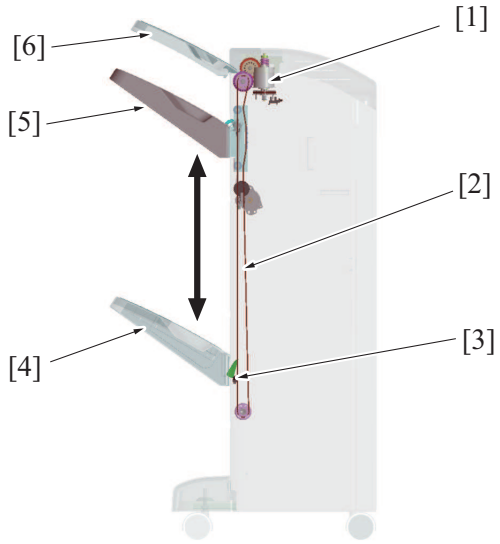
4.7.2 Drive



[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	-	-

4.7.3 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

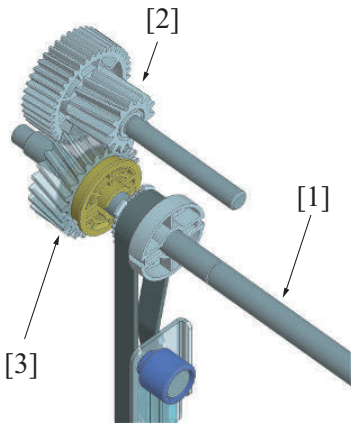
(1) Mechanism for protecting main tray drive section

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

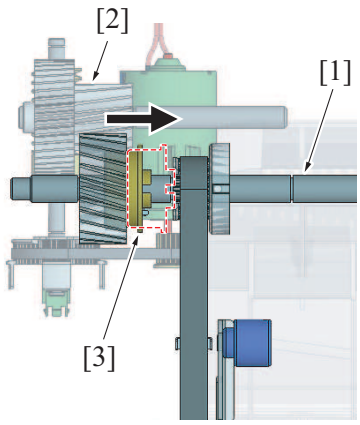


[1]	Main tray driving shaft	[2]	Main tray up/down motor drive connecting gear
[3]	Torque limiter	-	-

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



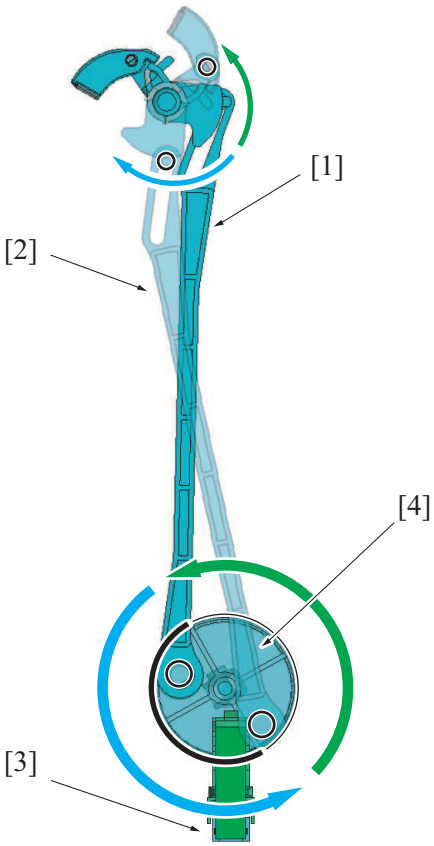
[1]	Main tray driving shaft	[2]	Main tray up/down motor drive connecting gear
[3]	Torque limiter	-	-

4.7.4 Main tray paper level detection control

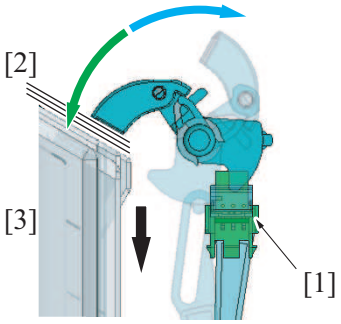
- To eliminate irregularity of the discharged paper, distance between the top surface of the discharged paper and the exit port is controlled to be consistent.
- The main tray upper position sensor detects the level of the discharged paper in the main tray.
- The top surface of the discharged paper is 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.



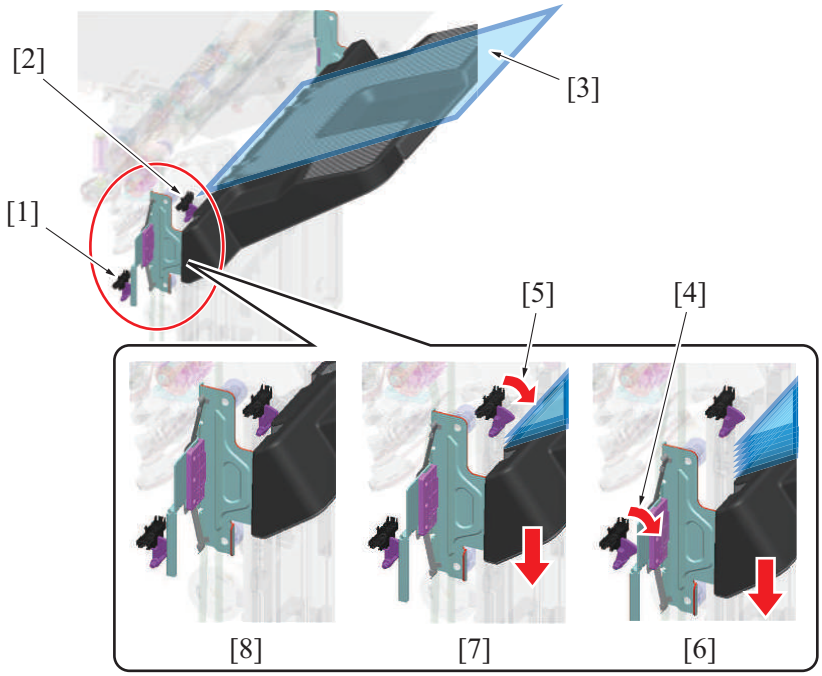
[1]	Paper detection lever (home position)	[2]	Paper detection lever (upper position)
[3]	Paper delivery control sensor (PS28)	[4]	Paper detection lever drive gear



[1]	Main tray upper position sensor/Fr (PS27) Main tray upper position sensor/Rr (PS26)	[2]	Paper
[3]	Main tray	-	-

4.7.5 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.

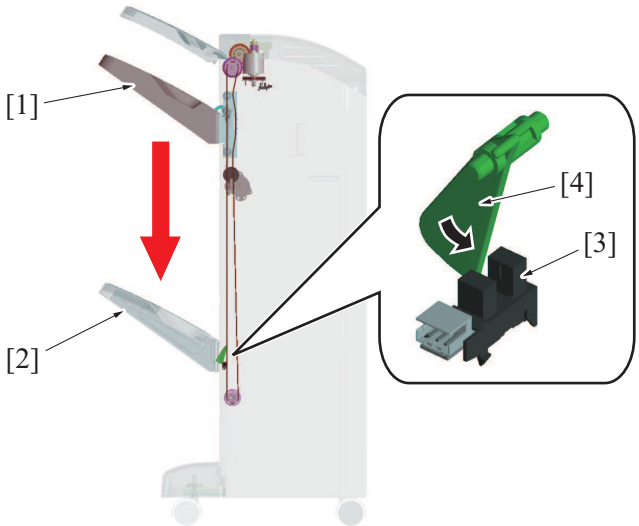


[1]	Main tray middle position sensor (PS10)	[2]	Main tray empty sensor (PS39)
[3]	Paper	[4]	Main tray middle position sensor: Blocked -> Unblocked
[5]	Main tray empty sensor: Blocked -> Unblocked	[6]	Paper present: Main tray paper removal warning is displayed
[7]	Paper present: Main tray paper removal warning is not displayed	[8]	Paper not present

4.7.6 Tray full detection mechanism

(1) Main tray

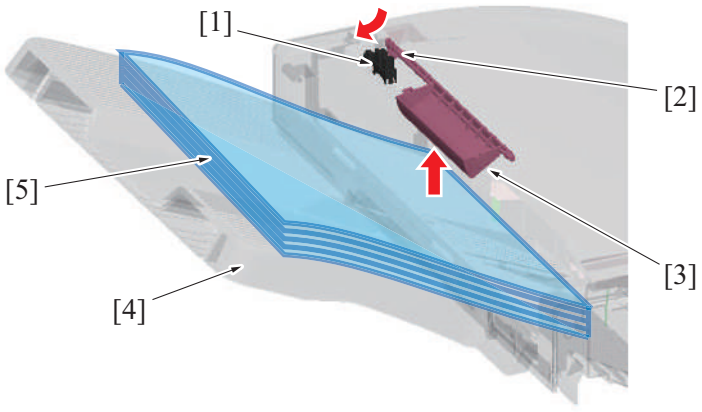
- The main tray is lowered to maintain the paper top surface to specified position when the paper is discharged to the main tray.
- Once the main tray is lowered to the specified position, the actuator is activated to block the main tray full detection sensor.
- When the main tray full detection sensor 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	-	-

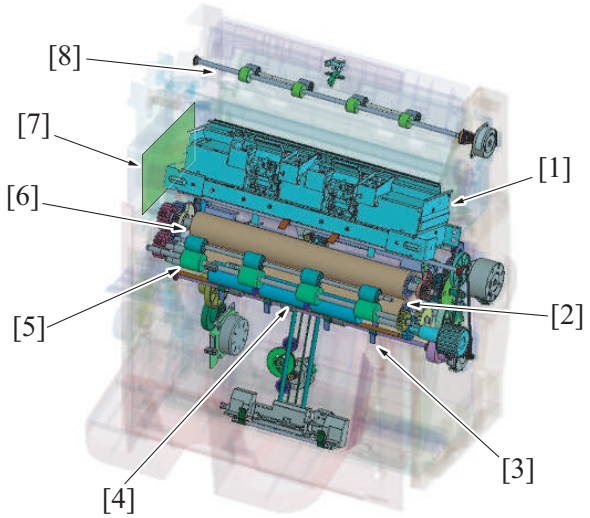
4.8 Saddle section

4.8.1 Configuration

NOTE

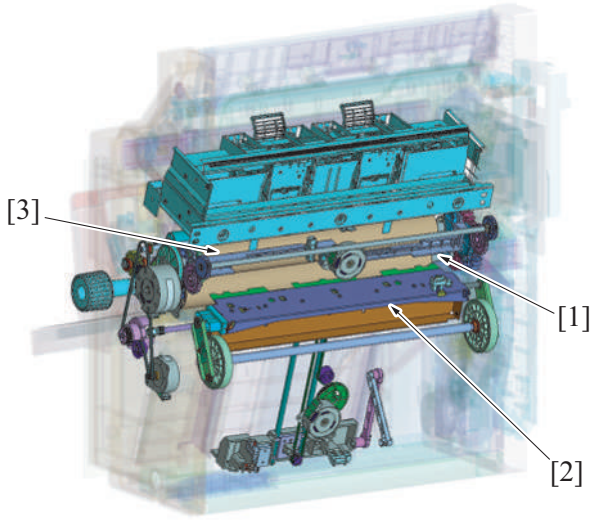
- **FS-539SD only**

Front left side perspective view



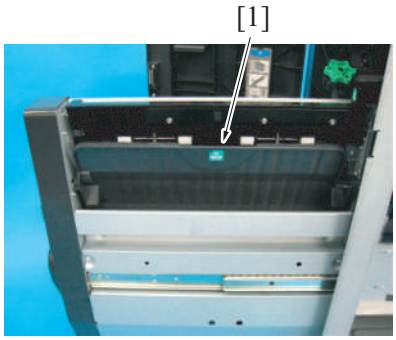
[1]	Staple unit	[2]	Center folding roller 2
[3]	Center folding section lower paddle	[4]	Tri-folding roller
[5]	Saddle tray exit roller	[6]	Center folding roller 1
[7]	SD drive board (SDDB)	[8]	Saddle section paper feed roller

Front right side perspective view



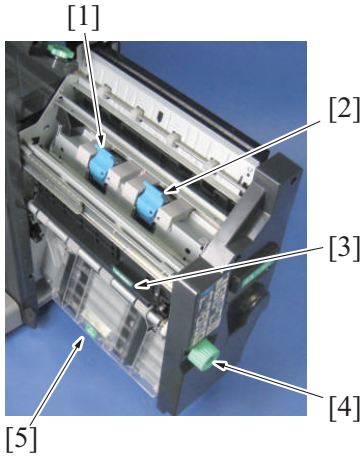
[1]	Center staple alignment plate drive gear/Rr	[2]	Center fold knife
[3]	Center staple alignment plate drive gear/Fr	-	-

Right side view



[1]	Jam removal cover (transport section)	-	-

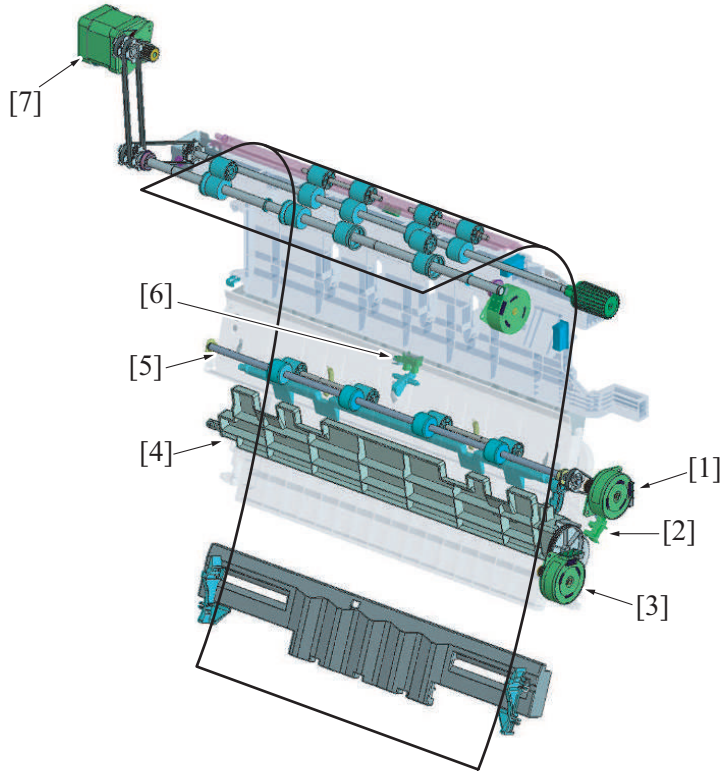
Front left side perspective view



[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)	-	-

4.8.2 Transport section

(1) Drive



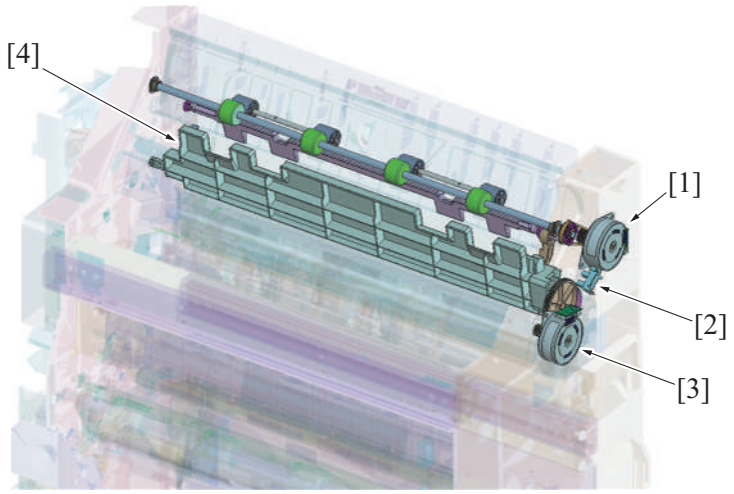
[1]	SD transport motor (M101)	[2]	Curl cover detection sensor (PS102)
[3]	Paper discharge control motor (M102)	[4]	Curl cover
[5]	SD transport roller	[6]	SD entrance sensor (PS101)
[7]	FNS discharge motor (M3) (finisher section)	-	-

(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.

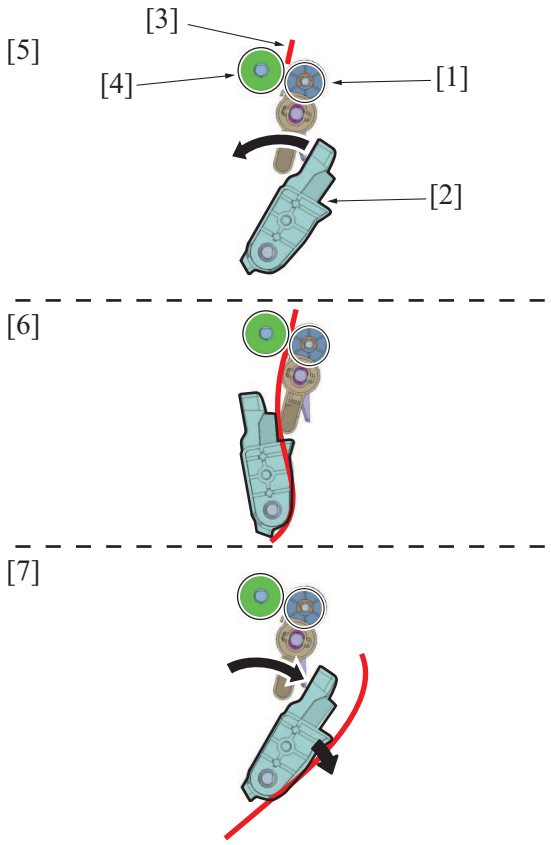
(3) Curl cover

- 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)

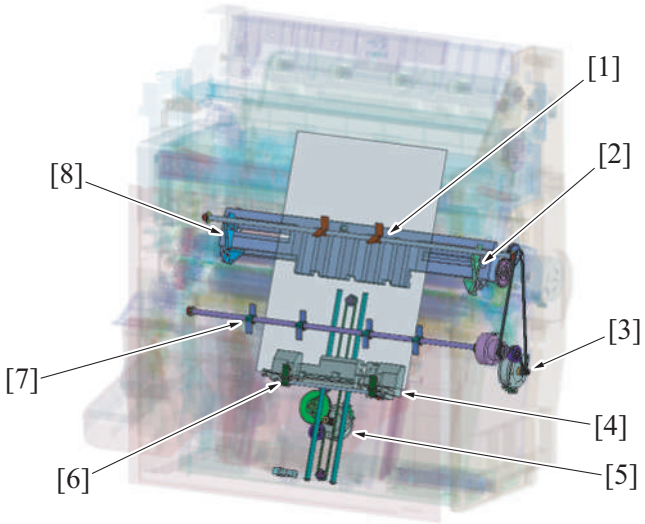
[3]	Paper discharge control motor (M102)	[4]	Curl cover



[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)	-	-

4.8.3 Alignment section

(1) Drive

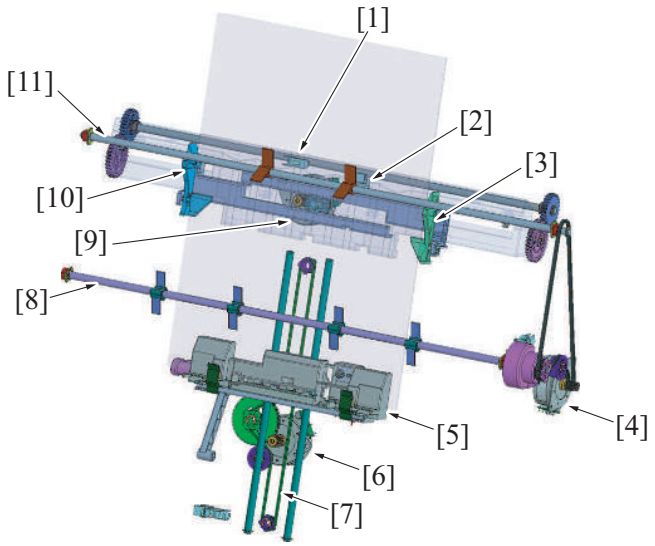


[1]	Center folding section upper paddle	[2]	Alignment plate/Fr
[3]	SD paddle motor (M107)	[4]	Stopper guide
[5]	Stopper drive motor (M104)	[6]	Paper grip
[7]	Center folding section lower paddle	[8]	Alignment plate/Rr

(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

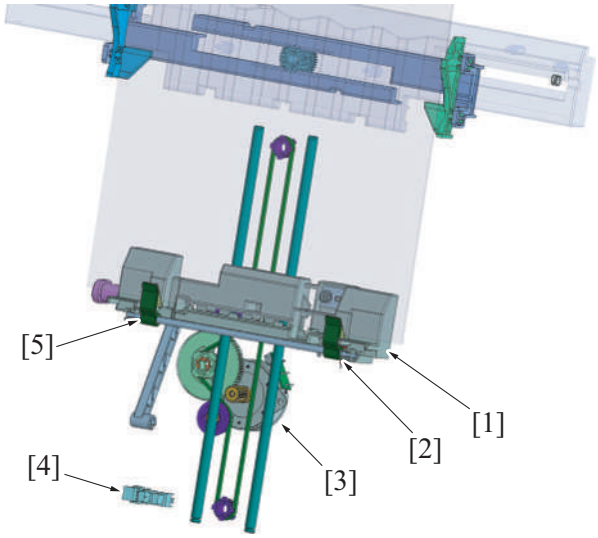
- The center folding section upper paddle and the center folding section lower paddle are installed in order to receive the transported paper to the alignment section without fail.
- The up/down paddle is driven by the SD paddle motor. The up/down paddle is driven when the specified period of time has 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.

