KYOCERA

KM-3050
KM-4050
KM-5050

SERVICE MANUAL

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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.

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 RECOMMANDÉ PAR LE CONSTRUCTEUR. METTRE AU RÉBUT LES BATTERIES USAGÉES CONFORMÉMENT AUX INSTRUCTIONS DU FABRICANT.

Revision history

Revision	Date	Replaced pages	Remarks

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Safety precautions

This booklet provides safety warnings and precautions for our service personnel to ensure the safety of their customers, their machines as well as themselves during maintenance activities. Service personnel are advised to read this booklet carefully to familiarize themselves with the warnings and precautions described here before engaging in maintenance activities.

Safety warnings and precautions

Various symbols are used to protect our service personnel and customers from physical danger and to prevent damage to their property. These symbols are described below:

⚠**DANGER:** High risk of serious bodily injury or death may result from insufficient attention to or incorrect compliance with warning messages using this symbol.

⚠**WARNING:** Serious bodily injury or death may result from insufficient attention to or incorrect compliance with warning messages using this symbol.

⚠**CAUTION:** Bodily injury or damage to property may result from insufficient attention to or incorrect compliance with warning messages using this symbol.

Symbols

The triangle (△) symbol indicates a warning including danger and caution. The specific point of attention is shown inside the symbol.

 General warning.

 Warning of risk of electric shock.

 Warning of high temperature.

⃠ indicates a prohibited action. The specific prohibition is shown inside the symbol.

 General prohibited action.

 Disassembly prohibited.

● indicates that action is required. The specific action required is shown inside the symbol.

 General action required.

 Remove the power plug from the wall outlet.

 Always ground the copier.

1.Installation Precautions

⚠WARNING

- Do not use a power supply with a voltage other than that specified. Avoid multiple connections to one outlet: they may cause fire or electric shock. When using an extension cable, always check that it is adequate for the rated current. .....

- Connect the ground wire to a suitable grounding point. Not grounding the copier may cause fire or electric shock. Connecting the earth wire to an object not approved for the purpose may cause explosion or electric shock. Never connect the ground cable to any of the following: gas pipes, lightning rods, ground cables for telephone lines and water pipes or faucets not approved by the proper authorities. .....

⚠CAUTION:

- Do not place the copier on an infirm or angled surface: the copier may tip over, causing injury. .....

- Do not install the copier in a humid or dusty place. This may cause fire or electric shock. .....

- Do not install the copier near a radiator, heater, other heat source or near flammable material.

  This may cause fire. .....

- Allow sufficient space around the copier to allow the ventilation grills to keep the machine as cool as possible. Insufficient ventilation may cause heat buildup and poor copying performance. .....

- Always handle the machine by the correct locations when moving it. .....

- Always use anti-toppling and locking devices on copiers so equipped. Failure to do this may cause the copier to move unexpectedly or topple, leading to injury. .....

- Avoid inhaling toner or developer excessively. Protect the eyes. If toner or developer is accidentally ingested, drink a lot of water to dilute it in the stomach and obtain medical attention immediately. If it gets into the eyes, rinse immediately with copious amounts of water and obtain medical attention. .....

- Advice customers that they must always follow the safety warnings and precautions in the copier's instruction handbook. .....

2.Precautions for Maintenance

⚠WARNING

- Always remove the power plug from the wall outlet before starting machine disassembly. .....

- Always follow the procedures for maintenance described in the service manual and other related brochures. .....

- Under no circumstances attempt to bypass or disable safety features including safety mechanisms and protective circuits. .....

- Always use parts having the correct specifications. .....
- Always use the thermostat or thermal fuse specified in the service manual or other related brochure when replacing them. Using a piece of wire, for example, could lead to fire or other serious accident. .....

- When the service manual or other serious brochure specifies a distance or gap for installation of a part, always use the correct scale and measure carefully. .....

- Always check that the copier is correctly connected to an outlet with a ground connection. .....
- Check that the power cable covering is free of damage. Check that the power plug is dust-free. If it is dirty, clean it to remove the risk of fire or electric shock. .....

- Never attempt to disassemble the optical unit in machines using lasers. Leaking laser light may damage eyesight. .....

- Handle the charger sections with care. They are charged to high potentials and may cause electric shock if handled improperly. .....

⚠CAUTION

- Wear safe clothing. If wearing loose clothing or accessories such as ties, make sure they are safely secured so they will not be caught in rotating sections. .....

- Use utmost caution when working on a powered machine. Keep away from chains and belts. .....

- Handle the fixing section with care to avoid burns as it can be extremely hot. .....

- Check that the fixing unit thermistor, heat and press rollers are clean. Dirt on them can cause abnormally high temperatures. .....

- Do not remove the ozone filter, if any, from the copier except for routine replacement. .....

- Do not pull on the AC power cord or connector wires on high-voltage components when removing them; always hold the plug itself. .....

- Do not route the power cable where it may be stood on or trapped. If necessary, protect it with a cable cover or other appropriate item. .....

- Treat the ends of the wire carefully when installing a new charger wire to avoid electric leaks. .....

- Remove toner completely from electronic components. .....

- Run wire harnesses carefully so that wires will not be trapped or damaged. .....

- After maintenance, always check that all the parts, screws, connectors and wires that were removed, have been refitted correctly. Special attention should be paid to any forgotten connector, trapped wire and missing screws. .....

- Check that all the caution labels that should be present on the machine according to the instruction handbook are clean and not peeling. Replace with new ones if necessary. .....

- Handle greases and solvents with care by following the instructions below: .....
  - · Use only a small amount of solvent at a time, being careful not to spill. Wipe spills off completely.
  - · Ventilate the room well while using grease or solvents.
  - · Allow applied solvents to evaporate completely before refitting the covers or turning the power switch on.
  - · Always wash hands afterwards.

- Never dispose of toner or toner bottles in fire. Toner may cause sparks when exposed directly to fire in a furnace, etc. .....

- Should smoke be seen coming from the copier, remove the power plug from the wall outlet immediately. .....

3.Miscellaneous

⚠WARNING

- Never attempt to heat the drum or expose it to any organic solvents such as alcohol, other than the specified refiner; it may generate toxic gas. .....

CONTENTS

2-4 Appendixes

INSTALLATION GUID

PAPER FEEDER
3000 SHEETS PAPER FEEDER
DOCUMENT FINISHER
3000 SHEETS DOCUMENT FINISHER
DOCUMENT PROCESSOR
BUILT-IN FINISHER
JOB SEPARATOR
FAX System (M)
Data Security Kit (C)

1-1-1 Specifications

Type ..... Desktop
Copying system ..... Indirect electrostatic system
Originals ..... Sheets, books and three-dimensional objects
Maximum size: A3/Ledger
Original feed system ..... Fixed
Copy paper ..... Weight
Cassette: 60 - 105 g/m^2
MP tray: 45 - 200 g/m^2
Types
Cassette: Plain, Preprinted, Bond, Recycled, Rough, Letterhead, Color (Colour), Prepunched, High quality and Custom1 - 8
MP tray: Plain, Transparency, Preprinted, Labels, Bond, Recycled, Vellum, Rough, Letterhead, Color (Colour), Prepunched, Envelope, Cardstock, Thick paper, High quality and Custom1 - 8
Copying sizes ..... Cassette: A3/Ledger - A5R/StatementR
MP tray: A3/Ledger - A6R/StatementR
Magnification ratios ..... Manual mode: 25 - 400%, 1% increments
Auto copy mode: fixed ratios
Metric
1:1 ± 1.0%, 1:4.00/1:2.00/1:1.41/1:1.22/1:1.15/1:0.86/1:0.81/1:0.70/1:0.50/1:0.25
Inch
1:1 ± 1.0%, 1:4.00/1:2.00/1:1.29/1:1.21/1:0.78/1:0.64/1:0.50/1:0.25
Copy speed ..... At 100% magnification in copy mode:
30 ppm model
A3/Ledger: 20 sheets/min.
B4/Legal: 20 sheets/min.
A4/Letter: 30 sheets/min.
A4R/LetterR: 22 sheets/min.
B5: 30 sheets/min.
B5R: 20 sheets/min.
A5R/StatementR: 14 sheets/min.
A6R: 16 sheets/min.
40 ppm model
A3/Ledger: 23 sheets/min.
B4/Legal: 23 sheets/min.
A4/Letter: 40 sheets/min.
A4R/LetterR: 27 sheets/min.
B5: 40 sheets/min.
B5R: 22 sheets/min.
A5R/StatementR: 16 sheets/min.
A6R: 18 sheets/min.
50 ppm model
A3/Ledger: 26 sheets/min.
B4/Legal: 26 sheets/min.
A4/Letter: 50 sheets/min.
A4R/LetterR: 31 sheets/min.
B5: 50 sheets/min.
B5R: 24 sheets/min.
A5R/StatementR: 18 sheets/min.
A6R: 18 sheets/min.
First copy time ..... 3.9 s or less (30 ppm model)
3.5 s or less (40/50 ppm model)
Warm-up time ..... 30 s (room temperature 22°C/71.6°F, 60% RH)
Recovery from sleep mode: 15 s (room temperature 22°C/71.6°F, 60% RH)
Paper feed system ..... Automatic feed
Capacity:
Cassette: 500 sheets (80 g/m^2)
Manual feed
Capacity:
MP tray: 200 sheets (80 g/m^2)
Paper eject system ..... Output tray: 250 sheets (80 g/m^2)

Multiple copying	1 - 999 sheets
Photoconductor	a-Si (drum diameter 40 mm)
Charging system	Single positive corona charging
Recording system	Semiconductor laser
Developing system	Dry, reverse developing (single component system) Developer: 1-component, magnetism toner Toner replenishing: automatic from a toner container
Transfer system	Transfer roller
Separation system	Separation electrode
Fusing system	Heat roller Heat source: halogen heaters Abnormally high temperature protection devices: thermostats
Charge erasing system	Exposure by cleaning lamp
Cleaning system	Cleaning blade and roller
Scanning system	Flat bed scanning by CCD image sensor
Memory	Standard 512 MB/Maximum 1024 MB
Hard disk	40 GB
Resolution	600 x 600 dpi
Light source	Inert gas lamp
Dimensions	599 (W) x 646 (D) x 745 (H) mm 23 9/16" (W) x 25 7/16" (D) x 29 5/16" (H)
Weight	Approx. 85 kg/187 lbs
Floor requirements	1497 (W) x 646 (D) mm 58 15/16" (W) x 25 7/16" (D)
Functions	Original size, Paper selection, Mixed sized originals, Original orientation, Collate/Offset mode, Staple/Punch mode, Output destination, Zoom mode, Combine mode, Margin/Centering mode, Border erase, Booklet from sheets, Duplex, Cover mode, Form overlay, Page numbering, Memo mode, Density adjustment, Selection of image quality, EcoPrint mode, Batch scanning, Auto image rotation, Inverted copying, Mirror image, Job finish notice, File name, Priority override, Multi-page forms, Repeat copy, Programmed copying, Registering shortcuts
Power source	120 V AC, 60 Hz, 11.5 A 220 to 240 V AC, 50/60 Hz, 6.3 A
Options	Document processor, paper feeder, 3000-sheet paper feeder, 3000-sheet document finisher, document finisher, built-in finisher, job separator, key counter, fax kit, security kit, data backup kit and PDF upgrade kit

Printer functions

Printing speed	Same as copying speed
First print time	Same as first copy time
Resolution	Fast 1200 mode/600 dpi/300 dpi
Applicable OS	Microsoft Windows 95 (OSR2) Microsoft Windows 98 (second edition) Microsoft Windows NT4.0 (service pack 5 or later) Microsoft Windows 2000 (service pack 2 or later) Microsoft Windows Me Microsoft Windows XP Microsoft Windows Server 2003 Apple Macintosh OS 9.x Apple Macintosh OS X 10.x
Interface	Parallel: Bi-directional parallel (IEEE 1284 Nibble/ECP mode) USB high-speed: 3 slots USB interface connector Optional serial interface (RS-232C) Network interface: 10Base-T/100Base-TX
PDL	PRESCRIBE
Emulation	PCL6 (5e, XL), KPDL3, KC-GL, Line Printer, IBM Proprinter X24E, EPSON LQ-850, DIABLO 630

Font	Outline font: 80 fonts (PCL6)/136 fonts (KPDL3) Bitmap font: 1 font/79 fonts are processed by outline font. OCR characters: OCR-A, OCR-B and OCR-kana
Connectivity	Plug & Play SNMP (printer MIB supported)

Scanner functions

Ethernet	10BASE-T/100BASE-TX
Network Protocol	TCP/IP
Transmission system	PC transmission: SMB Scan to SMB, FTP Scan to FTP E-mail transmission: SMTP Scan to E-mail TWAIN scan: TWAIN source
Resolution	600 dpi, 400 dpi, 300 dpi, 200 dpi, 200 x 100 dpi, 200 x 400 dpi
File Format	Monochrome: TIFF (MMR), PDF (MMR) Gray: JPEG, PDF (JPEG) Color: JPEG, PDF (high compression)
Scanning Speed	1-sided: monochrome 50 sheets/min Color 25 sheets/min 2-sided: monochrome 25 sheets/min Color 12.5 sheets/min

NOTE: These specifications are subject to change without notice.

1-1-2 Parts names

(1) Machine

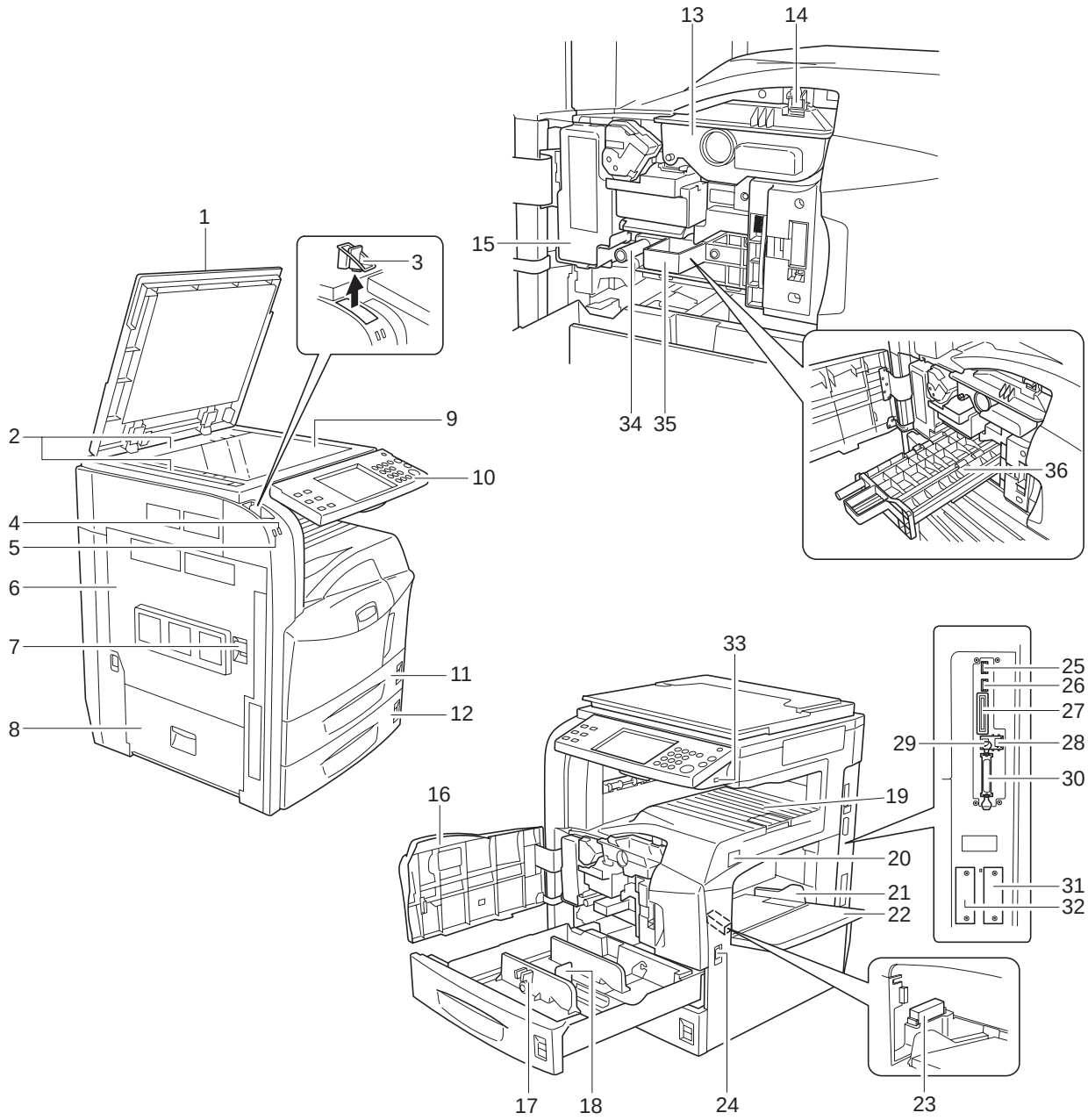


Figure 1-1-1

1. Original cover (Option)
2. Original size indicator plates
3. Clip holder
4. Reception indicator
5. Error indicator
6. Left cover 1
7. Left cover 1 Lever
8. Left cover 2
9. Platen
10. Operation panel
11. Cassette 1
12. Cassette 2
13. Toner container
14. Toner container stopper
15. Waste toner box
16. Front cover
17. Paper width adjusting tab
18. Length adjustment plate
19. Top tray
20. Main power switch
21. Paper width guides
22. Multi purpose tray
23. Memory card cover holder
24. Handles
25. USB memory slot (A2)
26. USB memory slot (A3)
27. Memory card slot
28. Network interface connector
29. USB interface connector
30. Parallel interface connector
31. Option interface slot (OPT1)
32. Option interface slot (OPT2)
33. USB memory slot (A1)
34. Green knob (A1)
35. Paper feed unit (A2)
36. Paper feed unit cover (A2)

(2) Operation panel

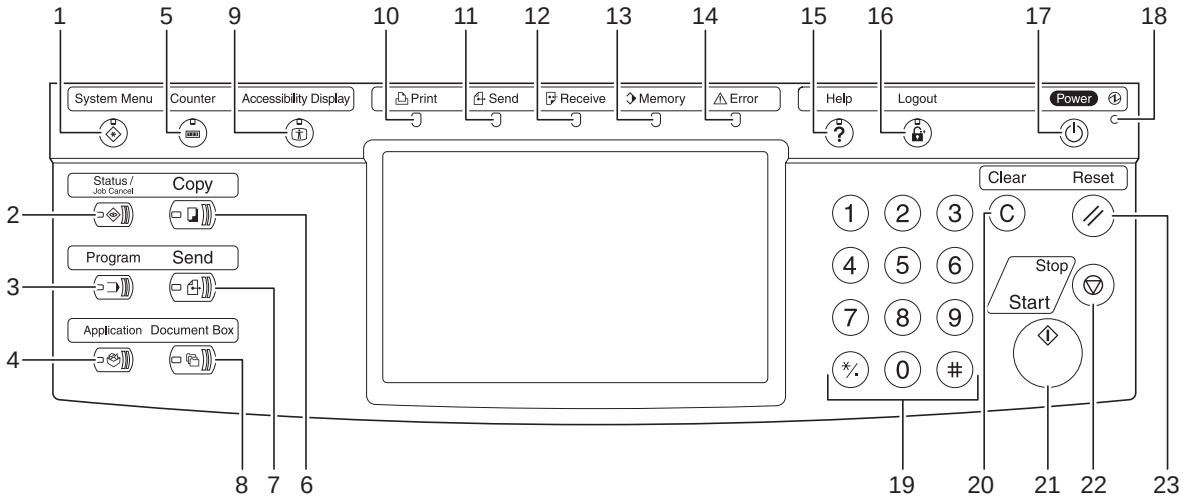


Figure 1-1-2

1. System menu key/indicator
2. Status/Job cancel key/indicator
3. Program key/indicator
4. Application key
5. Counter key/indicator
6. Copy key/indicator
7. Send key/indicator
8. Document box key/indicator
9. Accessibility key/indicator
10. Print indicator
11. Transmission indicator
12. Reception indicator
13. Memory indicator
14. Error indicator
15. Help key/indicator
16. Log-out key/indicator
17. Power key
18. Main power indicator
19. Numeric keys
20. Clear key
21. Start key/indicator
22. Stop key
23. Reset key

1-1-3 Machine cross section

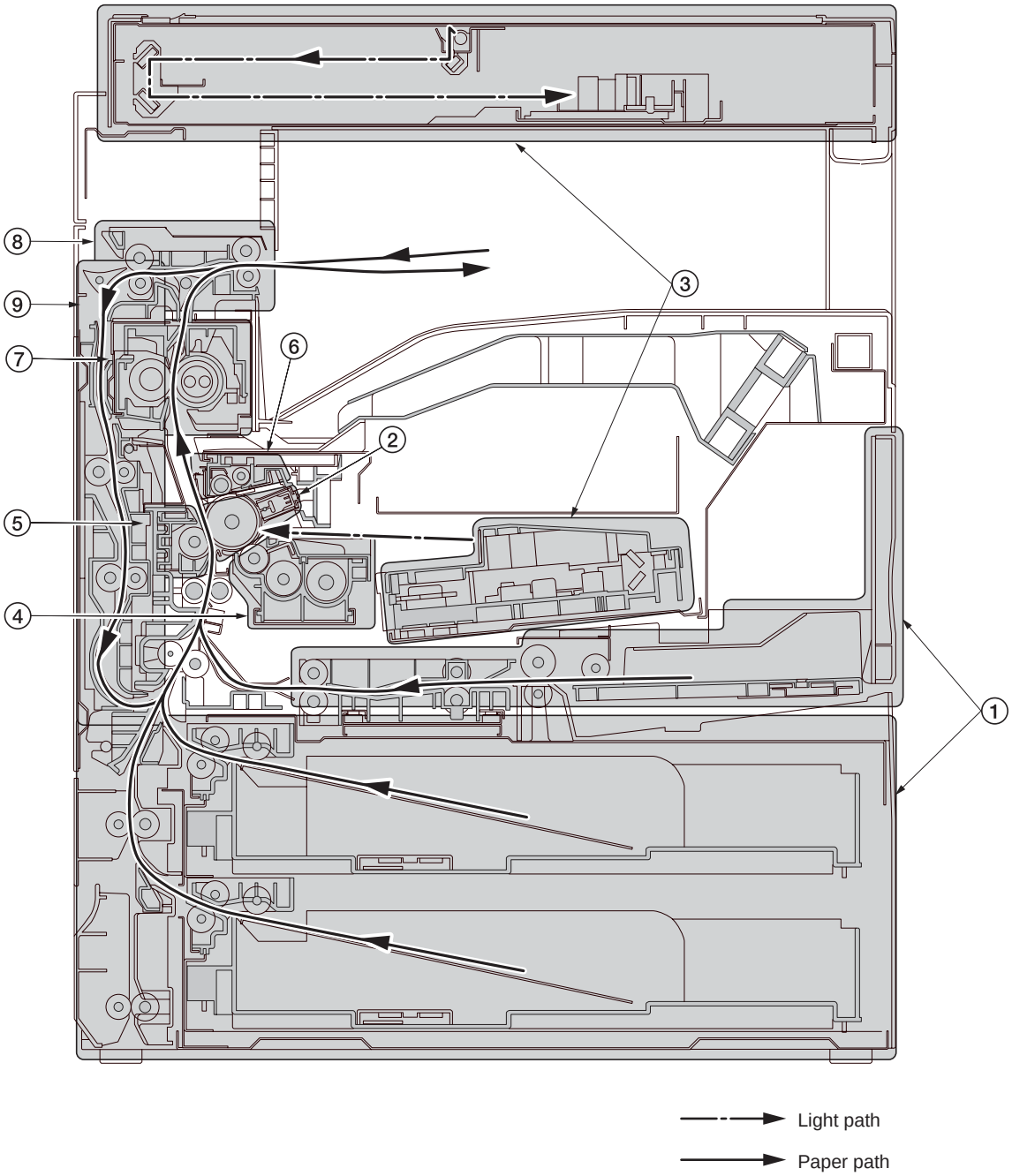


Figure 1-1-3 Machine cross section

1. Paper feed section
2. Main charging section
3. Optical section
4. Developing section
5. Transfer and separation section
6. Cleaning and charge erasing section
7. Fuser section
8. Eject and switchback section
9. Duplex section

1-2-1 Installation environment

1. Temperature: 10 to 32.5°C/50 to 90.5°F
2. Humidity: 15 to 80%RH
3. Power supply: 120 V AC, 11.5 A
   220 to 240 V AC, 6.3 A
4. Power source frequency: 50 Hz ± 0.3%/60 Hz ± 0.3%
5. Installation location
   Avoid direct sunlight or bright lighting. Ensure that the photoconductor will not be exposed to direct sunlight or other strong light when removing paper jams.
   Avoid extremes of temperature and humidity, abrupt ambient temperature changes, and hot or cold air directed onto the machine.
   Avoid dust and vibration.
   Choose a surface capable of supporting the weight of the machine.
   Place the machine on a level surface (maximum allowance inclination: 1°).
   Avoid air-borne substances that may adversely affect the machine or degrade the photoconductor, such as mercury, acidic of alkaline vapors, inorganic gasses, NOx, SOx gases and chlorine-based organic solvents.
   Select a room with good ventilation.
6. Allow sufficient access for proper operation and maintenance of the machine.
   Machine front: 1000 mm/39 3/8" Machine rear: 100 mm/3 15/16"
   Machine right: 300 mm/11 13/16" Machine left: 300 mm/11 13/16"

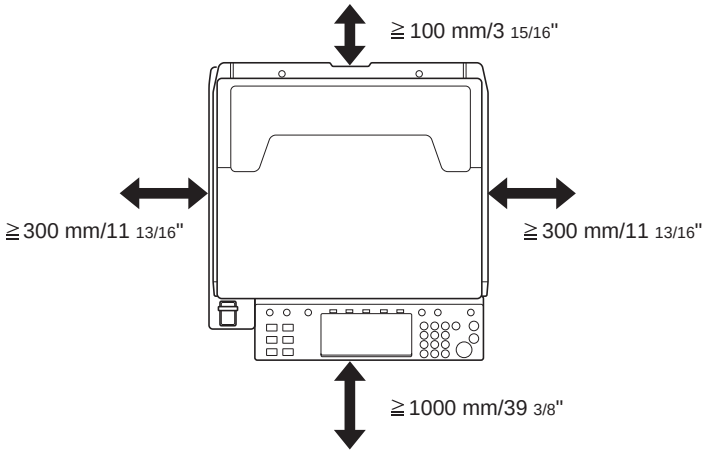
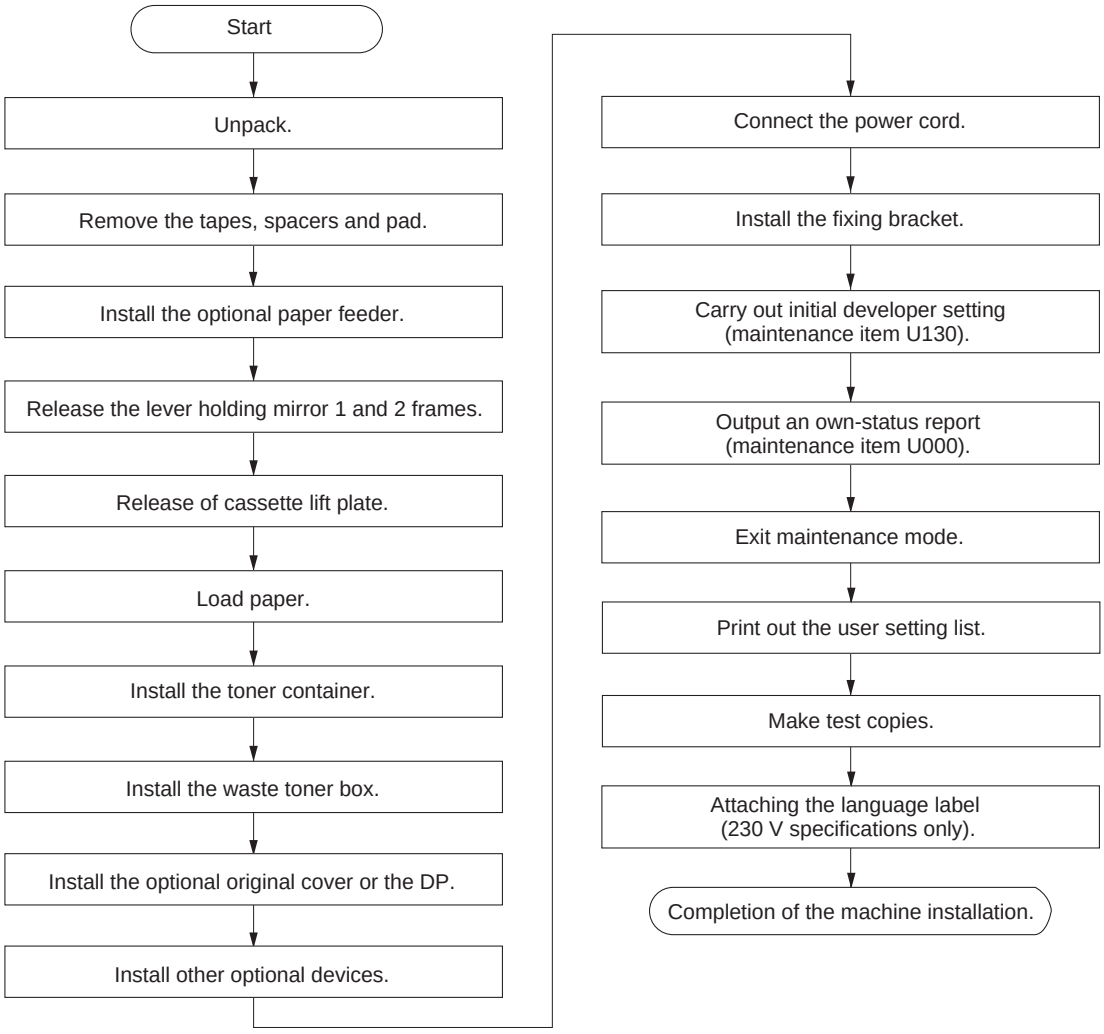


Figure 1-2-1 Installation dimensions

1-2-2 Unpacking and installation

(1) Installation procedure



Moving the machine
When moving the machine, pull out the four carrying handles on the right and left sides and hold them.

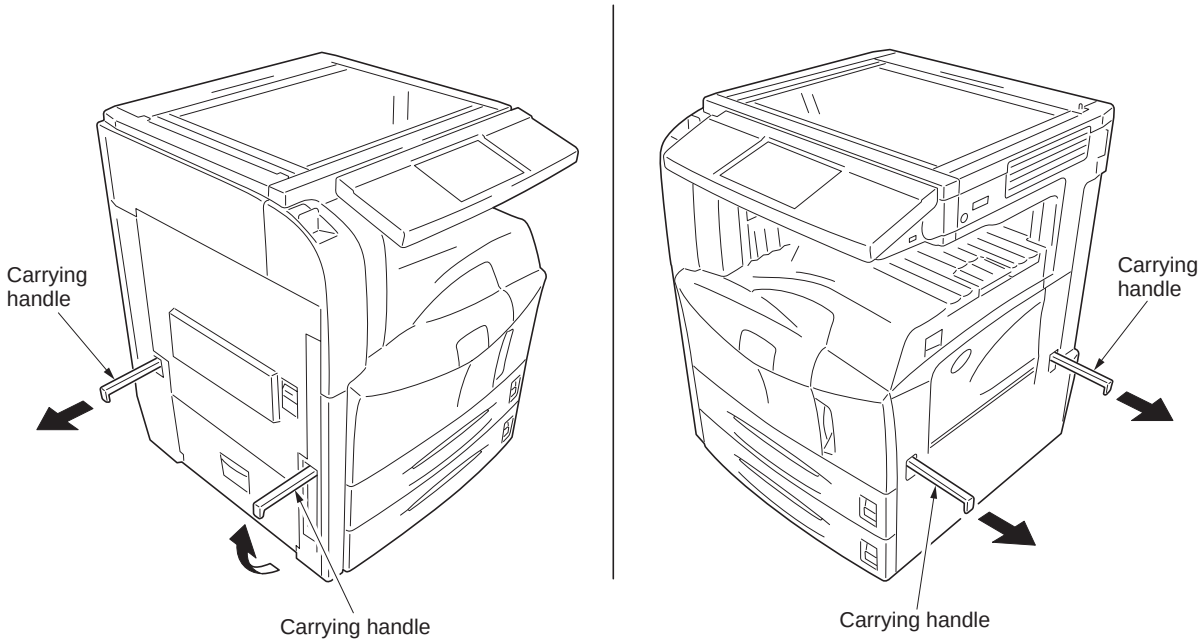


Figure 1-2-2

Unpacking.

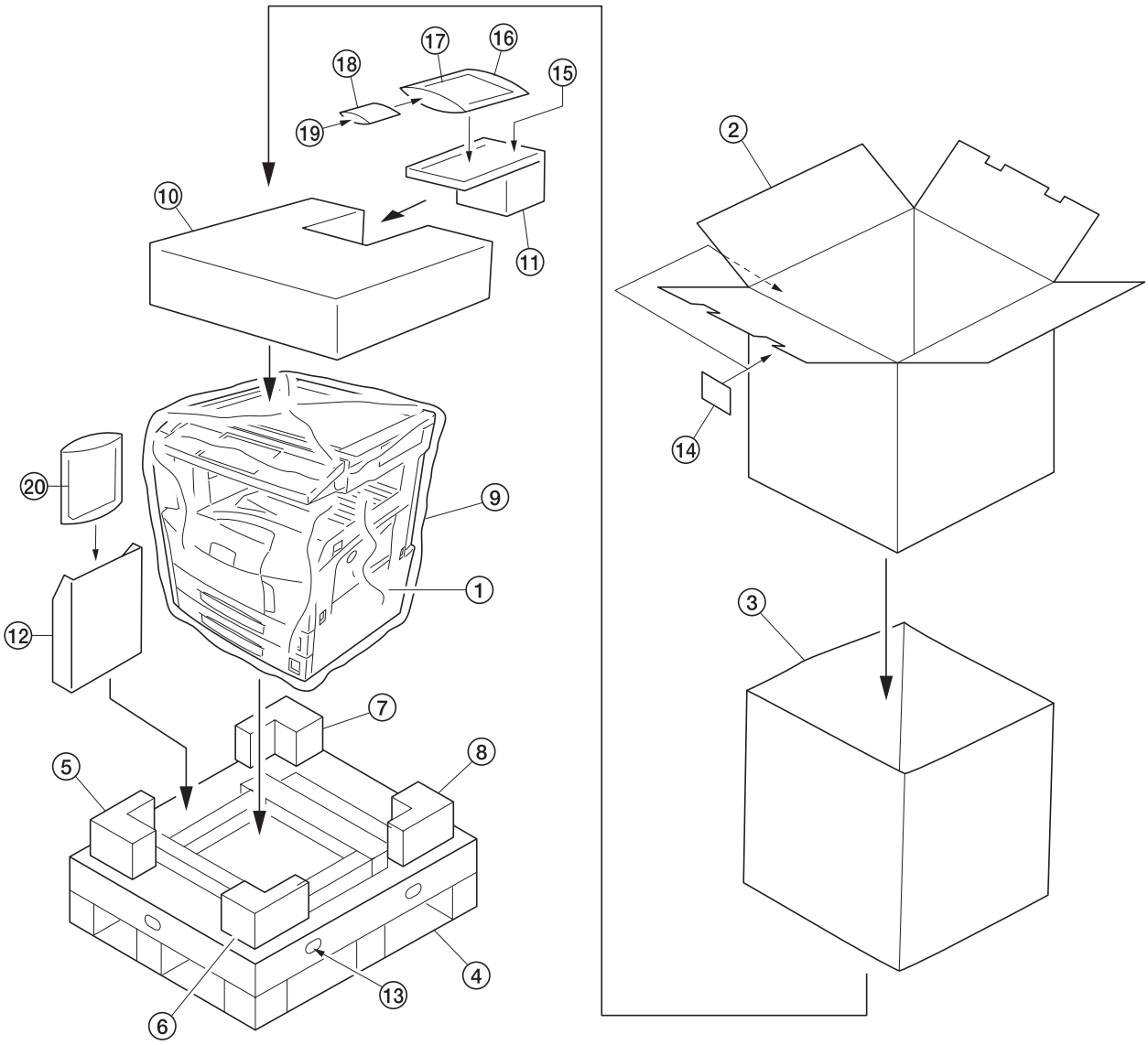


Figure 1-2-3 Unpacking

1. Machine
2. Outer case
3. Inner frame
4. Skid
5. Bottom front left pad
6. Bottom front right pad
7. Bottom rear left pad
8. Bottom rear right pad
9. Machine cover
10. Upper pad
11. Spacer
12. Document tray
13. Hinge joints
14. Bar code labels
15. Power cord
16. Plastic bag
17. Leaflet
18. Plastic bag
19. M3 x 8 screws
20. Operation guide

Caution: Place the machine on a level surface.

Remove the tapes, spacers and pad.

1. Remove two tapes.
2. Pull the lever and operation section is lowered.
3. Remove two spacers.
   Remove waste textile on the operation panel, if any.
4. Remove the pad.
5. Remove the tape holding the power cord.

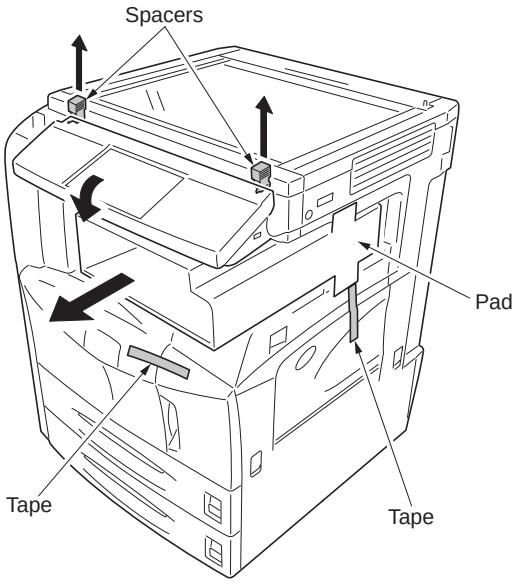


Figure 1-2-4

Install the optional paper feeder.

1. Install the optional paper feeder as necessary
2. Verify levelness at the four corners of the platen using a level gauge, and adjust the level bolts at the bottom of the machine to optimize levelness.

Release the lever holding mirror 1 and 2 frames.

1. Turn the lever of the machine rear side with the tool to release the lever holding the mirror 1 and 2 frames.

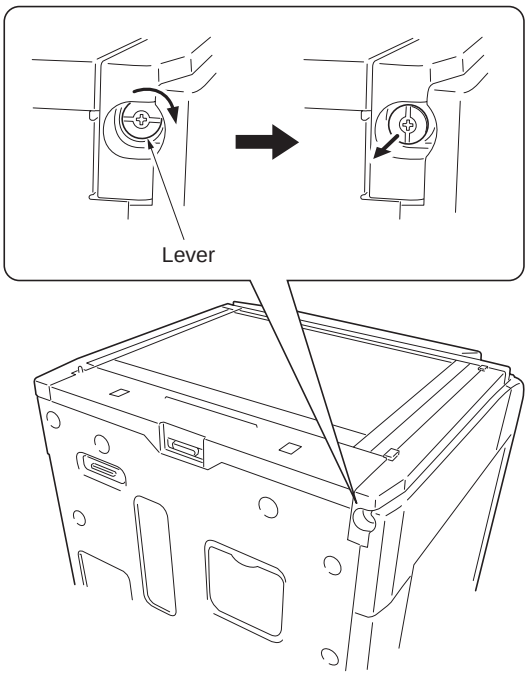


Figure 1-2-5

Release of cassette lift plate.

1. Pull cassette 1 and 2 out.
   Remove the lift plate stopper from each cassette and attach it to the storage location.
   When moving the machine, attach the lift plate in original position.

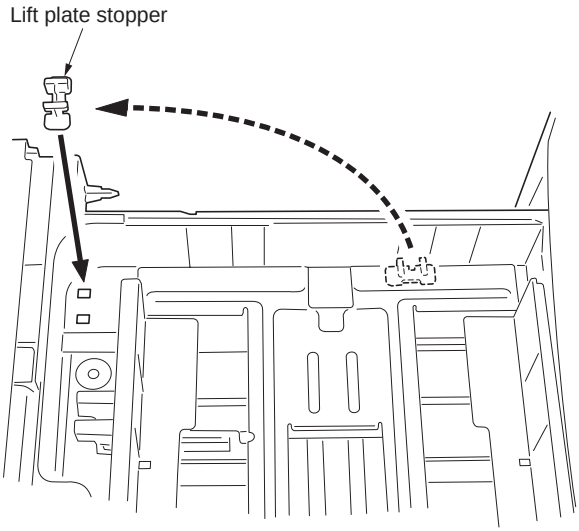


Figure 1-2-6

Load paper.

1. Pull the cassette out.
2. Holding the paper width adjusting tab both ends, move the paper width guides to fit the paper.

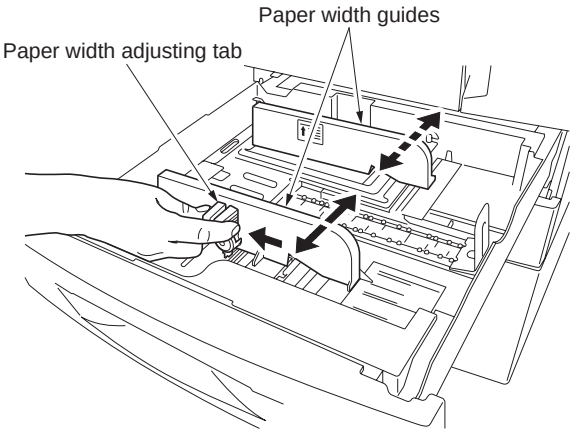


Figure 1-2-7

3. Adjust the length adjustment plate to fit the paper size.

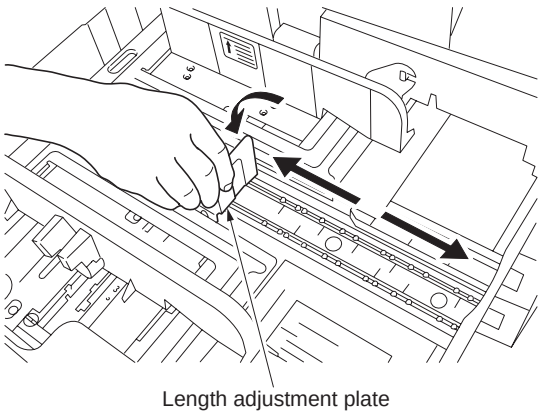


Figure 1-2-8

4. Align the paper flush against the left side of the cassette.

Figure 1-2-9

Install the toner container.

1. Open the front cover.
2. Tap the top of the toner container five to six times.

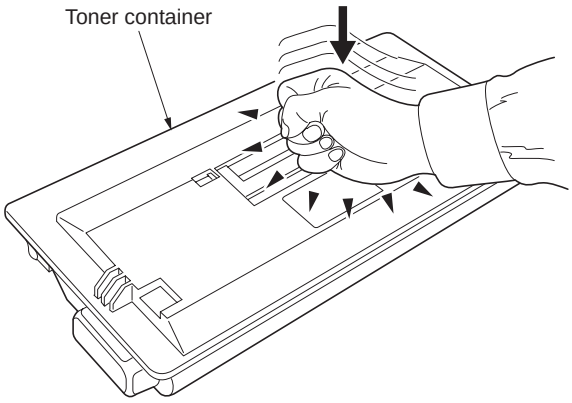


Figure 1-2-10

3. Shake the toner container approximately 10 times in the horizontal direction to stir toner.

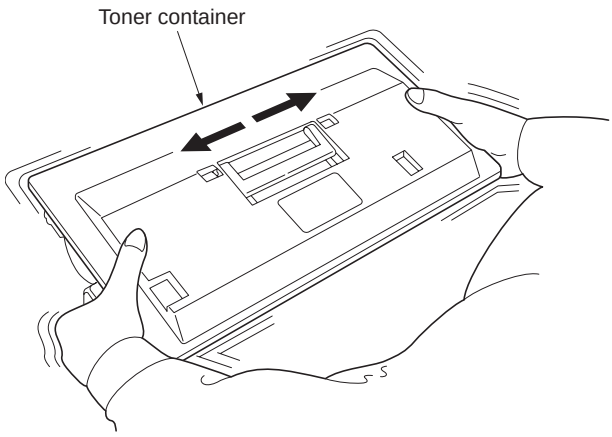


Figure 1-2-11

4. Gently push the toner container into the machine along the rails.
   Push the container all the way into the machine until it locks in place.

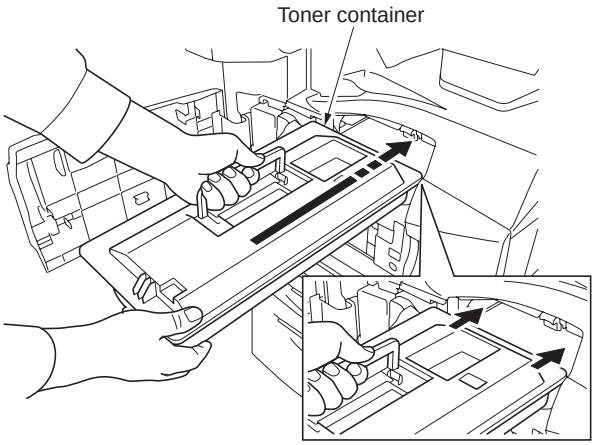


Figure 1-2-12

Install the waste toner box.

1. Install the waste toner box in the machine.
2. Close the front cover.

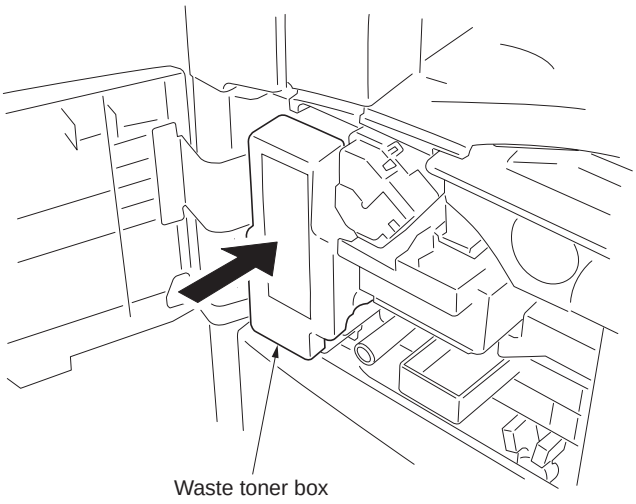


Figure 1-2-13

Install the optional original cover or the DP.

1. Install the optional original cover or DP.

Install other optional devices.

1. Install the optional devices (job separator, built-in finisher, document finisher and/or fax kit etc.) as necessary.

Connect the power cord.

1. Connect the power cord to the connector on the machine.
2. Insert the power plug into the wall outlet.

Install the fixing brackets.

1. Remove two screws from the rear cover.
2. Hook the catch of fixing bracket onto the groove of round frame, and secure it using two screws removed before step.

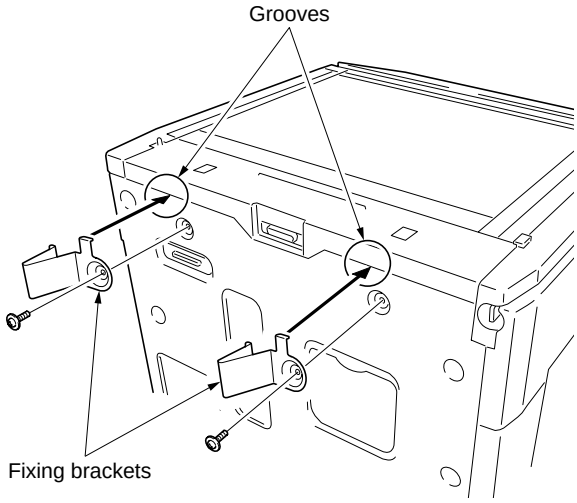


Figure 1-2-14

Carry out initial developer setting (maintenance item U130).

1. Turn the main power switch on and press the status key.
2. Enter the maintenance mode by entering 10871087 using the numeric keys.
3. Enter 130 using the numeric keys and press the start key.
4. Press the start key to execute the maintenance item. The drive stops within approximately 5 minutes.
5. Press the stop key.

Output an own-status report (maintenance item U000).

1. Enter 000 using the numeric keys and press the start key.
2. Select MAINTENANCE and press the start key to output a list of the current settings of the maintenance items.
3. Press the stop key.

Exit maintenance mode.

1. Enter 001 using the numeric keys and press the start key. The machine exits the maintenance mode.

Print out the user setting list.

1. Select [Report Print] to output the user various setting reports.

Make test copies.

1. Place an original and make test copies.

Attaching the language label (230 V specifications only).

1. According to need, attach the correspond language label.

Completion of the machine installation.

(2) Setting initial copy modes

Factory settings are as follows:

Maintenance item No.	Contents	Factory setting
U253	Switching between double and single counts	Double count
U260	Selecting the timing for copy counting	After ejection
U285	Setting service status page	ON
U326	Setting the black line cleaning indication	ON
U328	Side ejection setting	OFF
U342	Setting the ejection restriction	ON
U343	Switching between duplex/simplex copy mode	OFF

1-2-3 Installing the key counter (option)

Key counter installation requires the following parts:
Key counter (P/N 82142540)
Key counter set (P/N 302A369705)

Supplied parts of key counter set:
Key counter cover (P/N 2A360010)
Key counter retainer (P/N 66060030)
Key counter cover retainer (P/N 66060022)
Key counter mount (P/N 66060040)
Key counter socket assembly (P/N 41529210)
Two (2) M3 x 6 bronze flat-head screws (P/N B2303060)
One (1) M4 x 30 tap-tight S screw (P/N B1B54300)
Four (4) M4 x 6 bronze TP screws (P/N B4304060)
Two (2) M4 x 10 bronze TP screws (P/N B4304100)
One (1) M3 x 8 bronze binding screw (P/N B1303080)
One (1) M4 x 6 chrome TP screw (P/N B4104060)
One (1) M4 x 20 tap-tight S screw (P/N 7BB100420H)
One (1) M3 bronze nut (P/N C2303000)
Two (2) M4 x 10 tap-tight screws (P/N B3024100)
Two (2) M4 x 10 tap-tight P screws (P/N B8014100)

Procedure

1. Press the Power key on the operation panel to off. Make sure that the Power indicator and the Memory indicator are off before turning off the main power switch. And then unplug the power cable from the wall outlet.
2. Fit the key counter socket assembly to the key counter retainer using the two screws and nut.
3. Fit the key counter mount to the key counter cover using the two screws, and attach the key counter retainer to the mount using the two screws.

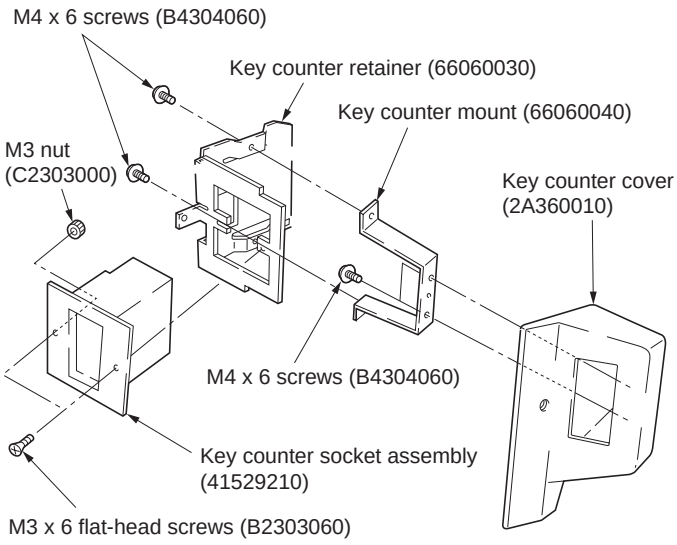


Figure 1-2-15

4. Remove the scanner right cover and the upper right cover.
5. Cut out the aperture plate on the upper right cover using nippers.
6. Pass the connect inside the machine through the aperture and refit the upper right cover and scanner right cover.

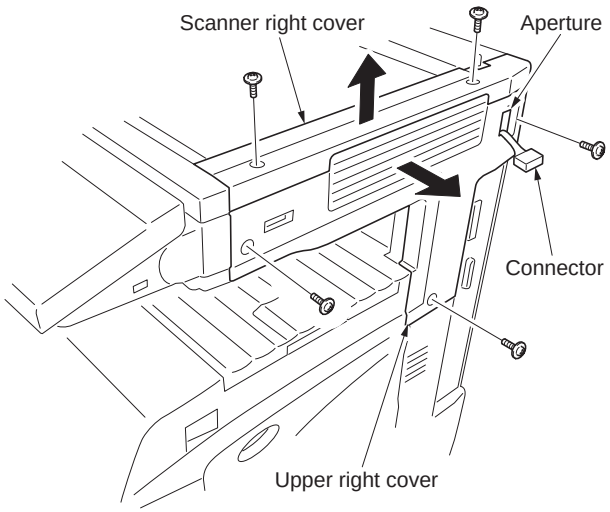


Figure 1-2-16

7. Pass the key counter signal cable through the aperture in the key counter cover retainer, and insert into the connector of the machine.
8. Seat the projection of the key counter cover retainer in the aperture in the upper right cover.
9. Fit the key counter cover with the key counter socket assembly inserted to the key counter cover retainer on the machine using the screw.
10. Insert the key counter into the key counter socket assembly.

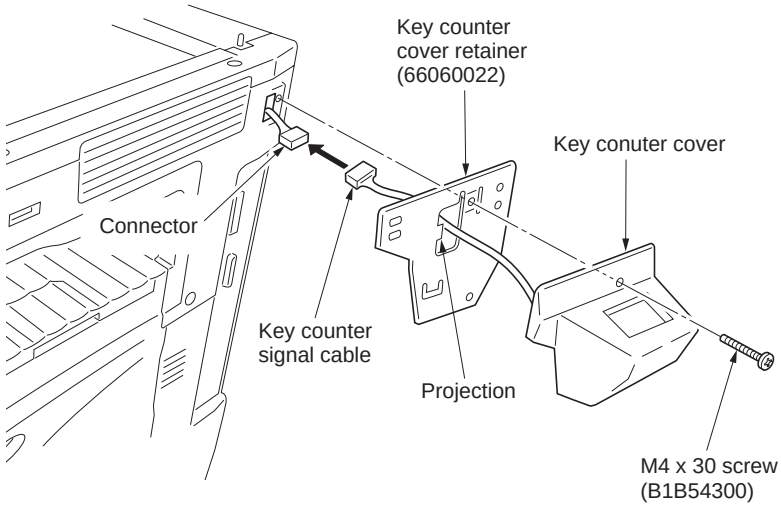


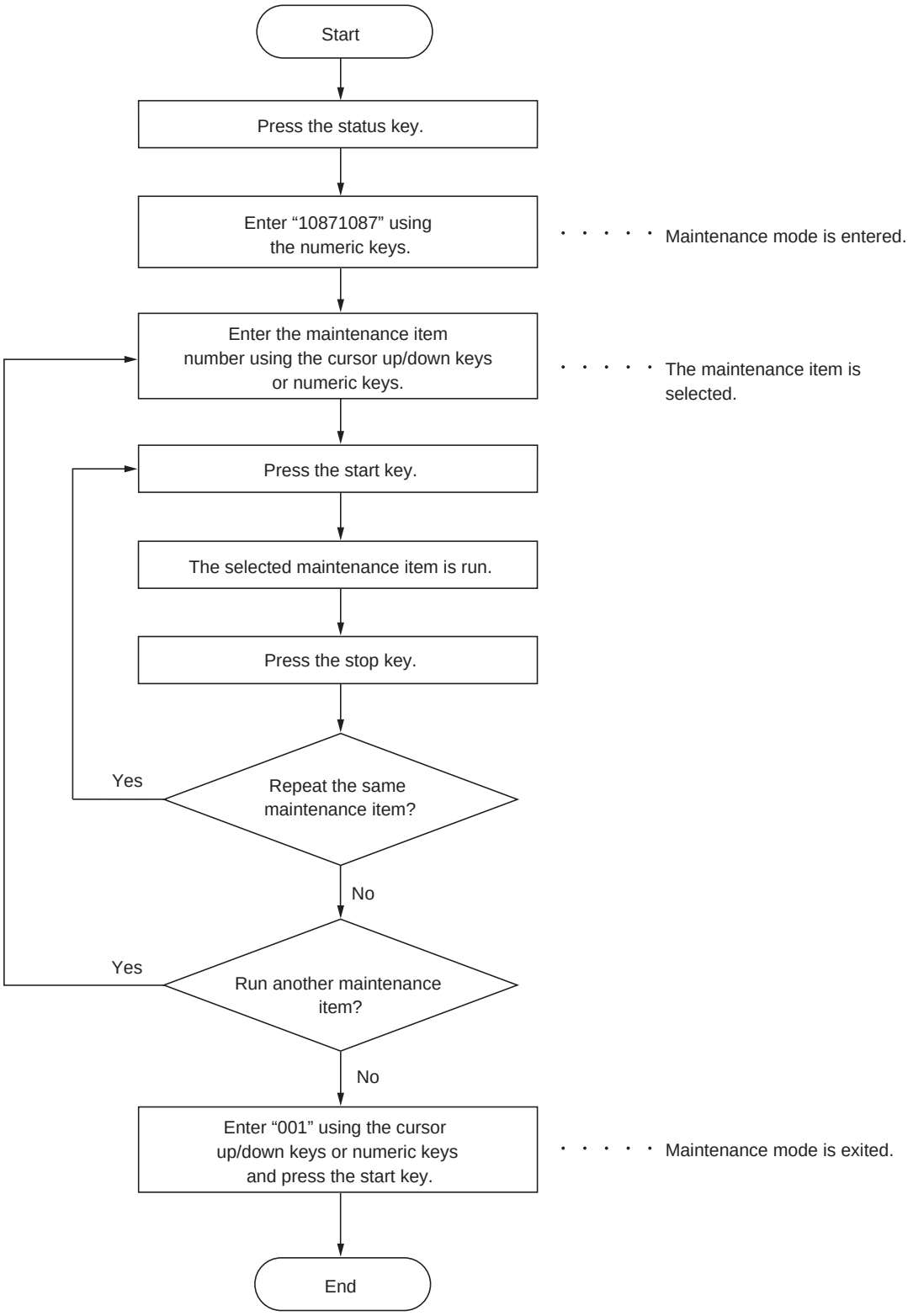
Figure 1-2-17

11. Turn the main power switch on and enter the maintenance mode.
12. Run maintenance item U204 and select ON.
13. Exit the maintenance mode.
14. Check that the message requesting the key counter to be inserted is displayed on the touch panel when the key counter is pulled out.
15. Check that the counter counts up as prints are made.

1-3-1 Maintenance mode

The machine is equipped with a maintenance function which can be used to maintain and service the machine.

(1) Executing a maintenance item



(2) Maintenance modes item list

Section	Item No.	Content of maintenance item	Initial setting*
General	U000	Outputting an own-status report	-
	U001	Exiting the maintenance mode	-
	U002	Setting the factory default data	-
	U003	Setting the service telephone number	**********[*1]
	U004	Displaying the machine number	-
	U005	Copying without paper	-
	U019	Displaying the ROM version	-
Initialization	U020	Initializing all data	-
	U021	Initializing counters and mode settings	-
	U022	Initializing backup memory	-
	U024	HDD formatting	-
Drive, paper feed, paper conveying and cooling system	U030	Checking motor operation	-
	U031	Checking switches for paper conveying	-
	U032	Checking clutch operation	-
	U033	Checking solenoid operation	-
	U034	Adjusting the print start timing Adjusting the leading edge registration Adjusting the center line	 245/0/-30/-30[*1] 490/0/0/0/0/0/0[*1]
	U035	Setting the printing area for folio paper Length/Width	 330/210[*1]
	U051	Adjusting the amount of slack in the paper	0/0/0/0[*1]
	U053	Setting the adjustment of the motor speed Drive motor Eject motor Polygon motor	 2[*1] 0[*1] -5[*1]
Optical	U061	Turning the exposure lamp on	-
	U063	Adjusting the shading position	0[*1]
	U065	Adjusting the scanner magnification Main scanning direction/auxiliary scanning direction	 0/0[*1]
	U066	Adjusting the scanner leading edge registration	0/0[*1]
	U067	Adjusting the scanner center line	0/0[*1]
	U068	Adjusting the scanning position for originals from the DP	0/0[*1]
	U070	Adjusting the DP magnification	0/0/0[*1]
	U071	Adjusting the DP scanning timing	0/0/0/0/0[*1]
	U072	Adjusting the DP center line	0/0/0[*1]
	U073	Checking scanner operation	-
	U074	Adjusting the DP input light luminosity	0/0/0[*1]
	U080	Setting the economy mode	-6[*1]
	U087	Setting DP reading position modification operation	175/170/160[*1]
	U089	Outputting a MIP-PG pattern	-
	U093	Setting the exposure density gradient Text and photo/text/photo	 0/0/0[*1]
	U099	Adjusting original size detection	105/105/105/60/60/60/[*1] 150/240[*1]

*Initial setting for executing U020, *1: The item initialized for executing U020, *2: The item initialized for executing U021

Section	Item No.	Content of maintenance item	Initial setting*
High voltage	U100	Setting the main high voltage	-
	U101	Setting the other high voltages Developing bias AC component frequency at image formation Developing shift bias potential at image formation Developing bias AC component duty at image formation Transfer control voltage Separation control voltage	 28*1 2*1 50*1 130*1 20*1
	U102	Setting the cleaning interval for the main charger	5*1,*2
	U109	Displaying the drum type	-
	U110	Checking the drum count	-
	U112	Setting toner refresh operation Time of toner refreshment Developing bias on time	 120*1 700 (30 ppm)*1 540 (40/50 ppm)*1
	U114	Setting separation charger mode	MODE1*1
	U117	Checking the drum number	-
	U118	Displaying the drum history	-
Developing	U130	Initial setting for the developing unit	-
	U144	Setting toner loading operation	MODE2*1
	U150	Checking sensors for toner	-
	U157	Checking/clearing the developing drive time	-
	U158	Checking the developing count	-
Fuser and cleaning	U161	Setting the fuser control temperature Driving start temperature when warm-up starts Control temperature for displaying [Ready for copying.] Control temperature during printing	 175 (30 ppm)*1,*2 185 (40/50 ppm)*1,*2 190 (30 ppm)*1,*2 200 (40/50 ppm)*1,*2 190 (30 ppm)*1,*2 200 (40/50 ppm)*1,*2
	U163	Resetting the fuser problem data	-
	U167	Checking fuser counts	-
	U196	Turning the fuser heater on	-
	U199	Checking the fuser temperature	-
Operation panel and support equipment	U200	Turning all LEDs on	-
	U201	Initializing the touch panel	-
	U202	Setting the KMAS host monitoring system	-
	U203	Checking DP operation	-
	U204	Setting the presence or absence of a key card or key counter	OFF/COUNTER*1,*2
	U206	Setting the presence or absence of the coin vender	-
	U207	Checking the operation panel keys	-
	U208	Setting the paper size for the paper feeder	Inch specifications: Letter*1,*2 Metric specifications: A4*1,*2
	U220	Setting the trial functions	-
	U234	Setting punch destination	Inch specifications: INCH*1 Metric specifications: EUROPE METRIC*1
	U236	Setting the limit for the ejection section of the built-in finisher	OFF*1,*2
	U237	Setting finisher stack quantity	0/0*1,*2
	U240	Checking the operation of the finisher	-
	U241	Checking the operation of the switches of the finisher	-

*Initial setting for executing U020, *1: The item initialized for executing U020, *2: The item initialized for executing U021

Section	Item No.	Content of maintenance item	Initial setting*
Operation panel and support equipment	U243	Checking the operation of the DP motors	-
	U244	Checking the DP switches	-
	U245	Checking messages	-
	U246	Setting the finisher 3000-sheet document finisher Centerfold unit built-in finisher	 0/0/0/0/0/0*1 0/0/0/0/0/0/0/0*1 0/0/0*1
	U247	Setting the paper feed device	-
Mode setting	U250	Setting the maintenance cycle	400000 (30 ppm)*1,*2 500000 (40/50 ppm)*1,*2
	U251	Checking/clearing the maintenance count	-
	U252	Setting the destination	-
	U253	Switching between double and single counts	Double count*1
	U260	Selecting the timing for copy counting	After ejection*1,*2
	U265	Setting OEM purchaser code	0*1
	U285	Setting service status page	ON*1
	U326	Setting the black line cleaning indication	ON/8*1,*2
	U328	Side ejection setting	OFF*1,*2
	U332	Setting the size conversion factor	1.0*1,*2
	U341	Specific paper feed location setting for printing function	-
	U342	Setting the ejection restriction	ON*1,*2
	U343	Switching between duplex/simplex copy mode	OFF*1,*2
	U345	Setting the value for maintenance due indication	-
Image processing	U402	Adjusting margins of image printing	74/70/68/85/140/55*1
	U403	Adjusting margins for scanning an original on the platen	2.0/2.0/2.0/2.0*1
	U404	Adjusting margins for scanning an original from the DP	3.0/2.5/3.0/4.0*1 3.0/2.5/3.0/4.0*1
	U407	Adjusting the leading edge registration for memory image printing	0*1
	U411	Adjusting the scanner automatically	-
	U425	Setting the target	-
Network scanner	U510	Setting the enterprise mode	Inch specifications: ON*1,*2 Metric specifications: OFF*1,*2
Others	U901	Checking/clearing copy counts by paper feed locations	-
	U902	Checking/clearing the punch-hole scrap counter	35000/0*1,*2
	U903	Checking/clearing the paper jam counts	-
	U904	Checking/clearing the service call counts	-
	U905	Checking/clearing counts by optional devices	-
	U906	Resetting partial operation control	-
	U908	Checking the total counter value	-
	U910	Clearing the black ratio data	-
	U911	Checking/clearing copy counts by paper sizes	-
	U920	Checking the copy counts	-
	U927	Clearing the all copy counts and machine life counts (one time only)	-
	U928	Checking machine life counts	-

*Initial setting for executing U020, *1: The item initialized for executing U020, *2: The item initialized for executing U021

Section	Item No.	Content of maintenance item	Initial setting*
Others	U933	Setting the backup kit	-
	U935	Relay board maintenance	-
	U942	Setting of amount of slack for feeding from DP	0/0*1
	U984	Checking the developing unit number	-
	U985	Displaying the developing unit history	-
	U989	HDD scandisk	-
	U990	Checking/clearing the time for the exposure lamp to light	-
	U991	Checking the scanner count	-
	U993	Outputting a VTC-PG pattern	-

*Initial setting for executing U020, *1: The item initialized for executing U020, *2: The item initialized for executing U021

(3) Contents of the maintenance mode items

Maintenance item No.	Description
U000	**Outputting an own-status report** **Description** Outputs lists of the current settings of the maintenance items, and paper jam and service call occurrences. Outputs the event log or service status page. **Purpose** To check the current setting of the maintenance items, or paper jam or service call occurrences. Before initializing or replacing the backup RAM, output a list of the current settings of the maintenance items to reenter the settings after initialization or replacement. **Method** 1. Press the start key. 2. Select the item to be output. 3. Press the start key. The interrupt print mode is entered and a list is output. When A4/Letter paper is available, a report of this size is output. If not, specify the paper feed location. When output is complete, the screen for selecting an item is displayed. **Event log**

Display	Output list
MAINTENANCE	List of the current settings of the maintenance modes
EVENT LOG	Outputs the event log
SERVICE STATUS	Outputs the service status page

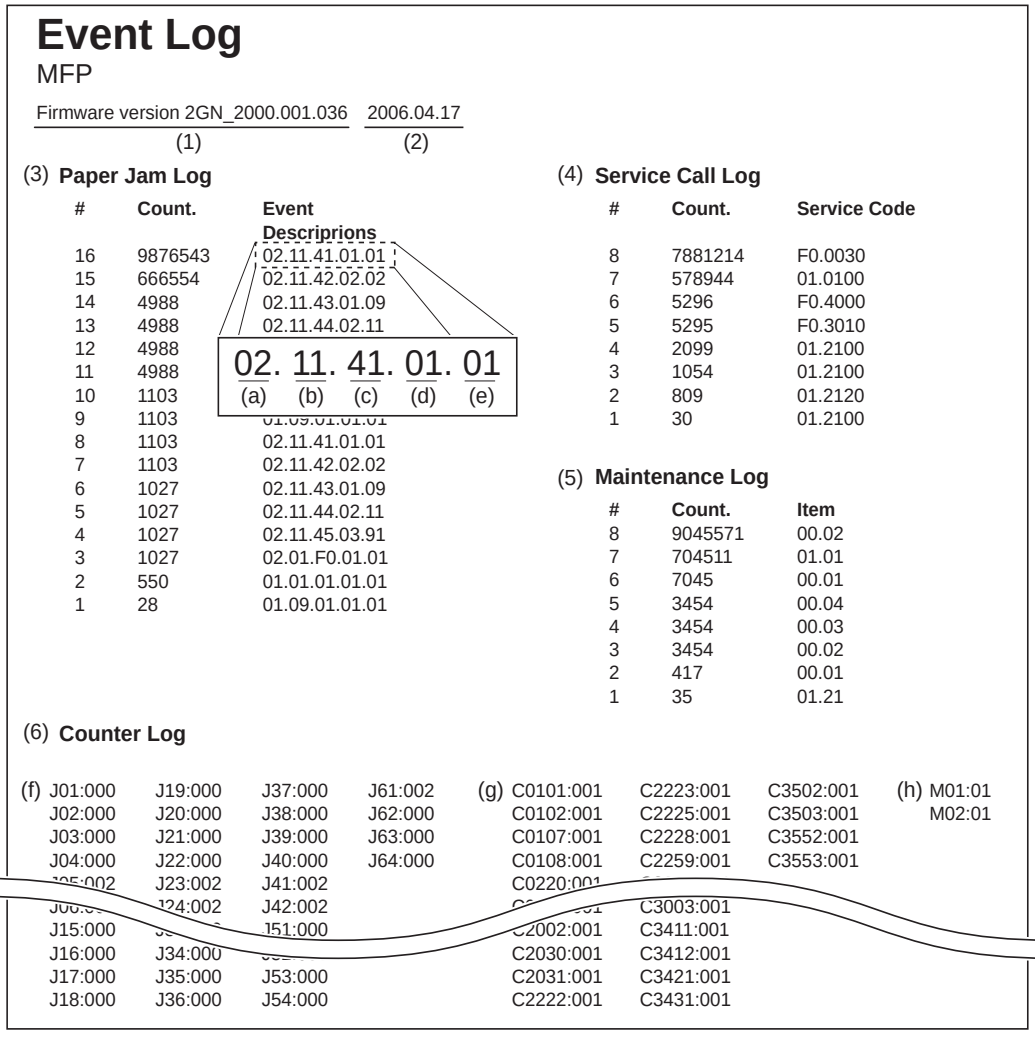


Figure 1-3-1

Maintenance item No.	Description
U000	**Detail of event log**

No.	Items	Description		
(1)	System version			
(2)	System date			
(3)	Paper Jam Log	#	Count.	Event
		Remembers 1 to 16 of occurrence. If the occurrence of the previous paper jam is less than 16, all of the paper jams are logged. When the occurrence excessed 16, the oldest occurrence is removed.	The total page count at the time of the paper jam.	Log code (2 digit, hexadecimal, 5 categories) (a) Cause of a paper jam (b) Paper source (c) Paper size (d) Paper type (e) Paper eject
(4)	Service Call Log	#	Count.	Service Code
		Remembers 1 to 8 of occurrence of self diagnostics error. If the occurrence of the previous diagnostics error is less than 8, all of the diagnostics errors are logged.	The total page count at the time of the self diagnostics error.	Self diagnostic error code (See page 1-4-22)
(5)	Maintenance Log	#	Count.	Item
		Remembers 1 to 8 of occurrence of replacement. If the occurrence of the previous replacement of toner container is less than 8, all of the occurrences of replacement are logged.	The total page count at the time of the replacement of the toner container.	Code of maintenance replacing item (1 byte, 2 categories) First byte (Replacing item) 01: Toner container 02: Maintenance kit Second byte (Type of replacing item) 00: (fixed)
(6)	Counter Log Comprised of three log counters including paper jams, self diagnostics errors, and replacement of the toner container.	(f) Jam	(g) Self diagnostic error	(h) Maintenance item replacing
		Indicates the log counter of paper jams depending on location. Refer to Paper Jam Log. All instances including those are not occurred are displayed.	Indicates the log counter of self diagnostics errors depending on cause. (See P.1-4-22) Example: C6000: 4 Self diagnostics error 6000 has happened four times.	Indicates the log counter depending on the maintenance item for maintenance. T: Toner container 00: Black M: Maintenance kit 00: (fixed) Example: T00: 1 The toner container has been replaced once.

Maintenance item No.	Description
U000	**Service status page (1)**

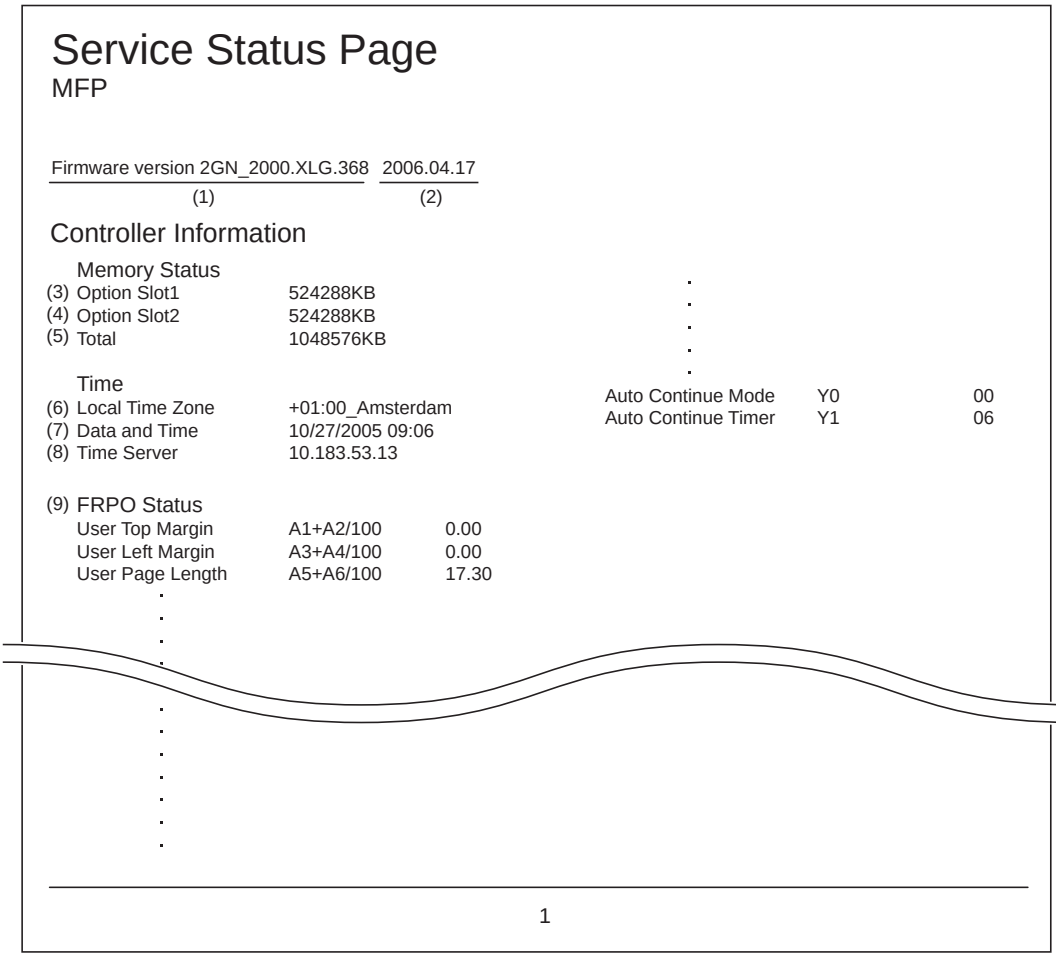


Figure 1-3-2

Detail of Service status page

No.	Description	Supplement
(1)	System version	
(2)	System date	
(3)	Slot 1 RAM size	
(4)	Slot 2 RAM size	
(5)	Total RAM size	
(6)	Local time zone	
(7)	Report output date	Day/Month/Year hour:minutes
(8)	NTP server name	
(9)	FRPO setting	

Maintenance item No.	Description
U000	**Service status page (2)**

Service Status Page

MFP

Firmware version 2GN_2000.XLG.368 2006.04.17

Engine Information

(10)	Engine ROM Version	2GW_1000.003.001
(11)	Front Panel ROM Version	2GW_A000.001.019
(12)	NVRAM Version	_Bb04B29_Bb04B29
(13)	Scanner Version	2GW_1200.001.088
(14)	FAX Slot1	
	FAX BOOT Version	3KH_5000.001.001
	FAX APL Version	3KH_5100.001.001
	FAX IPL Version	3KH_5200.001.001
(15)	Serial No.	AFZ3123456
(16)	MAC Address	00:C0:EE:D0:01:0D

Toner Coverage

(17)	Period (07/11/05 - 07/12/05 09:05)	
(18)	Usage Page (A4/Letter Conversion)	3043.50
(19)	Average (%)	
	Total	2.90
	Copy	3.56
	Printer	2.87
	FAX	3.52
(20)	Last Page (%)	2.80

Installed Options

(21)	Document Processor	Installed
(22)	Paper Feeder	Cassette
(23)	Finisher	3000-Finisher
	Mail Box	Not Installed
(24)	Job Separator	Installed
(25)	Memory Card	Not Installed
(26)	PDF Expansion Kit	Installed
(27)	Fax Backup Kit	Not Installed
(28)	Security Kit	Installed
(29)	Data Security Kit (C) Software	
(30)	Security Library Version 0.50	

Counter

(31)	Printed	
	Total Printed Pages	631
	Copier	11
	Printer	620
	FAX	0
(32)	Scanned	
	Total Scanned Pages	1
	Copier	0
	Other	1
(33)	Paper Size	
	A3	69
	A4	539
	A5	0
	A6	0
	B4	36
	B5	0
	Ledger	7
	Folio	0
	Legal	0
	Letter	0
	Statement	0
	Other	0

(34) FAX Infomation

Rings (Normal)	3
Rings (FAX/TEL)	3
Rings (TAD)	3
TX SPEED	V.29 9600bps
RX SPEED	9600bps
ECM TX	ON
ECM RX	OFF
V.34	TX
REG.G3 TX EQR	4db
REG.G3 RX EQR	0db
RX MODEM LEVEL	-43dBm
SGL LVL MODEM	-9dBm

(35) 1/1
(36) 500/530
(37) 0/0/0/0
(38) 97/0
(39) F00/U00
(40) 0A001300/F0A8EF98/000000000000/000000000000/020A1Bt/
(41) 1234/1234/0001234abcd567800001234abcd5678/01234567890123456789012345678901/08/00/07
(42) 0000000000/F80C001A37/302A183C00/000100013D/8791BFC305/0000003100/000F5D0000/01FD000000/
0000000FB7/0000000000/0000260000/0000000000/0000000000/0000008400/0000000000/011F000F51/
8F0F

2

Figure 1-3-3

Maintenance item No.	Description
U000	**Detail of Service status page**

No.	Description	Supplement
(10)	Engine ROM version	
(11)	Operation panel ROM version	
(12)	NV RAM version	_ Bb 04B29 _ Bb 04B29 (a) (b) (c) (d) (e) (f) (a) Consistency of the present software version and the database _ (underscore): OK * (Asterisk): NG (b) Database version (c) The oldest time stamp of database version (d) Consistency of the present software version and the ME firmware version _ (underscore): OK * (Asterisk): NG (e) ME firmware version (f) The oldest time stamp of the ME database version Normal if (a) and (d) are underscored, and (b) and (e) are identical with (c) and (f).
(13)	Scanner version	
(14)	Fax firmware version	This item is printed only when the optional fax kit is installed.
(15)	Serial No.	10 digits
(16)	Mac address	
(17)	Cleared date and output date	
(18)	Page of relation to the A4/Letter	
(19)	Average coverage	Total/Copy/Printer/Fax
(20)	Coverage on the final output page	
(21)	Presence or absence of the optional DP	Installed Not Installed
(22)	Presence or absence of the optional paper feeder	Cassette: paper feeder LCF: 3000-sheet paper feeder Not Installed
(23)	Presence or absence of the optional document finisher	Inner Finisher: built-in finisher 3000-Finisher: 3000-sheet document finisher 1000-Finisher: document finisher Not Installed
(24)	Presence or absence of the optional job separator	Installed Not Installed
(25)	Presence or absence of the Compact Flash	Installed Not Installed
(26)	Presence or absence of the optional PDF upgrade kit	Installed: The formal version is installed Not Installed: The PDF upgrade kit is not installed Trial Version(xx/xx/xx): A trial version is installed
(27)	Presence or absence of the optional data backup kit	Installed Not Installed
(28)	Presence or absence of the optional security kit	Installed Not Installed

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U000</td><td>
<table>
<tr><th>No.</th><th>Description</th><th>Supplement</th></tr>
<tr><td>(29)</td><td>Identification name for the security kit</td><td></td></tr>
<tr><td>(30)</td><td>Security kit version</td><td></td></tr>
<tr><td>(31)</td><td>Printed page counts</td><td>Total/Copy/Printer/Fax</td></tr>
<tr><td>(32)</td><td>Scanned page counts</td><td>Total/Copy/Other</td></tr>
<tr><td>(33)</td><td>Counts by paper sizes</td><td></td></tr>
<tr><td>(34)</td><td>Fax kit information</td><td>This item is printed only when the optional fax kit is installed.</td></tr>
<tr><td>(35)</td><td>Destination information/Area information</td><td></td></tr>
<tr><td>(36)</td><td>Printable area setting</td><td></td></tr>
<tr><td>(37)</td><td>Offset for each bin</td><td>MP tray (top)/MP tray (left)/Cassette 2 (top)/Cassette 2 (left)</td></tr>
<tr><td>(38)</td><td>Margin setting</td><td>System (top)/System (left)</td></tr>
<tr><td>(39)</td><td>Panel lock information/USB information</td><td>Panel lock
0: OFF/1: Partial lock/2: Full lock
USB
0: Not installed/1: Full speed/2: Hi speed</td></tr>
<tr><td>(40)</td><td>Engine information</td><td></td></tr>
<tr><td>(41)</td><td>RFID information</td><td></td></tr>
<tr><td>(42)</td><td>Maintenance information</td><td></td></tr>
</table>
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U001</td><td>Exiting the maintenance mode
Description
Exits the maintenance mode and returns to the normal copy mode.
Purpose
To exit the maintenance mode.
Method
Press the start key. The normal copy mode is entered.</td></tr>
<tr><td>U002</td><td>Setting the factory default data
Description
Restores the machine conditions to the factory default settings.
Purpose
To move the mirror frame of the scanner to the position for transport (position in which the frame can be fixed).
Method
1. Press the start key.
2. Press [MODE1(ALL)] on the touch panel.
3. Press the start key.
The mirror frame of the scanner returns to the position for transport.
4. Turn the main power switch off and on.

An error code is displayed in case of an intialization error. Refer to the table of the error codes on P.1-3-14. When ERROR 09 occurred, turn main power switch off then on, format the hard disk using maintenance item U024, and execute initialization using maintenance item U002. For other errors occurred, turn main power switch off then on, and execute initialization using maintenance item U002.</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U003</td><td>
Setting the service telephone number
Description
Sets the telephone number to be displayed when a service call code is detected.
Purpose
To set the telephone number to call service when installing the machine.
Method
Press the start key. The currently set telephone number is displayed.
Setting
1. Press the start key.
The keys to enter the number are displayed on the touch panel.
2. Press [TEL NO.] on the touch panel.
3. Enter a telephone number (up to 15 digits).
4. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U004</td><td>
Displaying the machine number
Description
Displays the machine number.
Purpose
To check the machine number.
Method
Press the start key. The currently machine number is displayed.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U005</td><td>
Copying without paper
Description
Simulates the copy operation without paper feed.
Purpose
To check the overall operation of the machine.
Method
1. Press the start key.
2. Select the item to be operated.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>MFP</td><td>Only the machine operates.</td></tr>
<tr><td>MFP + DP</td><td>Both the machine and DP operate (continuous operation).</td></tr>
</table>
3. Press the start key.
4. Press the system menu key. The copy mode screen is displayed.
5. Set the operation conditions required on the copy mode screen. Changes in the following settings can be made.
Paper feed locations
Magnifications
Simplex or duplex copy mode
Number of copies: in simplex copy mode, continuous copying is performed when set to 999; in duplex copy mode, continuous copying is performed regardless of the setting.
Copy density
Keys on the operation panel
6. To control the paper feed pulley, remove all the paper in the drawers, or the drawers. With the paper present, the paper feed pulley does not operate.
7. Press the start key. The operation starts.
Copy operation is simulated without paper under the set conditions.
To stop continuous operation, press the stop key.
8. To return to the screen for selecting an item, press the system menu key.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U019	**Displaying the ROM version** **Description** Displays the part number of the ROM fitted to each PWB. **Purpose** To check the part number or to decide, if the newest version of ROM is installed. **Method** 1. Press the start key. The ROM version are displayed. 2. Change the screen using the cursor up/down keys

Display	Description
MAIN	Main PWB ROM IC
MMI	Operation PWB ROM IC
ENGINE	Engine PWB ROM IC
ENGINE BOOT	Engine PWB booting
SCANNER	Scanner PWB ROM IC
OPTION LANGUAGE	Optional language ROM IC
DICTIONARY	-
DP	Optional DP main PWB ROM IC
LCF	Optional 3000-sheet paper feeder main PWB ROM IC
OPTION CASSETTE	Optional paper feeder main PWB ROM IC
DF MAIN	Optional 3000-sheet document finisher main PWB ROM IC
DF MTRAY	Optional 3000-sheet document finisher internal tray PWB ROM IC
DF SADDLE	Optional centerfold main PWB ROM IC
DF MAILBOX	Optional mail box main PWB ROM IC
INNER DF	Optional built-in finisher main PWB ROM IC
SIMPLE DF MAIN	Optional document sheet finisher main PWB ROM IC
FAX BOOT1	Optional fax control PWB booting
FAX APL1	Optional fax control PWB APL
FAX IPL1	Optional fax control PWB IPL
FAX BOOT2	-
FAX APL2	-
FAX IPL2	-

Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U020	**Initializing all data** **Description** Initializes all the backup RAM on the main PWB to return to the original settings. Refer to *1 of the maintenance mode item list about the item initialized. **Purpose** To be executed as required. **Method** 1. Press the start key. 2. Select the destination. 3. Press the start key. All data in the backup RAM is initialized 4. Turn the main power switch off and on. An error code is displayed in case of an intialization error. When ERROR 09 occurred, turn main power switch off then on, format the hard disk using maintenance item U024, and execute initialization using maintenance item U020. For other errors occurred, turn main power switch off then on, and execute initialization using maintenance item U020. **Error codes**

Display	Description
INCH	Inch (North America) specifications
EUROPE METRIC	Metric (Europe) specifications
ASIA PACIFIC	Metric (Asia Pacific) specifications

Codes	Description
ERROR 01	Configuration initialization error
ERROR 02	Counter initialization error
ERROR 03	One-touch initialization error
ERROR 04	Panel program initialization error
ERROR 05	Event log initialization error
ERROR 06	Account initialization error
ERROR 07	Address book initialization error
ERROR 08	Department initialization error
ERROR 09	Document box initialization error
ERROR 0a	Permissibility initialization error
ERROR 0b	Job log initialization error
ERROR 20	Engine initialization error
ERROR 40	Scanner initialization error

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U021</td><td>
Initializing counters and mode settings
Description
Initializes all settings, except those pertinent to the type of copier, namely each counter, service call history and mode setting. Also initializes backup RAM according to region specification selected in maintenance item U252 Setting the destination.
Refer to *2 of the maintenance mode item list about the item initialized.
Purpose
To return the machine settings to their factory default.
Method
1. Press the start key.
2. Press [EXECUTE] on the touch panel.
3. Press the start key. All data other than that for adjustments due to variations between machines is initialized based on the destination setting.
4. Turn the main power switch off and on.