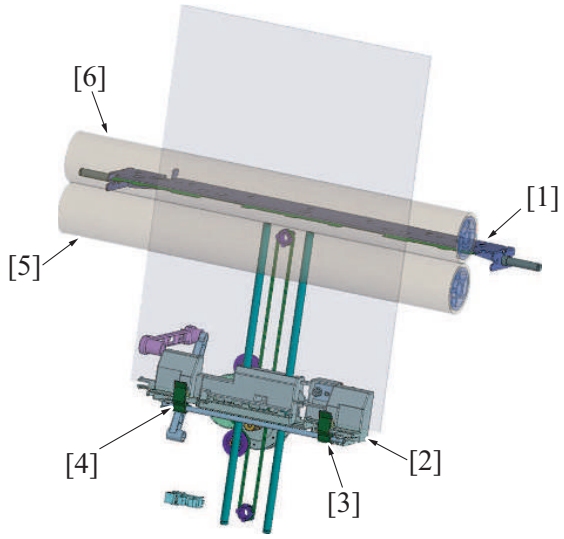
(a) Stopper operation

- 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

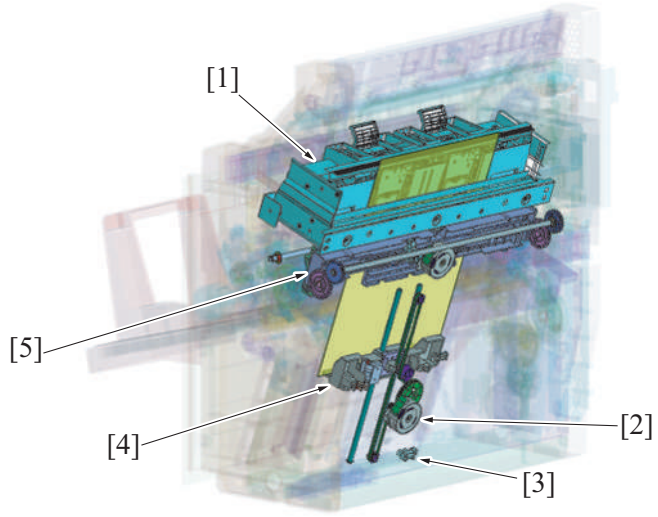
- After a specified period of time since the last sheet of paper was aligned, the stopper solenoid is turned ON and the sheets of paper are held in place.
- After the sheets are held in place, the stopper drive motor rotates to move the stopper guide down and lower the sheets to the center staple position.
- 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.

4.8.4 Stapler

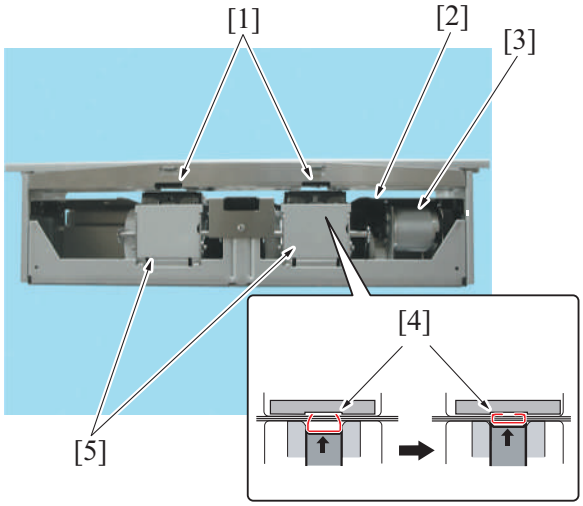
(1) Drive



[1]	Stapler unit	[2]	Stopper drive motor (M104)
[3]	Stopper home sensor (PS106)	[4]	Stopper guide
[5]	Alignment tray	-	-

(2) Stapling operation

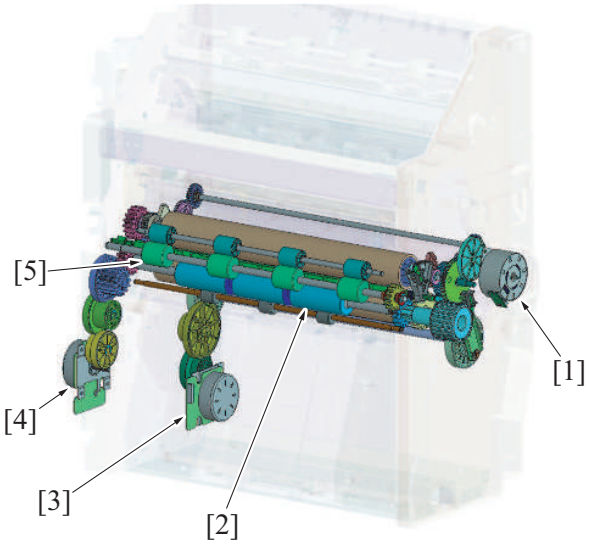
- The stapling operation is performed by the staple motor in the stapler.
- The drive gear pushes out the pressed portion of the paper toward the clincher to hold the paper, and then the pin will be pushed out.
- When the pin penetrates the paper batch, the pin will be bent to staple the paper batch at the clincher section.



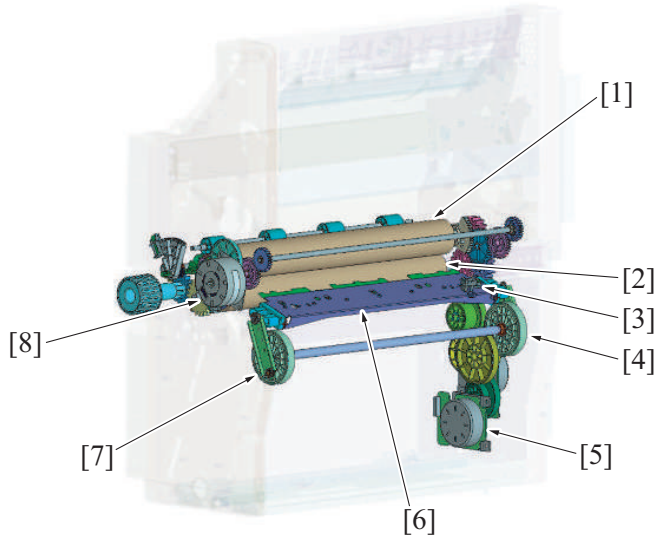
[1]	Clincher	[2]	Drive gear
[3]	Stapler motor	[4]	Staple
[5]	Stapler	-	-

4.8.5 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	-	-



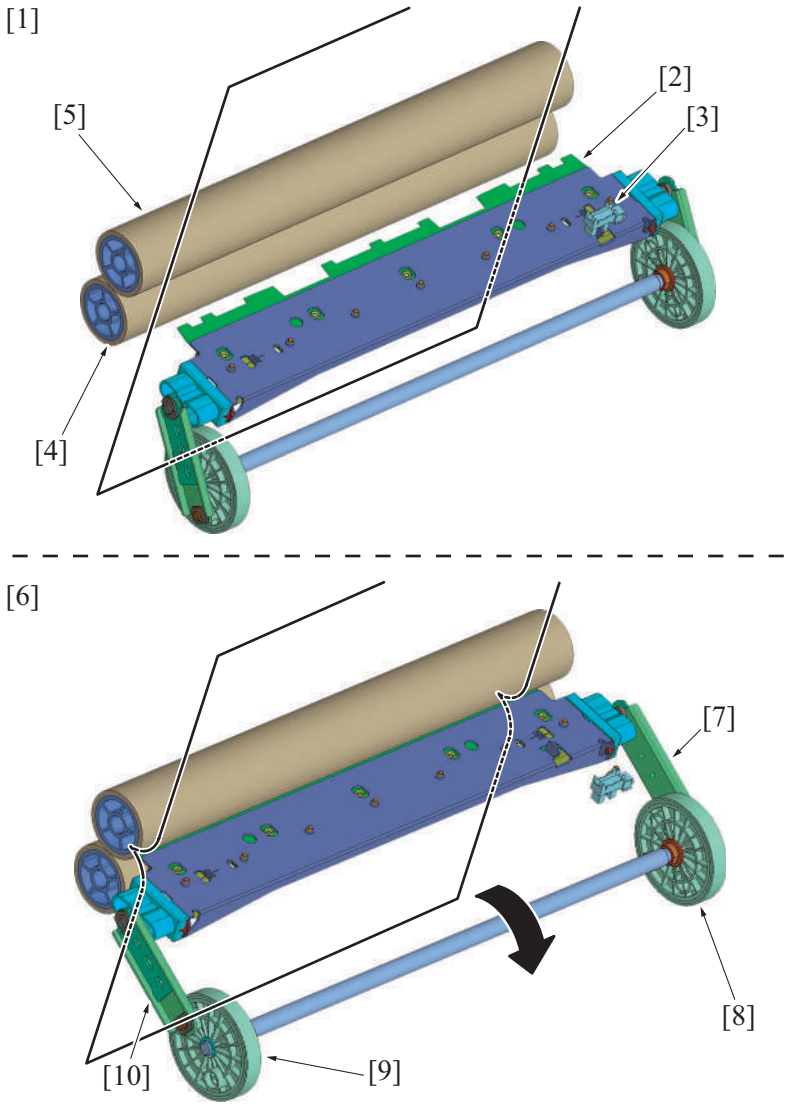
[1]	Center folding roller 1	[2]	Center folding roller 2
[3]	Center fold knife home sensor (PS108)	[4]	Fold drive gear/Rr
[5]	Center fold knife motor (M109)	[6]	Center folding knife assy
[7]	Fold drive gear/Fr	[8]	Center fold guide motor (M106)

(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.



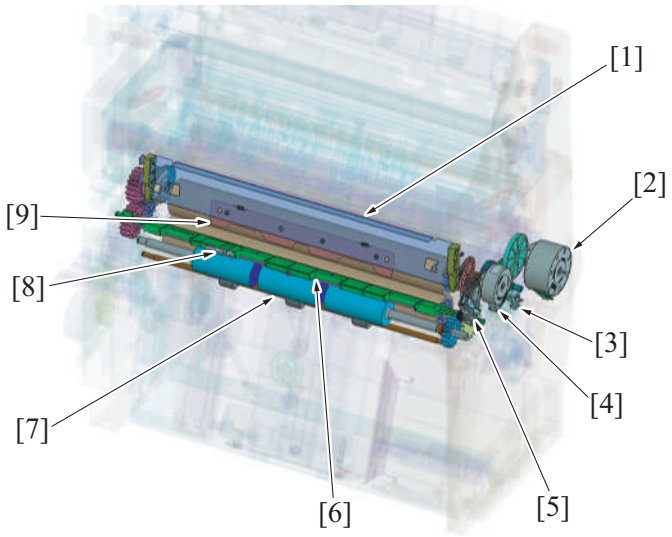
[1]	Before folding	[2]	Folding knife
[3]	Center fold knife home sensor (PS108)	[4]	Center folding roller 2
[5]	Center folding roller 1	[6]	Folding operation
[7]	Crank shaft/Rr	[8]	Fold knife assy drive gear/Rr
[9]	Fold knife assy drive gear/Fr	[10]	Crank shaft/Fr

(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.

4.8.6 Tri-folding

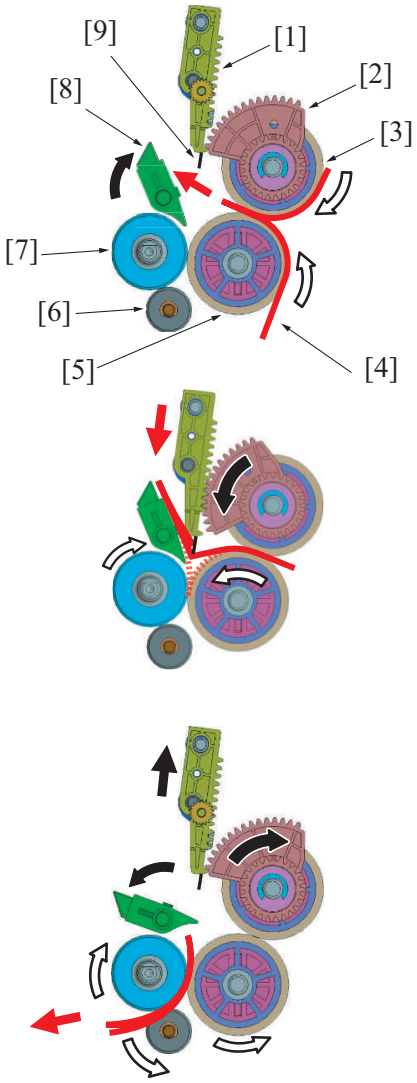
(1) Drive



[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

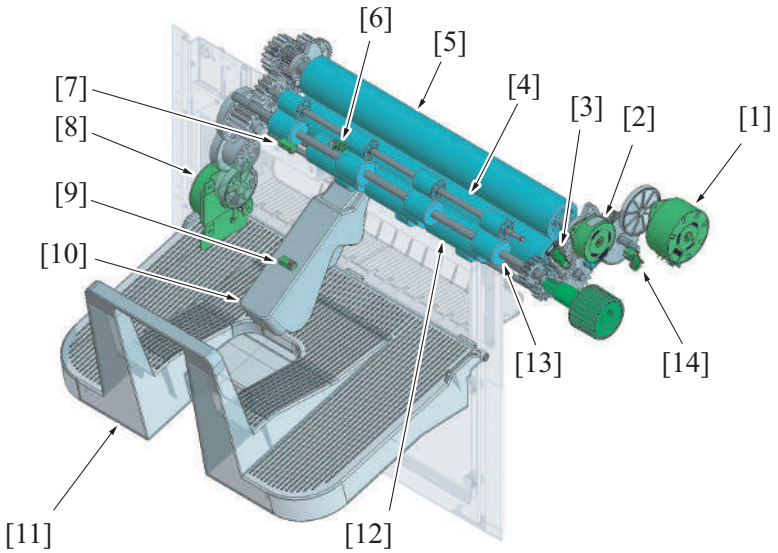
1. When the center fold guide motor drives, the tri-folding gate rotates. The leading edge of the paper to which the first fold was applied at the center folding section, will be transported to the tri-folding path.
2. When the tri-folding guide motor drives, the tri-folding knife assy drive gear rotates 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	-	-

4.8.7 Exit section

(1) Drive



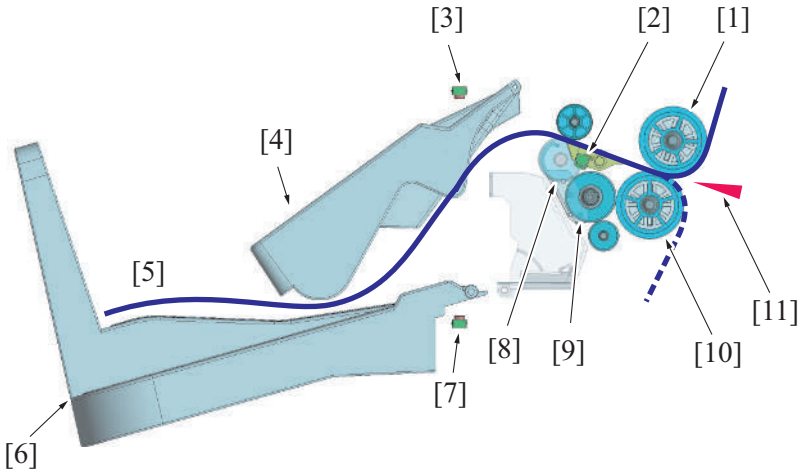
[1]	Center fold guide motor (M106)	[2]	Tri-folding guide motor (M108)
[3]	Tri-folding gate home sensor (PS111)	[4]	Center folding roller 2
[5]	Center folding roller 1	[6]	Fold exit sensor (PS112)
[7]	Booklet tray empty detection sensor/in (PS113)	[8]	Center fold roller motor (M105)
[9]	Booklet tray empty 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

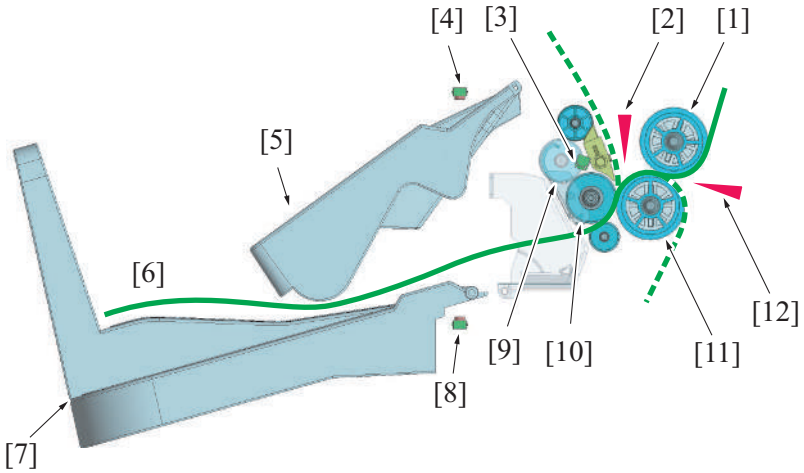
- The center fold roller motor is driven after the center folding or the center staple, and discharges the paper to the saddle tray by the saddle tray exit roller.



[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.