An error code is displayed in case of an intialization error. Refer to the table of the error codes on P.1-3-14. When ERROR 09 occurred, turn main power switch off then on, format the hard disk using maintenance item U024, and execute initialization using maintenance item U021. For other errors occurred, turn main power switch off then on, and execute initialization using maintenance item U021.
</td></tr>
<tr><td>U022</td><td>
Initializing backup memory
Description
Initializes only the backup data for image processing.
Purpose
To be executed as required.
Method
1. Press the start key.
2. Select the item to initialize.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MAIN+ENGINE</td><td>Initialize the backup data of main PWB and engine PWB.</td></tr>
<tr><td>SCANNER</td><td>Initialize the backup data of scanner PWB.</td></tr>
<tr><td>DP</td><td>Initialize the backup data of DP main PWB.</td></tr>
</table>
3. Select the destination.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>INCH</td><td>Inch (North America) specifications</td></tr>
<tr><td>EUROPE METRIC</td><td>Metric (Europe) specifications</td></tr>
<tr><td>ASIA PACIFIC</td><td>Metric (Asia Pacific) specifications</td></tr>
</table>
4. Press the start key. All data in the backup RAM is initialized.
5. Turn the main power switch off and on.

An error code is displayed in case of an intialization error. Refer to the table of the error codes on P.1-3-14. When ERROR 09 occurred, turn main power switch off then on, format the hard disk using maintenance item U024, and execute initialization using maintenance item U022. For other errors occurred, turn main power switch off then on, and execute initialization using maintenance item U022.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U024</td><td>
HDD formatting
Description
Formats the HDD backup data areas for the document management, network scanner and department administration.
Purpose
To initialize the HDD when replacing the HDD after shipping.
Method
1. Press the start key.
2. Press [EXECUTE] on the touch panel.
3. Press the start key to initialize the hard disk.
4. Turn the main power switch off and on.
</td></tr>
<tr><td>U030</td><td>
Checking motor operation
Description
Drives each motor.
Purpose
To check the operation of each motor.
Method
1. Press the start key.
2. Select the motor to be operated.
3. Press the start key. The operation starts.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>FEED</td><td>Paper feed motor operates</td></tr>
<tr><td>MAIN</td><td>Drive motor operates</td></tr>
<tr><td>EJECT(FW)</td><td>Eject motor rotates forward</td></tr>
<tr><td>EJECT(REV)</td><td>Eject motor rotates in reverse</td></tr>
</table>
4. To stop operation, press the stop key.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U031</td><td>
Checking switches for paper conveying
Description
Displays the on-off status of each paper detection switch on the paper path.
Purpose
To check if the switches for paper conveying operate correctly.
Method
1. Press the start key.
2. Turn each switch on and off manually to check the status.
When a switch is detected to be in the ON position, the display for that switch will be highlighted.
<table>
<tr><th>Display</th><th>Switches</th></tr>
<tr><td>FEED1</td><td>Feed switch 1 (FSW1)</td></tr>
<tr><td>FEED2</td><td>Feed switch 2 (FSW2)</td></tr>
<tr><td>FEED3</td><td>Feed switch 3 (FSW3)</td></tr>
<tr><td>MP TRAY</td><td>MP feed switch (MPFSW)</td></tr>
<tr><td>REGIST</td><td>Registration switch (RSW)</td></tr>
<tr><td>EJECT</td><td>Eject switch (ESW)</td></tr>
<tr><td>BRANCH</td><td>Feedshift switch (FSSW)</td></tr>
<tr><td>DUPLEX</td><td>Duplex paper conveying switch (DUPPCSW)</td></tr>
<tr><td>JOB SEPARATOR</td><td>Job separator eject switch (JBESW)*</td></tr>
</table>
*: Optional.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U032</td><td>
Checking clutch operation
Description
Turns each clutch on.
Purpose
To check the operation of each clutch.
Method
1. Press the start key.
2. Select the clutch to be operated.
3. Press the start key. The clutch turns on for 1 s.
<table>
<tr><th>Display</th><th>Clutches</th></tr>
<tr><td>PF1</td><td>Upper paper feed clutch (PFCL-U)</td></tr>
<tr><td>PF2</td><td>Lower paper feed clutch (PFCL-L)</td></tr>
<tr><td>PF MP TRAY</td><td>MP paper feed clutch (MPPFCL)</td></tr>
<tr><td>FEED1</td><td>Feed clutch 1 (FCL1)</td></tr>
<tr><td>FEED2</td><td>Feed clutch 2 (FCL2)</td></tr>
<tr><td>FEED3</td><td>Feed clutch 3 (FCL3)</td></tr>
<tr><td>FEED MP TRAY</td><td>MP feed clutch (MPFCL)</td></tr>
<tr><td>REGIST</td><td>Registration clutch (RCL)</td></tr>
<tr><td>DUPLEX</td><td>Duplex feed clutch (DUPFCL)</td></tr>
<tr><td>MOTOR ON</td><td>The drive motor (DM) and the paper feed motor (PFM) are turned ON.</td></tr>
</table>
To stop motor driving, press [MOTOR ON] again.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U033</td><td>
Checking solenoid operation
Description
Applies current to each solenoid in order to check its ON status.
Purpose
To check the operation of each solenoid.
Method
1. Press the start key.
2. Select the solenoid to be operated.
3. Press the start key. The solenoid turns on for 1 s.
<table>
<tr><th>Display</th><th>Solenoids</th></tr>
<tr><td>TONER</td><td>Toner feed solenoid (TNFSOL)</td></tr>
<tr><td>BRANCH1</td><td>Feedshift solenoid (FSSOL)</td></tr>
<tr><td>BRANCH2</td><td>Feedshift solenoid (FSSOL)*</td></tr>
<tr><td>MOTOR ON</td><td>The drive motor (DM) and the paper feed motor (PFM) are turned on.</td></tr>
</table>
*Optional.
To stop motor driving, press [MOTOR ON] again.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U034	**Adjusting the print start timing** **Description** Adjusts the leading edge registration or center line. **Purpose** Make the adjustment if there is a regular error between the leading edges of the copy image and original. Make the adjustment if there is a regular error between the center lines of the copy image and original. **Method** 1. Press the start key. 2. Select the item to be adjusted. The setting screen for the selected item is displayed.

Display	Description
LSU OUT TOP	Leading edge registration adjustment
LSU OUT LEFT	Center line adjustment

Adjustment: leading edge registration adjustment

1. Select the item to be adjusted.

Display	Description	Setting range	Initial setting	Change in value per step
TOP	Adjustment of reference value	0 to 500	245	1.0 mm
MP TRAY	Paper feed from MP tray*	-250 to 250	0	1.0 mm
CASSETTE	Paper feed from cassette*	-250 to 250	-30	1.0 mm
DUPLEX	Duplex mode (second)*	-250 to 250	-30	1.0 mm

*: Setting the difference value from reference value

2. Press the system menu key.
3. Press the start key to output a test pattern.
4. Press the system menu key.
5. Change the setting value using the +/- or numeric keys.
   For output example 1, decrease the value. For output example 2, increase the value.

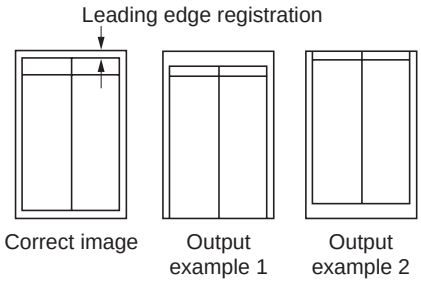
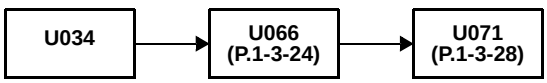


Figure 1-3-4

6. Press the start key. The value is set.

Caution

Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.



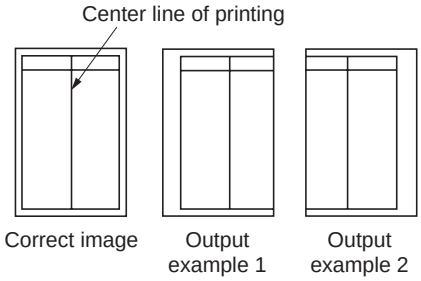
<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U034</td><td>
Adjustment: center line adjustment
1. Select the item to be adjusted.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr>
<tr><td>LEFT</td><td>Adjustment of reference value</td><td>0 to 1000</td><td>490</td><td>1.0 mm</td></tr>
<tr><td>MP TRAY</td><td>Paper feed from MP tray*</td><td>-500 to 500</td><td>0</td><td>1.0 mm</td></tr>
<tr><td>CASSETTE 1</td><td>Paper feed from cassette 1*</td><td>-500 to 500</td><td>0</td><td>1.0 mm</td></tr>
<tr><td>CASSETTE 2</td><td>Paper feed from cassette 2*</td><td>-500 to 500</td><td>0</td><td>1.0 mm</td></tr>
<tr><td>CASSETTE 3</td><td>Paper feed from optional cassette 3*</td><td>-500 to 500</td><td>0</td><td>1.0 mm</td></tr>
<tr><td>CASSETTE 4</td><td>Paper feed from optional cassette 4*</td><td>-500 to 500</td><td>0</td><td>1.0 mm</td></tr>
<tr><td>DUPLEX</td><td>Duplex mode (second)*</td><td>-500 to 500</td><td>0</td><td>1.0 mm</td></tr>
</table>
*: Setting the difference value from reference value
2. Press the system menu key.
3. Press the start key to output a test pattern.
4. Press the system menu key.
5. Change the setting value using the +/- or numeric keys.
For output example 1, decrease the value. For output example 2, increase the value.


Figure 1-3-5
6. Press the start key. The value is set.
Caution
Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.
U034 → U067 (P.1-3-25) → U072 (P.1-3-30)
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U035</td><td>
Setting the printing area for folio paper
Description
Changes the printing area for copying on folio paper.
Purpose
To prevent cropped images on the trailing edge or left/right side of copy paper by setting the actual printing area for folio paper.
Setting
1. Press the start key.
2. Select the item to be set.
3. Change the setting using the +/- keys.
<table>
<tr><th>Display</th><th>Setting</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>LENGTH DATA</td><td>Length</td><td>330 to 356 mm</td><td>330</td></tr>
<tr><td>WIDTH DATA</td><td>Width</td><td>200 to 220 mm</td><td>210</td></tr>
</table>
4. Press the start key. The value is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U051	**Adjusting the amount of slack in the paper** **Description** Adjusts the amount of slack in the paper **Purpose** Make the adjustment if the leading edge of the copy image is missing or varies randomly, or if the copy paper is Z-folded. **Adjustment** 1. Press the start key. 2. Select the item to be adjusted.

Display	Description	Setting range	Initial setting
MP TRAY	Paper feed from MP tray	-30 to 20	0
CASSETTE	Paper feed from cassette	-30 to 20	0
DUPLEX	Duplex mode (second)	-30 to 20	0
MP TRAY (THICK)	Paper feed from MP tray (thick paper)	-30 to 20	0

3. Press the system menu key.
4. Place an original and press the start key to make a test copy.
5. Press the system menu key.
6. Change the setting value using the +/- or numeric keys.
   For output example 1, increase the value. For output example 2, decrease the value.
   The greater the value, the larger the amount of slack; the smaller the value, the smaller the amount of slack.

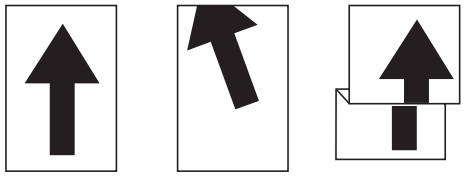


Figure 1-3-6

7. Press the start key. The value is set.

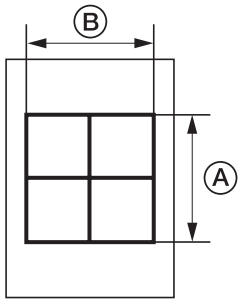
Completion
Press the stop key. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U053	**Setting the adjustment of the motor speed** **Description** Performs fine adjustment of the speeds of the motors. **Purpose** To adjust the speed of the respective motors when the magnification is not correct. **Method** 1. Press the start key. 2. Select the item to be adjusted.

Display	Description	Setting range	Initial setting
MAIN MOTOR	Drive motor speed adjustment	-40 to 40	2
EJECT MOTOR	Eject motor speed adjustment	-7 to 15	0
POLYGON MOTR	Polygon motor speed adjustment	-20 to 20	-5

Adjustment

1. Press the system menu key.
2. Press the start key to output an A3/Ledger VTC pattern.



Correct values for an A3/Ledger output are:
A = 300 ± 0.75mm
B = 270 ± 1.35 mm

Figure 1-3-7

3. Press the system menu key.
4. Change the setting value using the +/- or numeric keys.
   A: Drive motor speed adjustment
   Increasing the setting makes the image longer in the auxiliary scanning direction, and decreasing it makes the image shorter in the auxiliary scanning direction.
   B: Polygon motor speed adjustment
   Increasing the setting makes the image shorter in the main scanning direction and longer in the auxiliary scanning direction; decreasing the setting makes the image longer in the main scanning direction and shorter in the auxiliary scanning direction.
5. Press the start key. The value is set.

Completion

Press the stop key. The indication for selecting a maintenance item No. appears.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U061</td><td>
Turning the exposure lamp on
Description
Turns the exposure lamp on.
Purpose
To check the exposure lamp.
Method
1. Press the start key.
2. Select the item.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>CCD</td><td>Exposure lamp</td></tr>
<tr><td>CIS</td><td>CIS (optional DP exposure lamp)</td></tr>
</table>
3. Press the start key. The selected lamp lights.
4. To turn the exposure lamp off, press the stop key.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U063</td><td>
Adjusting the shading position
Description
Changes the shading position of the scanner.
Purpose
Used when white lines continue to appear longitudinally on the image after the shading plate is cleaned. This is due to flaws or stains inside the shading plate. To prevent this problem, the shading position should be changed so that shading is possible without being affected by the flaws or stains.
Method
1. Press the start key.
2. Change the setting using the +/- or numeric keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr>
<tr><td>Shading position</td><td>-12 to 18</td><td>0</td><td>0.11 mm</td></tr>
</table>
Increasing the setting moves the shading position toward the machine right, and decreasing it moves the position toward the machine left.
3. Press the start key. The value is set.
Supplement
While this maintenance item is being executed, copying from an original is available in the interrupt copying mode.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U065	**Adjusting the scanner magnification** **Description** Adjusts the magnification of the original scanning. **Purpose** Make the adjustment if the magnification in the main scanning direction is incorrect. Make the adjustment if the magnification in the auxiliary scanning direction is incorrect. **Caution** Adjust the magnification of the scanner in the following order. U053 (P.1-3-21) → U065 (main scanning direction) → U065 (auxiliary scanning direction) → U067 (P.1-3-25) → U070 (P.1-3-26) **Method** 1. Press the start key. 2. Select the item to be adjusted.

Display	Description	Setting range	Initial setting	Change in value per step
MAIN SCAN ADJ	Scanner magnification in the main scanning direction	-15 to 15	0	0.1 %
SUB SCAN ADJ	Scanner magnification in the auxiliary scanning direction	-25 to 25	0	0.1 %

Adjustment: main scanning direction

1. Press the system menu key.
2. Place an original and press the start key to make a test copy.
3. Press the system menu key.
4. Change the setting value using the +/- or numeric keys.
   For copy example 1, increase the value. For copy example 2, decrease the value.

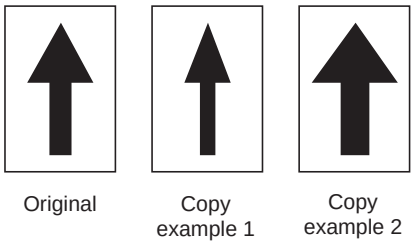


Figure 1-3-8

5. Press the start key. The value is set.

Adjustment: auxiliary scanning direction

1. Press the system menu key.
2. Place an original and press the start key to make a test copy.
3. Press the system menu key.
4. Change the setting value using the +/- or numeric keys.
   For copy example 1, increase the value. For copy example 2, decrease the value.

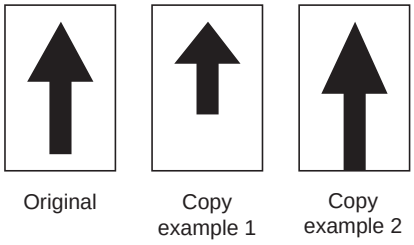


Figure 1-3-9

5. Press the start key. The value is set.

Completion

Press the stop key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U066	**Adjusting the scanner leading edge registration** **Description** Adjusts the scanner leading edge registration of the original scanning. **Purpose** Make the adjustment if there is a regular error between the leading edges of the copy image and original. **Adjustment** 1. Press the start key. 2. Select the item to be adjusted.

Display	Description	Setting range	Initial setting	Change in value per step
ADJUST DATA 1	Scanner leading edge registration	-45 to 45	0	0.11 mm
ADJUST DATA2	Scanner leading edge registration (rotate copying)	-45 to 45	0	0.10 mm

3. Press the system menu key.
4. Place an original and press the start key to make a test copy.
5. Press the system menu key.
6. Change the setting value using the +/- or numeric keys.
   For copy example 1, increase the value. For copy example 2, decrease the value.

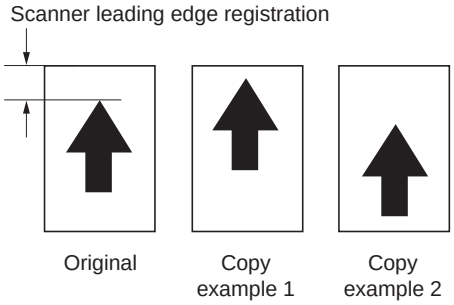
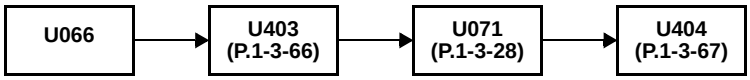


Figure 1-3-10

7. Press the start key. The value is set.

Caution
Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.



Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U067	**Adjusting the scanner center line** **Description** Adjusts the scanner center line of the original scanning. **Purpose** Make the adjustment if there is a regular error between the center lines of the copy image and original. **Adjustment** 1. Press the start key. 2. Select the item to be adjusted.

Display	Description	Setting range	Initial setting	Change in value per step
ADJUST DATA 1	Scanner center line	-70 to 70	0	0.08 mm
ADJUST DATA2	Scanner center line (rotate copying)	-25 to 25	0	0.10 mm

3. Press the system menu key.
4. Place an original and press the start key to make a test copy.
5. Press the system menu key.
6. Change the setting value using the +/- or numeric keys.
   For copy example 1, increase the value. For copy example 2, decrease the value.

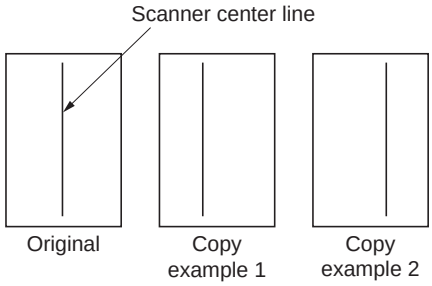
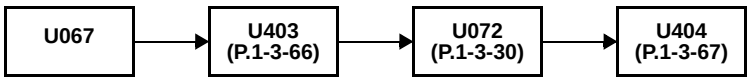


Figure 1-3-11

7. Press the start key. The value is set.

Caution
Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.



Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U068</td><td>
Adjusting the scanning position for originals from the DP
Description
Adjusts the position for scanning originals from the DP. Performs the test copy at the five scanning positions after adjusting.
Purpose
Used when the image fogging occurs because the scanning position is not proper when the DP is used. Run U071 to adjust the timing of DP leading edge when the scanning position is changed.
Setting
1. Press the start key.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr>
<tr><td>ADJUST DATA</td><td>Starting position adjustment for scanning originals</td><td>-55 to 55</td><td>0</td><td>0.11 mm</td></tr>
<tr><td>TEST POSITION</td><td>Scanning position for the test copy originals</td><td>0 to 3</td><td>0</td><td>0.71 mm</td></tr>
</table>
2. Select [ADJUST DATA] of the screen for selecting an item.
3. Change the setting using the +/- or numeric keys.
When the setting value is increased, the scanning position moves to the right and it moves to the left when the setting value is decreased.
4. Press the start key. The value is set.
5. Select [TEST POSITION] of the screen for selecting an item.
6. Select the Scanning position using the +/- or numeric keys.
7. Press the start key. The value is set.
8. Set the original (the one which density is known) in the DP and press the system menu key. The screen for the test copy mode is displayed.
9. Press the start key. Test copy is executed.
10. Perform the test copy at each scanning position with the setting value from 0 to 4 and check that no black line appears and the image is normally scanned.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U070</td><td>
Adjusting the DP magnification
Description
Adjusts the DP original scanning speed.
Purpose
Make the adjustment if the magnification is incorrect in the main scanning direction or auxiliary scanning direction when the optional DP is used.
Method
1. Press the start key.
2. Select the item to be adjusted.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr>
<tr><td>CIS MAIN ADJ</td><td>Magnification in the main scanning direction of CIS</td><td>-25 to 25</td><td>0</td><td>0.1 %</td></tr>
<tr><td>CONVEY SPEED</td><td>Magnification in the auxiliary scanning direction of CCD</td><td>-25 to 25</td><td>0</td><td>0.1 %</td></tr>
<tr><td>CIS SUB ADJ</td><td>Magnification in the auxiliary scanning direction of CIS</td><td>-15 to 10</td><td>0</td><td>0.05 %</td></tr>
</table>
</td></tr>
</table>

Maintenance item No.	Description
U070	**Adjustment: main scanning direction of CIS** 1. Press the system menu key. 2. Place an original on the DP and press the start key to make a test copy. 3. Press the system menu key. 4. Change the setting value using the +/- or numeric keys. For copy example 1, increase the value. For copy example 2, decrease the value.

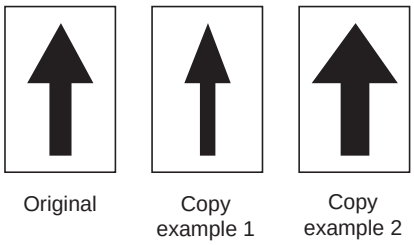


Figure 1-3-12

5. Press the start key. The value is set.

Caution

Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.

U070 → **U071 (P.1-3-28)** → **U404 (P.1-3-67)**

Adjustment: auxiliary scanning direction of CCD/CIS

1. Press the system menu key.
2. Place an original on the DP and press the start key to make a test copy.
3. Press the system menu key.
4. Change the setting value using the +/- or numeric keys.
   For copy example 1, increase the value. For copy example 2, decrease the value.

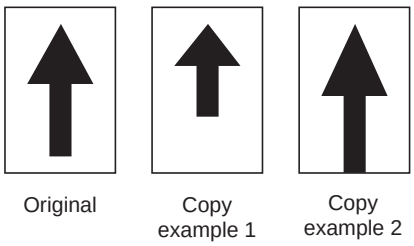


Figure 1-3-13

5. Press the start key. The value is set.

Caution

Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.

U070 → **U071 (P.1-3-28)** → **U404 (P.1-3-67)**

Completion

Press the stop key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U071	**Adjusting the DP scanning timing** **Description** Adjusts the DP original scanning timing. **Purpose** Make the adjustment if there is a regular error between the leading or trailing edges of the original and the copy image when the optional DP is used. **Method** 1. Press the start key. 2. Select the item to be adjusted.

Display	Description	Setting range	Initial setting	Change in value per step
ADJUST DATA1	Leading edge registration (first page)	-32 to 32	0	0.09 mm
ADJUST DATA2	Trailing edge registration (first page)	-32 to 32	0	0.09 mm
ADJUST DATA3	Leading edge registration (second page)	-45 to 45	0	0.09 mm
ADJUST DATA4	Trailing edge registration (second page)	-45 to 45	0	0.09 mm
ADJUST DATA5	Leading edge registration (rotate copying)	-20 to 20	0	0.17 mm

Adjustment: leading edge registration

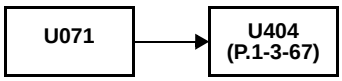
1. Press the system menu key.
2. Place an original on the DP and press the start key to make a test copy.
3. Press the system menu key.
4. Change the setting value using the +/- or numeric keys.
   For copy example 1, increase the value. For copy example 2, decrease the value.

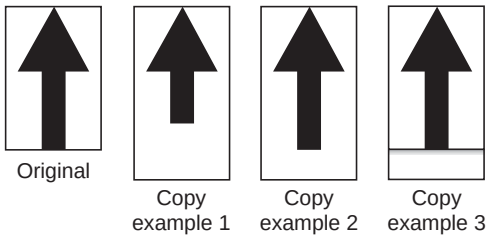
Figure 1-3-14

5. Press the start key. The value is set.

Caution

Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.



Maintenance item No.	Description
U071	**Adjustment: trailing edge registration** 1. Press the system menu key. 2. Place an original on the DP and press the start key to make a test copy. 3. Press the system menu key. 4. Change the setting value using the +/- or numeric keys. For copy example 1, increase the value. For copy example 3, decrease the value.  **Figure 1-3-15** 5. Press the start key. The value is set. **Caution** Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode. **U071** → **U404 (P.1-3-67)** **Completion** Press the stop key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U072	**Adjusting the DP center line** **Description** Adjusts the scanning start position for the DP original. **Purpose** Make the adjustment if there is a regular error between the centers of the original and the copy image when the optional DP is used. **Adjustment** 1. Press the start key. 2. Select the item to be adjusted.

Display	Description	Setting range	Initial setting	Change in value per step
ADJUST DATA1	Center line for the simplex copy mode	-39 to 39	0	0.17 mm
ADJUST DATA2	Center line for the duplex copy mode	-39 to 39	0	0.17 mm
ADJUST DATA3	Center line for rotate copying	-7 to 7	0	0.17 mm

3. Press the system menu key.
4. Place an original on the DP and press the start key to make a test copy.
5. Press the system menu key.
6. Change the setting value using the +/- or numeric keys.
   For copy example 1, increase the value. For copy example 2, decrease the value.

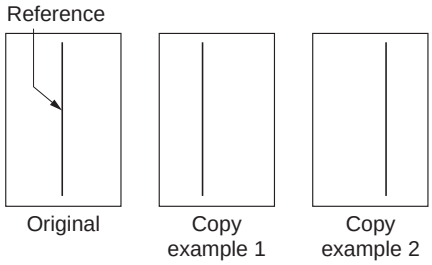
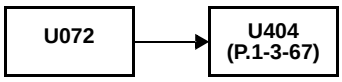


Figure 1-3-16

7. Press the start key. The value is set.

Caution
Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.



Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U073	**Checking scanner operation** **Description** Simulates the scanner operation under arbitrary conditions. **Purpose** To check scanner operation. **Start** 1. Press the start key. 2. Select the item to be operated.

Display	Description
SCANNER MOTOR	Scanner operation
HOME POSITION	Home position operation
DP READING	DP scanning position operation
DUST CHECK	Dust adhesion check operation with lamp on

Setting: SCANNER MOTOR

1. Select [SCANNER MOTOR].
2. Select the item.
3. Change the setting using the +/- keys.

Display	Operating conditions	Setting range
ZOOM	Magnification	25 to 400%
SIZE	Original size	See below.
LAMP	On and off of the exposure lamp	0 (off) or 1 (on)

Original sizes for each setting in SIZE

Setting	Paper size	Setting	Paper size
5000	A4	5000	A5R
4300	B5	7800	Folio
5100	11" x 8 1/2"	10200	11" x 17"
10000	A3	9000	11" x 15"
8600	B4	8400	8 1/2" x 14"
7100	A4R	6600	8 1/2" x 11"
6100	B5R	5100	5 1/2" x 8 1/2"

4. Press the start key. Scanning starts under the selected conditions.
5. To stop operation, press the stop key.

Method: HOME POSITION

1. Select [HOME POSITION].
2. Press the start key.
   The mirror frame of the scanner moves to the home position.

Method: DP READING

1. Select [DP READING].
2. Press the start key.
   The mirror frame of the scanner moves to the reading position.

Method: DUST CHECK

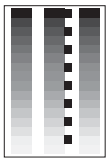
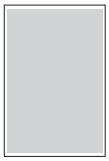
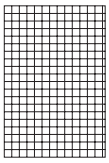
1. Select [DUST CHECK].
2. Press the start key. The exposure lamp lights.
3. To turn the exposure lamp off, press the stop key.

Completion

Press the stop key when scanning stops. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U074</td><td>
Adjusting the DP input light luminosity
Description
Adjusts the luminosity of the exposure lamp for scanning originals from the DP.
Purpose
Used if the exposure amount differs significantly between when scanning an original on the contact glass and when scanning an original from the DP.
Setting
1. Press the start key.
2. Select the item to be set.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>R</td><td>DP input light luminosity of R image</td><td>-12 to 12</td><td>0</td></tr>
<tr><td>G</td><td>DP input light luminosity of G image</td><td>-12 to 12</td><td>0</td></tr>
<tr><td>B</td><td>DP input light luminosity of B image</td><td>-12 to 12</td><td>0</td></tr>
</table>
3. Change the setting using the +/- or numeric keys.
Increasing the setting makes the luminosity higher, and decreasing it makes the luminosity lower.
4. Press the start key. The value is set.
Supplement
While this maintenance item is being executed, copying from an original is available in the interrupt copying mode.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U080</td><td>
Setting the economy mode
Description
Sets the level in the economy mode.
Purpose
To increase or decrease the image density in the eco-print mode.
Setting
1. Press the start key.
2. Select [ADJUST DATA].
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exposure is toner economy mode</td><td>-12 to 0</td><td>-6</td></tr>
</table>
3. Change the setting value using the +/- or numeric keys.
Increasing the setting makes the image darker; decreasing it makes the image lighter.
4. Press the start key. The value is set.
Supplement
While this maintenance item is being executed, copying from an original is available in the interrupt copying mode.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U087</td><td>
Setting DP reading position modification operation
Description
The presence or absence of dust is determined by comparing the scan data of the original trailing edge and that taken after the original is conveyed past the DP original scanning position. If dust is identified, the DP original scanning position is adjusted for the following originals.
Purpose
When using optional DP, to solve the problem when black lines occurs due to the dust with respect to original reading position.
Method
1. Press the start key.
2. Select the item to be set. The setting screen for the selected item is displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>CCD</td><td>Setting of standard data when dust is detected.</td></tr>
<tr><td>BLACK</td><td>Initialization of original reading position.</td></tr>
</table>
Setting: standard data when dust is detected
1. Select the item to be set.
2. Change the value using the +/- or numeric keys.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>CCD R</td><td>Lowest density of the R regard as the dust.</td><td>0 to 255</td><td>175</td></tr>
<tr><td>CCD G</td><td>Lowest density of the G regard as the dust.</td><td>0 to 255</td><td>170</td></tr>
<tr><td>CCD B</td><td>Lowest density of the B regard as the dust.</td><td>0 to 255</td><td>160</td></tr>
</table>
3. Press the start key. The value is set.
Setting: Initialization of original reading position
1. Select [CLEAR].
2. Press the start key. The setting is cleared.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U089</td><td>
Outputting a MIP-PG pattern
Description
Selects and outputs the MIP-PG pattern created in the machine.
Purpose
To check copier status other than scanner when adjusting image printing, using MIP-PG pattern output (without scanning).
Method
1. Press the start key.
2. Select the MIP-PG pattern to be output.
<table>
<tr><th>Display</th><th>PG pattern to be output</th><th>Purpose</th></tr>
<tr><td>GRAYSCALE</td><td>  </td><td>To check the laser scanner unit engine output characteristics.</td></tr>
<tr><td>MONO-LEVEL</td><td>  </td><td>To check the drum quality.</td></tr>
<tr><td>256-LEVEL</td><td>  </td><td>To check resolution reproducibility in printing.</td></tr>
<tr><td>1 dot-LINE</td><td>  </td><td>To check fine line reproducibility.
To adjust the position of the laser scanner unit (lateral squareness)</td></tr>
</table>
3. To change the output conditions of MONO-LEVEL and 1dot-LINE, use the +/- or numeric keys to change the preset values and press the start key to register the setting.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Output density of MONO-LEVEL</td><td>0 to 255</td><td>0</td></tr>
<tr><td>1dot-LINE</td><td>0 to 21</td><td>0</td></tr>
</table>
4. Press the system menu key.
5. Press the start key. A MIP-PG pattern is output.
6. To return to the screen for selecting an item, press the system menu key.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U093	**Setting the exposure density gradient** **Description** Changes the exposure density gradient in the manual density mode, depending on respective image quality modes. **Purpose** To set how the image density is altered by a change of one step in the manual density adjustment for respective image quality modes. Also used to make copy images darker or lighter. **Method** 1. Press the start key. 2. Select the image quality mode. The setting screen for the selected item is displayed.

Display	Description
MIXED	Density in text and photo mode
TEXT	Density in text mode
PHOTO	Density in photo mode

Setting: Density in text and photo mode

1. Select the item to be set.
2. Adjust the setting using the +/- or numeric keys.

Display	Description	Setting range	Initial setting
MIXED DARKER	Change in density when manual density is set dark	0 to 3	0
MIXED LIGHTER	Change in density when manual density is set light	0 to 3	0

Increasing the setting makes the change in density larger, and decreasing it makes the change smaller.

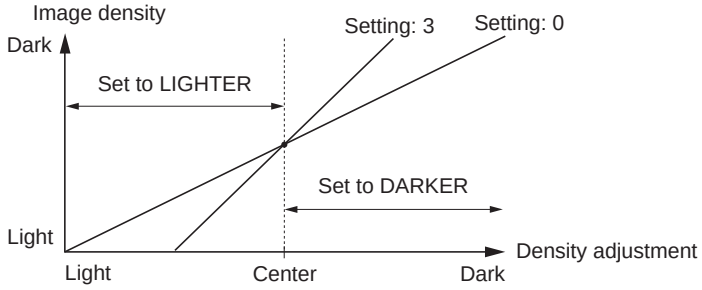


Figure 1-3-17

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop key.

Setting: Density in text mode

1. Select the item to be set.
2. Adjust the setting using the +/- or numeric keys.

Display	Description	Setting range	Initial setting
TEXT DARKER	Change in density when manual density is set dark	0 to 3	0
TEXT LIGHTER	Change in density when manual density is set light	0 to 3	0

Increasing the setting makes the change in density larger, and decreasing it makes the change smaller.

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop key.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U093</td><td>
Setting: Density in photo mode
1. Select the item to be set.
2. Adjust the setting using the +/- or numeric keys.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>PHOTO DARKER</td><td>Change in density when manual density is set dark</td><td>0 to 3</td><td>0</td></tr>
<tr><td>PHOTO LIGHTER</td><td>Change in density when manual density is set light</td><td>0 to 3</td><td>0</td></tr>
</table>
Increasing the setting makes the change in density larger, and decreasing it makes the change smaller.
3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop key.
Supplement
While this maintenance item is being executed, copying from an original is available in the interrupt copying mode.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U099	**Adjusting original size detection** **Description** Checks the operation of the original size detection sensor and sets the sensing threshold value. **Purpose** To adjust the sensitiveness of the sensor and size judgement time if the original size detection sensor malfunctions frequently due to incident light or the like. **Method** 1. Press the start key. 2. Select the item. The screen for executing each item is displayed.

Display	Description
DATA	Displaying detection sensor transmission data
B/W LEVEL	Setting detection sensor threshold value Setting original size judgment time

Method to display the data for the sensor

1. Place the original and close the original cover or DP. The detection sensor transmission data is displayed.

Display	Description
ORIGINAL AREA R	Detected original width size (R)
ORIGINAL AREA G	Detected original width size (G)
ORIGINAL AREA B	Detected original width size (B)
ORIGINAL AREA	Detected original width size
SIZE SW L	Displays the original detection switch ON/OFF

2. To return to the screen for selecting an item, press the stop key.

Setting

1. Select an item to be set.
2. Adjust the setting using the +/- or numeric keys.

Display	Description	Setting range	Initial setting
ORIGINAL R	Original threshold value (R)	0 to 255	105
ORIGINAL G	Original threshold value (G)	0 to 255	105
ORIGINAL B	Original threshold value (B)	0 to 255	105
LIGHT SOURCE R	Light source threshold value (R)	0 to 255	60
LIGHT SOURCE G	Light source threshold value (G)	0 to 255	60
LIGHT SOURCE B	Light source threshold value (B)	0 to 255	60
WAIT TIME	Time from activation of the original detection switch (ODSW) to original size judgment	0 to 255	150
A4R AREA	Original size detection position display (mm)	220/240	240

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop key.