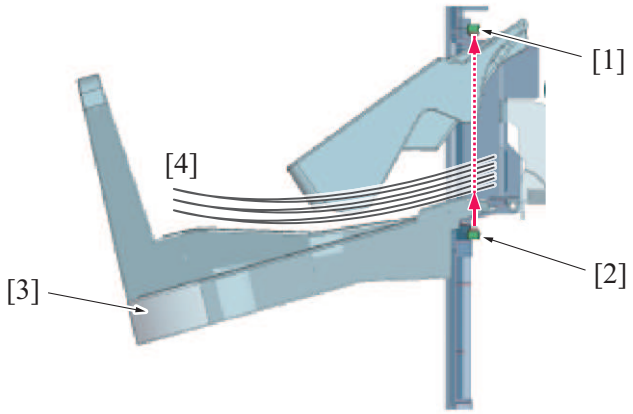


[1]	Center folding roller 1	[2]	Tri-folding knife
[3]	Fold exit sensor (PS112)	[4]	Booklet tray empty detection sensor/in (PS113)
[5]	Paper press	[6]	Paper transport route
[7]	Saddle tray	[8]	Booklet tray empty detection sensor/out (PS114)

[9]	Saddle tray exit roller	[10]	Tri-folding roller
[11]	Center folding roller 2	[12]	Folding knife

(3) Tray full detection mechanism

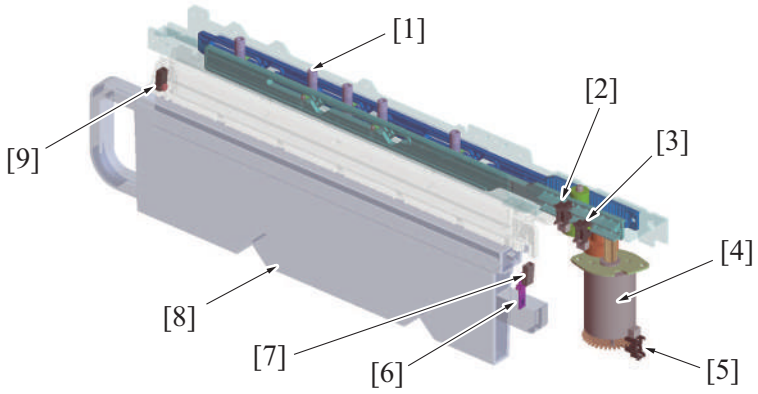
- When paper sheets are discharged to the saddle tray, the light from the saddle tray no paper detection sensor is blocked. When the stacked sheets are removed, the sensor light is unblocked.
- When a predetermined amount of paper is discharged into the saddle tray, the stacked paper blocks the saddle 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

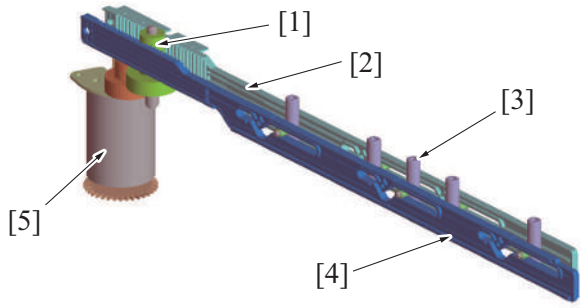
4.9 PK-524

4.9.1 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)	-	-

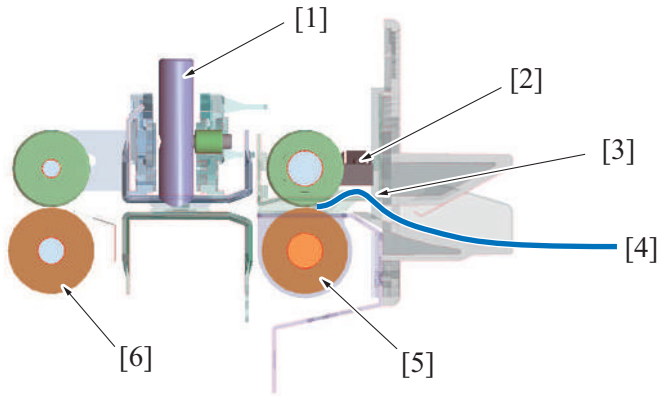
4.9.2 Drive



[1]	Puncher drive gear	[2]	Puncher frame 1
[3]	Puncher	[4]	Puncher frame 2
[5]	Punch drive motor (M1)	-	-

4.9.3 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

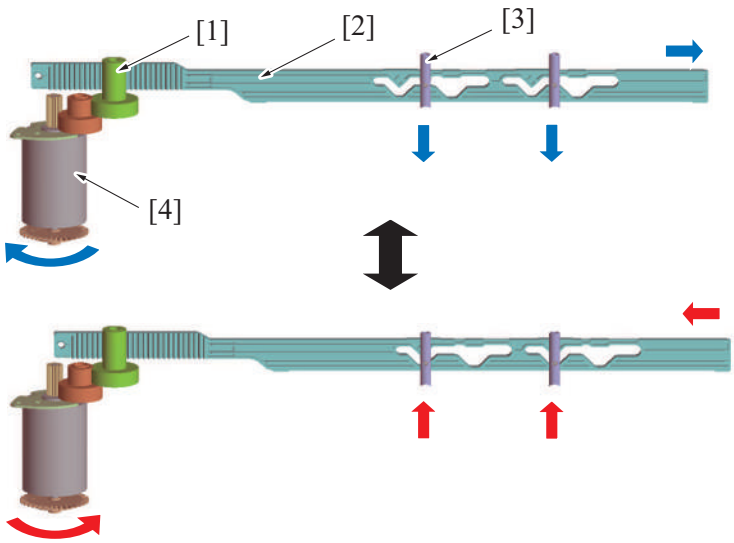
- Punch resists values that are accessed in Service Mode can be adjusted to adjust the punch holes if the punch holes are tilted.
- Punch resists values (resist loop value) are changed when the timing at which the FNS entry roller starts rotating is changed.

4.9.4 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.

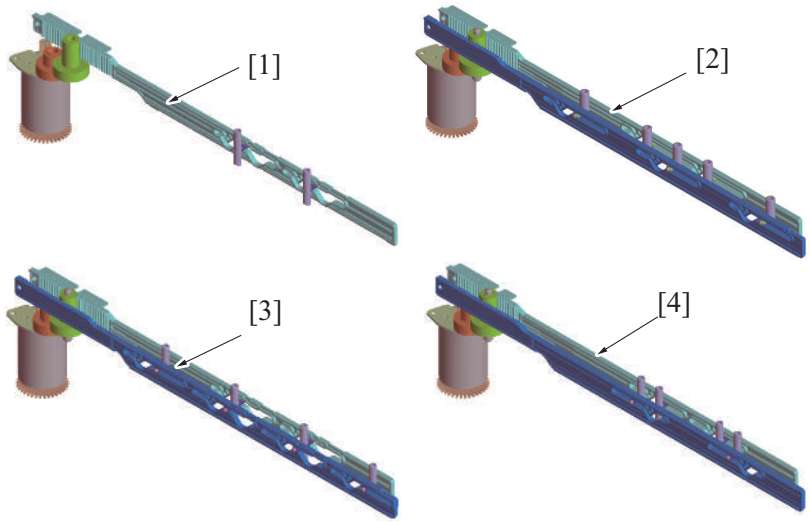
(1) Punching operation

- 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)

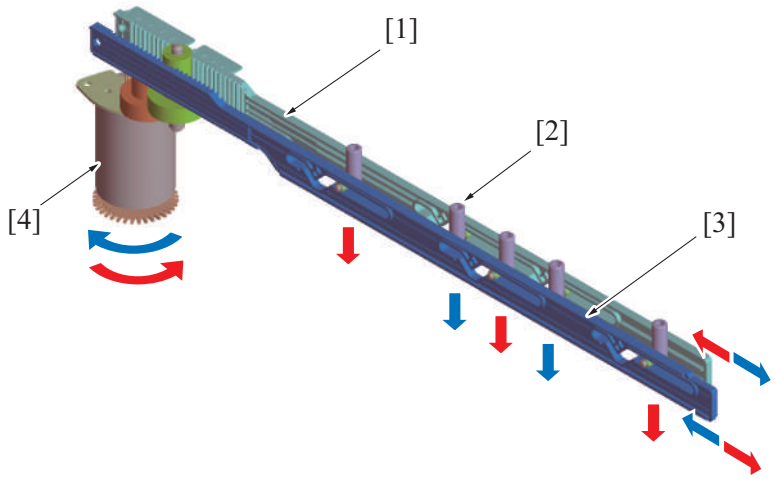
(2) Punch kit type



[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

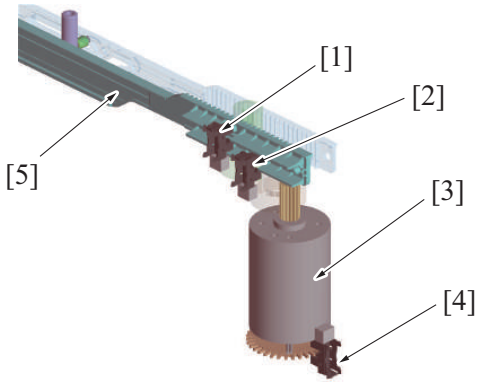
- Puncher frame 1 and the puncher frame 2 have cams with different shapes.
- When the puncher drive gear rotates clockwise, the puncher frame 1 shifts to the front side, and the puncher frame 2 shifts to the back side.
- When the puncher drive gear rotates counter-clockwise, the puncher frame 1 shifts 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)

4.9.5 Puncher up/down status detection configuration

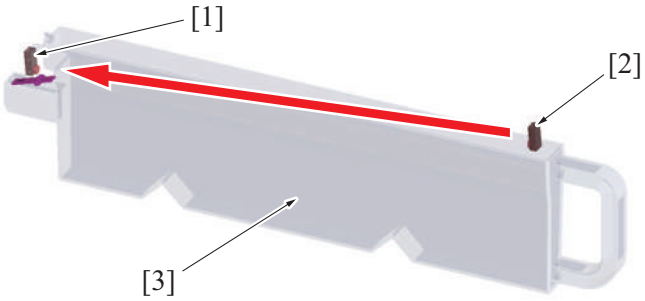
- The puncher frame 1 has two light-blocking plates to detect the position of the puncher frame.
- The punch drive motor has a round light-blocking plate and the puncher motor sensor on the same shaft to detect the rotation value (pulse) of the punch drive motor.
- The up/down status of the puncher is 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	-	-

4.9.6 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.

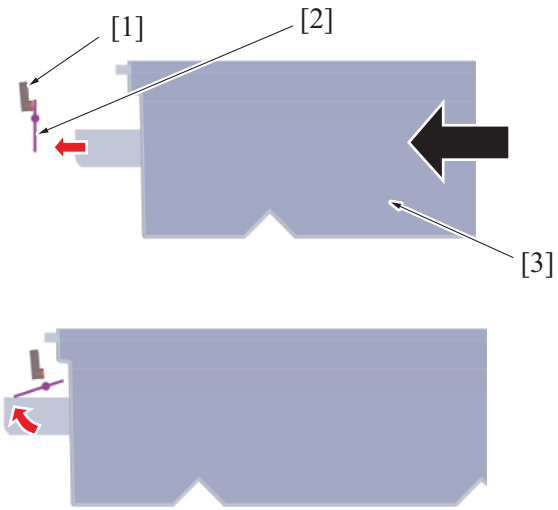


[1]	Punch dust full sensor/in (PS5)	[2]	Punch dust full sensor/out (PS4)

[3]	Punch dust box	-	-

4.9.7 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.

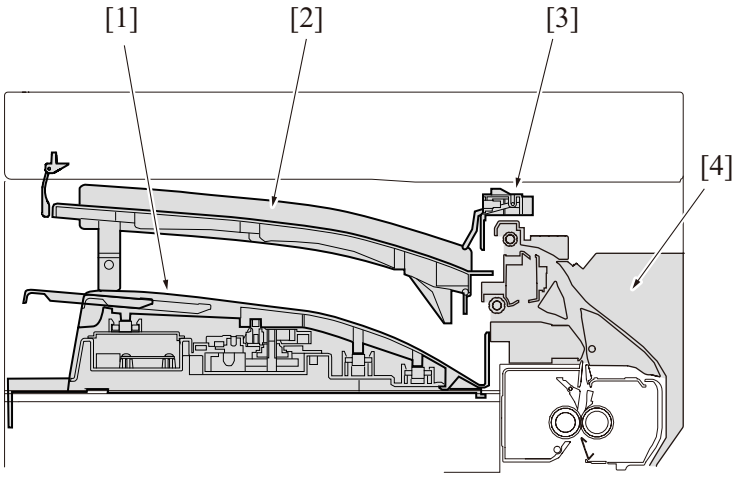


[1]	Punch dust full sensor/in (PS5)	[2]	Actuator
[3]	Punch dust box	-	-

5. JS-506

5.1 CONFIGURATION

5.1.1 Section configuration

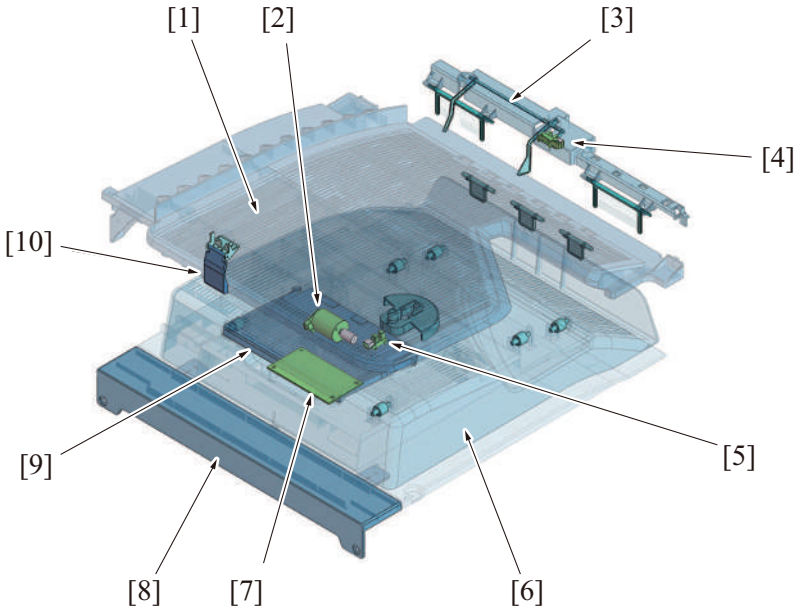


[1]	Exit tray 2	[2]	Paper exit tray 1
[3]	Sensor assy (exit tray 1)	[4]	Paper exit/reverse section at the main body (*)

- *: The unit shape and part configuration are changed when JS-506 is installed to the main body.

5.1.2 Main part configuration

- JS-506 has the exit tray 1 (upper) and the exit tray 2 (lower).
- JS-506 does not have the paper transport function and only has the shift function.

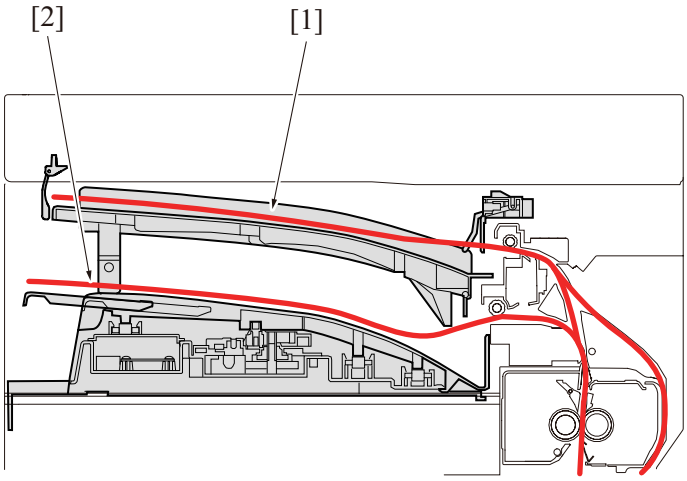


[1]	Exit tray 1 (upper)	[2]	Tray shift motor (M1)
[3]	Exit tray 1 full detection lever	[4]	Exit tray 1 full sensor (PS2)
[5]	Tray shift home sensor (PS1)	[6]	Exit tray 2 (lower)
[7]	JS control board (JSCB)	[8]	Separator cover (*)
[9]	Extension tray	[10]	Exit tray 1 paper stopper (*)

- *: May not be available depending on the main body where JS-506 is installed.

5.2 PAPER PATH

5.2.1 Paper feed to the exit tray

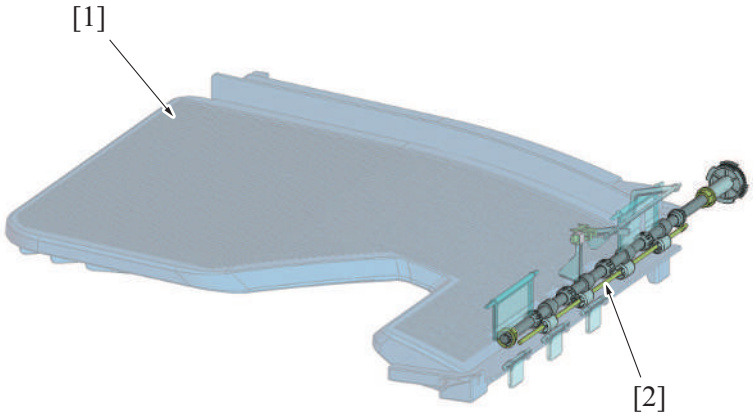


[1]	Paper feed to the exit tray 1	[2]	Paper feed to the exit tray 2

5.3 DRIVE

5.3.1 Paper transport drive mechanism for exit tray 1

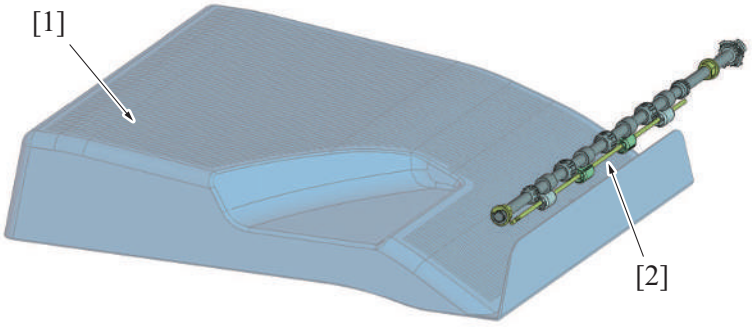
- A reverse roller on the main body side transports paper to the exit tray 1.



[1]	Exit tray 1	[2]	Switchback roller (main body; paper exit/reverse section)

5.3.2 Paper transport drive mechanism for exit tray 2

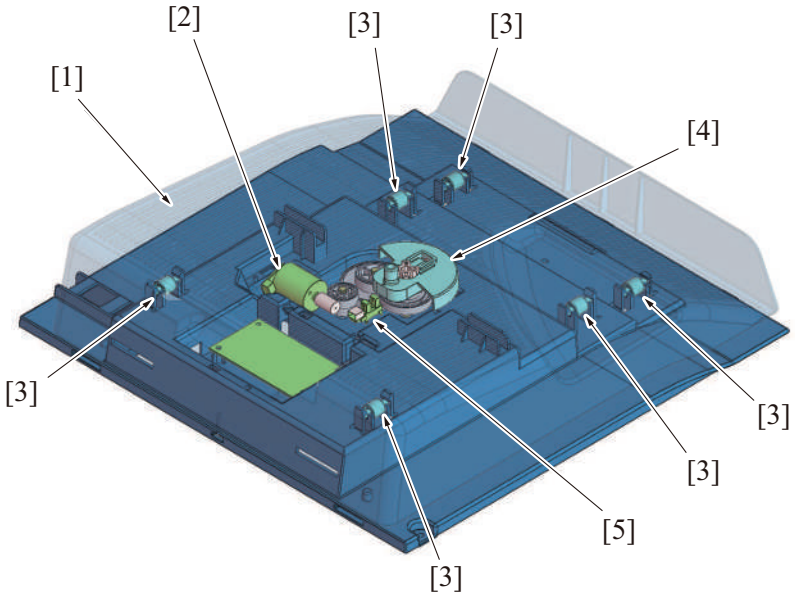
- A reverse roller on the side transports paper to the exit tray 2.



[1]	Exit tray 2	[2]	Exit roller (main body; paper exit/reverse section)

5.3.3 Exit tray 2 shift drive mechanism

- A shift tray motor conducts shift drive of the exit tray 2.



[1]	Exit tray 2	[2]	Tray shift motor (M1)
[3]	Exit tray support rolls (6 points)	[4]	Shift control actuator
[5]	Tray shift home sensor (PS1)	-	-

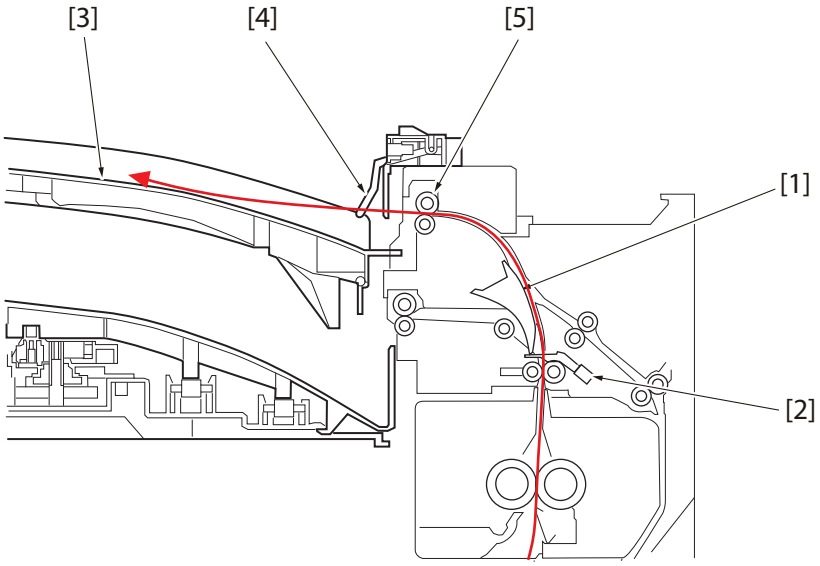
5.4 Exit tray 1

5.4.1 Paper transport

- JS-506 exit tray 1 does not have a paper transport mechanism. Paper transport is performed by a reverse roller in the main body.
- The paper exit/reverse switch gate is switched to the reverse roller side when the paper is transported to the reverse roller.
- The reverse roller stops after the predetermined period of time when the paper exit sensor on the main body detects the trailing edge of the last paper.

NOTE

- **The main body mechanism and control details are changed when JS-506 is installed to the main body.**



[1]	Paper exit/reverse switch gate (reverse roller side)	[2]	Paper exit sensor (main body)
[3]	Paper exit tray 1	[4]	Exit tray 1 full detection lever
[5]	Reverse roller (main body)	-	-

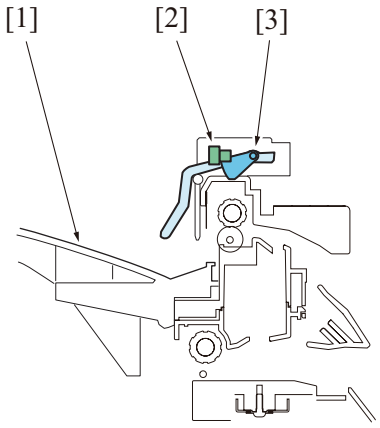
5.4.2 Paper full detection

- The exit tray 1 has the exit tray 1 full sensor which detects paper full.