Completion

Press the stop key. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U100</td><td>
Setting the main high voltage
Description
Performs main charging.
Purpose
To check main charging.
Method
1. Press the start key.
2. Select the item to be operated. The selected operation starts.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MC ON</td><td>Turning the main charger on</td></tr>
<tr><td>LASER ON/OFF</td><td>Turning the main charger on and the laser scanner unit on and off</td></tr>
</table>
3. To stop operation, press the stop key.
Completion
Press the stop key when main charger output stops. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U101</td><td>
Setting the other high voltages
Description
Sets the developing bias control voltage, the transfer control voltage, and the separation control voltage or checks the output of these voltages.
Purpose
To check the developing bias, the transfer voltage and the separation voltage or to take measures against drop of image density or background fog.
Setting
1. Press the start key.
2. Select the item to be set.
3. Change the setting using the +/- or numeric keys.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>DEV BIAS</td><td>Developing bias AC component frequency at image formation</td><td>20 to 32</td><td>28</td></tr>
<tr><td>DEV SBIAS</td><td>Developing shift bias potential at image formation</td><td>0 to 3</td><td>2</td></tr>
<tr><td>DEV DUTY</td><td>Developing bias AC component duty at image formation</td><td>0 to 100</td><td>50</td></tr>
<tr><td>TC DATA</td><td>Transfer control voltage</td><td>0 to 300</td><td>130</td></tr>
<tr><td>SC DATA</td><td>Separation control voltage</td><td>0 to 60</td><td>20</td></tr>
</table>
Increasing the DEV BIAS setting makes the image darker; decreasing it makes the image lighter.
Increasing the DEV SBIAS setting makes the image darker.
Increasing the DEV DUTY setting makes the image lighter; decreasing it makes the image darker.
Increasing the TC DATA setting makes the transfer voltage higher, and decreasing it makes the voltage lower.
Increasing the SC DATA setting makes the separation voltage higher, and decreasing it makes the voltage lower.
4. Press the start key. The value is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U102</td><td>
Setting the cleaning interval for the main charger
Description
Changes the intervals at which the main charger is cleaned.
Purpose
To change the setting when the background is visible.
Setting
1. Press the start key.
2. Change the setting using the +/- or numeric keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Main charger cleaning operation intervals</td><td>0 to 20 (unit: 1000 sheets)</td><td>5</td></tr>
</table>
When set to 0, the cleaning for the main charger is not operated.
3. Press the start key. The value is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U109</td><td>
Displaying the drum type
Description
Displays the drum surface potential set as EEPROM of the drum unit.
Purpose
To check the drum surface potential.
Method
Press the start key. Drum surface potential (V) is displayed.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U110</td><td>
Checking the drum count
Description
Displays the drum counts for checking.
Purpose
To check the drum status.
Method
Press the start key. The drum counter count is displayed.
Setting
1. Change the setting using the +/- or numeric keys.
2. Press the start key. The count is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U112</td><td>
Setting toner refresh operation
Description
Sets the toner refresh operation time and the developing bias on time at power on and after copying.
Purpose
To change the toner refresh operation time and the developing bias on time at power on and after copying if image flow level is low.
Setting
1. Press the start key.
2. Select the item to be set.
3. Change the setting using the +/- keys.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>ON TIME(SEC)</td><td>Toner refresh operation time</td><td>50 to 150 (sec)</td><td>120</td></tr>
<tr><td>BIAS TIME(MSEC)</td><td>Developing bias on time</td><td>500 to 1000 (msec)</td><td>700 (30 ppm)
540 (40/50 ppm)</td></tr>
</table>
4. Press the start key. The value is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U114</td><td>
Setting separation charger mode
Description
Sets the separation charger mode.
Purpose
To change the setting if the fuser offset or carrier leaking occurs.
Method
1. Press the start key.
2. Change the setting using the +/- or numeric keys.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>MODE</td><td>Separation charger mode</td><td>0 to 255 (0 to 3)*</td><td>3</td></tr>
</table>
*: Entering a value other than 0 to 3 will engage the MODE3 (value 3) separation mode.
Details on the modes
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MODE0 (Value 0)</td><td>Full page separation for both first and second pages</td></tr>
<tr><td>MODE1 (Value 1)</td><td>First page: Separation on leading and trailing edges
Second page: Full page sepration</td></tr>
<tr><td>MODE2 (Value 2)</td><td>Full page sepration is activated for both first and second pages provided the ambient temperature is less than 19°C/66.2°F.
First page: Separation is activated for both leading and trailing edges, second page: Full page separation, provided the ambient temperature is more than 20°C/68°F.</td></tr>
<tr><td>MODE3 (Value 3)</td><td>Separation is activated on both leading and trailing edges for both first and second pages.</td></tr>
</table>
3. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U117</td><td>
Checking the drum number
Description
Displays the drum number.
Purpose
To check the drum number.
Method
Press the start key. The drum number is displayed.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U118</td><td>
Displaying the drum history
Description
Displays the past record of machine number and the drum counter.
Purpose
To check the count value of machine number and the drum counter.
Method
Press the start key. Past record of 5 cases is displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MACHINE No.1 to 5</td><td>Past record of machine number</td></tr>
<tr><td>COUNT 1 to 5</td><td>Past record of drum counter</td></tr>
</table>
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U130</td><td>
Initial setting for the developing unit
Description
Replenishes toner to the developing unit to a certain level from the toner container that has been installed.
Purpose
To operate when installing the machine or replacing the developing unit.
Method
1. Press the start key. The screen for executing is displayed.
2. Press the start key.
Toner installation is started and the output value of the sensor and execution time are displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>TONER SENSOR</td><td>Output value of the sensor</td></tr>
<tr><td>TIME(SEC)</td><td>Execution time</td></tr>
</table>
Completion
Press the stop key after initial setting is complete. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U144</td><td>
Setting toner loading operation
Description
Sets toner loading operation after completion of copying.
Purpose
To set whether or not toner is loaded on the drum after low density copying. Normally no change is necessary from the initial setting.
Setting
1. Press the start key.
2. Select the item to be set.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MODE0</td><td>Toner not loaded</td></tr>
<tr><td>MODE1</td><td>Toner loaded after simplex or duplex copying</td></tr>
<tr><td>MODE2</td><td>Toner loaded after simplex copying</td></tr>
</table>
Initial setting: MODE2
3. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U150</td><td>
Checking sensors for toner
Description
Displays the on-off status of each sensor or switch related to toner.
Purpose
To check if the sensors and switches operate correctly.
Method
1. Press the start key.
2. Turn each switch on and off manually to check the status.
When the on-status of a switch is detected, that switch is displayed in reverse.
<table>
<tr><th>Display</th><th>Switches</th></tr>
<tr><td>DEVELOPER SENSOR</td><td>Toner sensor (TNS)</td></tr>
<tr><td>CONTAINER SET</td><td>Toner container detection switch (TCDSW)</td></tr>
<tr><td>CONTAINER SNSR</td><td>Toner container sensor (TCS)</td></tr>
<tr><td>WASTE BOX SET</td><td>Waste toner detection switch (WTDSW)</td></tr>
<tr><td>WASTE BOX SENSOR</td><td>Overflow sensor (OFS)</td></tr>
<tr><td>MOTOR ON</td><td>The toner feed solenoid (TNFSOL) and the paper feed motor (PFM) are turned on.</td></tr>
</table>
To stop motor driving, press [MOTOR ON] again
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U157</td><td>
Checking/clearing the developing drive time
Description
Displays the developing drive time for checking, or clearing a figure, which is used as a reference when correcting the toner control.
Purpose
To check the developing drive time after replacing the developing unit.
Method
Press the start key. The developing drive time is displayed in minutes.
Clearing
1. Press the clear key.
2. Press the start key. The time is cleared.
Setting
1. Enter a drive time (in minutes) using the numeric keys.
2. Press the start key. The time is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U158</td><td>
Checking the developing count
Description
Displays the developing count for checking.
Purpose
To check the developing count after replacing the developing unit.
Method
Press the start key. The developing counter count is displayed.
Setting
1. Change the setting using the +/- or numeric keys.
2. Press the start key. The count is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U161</td><td>
Setting the fuser control temperature
Description
Changes the fuser control temperature.
Purpose
Normally no change is necessary. However, can be used to prevent curling or creasing of paper, or solve a fuser problem on thick paper.
Method
1. Press the start key.
2. Select the item to be set.
3. Change the setting using the +/- or numeric keys.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>DRIVE START TEMP</td><td>Driving start temperature when warm-up starts</td><td>0 to 255 (°C)</td><td>175 (30 ppm)
185 (40/50 ppm)</td></tr>
<tr><td>READY CONTROL T</td><td>Control temperature for displaying [Ready for copying.]</td><td>0 to 255 (°C)</td><td>190 (30 ppm)
200 (40/50 ppm)</td></tr>
<tr><td>PRINT CONTROL T</td><td>Control temperature during printing</td><td>0 to 255 (°C)</td><td>190 (30 ppm)
200 (40/50 ppm)</td></tr>
</table>
4. Press the start key. The value is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U163</td><td>
Resetting the fuser problem data
Description
Resets the detection of a service call code indicating a problem in the fuser section.
Purpose
To prevent accidents due to an abnormally high fuser temperature.
Method
1. Press the start key.
2. Press [EXECUTE] on the touch panel.
3. Press the start key. The fuser problem data is initialized.
4. Turn the main power switch off and on.
</td></tr>
<tr><td>U167</td><td>
Checking fuser counts
Description
Displays fuser counts for checking.
Purpose
To check fuser counts after replacing the fuser unit.
Method
Press the start key. The fuser counts are displayed.
Setting
1. Change the setting using the +/- or numeric keys.
2. Press the start key. The count is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U196</td><td>
Turning the fuser heater on
Description
Turns the fuser heater M or S on.
Purpose
To check fuser heaters turning on.
Method
1. Press the start key.
2. Select the heater to be turned on. The selected heater turns on for 2 s and then turns off.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MAIN</td><td>Fuser heater M (FH-M)</td></tr>
<tr><td>SUB</td><td>Fuser heater S (FH-S)</td></tr>
</table>
Completion
Press the stop key when fuser heaters M and S are off. The screen for selecting the maintenance item No. is displayed.
</td></tr>
<tr><td>U199</td><td>
Checking the fuser temperature
Description
Displays the fuser temperature, the ambient temperature and the absolute humidity.
Purpose
To check the fuser temperature, the ambient temperature and the absolute humidity.
Method
Press the start key. The fuser temperature and ambient temperature are displayed in centigrade (°C) and the absolute humidity is displayed in percentage (%).
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>FIX CENTER TEMP</td><td>Fuser center temperature (°C)</td></tr>
<tr><td>FIX EDGE TEMP</td><td>Fuser edge temperature (°C)</td></tr>
<tr><td>SURROUND TEMP</td><td>Ambient temperature (°C)</td></tr>
<tr><td>HUMIDITY</td><td>Absolute humidity (%)</td></tr>
</table>
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U200	**Turning all LEDs on** **Description** Turns all the LEDs on the operation panel on. **Purpose** To check if all the LEDs on the operation panel light. **Method** Press the start key. All the LEDs on the operation panel light. Press the stop key or wait for 10 s. The LEDs turns off, and the screen for selecting a maintenance item No. is displayed.
U201	**Initializing the touch panel** **Description** Automatically correct the positions of the X- and Y-axes of the touch panel. **Purpose** To automatically correct the display positions on the touch panel after it is replaced. **Method** 1. Press the start key. The + key displayed at the upper left of the touch panel flashes. 2. Press on the center of the + key. The + key on lower right flashes. 3. Press the center of the flashing + key. Initialization of the touch panel is complete, and the screen for selecting a maintenance item No. is displayed. **Completion** Press the stop key. The screen for selecting a maintenance item No. is displayed.
U202	**Setting the KMAS host monitoring system** **Description** Initializes or operates the KMAS host monitoring system. This is an optional device which is currently supported only by Japanese specification machines, so no setting is necessary.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U203</td><td>
Checking DP operation
Description
Simulates the original conveying operation separately in the optional DP.
Purpose
To check the DP operation.
Method
1. Press the start key.
2. Place an original in the DP if running this simulation with paper.
3. Select the item to be operated.
4. When selecting [TEST2], to set the magnification using the +/- keys.
<table>
<tr><th>Display</th><th>Operation</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>TEST 1(NON P)</td><td>Without paper</td><td>-</td><td>-</td></tr>
<tr><td>TEST 2</td><td>With paper</td><td>100 to 200 (%)</td><td>100</td></tr>
</table>
5. Press the start key. The operation starts.
6. To stop continuous operation, press the stop key.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U204</td><td>
Setting the presence or absence of a key card or key counter
Description
Sets the presence or absence of the optional key card or key counter.
Purpose
To run this maintenance item if a key card or key counter is installed.
Method
1. Press the start key.
2. Select the item to be set. The setting screen for the selected item is displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>KEY-DEVICE</td><td>Sets the presence or absence of the key card or key counter</td></tr>
<tr><td>MESSAGE</td><td>Sets the message when optional equipment is not installed.</td></tr>
</table>
Setting: KEY-DEVICE
1. Select ON or OFF.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON</td><td>The key card or the key counter is installed</td></tr>
<tr><td>OFF</td><td>Not installed</td></tr>
</table>
2. Press the start key. The setting is set.
3. Turn the main power switch off and on.
Setting: MESSAGE
1. Select the [COUNTER], [CARD] or [COIN].
2. Press the start key. The setting is set.
3. Turn the main power switch off and on.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U206	**Setting the presence or absence of the coin vender** **Description** Sets the presence or absence of the optional coin vender. Also sets the details for coin vender operation, such as mode and unit price. This is an optional device which is currently supported only by Japanese specification machines, so no setting is necessary.
U207	**Checking the operation panel keys** **Description** Checks operation of the operation panel keys. **Purpose** To check operation of all the keys and LEDs on the operation panel. **Method** 1. Press the start key. The screen for executing is displayed. 2. COUNT0 is displayed and the leftmost LED on the operation panel lights. 3. As the keys lined up in the same line as the lit indicator are pressed in the order from the top to the bottom, the figure shown on the touch panel increases in increments of 1. When all the keys in that line are pressed and if there are any LEDs corresponding to the keys in the line on the immediate right, the top LED in that line will light. 4. When all the keys on the operation panel have been pressed, all the LEDs light for up to 10 seconds. **Completion** Press the stop key. The screen for selecting a maintenance item No. is displayed.
U208	**Setting the paper size for the paper feeder** **Description** Sets the size of paper used in optional 3000-sheet paper feeder. **Purpose** To change the setting when the size of paper used in the paper feeder is changed. **Method** Press the start key. The screen for selecting an item is displayed. **Setting** 1. Press the start key. 2. Select the paper size (A4, B5 or Letter). Initial setting: Letter (Inch specifications)/A4 (Metric specifications) 3. Press the start key. The setting is set. **Completion** Press the stop key. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U220</td><td>
Setting the trial functions
Description
Enables the trial of USB functions by period limitation.
Purpose
To try USB activation functions.
Method
Press the start key.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>FUNCTION</td><td>Selecting trial functions</td></tr>
<tr><td>TRIAL STATUS</td><td>Displays the current setting (1: Under trial, 0: Not trial)</td></tr>
<tr><td>COUPON COUNT</td><td>Displays remaining times</td></tr>
<tr><td>TIME LIMIT</td><td>Displays the end term of the function under present trial.</td></tr>
<tr><td>TRIAL START</td><td>Starts the trial of the function selected with FUNCTION.</td></tr>
<tr><td>TRIAL STOP</td><td>Stops the trial of the function selected with FUNCTION.</td></tr>
</table>
Setting: FUNCTION
1. Select [FUNCTION].
2. Select the function using the +/- keys.
3. Press the start key. The setting is set.
[COUPON COUNT], [TIME LIMIT], [TRIAL START] and [TRIAL STOP] are displayed.
Method: TRIAL START
1. Select [TRIAL STRAT].
2. Press the start key.
Trial of the function selected with [FUNCTION] is started.
The display of [COUPON COUNT] decreases one. The display of [TIME LIMIT] will be the date of the present date plus 30 days.
Method: TRIAL STOP
1. Select [TRIAL STOP].
2. Press the start key.
Trial of the function selected with [FUNCTION] is stopped.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U234</td><td>
Setting punch destination
Description
Sets the destination of optional punch unit of 3000-sheet document finisher.
Purpose
To be set when installing a different punch unit from the destination of the machine.
Setting
1. Press the start key.
2. Select the destination.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>AUTO</td><td>With no punch unit</td></tr>
<tr><td>JAPAN METRIC</td><td>Metric (Japan) specifications</td></tr>
<tr><td>INCH</td><td>Inch (North America) specifications</td></tr>
<tr><td>EUROPE METRIC</td><td>Metric (Europe) specifications</td></tr>
</table>
Initial setting: INCH (Inch specifications)/EUROPE METRIC (Metric specifications)
3. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U236</td><td>
Setting the limit for the ejection section of the built-in finisher
Description
If the machine is equipped with an optional built-in finisher, this mode sets whether A5R/B5R/statement size paper is output to the machine eject tray or not.
Purpose
If the machine is equipped with an optional built-in finisher and if paper jams occur due to curling of paper in the built-in ejection section when two-sided copying onto A5R/B5R/statement size paper is performed, this mode is used to change the setting to ON to disable ejection to the machine eject tray.
Method
Press the start key. The screen for executing is displayed.
Setting
1. Press the start key.
2. Select ON or OFF.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON</td><td>Does not eject to the machine eject tray.</td></tr>
<tr><td>OFF</td><td>Eject to the machine eject tray.</td></tr>
</table>
Initial setting: OFF
3. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U237</td><td>
Setting finisher stack quantity
Description
Sets the number of sheets of each stack on the main tray and on the internal tray in the optional 3000-sheet document finisher.
Purpose
To change the setting when a stack malfunction has occurred.
Method
1. Press the start key.
2. Select the item to be set.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MAIN TRAY</td><td>Number of sheets of stack on the main tray</td></tr>
<tr><td>MIDDLE TRAY</td><td>Number of sheets of stack on the internal tray for sort copying or staple copying</td></tr>
</table>
Setting the number of sheets of stack on the main tray
1. Change the setting using the +/- or numeric keys.
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>0</td><td>3000 sheets</td></tr>
<tr><td>1</td><td>1500 sheets</td></tr>
</table>
Initial setting: 0
2. Press the start key. The setting is set.
Setting the number of sheets of stack on the internal tray
1. Change the setting using the +/- or numeric keys.
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>0</td><td>For sort copying: 10 sheets, for staple copying: 50 sheets</td></tr>
<tr><td>1</td><td>For sort copying: 10 sheets, for staple copying: 30 sheets</td></tr>
</table>
Initial setting: 0
2. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U240</td><td>
Checking the operation of the finisher
Description
Turns each motor and solenoid of the 3000-sheet document finisher ON.
Purpose
To check the operation of each motor and solenoid of the 3000-sheet document finisher.
Method
1. Press the start key.
2. Select the item to be checked. The screen for executing each item is displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>FINISHER MOTOR</td><td>Checking the motor of the 3000-sheet document finisher</td></tr>
<tr><td>FINISHER SOL</td><td>Checking the solenoid of the 3000-sheet document finisher</td></tr>
<tr><td>MAIL BOX</td><td>Checking the motor and solenoid of the mail box</td></tr>
<tr><td>BOOKLET</td><td>Checking the motor of the centerfold unit</td></tr>
</table>
Method: Checking the motor of the 3000-sheet document finisher
1. Select the item to be operated. The operation starts.
<table>
<tr><th>Display</th><th>Motor</th></tr>
<tr><td>FEED IN MOTOR M</td><td>Paper entry motor (PEM) is turned on counterwise.</td></tr>
<tr><td>FEED IN MOTOR L</td><td>Paper entry motor (PEM) is turned on clockwise.</td></tr>
<tr><td>CONV MOTOR H</td><td>Paper conveying motor is turned on at high speed.</td></tr>
<tr><td>CONV MOTOR M</td><td>Paper conveying motor is turned on at middle speed.</td></tr>
<tr><td>CONV MOTOR L</td><td>Paper conveying motor is turned on at low speed.</td></tr>
<tr><td>EJECT MOTOR H</td><td>Eject motor (EJM) is turned on at high speed.</td></tr>
<tr><td>EJECT MOTOR M</td><td>Eject motor (EJM) is turned on at middle speed.</td></tr>
<tr><td>EJECT MOTOR L</td><td>Eject motor (EJM) is turned on at low speed.</td></tr>
<tr><td>SUB PATH MOTOR H</td><td>Relief path motor (RPM) is turned on counterwise.</td></tr>
<tr><td>SUB PATH MOTOR M</td><td>Relief path motor (RPM) is turned on clockwise.</td></tr>
<tr><td>BUNDLE UP MOTOR</td><td>Paper conveying belt motor 1 (PCBM1) is turned on.</td></tr>
<tr><td>BUNDLE DOWN MTR</td><td>Paper conveying belt motor 2 (PCBM2) is turned on.</td></tr>
<tr><td>WIDTH TEST(A3)</td><td>Side registration motor 1/2 (SRM1/2) is turned on.</td></tr>
<tr><td>WIDTH TEST(LD)</td><td>Side registration motor 1/2 (SRM1/2) is turned on.</td></tr>
<tr><td>STAPLE FR MOTOR</td><td>Staple shift motor 1 (STSM1) is turned on.</td></tr>
<tr><td>STAPLE S MOTOR</td><td>Staple shift motor 2 (STSM2) is turned on.</td></tr>
<tr><td>STAPLE MOTOR</td><td>Staple motor (STM) is turned on.</td></tr>
<tr><td>TRAY MOTOR</td><td>Main tray motor (MTM) is turned on.</td></tr>
<tr><td>PUNCH MOTOR</td><td>Punch motor (PUNM) is turned on.</td></tr>
<tr><td>PUDDLE MOTOR</td><td>Paddle motor (PDM) is turned on.</td></tr>
</table>
2. To stop operation, press the stop key.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U240</td><td>
Method: Checking the solenoid of the 3000-sheet document finisher
1. Select the item to be operated. The solenoid turns on for 1 s.
<table>
<tr><th>Display</th><th>Solenoid</th></tr>
<tr><td>FEED IN SOL</td><td>Paper entry solenoid (PESOL)</td></tr>
<tr><td>REAR DOWN SOL 1</td><td>Trailing edge holder solenoid 1 (TEHSOL1)</td></tr>
<tr><td>REAR DOWN SOL 2</td><td>Trailing edge holder solenoid 2 (TEHSOL2)</td></tr>
<tr><td>SUB PATH SOL</td><td>Relief path solenoid (RPSOL)</td></tr>
<tr><td>SUB TRAY R SOL</td><td>Feedshift solenoid 1 (FSSOL1)</td></tr>
<tr><td>SUB TRAY L SOL</td><td>Feedshift solenoid 2 (FSSOL2)</td></tr>
<tr><td>BOOKLET SOL</td><td>Feedshift solenoid 3 (FSSOL3)</td></tr>
<tr><td>PADDLE SOL</td><td>Paddle solenoid (PDSOL)</td></tr>
<tr><td>HOLD DOWN SOL</td><td>Paper holder solenoid (PHSOL)</td></tr>
<tr><td>EJECT SOL</td><td>Pressure switching solenoid (PSWSOL)</td></tr>
<tr><td>PUNCH SOL</td><td>Punch pattern solenoid (PPSOL)</td></tr>
<tr><td>M-TRAY LOCK SOL</td><td>Lock solenoid (LSOL)</td></tr>
</table>
Method: Checking the motor and solenoid of the mail box
1. Select the item to be operated. The operation starts.
<table>
<tr><th>Display</th><th>Motors and solenoids</th></tr>
<tr><td>FEED IN MOTOR</td><td>Mail box drive motor (MBDM)</td></tr>
<tr><td>BRANCH SOL 2</td><td>Tray feedshift solenoid 1 (TFSSOL1)</td></tr>
<tr><td>BRANCH SOL 3</td><td>Tray feedshift solenoid 2 (TFSSOL2)</td></tr>
<tr><td>BRANCH SOL 4</td><td>Tray feedshift solenoid 3 (TFSSOL3)</td></tr>
<tr><td>BRANCH SOL 5</td><td>Tray feedshift solenoid 4 (TFSSOL4)</td></tr>
<tr><td>BRANCH SOL 6</td><td>Tray feedshift solenoid 5 (TFSSOL5)</td></tr>
<tr><td>BRANCH SOL 7</td><td>Tray feedshift solenoid 6 (TFSSOL6)</td></tr>
<tr><td>FEED IN SOL</td><td>Mail paper entry solenoid (MPESOL)</td></tr>
</table>
2. To stop operation, press the stop key.
Method: Checking the motor of the centerfold unit
1. Select the item to be operated. The operation starts.
<table>
<tr><th>Display</th><th>Motor</th></tr>
<tr><td>CONV MOTOR</td><td>Centerfold main motor (CMM)</td></tr>
<tr><td>BLADE MOTOR</td><td>Blade motor (BLM)</td></tr>
<tr><td>BUNDLE UP MOTOR</td><td>Centerfold paper conveying belt motor 1 (CPCBM1)</td></tr>
<tr><td>BUNDLE DOWN MTR</td><td>Centerfold paper conveying belt motor 2 (CPCBM2)</td></tr>
<tr><td>WIDTH TEST(A3)</td><td>Centerfold side registration motor 1/2 (CSRM1/2)</td></tr>
<tr><td>WIDTH TEST(LD)</td><td>Centerfold side registration motor 1/2 (CSRM1/2)</td></tr>
<tr><td>STAPLE MOTOR</td><td>Centerfold staple motor (CSTM)</td></tr>
</table>
2. To stop operation, press the stop key.
Completion
Press the stop key with the operation stopped. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U241	**Checking the operation of the switches of the finisher** **Description** Displays the status of each switch of the 3000-sheet document finisher. **Purpose** To check the operation of each switch of the 3000-sheet document finisher. **Method** 1. Press the start key. 2. Select the item to be checked.

Display	Description
FINISHER	Checking the switch of the 3000-sheet document finisher
MAIL BOX	Checking the switch of the mail box
BOOKLET	Checking the switch of the centerfold unit

Method: Checking the switch of the 3000-sheet document finisher

1. Turn the respective switches on and off manually to check the status.
   When a switch is detected to be in the ON position, the display for that switch will be highlighted.

Display	Switches
FRONT COVER SW	Front cover switch (FCSW)
TOP COVER SW	Top cover switch (TCSW)
RIGHT COVER SW	Sub tray right switch (STRSW)
SET SW	Joint switch (JSW)
BOOKLET SW	Centerfold set switch (CSSW)
PUNCH TANK SW	Punch waste box sensor (PWBS)
TRAY L-LIMIT SW	Main tray lower limit detection sensor (MTLLDS)
TRAY U-LIMIT SW	Main tray upper limit detection sensor (MTULDS)
TRAY MIDDLE SW	Main tray middle position detection sensor (MTMPDS)
PAP HOLD DOWN SW	Paper holder home position sensor (PHHPS)
LOAD DET SW	Main tray load detection sensor (MTLDS)
FEED IN SW	Paper entry sensor (PES)
EJECT SW 1	Eject switch 1 (ESW1)
EJECT SW 2	Eject switch 2 (ESW2)
EJECT SW 3	Eject switch 3 (ESW3)
STAPLE HP SW 1	Staple home position switch 1 (STHPSW1)
STAPLE HP SW 2	Staple home position switch 2 (STHPSW2)
MIDDLE FEED SW1	Internal tray paper entry sensor 1 (ITPES1)
MIDDLE FEED SW2	Internal tray paper entry sensor 2 (ITPES2)
BUNDLE DET SW 1	Paper detection sensor 1 (PDS1)
BUNDLE DET SW 2	Paper detection sensor 2 (PDS2)
BUNDLE UP HP SW	Paper conveying belt home position sensor 1 (PCBHPS1)
BNDL DOWN HP SW	Paper conveying belt home position sensor 2 (PCBHPS2)
WIDTH HP SW 1	Side registration home position sensor 1 (SRHPS1)
WIDTH HP SW 2	Side registration home position sensor 2 (SRHPS2)
BUNDLE INTERF SW	Paper conveying belt position detection sensor (PCBDS)
VCARRY SW	Centerfold paper conveying sensor (CPCS)

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U241</td><td>
Method: Checking the switch of the mail box
1. Turn the respective switches on and off manually to check the status.
When a switch is detected to be in the ON position, the display for that switch will be highlighted.
<table>
<tr><th>Display</th><th>Switches</th></tr>
<tr><td>FEED IN SW</td><td>Mail paper entry switch (MPESW)</td></tr>
<tr><td>EJECT SW</td><td>Tray eject sensor (TEJS)</td></tr>
<tr><td>COVER SW</td><td>Mail box cover open/close switch (MBCOSW)</td></tr>
<tr><td>OVER FLOW SW 1</td><td>Tray overflow switch 1 (TOFSW1)</td></tr>
<tr><td>OVER FLOW SW 2</td><td>Tray overflow switch 2 (TOFSW2)</td></tr>
<tr><td>OVER FLOW SW 3</td><td>Tray overflow switch 3 (TOFSW3)</td></tr>
<tr><td>OVER FLOW SW 4</td><td>Tray overflow switch 4 (TOFSW4)</td></tr>
<tr><td>OVER FLOW SW 5</td><td>Tray overflow switch 5 (TOFSW5)</td></tr>
<tr><td>OVER FLOW SW 6</td><td>Tray overflow switch 6 (TOFSW6)</td></tr>
<tr><td>OVER FLOW SW 7</td><td>Tray overflow switch 7 (TOFSW7)</td></tr>
</table>
Method: Checking the switch of the centerfold unit
1. Turn the respective switches on and off manually to check the status.
When a switch is detected to be in the ON position, the display for that switch will be highlighted.
<table>
<tr><th>Display</th><th>Switches</th></tr>
<tr><td>BUNDLE UP HP SW</td><td>Centerfold paper conveying belt sensor 1 (CPCBS1)</td></tr>
<tr><td>BNDL DOWN HP SW</td><td>Centerfold paper conveying belt sensor 2 (CPCBS2)</td></tr>
<tr><td>BLADE HP SW</td><td>Blade home position sensor (BLHPS)</td></tr>
<tr><td>WIDTH HP SW U</td><td>Centerfold side registration sensor 2 (CSRS2)</td></tr>
<tr><td>WIDTH HP SW L</td><td>Centerfold side registration sensor 1 (CSRS1)</td></tr>
<tr><td>FEED IN SW</td><td>Centerfold paper entry sensor (CPES)</td></tr>
<tr><td>PAPER DET SW</td><td>Centerfold paper detection sensor (CPDS)</td></tr>
<tr><td>TRAY PAP DET SW</td><td>Tray paper detection sensor (TPDS)</td></tr>
<tr><td>EJECT SW</td><td>Centerfold eject switch (CESW)</td></tr>
<tr><td>TRAY DET SW</td><td>Centerfold top cover switch (CTCSW)</td></tr>
</table>
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U243</td><td>
Checking the operation of the DP motors
Description
Turns the motors in the optional DP on.
Purpose
To check the operation of the DP motors.
Method
1. Press the start key.
2. Select the item to be operated.
3. Press the start key. The operation starts.
<table>
<tr><th>Display</th><th>Motors</th></tr>
<tr><td>DP FEED MOTOR</td><td>Original feed motor (OFM) is turned on.</td></tr>
<tr><td>DP REG MOTOR</td><td>Original registration motor (ORM) is turned on.</td></tr>
<tr><td>DP CONV MOTOR</td><td>Original conveying motor (OCM) is turned on.</td></tr>
<tr><td>DP LIFT MOTOR</td><td>DP lift motor (DPLM) is turned on.</td></tr>
<tr><td>CIS FAN MOTOR</td><td>DP fan motor 1,2,3 (DPFM1,2,3) is turned on.</td></tr>
<tr><td>DP FEED MOT REV</td><td>Original feed motor (OFM) is turned on reversing.</td></tr>
</table>
4. To stop operation, press the stop key.
Completion
Press the stop key when operation stops. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U244</td><td>
Checking the DP switches
Description
Displays the status of the respective switches in the optional DP.
Purpose
To check if respective switches in the optional DP operate correctly.
Method
1. Press the start key.
2. Turn the respective switches on and off manually to check the status.
When a switch is detected to be in the ON position, the display for that switch will be highlighted.
<table>
<tr><th>Display</th><th>Switches</th></tr>
<tr><td>LIFT LOW LIM SW</td><td>DP lift upper limit switch (DPLULSW)</td></tr>
<tr><td>LIFT UP LIM SW</td><td>DP lift lower limit switch (DPLLLSW)</td></tr>
<tr><td>DP SET SW</td><td>Original set switch (OSSW)</td></tr>
<tr><td>DP PSD SW</td><td>Original size length switch (OLSW)</td></tr>
<tr><td>DP FEED SW</td><td>Original feed switch (OFSW)</td></tr>
<tr><td>DP REG SW</td><td>Original registration switch (ORSW)</td></tr>
<tr><td>CCD TMING SW</td><td>DP timing switch 1 (DPTSW1)</td></tr>
<tr><td>CIS TMING SW</td><td>DP timing switch 2 (DPTSW2)</td></tr>
<tr><td>DP COVER SW</td><td>DP safety switch 2 (DPSSW2)</td></tr>
<tr><td>DP OPEN SW</td><td>DP safety switch 1 (DPSSW1)</td></tr>
</table>
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U245</td><td>
Checking messages
Description
Displays a list of messages on the touch panel of the operation panel.
Purpose
To check the messages to be displayed.
Method
1. Press the start key.
2. Select the item to be displayed.
3. Change the screen using the cursor up/down keys to display each message one at a time.
When a message number is entered with the numeric keys and then the start key is pressed, the message corresponding the specified number is displayed.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U246	**Setting the finisher** **Description** Provides various settings for the optional finisher, if furnished. **Purpose** **Adjustment of registration stop timing in punch mode** Adjust if skewed paper conveying occurs or if the copy paper is Z-folded in punch mode. **Adjustment of paper stop timing in the punch mode** To adjust this item when the position of a punch hole is different from the specified one. **Adjustment of front/rear side registration home position of internal tray** Provides optimization when paper jam occurs due to an inferior fitting of the internal tray adjuster guides to paper. **Adjusting of front and back/slanted stapling home position** Adjusts the stapling position in the staple mode if the position is not proper. Provides adjustment of slanted stapling. **Adjustment of upper/lower side registration home position of centerfold unit** Provides optimization when paper jam occurs due to an inferior fitting of the centerfold adjuster guides to paper. **Adjustment of booklet stapling position** Adjusts the booklet stapling position in the stitching mode if the position is not proper. **Adjustment of center folding position** Adjusts the center folding position in the stitching mode if the position is not proper. **Start** 1. Press the start key. 2. Select the item to be set. The screen for setting each item is displayed.

Display	Description
FINISHER 3000	Adjustment of the 3000-sheet document finisher
BOOKLET FOLDER	Adjustment of the centerfold unit
FINISHER B-IN	Adjustment of the built-in finisher

Setting: 3000-sheet document finisher

1. Select the item to be set.

Display	Description
PUNCH REG ADJ	Adjustment of registration stop timing in punch mode
PUNCH POS ADJ	Adjustment of the paper stop timing in punch mode
WIDTH F HP ADJ	Adjustment of front side registration home position
WIDTH R HP ADJ	Adjustment of rear side registration home position
STAPLE HP ADJ	Adjustment of front and back stapling home position
T-STAPLE HP ADJ	Adjustment of slanted stapling home position

Setting: adjustment of registration stop timing

1. Select [PUNCH REG ADJ].
2. Change the setting using the +/- or numeric keys.

Description	Setting range	Initial setting	Change in value per step
Adjustment of registration stop timing	-20 to 20	0	1 ms

If skewed paper conveying occurs (sample 1), increase the preset value. If the copy paper is Z-folded (sample 2), decrease the preset value.

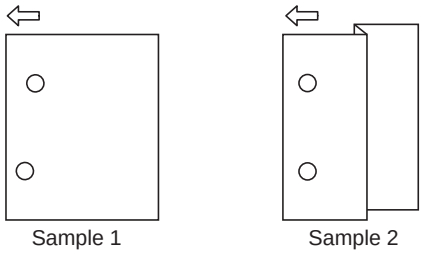


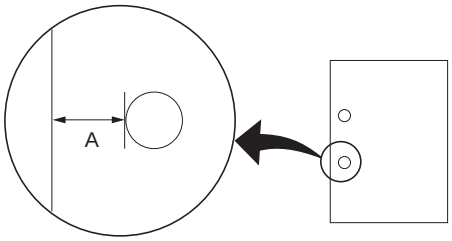
Figure 1-3-18

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop key.

Maintenance item No.	Description
U246	**Setting: adjustment of the paper stop timing** 1. Select PUNCH POS ADJ. 2. Change the setting using the +/- or numeric keys.

Description	Setting range	Initial setting	Change in value per step
Adjustment of the paper stop timing	-10 to 10	0	0.49 mm

If the distance of the position of a punch hole is smaller than the specified value A, increase the preset value. If the distance is larger than the value A, decrease the preset value.



Preset value A: 5.5 ± 2 mm (inch)
9.5 ± 2 mm (metric)

Figure 1-3-19

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop key.

Setting: adjustment of front/rear side registration home position

1. Select [WIDTH F HP ADJ] or [WIDTH R HP ADJ].
2. Change the setting using the +/- or numeric keys.

Description	Setting range	Initial setting	Change in value per step
Adjustment of front side registration home position	-10 to 10	0	0.314 mm
Adjustment of rear side registration home position	-10 to 10	0	0.314 mm

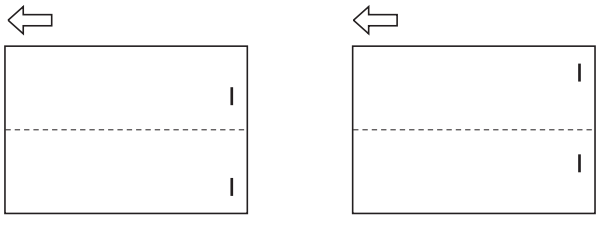
3. Press the start key. The value is set.
4. Press the stop key. The screen for selecting a maintenance item No. is displayed.
5. Enter maintenance mode U240 and select [FINISHER MOTOR], then [WIDTH TEST(A3)].
   The width guides of the internal tray will move to A3-size position.
6. Pull the internal tray, insert paper between the guides and check that paper is abut the guides.
7. Repeat the above adjustment until paper is properly in position.

Setting: adjustment of front and back stapling home position

1. Select [STAPLE HP ADJ].
2. Change the setting using the +/- or numeric keys.

Description	Setting range	Initial setting	Change in value per step
Adjustment of front and back stapling home position	-10 to 10	0	0.32 mm

When staple positions are off toward the front side of the machine (sample 1), increase the preset value.
When staple positions are off toward the rear side of the machine (sample 2), decrease the preset value.



Sample 1 Sample 2

Figure 1-3-20

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop key.

Maintenance item No.	Description
U246	**Setting: adjustment of slanted stapling home position** 1. Select T-STAPLE HP ADJ. 2. Change the setting using the +/- or numeric keys.

Description	Setting range	Initial setting	Change in value per step
Adjustment of slanted stapling home position	-10 to 10	0	0.99°

To increase the angle for slanted stapling (sample 1), decrease the preset value. To decrease the angle for slanted stapling (sample 2), increase the preset value.

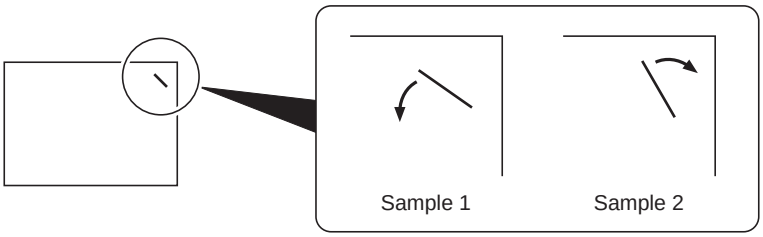


Figure 1-3-21

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop key.

Setting: centerfold unit

1. Select the item to be set.

Display	Description
WIDTH U HP ADJ	Adjustment of upper side registration home position
WIDTH L HP ADJ	Adjustment of lower side registration home position
STAPLE POS ADJ1	Adjustment of booklet stapling position for A4/letter size
STAPLE POS ADJ2	Adjustment of booklet stapling position for B4/legal size
STAPLE POS ADJ3	Adjustment of booklet stapling position for A3/ledger size
BOOKLET POS ADJ1	Adjustment of center folding position for A4/letter size
BOOKLET POS ADJ2	Adjustment of center folding position for B4/legal size
BOOKLET POS ADJ3	Adjustment of center folding position for A3/ledger size

Setting: adjustment of upper/lower side registration home position

1. Select [WIDTH U HP ADJ] or [WIDTH L HP ADJ].
2. Change the setting using the +/- or numeric keys.

Description	Setting range	Initial setting	Change in value per step
Adjustment of upper side registration home position	-20 to 20	0	0.1 mm
Adjustment of lower side registration home position	-46 to 46	0	0.1 mm

3. Press the start key. The value is set.
4. Press the stop key. The screen for selecting a maintenance item No. is displayed.
5. Enter maintenance mode U240 and select [BOOKLET], then [WIDTH TEST(A3)].
   The width guides of the centerfold unit will move to A3-size position.
6. Pull the centerfold unit, insert paper between the guides and check that paper is abut the guides.
7. Repeat the above adjustment until paper is properly in position.

Maintenance item No.	Description
U246	**Setting: adjustment of booklet stapling position** 1. Select the [STAPLE POS ADJ 1], [STAPLE POS ADJ 2] or [STAPLE POS ADJ 3]. 2. Change the setting using the +/- or numeric keys.

Description	Setting range	Initial setting	Change in value per step
Adjustment of booklet stapling position for A4/letter size	-10 to 10	0	0.55 mm
Adjustment of booklet stapling position for B4/legal size	-10 to 10	0	0.55 mm
Adjustment of booklet stapling position for A3/ledger size	-10 to 10	0	0.55 mm

When staples are placed too far right (sample 1), decrease the preset value. When staples are placed too far left (sample 2), increase the preset value.
Reference value: within ± 2 mm

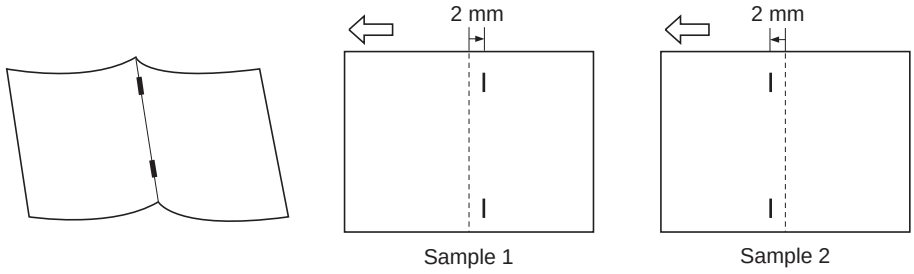


Figure 1-3-22

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop key.

Setting: adjustment of center folding position

1. Select the [BOOKLET POS ADJ1], [BOOKLET POS ADJ2] or [BOOKLET POS ADJ3].
2. Change the setting using the +/- or numeric keys.

Description	Setting range	Initial setting	Change in value per step
Adjustment of center folding position for A4/letter size	-10 to 10	0	0.55 mm
Adjustment of center folding position for B4R/legal size	-10 to 10	0	0.55 mm
Adjustment of center folding position for A3R/ledger size	-10 to 10	0	0.55 mm

When the centerfold position too far right (sample 1), increase the preset value. When the centerfold position too far left (sample 2), decrease the setting value.
Reference value: within ± 3 mm

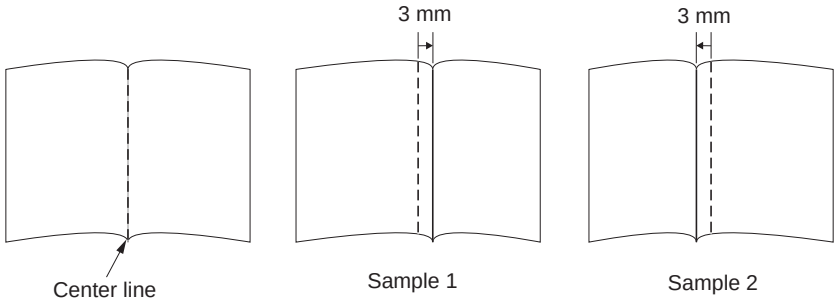


Figure 1-3-23

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop key.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U246</td><td>
Setting the side registration cursor stop position
1. Select the desired cursor position.
2. Change the setting using the +/- or numeric keys.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>FRONT</td><td>Front side registration cursor stop position</td><td>-4 to +4</td><td>0</td></tr>
<tr><td>REAR</td><td>Rear side registration cursor stop position</td><td>-4 to +4</td><td>0</td></tr>
<tr><td>END</td><td>Trailing edge registration cursor stop position</td><td>-4 to +4</td><td>0</td></tr>
</table>
3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop key.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U247</td><td>
Setting the paper feed device
Description
Turns on motors and clutches of optional 3000-sheet paper feeder or paper feeder.
Purpose
To check the operation of motors and clutches of paper feed device.
Method
1. Press the start key. The value varies depending to the option furnished.
3000-sheet paper feeder
<table>
<tr><th>Display</th><th>Motor and clutches</th></tr>
<tr><td>LCF FEED</td><td>Paper feeder conveying motor (PFCM)</td></tr>
<tr><td>CLUTCH B</td><td>Paper feeder conveying clutch (PFCCL)</td></tr>
<tr><td>CLUTCH P1</td><td>Paper feeder paper feed clutch 1 (PFPFCL1)</td></tr>
<tr><td>CLUTCH P2</td><td>Paper feeder paper feed clutch 2 (PFPFCL2)</td></tr>
</table>
Paper feeder
<table>
<tr><th>Display</th><th>Motor and clutches</th></tr>
<tr><td>DESK FEED</td><td>Paper feeder drive motor (PFDM)</td></tr>
<tr><td>CLUTCH FEED</td><td>Paper feeder feed clutch (PFFCL)</td></tr>
<tr><td>CLUTCH U</td><td>Paper feeder paper feed clutch 1 (PFPFCL1)</td></tr>
<tr><td>CLUTCH L</td><td>Paper feeder paper feed clutch 2 (PFPFCL2)</td></tr>
</table>
2. Select the item to be operated.
3. Press the start key. The operation starts.
4. To stop operation, press the stop key.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U250</td><td>
Setting the maintenance cycle
Description
Displays and changes the maintenance cycle.
Purpose
To check and change the maintenance cycle.
Method
Press the start key. The currently set maintenance cycle is displayed.
Setting
1. Change the setting using the numeric keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Maintenance cycle</td><td>0 to 9999999</td><td>400000 (30 ppm), 500000 (40/50 ppm)</td></tr>
</table>
2. Press the start key. The value is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U251</td><td>
Checking/clearing the maintenance count
Description
Displays, clears and changes the maintenance count.
Purpose
To check the maintenance count. Also to clear the count during maintenance service.
Method
Press the start key. The maintenance count is displayed.
Clearing
1. Press the clear key.
2. Press the start key. The count is cleared.
Setting
1. Enter a count using the numeric keys.
2. Press the start key. The count is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U252</td><td>
Setting the destination
Description
Switches the operations and screens of the machine according to the destination.
Purpose
To be executed after initializing the backup RAM by running maintenance item U020, in order to return the setting to the value before replacement or initialization.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Press the start key.
2. Select the destination.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>INCH</td><td>Inch (North America) specifications</td></tr>
<tr><td>EUROPE METRIC</td><td>Metric (Europe) specifications</td></tr>
<tr><td>ASIA PACIFIC</td><td>Metric (Asia Pacific) specifications</td></tr>
</table>
3. Press the start key. The setting is set.
4. Turn the main power switch off and on.
Supplement
The specified initial settings are provided according to the destinations in the maintenance items below. To change the initial settings in those items, be sure to run maintenance item U021 after changing the destination.
Initial setting according to the destinations
<table>
<tr><th>Maintenance item No.</th><th>Title</th><th>Japan</th><th>Inch</th><th>Europe Metric, Asia Pacific</th></tr>
<tr><td>208</td><td>Setting the paper size for the paper feeder</td><td>A4</td><td>Letter</td><td>A4</td></tr>
<tr><td>253</td><td>Switching between double and single counts</td><td>Single</td><td>Double</td><td>Double</td></tr>
</table>
</td></tr>
<tr><td>U253</td><td>
Switching between double and single counts
Description
Switches the count system for the total counter and other counters.
Purpose
Used to select, according to the preference of the user (copy service provider), if A3/Ledger paper is to be counted as one sheet (single count) or two sheets (double count).
Setting
1. Press the start key.
2. Select double or single count.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>SINGLE COUNT</td><td>Single count for all size paper</td></tr>
<tr><td>DBL CNT(A3/LGR)</td><td>Double count for A3/Ledger size or larger</td></tr>
<tr><td>DBL COUNT(B4)</td><td>Double count for B4 size or larger</td></tr>
</table>
Initial setting: DBL CNT(A3/LGR)
3. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U260</td><td>
Selecting the timing for copy counting
Description
Changes the copy count timing for the total counter and other counters.
Purpose
To be set according to user (copy service provider) request.
If a paper jam occurs frequently in the optional document finisher when the number of copies is counted at the time of paper ejection, copies are provided without copy counts. The copy service provider cannot charge for such copying. To prevent this, the copy timing should be made earlier.
If a paper jam occurs frequently in the paper conveying or fuser sections when the number of copies is counted before the paper reaches those sections, copying is charged without a copy being made. To prevent this, the copy timing should be made later.
Setting
1. Press the start key.
2. Select the copy count timing.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>FEED</td><td>When secondary paper feed starts</td></tr>
<tr><td>EJECT</td><td>When the paper is ejected</td></tr>
</table>
Initial setting: EJECT
3. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U265</td><td>
Setting OEM purchaser code
Description
Sets the OEM purchaser code.
Purpose
Sets the code when replacing the main PWB and the like.
Setting
1. Press the start key.
2. Adjust the preset value using the +/- or numeric keys.
3. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U285</td><td>
Setting service status page
Description
Determines displaying the toner coverage report on reporting.
Purpose
According to user request, changes the setting.
Method
1. Press the start key.
2. Press [COVERAGE].
Highlighted: ON, Non-highlighted: OFF
Initial setting: ON
3. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U326</td><td>
Setting the black line cleaning indication
Description
Sets whether to display the cleaning guidance when detecting the black line.
Purpose
Displays the cleaning guidance in order to make the call for service with the black line decrease by the rubbish on the platen when scanning from the DP.
Setting
1. Press the start key.
2. Select ON or OFF.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON</td><td>Displays the cleaning guidance</td></tr>
<tr><td>OFF</td><td>Not to display the cleaning guidance</td></tr>
<tr><td>COUNT</td><td>Setting counts of the cleaning guidance indication</td></tr>
</table>
Initial setting: ON
3. Press the start key. The setting is set.
Setting the count value
1. Select [COUNT].
2. Enter a count using the +/- or numeric keys.
Setting range: 0 to 999
Initial setting: 8
When setting is 0, the black line cleaning indication is displayed only if the black line is detected.
3. Press the start key. The count is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U328</td><td>
Side ejection setting
Description
Sets whether to eject to the side of the machine when an optional curl eliminator is installed.
Purpose
Set according to the preference of the user.
Setting
1. Press the start key.
2. Select ON or OFF.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON</td><td>To eject to the side of the machine</td></tr>
<tr><td>OFF</td><td>Not to eject to the side of the machine</td></tr>
</table>
Initial setting: OFF
3. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U332</td><td>
Setting the size conversion factor
Description
Sets the coefficient of nonstandard sizes in relation to the A4/Letter size. The coefficient set here is used to convert the black ratio in relation to the A4/Letter size and to display the result in user simulation.
Purpose
To set the coefficient for converting the black ratio for nonstandard sizes in relation to the A4/Letter size.
Setting
1. Press the start key.
2. Select [CALCULATION RATE].
3. Change the setting using the +/- keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Size parameter</td><td>0.1 to 3.0</td><td>1.0</td></tr>
</table>
4. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U341</td><td>
Specific paper feed location setting for printing function
Description
Sets a paper feed location specified for printer output.
Purpose
To use a paper feed location only for printer output.
A paper feed location specified for printer output cannot be used for copy output.
Setting
1. Press the start key.
2. Select the paper feed location for the printer.
Two or more cassette can be selected.
3. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U342</td><td>
Setting the ejection restriction
Description
Sets or cancels the restriction on the number of sheets to be ejected continuously when the internal eject tray is selected as the eject location.
Purpose
According to user request, sets or cancels restriction on the number of sheets.
Setting
1. Press the start key.
2. Select ON or OFF.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON</td><td>Sets restriction on the number of sheets</td></tr>
<tr><td>OFF</td><td>Cancels restriction on the number of sheets</td></tr>
</table>
Initial setting: ON
Details of restriction (number of sheets to be ejected continuously after the start key is pressed)
<table>
<tr><th>Condition</th><th>Number of sheets</th></tr>
<tr><td>When no optional ejection device is installed</td><td>250</td></tr>
<tr><td>When the job separator is installed</td><td>150</td></tr>
<tr><td>When the finisher is installed</td><td>100</td></tr>
</table>
3. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U343</td><td>
Switching between duplex/simplex copy mode
Description
Switches the initial setting between duplex and simplex copy.
Purpose
To be set according to frequency of use: set to the more frequently used mode.
Setting
1. Press the start key.
2. Select ON or OFF.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON</td><td>Duplex copy</td></tr>
<tr><td>OFF</td><td>Simplex copy</td></tr>
</table>
Initial setting: OFF
3. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U345</td><td>
Setting the value for maintenance due indication
Description
Sets when to display a message notifying that the time for maintenance is about to be reached, by setting the number of copies that can be made before the current maintenance cycle ends.
When the difference between the number of copies of the maintenance cycle and that of the maintenance count reaches the set value, the message is displayed.
This maintenance mode is effective for only Japanese specification.
</td></tr>
</table>

Maintenance item No.	Description
U402	**Adjusting margins of image printing** **Description** Adjusts margins for image printing. **Purpose** Make the adjustment if margins are incorrect. **Adjustment** 1. Press the start key. 2. Select the item to be adjusted.