NOTE

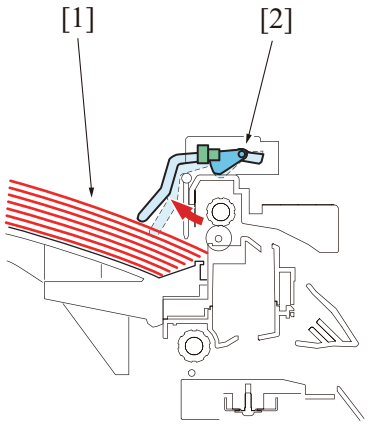
- **Paper may curl depending on the type of paper and the temperature and humidity of the room where the device is installed. The stacked sheets may be reduced depending on the amount of paper curl.**

(1) Paper not present



[1]	Exit tray 1	[2]	Exit tray 1 full sensor (PS2)
[3]	Exit tray 1 full detection lever: unblocked	-	-

(2) Paper full



[1]	Paper	[2]	Exit tray 1 full detection lever: blocked

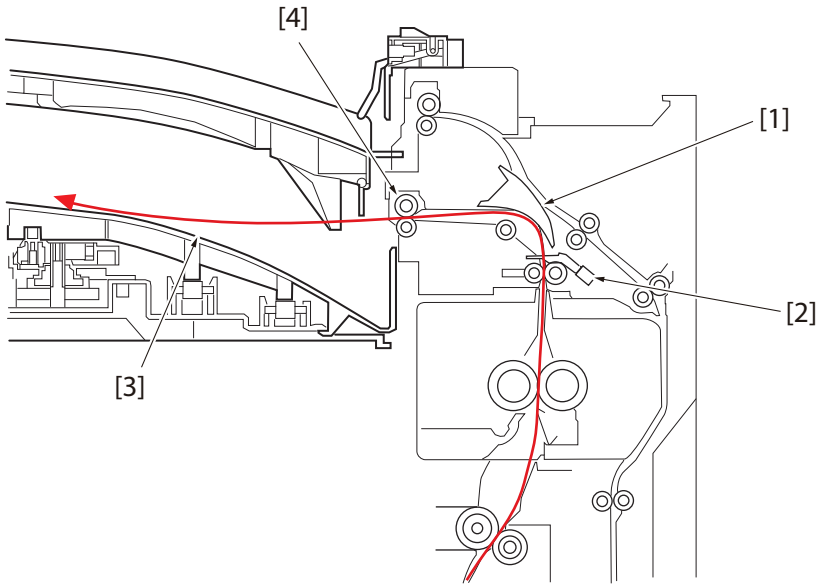
5.5 Exit tray 2

5.5.1 Paper transport

- JS-506 exit tray 2 does not have a paper transport mechanism. Paper transport is performed by a paper exit roller in the main body.
- The paper exit/reverse switching gate does not move, since it is in the default position (paper exit roller side).
- The paper exit roller stops after the predetermined period of time when the paper exit sensor on the main body detects the trailing edge of the last paper.

NOTE

- **The main body mechanism and control details are changed when JS-506 is installed to the main body.**

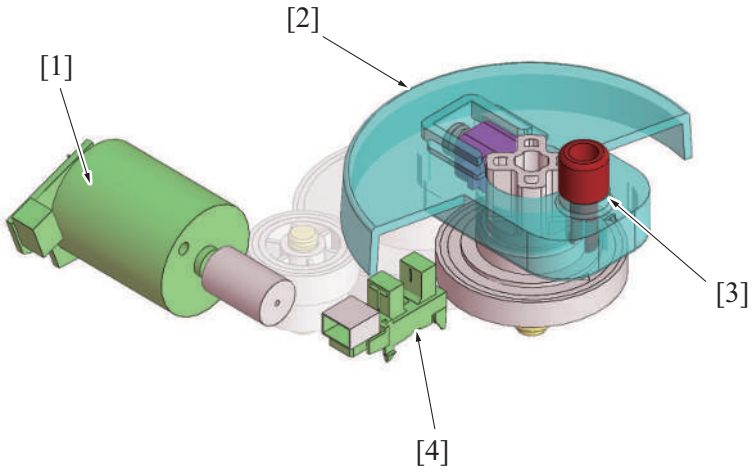


[1]	Paper exit/reverse switch gate (exit roller side) (main body)	[2]	Paper exit sensor (main body)
[3]	Exit tray 2	[4]	Exit roller (main body)

5.5.2 Paper shift mechanism

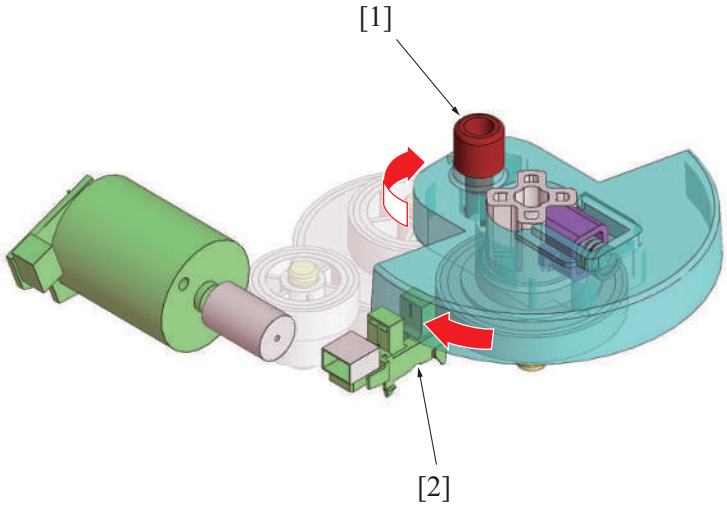
- Move paper alternately between the front side and the rear side of the exit tray 2 to sort paper.
- The shift mechanism operates when the "Shift output each job" is selected in default setting or when the offset function is selected on the control panel.
- The tray shift home sensor detects the home position for the exit tray 2.
- The exit tray 2 shifts to the home position when the power is on and the printing starts for the 1st job.
- Repeatedly move the paper between the rear side and front side of the exit tray 2 to sort paper in the exit tray 2.

(1) Paper exit tray 2: Home position



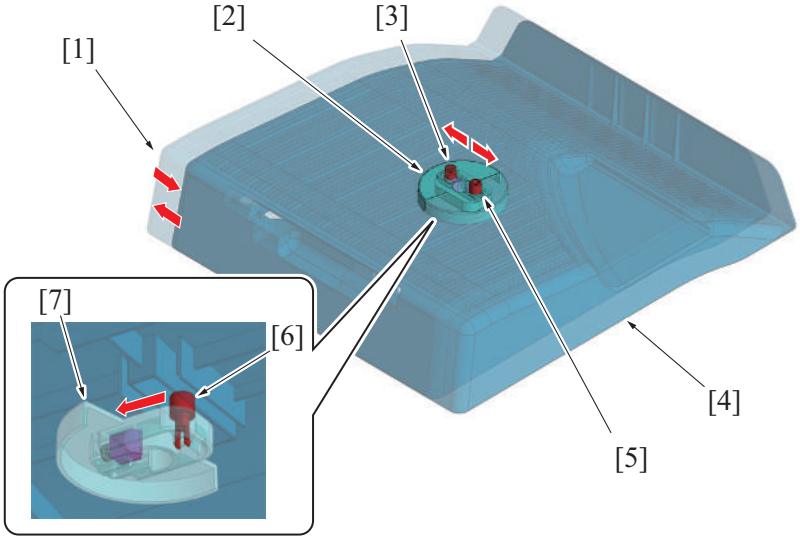
[1]	Tray shift motor (M1)	[2]	Shift control actuator
[3]	Tray shift projection: Home position (front side of the exit tray 2)	[4]	Tray shift home sensor (PS1): unblocked

(2) Paper exit tray 2: shift position



[1]	Tray shift projection: Shift position (rear side of the exit tray 2)	[2]	Tray shift home sensor (PS1): blocked

(3) Outline of exit tray 2 shift operation



[1]	Paper exit tray 2: shift position (rear side)	[2]	Shift control actuator
[3]	Tray shift projection: shift position	[4]	Paper exit tray 2: home position (front side)
[5]	Tray shift projection: Home position	[6]	Tray shift projection: Home position (exit tray 2, bottom view)
[7]	Shift control actuator (exit tray 2, bottom view)	-	-

5.5.3 Paper full detection

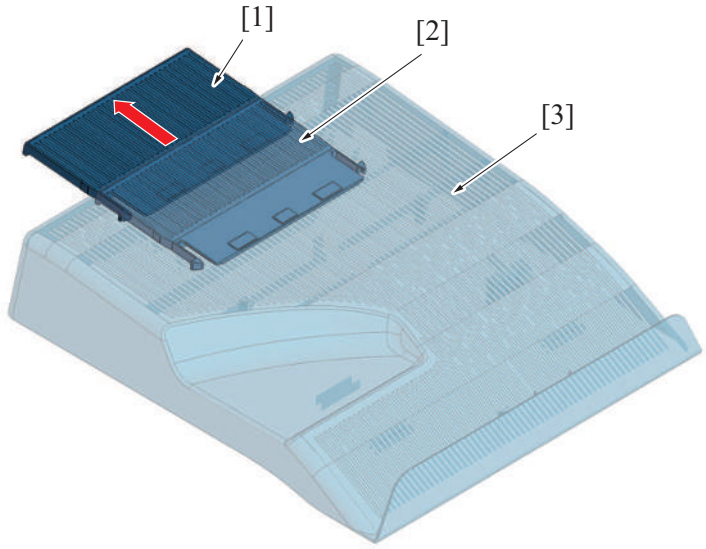
- The exit tray 2 does not have a paper full detection mechanism. If the exited paper exceeds the maximum number of stacked sheets, it may cause paper to spill out from the exit tray or jam.
  The maximum number of sheets stacked for the exit tray 2 is 150 sheets for plain paper.

NOTE

- **Pay attention not to make paper in the exit tray exceed the maximum number of stacked sheets when large number of sheets is printed continuously.**
- **Paper may curl depending on the type of paper and the temperature and humidity of the room where the device is installed. The stacked sheets may be reduced depending on the amount of paper curl.**

(1) Extension tray

- An extension tray is installed to the rear end of the exit tray 2 to accommodate large-sized paper (A3, ledger paper, and so on).
- Make sure to pull out the extension tray before the printing of large-sized paper.



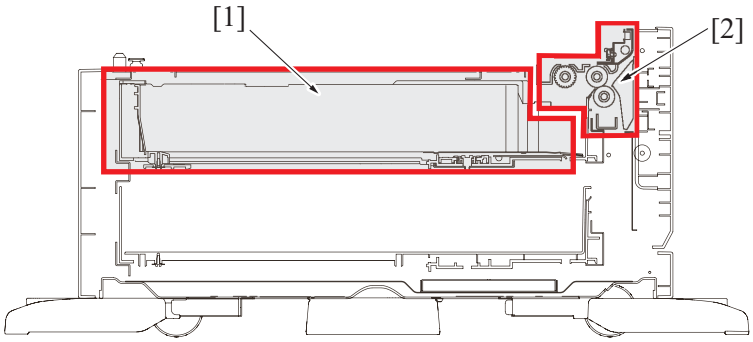
[1]	Extension tray: Used for printing large-sized paper	[2]	Extension tray: Used for printing small-sized paper
[3]	Exit tray 2	-	-

6. PC-118/PC-218/HT-509

6.1 CONFIGURATION

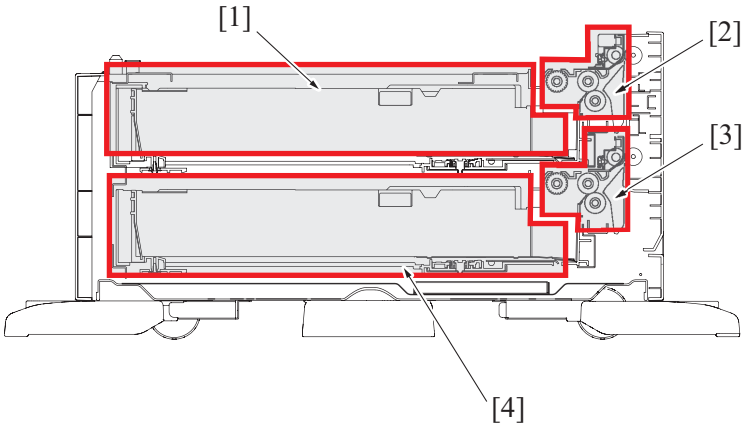
6.1.1 Section configuration

(1) PC-118



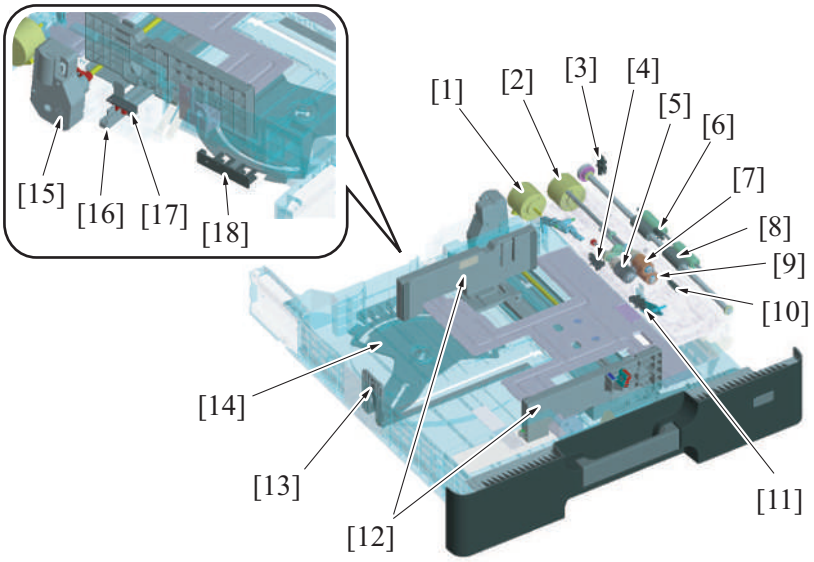
[1]	Tray 3 cassette section	[2]	Tray 3 feed roller section

(2) PC-218



[1]	Tray 3 cassette section	[2]	Tray 3 feed roller section
[3]	Tray 4 feed roller section	[4]	Tray 4 cassette section

6.1.2 Main electrical part configuration

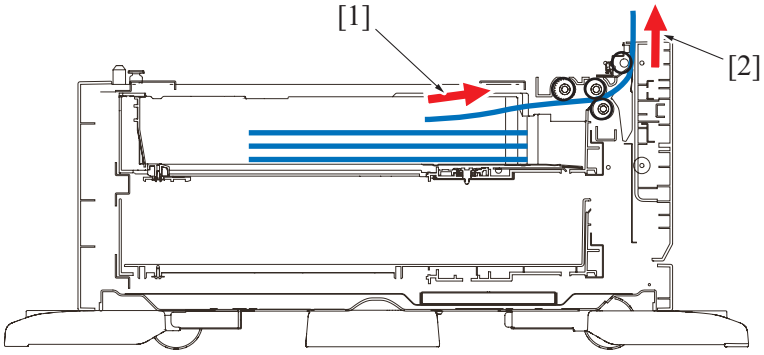


[1]	Tray 3 paper feed motor (M111) Tray 4 paper feed motor (M121)	[2]	Tray 3 vertical transport motor (M112) Tray 4 vertical transport motor (M122)

[3]	Right bottom door sensor (PS111)	[4]	Tray 3 upper limit sensor (PS116) Tray 4 upper limit sensor (PS126)
[5]	Tray 3/4 pick-up roller	[6]	Tray 3 vertical transport sensor (PS113) Tray 4 vertical transport sensor (PS123)
[7]	Tray 3/4 feed roller	[8]	Tray 3/4 vertical transport roller
[9]	Tray 3/4 separation roller	[10]	Tray 3 paper feed sensor (PS112) Tray 4 paper feed sensor (PS122)
[11]	Tray 3 paper empty sensor (PS114) Tray 4 paper empty sensor (PS124)	[12]	Tray 3/4 paper width guide
[13]	Tray 3/4 paper length guide	[14]	Paper length detection plate
[15]	Tray 3 lift-up motor (M113) Tray 4 lift-up motor (M123)	[16]	Paper width detection plate
[17]	Tray 3 CD paper size board (CDPSB/3) Tray 4 CD paper size board (CDPSB/4)	[18]	Tray 3 FD paper size board (FDPSB/3) Tray 4 FD paper size board (FDPSB/4)

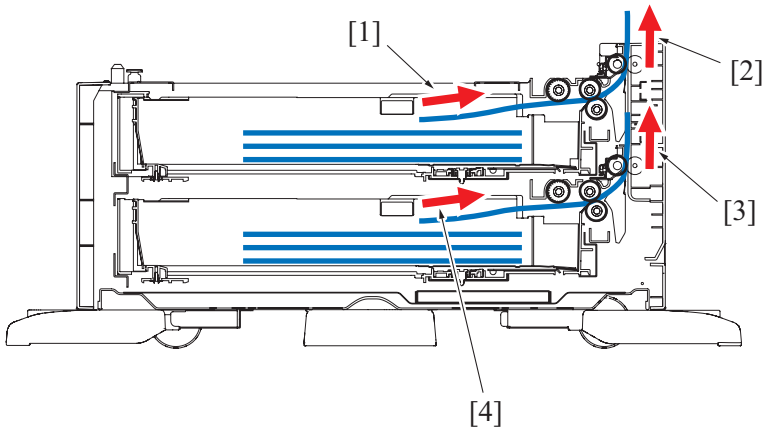
6.2 PAPER PATH

6.2.1 PC-118



[1]	Paper feeding from tray 3	[2]	Transportation to main body

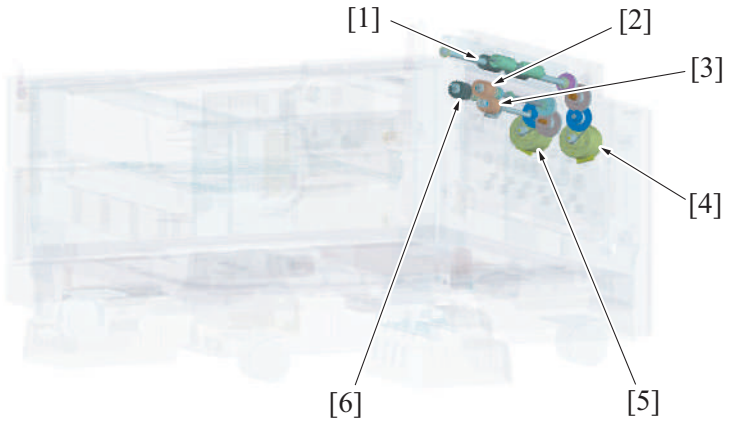
6.2.2 PC-218



[1]	Paper feeding from tray 3	[2]	Transportation to main body
[3]	Vertical transportation	[4]	Paper feeding from tray 4

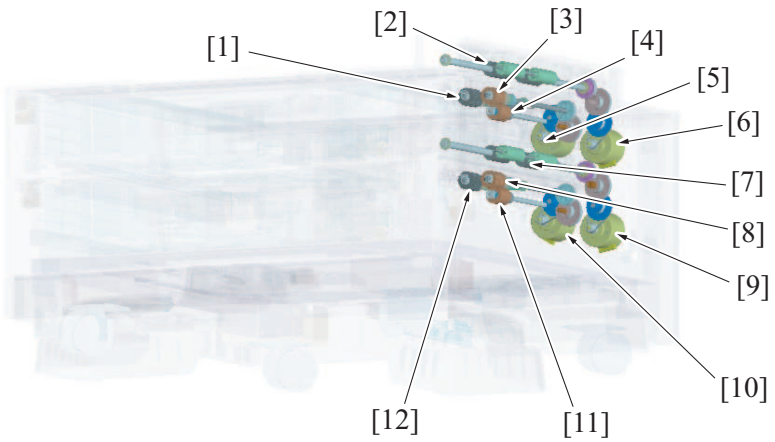
6.3 DRIVE

6.3.1 PC-118



[1]	Tray 3 vertical transport roller	[2]	Tray 3 feed roller
[3]	Tray 3 separation roller	[4]	Tray 3 vertical transport motor (M112)
[5]	Tray 3 paper feed motor (M111)	[6]	Tray 3 pick-up roller

6.3.2 PC-218



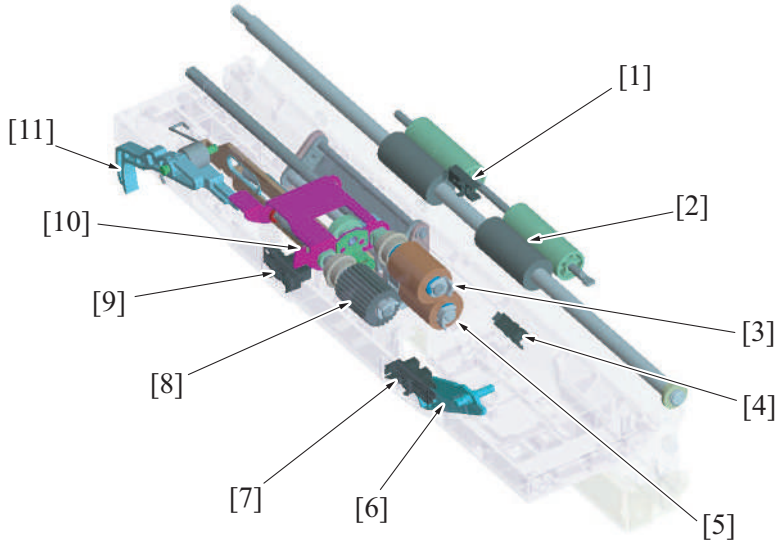
[1]	Tray 3 pick-up roller	[2]	Tray 3 vertical transport roller
[3]	Tray 3 feed roller	[4]	Tray 3 separation roller
[5]	Tray 3 paper feed motor (M111)	[6]	Tray 3 vertical transport motor (M112)
[7]	Tray 4 vertical transport roller	[8]	Tray 4 feed roller
[9]	Tray 4 vertical transport motor (M122)	[10]	Tray 4 paper feed motor (M121)
[11]	Tray 4 separation roller	[12]	Tray 4 pick-up roller

6.4 OPERATION

6.4.1 Paper feed section

(1) Paper feed drive mechanism

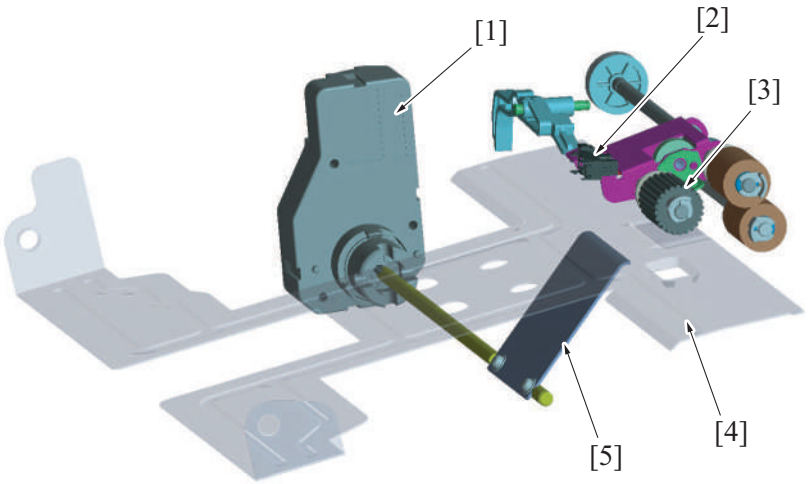
- Tray 3 and tray 4 is equipped with the same paper feed mechanism.
- The paper feed motor drives the pick-up roller and feed roller to feed paper from tray 3 and tray 4.
- Then, the vertical transport motor transports the paper through the vertical transport section.
- The pick-up roller takes up sheets of paper and the feed roller and separation roller ensure that only one sheet of paper is separated and fed into the main body.
- When the drawer is slid in, the lever is pushed to lower the pick-up roller.
- The tray is raised to cause the paper to push the feed roller. This raises the upper limit detection actuator, so that the upper limit is detected.
- The paper empty sensor detects when paper in the drawer runs out.



[1]	Tray 3 vertical transport sensor (PS113) Tray 4 vertical transport sensor (PS123)	[2]	Vertical transport roller
[3]	Feed roller	[4]	Tray 3 paper feed sensor (PS112) Tray 4 paper feed sensor (PS122)
[5]	Separation roller	[6]	Empty detection actuator
[7]	Tray 3 paper empty sensor (PS114) Tray 4 paper empty sensor (PS124)	[8]	Pick-up roller
[9]	Tray 3 upper limit sensor (PS116) Tray 4 upper limit sensor (PS126)	[10]	Upper limit detection actuator
[11]	Lever	-	-

(2) Paper lifting motion

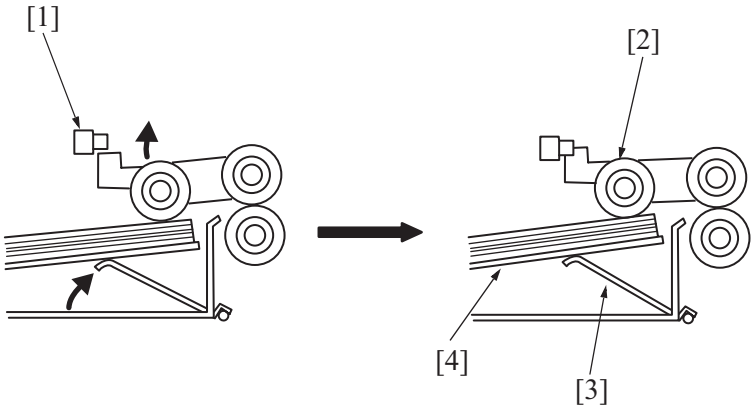
- The FD paper size board of each tray detects whether the drawer is slid in or out.
- When the FD paper size board is activated, the lift-up motor is energized to thereby raise the paper lifting plate.
- The paper stack of the tray pushes up the pick-up roller.
- When the upper limit position is detected by the upper limit sensor, it stops raising the paper lifting plate.
- As paper is consumed during the print cycle and the pick-up roller is lowered, the lift-up motor is energized until the upper limit sensor is blocked again.



[1]	Lift-up motor	[2]	Tray 3 upper limit sensor (PS116) Tray 4 upper limit sensor (PS126)
[3]	Pick-up roller	[4]	Paper lifting plate A
[5]	Paper lift-up plate B	-	-

(a) When the drawer is slid in

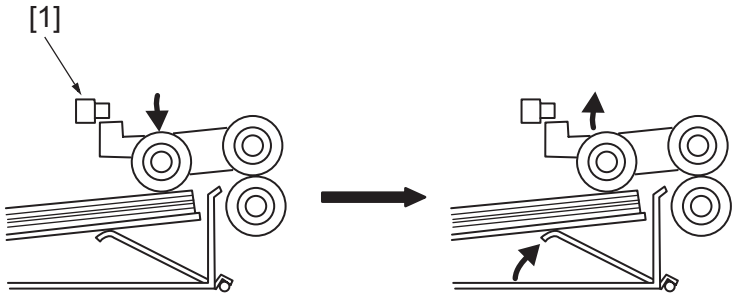
1. The paper lifting plate goes up and the top surface of the paper stack pushes up the pick-up roller.
2. The lifting motion stops as soon as the upper limit sensor detects the upper limit position.



[1]	Tray 3 upper limit sensor (PS116) Tray 4 upper limit sensor (PS126)	[2]	Pick-up roller
[3]	Paper lifting plate B	[4]	Paper lifting plate A

(b) During a print cycle

1. As the paper is consumed, the upper limit sensor is unblocked. Then the paper lifting plate goes up.



[1]	Tray 3 upper limit sensor (PS116) Tray 4 upper limit sensor (PS126)	-	-

6.4.2 Cassette section

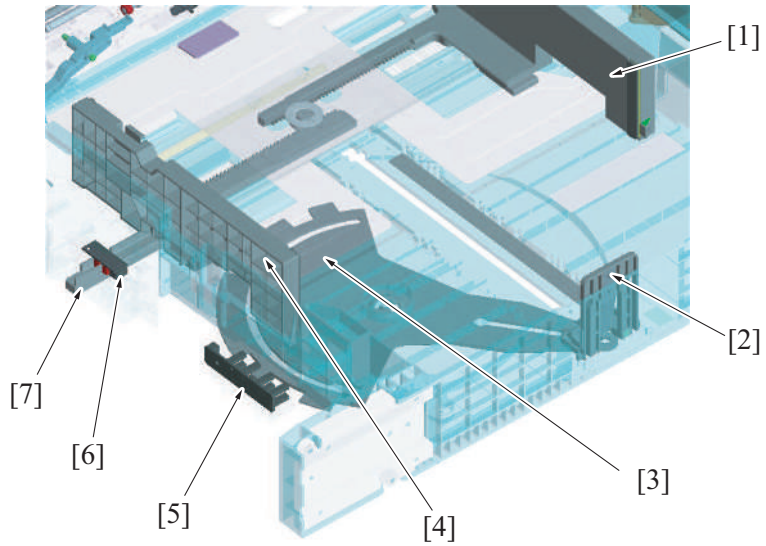
(1) Paper size detection

(a) Paper width direction

- The size in paper width direction is detected with the combination of ON/OFF the transmission type photo sensors 1, 2 on the CD paper size board.
- The CD paper size detection sensor is unblocked/blocked with the position of the paper width detection plate that is connected to the paper width guide.

(b) Paper feeding direction

- The size in paper feeding direction is detected with the combination of ON/OFF transmission type photo sensors 1 to 4 on the FD paper size board.
- The FD paper size detection sensor is unblocked/blocked with the position of the paper length detection plate that is connected to the paper length guide.
- The sensor on the FD paper size board also functions to detect whether the cassette is mounted.



[1]	Paper width guide (front)	[2]	Paper length guide
[3]	Paper length detection plate	[4]	Paper width guide (rear)
[5]	Tray 3 FD paper size board (FDPSB/3) Tray 4 FD paper size board (FDPSB/4)	[6]	Tray 3 CD paper size board (CDPSB/3) Tray 4 CD paper size board (CDPSB/4)
[7]	Paper width detection plate	-	-

(c) Sheet size determination

- The 2 CD paper size detection sensors detect the paper width, and the 4 FD paper size detection 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
A3	L	L	H	L	L	H
B4	L	H	H	H	L	H
A4S	H	H	L	L	L	L
A4	H	L	H	L	L	H
B5S	L	H	H	L	L	L
B5	L	H	L	L	L	H
A5 S, 5 1/2×8 1/2 S (Invoice S) (*1)	H	L	H	L	L	L
Ledger (11×17)	L	L	H	L	H	H
Legal (8 1/2x14)	L	H	H	H	L	L
Letter S (8 1/2×11 S)	L	L	L	H	L	L
Letter (81/2x11)	H	L	H	L	H	H
FLS S (*2)	H	H	H	H	L	L
8K S (270 mm × 390 mm)	L	H	L	H	H	H
16K (270 mm × 195 mm)	L	H	H	L	H	H

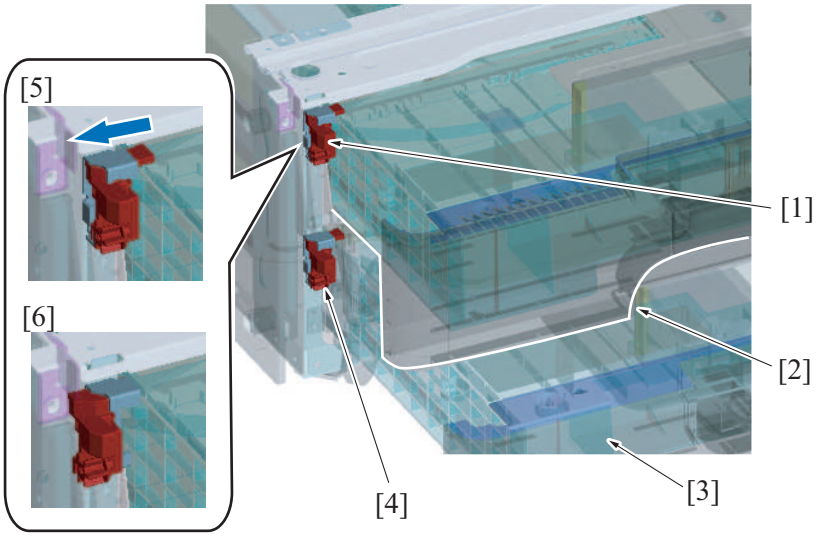
- (*1): For regions using inches, Invoice S paper size is detected. For other regions, A5S paper size is detected.
- (*2): In Service Mode, FLS can be configured with one of the following paper sizes. 8 $^{1}/_{2}$ ×13 $^{1}/_{2}$, 8×13, 8 $^{1}/_{4}$ ×13, 8 $^{1}/_{2}$ ×13

Sensor states

Sensor	Physical state	
	HIGH signal	LOW signal
FD paper size board: sensor/1 to sensor/4	Blocked	Unblocked
CD paper size board: sensor/1, sensor/2		

(2) Paper 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 3 stopper	[2]	Tray 3
[3]	Tray 4	[4]	Tray 4 stopper
[5]	State of the tray stopper lock	[6]	State of the tray stopper unlock

(a) Releasing the paper tray stopper

- Press the stopper on its left side, the stopper lock will be released.

(b) Locking the paper tray stopper

- Press the stopper on its right side, the stopper lock will be locked.

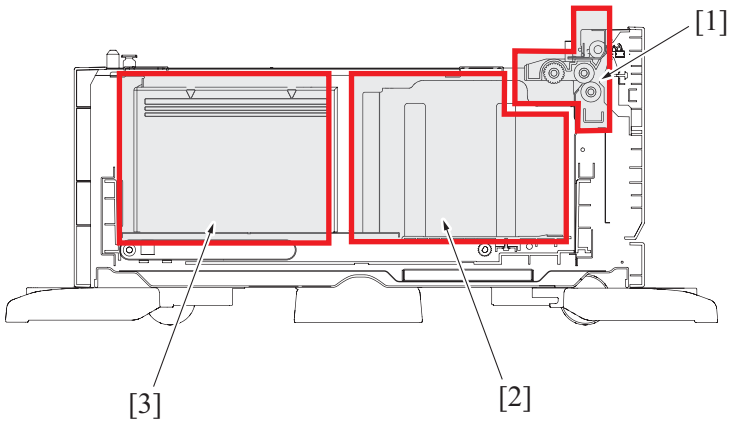
NOTE

- **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)**

7. PC-418/HT-509

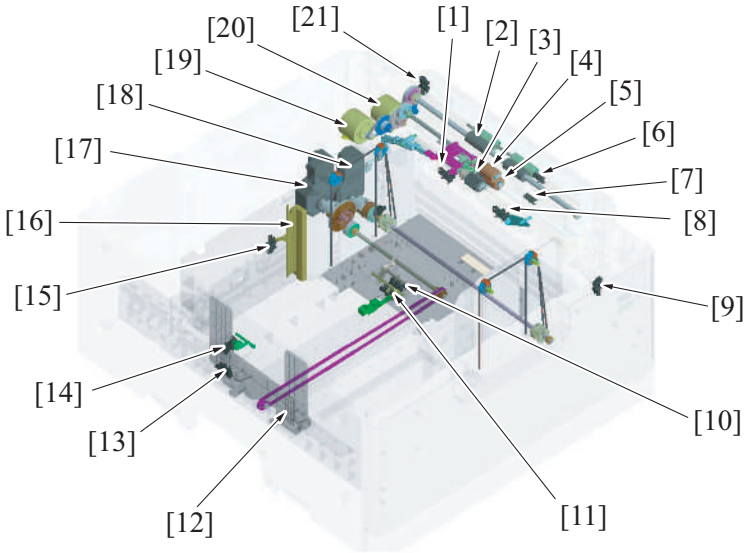
7.1 CONFIGURATION

7.1.1 Section configuration



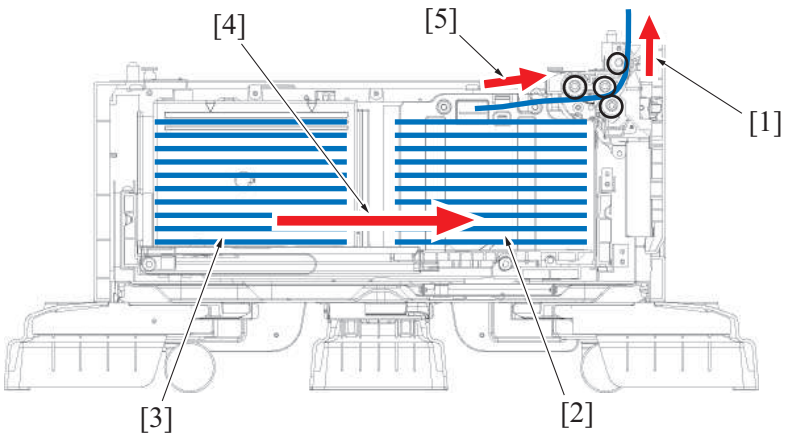
[1]	Paper feed section	[2]	Main tray
[3]	Sub tray	-	-

7.1.2 Main electrical part configuration



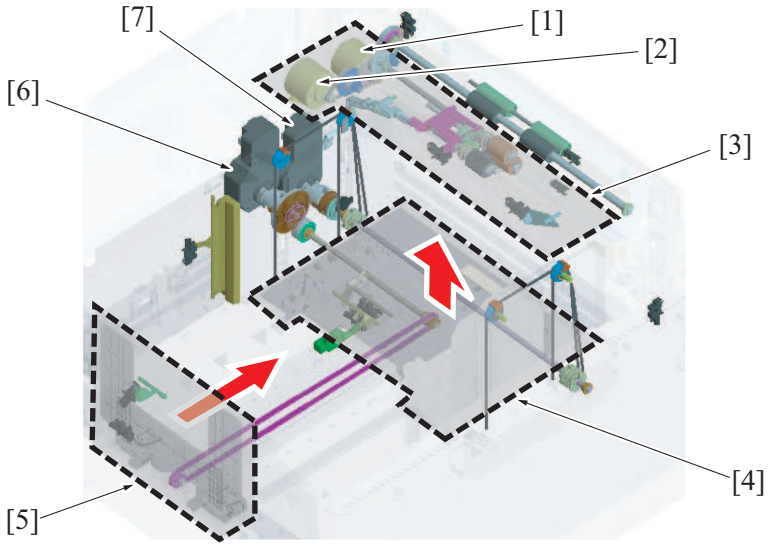
[1]	Main tray upper limit sensor (PS136)	[2]	Vertical transport roller
[3]	Pick-up roller	[4]	Feed roller
[5]	Separation roller	[6]	LCT vertical transport sensor (PS133)
[7]	Paper feed sensor (PS132)	[8]	Main tray upper paper empty sensor (PS137)
[9]	Cassette set sensor (PS143)	[10]	Main tray paper empty sensor (PS134)
[11]	Shifter stop / lower limit position sensor (PS138)	[12]	Shifter
[13]	Shifter home sensor (PS139)	[14]	Sub tray paper empty sensor (PS140)
[15]	Division board sensor (PS142)	[16]	Division board
[17]	Shifter motor (M133)	[18]	Elevator motor (M134)
[19]	Paper feed motor (M131)	[20]	Vertical transport motor (M132)
[21]	Right bottom door sensor (PS131)	-	-

7.2 PAPER PATH



[1]	Transportation to main body	[2]	Main tray
[3]	Sub tray	[4]	Move from the sub tray to the main tray
[5]	Paper feed from main tray	-	-

7.3 DRIVE



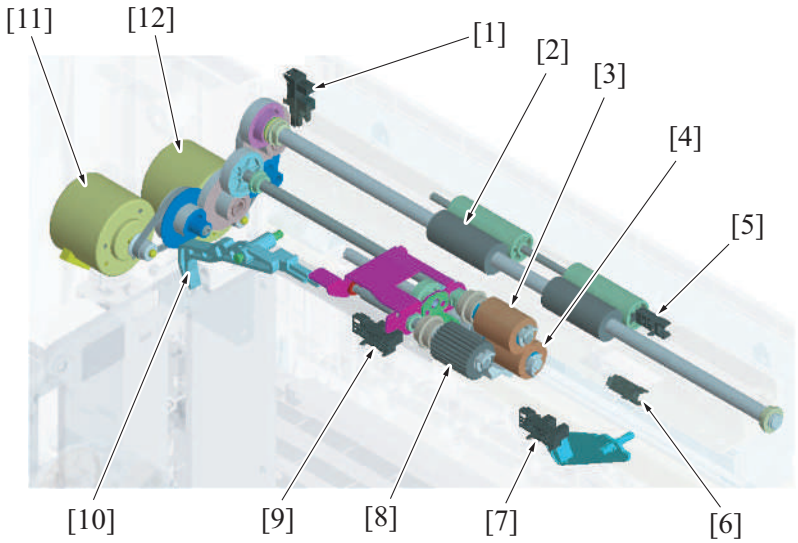
[1]	Vertical transport motor (M132)	[2]	Paper feed motor (M131)
[3]	Paper feed section	[4]	Elevator tray
[5]	Shifter	[6]	Shifter motor (M133)
[7]	Elevator motor (M134)	-	-

7.4 OPERATION

7.4.1 Paper feed section

(1) Paper feed drive mechanism

- The paper feed motor drives the pick-up roller and feed roller to take up and feed a sheet of paper into the main body.
- Then, the vertical transport motor transports the paper through the vertical transport section.
- 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.
- When the drawer is slid in, the lever is pushed to lower the pick-up roller.
- The tray is raised to cause the paper to push the feed roller. The tray is brought to a stop when the main tray upper limit sensor detects the upper limit.
- The main tray upper paper empty sensor detects whether paper is loaded on the main tray at the upper limit position.