Display	Description	Setting range	Initial setting	Change in value per step
LEAD	Printer leading edge margin	0 to 236	74	0.1 mm
A	Printer left margin	-80 to 236	70	0.1 mm
C	Printer right margin	-118 to 236	68	0.1 mm
TRAIL	Printer trailing edge margin	-118 to 236	85	0.1 mm
TRAIL(DUP)	Printer trailing edge margin in duplex mode (second side)	-118 to 236	140	0.1 mm
TRIAL(MP)	Printer trailing edge margin (MP tray)	-118 to 236	55	0.1 mm

3. Press the system menu key.
4. Press the start key to output a test pattern.
5. Press the system menu key.
6. Change the setting value using the +/- or numeric keys.
   Increasing the value makes the margin wider, and decreasing it makes the margin narrower.

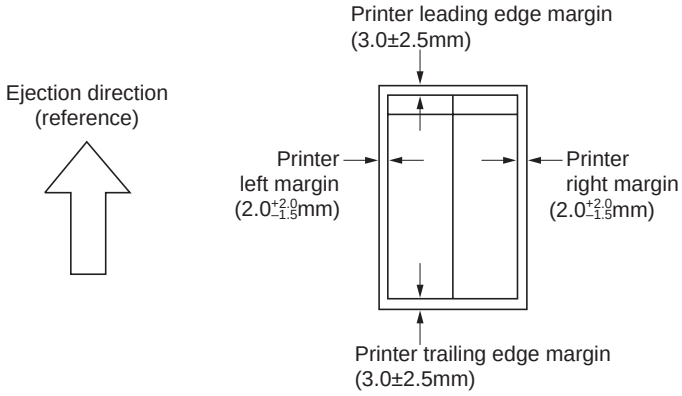
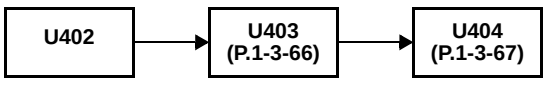


Figure 1-3-24

7. Press the start key. The value is set.

Caution
Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.



Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U403	**Adjusting margins for scanning an original on the platen** **Description** Adjusts margins for scanning the original on the contact glass. **Purpose** Make the adjustment if margins are incorrect. **Adjustment** 1. Press the start key. 2. Select the item to be adjusted.

Display	Description	Setting range	Initial setting	Change in value per step
A MARGIN	Scanner left margin	0 to 10.0	2.0	0.5 mm
B MARGIN	Scanner leading edge margin	0 to 10.0	2.0	0.5 mm
C MARGIN	Scanner right margin	0 to 10.0	2.0	0.5 mm
D MARGIN	Scanner trailing edge margin	0 to 10.0	2.0	0.5 mm

3. Press the system menu key.
4. Place an original and press the start key to make a test copy.
5. Press the system menu key.
6. Change the setting value using the +/- or numeric keys.
   Increasing the value makes the margin wider, and decreasing it makes the margin narrower.

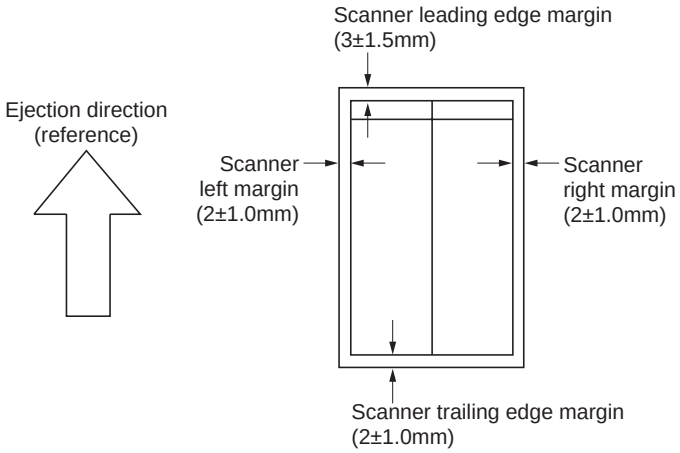
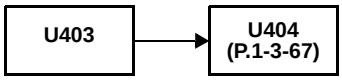


Figure 1-3-25

7. Press the start key. The value is set.

Caution
Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.



Completion
Press the stop key. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U404	**Adjusting margins for scanning an original from the DP** **Description** Adjusts margins for scanning the original from the DP. **Purpose** Make the adjustment if margins are incorrect when the optional DP is used. **Caution** Before making this adjustment, ensure that the following adjustments have been made in maintenance mode U402 (P.1-3-65) → U403 (P.1-3-66) → U404 **Adjustment** 1. Press the start key. 2. Select the item to be adjusted.

Display	Description	Setting range	Initial setting	Change in value per step
A MARGIN	Left margin (first page)	0 to 10.0	3.0	0.1 mm
B MARGIN	Leading edge margin (first page)	0 to 10.0	2.5	0.1 mm
C MARGIN	Right margin (first page)	0 to 10.0	3.0	0.1 mm
D MARGIN	Trailing edge margin (first page)	0 to 10.0	4.0	0.1 mm
A MARGIN(BACK)	Left margin (second page)	0 to 10.0	3.0	0.1 mm
B MARGIN(BACK)	Leading edge margin (second page)	0 to 10.0	2.5	0.1 mm
C MARGIN(BACK)	Right margin (second page)	0 to 10.0	3.0	0.1 mm
D MARGIN(BACK)	Trailing edge margin (second page)	0 to 10.0	4.0	0.1 mm

3. Press the system menu key.
4. Place an original on the DP and press the start key to make a test copy.
5. Press the system menu key.
6. Change the setting value using the +/- or numeric keys.
   Increasing the value makes the margin wider, and decreasing it makes the margin narrower.

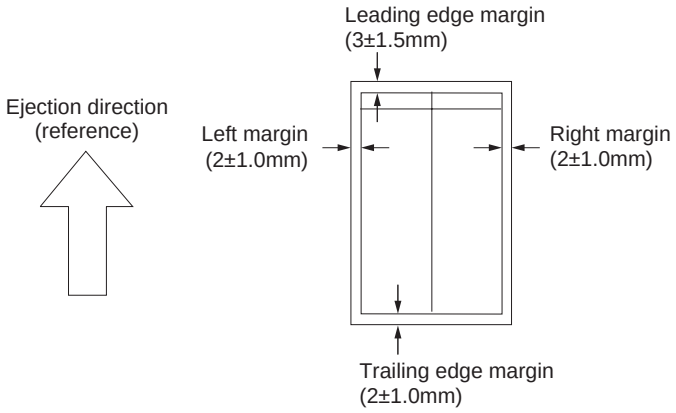


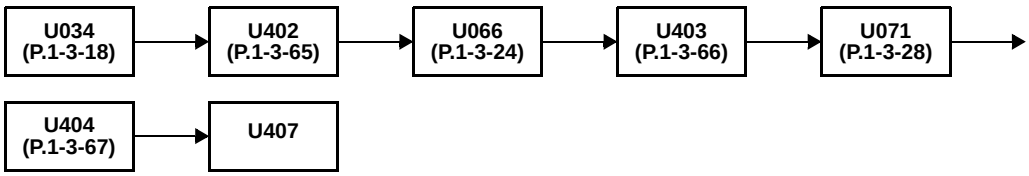
Figure 1-3-26

7. Press the start key. The value is set.

Completion

Press the stop key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U407	**Adjusting the leading edge registration for memory image printing** **Description** Adjusts the leading edge registration during memory copying. **Purpose** Make the adjustment if there is a regular error between the leading edges of the copy image and original during memory copying. **Caution** Before making this adjustment, ensure that the following adjustments have been made in maintenance mode



Adjustment

1. Press the start key.

Description	Setting range	Initial setting	Change in value per step
Leading edge registration for memory image printing	-47 to 47	0	1.0 mm

2. Press the system menu key.
3. Place an original and press the start key to make a test copy.
4. Press the system menu key.
5. Change the setting value using the +/- or numeric keys.
   For copy example 1, decrease the value.
   For copy example 2, increase the value.

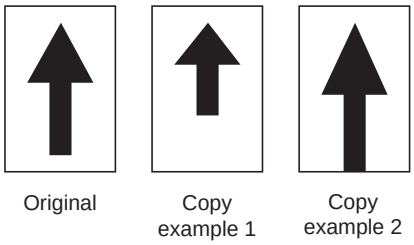


Figure 1-3-27

6. Press the start key. The value is set.

Completion

Press the stop key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U411	**Adjusting the scanner automatically** **Description** Uses a specified original and automatically adjusts the following items in the scanner and the DP scanning sections. **Purpose** To perform automatic adjustment of various items in the scanner and the DP scanning sections. **Method** 1. Press the start key. 2. Select the item. The screen for executing is displayed.

Display	Description	Original to be used for adjustment (P/N)
SCANNER	Automatic adjustment in the scanner section	302FZ56990
DP(FACE UP)	Automatic adjustment in the DP scanning section (first page)	2AC68241
DP(FACE DOWN)	Automatic adjustment in the DP scanning section (second page)	2AC68241/303JX57010/ 303JX57020

Remarks
Cut the trailing edge of the original as shown when the specified original (P/N: 2AC68241) is used.

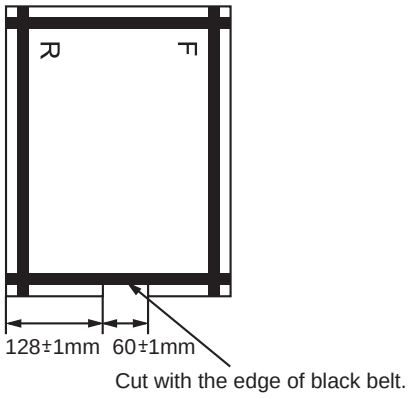


Figure 1-3-28

Method: SCANNER
1. Enter the target values which are shown on the specified original (P/N: 302FZ56990) executing maintenance item U425.
2. Set a specified original (P/N: 302FZ56990) on the platen.
3. Select the item.

Display	Description
ALL	Automatic adjustment using the platen for: original size magnification/leading edge timing/center line, input gamma, chromatic aberration filter, MTF filter and matrix.
INPUT	Automatic adjustment using the platen for: original size magnification/leading edge timing/center line.
GAMMA	Automatic adjustment using the platen for: input gamma.
C.A.	Automatic adjustment using the platen for: chromatic aberration filter.
MTF	Automatic adjustment using the platen for: MTF filter.
MATRIX	Automatic adjustment using the platen for: matrix.

4. Press the start key. Auto adjustment starts.
   When automatic adjustment has normally completed, [RESULT OK 00] is displayed. If a problem occurs during auto adjustment, [ERROR XX] (XX is replaced by an error code) is displayed and operation stops. Should this happen, determine the details of the problem and either repeat the procedure from the beginning, or adjust the remaining items manually by running the corresponding maintenance items.
5. To return to the screen for selecting an item, press the stop key.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U411</td><td>
Method: DP(FACE UP)
1. Set a specified original (P/N: 2AC68241) in the DP.
2. Select [INPUT].
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>INPUT</td><td>Automatic adjustment of first page using the DP for: original size magnification/leading edge timing/center line.</td></tr>
</table>
3. Press the start key. Auto adjustment starts.
When automatic adjustment has normally completed, [RESULT OK 00] is displayed. If a problem occurs during auto adjustment, [ERROR XX] (XX is replaced by an error code) is displayed and operation stops. Should this happen, determine the details of the problem and either repeat the procedure from the beginning, or adjust the remaining items manually by running the corresponding maintenance items.
4. To return to the screen for selecting an item, press the stop key.

Method: DP(FACE DOWN)
1. Select the item. The screen for executing is displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>NORMAL TARGET</td><td>Uses the value determined using maintenance item U425 as the target data.</td></tr>
<tr><td>ORIGINAL TARGET</td><td>Uses the specified original for acquiring data as the target data.</td></tr>
</table>
Method: NORMAL TREGET
1. Select the item.
<table>
<tr><th>Display</th><th>Description</th><th>Original to be used for adjustment (P/N)</th></tr>
<tr><td>ALL</td><td>Automatic adjustment of second page using the DP for: original size magnification/leading edge timing/center line, input gamma, chromatic aberration filter, MTF filter and matrix.</td><td>2AC68241/303JX57010/303JX57020</td></tr>
<tr><td>INPUT</td><td>Automatic adjustment of second page using the DP for: original size magnification/leading edge timing/center line.</td><td>2AC68241</td></tr>
<tr><td>GAMMA</td><td>Automatic adjustment of second page using the DP for: tolerance of input gamma.</td><td>303JX57010</td></tr>
<tr><td>MTF/MATRIX</td><td>Automatic adjustment of second page using the DP for: tolerance of MTF filter and matrix.</td><td>303JX57020</td></tr>
</table>
[ALL]
1. Enter the target values which are shown on the specified original (P/N: 2AC68241/303JX57010/303JX57020) executing maintenance item U425.
2. Set specified originals (P/N: 2AC68241/303JX57010/303JX57020) in the DP.
Stack the originals in the order of 2AC68241, 303JX57010, and 303JX57020.
3. Press the start key. Auto adjustment starts.
[INPUT]
1. Enter the target values which are shown on the specified original (P/N: 2AC68241) executing maintenance item U425.
2. Set a specified original (P/N: 2AC24681) in the DP.
3. Press the start key. Auto adjustment starts.
[GAMMA]
1. Enter the target values which are shown on the specified original (P/N: 303JX57010) executing maintenance item U425.
2. Set a specified original (P/N: 303JX57010) in the DP.
3. Press the start key. Auto adjustment starts.
[MTF/MATRIX]
1. Enter the target values which are shown on the specified original (P/N: 303JX57020) executing maintenance item U425.
2. Set a specified original (P/N: 303JX57020) in the DP.
3. Press the start key. Auto adjustment starts.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U411</td><td>
When automatic adjustment has normally completed, [RESULT OK 00] is displayed. If a problem occurs during auto adjustment, [ERROR XX] (XX is replaced by an error code) is displayed and operation stops. Should this happen, determine the details of the problem and either repeat the procedure from the beginning, or adjust the remaining items manually by running the corresponding maintenance items.

Method: ORIGINAL TARGET
1. Place the specified original for acquiring gamma target data (P/N: 303JX57010) on the platen, and press the start key.
2. Place the specified original for acquiring matrix target data (P/N: 303JX57010) on the platen, and press the start key.
3. Select the item.
<table>
<tr><th>Display</th><th>Description</th><th>Original to be used for adjustment (P/N)</th></tr>
<tr><td>ALL</td><td>Automatic adjustment of second page using the DP for: original size magnification/leading edge timing/ center line, input gamma, chromatic aberration filter, MTF filter and matrix.</td><td>2AC68241/303JX57010/ 303JX57020</td></tr>
<tr><td>INPUT</td><td>Automatic adjustment of second page using the DP for: original size magnification/leading edge timing/ center line.</td><td>2AC68241</td></tr>
<tr><td>GAMMA</td><td>Automatic adjustment of second page using the DP for: input gamma.</td><td>303JX57010</td></tr>
<tr><td>MTF/MATRIX</td><td>Automatic adjustment of second page using the DP for: MTF filter and matrix.</td><td>303JX57020</td></tr>
</table>
[ALL]
1. Set specified originals (P/N: 2AC68241/303JX57010/303JX57020) in the DP.
Stack the originals in the order of 2AC68241, 303JX57010, and 303JX57020.
2. Press the start key. Auto adjustment starts.
[INPUT]
1. Set a specified original (P/N: 2AC24681) in the DP.
2. Press the start key. Auto adjustment starts.
[GAMMA]
1. Set a specified original (P/N: 303JX57010) in the DP.
2. Press the start key. Auto adjustment starts.
[MTF/MATRIX]
1. Set a specified original (P/N: 303JX57020) in the DP.
2. Press the start key. Auto adjustment starts.

When automatic adjustment has normally completed, [RESULT OK 00] is displayed. If a problem occurs during auto adjustment, [ERROR XX] (XX is replaced by an error code) is displayed and operation stops. Should this happen, determine the details of the problem and either repeat the procedure from the beginning, or adjust the remaining items manually by running the corresponding maintenance items.
</td></tr>
</table>

Maintenance item No.	Description
U411	**Error Codes**

Codes	Description
ERROR 01	Black band detection error (scanner leading edge registration)
ERROR 02	Black band detection error (scanner center line)
ERROR 03	Black band detection error (scanner main scanning direction magnification)
ERROR 04	Black band is not detected (scanner leading edge registration)
ERROR 05	Black band is not detected (scanner center line)
ERROR 06	Black band is not detected (scanner main scanning direction magnification)
ERROR 07	Black band is not detected (scanner auxiliary scanning direction magnification)
ERROR 08	Black band is not detected (DP main scanning direction magnification far end)
ERROR 09	Black band is not detected (DP main scanning direction magnification near end)
ERROR 0a	Black band is not detected (DP auxiliary scanning direction magnification leading edge)
ERROR 0b	Black band is not detected (DP auxiliary scanning direction magnification leading edge original check)
ERROR 0c	Black band is not detected (DP auxiliary scanning direction trailing edge)
ERROR 0d	Black band is not detected (DP auxiliary scanning direction trailing edge 2)
ERROR 0e	DMA time out
ERROR 0f	Auxiliary scanning direction magnification error
ERROR 10	Auxiliary scanning direction leading edge detection error
ERROR 11	Auxiliary scanning direction trailing edge detection error
ERROR 12	Auxiliary scanning direction skew 1.5 error
ERROR 13	Maintenance request error
ERROR 14	Main scanning direction center line error
ERROR 15	Main scanning direction skew 1.5 error
ERROR 16	Main scanning direction magnification error
ERROR 17	Carriage error
ERROR 18	Service call error
ERROR 19	DP status error
ERROR 1a	DP open error
ERROR 1b	Original is not detected
ERROR 2X	N950 patch for the original error
ERROR 3X	N850 patch for the original error
ERROR 4X	N770 patch for the original error
ERROR 5X	N650 patch for the original error
ERROR 6X	N500 patch for the original error
ERROR 7X	N300 patch for the original error
ERROR 8X	N300 patch for the original error
ERROR 9X	N950 patch for the original error
ERROR aX	Cyan patch for the original error
ERROR bX	Magenta patch for the original error
ERROR cX	Yellow patch for the original error
ERROR dX	Red patch for the original error
ERROR eX	Green patch for the original error
ERROR fX	Blue patch for the original error
ERROR ff	Other error

Completion

Press the stop key. The screen for selecting a maintenance item is displayed.

Maintenance item No.	Description
U425	**Setting the target** **Description** The value that is indicated on the back of the chart to be used for adjustment should be entered. **Purpose** Performs data input in order to correct for differences in originals during automatic adjustment. **Method** 1. Press the start key. 2. Select the item. The screen for executing is displayed.

Display	Description	Original to be used for adjustment (P/N)
CCD	Entering the target values for scanner automatic adjustment	302FZ56990
CIS	Entering the target values for DP automatic adjustment	2AC68241/303JX57010/ 303JX57020

Setting: CCD

1. Select the item to be set.

Display	Description
N875	Setting the N875 patch for the original for adjustment
N475	Setting the N475 patch for the original for adjustment
N125	Setting the N125 patch for the original for adjustment
CYAN	Setting the cyan patch for the original for adjustment
MAGENTA	Setting the magenta patch for the original for adjustment
YELLOW	Setting the yellow patch for the original for adjustment
RED	Setting the red patch for the original for adjustment
GREEN	Setting the green patch for the original for adjustment
BLUE	Setting the blue patch for the original for adjustment
ADJUST ORIGINAL	Setting the main and auxiliary scanning directions

2. Select the item to be set.
3. Change the setting value using the +/- or numeric keys.

Display	Description	Setting range
L	Setting the L value	0.0 to 100.0
a	Setting the a value	-200.0 to 200.0
b	Setting the b value	-200.0 to 200.0

4. Press the start key. The value is set.
5. To return to the screen for selecting an item, press the stop key.

Setting: ADJUST ORIGINAL/MAIN

1. Measure distance from the left edge of the original for adjustment to the black band in three points.
   Measurement procedure
   1) Measure the distances A (50 mm), B (105 mm) and C (190 mm) along the auxiliary scanning direction.
   2) Apply the following formula for the values obtained: ((A + C) / 2 + B) / 2
2. Enter the values solved using the +/- keys in [MAIN ADJ].
3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop key.

Setting: ADJUST ORIGINAL/SUB

1. Measure distance from the leading edge of the original for adjustment to the black band in three points.
   Measurement procedure
   1) Measure the distances D (30 mm), E (148.5 mm) and C (267 mm) along the main scanning direction.
   2) Apply the following formula for the values obtained: ((D + F) / 2 + E) / 2
2. Enter the values solved using the +/- keys in [SUB ADJ].
3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop key.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U425</td><td>
Setting: CIS
1. Select the item to be set.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>N950</td><td>Setting the N950 patch for the original for adjustment</td></tr>
<tr><td>N850</td><td>Setting the N850 patch for the original for adjustment</td></tr>
<tr><td>N770</td><td>Setting the N770 patch for the original for adjustment</td></tr>
<tr><td>N650</td><td>Setting the N650 patch for the original for adjustment</td></tr>
<tr><td>N500</td><td>Setting the N500 patch for the original for adjustment</td></tr>
<tr><td>N300</td><td>Setting the N300 patch for the original for adjustment</td></tr>
<tr><td>CYAN</td><td>Setting the cyan patch for the original for adjustment</td></tr>
<tr><td>MAGENTA</td><td>Setting the magenta patch for the original for adjustment</td></tr>
<tr><td>YELLOW</td><td>Setting the yellow patch for the original for adjustment</td></tr>
<tr><td>RED</td><td>Setting the red patch for the original for adjustment</td></tr>
<tr><td>GREEN</td><td>Setting the green patch for the original for adjustment</td></tr>
<tr><td>BLUE</td><td>Setting the blue patch for the original for adjustment</td></tr>
</table>
2. Select the item to be set.
3. Change the setting value using the +/- or numeric keys.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th></tr>
<tr><td>L</td><td>Setting the L value</td><td>0.0 to 100.0</td></tr>
<tr><td>a</td><td>Setting the a value</td><td>-200.0 to 200.0</td></tr>
<tr><td>b</td><td>Setting the b value</td><td>-200.0 to 200.0</td></tr>
</table>
4. Press the start key. The value is set.
5. To return to the screen for selecting an item, press the stop key.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U510</td><td>
Setting the enterprise mode
Description
Sets whether or not the enterprise mode setting is enabled.
Purpose
According to user request, changes the setting.
Setting
1. Press the start key.
2. Select ON or OFF.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON</td><td>Enterprise mode setting is enabled.</td></tr>
<tr><td>OFF</td><td>Enterprise mode setting is disabled.</td></tr>
</table>
Initial setting: ON (Inch specifications)/OFF (Metric specifications)
3. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U901</td><td>
Checking/clearing copy counts by paper feed locations
Description
Displays or clears copy counts by paper feed locations.
Purpose
To check the time to replace consumable parts. Also to clear the counts after replacing the consumable parts.
Method
Press the start key. The counts by paper feed locations are displayed.
<table>
<tr><th>Display</th><th>Paper feed locations</th></tr>
<tr><td>MP TRAY</td><td>MP tray</td></tr>
<tr><td>CASSETTE 1</td><td>Cassette 1</td></tr>
<tr><td>CASSETTE 2</td><td>Cassette 2</td></tr>
<tr><td>CASSETTE 3</td><td>Optional cassette 3</td></tr>
<tr><td>CASSETTE 4</td><td>Optional cassette 4</td></tr>
<tr><td>LCF</td><td>Optional 3000-sheet paper feeder</td></tr>
<tr><td>DUPLEX</td><td>Duplex section</td></tr>
</table>
When an optional paper feed device is not installed, the corresponding count is not displayed.
Clearing
1. Select the count to be cleared.
To clear all counts, press the clear key.
2. Press the start key. The count is cleared.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U902</td><td>
Checking/clearing the punch-hole scrap counter
Description
To set the punch limit, display and clear the punch counter of optional 3000-sheet document finisher.
Purpose
To set the maximum number of punches possible in order to instruct the user of the time to replace punch waste. Also, used to manually clear the punch-hole scrap count if a message requiring collection of punch-hole scrap is shown on the touch panel after collection. If punch-hole scrap is collected with the machine power turned off, the punch-hole scrap count is not cleared and consequently this problem occurs.
Method
1. Press the start key.
2. Select the item.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>PUNCH LIMIT</td><td>The maximum number of punches
(maximum number of punching times)</td><td>0 to 999000</td><td>35000</td></tr>
<tr><td>PUNCH COUNT</td><td>Punch-hole scrap count
(current number of punching times)</td><td>0 to 999999</td><td>0</td></tr>
</table>
3. Change the setting using the numeric keys or clear key.
4. Press the start key. The value is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U903</td><td>
Checking/clearing the paper jam counts
Description
Displays or clears the jam counts by jam locations.
Purpose
To check the paper jam status. Also to clear the jam counts after replacing consumable parts.
Method
1. Press the start key.
2. Select the item. The screen for executing is displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>COUNT</td><td>Displays/clears the jam counts</td></tr>
<tr><td>TOTAL COUNT</td><td>Displays the total jam counts</td></tr>
</table>
Method: Displays/clears the jam counts
1. Select [COUNT]. The count for jam detection by type is displayed.
2. Change the screen using the cursor up/down keys.
3. Select the counts for all jam codes and press the clear key.
4. Press the start key. The count is cleared.
The individual counter cannot be cleared.
5. To return to the screen for selecting an item, press the stop key.
Method: Displays the total jam counts
1. Select [TOTAL COUNT]. The total number of jam counts by type is displayed.
2. Change the screen using the cursor up/down keys.
The total number of jam count cannot be cleared.
3. To return to the screen for selecting an item, press the stop key.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U904</td><td>
Checking/clearing the service call counts
Description
Displays or clears the service call code counts by types.
Purpose
To check the service call code status by types. Also to clear the service call code counts after replacing consumable parts.
Method
1. Press the start key.
2. Select the item. The screen for executing is displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>COUNT</td><td>Displays/clears the service call counts</td></tr>
<tr><td>TOTAL COUNT</td><td>Displays the total service call counts</td></tr>
</table>
Method: Displays/clears the service call counts
1. Select [COUNT]. The count for service call detection by type is displayed.
2. Change the screen using the cursor up/down keys.
3. Select the counts for all service call codes and press the clear key.
4. Press the start key. The count is cleared.
The individual counter cannot be cleared.
5. To return to the screen for selecting an item, press the stop key.
Method: Displays the total service call counts
1. Select [TOTAL COUNT]. The total number of service call counts by type is displayed.
2. Change the screen using the cursor up/down keys.
The total number of service call count cannot be cleared.
3. To return to the screen for selecting an item, press the stop key.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

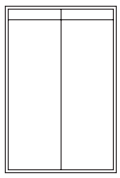
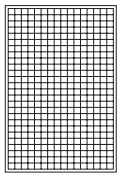
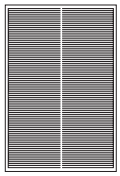
<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U905</td><td>
Checking/clearing counts by optional devices
Description
Displays or clears the counts of optional DP or finisher.
Purpose
To check the use of optional DP and finisher. Also to clear the counts after replacing consumable parts.
Method
1. Press the start key.
2. Select the device, the count of which is to be checked. The count of the selected device is displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>DP</td><td>Counts of optional DP</td></tr>
<tr><td>FINISHER</td><td>Counts of optional finisher</td></tr>
</table>
DP
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ADP</td><td>No. of single-sided originals that has passed through the DP</td></tr>
<tr><td>RADP</td><td>No. of double-sided originals that has passed through the DP</td></tr>
</table>
Finisher
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>CP CNT</td><td>No. of copies that has passed</td></tr>
<tr><td>STAPLE</td><td>Frequency the stapler has been activated</td></tr>
<tr><td>PUNCH</td><td>Frequency the punch has been activated</td></tr>
<tr><td>STACK</td><td>Frequency the stacker has been activated</td></tr>
<tr><td>SADDLE</td><td>Frequency the center holding has been activated</td></tr>
</table>
Clearing
1. Select the item to be cleared.
To clear the counts for all, press the clear key.
2. Press the start key. The count is cleared.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U906</td><td>
Resetting partial operation control
Description
Resets the service call code for partial operation control.
Purpose
To be reset after partial operation is performed due to problems in the casettes or other sections, and the related parts are serviced.
Method
1. Press the start key.
2. Press [EXECUTE] on the touch panel.
3. Press the start key to reset partial operation control.
The maintenance mode is exited, and the machine returns to the same status as when the main power switch is turned on.
</td></tr>
<tr><td>U908</td><td>
Checking the total counter value
Description
Displays the total counter value.
Purpose
To check the total counter value.
Method
Press the start key. The screen for total count value is displayed.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U910	**Clearing the black ratio data** **Description** Clears the accumulated black ratio data for A4 sheet. **Purpose** To clear data as required at times such as during maintenance service. **Method** 1. Press the start key. 2. Press [EXCUTE] on the touch panel. 3. Press the start key. The accumulated black ratio data is cleared. **Completion** Press the stop key. The screen for selecting a maintenance item No. is displayed.
U911	**Checking/clearing copy counts by paper sizes** **Description** Displays and clears the paper feed counts by paper sizes. **Purpose** To check or clear the counts after replacing consumable parts. **Method** Press the start key. The screen for the paper feed counts by paper size is displayed. **Clearing** 1. Select the paper size. To clear all counts, press the clear key. 2. Press the start key. The count is cleared. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U920	**Checking the copy counts** **Description** Checks the copy counts. **Purpose** To check the copy counts. **Method** Press the start key. The current counts of copy counter, printer counter and fax counter are displayed. **Completion** Press the stop key. The screen for selecting a maintenance item No. is displayed.
U927	**Clearing the all copy counts and machine life counts (one time only)** **Description** Resets all of the counts back to 0. **Purpose** To start the counters with value 0 when installing the machine. **Supplement** The total account counter and the machine life counter can be cleared only once if all count values are 1000 or less. **Method** 1. Press the start key. 2. Press [EXECUTE] on the touch panel. 3. Press the start key. All copy counts and machine life counts are cleared. [CANNOT EXECUTE] is displayed if the count cannot be cleared. **Completion** Press the stop key. The screen for selecting a maintenance item No. is displayed.
U928	**Checking machine life counts** **Description** Displays the machine life counts. **Purpose** To check the machine life counts. **Method** Press the start key. The current machine life counts is displayed. **Completion** Press the stop key. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U933</td><td>
Setting the backup kit
Description
Initializes optional data backup kit (CF) and restore the backup data.
Purpose
To initialize the CF when call for service (C0700) occurs. Also, to restore data when the hard disk has been damaged.
Method
1. Press the start key.
2. Select the item.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>INITIALIZE CF</td><td>Initializes the data backup kit (CF) and backs up the job accounting data in the hard disk into the data backup kit (CF).</td></tr>
<tr><td>FAX IMAGE</td><td>Prints the fax reception data backed up in the data backup kit (CF).</td></tr>
<tr><td>JOB ACCOUNTING</td><td>Restores the job accounting data stored in the data backup kit (CF) to the hard disk.</td></tr>
</table>
Method: Initialization of CF
1. Select [INITIALIZE CF].
2. Press the start key. CF is initialized.
3. Turn the main power switch off and on.
Method: Printing the fax image
1. Select [FAX IMAGE].
2. Press [EXECUTE].
3. Press the start key. The fax reception data is printed out.
Method: Restoration of data of the hard disk
1. Select [JOB ACCOUNTING].
2. Press the start key. The job accounting data is restored.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U935</td><td>
Relay board maintenance
Description
Sets the machine status temporarily when call for service (C0060) occurs. However, after the setting, call for service (C0060) occurs again when progress of period.
Setting
1. Press the start key.
2. Select the item.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MODE 0</td><td>Setting mode: OFF</td></tr>
<tr><td>MODE 1</td><td>Setting mode: ON (Usable up to three times of use)</td></tr>
</table>
Initial setting: MODE 0
3. Press the start key. The setting is set.
4. Turn the main power switch off and on.
Supplement
After removing the cause of the problem, be sure to change the setting in OFF.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U942</td><td>
Setting of amount of slack for feeding from DP
Description
Adjusts the amount of slack generated when the optional DP is used.
Purpose
Use this mode if an original non-feed jam, oblique feed or wrinkling of original occurs when the DP is used.
Setting
1. Press the start key.
2. Select the item to be adjusted.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr>
<tr><td>REGST</td><td>Amount of slack in the reading original from the DP</td><td>-31 to 31</td><td>0</td><td>0.17 mm</td></tr>
<tr><td>REGST MIX</td><td>Amount of slack in the reading original from the DP in the auto selection mode</td><td>-31 to 31</td><td>0</td><td>0.17 mm</td></tr>
</table>
3. Press the system menu key.
4. Place an original on the DP and press the start key to make a test copy.
5. Press the system menu key.
6. Change the setting value using the +/- or numeric keys.
The greater the value, the larger the amount of slack; the smaller the value, the smaller the amount of slack.
If an original non-feed jam or oblique feed occurs, increase the setting value. If wrinkling of original occurs, decrease the value.
7. Press the start key. The setting is set.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U984</td><td>
Checking the developing unit number
Description
Displays the developing unit number.
Purpose
To check the developing unit number.
Method
Press the start key. The number is displayed.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U985</td><td>
Displaying the developing unit history
Description
Displays the past record of machine number and the developing counter.
Purpose
To check the count value machine number and the developing counter.
Method
Press the start key. Past record of 5 cases is displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MACHINE No.1 to 5</td><td>Past record of machine number</td></tr>
<tr><td>COUNT 1 to 5</td><td>Past record of developing counter</td></tr>
</table>
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U989</td><td>
HDD scandisk
Description
Restores data in the hard disk by scanning the disk.
Purpose
If power is turned off while accessing to the hard disk is performed, the control information in the hard disk drive may be damaged. Use this mode to restore the data.
Method
1. Press the start key.
2. Press [EXECUTE] on the touch panel.
3. Press the start key. When scanning of the disk is complete, the execution result is displayed.
4. Turn the main power switch off and on.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U990</td><td>
Checking/clearing the time for the exposure lamp to light
Description
Displays, clears or changes the accumulated time for the exposure lamp to light.
Purpose
To check duration of use of the exposure lamp. Also to clear the accumulated time for the lamp after replacement.
Method
Press the start key. The accumulated time of illumination for the exposure lamp is displayed in minutes.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>CCD</td><td>Accumulated time for the exposure lamp</td></tr>
<tr><td>CIS</td><td>Accumulated time for CIS</td></tr>
</table>
Clearing
1. Select the item to be cleared.
2. Press the start key. The accumulated time is cleared.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U991</td><td>
Checking the scanner count
Description
Displays the scanner operation count.
Purpose
To check the status of use of the scanner.
Method
Press the start key.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>COPY SCAN COUNT</td><td>Scanner operation count for copying</td></tr>
<tr><td>OTHERS SCAN CNT</td><td>Scanner operation count except for copying</td></tr>
</table>
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U993</td><td>
Outputting a VTC-PG pattern
Description
Selects and outputs a VTC-PG pattern created in the machine.
Purpose
When performing respective image printing adjustments, used to check the machine status apart from that of the scanner with a non-scanned output VTC-PG pattern.
Method
1. Press the start key.
2. Select the VTC-PG pattern to be output.
<table>
<tr><th>Display</th><th>PG pattern to be output</th><th>Purpose</th></tr>
<tr><td>PG1</td><td>  </td><td>Leading edge registration adjustment
Center line adjustment
Margin adjustment</td></tr>
<tr><td>PG2</td><td>  </td><td>Lateral squareness adjustment
Magnification adjustment</td></tr>
<tr><td>PG3</td><td>  </td><td>Driving unevenness of drum</td></tr>
</table>
3. Press the system menu key.
4. Press the start key. A VTC-PG pattern is output.
5. To return to the screen for selecting an item, press the system menu key.
Completion
Press the stop key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

1-4-1 Paper misfeed detection

(1) Paper misfeed indication

When a paper misfeed occurs, the machine immediately stops copying and displays the jam location on the operation panel.
Paper misfeed counts sorted by the detection condition can be checked in maintenance item U903.
To remove paper jammed in the machine, open the front cover, left cover or pull the cassette out.
To remove original jammed in the optional DP, open the document processor top cover or document processor reverse unit.
To remove the jammed paper in optional document finisher, detach the finisher from the machine.
Paper misfeed detection can be reset by opening and closing the respective covers to turn safety switch off and on.

(2) Paper misfeed detection conditions

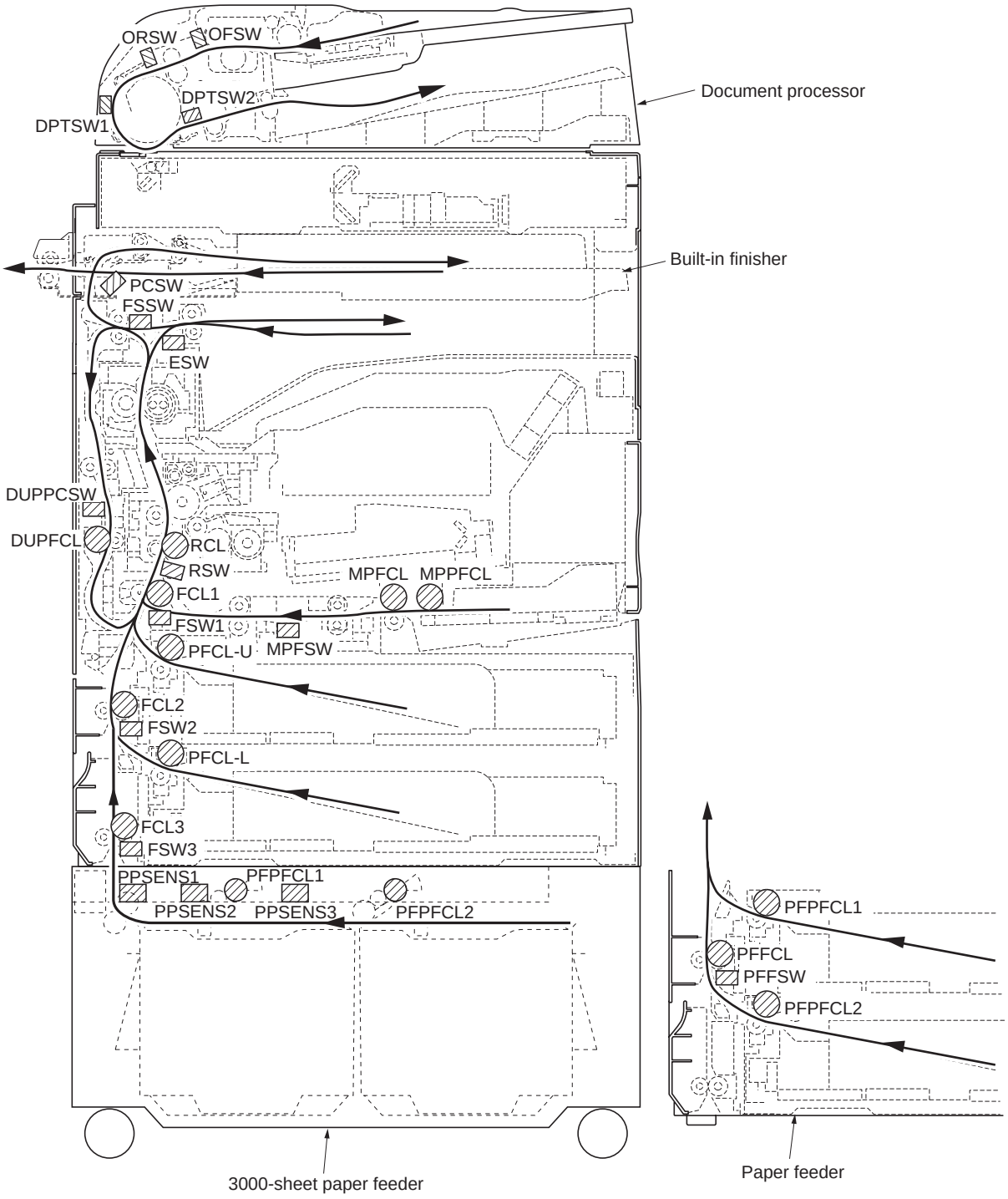


Figure 1-4-1

Section	Description	Conditions	Specified time
System	04 Cover open	Cover is open during copying.	-
	05 Secondary paper feed does not start	Secondary paper feed does not start within specified time of arrival of paper at the registration section.	30 s
	09 3000-sheet paper feeder sequence error jam	A communication sequence error occurs between the machine and the 3000-sheet paper feeder.	-
Paper feed section	10 No paper feed from cassette 1	Feed switch 1 (FSW1) does not turn on within the specified time of upper paper feed clutch (PFCL-U) turning on; the clutch is then successively turned off for 1 s and turned back on, but the switch again fails to turn on within the specified time.	1489 ms (30 ppm)/ 1152 ms (40/50 ppm)
	11 No paper feed from cassette 2	Feed switch 2 (FSW2) does not turn on within the specified time of lower paper feed clutch (PFCL-L) turning on; the clutch is then successively turned off for 1 s and turned back on, but the switch again fails to turn on within the specified time.	1562 ms (30 ppm)/ 1209 ms (40/50 ppm)
	12 No paper feed from optional cassette 3	Feed switch 3 (FSW3) does not turn on within the specified time of paper feeder paper feed clutch 1 (PFPFCL1) turning on; the clutch is then successively turned off for 1 s and turned back on, but the switch again fails to turn on within the specified time (paper feed from optional paper feeder).	1562 ms (30 ppm)/ 1209 ms (40/50 ppm)
		Feed switch 3 (FSW3) does not turn on within the specified time of paper feeder paper feed clutch 1 (PFPFCL1) turning on; the clutch is then successively turned off for 1 s and turned back on, but the switch again fails to turn on within the specified time (paper feed from optional 3000-sheet paper feeder).	2044 ms (30 ppm)/ 1582 ms (40/50 ppm)
	13 No paper feed from optional cassette 4	The paper feeder feed switch (PFFSW) does not turn on within the specified time of paper feeder paper feed clutch 2 (PFPFCL2) turning on; the clutch is then successively turned off for 1 s and turned back on, but the switch again fails to turn on within the specified time (paper feed from optional paper feeder).	1562 ms (30 ppm)/ 1209 ms (40/50 ppm)
	14 No paper feed from MP tray	The MP feed switch (MPFSW) does not turn on within the specified time of the MP paper feed clutch (MPPFCL) turning on; the clutch is then successively turned off for 1 s and turned back on, but the switch again fails to turn on within the specified time.	5056 ms (30 ppm)/ 3913 ms (40/50 ppm)
	15 Jam in paper feeder horizontal paper conveying section 1	Paper path sensor 3 (PPSENS3) does not turn on within specified time of paper feeder paper feed clutch 2 (PFPFCL2) turning on (paper feed from optional 3000-sheet paper feeder).	823 ms (30 ppm)/ 637 ms (40/50 ppm)
	16 Jam in paper feeder horizontal paper conveying section 2	Paper path sensor 2 (PPSENS2) does not turn on within specified time of the paper path sensor 3 (PPSENS3) turning on (paper feed from optional 3000-sheet paper feeder).	879 ms (30 ppm)/ 681 ms (40/50 ppm)
	17 Jam in paper feeder horizontal paper conveying section 3	Paper path sensor 1 (PPSENS1) does not turn on within specified time of the paper path sensor 2 (PPSENS2) turning on (paper feed from optional 3000-sheet paper feeder).	539 ms (30 ppm)/ 417 ms (40/50 ppm)