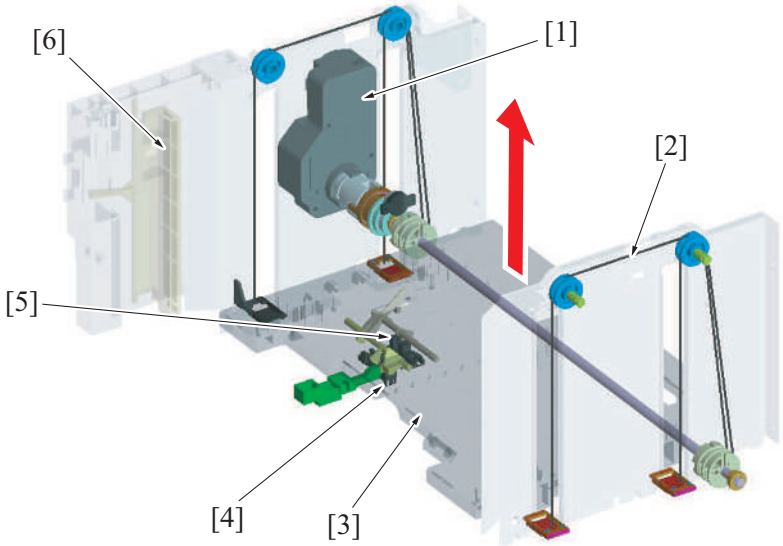


[1]	Right bottom door sensor (PS131)	[2]	Vertical transport roller
[3]	Feed roller	[4]	Separation roller
[5]	Vertical transport sensor (PS133)	[6]	Paper feed sensor (PS132)
[7]	Main tray upper paper empty sensor (PS137)	[8]	Pick-up roller
[9]	Main tray upper limit sensor (PS136)	[10]	Lever
[11]	Paper feed motor (M131)	[12]	Vertical transport motor (M132)

7.4.2 Main tray section

(1) Elevator tray up/down mechanism

- The elevator tray is suspended by the cables at the front and rear.
- As the elevator motor turns forward or backward, the cables are wound/released to raise or lower the tray.
- The amount of remaining paper in the main tray is calculated from the time it takes the elevator tray to rise.
- The main tray paper empty sensor detects if the elevator tray has no paper and starts the lowering of the elevator tray.
- The shifter stop/lower limit position sensor detects the main tray at its lower limit position.

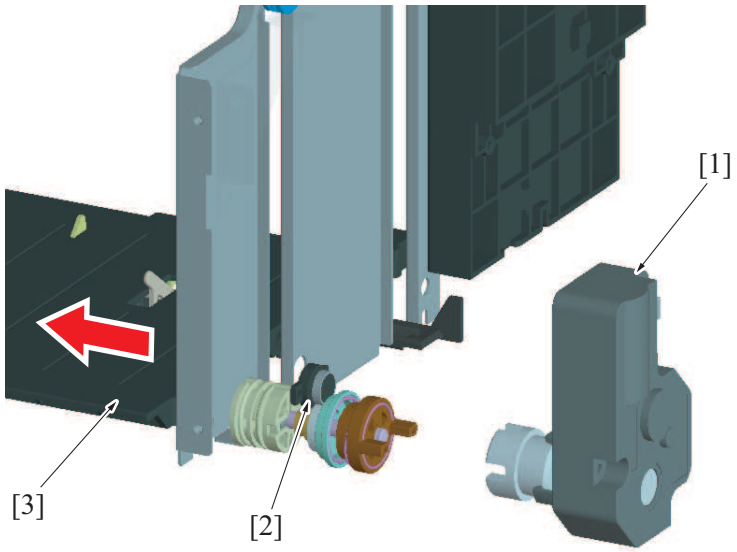


[1]	Elevator motor (M134)	[2]	Wire
[3]	Elevator tray	[4]	Shifter stop/lower limit position sensor (PS138)
[5]	Main tray paper empty sensor (PS134)	[6]	Division board

(2) Elevator tray lower limit detection

(a) Elevator tray lower limit operation

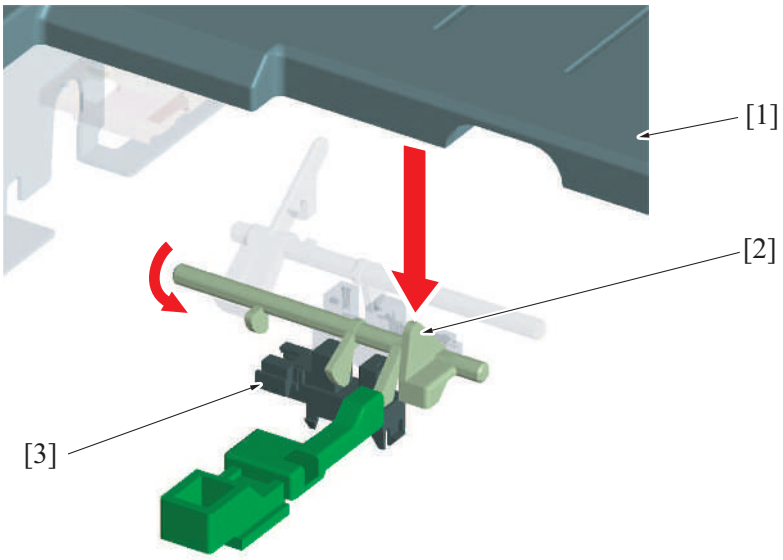
- When the machine detects the paper in the sub tray when the main tray became empty, the machine rotates the elevator motor reversely. It starts the lowering operation of the elevator tray.
- If the sub tray is detected to be not loaded with paper when paper on the main tray runs out, the descent motion of the main tray is not performed. The main tray is lowered when the drawer is slid out.
- When the tray is slid out, the elevator motor is disengaged from the gear, so that the elevator tray lowers by its own weight.
- At this time, an effect of the damper that is connected to the gear prevents it from lowering swiftly and ensures a slow descent motion.



[1]	Elevator motor (M134)	[2]	Damper
[3]	Elevator tray	-	-

(b) Elevator tray lower limit detection

- The shifter stop/lower limit position sensor detects the lower limit position of the elevator tray.
- The lower limit is detected when the elevator tray goes down, presses the lower limit detection actuator, and blocks the sensor.
- This sensor has two functions and detects also the stop position of the shifter.

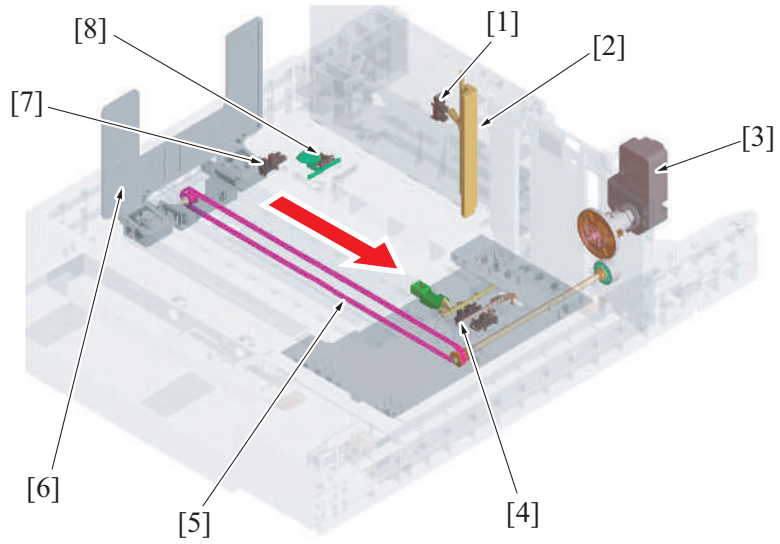


[1]	Elevator tray	[2]	Lower limit detection actuator portion
[3]	Shifter stop/lower limit position sensor (PS138)	-	-

7.4.3 Sub tray section

(1) Shifter drive mechanism

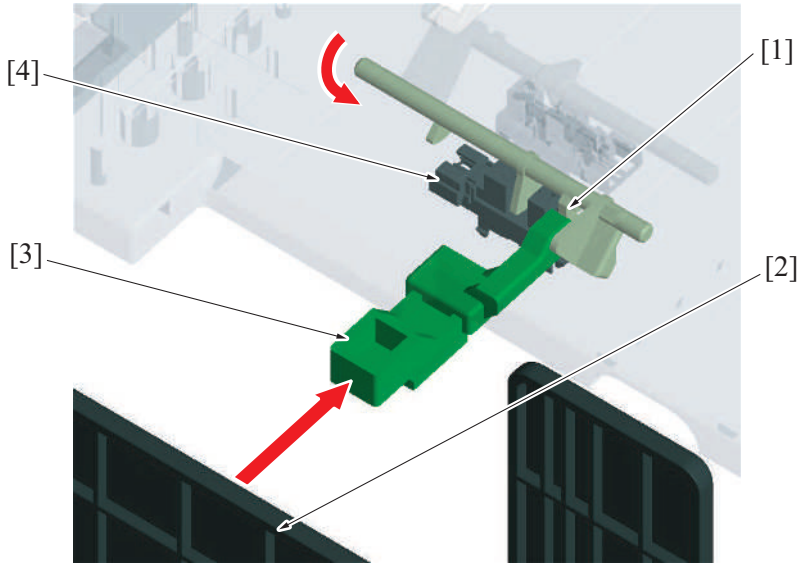
- If the main tray runs out of paper, while the sub tray is loaded with paper, the paper stack on the sub tray is moved to the main tray.
- The shifter motor drives the belt, which moves the shifter to thereby move the paper stack.
- The shifter moves to the position of the shifter stop/lower limit position sensor. Then, the shifter motor is rotated backward to return the shifter to, and stop it at, the position at which the shifter home sensor is blocked.



[1]	Division board sensor (PS142)	[2]	Division board
[3]	Shifter motor (M133)	[4]	Shifter stop/lower limit position sensor (PS138)
[5]	Belt	[6]	Shifter
[7]	Shifter home sensor (PS139)	[8]	Sub tray paper empty sensor (PS140)

(2) Shifter stop position detection

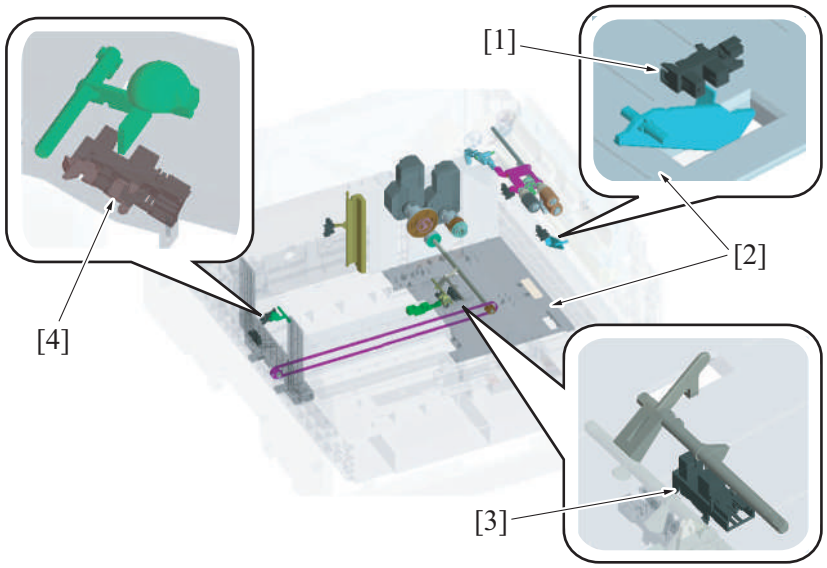
- The shifter stop/lower limit position sensor is blocked when the main tray is at the lower limit position.
- The shifter stop/lower limit position sensor detects the shifter stop position.
- The shifter pushes the lever, which pushes the shifter stop position detection actuator.
- When the shifter has moved to the stop position, the shifter stop/lower limit position sensor becomes unblocked.



[1]	Shifter stop position detection actuator portion	[2]	Shifter
[3]	Lever	[4]	Shifter stop/lower limit position sensor (PS138)

7.4.4 Paper empty detection control

- The paper empty detection control runs when the tray is in the closed position.
- A tray empty paper detection is made when both the main tray and sub tray are detected to be empty.



[1]	Main tray upper paper empty sensor (PS137)	[2]	Elevator tray
[3]	Main tray paper empty sensor (PS134)	[4]	Sub tray paper empty sensor (PS140)

(1) Main tray empty detection

- The main tray paper empty sensor becomes unblocked when the elevator tray is in the lower limit position. It triggers the main tray paper empty detection.
- The main tray upper paper empty sensor becomes unblocked when the elevator tray is in the upper limit position. It detects the main tray paper empty detection.

(2) Sub tray empty detection

- The main tray paper empty detection triggers when the sub tray paper empty sensor installed in the sub tray becomes unblocked.

8. THEORY OF OPERATION FK-513

8.1 COMMUNICATION CONTROL

8.1.1 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

8.1.2 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.

8.1.3 V8/V34 sequence

(1) V34

(a) Outline

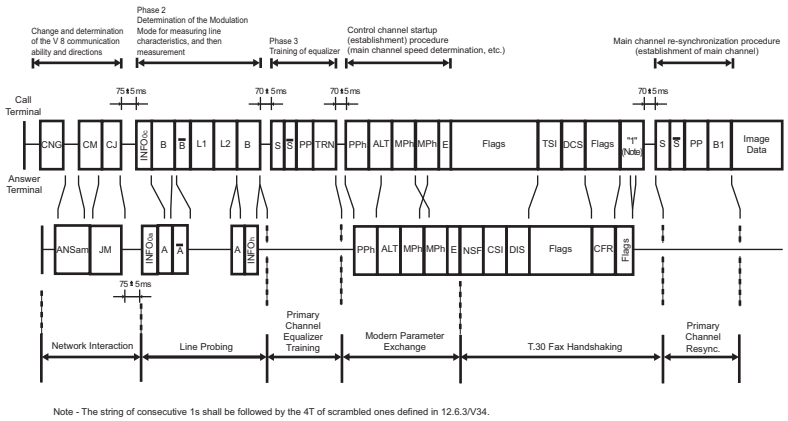
- The 33.6kbps data transmission method and protocol including the V8 protocol. As for each of full-duplex and half-duplex, startup handshake until data transmission starts is divided into four phases, phase1 to 4, and signals used in each phase are regulated.

(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

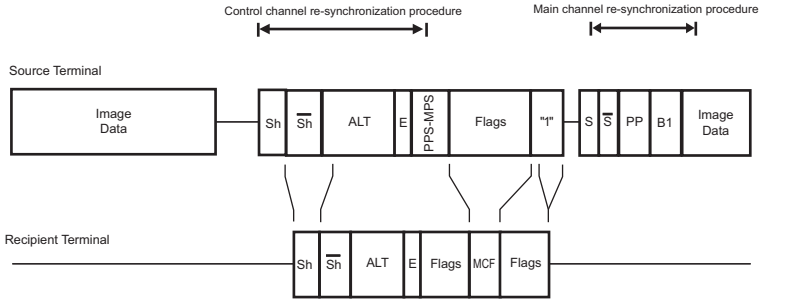
(2) Sample of a signal procedure at sending two pages

(a) Beginning of communications to beginning of 1st page transmission

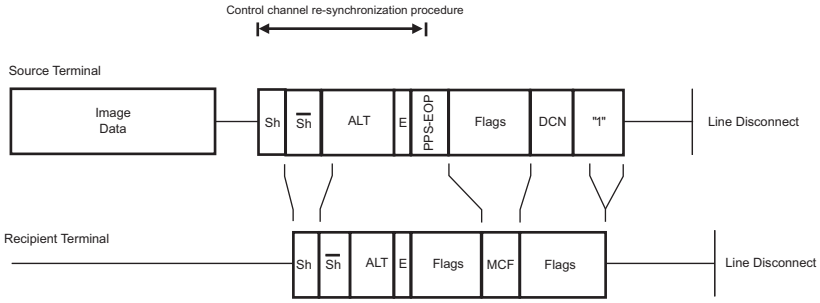


Note - The string of consecutive 1s shall be followed by the 4T of scrambled ones defined in 12.6.3/V34.

(b) Signals between pages



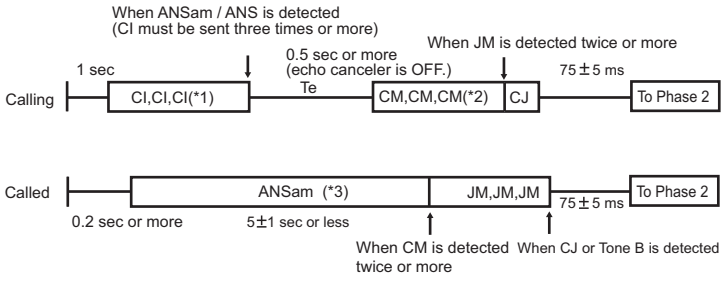
(c) 2nd page transmission termination to communication termination



Note - Some terminals may disconnect the line immediately after sending DCN without sending consecutive 1s.

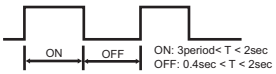
(3) Procedure details

(a) Phase 1 (V8) ....Beginning of connection between a calling modem and a called modem



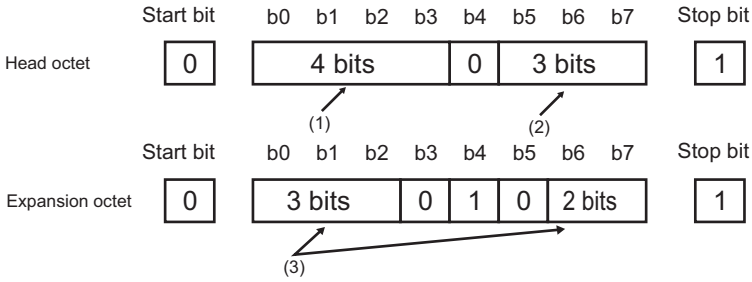
- *1: One of no signals / C1 / CNG (T.30) / CT (V.25)
- *2: V.34 full-duplex ability in the modulation mode bit is ON.
- *3: ANSam of phase inversion is sent. Phase inversion is an option in case of supporting only half-duplex. When CM or valid signal from the calling side is not detected, the procedure 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 " P.8.1.3 (4) Common signal bit definition".)
- (3): Additional option bit (Differs depending on category tags. See " P.8.1.3 (4) 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)

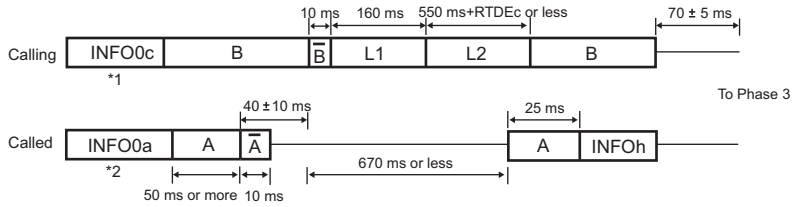
b0	b1	b2	b3	b4	b5	b6	b7	Meaning
1	0	1	1	0				(GSTN access category tag)
					0/1			Celluler connection in the calling side
						0/1		Celluler connection in the called side
							0/1	0: Analog network connection 1: Digital network connection

(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.	
Ā	• 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.	
B̄	1200 Hz tone signal output from the called 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

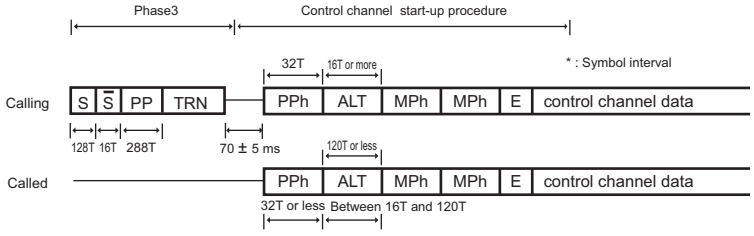
Bits (LSB-MSB)	Value	Meaning	
			• 1: Yes
14	0/1	3429 symbol / sec support	• 0: No • 1: Yes
15	0/1	Ability to transmit at low carrier frequency at 3000 symbol / sec	• 0: No • 1: Yes
16	0/1	Ability to transmit at high carrier frequency at 3000 symbol / sec	• 0: No • 1: Yes
17	0/1	Ability to transmit at 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

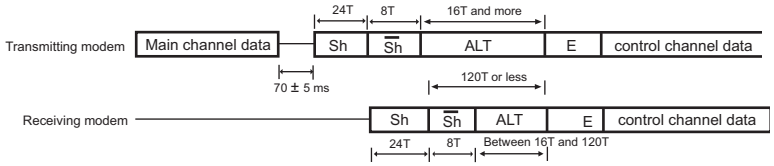
- A procedure required to switch control channel and main channel in the half-duplex procedure
- A procedure which includes another modulation parameter exchanging is especially called the startup procedure. (used for changing the communication speed)

(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

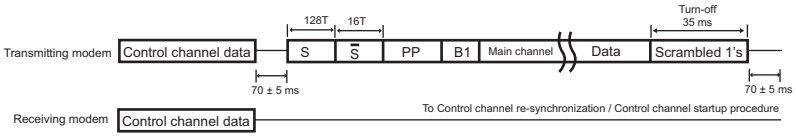
- Control channel re-synchronization.
- See signals related to control channels for signal names and change method.



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.



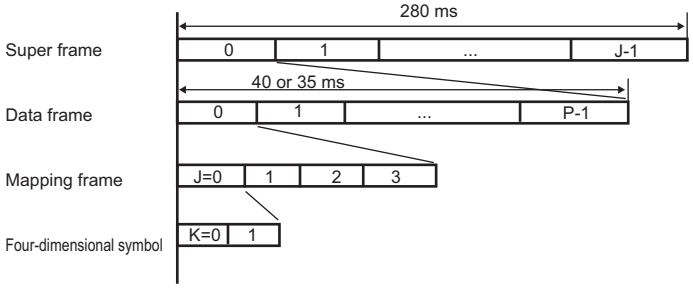
(8) Other

(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

8.2 FUNCTION

8.2.1 Telephone function

(1) TEL/FAX switching

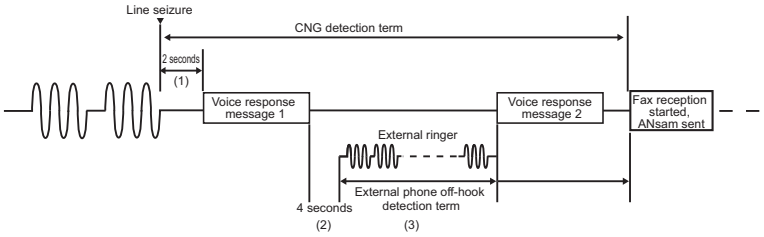
(a) Outline

- 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

8.2.2 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

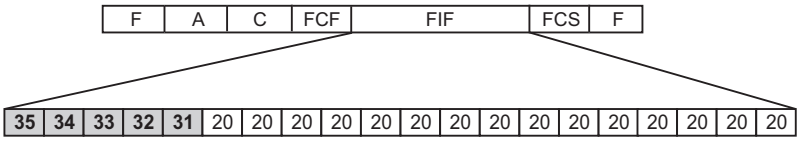
(a) Contents of signals

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)

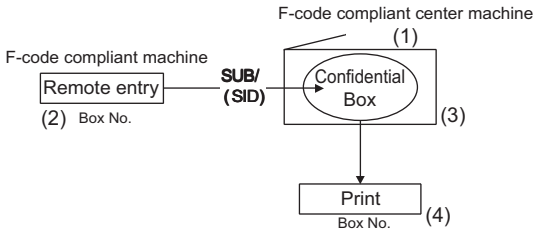
eg.) 12345



(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

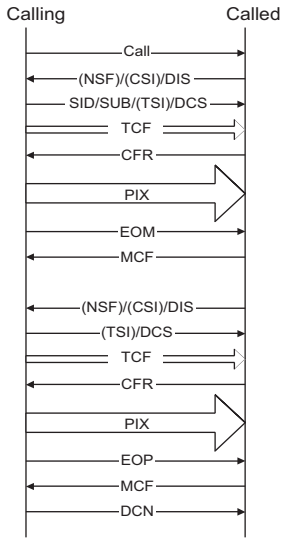


1. The confidential box is registered in the center machine.
   - Registration of confidential box No. and name
   - Registration of communication password
   - Registration of box password
2. Transmission operation on the transmitting side
   - Specification of confidential box No.
3. Reception in the center machine
   - Automatic output of confidential communication report
4. Printing in the center machine
   - Output by entering an access protect No.

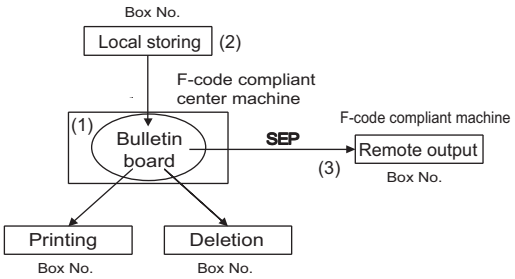
(a) BOX specifications

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

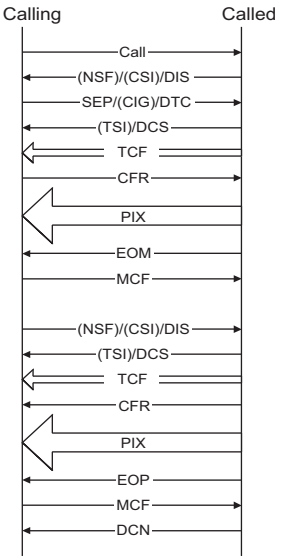


1. Registration of the bulletin board box in the center machine
   - Registration of the bulletin board No. and name
2. Storing documents in the bulletin board
3. Operations for polling reception on the compliant machine
   - Appointment of bulletin board No.

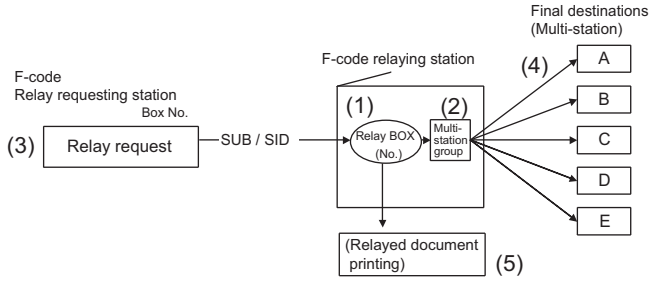
(a) BOX specifications

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.

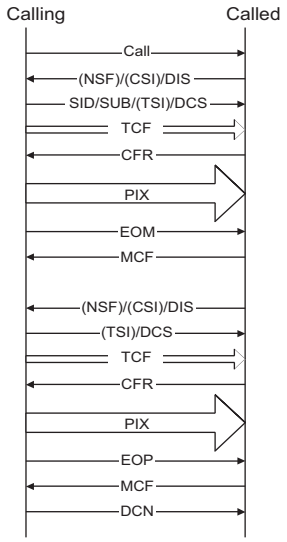
4. Transmission to the final remote stations registered in the group

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



8.2.3 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

8.2.4 Reception function

(1) Reduction / division of reception

- Parameters related to reduction / division are set on the [Administrator Settings] -> [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 Settings] -> [Fax Settings] -> [TX/RX Settings].
  - [Print Paper Selection]: Auto Select, Fixed Size, Priority Size: a
  - [Tray Selection for RX Print]: 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 Settings] -> [Fax Settings] -> [Function Settings] -> [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 Settings] -> [Fax Settings] -> [Function Settings] -> [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

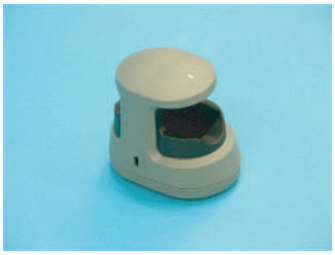
- Set in the [Administrator Settings] -> [Fax Settings] -> [Function Settings] -> [Closed Network RX].
- When this setting is set to “No”, the closed reception actions are not performed at reception.

(c) Closed reception password

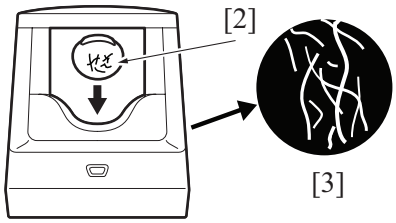
- Four digits (0 to 9)
- Set in the [Administrator Settings] -> [Fax Settings] -> [Function Settings] -> [Closed Network RX].

9. AU-102

9.1 Configuration



[1]



[1]	Authentication unit (AU-102)	[2]	Finger
[3]	Vein image	-	-

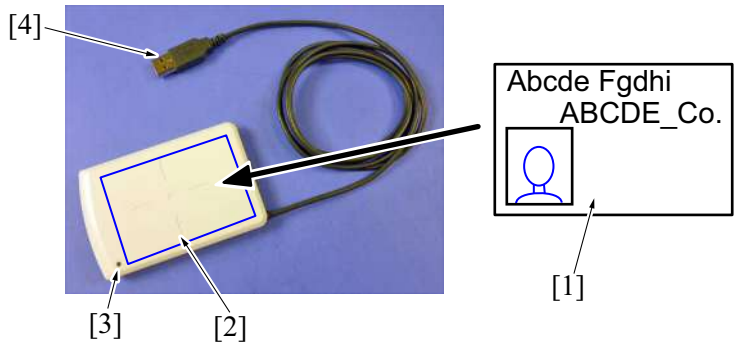
9.2 Operation

- 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.

10. AU-201S

10.1 AU-201S

10.1.1 Configuration



[1]	Non-contact IC card	[2]	Read-write area
[3]	Status LED	[4]	USB connector (Type-A)

10.1.2 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.

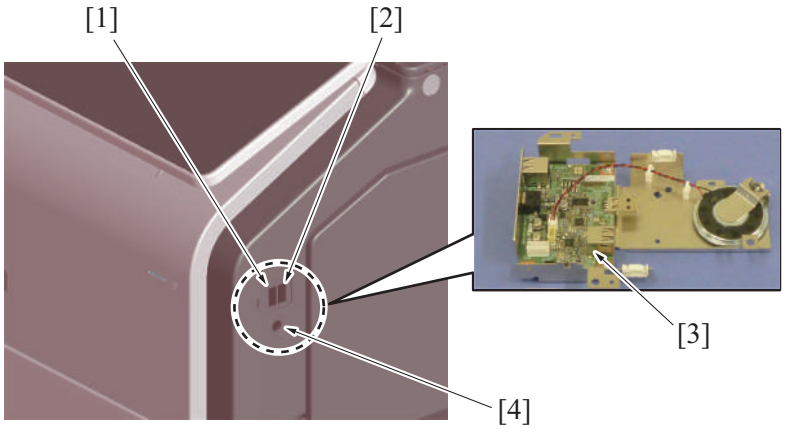
10.1.3 Specifications

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)		

11. EK-608/EK-609

11.1 EK-608

11.1.1 Configuration



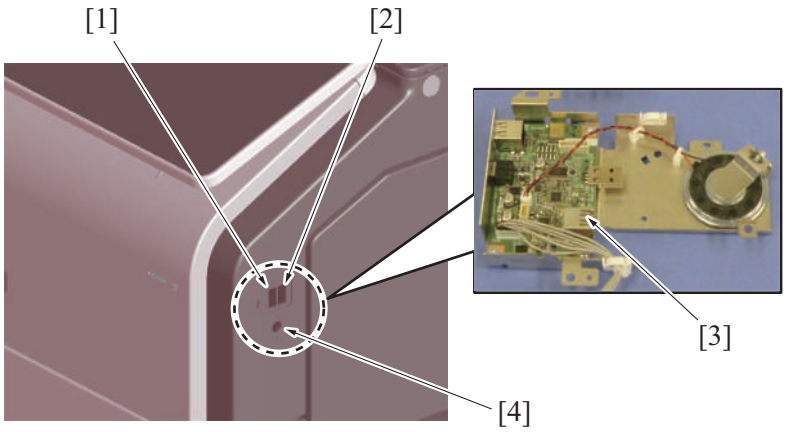
[1]	USB terminal (extension)	[2]	USB terminal (standard)
[3]	Local Interface Kit EK-608	[4]	Voice guidance output terminal

11.1.2 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.

11.2 EK-609

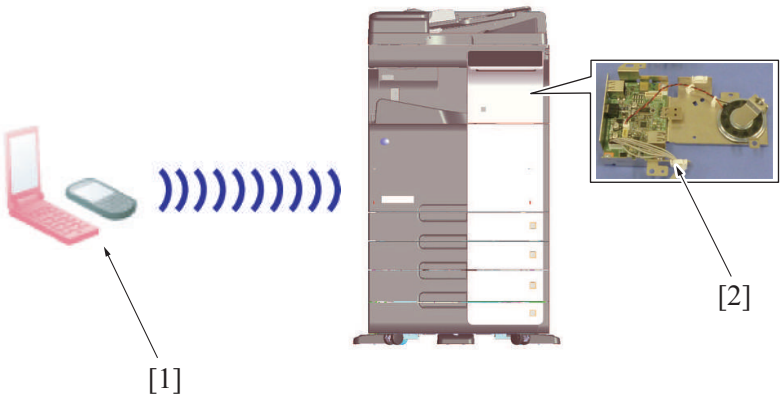
11.2.1 Configuration



[1]	USB terminal (extension)	[2]	USB terminal (standard)
[3]	Local Interface Kit EK-609	[4]	Voice guidance output terminal

11.2.2 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.

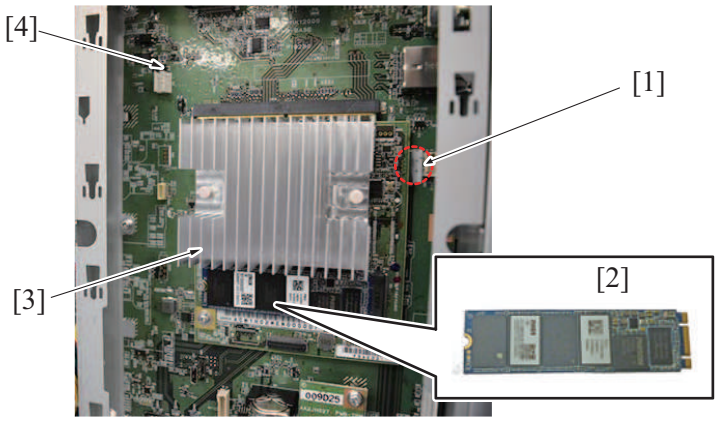


[1]	Portable phone, PDA	[2]	Local Interface Kit EK-609

12. EM-907

12.1 CONFIGURATION

- The Expanded Memory Unit EM-907 is mounted on the CPU board.
- By mounting the EM-907, it can be used as an internal storage of 256 GB.
- When installing the EM-907, it is not needed to remove the microSD.



[1]	Standard storage (microSD): 8 GB	[2]	Expanded Memory Unit (EM-907): 256GB
[3]	CPU board (CPUB)	[4]	Base board (BASEB)

12.2 INSTALLATION PROCEDURE

12.2.1 Advance preparation

The following procedures are required before mounting the Expanded Memory Unit (EM-907).

(1) MFP firmware update

1. Prepare the USB memory with the latest firmware data.
2. Turn OFF the main power switch.
3. Insert the USB memory with the firmware into the USB port, and turn ON the main power switch while pressing the Stop key.
4. Update the MFP firmware.
5. Wait for the machine to complete the reboot.
6. Check whether the firmware has been updated.

(2) Nonvolatile data backup

1. Touch [Service Mode] -> [Enhanced Security] -> [Memory Data Backup].
2. Check that the prompting message to turn OFF and ON the main power switch is displayed. Then turn OFF and ON the main power switch.

(3) Storage lock check

1. Check with the customer MFP administrator that if the MFP storage is locked with a password.
   If the MFP storage is locked, select [Utility] -> [Storage Management] -> [Storage Lock Password] and release the MFP storage lock.
   NOTE
   - **Contact the customer MFP administrator for the storage lock release password.**

(4) Encryption settings check

1. Check with the customer MFP administrator that if the encryption settings are applied to the MFP storage.
2. If the encryption settings are applied to the MFP storage, release the encryption settings.
   NOTE
   - **If the encryption settings are not released, the firmware installation fails during the transition procedure.**

12.2.2 Release encryption setting

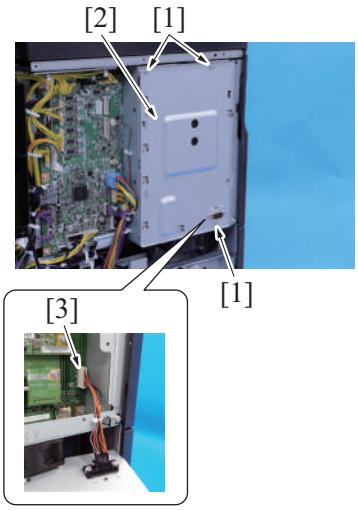
If the encryption settings are applied to the MFP storage, release the encryption settings as follows.

1. Touch [Utility] -> [Storage Management] -> [Encryption Settings].
2. Touch [Main Storage].
3. Select [Yes], and touch [OK].
4. Touch [Release], and enter the set encryption passphrase (using 20 or 64 characters, case-sensitive).
   NOTE
   - **Contact the customer MFP administrator for the encryption passphrase.**
5. Check that the prompting message to turn OFF and ON the main power switch is displayed. Then turn OFF and ON the main power switch.
6. After reboot, start releasing the encryption settings.
   NOTE
   - **Do not turn OFF the main power switch during releasing the encryption settings.**
7. After the encryption settings are released, the machine automatically restarts and a prompting screen to reformat the storage is displayed.
8. Touch [Utility] -> [Storage Management] -> [Format].
9. Select [Yes], and touch [OK].
10. Start formatting.
    NOTE
    - **Do not turn OFF the main power switch during formatting.**
11. Check that the prompting message to turn OFF and ON the main power switch is displayed. Then turn OFF and ON the main power switch.
12. Make sure that the machine starts up normally, turn OFF the main power switch.

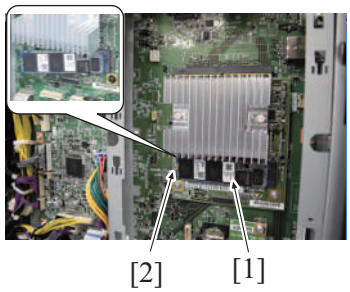
12.2.3 Mounting procedure

Mounting procedure of the Expanded Memory Unit (EM-907)

1. Turn OFF the main power switch of the MFP main unit and unplug the power cord from the outlet.
2. Pull out the power cord connector from the MFP main unit.
3. Remove the upper rear cover.
   F.5.1.12 Upper rear cover



4. Remove three screws [1], and remove the plate [2].
   NOTE
   - **When the connector cable is attached, remove the connector [3].**



5. Insert the storage board [1] into the slot of the CPU board and attach the screw [2] using the precision screwdriver (+).
   NOTE
   - **When mounting the storage board, insert it obliquely.**

6. Reinstall the removed parts.

12.2.4 Transition procedure

After mounting the EM-907, the following procedures are required before use.

(1) Firmware installation

1. Insert the USB memory with the latest firmware into the USB port, and turn ON the main power switch while pressing the Stop key.
2. Install the firmware.
3. Wait for the machine to complete the reboot after the install.

4. When the [Recover Data] screen appears, touch [Recover Data].
5. When the confirmation message appears, touch [Yes].
6. When the “Turn the main power switch OFF and ON” screen appears, turn OFF the main power switch.

(2) Storage type setting

1. Turn ON the main power switch.
2. After the machine rebooted, the trouble code (C-D073) screen appears.
3. Select [Service Mode] -> [System 2] -> [Set storage type], and touch [Storage].
4. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.

(3) microSD -> Storage data copy

1. After the machine rebooted, touch [Service Mode] -> [State Confirmation] -> [Memory/Storage Adjustment] -> [microSD -> Storage Data Copy]. Transfer the data in the standard storage (microSD) to the Expanded Memory Unit (EM-907).
   NOTE
   - **Do not turn OFF the main power switch during copying data. (Wait until the “Result 100% OK” appears.)**

2. Check that the prompting message to turn OFF and ON the main power switch is displayed.
3. Turn OFF the main power switch, wait for 10 sec., then turn the switch ON.
4. After the machine rebooted, confirm that the main unit setting information and destination information have been transferred.
   NOTE
   - **Do not remove the EM-907 after data copy completion from microSD to the Expanded Memory Unit (EM-907).**
   - **Even if the storage installation setting is returned to microSD, the machine cannot be started normally. (The trouble code: C-D071 is displayed.)**
5. When the operation check of the machine is completed, perform the following procedures as needed.