Section	Description	Conditions	Specified time
Paper feed section	18 Misfeed in vertical paper conveying section	The registration switch (RSW) does not turn on within specified time of feed switch 1 (FSW1) turning on.	1657 ms (30 ppm)/ 1283 ms (40/50 ppm)
		Feed switch 1 (FSW1) does not turn on within specified time of feed switch 2 (FSW2) turning on.	1910 ms (30 ppm)/ 1478 ms (40/50 ppm)
		Feed switch 2 (FSW2) does not turn on within specified time of feed switch 3 (FSW3) turning on.	1904 ms (30 ppm)/ 1474 ms (40/50 ppm)
	19 Misfeed in paper feeder vertical paper conveying section	Feed switch 3 (FSW3) does not turn on within specified time of the paper feeder feed switch (PFFSW) turning on.	1573 ms (30 ppm)/ 1217 ms (40/50 ppm)
	20 Misfeed in MP tray vertical paper conveying section	The registration switch (RSW) does not turn on within specified time of the MP feed switch (MPFSW) turning on.	3933 ms (30 ppm)/ 3043 ms (40/50 ppm)
	21 Multiple sheets in paper feed section	The feed switch 1 (FSW1) does not turn off within specified time of its turning on.	Paper length + 4337ms (30 ppm)/ Paper length + 3357ms (40/50 ppm)
		The feed switch 2 (FSW2) does not turn off within specified time of its turning on.	Paper length + 4337ms (30 ppm)/ Paper length + 3357ms (40/50 ppm)
		The feed switch 3 (FSW3) does not turn off within specified time of its turning on (paper feed from optional paper feeder).	3382ms (30 ppm)/ 2617ms (40/50 ppm)
		The feed switch 3 (FSW3) does not turn off within specified time of its turning on (paper feed from optional 3000-sheet paper feeder).	Paper length + 1595ms (30 ppm)/ Paper length + 1234ms (40/50 ppm)
		The paper feeder feed switch (PFFSW) does not turn off within specified time of its turning on.	3382ms (30 ppm)/ 2617ms (40/50 ppm)
		The MP feed switch (MPFSW) does not turn off within specified time of its turning on.	Paper length + 4337ms (30 ppm)/ Paper length + 3357ms (40/50 ppm)
		The feed switch 1 (FSW1) does not turn off within specified time of the upper paper feed clutch (PFCL-U) turning on.	1489 ms (30 ppm)/ 1152 ms (40/50 ppm)
		The feed switch 2 (FSW2) does not turn off within specified time of the lower paper feed clutch (PFCL-L) turning on.	1562 ms (30 ppm)/ 1209 ms (40/50 ppm)
		The feed switch 3 (FSW3) does not turn off within specified time of the paper feeder paper feed clutch 1 (PFPFCL1) turning on.	3416 ms (30 ppm)/ 2643 ms (40/50 ppm)
		The paper feeder feed switch (PFFSW) does not turn off within specified time of the paper feeder paper feed clutch 2 (PFPFCL2) turning on.	5056 ms (30 ppm)/ 3913 ms (40/50 ppm)
		The MP feed switch (MPFSW) does not turn off within specified time of the MP paper feed clutch (MPPFCL) turning on.	5056 ms (30 ppm)/ 3913 ms (40/50 ppm)

Section	Description	Conditions	Specified time
Paper feed section	22 Multiple sheets in vertical conveying section	The feed switch 1 (FSW1) does not turn off within specified time of the feed switch 2 (FSW2) turning off.	1910 ms (30 ppm)/ 1478 ms (40/50 ppm)
		The feed switch 2 (FSW2) does not turn off within specified time of the feed switch 3 (FSW3) turning off.	1989 ms (30 ppm)/ 1539 ms (40/50 ppm)
		The feed switch 1 (FSW1) does not turn off within specified time of the feed switch 2 (FSW2) turning on	1910 ms (30 ppm)/ 1478 ms (40/50 ppm)
		The feed switch 2 (FSW2) does not turn off within specified time of the feed switch 3 (FSW3) turning on.	1904 ms (30 ppm)/ 1474 ms (40/50 ppm)
	23 Multiple sheets in MP tray conveying section	The registration switch (RSW) does not turn off within specified time of the MP feed switch (MPFSW) turning off.	3539 ms (30 ppm)/ 2739 ms (40/50 ppm)
		The registration switch (RSW) does not turn off within specified time of the MP feed switch (MPFSW) turning on.	3933 ms (30 ppm)/ 3043 ms (40/50 ppm)
Paper conveying section	30 Misfeed in registration/ transfer section	The registration switch (RSW) does not turn off within specified time of the feed switch 1 (FSW1) turning off.	1511 ms (30 ppm)/ 1170 ms (40/50 ppm)
		The registration switch (RSW) does not turn off within specified time of the feed switch 1 (FSW1) turning on.	1652 ms (30 ppm)/ 1278 ms (40/50 ppm)
Fuser section	40 Misfeed in fuser section (MP tray) 41 Misfeed in fuser section (cassette 1) 42 Misfeed in fuser section (cassette 2) 43 Misfeed in fuser section (optional cassette 3) 44 Misfeed in fuser section (optional cassette 4) 45 Misfeed in fuser section (optional 3000-sheet paper feeder) 46 Misfeed in fuser section (duplex section)	The eject switch (ESW) does not turn on within specified time of the registration clutch (RCL) turning on.	2899 ms (30 ppm)/ 2243 ms (40/50 ppm)
		The feedshift switch (FSSW) does not turn on within specified time of the registration clutch (RCL) turning on.	2899 ms (30 ppm)/ 2243 ms (40/50 ppm)
Eject section	50 Misfeed in eject section	The eject switch (ESW) does not turn off within specified time of the registration switch (RSW) turning off.	2899 ms (30 ppm)/ 2243 ms (40/50 ppm)
		The eject switch (ESW) does not turn off within specified time of the registration clutch (RCL) turning on.	2899 ms (30 ppm)/ 2243 ms (40/50 ppm)
	51 Misfeed in job separator eject section	The job separator eject switch (JBESW) does not turn on within specified time of the feedshift switch (FSSW) turning on.	2051 ms (30 ppm)/ 1587 ms (40/50 ppm)
		The job separator eject switch (JBESW) does not turn off within specified time of the feedshift switch (FSSW) turning off.	2051 ms (30 ppm)/ 1587 ms (40/50 ppm)
		The job separator eject switch (JBESW) does not turn off within specified time of the feedshift switch (FSSW) turning on.	2051 ms (30 ppm)/ 1587 ms (40/50 ppm)

Section	Description	Conditions	Specified time
Feedshift section	52 Misfeed in feedshift section	The feedshift switch (FSSW) does not turn on within specified time of the start of eject motor (EM) reverse rotation.	1545 ms (30 ppm)/ 1196 ms (40/50 ppm)
		During paper switchback operation, the feedshift switch (FSSW) does not turn off within specified time of the its turning on.	2989 ms (30 ppm)/ 2313 ms (40/50 ppm)
		The feedshift switch (FSSW) does not turn off within specified time of the registration switch (RSW) turning off.	2899 ms (30 ppm)/ 2243 ms (40/50 ppm)
		The feedshift switch (FSSW) does not turn off within specified time of the registration clutch (RCL) turning on.	2899 ms (30 ppm)/ 2243 ms (40/50 ppm)
Duplex section	60 Duplex paper conveying section 1	The duplex paper conveying switch (DUPPCSW) does not turn on within specified time of the feedshift switch (FSSW) turning on.	2837 ms (30 ppm)/ 2196 ms (40/50 ppm)
		The duplex paper conveying switch (DUPPCSW) does not turn off within specified time of the feedshift switch (FSSW) turning off.	2837 ms (30 ppm)/ 2196 ms (40/50 ppm)
	61 Duplex paper conveying section 2	The feed switch 1 (FSW1) does not turn on within specified time of the duplex paper conveying switch (DUPPCSW) turning on.	1994 ms (30 ppm)/ 1543 ms (40/50 ppm)
		The feed switch 1 (FSW1) does not turn off within specified time of the duplex paper conveying switch (DUPPCSW) turning off.	1994 ms (30 ppm)/ 1543 ms (40/50 ppm)
Optional DP	70 No original feed	The original feed switch (OFSW) does not turn on within specified time during the first sheet feeding.	2436 pulse
		The original feed switch (OFSW) does not turn on within specified time during the second sheet feeding.	4430 pulse
	71 An original jam in the original feed/conveying section 1	DP timing switch 2 (DPTSW2) does not turn off within specified time.	2500 pulse
	72 An original jam in the original feed/conveying section 2	The original feed switch (OFSW) and original registration switch (ORSW) does not turn off within specified time.	16675 pulse
	73 An original jam in the original conveying section	DP timing switch 1 (DPTSW1) does not turn off within specified time.	4979 pulse
	74 An original jam in the original registration section	The original registration switch (ORSW) does not turn on within specified time and after 5 retries.	4979 pulse

Section	Description	Conditions	Specified time
Optional DP	75 An original jam in the original registration section	The original registration switch (ORSW) does not turn off within specified time.	19533 pulse
		DP timing switch 1 (DPTSW1) does not turn on within specified time.	4979 pulse
	76 An original jam in the original feed/conveying section	DP timing switch 2 (DPTSW2) does not turn on within specified time.	2500 pulse
	78 Document processor top cover open	The document processor top cover is opened during original feeding.	-
Optional finisher	80 Jam between the finisher and machine (3000-sheet document finisher only)	Paper ejection is not output from the machine to the document finisher within specified time of the paper entry sensor (PES) turning on.	15 s
	81 Paper entry sensor nonarrival jam	(3000-sheet document finisher) The paper entry sensor (PES) is not turned off even if a specified time has elapsed after the machine eject signal was received.	1360 ms (30 ppm)/ 1052 ms (40/50 ppm)
		(3000-sheet document finisher) The paper entry sensor (PES) is not turned on even if a specified time has elapsed after the machine eject signal was received.	1360 ms (30 ppm)/ 1052 ms (40/50 ppm)
		(3000-sheet document finisher) The paper entry sensor (PES) does not turn off within specified time of its turning on.	2989 ms (30 ppm)/ 2313 ms (40/50 ppm)
		(Document finisher) The paper entry sensor (PES) is not turned on even if a specified time has elapsed after the machine eject signal was received.	2627 ms
		(Built-in finisher) The paper conveying switch (PCSW) is not turned on even if a specified time has elapsed after the machine eject signal was received.	1573 ms (30 ppm) 1217 ms (40/50 ppm)
		(Built-in finisher) The paper conveying switch (PCSW) does not turn off within specified time of its turning on when paper is conveyed to the intermediate tray from the paper conveying unit.	Paper length + 1123 ms (30 ppm) Paper length + 869 ms (40/50 ppm)
	82 Jam in stapler	(3000-sheet document finisher) The home position is not detected within the specified time when driving the staple motor.	600 ms
		(Document finisher) The staple home position sensor (STSPS) is not turned on within the specified time when driving the staple motor (STM).	1000 ms
		(Built-in finisher) The staple home position sensor (STHPS) is not turned on within the specified time when driving the staple motor (STM).	600 ms

Section	Description	Conditions	Specified time
Optional finisher	83 Exit sensor stay jam	(3000-sheet document finisher) Eject switch 1 (ESW1) is not turned off within specified time of its turning on.	1182 ms
		(Document finisher) In the straight mode, the exit sensor (EXS) is not turned off within specified time of its turning on.	1680ms
		(Document finisher) In the offset or staple mode, the exit sensor (EXS) is not turned off within specified time of its turning on.	5375ms
		(Built-in finisher) The paper conveying switch (PCSW) does not turn off within specified time of its turning on when paper is ejected to the finisher tray from the intermediate tray.	Paper length + 1123 ms (30 ppm) Paper length + 869 ms (40/50 ppm)
	84 Jam in eject section of right sub tray (3000-sheet document finisher only)	Eject switch 2 (ESW2) is not turned off even if a specified time has elapsed after the machine eject signal was received.	1562 ms (30 ppm)/ 1209 ms (40/50 ppm)
		Eject switch 2 (ESW2) is not turned on even if a specified time has elapsed after the machine eject signal was received.	1562 ms (30 ppm)/ 1209 ms (40/50 ppm)
		Eject switch 2 (ESW2) is not turned off within specified time of its turning on.	2989 ms (30 ppm)/ 2313 ms (40/50 ppm)
	85 Jam in eject section of left sub tray (3000-sheet document finisher only)	Eject switch 3 (ESW3) does not turn off within specified time of paper entry sensor (PES) turning on.	1843 ms (30 ppm)/ 1426 ms (40/50 ppm)
		Eject switch 3 (ESW3) does not turn on within specified time of paper entry sensor (PES) turning on.	1843 ms (30 ppm)/ 1426 ms (40/50 ppm)
		Eject switch 3 (ESW3) is not turned off within specified time of its turning on.	2989 ms (30 ppm)/ 2313 ms (40/50 ppm)
	86 Jam in eject section of internal tray 1 (3000-sheet document finisher only)	Internal tray entry sensor 1 (ITPES1) is not turned on even if a specified time has elapsed after the eject signal was received.	2674 ms (30 ppm)/ 2070 ms (40/50 ppm)
	87 Jam in eject section of internal tray 2 (3000-sheet document finisher only)	Internal tray entry sensor 2 (ITPES2) does not turn on within specified time of internal tray entry sensor 1 (ITPES1) turning on.	1708 ms (30 ppm)/ 1322 ms (40/50 ppm)
		Internal tray entry sensor 2 (ITPES2) does not turn off within specified time of internal tray entry sensor 1 (ITPES1) turning off.	676 ms
	88 Jam in eject section of main tray (3000-sheet document finisher only)	Eject switch 1 (ESW1) is not turned on within specified time.	1324 ms
		Side registration home position sensor 1 (SRHPS1) is not turned off within specified time of its turning on.	500 ms
		Side registration home position sensor 2 (SRHPS2) is not turned off within specified time of its turning on.	500 ms
		The paper conveying belt detection sensor (PCBDS) is not turned off within specified time.	2000 ms

Section	Description	Conditions	Specified time
Optional finisher	89 Jam in centerfold unit (3000-sheet document finisher only)	The centerfold paper entry sensor (CPES) does not turn off within specified time of centerfold paper detection sensor (CPDS) turning on.	1770 ms (30 ppm)/ 1370 ms (40/50 ppm)
		The centerfold paper entry sensor (CPES) does not turn on within specified time of centerfold paper detection sensor (CPDS) turning on.	1770 ms (30 ppm)/ 1370 ms (40/50 ppm)
		The centerfold paper entry sensor (CPES) is not turned off within specified time of its turning on.	2989 ms (30 ppm)/ 2313 ms (40/50 ppm)
		The centerfold eject switch (CESW) is not turned on within specified time.	3040 ms
		The centerfold eject switch (CESW) is not turned off within specified time of its turning on.	4213 ms
		Centerfold side registration sensor 1 (CSRS1) is not turned on within specified time.	600 ms
		Centerfold side registration sensor 2 (CSRS2) is not turned on within specified time.	600 ms
	89 Jam in centerfold unit (3000-sheet document finisher only)	The home position is not detected within the specified time after driving the centerfold staple motor (CSTM).	1000 ms
		The centerfold paper detection sensor (CPDS) is not turned off within specified time.	4528 ms (30 ppm)/ 3504 ms (40/50 ppm)
		The centerfold paper detection sensor (CPDS) is not turned on within specified time.	4528 ms (30 ppm)/ 3504 ms (40/50 ppm)
		The centerfold paper detection sensor (CPDS) is not turned off within specified time of its turning on.	2989 ms (30 ppm)/ 2313 ms (40/50 ppm)
	90 Jam in mail box (3000-sheet document finisher only)	The mail paper entry switch (MPESW) is not turned on within specified time.	1315 ms (30 ppm)/ 1017 ms (40/50 ppm)
		The mail paper entry switch (MPESW) is not turned off within specified time of its turning on.	2989 ms (30 ppm)/ 2313 ms (40/50 ppm)
		The tray eject sensor (TEJS) does not turn on within specified time of mail paper entry switch (MPESW) turning on.	Tray 1 to 4 2618 ms (30 ppm)/ 2026 ms (40/50 ppm) Tray 5 to 7 1483 ms (30 ppm)/ 1148 ms (40/50 ppm)
		The tray eject sensor (TEJS) is not turned off within specified time of its turning on.	2989 ms (30 ppm)/ 2313 ms (40/50 ppm)
	91 Finisher cover open	(3000-sheet document finisher) The front cover, top cover or right sub tray is opened when starting the finisher operation. The centerfold unit top cover is opened when starting the centerfold operation. The mail box cover is opened when starting the operation.	-
		(Document finisher) The finisher cover becomes open during paper is running. Paper is remaining in paths at power on.	-
	92 Exit sensor non-arrival jam (document finisher only)	In the straight mode, the exit sensor (EXS) is not turned on even if a specified time has elapsed after the paper entry sensor (PES) was turned on.	1770 ms

Section	Description	Conditions	Specified time
Optional finisher	93 Reverse sensor jam (document finisher only)	The reverse sensor (REVS) does not turn on within specified time of paper entry sensor (PES) turning on.	1071 ms
		The reverse sensor (REVS) is not turned on within specified time.	435 ms
		The reverse sensor (REVS) does not turn off within specified time of paper entry sensor (PES) turning off.	622 ms
		The reverse sensor (REVS) is not turned off within specified time its turning on.	Depends on paper size
	94 Paper entry sensor stay/remaining jam (document finisher only)	The paper entry sensor (PES) is not turned off within specified time its turning on.	Depends on paper size
	95 Paper conveying sensor jam (document finisher only)	The paper conveying sensor (PCS) does not turn on within specified time of reverse sensor (REVS) turning on.	735 ms
		The paper conveying sensor (PCS) does not turn off within specified time of reverse sensor (REVS) turning off.	1004 ms
	96 Jam between the built-in finisher and machine (built-in finisher only)	Paper ejection is not output from the machine to the document finisher within specified time of the intermediate tray sensor (ITS) turning on.	1573 ms (30 ppm) 1217 ms (40/50 ppm)

(3) Paper misfeeds

Problem	Causes/check procedures	Corrective measures
(1) A paper jam in the paper feed, conveying or eject section is indicated as soon as the main power switch is turned on.	A piece of paper torn from copy paper is caught around feed switch 1/2/3, registration switch, eject switch or feedshift switch.	Check visually and remove it, if any.
	Defective switch.	Run maintenance item U031 and turn switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Feed switch 1/2/3, registration switch, eject switch, feedshift switch
(2) A paper jam in the paper feed section is indicated during copying (no paper feed from cassette 1). Jam code 10	Paper is extremely curled.	Change the paper.
	Check if the paper feed pulley, separation pulley or forwarding pulley of the cassette 1 are deformed.	Check visually and replace any deformed pulleys.
	Broken feed switch 1 actuator.	Check visually and replace switch.
	Defective feed switch 1.	Run maintenance item U031 and turn feed switch 1 on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if the upper paper feed clutch malfunctions.	Run maintenance item U032 and select the upper paper feed clutch on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the upper paper feed clutch.	Check (see page 1-4-51).
(3) A paper jam in the paper feed section is indicated during copying (no paper feed from cassette 2). Jam code 11	Paper is extremely curled.	Change the paper.
	Check if the paper feed pulley, separation pulley or forwarding pulley of the cassette 2 are deformed.	Check visually and replace any deformed pulleys.
	Broken feed switch 2 actuator.	Check visually and replace switch.
	Defective feed switch 2.	Run maintenance item U031 and turn feed switch 2 on and off manually. Replace feed switch 2 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if the lower paper feed clutch malfunctions.	Run maintenance item U032 and select the lower paper feed clutch on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the lower paper feed clutch.	Check (see page 1-4-51).

Problem	Causes/check procedures	Corrective measures
(4) A paper jam in the paper feed section is indicated during copying (no paper feed from optional cassette 3). Jam code 12	Optional paper feeder	
	Paper is extremely curled.	Change the paper.
	Check if the paper feed pulley, forwarding pulley and separation pulley of optional cassette 3 are deformed.	Check visually and replace any deformed pulleys.
	Broken feed switch 3 actuator.	Check visually and replace switch.
	Defective feed switch 3.	Run maintenance item U031 and turn feed switch 3 on and off manually. Replace feed switch 3 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if paper feeder paper feed clutch 1 malfunctions.	Run maintenance item U247 and select paper feeder paper feed clutch 1 on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with paper feeder paper feed clutch 1.	Check (see service manual of paper feeder).
	Optional 3000-sheet paper feeder	
	Paper is extremely curled.	Change the paper.
	Broken feed switch 3 actuator.	Check visually and replace switch.
	Defective feed switch 3.	Run maintenance item U031 and turn feed switch 3 on and off manually. Replace feed switch 3 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if the clutch malfunctions.	Run maintenance item U247 and select following clutch on the touch panel to be turned on and off. Check the status and remedy if necessary. Paper feeder paper feed clutch 1/2, paper feeder paper conveying clutch
	Electrical problem with clutch.	Check (see service manual of 3000-sheet paper feeder).
(5) A paper jam in the paper feed section is indicated during copying (no paper feed from optional cassette 4). Jam code 13	Paper is extremely curled.	Change the paper.
	Check if the paper feed pulley, forwarding pulley and separation pulley of optional cassette 4 are deformed.	Check visually and replace any deformed pulleys.
	Broken paper feeder feed switch actuator.	Check visually and replace switch.
	Defective paper feeder feed switch.	With 5 V DC present at CN2-8 on the paper feeder main PWB, check if CN2-7 on the paper feeder main PWB remains low when the paper feeder feed switch is turned on and off. If it does, replace the paper feeder feed switch.
	Check if paper feeder paper feed clutch 2 malfunctions.	Run maintenance item U247 and select paper feeder paper feed clutch 2 on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with paper feeder paper feed clutch 2.	Check (see service manual of paper feeder).

Problem	Causes/check procedures	Corrective measures
(6) A paper jam in the paper feed section is indicated during copying (no paper feed from MP tray). Jam code 14	Paper is extremely curled.	Change the paper.
	Check if the MP paper feed pulley, MP forwarding pulley and MP separation pulley are deformed.	Check visually and replace any deformed pulleys.
	Broken MP feed switch actuator.	Check visually and replace switch.
	Defective MP feed switch.	Run maintenance item U031 and turn MP feed switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if the MP paper feed clutch malfunctions.	Run maintenance item U032 and select MP paper feed clutch on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the MP paper feed clutch.	Check (see page 1-4-51).
(7) A paper jam in the paper feed section is indicated during copying (jam in 3000-sheet paper feeder horizontal paper conveying section). Jam code 15	Paper is extremely curled.	Change the paper.
	Check if the paper side guides are deformed.	Check visually and replace.
	Defective paper path sensor 3.	With 5 V DC present at CN6-12 on the paper feeder main PWB, check if CN6-11 on the paper feeder main PWB remains low when paper path sensor 3 is turned on and off. If it does, replace paper path sensor 3.
	Check if paper feeder paper feed clutch 2 malfunctions.	Run maintenance item U247 and select paper feeder paper feed clutch 2 on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with paper feeder paper feed clutch 2.	Check (see service manual of 3000-sheet paper feeder).
(8) A paper jam in the paper feed section is indicated during copying (jam in 3000-sheet paper feeder horizontal paper conveying section). Jam code 16	Paper is extremely curled.	Change the paper.
	Check if the paper side guides are deformed.	Check visually and replace.
	Defective paper path sensor 2.	With 5 V DC present at CN6-9 on the paper feeder main PWB, check if CN6-8 on the paper feeder main PWB remains low when paper path sensor 2 is turned on and off. If it does, replace paper path sensor 2.
	Check if paper feeder paper feed clutch 1 malfunctions.	Run maintenance item U247 and select paper feeder paper feed clutch 1 on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with paper feeder paper feed clutch 1.	Check (see service manual of 3000-sheet paper feeder).

Problem	Causes/check procedures	Corrective measures
(9) A paper jam in the paper feed section is indicated during copying (jam in 3000-sheet paper feeder horizontal paper conveying section). Jam code 17	Paper is extremely curled.	Change the paper.
	Check if the paper side guides are deformed.	Check visually and replace.
	Defective paper path sensor 1.	With 5 V DC present at CN6-6 on the paper feeder main PWB, check if CN6-5 on the paper feeder main PWB remains low when paper path sensor 1 is turned on and off. If it does, replace paper path sensor 1.
	Check if paper feeder paper conveying clutch malfunctions.	Run maintenance item U247 and select paper feeder paper conveying clutch on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with paper feeder paper conveying clutch.	Check (see service manual of 3000-sheet paper feeder).
(10) A paper jam in the paper feed section is indicated during copying (jam in vertical paper conveying section). Jam code 18	Broken feed switch 1/2/3 actuator.	Check visually and replace switch.
	Defective switch.	Run maintenance item U031 and turn following switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Feed switch 1/2/3, registration switch
	Defective feed pulleys or feed rollers.	Check visually and replace.
(11) A paper jam in the paper feed section is indicated during copying (jam in optional paper feeder vertical paper conveying section). Jam code 19	Broken feed switch 3 actuator.	Check visually and replace switch.
	Defective feed switch 3.	Run maintenance item U031 and turn feed switch 3 on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Broken paper feeder feed switch actuator.	Check visually and replace switch.
	Defective paper feeder feed switch.	With 5 V DC present at CN2-8 on the paper feeder main PWB, check if CN2-7 on the paper feeder main PWB remains low when the paper feeder feed switch is turned on and off. If it does, replace the paper feeder feed switch.
(12) A paper jam in the paper feed section is indicated during copying (jam in MP tray vertical paper conveying section). Jam code 20	Broken MP feed switch actuator.	Check visually and replace switch.
	Defective switch.	Run maintenance item U031 and turn following switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. MP feed switch, registration switch

Problem	Causes/check procedures	Corrective measures
(13) A paper jam in the paper feed section is indicated during copying (multiple sheets in paper feed section). Jam code 21	Broken feed switch 1/2/3 or MP feed switch actuator.	Check visually and replace switch.
	Defective switch.	Run maintenance item U031 and turn switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Feed switch 1/2/3, MP feed switch
	Broken paper feeder feed switch actuator.	Check visually and replace switch.
	Defective paper feeder feed switch.	With 5 V DC present at CN2-8 on the paper feeder main PWB, check if CN2-7 on the paper feeder main PWB remains low when the paper feeder feed switch is turned on and off. If it does, replace the paper feeder feed switch.
	Check if the clutch malfunctions.	Run maintenance item U247 and select following clutch on the touch panel to be turned on and off. Check the status and remedy if necessary. Upper paper feed clutch, lower paper feed clutch, MP paper conveying clutch
	Electrical problem with clutch.	Check (see page 1-4-51).
	Defective feed pulleys or feed rollers.	Check visually and replace.
(14) A paper jam in the paper feed section is indicated during copying (multiple sheets in vertical conveying section). Jam code 22	Broken feed switch 1/2/3 actuator.	Check visually and replace switch.
	Defective switch.	Run maintenance item U031 and turn switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Feed switch 1/2/3
	Defective feed pulleys or feed rollers.	Check visually and replace.
(15) A paper jam in the paper feed section is indicated during copying (multiple sheets in bypass conveying section). Jam code 23	Broken MP feed switch actuator.	Check visually and replace switch.
	Defective switch.	Run maintenance item U031 and turn switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. MP feed switch, registration switch
(16) A paper jam in the paper conveying section is indicated during copying (jam in registration/transfer section). Jam code 30	Broken feed switch 1 actuator.	Check visually and replace switch.
	Defective switch.	Run maintenance item U031 and turn switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Feed switch 1, registration switch
	The contact between the right and left registration rollers is not correct.	Check visually and replace.

Problem	Causes/check procedures	Corrective measures
(17) A paper jam in the fuser section is indicated during copying (jam in fuser section). Jam codes 40 to 44, 46 and 47	Broken eject switch or feedshift switch actuator.	Check visually and replace switch.
	Defective switch.	Run maintenance item U031 and turn switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Eject switch, feedshift switch
	Check if the registration clutch malfunctions.	Run maintenance item U032 and select the registration clutch on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the registration clutch.	Check (see page 1-4-51).
(18) A paper jam in the eject section is indicated during copying (jam in eject section). Jam code 50	Broken eject switch actuator.	Check visually and replace switch.
	Defective switch.	Run maintenance item U031 and turn switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Registration switch, eject switch
	Check if the registration clutch malfunctions.	Run maintenance item U032 and select the registration clutch on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the registration clutch.	Check (see page 1-4-51).
(19) A paper jam in the eject section is indicated during copying (jam in optional job separator eject section). Jam code 51	Broken feedshift switch or job separator eject switch actuator.	Check visually and replace switch.
	Defective switch.	Run maintenance item U031 and turn switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Feedshift switch, job separator eject switch
(20) A paper jam in the feedshift section is indicated during copying (jam in feedshift section). Jam code 52	Check if the feedshift solenoid malfunctions.	Run maintenance item U033 and select the feedshift solenoid on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the feedshift solenoid.	Check (see page 1-4-51).
	Broken feedshift switch actuator.	Check visually and replace switch.
	Defective switch.	Run maintenance item U031 and turn switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Feedshift switch, registration switch
	Check if the registration clutch malfunctions.	Run maintenance item U032 and select the registration clutch on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the registration clutch.	Check (see page 1-4-51).

Problem	Causes/check procedures	Corrective measures
(21) A paper jam in the switchback section is indicated during copying (jam in optional switchback unit). Jam code 53	Broken feedshift switch or switchback eject switch actuator.	Check visually and replace switch.
	Defective feedshift switch.	Run maintenance item U031 and turn the feedshift switch on and off manually. Replace the feedshift switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective switchback eject switch.	With 5 V DC present at CN5-2 on the switchback unit main PWB, check if CN5-4 on the switchback unit main PWB remains low when the switchback eject switch is turned on and off. If it does, replace the switchback eject switch.
(22) A paper jam in the duplex section is indicated during copying (jam in duplex paper conveying section 1). Jam code 60	Broken feedshift switch or duplex paper conveying switch actuator.	Check visually and replace switch.
	Defective switch.	Run maintenance item U031 and turn switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Feedshift switch, duplex paper conveying switch
(23) A paper jam in the duplex section is indicated during copying (jam in duplex paper conveying section 2). Jam code 61	Broken duplex paper conveying switch or feed switch 1 actuator.	Check visually and replace switch.
	Defective switch.	Run maintenance item U031 and turn switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Duplex paper conveying switch, feed switch 1
(24) An original jams in optional DP is indicated during copying (no original feed). Jam code 70	Defective original feed switch.	Run maintenance item U244 and turn the original feed switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if the original feed motor malfunctions.	Run maintenance item U243 and select the original feed motor on the touch panel to be turned on and off. Check the status and remedy if necessary.
(25) An original jams in optional DP is indicated during copying (a jam in the original feed/conveying section). Jam code 71	Defective DP timing switch 2.	Run maintenance item U244 and turn the DP timing switch 2 on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
(26) An original jams in optional DP is indicated during copying (a jam in the original feed/conveying section). Jam code 72	Defective switch.	Run maintenance item U244 and turn switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Original feed switch, original registration switch
(27) An original jams in optional DP is indicated during copying (a jam in the original conveying section). Jam code 73	Defective DP timing switch 1.	Run maintenance item U244 and turn the DP timing switch 1 on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.

Problem	Causes/check procedures	Corrective measures
(28) An original jams in optional DP is indicated during copying (a jam in the original registration section). Jam code 74	Defective original registration switch.	Run maintenance item U244 and turn the original registration switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
(29) An original jams in optional DP is indicated during copying (a jam in the original registration section). Jam code 75	Defective switch.	Run maintenance item U244 and turn switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Original registration switch, DP timing switch 1
(30) An original jams in optional DP is indicated during copying (a jam in the original feed/conveying section). Jam code 76	Defective DP timing switch 2.	Run maintenance item U244 and turn the DP timing switch 2 on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
(31) A paper jam in optional document finisher is indicated during copying (jam between finisher and machine). Jam code 80	Defective paper entry sensor.	Run maintenance item U241 and turn the paper entry sensor on and off manually. Replace the original switchback switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
(32) A paper jam in optional document finisher is indicated during copying (paper jam during paper insertion to the finisher). Jam code 81	3000-sheet document finisher/document finisher	
	Extremely curled paper.	Change the paper.
	Defective paper entry sensor.	(3000-sheet document finisher) Run maintenance item U241 and turn the paper entry sensor on and off manually. Replace the original switchback switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
		(Document finisher) With 5 V DC present at CN14-1 and CN14-3 on the finisher main PWB, check if CN14-2 and CN14-4 on the finisher main PWB remains low or high when the paper entry sensor is turned on and off. If it does, replace the paper entry sensor.
	Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
	Built-in finisher	
	Extremely curled paper.	Change the paper.
	Defective paper conveying switch.	With 5 V DC present at YC2-23 on the finisher control PWB, check if YC2-21 on the finisher control PWB remains low or high when the paper conveying switch is turned on and off. If it does, replace the paper conveying switch.
	Check if the feedshift roller or feedshift pulley is deformed.	Check and remedy.

Problem	Causes/check procedures	Corrective measures
(33) A paper jam in optional document finisher is indicated during copying (finisher stapler jam). Jam code 82	3000-sheet document finisher/document finisher	
	Defective staple home position sensor.	Run maintenance item U241 and turn the staple home position sensor on and off manually. Replace the sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
	Built-in finisher	
	The stapler is blocked with a staple.	Remove the stapler cartridge, and check the cartridge and the stapling section of the stapler. Remove the staple if any.
	Defective stapler section.	With 5 V DC present at YC2-24 on the finisher control PWB, check if YC2-19 on the finisher control PWB remains low or high. If it does, replace the stapler section.
(34) A paper jam in optional document finisher is indicated during copying (eject sensor stay jam). Jam code 83	3000-sheet document finisher	
	Defective eject switch 1.	Run maintenance item U241 and turn eject switch 1 on and off manually. Replace the original switchback switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Document finisher	
	Defective eject sensor.	With 5 V DC present at CN5-4 on the finisher main PWB, check if CN5-6 on the finisher main PWB remains low or high when the eject sensor is turned on and off. If it does, replace the eject sensor.
	Check if the paper conveying motor malfunctions.	Check and remedy.
	Check if the eject roller and eject pulley contact each other.	Check and remedy.
	Check if the eject guide is deformed.	Check and remedy.
	Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
	Built-in finisher	
	Defective paper conveying switch.	With 5 V DC present at YC2-23 on the finisher control PWB, check if YC2-21 on the finisher control PWB remains low when the paper conveying switch is turned on and off. If it does, replace the paper conveying switch.
	Check if the feedshift roller or feedshift pulley is deformed.	Check and remedy.
(35) A paper jam in optional document finisher is indicated during copying (sub tray eject jam). Jam code 84	Defective eject switch 2.	Run maintenance item U241 and turn eject switch 2 on and off manually. Replace the original switchback switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
(36) A paper jam in optional document finisher is indicated during copying (sub tray eject jam). Jam code 85	Defective eject switch 3.	Run maintenance item U241 and turn eject switch 3 on and off manually. Replace the original switchback switch if indication of the corresponding switch on the touch panel is not displayed in reverse.

Problem	Causes/check procedures	Corrective measures
(37) A paper jam in optional document finisher is indicated during copying (internal tray paper entry sensor 1 jam). Jam code 86	Defective internal tray paper entry sensor 1.	Run maintenance item U241 and turn internal tray paper entry sensor 1 on and off manually. Replace the original switchback switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
(38) A paper jam in optional document finisher is indicated during copying (internal tray paper entry sensor 2 jam). Jam code 87	Defective internal tray paper entry sensor 2.	Run maintenance item U241 and turn internal tray paper entry sensor 2 on and off manually. Replace the original switchback switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
(39) A paper jam in optional document finisher is indicated during copying (main tray eject jam). Jam code 88	Defective sensor/switch.	Run maintenance item U241 and turn the following switch on and off manually. Replace the original switchback switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Eject switch 1, side registration home position sensor 1/2, paper conveying belt position detection sensor
(40) A paper jam in optional document finisher is indicated during copying (centerfold unit jam). Jam code 89	Defective sensor/switch.	Run maintenance item U241 and turn the following switch on and off manually. Replace the original switchback switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Centerfold paper entry sensor, centerfold eject switch, centerfold paper detection switch
(41) A paper jam in optional document finisher is indicated during copying (mail box jam). Jam code 90	Defective sensor/switch.	Run maintenance item U241 and turn the following switch on and off manually. Replace the original switchback switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Mail paper entry switch, tray eject sensor
(42) A paper jam in optional document finisher is indicated during copying (eject sensor non-arrival jam). Jam code 92	Defective eject sensor.	With 5 V DC present at CN5-4 on the finisher main PWB, check if CN5-6 on the finisher main PWB remains low or high when the eject sensor is turned on and off. If it does, replace the eject sensor.
	Check if the paper conveying motor malfunctions.	Check.
	Check if the eject roller and eject pulley contact each other.	Check and remedy.
	Check if the eject guide is deformed.	Check and remedy.
	Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.

Problem	Causes/check procedures	Corrective measures
(43) A paper jam in optional document finisher is indicated during copying (reverse sensor jam). Jam code 93	Defective reverse sensor.	With 5 V DC present at CN14-5 on the finisher main PWB, check if CN14-7 on the finisher main PWB remains low or high when the reverse sensor is turned on and off. If it does, replace the reverse sensor.
	Check if the reverse motor malfunctions.	Check.
	Check if the reverse roller and reverse pulley contact each other.	Check and remedy.
	Check if the reverse guide is deformed.	Check and remedy.
	Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
(44) A paper jam in optional document finisher is indicated during copying (paper entry sensor stay jam). Jam code 94	Extremely curled paper.	Change the paper.
	Defective paper entry sensor.	With 5 V DC present at CN14-1and CN14-3 on the finisher main PWB, check if CN14-2 and CN14-4 on the main PCB remains low or high when the paper entry sensor is turned on and off. If it does, replace the paper entry sensor.
	Check if the paper entry guide is deformed.	Check and remedy.
	Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
(45) A paper jam in optional document finisher is indicated during copying (paper conveying sensor jam). Jam code 95	Defective paper conveying sensor.	With 5 V DC present at CN4-4 on the finisher main PWB, check if CN4-6 on the finisher main PWB remains low or high when the paper conveying sensor is turned on and off. If it does, replace the paper conveying sensor.
	Check if the paper conveying motor malfunctions.	Check.
	Check if the paper conveying roller and paper conveying pulley contact each other.	Check and remedy.
	Check if the paper conveying guide is deformed.	Check and remedy.
	Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
(46) A paper jam in optional built-in finisher is indicated during copying (jam between finisher and machine). Jam code 96	Defective intermediate tray sensor.	With 5 V DC present at YC3-1 on the finisher control PWB, check if YC3-2 on the finisher control PWB remains low or high when the intermediate tray sensor is turned on and off. If it does, replace the intermediate tray sensor.

1-4-2 Self-diagnosis

(1) Self-diagnostic function

This unit is equipped with a self-diagnostic function. When a problem is detected, copying is disabled and the problem displayed as a code consisting of C followed by a number, indicating the nature of the problem.
A message is also displayed requesting the user to call for service.
After removing the problem, the self-diagnostic function can be reset by turning safety switches off and back on.

List of system errors
When an unexpected error is detected for some reason, a system error will be indicated. After a system error is indicated, the error can be cleared by turning the main power switch off and then on. If the error is detected continuously, however, perform the operation shown in Table 1-4-1. If a system error occurs frequently, a fault may have occurred. Check the details of the C call to take proper measures.

System error	Contents	Operation
0800	Image processing problem	System error → Normal service call processing
1800	Paper feeder unit communication problem	System error → service call → partial operation
4200	BD steady-state problem	System error → Normal service call processing
8800	Document finisher communication problem	System error → service call → partial operation
9000	DP communication problem	System error → service call → partial operation

Table 1-4-1

Partial operation control
If any of the following calls for service is detected, partial operation control will be activated. After taking measures against the cause of trouble, run maintenance item U906 to reset partial operation control.