- **Storage encryption settings**
  NOTE
  - **After mounting the EM-907, if the storage encryption settings and formatting are performed, the data in the storage will be erased.**
  - **Back up the necessary data in advance before encryption settings.**
  - **After the encryption settings are complete, restore the backup data to the main unit.**
- **Movie data installation**
  NOTE
  - **Prepare the USB memory with the movie data.**
  - **Install the movie data from [Service Mode] -> [System 2] -> [Install Data] -> [Movie Data].**
  - **By installing the movie data, operation guidance by movie is displayed on the control panel.**

12.3 Function

- Available functions by mounting EM-907.

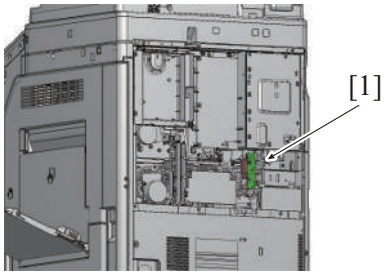
Category	Function
Copy	• User Box • Program Job • Overlay • Registered Overlay
Print	• E-mail RX Print *4 • User Box • ID & Print • SMB Print • Combination of overlay images registered on the device • Download Manager • Simple printing for secure document
Scan	• DOCX/XLSX conversion and OCR character recognition *4 • PDF encryption by digital ID *7 • PDF File Properties *7 • PDF/A *7 • PDF Web Optimization *7 • Searchable PDF *8 • S/MIME • Scan to URL • Scan to Home • Scan to Me • Scan to Box • Address Search/Address Search (LDAP) • HDD TWAIN
Fax/Network Fax	• Fax *1 • Internet Fax • IP Address Fax *1 • IP fax (SIP) *6 • File Type (TSI Routing) *4 • DOCX/XLSX conversion and OCR character recognition*4 • Conversion of searchable PDF file (Forward TX, TSI Routing) *4
Box	• User Box • ID & Print User Box • Annotation User Box • Password Encrypted PDF User Box • External Memory • User Box administrator • User Box Document Backup • User Box
Security/Maintenance	• Virus scan *5 • Font/macro management • Destination import/export • Destination batch deletion • Rollback after firmware update • Automatic update file relay function • Destination reference restriction • Job Log • TX Operation Log
Network and system link	• FTP Server • Link with fax server • Connection to application

- *1: Fax kit (FK-515) is required.
- *2: i-Option (LK-102) is required.
- *3: i-Option (LK-105) is required.
- *4: i-Option (LK-110) is required.
- *5: i-Option (LK-116) is required.
- *6: i-Option (LK-117) is required.
- *7: i-Option (LK-102) or i-Option (LK-110) is required.
- *8: i-Option (LK-105) or i-Option (LK-110) is required.
-

13. UK-221

13.1 CONFIGURATION

13.1.1 Mounting position



[1]	Upgrade kit (UK-221)	-	-

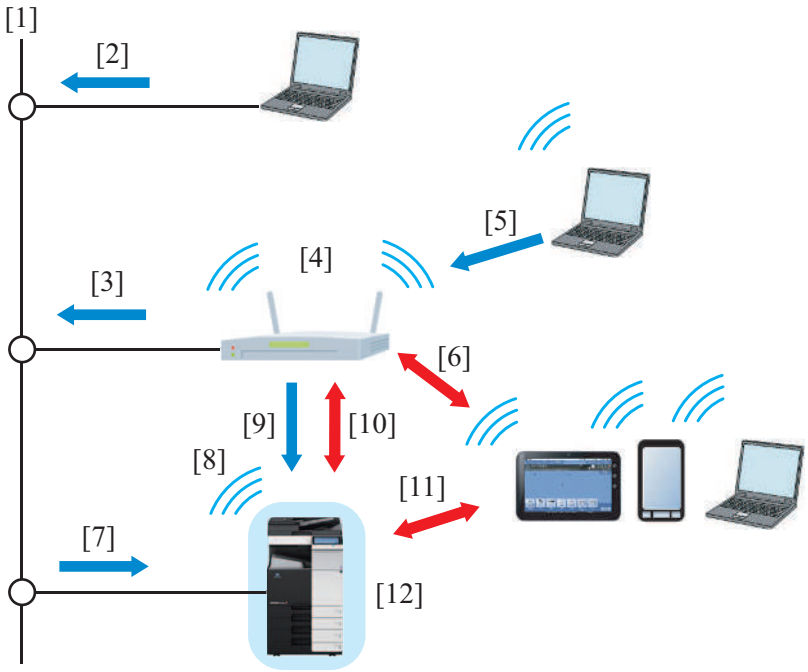
13.2 OPERATION

13.2.1 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.** • **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.**

13.2.2 2nd network interface structure

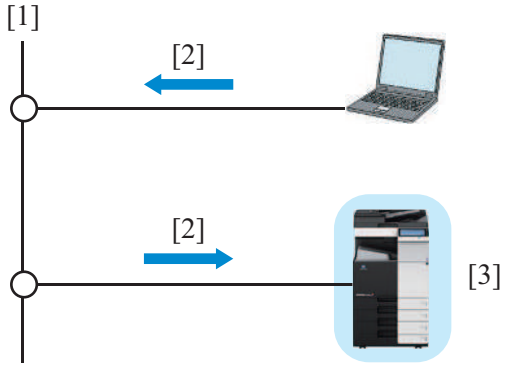
(1) Wired Only

- 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.

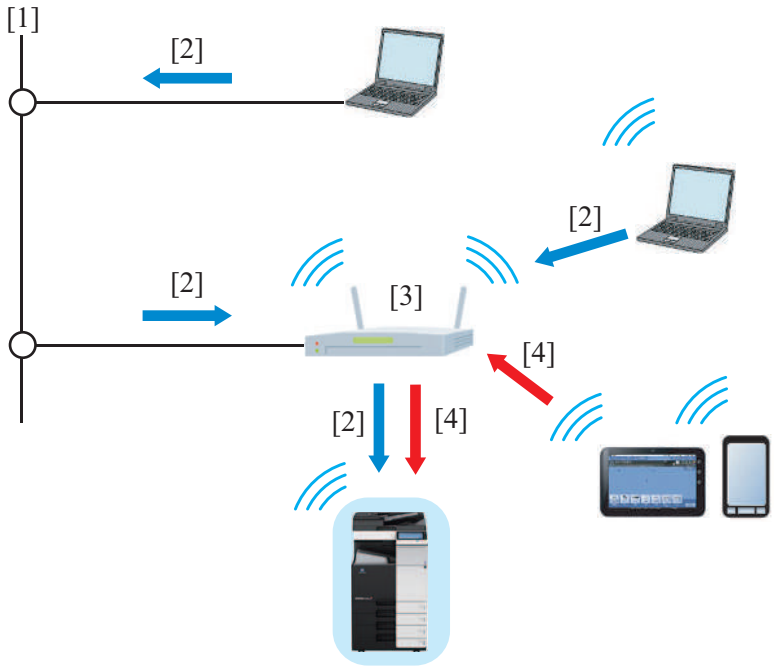
(a) Operation

- 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.

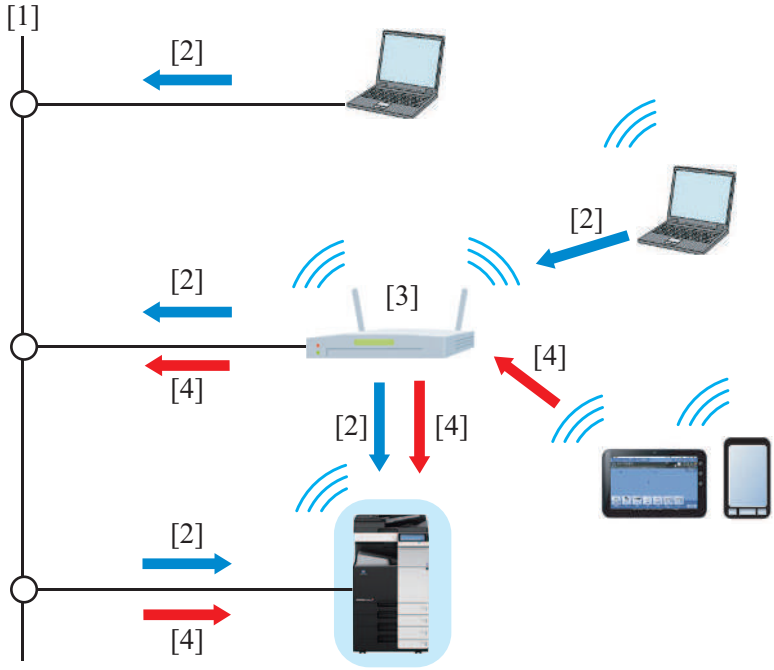
(a) Operation

- 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

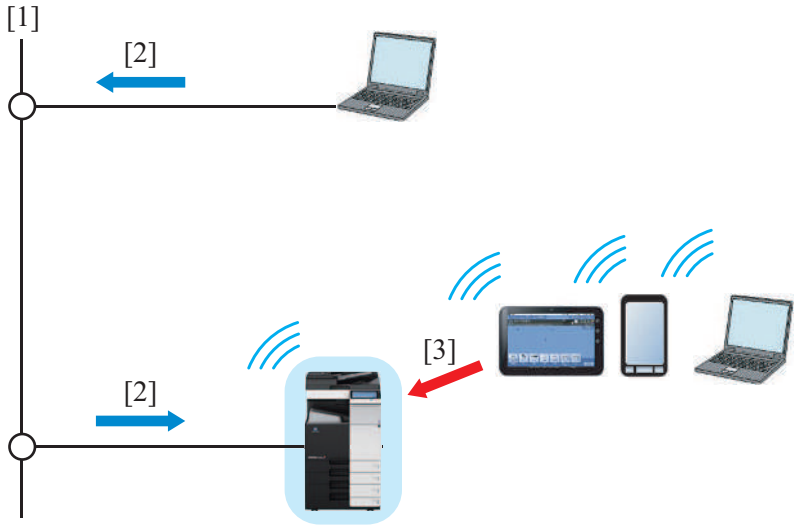
(4) Wired+Wireless (Primary Mode)

- 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	-	-

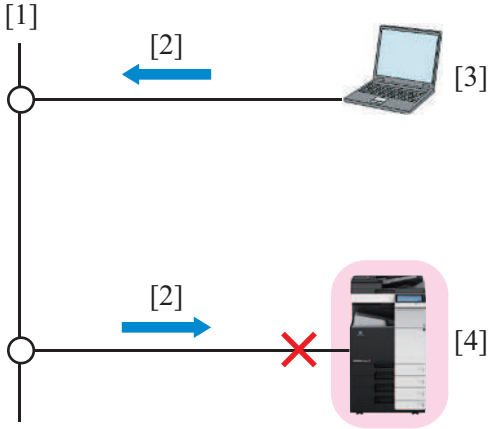
(5) Wired+Wireless (Wi-Fi Direct)

- 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.

13.2.3 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)

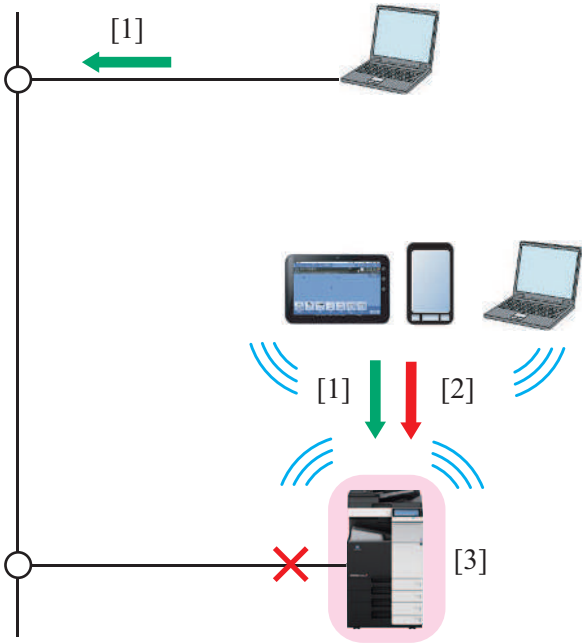
(1) Wired+Wireless (Secondary Mode)

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.

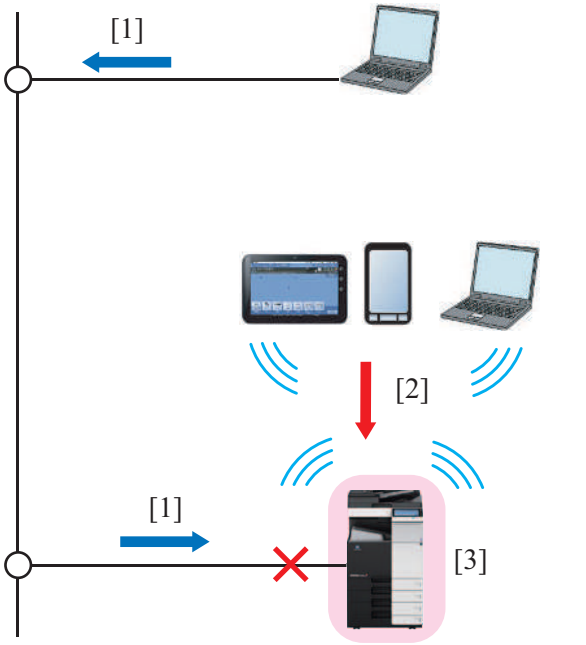
   Diagram of startup operation



   [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)

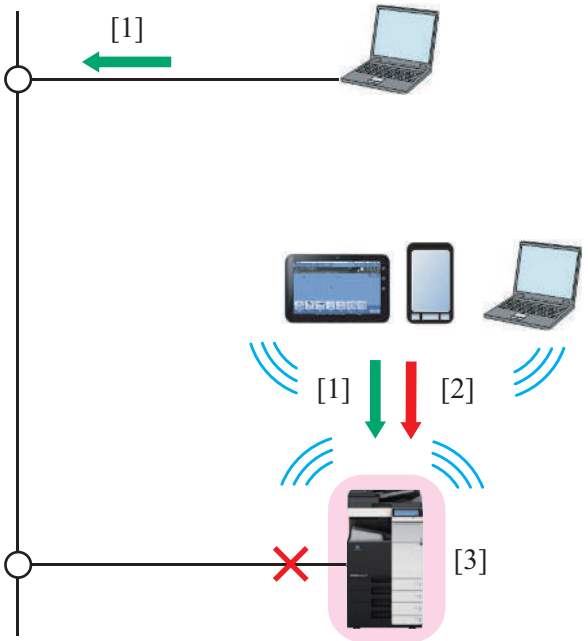
NOTE

- **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.

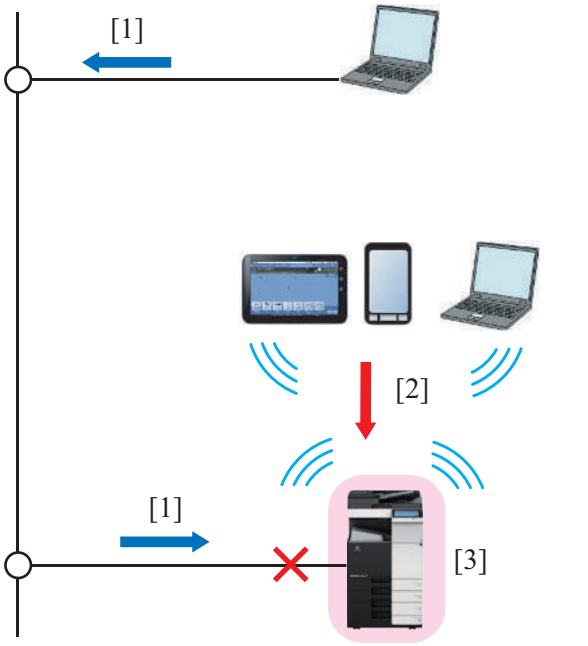
   Diagram of startup operation



   [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



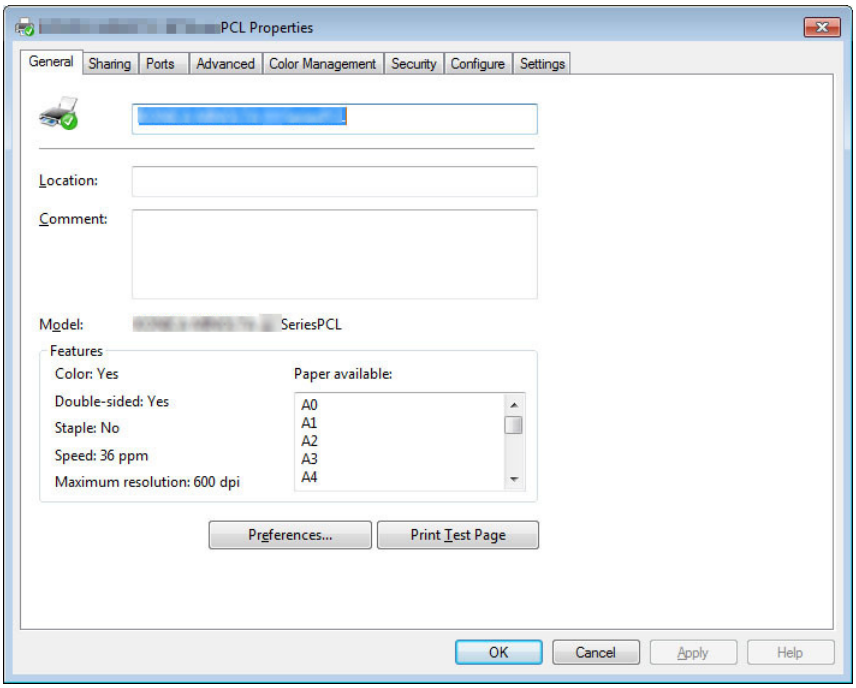
   [1] Job received from a PC
   [2] Job received from a mobile device
   [3] Main body (on startup)
   - After starting up the main body, the wireless LAN communication between the main body and the wireless LAN access point will be completed.

(3) Setting for printer driver

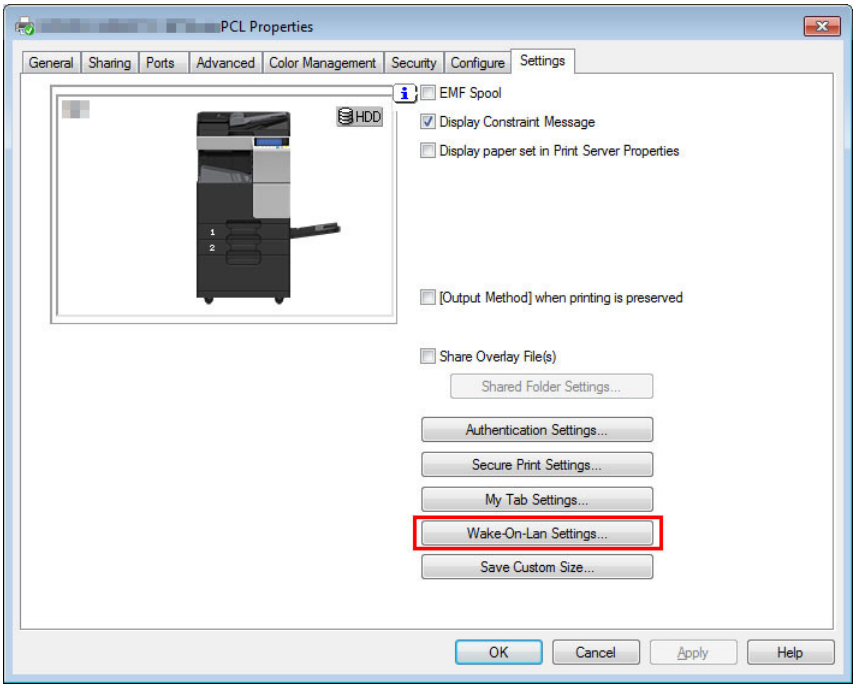
- To execute a print job, property settings are required for the printer driver to start up the main unit from ErP Auto Power Off mode.

(a) Setting procedure

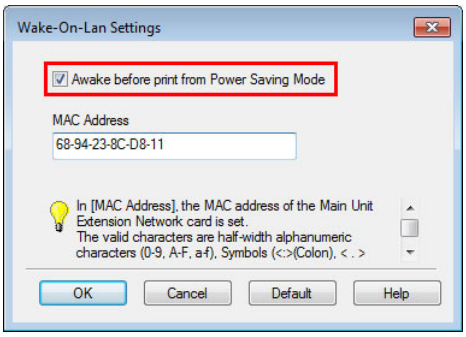
1. Open the property window of the printer.



2. Select the [Initial settings] tab, and select [Wake-On-Lan setting].



3. Select the [Awake before print from Power Saving Mode] check box.



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