Code	Contents
C0170	Copy counts problem
C0180	Machine number mismatch error

(2) Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0030	**Fax control PWB system problem (optional fax)** Processing with the fax software was disabled due to a hardware or software problem.	Defective fax control PWB.	Replace the fax control PWB and verify the operation.
C0060	**Main PWB type mismatch error**	Defective PWB.	Contact the Service Administrative Division.
C0070	**Fax control PWB incompatibility detection problem (optional fax)** Fax software is not compatible with main software.	FAX and the machine are not compatible.	Use the FAX control PWB that is designed for use with the machine.
C0130	**Backup memory (EEPROM) device problem (Main PWB)** Reading from or writing to EEPROM cannot be performed.	Defective main PWB.	Replace the main PWB and check for correct operation.
		Device damage of EEPROM.	Contact the Service Administrative Division.
C0140	**Backup memory (EEPROM) data problem (Main PWB)** Reading data from EEPROM is abnormal.	Data damage of EEPROM.	Contact the Service Administrative Division.
C0150	**Backup memory device problem (Engine PWB)** Reading from or writing to EEPROM cannot be performed.	Defective engine PWB.	Replace the engine PWB and check for correct operation.
		Device damage of EEPROM.	Contact the Service Administrative Division.
C0160	**Backup memory data problem (Engine PWB)** Reading data from EEPROM is abnormal. Read and write data does not match five times continuously.	Problem with the backup memory data.	Run maintenance item U022 to initialize the backup memory data.
		Defective engine PWB.	If the C0160 is displayed after initializing the backup memory, replace the engine PWB and check for correct operation.
C0170	**Copy counts problem** A checksum error is detected in the main and engine backup memories for the copy counters.	Data damage of EEPROM.	Contact the Service Administrative Division.
		Defective PWB.	Replace the main PWB or engine PWB and check for correct operation.
C0180	**Machine number mismatch error** Machine number of main PWB and engine PWB does not match.	Data damage of EEPROM.	Contact the Service Administrative Division.
C0600	**DIMM installed incorrectly** DIMM is not installed correctly.	DIMM installed incorrectly.	Check if the DIMM is inserted into the socket on the main PWB correctly.
C0610	**DIMM problem** The DIMM on the main PWB does not operate correctly.	Defective main PWB.	Replace the main PWB and check for correct operation.
		Defective DIMM.	Replace the DIMM and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0630	**DMA problem** DMA transmission of compressed, decompressed, rotated, relocated or blanked-out image data does not complete within the specified period of time.	Defective main PWB.	Replace the main PWB and check for correct operation.
C0640	**Hard disk drive problem** The hard disk cannot be accessed.	Poor contact in the connector terminals.	Check the connection of connector YC49 on the main PWB and the connector on the hard disk. Repair or replace if necessary.
		Defective hard disk.	Run U024 (HDD formatting) without turning the power off to initialize the hard disk. Replace the hard disk drive and check for correct operation if the problem is still detected after initialization.
		Defective main PWB.	Replace the main PWB and check for correct operation.
C0700	**CF error for backup** Optional data backup kit (CF) is not suitable as backup.	CF installed incorrectly.	Install CF correctly.
		Defective CF.	Install normal CF.
C0800	**Image processing problem** JAM05 is detected twice.	Defective main PWB.	Replace the main PWB and check for correct operation.
C0830	**Flash ROM program area checksum error (optional fax)** A checksum error occurred with the program in the Flash ROM on the fax control PWB.	Defective fax control PWB.	Replace the fax control PWB and check for correct operation.
C0870	**Fax control PWB to main PWB high capacity data transfer problem (optional fax)** High-capacity data transfer between the fax control PWB and the main PWB was not normally performed even if the data transfer was retried the specified times.	Poor contact in the connector terminals.	Check the connection of connector YC1 on the fax control PWB and YC4 on the interface PWB, connection of connector YC30 on the main PWB and YC6 on the interface PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective fax control PWB or main PWB.	Replace the fax control PWB or main PWB and check for correct operation.
C0880	**Fax control PWB program archive problem (optional fax)** When power is turned on, the compressed program in the Flash ROM on the fax control PWB was not successfully decompressed.	Defective fax control PWB.	Replace the fax control PWB and check for correct operation.
C0920	**Fax file system error (optional fax)** The backup data is not retained for file system abnormality of flash memory of the fax control PWB.	Defective fax control PWB.	Replace the fax control PWB and verify the operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1010	**Upper lift motor error** When cassette 1 is inserted, upper lift limit switch does not turn on within 12 s of upper lift motor turning on.	Poor contact in the connector terminals.	Check the connection of connector of upper lift motor and the connector YC13 on the engine PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Broken gears or couplings of upper lift motor.	Replace upper lift motor.
		Defective upper lift motor.	Check for continuity across the coil. If none, replace upper lift motor.
		Defective upper lift limit switch.	Check if YC13-B9 on the engine PWB goes low when upper lift limit switch is turned off. If not, replace upper lift limit switch.
		Poor contact in the connector terminals.	Check the connection of connector of upper lift limit switch and the connector YC13 on the engine PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective engine PWB.	Replace the engine PWB and check for correct operation.
C1020	**Lower lift motor error** When cassette 2 is inserted, lower lift limit switch does not turn on within 12 s of lower lift motor turning on.	Poor contact in the connector terminals.	Check the connection of connector of lower lift motor and the connector YC13 on the engine PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Broken gears or couplings of lower lift motor.	Replace lower lift motor.
		Defective lower lift motor.	Check for continuity across the coil. If none, replace lower lift motor.
		Defective lower lift limit switch.	Check if YC13-B15 on the engine PWB goes low when lower lift limit switch is turned off. If not, replace lower lift limit switch.
		Poor contact in the connector terminals.	Check the connection of connector of lower lift limit switch and the connector YC13 on the engine PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective engine PWB.	Replace the engine PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1030	**Paper feeder lift motor 1 error (optional paper feeder)** When optional cassette 3 is inserted, paper feeder lift switch 1 does not turn on within 12 s of paper feeder lift motor 1 turning on.	Poor contact in the connector terminals.	Check the connection of connector on the engine PWB and the connector on the paper feeder main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Broken gears or couplings of paper feeder lift motor 1.	Replace paper feeder lift motor 1.
		Defective paper feeder lift motor 1.	Check for continuity across the coil. If none, replace paper feeder lift motor 1.
		Defective paper feeder lift switch 1.	Check if YC1-5 on the paper feeder main PWB goes low when paper feeder lift switch 1 is turned off. If not, replace paper feeder lift switch 1.
C1040	**Paper feeder lift motor 2 error (optional paper feeder)** When optional cassette 4 is inserted, paper feeder lift switch 2 does not turn on within 12 s of paper feeder lift motor 2 turning on.	Poor contact in the connector terminals.	Check the connection of connector on the engine PWB and the connector on the paper feeder main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Broken gears or couplings of paper feeder lift motor 2.	Replace paper feeder lift motor 2.
		Defective paper feeder lift motor 2.	Check for continuity across the coil. If none, replace paper feeder lift motor 2.
		Defective paper feeder lift switch 2.	Check if YC1-7 on the paper feeder main PWB goes low when paper feeder lift switch 2 is turned off. If not, replace paper feeder lift switch 2.
C1100	**Paper feeder lift motor 1 error (optional 3000-sheet paper feeder)** A motor over-current signal is detected continuously for 1 s or longer.	Poor contact in the connector terminals.	Check the connection of connector on the engine PWB and the connector on the paper feeder main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Paper feeder lift motor 1 does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.
C1110	**Paper feeder lift motor 2 error (optional 3000-sheet paper feeder)** A motor over-current signal is detected continuously for 1 s or longer.	Poor contact in the connector terminals.	Check the connection of connector on the engine PWB and the connector on the paper feeder main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Paper feeder lift motor 2 does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1120	**Paper feeder left lift position problem (optional 3000-sheet paper feeder)** Paper feeder switch 2 does not turn on within 30 s of paper feeder lift motor 1 turning on.	Poor contact in the connector terminals.	Check the connection of connector on the engine PWB and the connector on the paper feeder main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective paper feeder lift switch 2.	Check if YC5-7 on the paper feeder main PWB goes low when paper feeder lift switch 2 is turned off. If not, replace paper feeder lift switch 2.
		Defective paper feeder lift motor 1.	Check for continuity across the coil. If none, replace paper feeder lift motor 1.
		The paper feeder left lift does not rise properly.	Check the gears and belts, and remedy if necessary.
C1130	**Paper feeder right lift position problem (optional 3000-sheet paper feeder)** Paper feeder switch 1 does not turn on within 30 s of paper feeder lift motor 2 turning on.	Poor contact in the connector terminals.	Check the connection of connector on the engine PWB and the connector on the paper feeder main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective paper feeder lift switch 1.	Check if YC5-4 on the paper feeder main PWB goes low when paper feeder lift switch 1 is turned off. If not, replace paper feeder lift switch 1.
		Defective paper feeder lift motor 2.	Check for continuity across the coil. If none, replace paper feeder lift motor 2.
		The paper feeder right lift does not rise properly.	Check the gears and belts, and remedy if necessary.
C1800	**Paper feeder unit communication problem (optional paper feeder/3000-sheet paper feeder)** No communication: there is no reply after 5 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.	Poor contact in the connector terminals.	Check the connection of connector on the engine PWB and the connector on the paper feeder main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective engine PWB.	Replace the engine PWB and check for correct operation.
		Defective paper feeder main PWB.	Replace the paper feeder main PWB and check for correct operation.
C1900	**Paper feeder EEPROM error (optional paper feeder)** When writing the data, the write data and the read data is not continuously in agreement three times.	Poor contact in the connector terminals.	Check the connection of connector on the engine PWB and the connector on the paper feeder main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective engine PWB.	Replace the engine PWB and check for correct operation.
		Defective paper feeder.	Replace the paper feeder with another unit and check the operation. If the operation is normal, replace or repair optional paper feeder.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C2000	**Drive motor problem** Stable OFF is detected for 1 s continuously after drive motor stability.	Poor contact in the connector terminals.	Check the connection of connector YC11 on the engine PWB and the connector on the drive motor, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective drive transmission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushings and gears. Check for broken gears and replace if any.
		Defective engine PWB.	Replace the engine PWB and check for correct operation.
		Defective drive motor.	Replace the drive motor.
C2250	**Main charger cleaning motor error** A locking error has been detected three times in a row during a reciprocating cleaning motion.	Poor contact in the connector terminals.	Check the connection of connector YC9 on the engine PWB and the connector on the main charger cleaning motor, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective drive transmission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushings and gears. Check for broken gears and replace if any.
		Defective engine PWB.	Replace the engine PWB and check for correct operation.
		Defective main charger cleaning motor.	Replace the main charger cleaning motor.
C2500	**Paper feed motor error** Stable OFF is detected for 1 s continuously after paper feed motor stability.	Poor contact in the connector terminals.	Check the connection of connector YC11 on the engine PWB and the connector on the paper feed motor, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective drive transmission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushings and gears. Check for broken gears and replace if any.
		Defective engine PWB.	Replace the engine PWB and check for correct operation.
		Defective paper feed motor.	Replace the paper feed motor.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C2600	**Paper feeder paper conveying motor error (optional 3000-sheet paper feeder)** The lock signal of the motor is detected avobe 450 ms. **Paper feeder drive motor error (optional paper feeder)** The lock signal of the motor is detected avobe 500 ms.	Poor contact in the connector terminals.	Check the connection of connector on the engine PWB and the connector on the paper feeder main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Paper feeder paper conveying motor / paper feeder drive motor does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.
		Defective PWB.	Replace the paper feeder main PWB or engine PWB and check for correct operation.
		Defective motor.	Replace the paper feeder paper conveying motor / paper feeder drive motor.
C3100	**Scanner carriage problem** The home position is not correct when the power is turned on or at the start of copying using the table.	Poor contact in the connector terminals.	Check the connection of connector YC4 on the scanner PWB and the connector on the scanner home position switch, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective scanner PWB.	Replace the scanner PWB and check for correct operation.
		Defective scanner home position switch.	Replace the scanner home position switch.
		Defective scanner motor.	Replace the scanner motor.
		The mirror frame, exposure lamp, or scanner wire is defective.	Check if the mirror flames and exposure lamp are on the rail. And check the scanner wire winds correctly.
C3200	**Exposure lamp problem** After the reading starting, when input value at the time of exposure lamp illumination does not exceed the threshold value between 5 s.	Poor contact in the connector terminals.	Check the connection of connector YC6 on the scanner PWB and the connector on the inverter PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective scanner PWB.	Replace the scanner PWB and check for correct operation.
		Defective CCD PWB.	Replace the CCD PWB and check for correct operation.
		Defective exposure lamp or inverter PWB.	Replace the exposure lamp or inverter PWB.
		Incorrect shading position.	Adjust the position of the contact glass (shading plate). If the problem still occurs, replace the scanner home position switch.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C3210	**CIS lamp problem** After the reading starting, when input value at the time of CIS illumination does not exceed the threshold value between 5 s.	Poor contact in the connector terminals.	Check the connection of connector on the main PWB and the connector on the DP main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective DP main PWB.	Replace the DP main PWB and check for correct operation.
		Defective DP inverter PWB.	Replace the DP inverter PWB and check for correct operation.
		Defective CIS.	Replace the CIS and check for correct operation.
C3300	**CCD AGC problem** After AGC, correct input is not obtained at CCD.	Poor contact in the connector terminals.	Check the connection of connector on the SHD PWB and the connector on the CCD PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective exposure lamp.	Replace the exposure lamp or inverter PWB.
		Defective PWB.	Replace the SHD PWB or CCD PWB and check for correct operation.
C3310	**CIS AGC problem** After AGC, correct input is not obtained at CIS.	Defective DP main PWB.	Replace the DP main PWB and check for correct operation.
		CIS output problem.	Replace the CIS and check for correct operation.
		Defective DP inverter PWB.	Replace the DP inverter PWB and check for correct operation.
C3500	**Communication error between scanner and SHD** An error code is detected.	Poor contact in the connector terminals.	Check the connection of connector YC3 on the scanner PWB and the connector YC4 on the SHD PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective PWB.	Replace the scanner PWB or SHD PWB and check for correct operation.
C3900	**Backup memory read/write problem (scanner PWB)** Read and write data does not match.	Defective backup RAM or scanner PWB.	Replace the scanner PWB and check for correct operation.
C3910	**Backup memory data problem (scanner PWB)** Data in the specified area of the backup memory does not match the specified values.	Problem with the backup memory data.	Run maintenance item U022 to initialize the backup memory data.
		Defective scanner PWB.	If the C3910 is displayed after initializing the backup memory, replace the scanner PWB and check for correct operation.
C4000	**Polygon motor synchronization problem** The polygon motor does not reach the stable speed within 20 s of the START signal turning on.	Poor contact in the connector terminals.	Check the connection of connector YC8 on the engine PWB and laser scanner unit, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective polygon motor.	Replace the laser scanner unit.
		Defective engine PWB.	Replace the engine PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C4010	**Polygon motor steady-state problem** The polygon motor rotation is not stable for 20 s after the polygon motor rotation has been stabilized.	Poor contact in the connector terminals.	Check the connection of connector YC8 on the engine PWB and laser scanner unit, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective polygon motor.	Replace the laser scanner unit.
		Defective engine PWB.	Replace the engine PWB and check for correct operation.
C4200	**BD steady-state problem** ASIC detects a BD error A for 2 s after the polygon motor rotation has been stabilized.	Poor contact in the connector terminals.	Check the connection of connector YC8 on the engine PWB and laser scanner unit, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective laser scanner unit.	Replace the laser scanner unit.
		Defective engine PWB.	Replace the engine PWB and check for correct operation.
C5300	**Broken cleaning lamp wire** While the cleaning lamp is on, the broken cleaning lamp wire detection signal is detected for 2 s continuously.	Defective cleaning lamp.	Replace the cleaning lamp.
		Defective engine PWB.	Replace the engine PWB and check for correct operation.
C6000	**Fuser heater break** Fuser thermistor 1 is detected 40°C/104°F below with 10 s continuously during warm-up and ready in.	Defective fuser heater M or S.	Replace the fuser heater M or S.
		Installation defectiveness on fuser thermistor 1.	Check the mounting state of the fuser thermistor 1. If any problem is found, repair it.
		Defective fuser thermostat.	Replace the fuser thermostat.
		Defective PWB.	Replace the power source PWB or engine PWB and check for correct operation.
C6020	**Abnormally high fuser thermistor temperature** Fuser thermistor 1 or 2 is detected 230°C/446°F or more for 40 ms.	Installation defectiveness on fuser thermistor 1 or 2.	Check the mounting state of the fuser thermistor 1 or 2. If any problem is found, repair it.
		Defective fuser thermistor 1 or 2.	Replace the fuser thermistor 1 or 2.
		Defective engine PWB.	Replace the engine PWB and check for correct operation.
C6030	**Fuser thermistor break error** The thermistor break signal is detected continuously for 500 ms.	Installation defectiveness on fuser thermistor 1 or 2.	Check the mounting state of the fuser thermistor 1 or 2. If any problem is found, repair it.
		Defective fuser thermistor 1 or 2.	Replace the fuser thermistor 1 or 2.
		Defective engine PWB.	Replace the engine PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C6050	**Abnormally low fuser thermistor 3 temperature** Fuser thermistor 1 is detected 100°C/212°F less than 1 s continuously during copying.	Defective fuser heater M or S.	Replace the fuser heater M or S.
		Installation defectiveness on fuser thermistor 1.	Check the mounting state of the fuser thermistor 1. If any problem is found, repair it.
		Defective PWB.	Replace the power source PWB or engine PWB and check for correct operation.
C6400	**Zero-cross signal error** While fuser heater ON/OFF control is performed, the zero-cross signal is not input within 3 s.	Defective PWB.	Replace the engine PWB or power source PWB and check for correct operation.
C6410	**Fuser unit connector insertion problem** Absence of the fuser unit is detected.	Fuser unit connector inserted incorrectly.	Reinsert the fuser unit connector if necessary.
		Defective fuser unit connector.	Replace the fuser unit.
C6420	**Fuser unit fuse cut problem** The fuse in the fuser unit did not blow within three seconds.	Poor contact in the connector terminals.	Check the connection of connector YC10 on the engine PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Fuser unit connector inserted incorrectly.	Reinsert the fuser unit connector if necessary.
C7300	**Toner container problem** Toner level is not detected when toner empty is detected.	Poor contact in the connector terminals.	Check the connection of connector YC9 on the engine PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective toner container sensor.	Replace the toner container sensor.
C7400	**Developing unit connector insertion problem** Absence of the developing unit is detected.	Developing unit connector inserted incorrectly.	Reinsert the developing unit connector if necessary.
		Defective developing unit connector.	Replace the developing unit.
C7410	**Drum unit connector insertion problem** Absence of the drum unit is detected.	Drum unit connector inserted incorrectly.	Reinsert the drum unit connector if necessary.
		Defective drum unit connector.	Replace the drum unit.
C7800	**Broken external thermistor wire** The thermistor output value is 4.5 V or more.	Poor contact in the connector terminals.	Check the connection of connector YC14 on the engine PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective humidity sensor.	Replace the humidity sensor.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C7810	**Short-circuited external thermistor** The thermistor input value is 0.5 V or less.	Poor contact in the connector terminals.	Check the connection of connector YC14 on the engine PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective humidity sensor.	Replace the humidity sensor.
C7900	**Drum EEPROM error** Reading from or writing to EEPROM cannot be performed.	Poor contact in the connector terminals.	Check the connection of connector on the engine PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective drum unit.	Replace the drum unit.
C7910	**Developing unit EEPROM error** Reading from or writing to EEPROM cannot be performed.	Poor contact in the connector terminals.	Check the connection of connector on the engine PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective developing unit.	Replace the developing unit.
C8020	**Punch motor problem (optional 3000-sheet document finisher)** The LOCK signal of the punch motor is detected for more than 500 ms while the punch motor is operating.	Poor contact in the connector terminals.	Check the connection of connector on the punch PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective punch motor.	Replace the punch motor.
		Defective PWB.	Replace the punch PWB or finisher main PWB and check for correct operation.
C8030	**Tray upper limit detection problem (optional document finisher)** When the tray elevation motor raises a tray, the ON status of the tray upper limit sensor is detected.	The tray upper limit sensor/push paper sensor/surface view sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective tray upper limit sensor/ push paper sensor/ surface view sensor.	Replace the sensor.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8050	**Paper conveying belt motor 1 problem (optional 3000-sheet document finisher)** Paper conveying belt home position sensor 1 does not turn off within 1.5 s. Paper conveying belt home position sensor 1 does not turn on within 2.5 s. Jam 88 is indicated.	Poor contact in the connector terminals.	Check the connection of connector YC2 on the internal tray PWB and the connector on paper conveying belt motor 1, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective paper conveying belt home position sensor 1.	Replace paper conveying belt home position sensor 1.
		Defective paper conveying belt motor 1.	Replace paper conveying belt motor 1.
		Defective PWB.	Replace the internal tray PWB or finisher main PWB and check for correct operation.
C8060	**Paper conveying belt motor 2 problem (optional 3000-sheet document finisher)** Paper conveying belt home position sensor 2 does not turn off within 1.5 s. Paper conveying belt home position sensor 2 does not turn on within 2.5 s.	Poor contact in the connector terminals.	Check the connection of connector YC6 on the internal tray PWB and the connector on paper conveying belt motor 2, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective paper conveying belt home position sensor 2.	Replace paper conveying belt home position sensor 2.
		Defective paper conveying belt motor 2.	Replace paper conveying belt motor 2.
		Defective PWB.	Replace the internal tray PWB or finisher main PWB and check for correct operation.
C8070	**Internal tray communication error (optional 3000-sheet document finisher)** Communication with the internal tray is not possible although the connection is detected.	Poor contact in the connector terminals.	Check the connection of connector YC6 on the finisher main PWB and the connector YC1 on the internal tray PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective PWB.	Replace the internal tray PWB or finisher main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8140	**Main tray problem (optional 3000-sheet document finisher)** The main tray is not detected by the main tray top limit detection sensor or the main tray capacity detection sensor within 20s since the tray has started ascending. The main tray upper limit detection sensor or the main tray load detection sensor is not detected to be turned off in 20 seconds after the main tray has descended. The main tray low limit detection sensor is not detected to be turned on in 20 seconds after the main tray has descended. During main tray ascent, the main tray upper limit detection sensor or the main tray load detection sensor stays on for more than 2 s.	Poor contact in the connector terminals.	Check the connection of connector YC6 on the finisher main PWB and the connector on the main tray motor, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective main tray motor.	Replace the main tray motor.
		Defective main tray upper limit detection sensor/main tray load detection sensor/main tray lower limit detection sensor.	Replace the sensor.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
	Tray elevation motor problem (optional document finisher) When the tray elevation motor is driving, the ON status of the tray lower limit sensor or surface view sensor cannot be detected even if a specified time has elapsed.	The tray elevation motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The tray elevation motor malfunctions.	Replace the tray elevation motor.
		The tray lower limit sensor/push paper sensor/surface view sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective tray lower limit sensor/ push paper sensor/ surface view sensor.	Replace the sensor.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8170	**Side registration motor 1 problem (optional 3000-sheet document finisher)** When operation returned to a home position is performed at the time of initial operation and a home position is not detected even if 3 s passed. Jam 88 is indicated.	Poor contact in the connector terminals.	Check the connection of connector YC2 on the internal tray PWB and the connector on side registration motor 1, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective side registration motor 1.	Replace side registration motor 1.
		Defective PWB.	Replace the internal tray PWB or finisher main PWB and check for correct operation.
	Adjustment motor problem (optional document finisher) When the adjustment motor is driving, the ON status of the adjustment home position sensor cannot be detected even if a specified time has elapsed. When adjustment operation starts, the ON status of the adjustment home position sensor is not detected.	The adjustment motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective adjustment motor.	Replace adjustment motor.
		The adjustment home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective adjustment home position sensor.	Replace the adjustment home position sensor.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
	Finisher front side registration motor problem (optional built-in finisher) When the front-side registration home-position sensor is turned on during initialization, the sensor did not turn on while it has moved by 106 pulses. When the front-side registration home-position sensor is turned off during initialization, the sensor did not turn on in three seconds.	The front side registration motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective front side registration motor.	Replace front side registration motor.
		The front side registration home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective front side registration home position sensor.	Replace the front side registration home position sensor.
		Defective finisher control PWB.	Replace the finisher control PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8180	**Side registration motor 2 problem (optional 3000-sheet document finisher)** When operation returned to a home position is performed at the time of initial operation and a home position is not detected even if 3 s passed. Jam 88 is indicated.	Poor contact in the connector terminals.	Check the connection of connector YC8 on the internal tray PWB and the connector of side registration motor 2, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective side registration motor 2.	Replace side registration motor 2.
		Defective PWB.	Replace the internal tray PWB or finisher main PWB and check for correct operation.
	Finisher rear side registration motor problem (optional built-in finisher) When the rear-side registration home-position sensor is turned on during initialization, the sensor did not turn on while it has moved by 106 pulses. When the rear-side registration home-position sensor is turned off during initialization, the sensor did not turn on in three seconds.	The rear side registration motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective rear side registration motor.	Replace rear side registration motor.
		The rear side registration home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective rear side registration home position sensor.	Replace the rear side registration home position sensor.
		Defective finisher control PWB.	Replace the finisher control PWB and check for correct operation.
C8190	**Finisher trailing edge registration motor problem (optional built-in finisher)** When the trailing edge registration home-position sensor is turned on during initialization, the sensor did not turn on while it has moved by 106 pulses. When the trailing edge registration home-position sensor is turned off during initialization, the sensor did not turn on in three seconds.	The trailing edge registration motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective trailing edge registration motor.	Replace trailing edge registration motor.
		The trailing edge registration home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective trailing edge registration home position sensor.	Replace the trailing edge registration home position sensor.
		Defective finisher control PWB.	Replace the finisher control PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8210	**Stapler moving motor 1 error (optional 3000-sheet document finisher)** When operation returned to a home position is performed at the time of initial operation and a home position is not detected even if 1.5 s passed.	Poor contact in the connector terminals.	Check the connection of connector YC9 on the finisher main PWB and the connector of stapler moving motor 1, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective stapler moving motor 1.	Replace stapler moving motor 1.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
	Stapler problem (optional document finisher) When the stapler motor is driving, the ON status of the stapler home position sensor cannot be detected even if a specified time has elapsed.	The stapler connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The stapler is blocked with a staple.	Remove the stapler cartridge, and check the cartridge and the stapling section of the stapler.
		The stapler is broken.	Replace the stapler and check for correct operation.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
	Finisher stapler problem (optional built-in finisher) The stapler home position sensor does not change state from nondetection to detection within 200 ms of the start of stapler motor counterclockwise (forward) rotation. During initialization, the stapler home position sensor does not change state from non-detection to detection within 600 ms of the start of stapler motor clockwise (reverse) rotation.	The stapler connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The stapler is blocked with a staple.	Remove the stapler cartridge, and check the cartridge and the stapling section of the stapler.
		The stapler is broken.	Replace the front stapler and check for correct operation.
		Defective finisher control PWB.	Replace the finisher control PWB and check for correct operation.
C8220	**Stapler moving motor 2 error (optional 3000-sheet document finisher)** When operation returned to a home position is performed at the time of initial operation and a home position is not detected even if 3.5 s passed.	Poor contact in the connector terminals.	Check the connection of connector YC10 on the finisher main PWB and the connector of stapler moving motor 2, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective stapler moving motor 2.	Replace stapler moving motor 2.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
C8230	**Stapler motor problem (optional 3000-sheet document finisher)** Jam 82 is indicated.	Poor contact in the connector terminals.	Check the connection of connector YC10 on the finisher main PWB and the connector of stapler motor, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective stapler motor.	Replace the stapler motor.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8300	**Centerfold unit communication error (optional centerfold unit of 3000-sheet document finisher)** Communication with the centerfold unit is not possible although the connection is detected.	Poor contact in the connector terminals.	Check the connection of connector YC22 on the finisher main PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective centerfold unit set switch.	Replace the centerfold unit set switch.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
C8310	**Centerfold side registration motor 1 problem (optional centerfold unit of 3000-sheet document finisher)** The home position is not detected when initial operation even if 1000 ms passed.	Poor contact in the connector terminals.	Check the connection of connector YC6 on the centerfold main PWB and the connector of centerfold side registration motor 1, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective centerfold side registration motor 1.	Replace centerfold side registration motor 1.
		Defective PWB.	Replace the centerfold main PWB or finisher main PWB and check for correct operation.
C8320	**Centerfold paper conveying belt motor problem (optional centerfold unit of 3000-sheet document finisher)** The home position is not detected when initial operation even if 2500 ms passed.	Poor contact in the connector terminals.	Check the connection of connector YC6/YC7 on the centerfold main PWB and the connector of centerfold paper conveying belt motor 1/2, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective centerfold paper conveying belt motor 1/2.	Replace centerfold paper conveying belt motor 1/2.
		Defective PWB.	Replace the centerfold main PWB or finisher main PWB and check for correct operation.
C8330	**Blade motor problem (optional centerfold unit of 3000-sheet document finisher)** The home position is not detected when initial operation even if 1500 ms passed.	Poor contact in the connector terminals.	Check the connection of connector YC8 on the centerfold main PWB and the connector of the blade motor, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective blade motor.	Replace the blade motor.
		Defective PWB.	Replace the centerfold main PWB or finisher main PWB and check for correct operation.
C8340	**Centerfold staple motor problem (optional centerfold unit of 3000-sheet document finisher)** Jam89 is indicated.	Poor contact in the connector terminals.	Check the connection of connector YC9 on the centerfold main PWB and the connector of the centerfold staple motor, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective centerfold staple motor.	Replace the centerfold staple motor.
		Defective PWB.	Replace the centerfold main PWB or finisher main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8350	**Centerfold side registration motor 2 problem (optional centerfold unit of 3000-sheet document finisher)** The home position is not detected when initial operation even if 1000 ms passed.	Poor contact in the connector terminals.	Check the connection of connector YC7 on the centerfold main PWB and the connector of centerfold side registration motor 2, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective centerfold side registration motor 2.	Replace centerfold side registration motor 1.
		Defective PWB.	Replace the centerfold main PWB or finisher main PWB and check for correct operation.
C8360	**Centerfold main motor problem (optional centerfold unit of 3000-sheet document finisher)** The motor lock signal is detected above 1000 ms during driving the centerfold main motor.	Poor contact in the connector terminals.	Check the connection of connector YC12 on the centerfold main PWB and the connector of the centerfold main motor, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective centerfold main motor.	Replace the centerfold main motor.
		Defective PWB.	Replace the centerfold main PWB or finisher main PWB and check for correct operation.
C8440	**Sensor adjusting problem (optional document finisher)** The sensor cannot be adjusted within the specified range.	The paper entry sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective paper entry sensor.	Replace the paper entry sensor and check for correct operation.
		The optical path of the paper entry sensor is blocked by foreign matter.	Remove the foreign matter.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
C8460	**EEPROM problem (optional document finisher)** Reading from or writing to EEPROM cannot be performed.	Defective EEPROM or finisher main PWB.	Replace the finisher main PWB and check for correct operation.
C8500	**Mail box communication error (optional mail box of 3000-sheet document finisher)** Communication with the mail box is not possible although the connection is detected.	Poor contact in the connector terminals.	Check the connection of the connector of the mail box and the connector YC7 on the finisher main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective PWB.	Replace the mail box main PWB or finisher main PWB and check for correct operation.

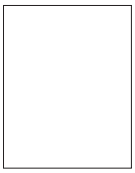
Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8510	**Mail box drive motor problem (optional mail box of 3000-sheet document finisher)** The motor lock signal is detected above 500 ms during driving the mail box drive motor.	Poor contact in the connector terminals.	Check the connection of connector YC2 on the mail box main PWB and the connector of the mail box drive motor, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective mail box drive motor.	Replace the mail box drive motor.
		Defective PWB.	Replace the mail box main PWB or finisher main PWB and check for correct operation.
C8800	**Document finisher communication problem (optional 3000-sheet document finisher)** No communication: there is no reply after 5 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.	Poor contact in the connector terminals.	Check the connection of connector on the finisher main PWB and the connector on the engine PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective PWB.	Replace the finisher main PWB or engine PWB and check for correct operation.
C8900	**Backup memory data problem (optional 3000-sheet document finisher)** Read and write data does not match.	Poor contact in the connector terminals.	Check the connection of connector on the finisher main PWB and the connector on the engine PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
C8910	**Backup memory data problem (optional punch unit of 3000-sheet document finisher)** Read and write data does not match.	Poor contact in the connector terminals.	Check the connection of connector on the punch PWB and the connector YC4 on the finisher main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective punch PWB.	Replace the punch PWB and check for correct operation.
C8920	**Backup memory data problem (optional mail box of 3000-sheet document finisher)** Read and write data does not match.	Poor contact in the connector terminals.	Check the connection of connector on the mail box main PWB and the connector YC7 on the finisher main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective mail box main PWB.	Replace the mail box main PWB and check for correct operation.
C8930	**Backup memory data problem (optional centerfold unit of 3000-sheet document finisher)** Read and write data does not match.	Poor contact in the connector terminals.	Check the connection of connector on the centerfold main PWB and the connector YC5 on the finisher main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective centerfold main PWB.	Replace the centerfold main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C9000	**DP communication problem (optional DP)** A communication error is detected.	Poor contact in the connector terminals.	Check the connection of connector YC7 on the scanner PWB and the connector of the DP, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective DP main PWB.	Replace the DP main PWB and check for correct operation.
C9040	**DP lift motor going up error (optional DP)** The pulse count raised to 10000 at lifting, however, the DP lift switch could not be turned on. After one time retry, the DP lift limit switch could not be turned on.	Loose connection of the DP lift motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the DP lift motor.	Replace the DP lift motor and check for correct operation.
		Malfunction of the DP lift upper limit switch.	Replace the DP lift upper limit switch and check for correct operation.
		Loose connection of the DP lift upper limit switch connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective DP main PWB.	Replace the DP main PWB and check for correct operation.
C9050	**DP lift motor going down error (optional DP)** The pulse count lowered to 10000 at lifting down, however, the DP bottom limit switch could not be turned on. After one time retry, the DP bottom limit switch could not be turned on.	Loose connection of the DP lift motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the DP lift motor.	Replace the DP lift motor and check for correct operation.
		Malfunction of the DP lift lower limit switch.	Replace the DP lift lower limit switch and check for correct operation.
		Loose connection of the DP lift lower limit switch connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective DP main PWB.	Replace the DP main PWB and check for correct operation.
C9060	**DP EEPROM error (optional DP)** Read and write data does not match. Data in the specified area of the backup memory does not match the specified values.	Defective DP main PWB.	Replace the DP main PWB and check for correct operation.
		Device damage of EEPROM.	Contact the Service Administrative Division.
C9070	**Communication problem between DP and SHD (optional DP)** A communication error is detected.	Loose connection of the SHD PWB.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective SHD PWB.	Replace the SHD PWB and check for correct operation.
C9080	**Communication problem between DP and CIS (optional DP)** Reading cannot be performed correctly.	Loose connection of CIS.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective CIS.	Replace CIS and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
F000	**Operation panel PWB communication error**	Defective main PWB.	Replace the main PWB and check for correct operation.
		Defective operation panel PWB.	Replace the operation panel PWB and check for correct operation.
F010	**Main PWB checksum error**	Defective main PWB.	Replace the main PWB and check for correct operation.
F020	**Memory checksum error**	Defective main PWB.	Replace the main PWB and check for correct operation.
		Defective expansion memory.	Replace the expansion memory and check for correct operation.
F030	**Main PWB system error**	Defective main PWB.	Replace the main PWB and check for correct operation.
F040	**Engine PWB communication error**	Defective main PWB.	Replace the main PWB and check for correct operation.
		Defective engine PWB.	Replace the engine PWB and check for correct operation.
F041	**Scanner PWB communication error**	Defective main PWB.	Replace the main PWB and check for correct operation.
		Defective scanner PWB.	Replace the scanner PWB and check for correct operation.
F050	**Engine ROM checksum error**	Defective engine PWB.	Replace the engine PWB and check for correct operation.
F060	**Engine RAM error**	Defective engine PWB.	Replace the engine PWB and check for correct operation.
F070	**Flash ROM error**	Defective flash ROM.	Replace the flash ROM and check for correct operation.
F080	**Flash ROM error (during download)**	Defective flash ROM.	Replace the flash ROM and check for correct operation.
F090	**Fax control PWB communication error**	Defective main PWB.	Replace the main PWB and check for correct operation.

1-4-3 Image formation problems

(1)No image appears (entirely white).

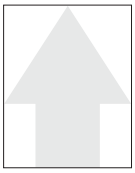


See page 1-4-45.

(2)No image appears (entirely black).

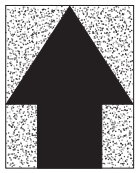
See page 1-4-45.

(3)Image is too light.



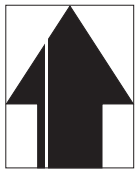
See page 1-4-46.

(4)Background is visible.



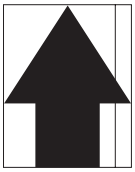
See page 1-4-46.

(5)A white line appears longitudinally.



See page 1-4-46.

(6)A black line appears longitudinally.

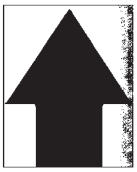


See page 1-4-47.

(7)A black line appears laterally.

See page 1-4-47.

(8)One side of the copy image is darker than the other.

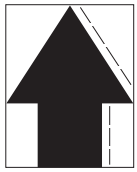


See page 1-4-47.

(9)Black dots appear on the image.

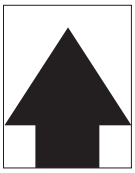
See page 1-4-47.

(10)Image is blurred.



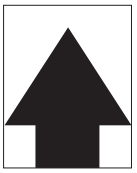
See page 1-4-48.

(11)The leading edge of the image is consistently misaligned with the original.



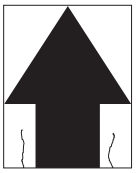
See page 1-4-48.

(12)The leading edge of the image is sporadically misaligned with the original.



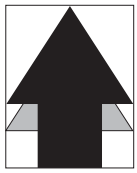
See page 1-4-48.

(13)Paper creases.



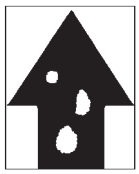
See page 1-4-48.

(14)Offset occurs.



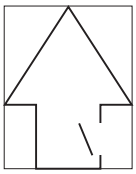
See page 1-4-49.

(15)Image is partly missing.



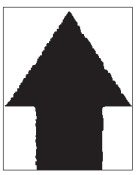
See page 1-4-49.

(16)Fusing is poor.



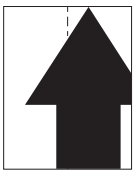
See page 1-4-49.

(17)Image is out of focus.



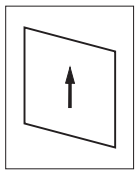
See page 1-4-49.

(18)Image center does not align with the original center.



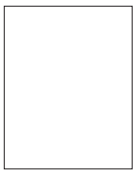
See page 1-4-50.

(19)Image is not square.



See page 1-4-50.

(1) No image appears (entirely white).

Copy example	Causes		Check procedures/corrective measures
	No transfer charging.	The connector terminals of the high voltage PWB make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective engine PWB.	Check if YC7-10 on the engine PWB goes low when maintenance item U101 is run. If not, replace the engine PWB.
		Defective high voltage PWB.	Check if transfer charging takes place when CN1-5 on the high voltage PWB goes low while maintenance item U101 is run. If not, replace the high voltage PWB.
	No LSU laser is output.	Defective laser scanner unit.	Replace the laser scanner unit (see page 1-5-21).
		Defective main PWB.	Check if YC21-A3 on the main PWB goes low when maintenance item U100 is run. If not, replace the main PWB.
	No developing bias output.	The connector terminals of the high voltage PWB make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective engine PWB.	Check if YC7-1 on the engine PWB goes low when maintenance item U101 is run. If not, replace the engine PWB.
		Defective high voltage PWB.	Check if developing bias is output when CN1-14 on the high voltage PWB goes low while maintenance item U101 is run. If not, replace the high voltage PWB.

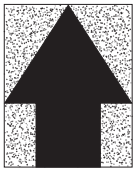
(2) No image appears (entirely black).

Copy example	Causes		Check procedures/corrective measures
	No main charging.	Broken main charger wire.	Replace the main charger unit (see page 1-5-25).
		Leaking main charger housing.	Clean the main charger wire and grid.
		The connector terminals of the high voltage PWB make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective engine PWB.	Check if YC7-4 on the engine PWB goes low when maintenance item U100 is run. If not, replace the engine PWB.
		Defective high voltage PWB.	Check if main charging takes place when CN1-11 on the high voltage PWB goes low while maintenance item U100 is run. If not, replace the high voltage PWB.
	Exposure lamp fails to light.	Poor contact in the exposure lamp connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective inverter PWB.	Check if the exposure lamp lights when YC1-3 on the inverter PWB goes low while maintenance item U061 is run. If not, replace the inverter PWB.
		Defective scanner PWB.	Check if YC6-3 on the scanner PWB goes low when maintenance item U061 is run. If not, replace the scanner PWB.

(3) Image is too light.

Copy example	Causes		Check procedures/corrective measures
	Insufficient toner.		If the display shows the message requesting toner replenishment, replace the container.
	Deteriorated toner.		Perform the drum refresh operation.
	Defective transfer charging output.	The connector terminals of the high voltage PWB make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective engine PWB.	Check if YC7-10 on the engine PWB goes low when maintenance item U101 is run. If not, replace the engine PWB.
		Defective high voltage PWB.	Check if transfer charging takes place when CN1-5 on the high voltage PWB goes low while maintenance item U101 is run. If not, replace the high voltage PWB.

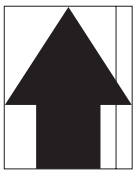
(4) Background is visible.

Copy example	Causes	Check procedures/corrective measures
	Deteriorated toner.	Perform the drum refresh operation.
	Dirty main charger wire.	Clean the wire or, if it is extremely dirty, replace it (see page 1-5-25).

(5) A white line appears longitudinally.

Copy example	Causes	Check procedures/corrective measures
	Foreign matter in the developing unit.	Check if the magnetic brush is formed uniformly. Replace the developing unit if any foreign matter (see page 1-5-26).
	Dirty shading plate.	Clean the shading plate.

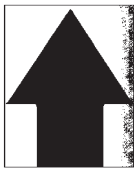
(6) A black line appears longitudinally.

Copy example	Causes	Check procedures/corrective measures
	Dirty contact glass.	Clean the contact glass.
	Dirty or flawed drum.	Perform the drum refresh operation. If the drum is flawed, replace the drum unit (see page 1-5-24).
	Deformed or worn cleaning blade.	Replace the drum unit (see page 1-5-24).
	Dirty scanner mirror.	Clean the scanner mirror.
	Dirty main charger wire.	Clean the wire or, if it is extremely dirty, replace it (see page 1-5-25).

(7) A black line appears laterally.

Copy example	Causes	Check procedures/corrective measures
	Flawed drum.	Replace the drum unit (see page 1-5-24).
	Dirty developing section.	Clean any part contaminated with toner in the developing section.
	Leaking main charger housing.	Clean the main charger wire and grid.
	Leaking separation electrode.	Clean the separation electrode.

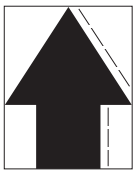
(8) One side of the copy image is darker than the other.

Copy example	Causes	Check procedures/corrective measures
	Dirty main charger wire.	Clean the wire or, if it is extremely dirty, replace it (see page 1-5-25).
	Defective exposure lamp.	Check if the exposure lamp light is distributed evenly. If not, replace the exposure lamp (see page 1-5-11).

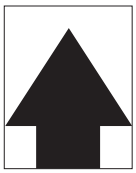
(9) Black dots appear on the image.

Copy example	Causes	Check procedures/corrective measures
	Dirty or flawed drum.	Perform the drum refresh operation. If the drum is flawed, replace the drum unit (see page 1-5-24).
	Dirty contact glass.	Clean the contact glass.
	Deformed or worn cleaning blade.	Replace the drum unit (see page 1-5-24).
	Dirty drum separation claws.	Clean the drum separation claws.
	Dirty the heat roller separation claws.	Clean the heat roller separation claws.

(10) Image is blurred.

Copy example	Causes	Check procedures/corrective measures
	Scanner moves erratically.	Check if there is any foreign matter on the front and rear scanner rails. If any, remove it.
	Deformed press roller.	Replace the press roller (see page 1-5-30).
	Paper conveying section drive problem.	Check the gears and belts and, if necessary, grease them.

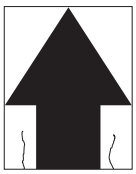
(11) The leading edge of the image is consistently misaligned with the original.

Copy example	Causes	Check procedures/corrective measures
	Misadjusted leading edge registration.	Run maintenance mode U034 to readjust the leading edge registration (see page 1-3-18).
	Misadjusted scanner leading edge registration.	Run maintenance mode U066 to readjust the scanner leading edge registration (see page 1-3-24).

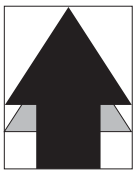
(12) The leading edge of the image is sporadically misaligned with the original.

Copy example	Causes	Check procedures/corrective measures
	Feed clutch, paper feed clutch, MP paper feed clutch or registration clutch installed or operating incorrectly.	Check the installation position and operation of each clutch. If any of them operates incorrectly, replace it.

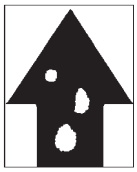
(13) Paper creases.

Copy example	Causes	Check procedures/corrective measures
	Paper curled.	Check the paper storage conditions.
	Paper damp.	Check the paper storage conditions.
	Defective pressure springs.	Replace the pressure springs.
	Defective separation.	Check the drum separation claws and heat roller separation claws.

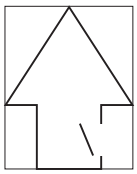
(14) Offset occurs.

Copy example	Causes	Check procedures/corrective measures
	Defective cleaning blade.	Replace the drum unit (see page 1-5-24).
	Defective fuser unit.	Check the heat roller and press roller.
	Wrong types of paper.	Check if the paper meets specifications. Replace paper.

(15) Image is partly missing.

Copy example	Causes	Check procedures/corrective measures
	Paper damp.	Check the paper storage conditions.
	Paper creased.	Change the paper.
	Drum condensation.	Perform the drum refresh operation.
	Dirty or flawed drum.	Perform the drum refresh operation. If the drum is flawed, replace the drum unit (see page 1-5-24).

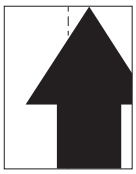
(16) Fusing is poor.

Copy example	Causes	Check procedures/corrective measures
	Wrong types of paper.	Check if the paper meets specifications. Replace paper.
	Defective pressure springs.	Replace the pressure springs.
	Flawed press roller.	Replace the press roller (see page 1-5-30).
	Flawed fuser heater.	Replace the fuser heater (see page 1-5-31).

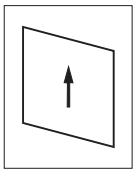
(17) Image is out of focus.

Copy example	Causes	Check procedures/corrective measures
	Defective image scanning unit.	Replace the image scanning unit (see page 1-5-18).
	Drum condensation.	Perform the drum refresh operation.

(18) Image center does not align with the original center.

Copy example	Causes	Check procedures/corrective measures
	Misadjusted image center line.	Run maintenance item U034 to readjust the center line of image printing (see page 1-3-19).
	Misadjusted scanner center line.	Run maintenance item U067 to readjust the scanner leading edge registration (see page 1-3-25).
	Original is not placed correctly.	Place the original correctly.

(19) Image is not square.

Copy example	Causes	Check procedures/corrective measures
	Laser scanner unit positioned incorrectly.	Adjust the installation position of the laser scanner unit (see page 1-5-23).

1-4-4 Electric problems

Troubleshooting to each failure must be in the order of the numbered symptoms.

Problem	Causes	Check procedures/corrective measures
(1) The machine does not operate when the main power switch is turned on.	1. The power cord is not plugged in properly.	Check the contact between the power plug and the outlet.
	2. No electricity at the power outlet.	Measure the input voltage.
	3. Broken power cord.	Check for continuity. If none, replace the cord.
	4. Defective main power switch.	Check for continuity across the contacts. If none, replace the main power switch.
	5. Defective power source PWB.	With AC present, check for 24 V DC at YC1-7 on the power source PWB, 5 V DC at YC1-6 and 3.3 V DC at YC1-5. If none, replace the power source PWB.
(2) The eject motor does not operate.	1. Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	2. Defective drive transmission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushings and gears. Check for broken gears and replace if any.
	3. Defective eject motor.	Run maintenance item U030 and check if the eject motor operates. If not, replace the eject motor.
	4. Defective engine PWB.	Run maintenance item U030 and check if the eject motor operates. If not, replace the engine PWB.
(3) The scanner motor or cooling fan motor 1 to 13 does not operate.	1. Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	2. Broken motor coil.	Check for continuity across the coil. If none, replace the motor.
(4) The upper/lower paper feed clutch, feed clutch 1/2/3, MP paper feed clutch, MP feed clutch, registration clutch or duplex feed clutch does not operate.	1. Broken clutch coil.	Check for continuity across the coil. If none, replace the clutch.
	2. Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	3. Defective engine PWB.	Run maintenance item U032 and check if following terminals on the engine PWB goes low. If not, replace the engine PWB. Upper paper feed clutch: YC14-B1 on the engine PWB Lower paper feed clutch: YC14-B4 on the engine PWB Feed clutch 1: YC11-14 on the engine PWB Feed clutch 2: YC13-A12 on the engine PWB Feed clutch 3: YC13-A5 on the engine PWB MP paper feed clutch: YC6-A9 on the engine PWB MP feed clutch: YC6-A11 on the engine PWB Registration clutch: YC14-B6 on the engine PWB Duplex feed clutch: YC10-B2 on the engine PWB
(5) The feedshift solenoid or toner feed solenoid does not operate.	1. Broken solenoid coil.	Check for continuity across the coil. If none, replace the solenoid.
	2. Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	3. Defective engine PWB.	Run maintenance item U033 and check if the solenoid operates. If not, replace the engine PWB.

Problem	Causes	Check procedures/corrective measures
(6) The exposure lamp does not turn on or off.	1. Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	2. Defective scanner PWB.	Run maintenance item U061 and check if YC6-3 on the scanner PWB goes low. If not, replace the scanner PWB.
		If YC6-3 on the scanner PWB is always low, replace the scanner PWB.
	3. Defective inverter PWB.	Run maintenance item U061 and check if the exposure lamp turns on with YC1-3 on the inverter PWB go low. If not, replace the inverter PWB.
		If the exposure lamp does not turn off with YC1-3 on the inverter PWB high, replace the inverter PWB.
	4. Defective exposure lamp.	Replace the exposure lamp even if checking or correcting other measures.
(7) Main charging is not performed.	1. Broken main charger wire.	(See page 1-4-45.)
	2. Leaking main charger housing.	
	3. The connector terminals of the high voltage PWB make poor contact.	
	4. Defective engine PWB.	
	5. Defective high voltage PWB.	
(8) No developing bias is output.	1. The connector terminals of the high voltage PWB make poor contact.	(See page 1-4-45.)
	2. Defective engine PWB.	
	3. Defective high voltage PWB.	
(9) Transfer charging is not performed.	1. The connector terminals of the high voltage PWB make poor contact.	(See page 1-4-45.)
	2. Defective engine PWB.	
	3. Defective high voltage PWB.	
(10) The original size is not detected correctly.	1. Original is not placed correctly.	Check the original and correct if necessary.
	2. Poor contact in the original detection switch or original size detection sensor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	3. Defective original detection switch.	If the level of YC4-5 on the scanner PWB does not go low when the original detection switch is turned on and off, replace the original detection switch.
	4. Defective original size detection sensor.	Check if sensor operates correctly. If not, replace it.

Problem	Causes	Check procedures/corrective measures
(11) The touch panel keys do not work.	1. Poor contact in the touch panel connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	2. Defective touch panel or main operation PWB.	If any keys do not work after running the maintenance item U201 to initialize the touch panel, replace the touch panel or main operation PWB.
(12) The message requesting paper to be loaded is shown when paper is present on the cassette 1/2 or MP tray.	1. Poor contact in the connector terminals of upper/lower paper switch or MP paper switch.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	2. Defective upper/lower paper switch or MP paper switch.	If the level of following terminal on PWB does not go low when the switch is turned on and off, replace the switch. Upper paper switch: YC13-B12 on the engine PWB Lower paper switch: YC13-B18 on the engine PWB MP paper switch: YC6-A6 on the engine PWB
(13) The size of paper on the cassette 1/2 or MP tray is not displayed correctly.	1. Poor contact in the connector terminals of upper/lower paper size length switch, upper/lower paper size width switch, MP paper size length switch or MP paper size width switch.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	2. Defective upper/lower paper size length switch or MP paper size length switch.	If the level of following terminal on PWB does not go low when the switch is turned on and off, replace the switch. Upper paper size length switch: YC13-B2 on the engine PWB Lower paper size length switch: YC13-A19 on the engine PWB MP paper size length switch: YC6-B11 on the engine PWB
	3. Defective upper/lower paper size width switch or MP paper size width switch.	If the level of following terminal on PWB does not change when the width guide in the cassette 1/2 or insert guide on the MP tray is moved, replace the switch. Upper paper size width switch: YC12-3, 4, 5 on the engine PWB Lower paper size width switch: YC12-9, 10, 11 on the engine PWB MP paper size width switch: YC6-A1, A2, A3 on the engine PWB
(14) A paper jam in the paper feed, paper conveying, fuser, eject or duplex section is indicated when the main power switch is turned on.	1. A piece of paper torn from copy paper is caught around feed switch 1/2/3, registration switch, feedshift switch, eject switch or duplex paper conveying switch.	Check visually and remove it, if any.
	2. Defective feed switch 1/2/3, registration switch, feedshift switch, eject switch or duplex paper conveying switch.	Run maintenance item U031 and turn each switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.

Problem	Causes	Check procedures/corrective measures
(15) The message requesting cover to be closed is displayed when the front cover or left cover 1/2 is closed.	1. Poor contact in the connector terminals of front cover switch, left cover 1 switch or left cover 2 switch.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	2. Defective front cover switch, left cover 1 switch or left cover 2 switch.	Check for continuity across each switch. If there is no continuity when the switch is on, replace it.
(16) Others.	1. Wiring is broken, shorted or makes poor contact.	Check for continuity. If none, repair.

1-4-5 Mechanical problems

Problem	Causes/check procedures	Corrective measures
(1) No primary paper feed.	Check if the surfaces of the following rollers or pulleys are dirty with paper powder: upper/lower forwarding pulleys, upper/lower paper feed pulleys, upper/lower separation pulleys, feed rollers, registration rollers, MP forwarding pulley, MP paper feed pulley and MP separation pulley.	Clean with isopropyl alcohol.
	Check if the upper/lower forwarding pulleys, upper/lower paper feed pulleys or upper/lower separation pulleys is deformed.	Replace the pulley if it is deformed (see page 1-5-2).
	Check if the MP forwarding pulley, MP paper feed pulley or MP separation pulley is deformed.	Replace the pulley if it is deformed (see page 1-5-4).
	Electrical problem with the following clutches: upper/lower paper feed clutches, feed clutches 1/2/3, MP paper feed clutch and MP feed clutch.	See page 1-4-51.
(2) No secondary paper feed.	Check if the surfaces of the right and left registration rollers are dirty with paper powder.	Clean with isopropyl alcohol.
	Electrical problem with the registration clutch.	See page 1-4-51.
(3) Skewed paper feed.	Width guide in a cassette installed incorrectly.	Check the width guide visually and correct or replace if necessary.
	Deformed width guide in a cassette.	Check visually and replace any deformed guide.
	Check if a pressure spring along the paper conveying path is deformed or out of place.	Repair or replace.
(4) The scanner does not travel.	Check if the scanner wire is loose.	Reinstall the scanner wire (see page 1-5-13).
	The scanner motor malfunctions.	See page 1-4-51.
(5) Multiple sheets of paper are fed at one time.	Paper is extremely curled.	Change the paper.
	Check if the upper or lower separation pulley is worn.	Replace the upper or lower separation pulley if it is worn (see page 1-5-2).
	Check if the MP separation pulley is worn.	Replace the MP separation pulley if it is worn (see page 1-5-4).

Problem	Causes/check procedures	Corrective measures
(6) Paper jams.	Paper is extremely curled.	Change the paper.
	Deformed guides along the paper conveying path.	Check visually and replace any deformed guides.
	Check if the contact between the right and left registration rollers is correct.	Check visually and remedy if necessary.
	Check if the contact between the feed roller and feed pulley is correct.	Check visually and remedy if necessary.
	Check if the press roller is extremely dirty or deformed.	Clean or replace the press roller.
	Check if the contact between the heat roller and its separation claws is correct.	Repair if any springs are off the separation claws.
	Check if the contact between the eject roller and pulley is correct.	Check visually and remedy if necessary.
	The feedshift solenoid malfunctions.	See page 1-4-51.
	Check if the duplex feed pulley, upper duplex feed roller or lower duplex feed roller is deformed.	Check visually and replace the pulley or roller if deformed.
(7) Toner drops on the paper conveying path.	Check if the developing unit is extremely dirty.	Clean the developing unit.
(8) Abnormal noise is heard.	Check if the pulleys, rollers and gears operate smoothly.	Grease the bearings and gears.
	Check if the following clutches are installed correctly: upper/lower paper feed clutches, feed clutches 1/2/3, MP paper feed clutch and MP feed clutch.	Correct.

1-5-1 Precautions for assembly and disassembly

(1) Precautions

Before starting disassembly, press the Power key on the operation panel to off. Make sure that the Power indicator and the Memory indicator are off before turning off the main power switch. And then unplug the power cable from the wall outlet.
Turning off the main power switch before pressing the Power key to off may cause damage to the equipped hard disk.
When optional fax kit is installed, be sure to disconnect the modular code before starting disassembly.
When handling PWBs (printed wiring boards), do not touch parts with bare hands.
The PWBs are susceptible to static charge. Do not touch any PWB containing ICs with bare hands or any object prone to static charge.
Use only the specified parts to replace the fuser unit thermostat. Never substitute electric wires, as the machine may be seriously damaged.
When replacing battery on a PWB, dispose properly according to laws and regulations.
When removing the hook of the connector, be sure to release the hook.

(2) Drum

Note the following when handling or storing the drum.
When removing the drum unit, never expose the drum surface to strong direct light.
Keep the drum at an ambient temperature between 0°C/32°F and 35°C/95°F and at a relative humidity not higher than 85% RH. Avoid abrupt changes in temperature and humidity.
Avoid exposure to any substance which is harmful to or may affect the quality of the drum.
Do not touch the drum surface with any object. Should it be touched by hands or stained with oil, clean it.

(3) Toner

Store the toner container in a cool, dark place.
Avoid direct light and high humidity.

1-5-2 Paper feed section

(1) Detaching and refitting the forwarding, paper feed and separation pulleys

Follow the procedure below to replace the forwarding, paper feed and separation pulleys.

Procedure

Removing the primary paper feed units

1. Open the front cover and pull out the cassettes 1 and 2.
2. Remove the screw and remove the primary paper feed unit.

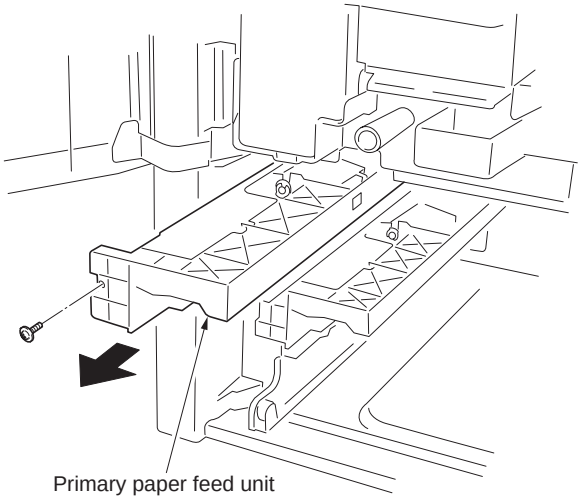


Figure 1-5-1

Removing the forwarding pulley

3. Remove the stopper from the primary paper feed unit.
4. Raise the forwarding pulley retainer in the direction the arrow, and remove from the primary paper feed unit.

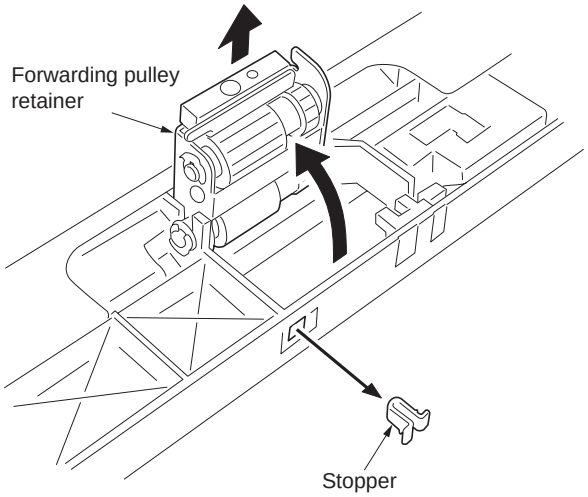


Figure 1-5-2

5. Remove the stop ring from the forwarding pulley retainer.
6. Remove the forwarding pulley from the forwarding pulley shaft.

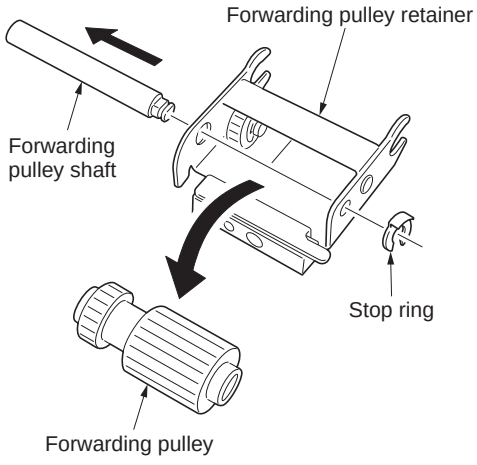


Figure 1-5-3

Removing the paper feed pulley

7. Remove two stop rings from the primary paper feed unit.
8. Pull the paper feed pulley shaft in the direction of the arrow and remove the paper feed pulley.

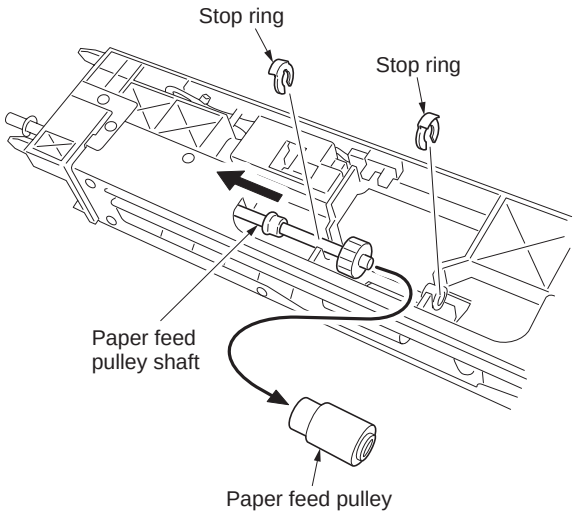


Figure 1-5-4

Removing the separation pulley

9. Remove the stop ring from the primary paper feed unit.
10. Pull the separation pulley shaft in the direction of the arrow and remove the separation pulley.

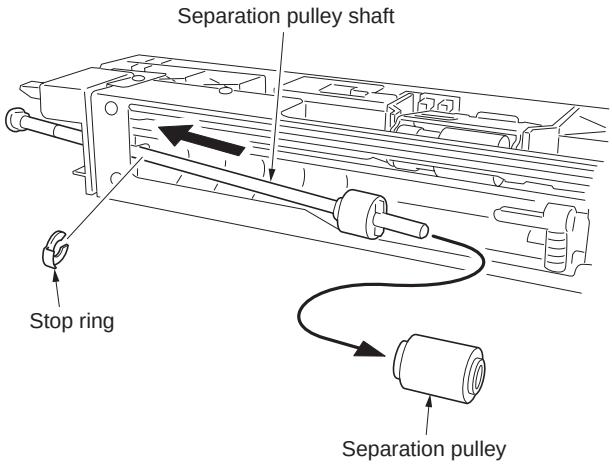


Figure 1-5-5

11. Replace the forwarding, paper feed and separation pulleys.
12. Install the separation and paper feed pulleys to the primary paper feed unit.
13. Install the forwarding pulley to the forwarding pulley retainer.
    When refitting the forwarding pulley, orient it correctly as shown in Figure 1-5-6.
14. Refit the forwarding pulley retainer to the primary paper feed unit.
15. Refit the primary paper feed unit.

16. When the forwarding pulley, paper feed pulley, separation pulley or the primary paper feed unit is replaced, perform maintenance mode U903 to clear the jam counter (see page 1-3-76).

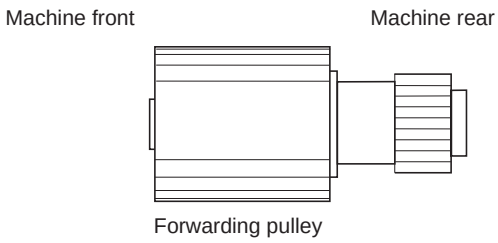


Figure 1-5-6

(2) Detaching and refitting the MP separation, MP paper feed and MP forwarding pulleys

Follow the procedure below to replace the MP separation, MP paper feed and MP forwarding pulleys.

Procedure

Removing the MP unit

1. Remove four screws and remove the right lower cover.

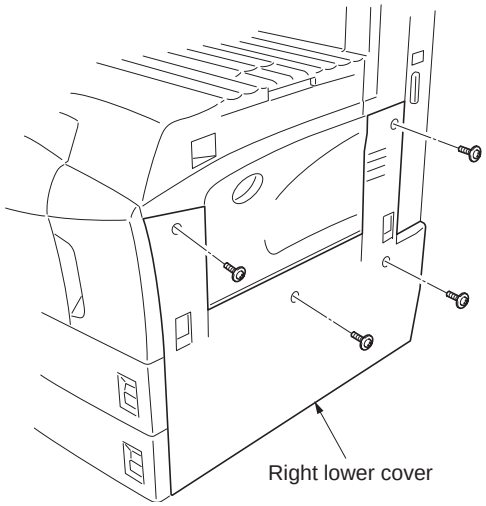


Figure 1-5-7

2. Remove two screws and two MP holder plates.
3. Remove two pins, two screws and two connectors, and then remove the MP unit.

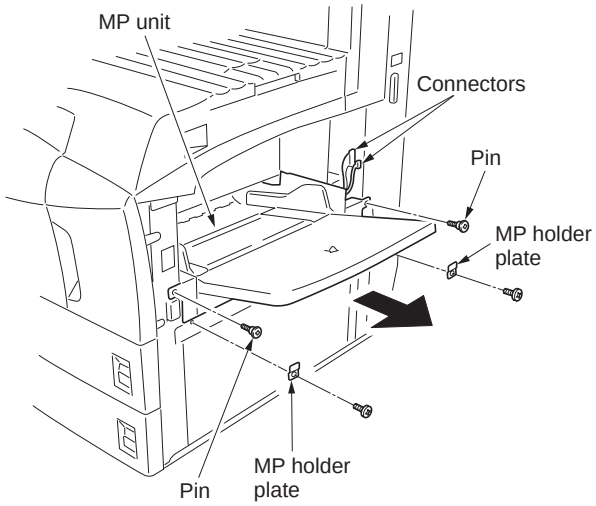


Figure 1-5-8

Removing the MP separation pulley

4. Reverse the MP unit and remove the spring and stop ring from the MP separation pulley shaft and move the bushing inside.

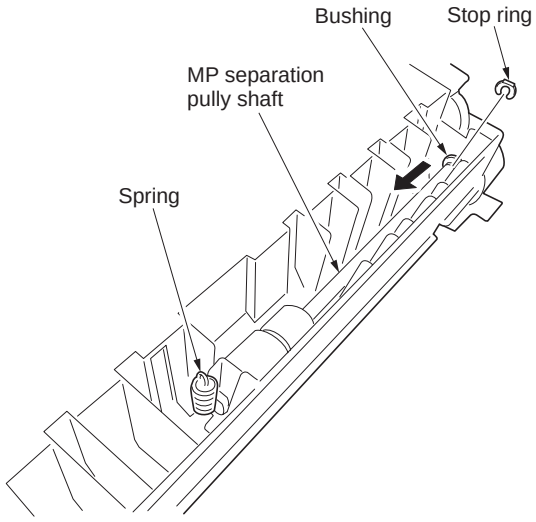


Figure 1-5-9

5. Raise the MP separation shaft as shown in the figure, remove the holder plate and the bushing, and then remove the MP separation pulley.
   Take care not to remove the spring pin of the gear at the rear of the MP separation pulley shaft. If it is removed, refit it to its original position.

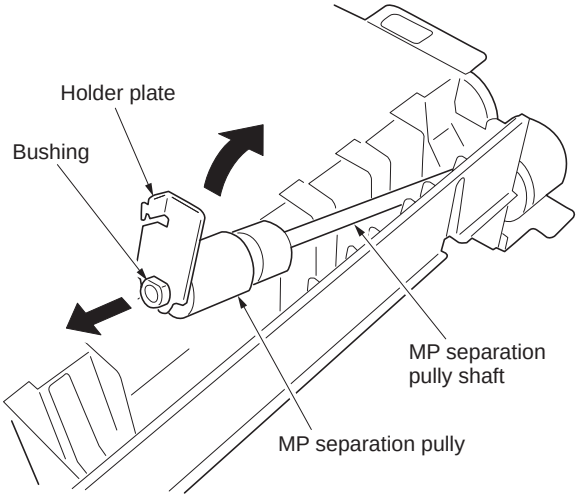


Figure 1-5-10

Removing the MP paper feed pulley

6. Remove the connector of the MP paper switch and remove the wire from the three clamps.
7. Remove the screw and remove the MP unit cover.

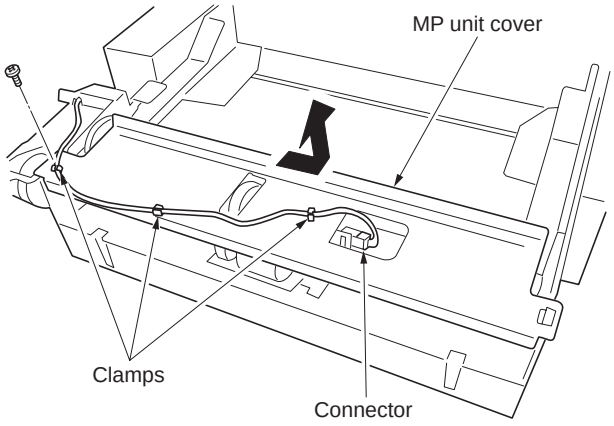


Figure 1-5-11

8. Remove the stop ring and bushing on the front of the MP paper feed pulley shaft.

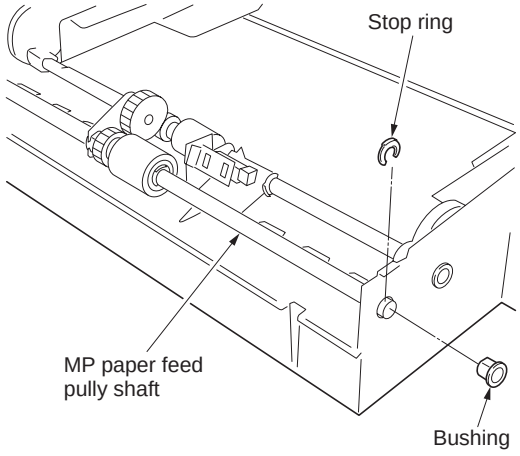


Figure 1-5-12

9. Raise the MP paper feed pulley shaft as shown in the figure, remove the stop ring, and then remove the MP paper feed pulley.

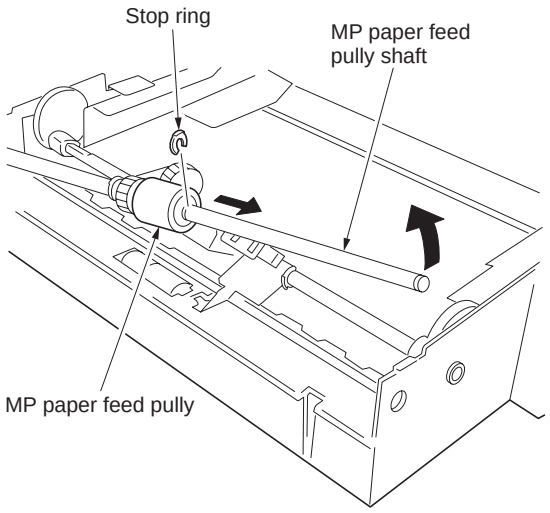


Figure 1-5-13

Removing the MP forwarding pulley

10. Remove the sponge.
11. Remove the stop ring and MP paper feed clutch.
    When refitting, insert the cutout in the MP paper feed clutch over the stopper on the machine.

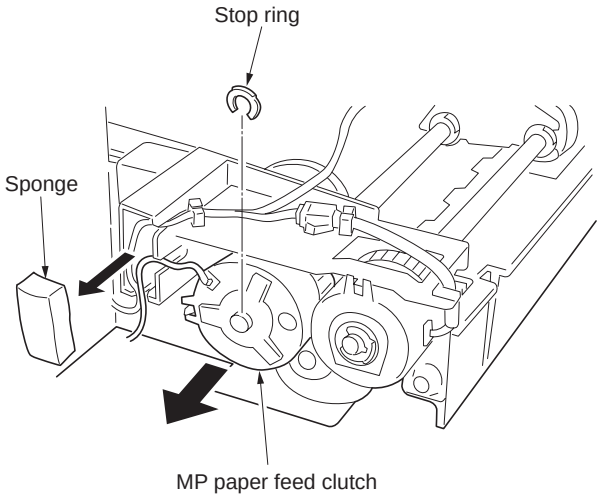


Figure 1-5-14

12. Remove the screw from the cam at the rear of the MP forwarding pulley shaft and move the cam and the bushing toward the inner side.

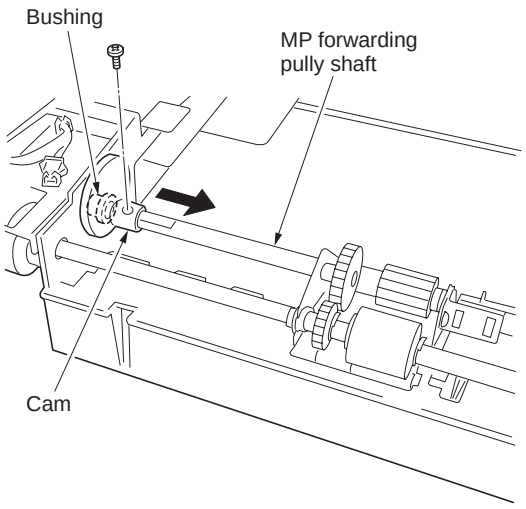


Figure 1-5-15

13. Remove the stop ring of the MP paper feed pulley shaft and slide the bushing in the direction of the arrow.

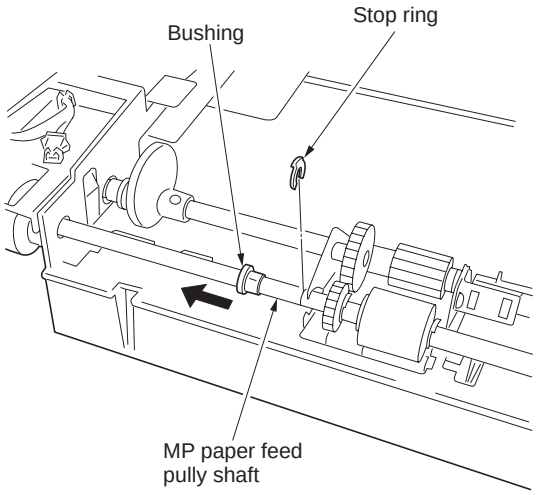


Figure 1-5-16

14. Slide the MP forwarding pulley shaft temporarily toward the rear side and then raise it to remove from the MP unit.
Remove the shaft while raising the actuator of the MP paper switch.

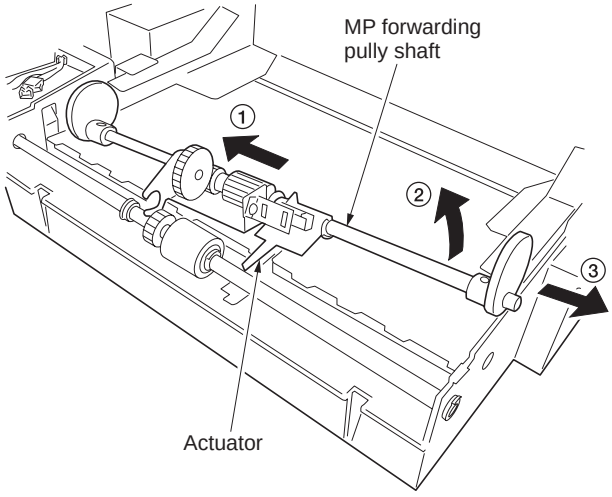


Figure 1-5-17

15. Remove the bushing an cam on the rear of the MP forwarding pulley shaft.

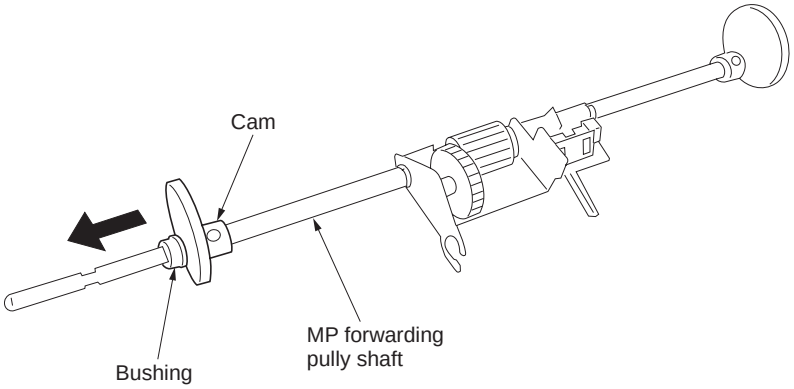


Figure 1-5-18

16. Remove the stop ring and slide the MP forwarding pulley with the forwarding pulley retainer from the shaft to remove it.
17. Replace the MP separation, MP paper feed and MP forwarding pulleys.

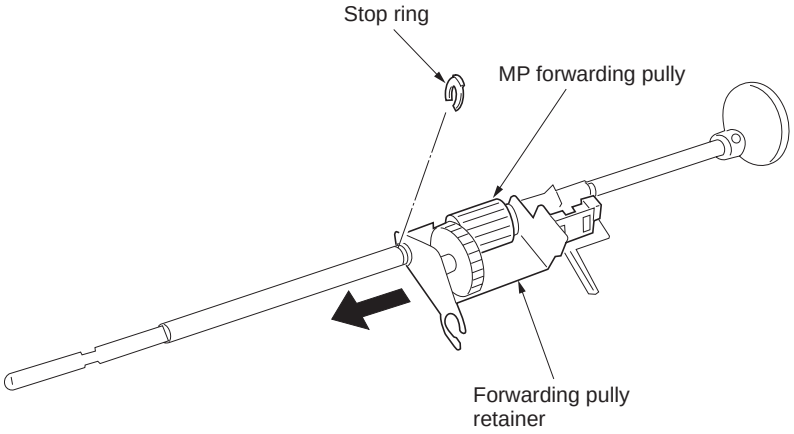


Figure 1-5-19

18. Install the MP forwarding pulley to the MP forwarding pulley shaft.
19. Refit the MP forwarding pulley shaft to the MP unit.
20. Install the MP paper feed pulley to the MP unit.
21. Refit the MP unit cover to the MP unit. When refitting the MP unit cover, the film on the cover is positioned under the MP paper feed pulley shaft.
22. Install the MP separation pulley to the MP unit.
23. Refit the MP unit.

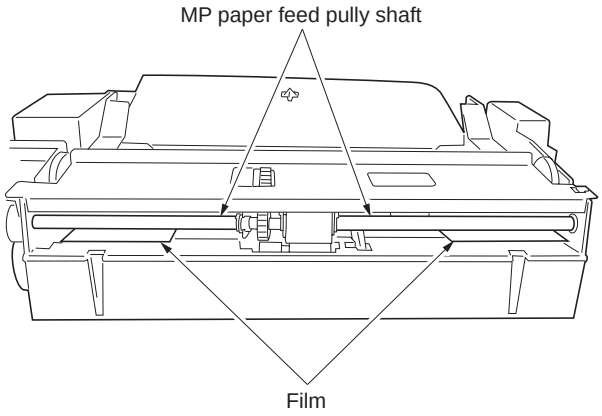


Figure 1-5-20

24. When the MP forwarding pulley, MP paper feed pulley or the MP separation pulley is replaced, perform maintenance mode U903 to clear the jam counter (see page 1-3-76).

(3) Detaching and refitting the left and right registration cleaner

Take the following procedure when the left or right registration cleaner is to be replaced.

Procedure

Removing the left registration cleaner

1. Open the left cover 1 and remove the transfer roller unit. (see page 1-5-27).
2. Remove two roller stoppers and remove the left registration roller.
3. Remove two registration guides.

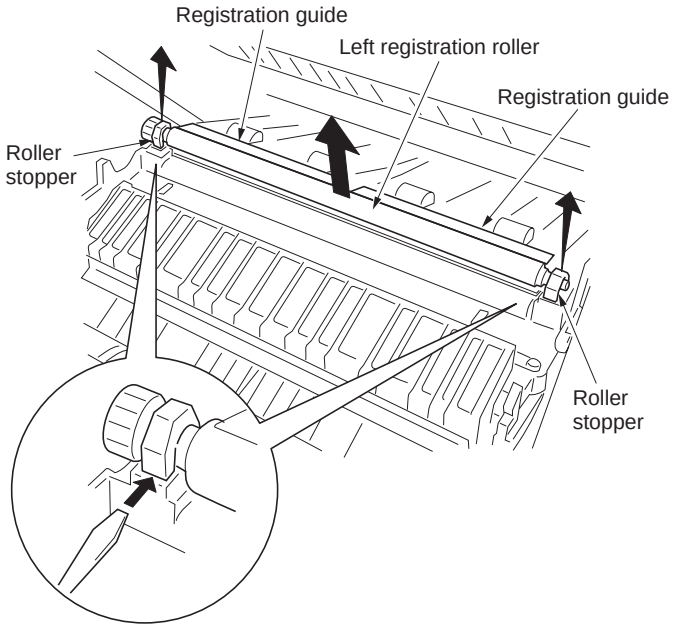


Figure 1-5-21

4. Remove the left registration cleaner
5. Replace the left registration cleaner and registration guides.
   Install the left registration cleaner and registration guides.
6. Refit the left registration roller, roller stoppers and transfer roller unit.

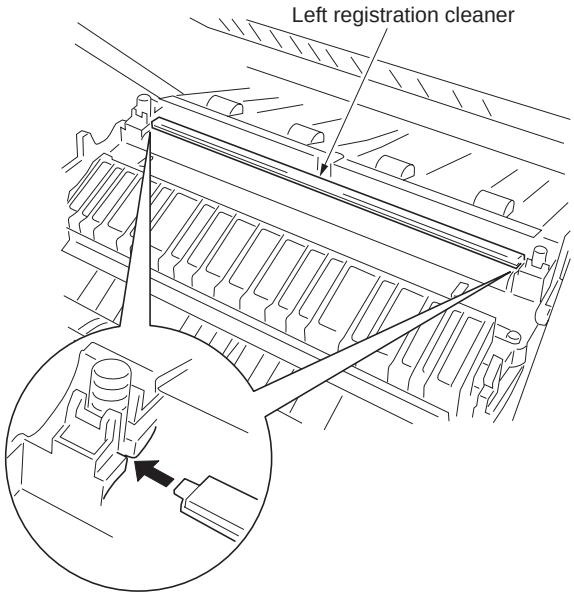


Figure 1-5-22

Removing the right registration cleaner

1. Remove the developing unit and drum unit. (see pages 1-5-26 and 24).
2. Remove the right registration cleaner.
3. Replace the right registration cleaner and Install the cleaner.
4. Refit the drum unit and developing unit.

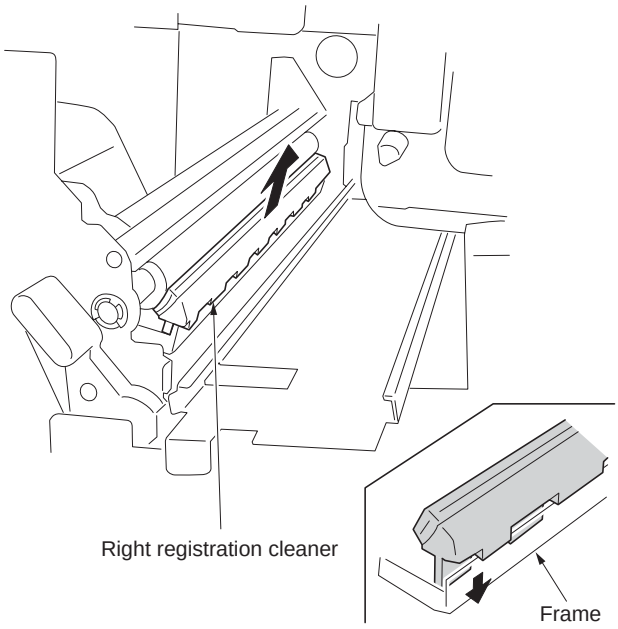


Figure 1-5-23

1-5-3 Optical section

(1) Detaching and refitting the exposure lamp

Replace the exposure lamp as follows.

Procedure

1. Remove the original cover or the DP.
2. Remove ten screws and remove the rear cover.

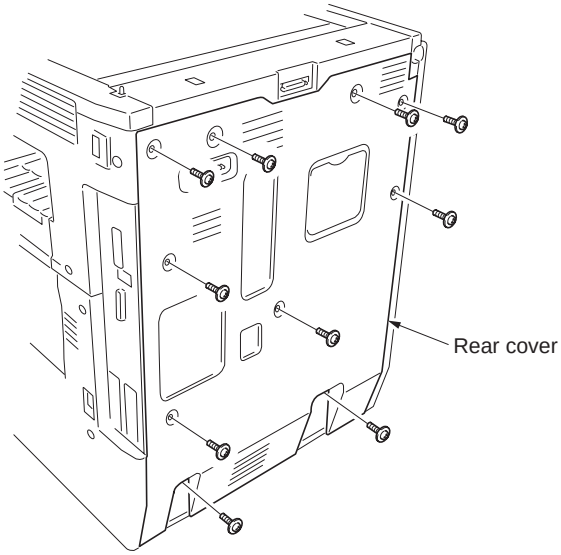


Figure 1-5-24

3. Remove two screws and remove the scanner right cover.
4. Remove the platen.

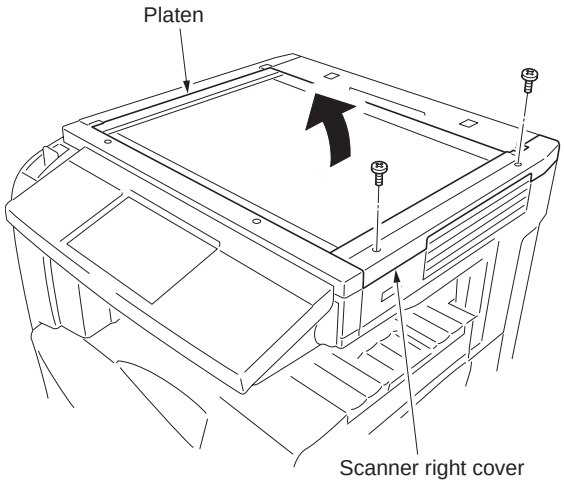


Figure 1-5-25

5. Remove the connector of the inverter PWB.
6. Release the wire from the wire saddles and pull the connector out from the opening on the rear of the scanner unit.

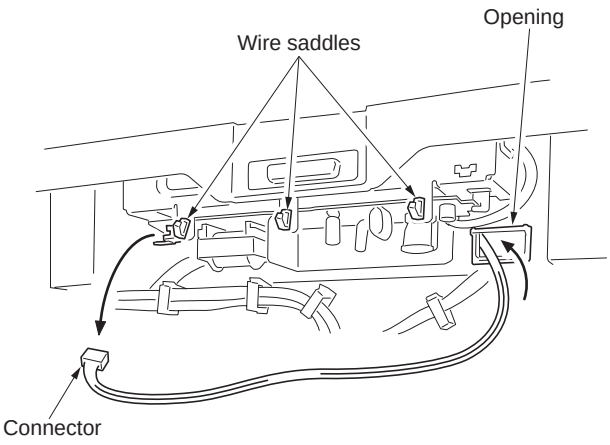


Figure 1-5-26

7. Remove the sponge from the wire guide and release the wire.
8. Move the mirror 1 frame to notch position and release the wire from the wire holder.

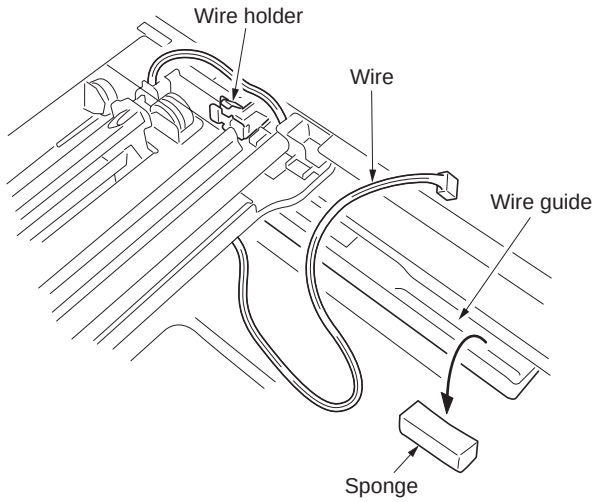


Figure 1-5-27

9. Remove the screw and remove the exposure lamp.
10. Replace the exposure lamp and install the lamp.
11. Refit the platen, scanner right cover and rear cover.

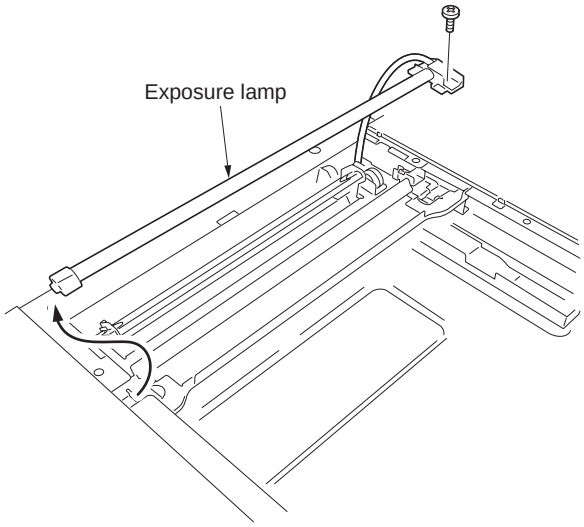


Figure 1-5-28

(2) Detaching and refitting the scanner wires

Take the following procedure when the scanner wires are broken or to be replaced.

NOTE
When fitting the wires, be sure to use those specified below.
Machine front: (P/N: 302GR17110), gray
Machine rear: (P/N: 302GR17100), black

Fitting requires the following tools
Two frame securing tools (P/N 302C968310)
Two scanner wire stoppers (P/N 3596811)

Procedure

Detaching the scanner wires

1. Remove the exposure lamp (see page 1-5-11).
2. Remove the clip holder.
3. Open the front cover and left cover 1.
4. Remove four screws and remove front left cover.

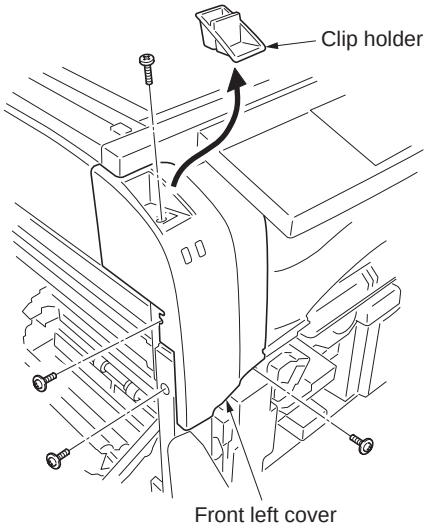


Figure 1-5-29

5. Remove the screw and pin and then remove the left upper cover.

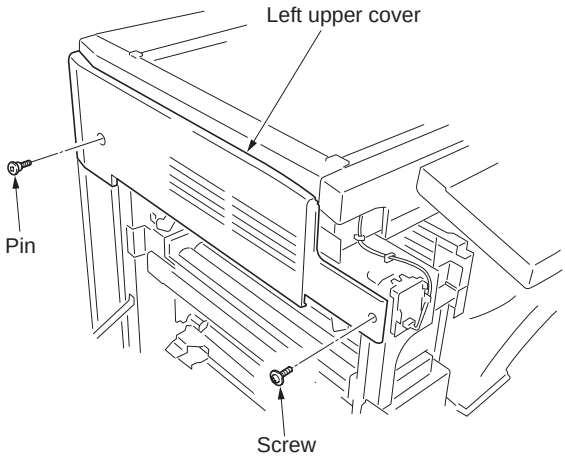


Figure 1-5-30

6. Remove two screws and remove the scanner left cover.

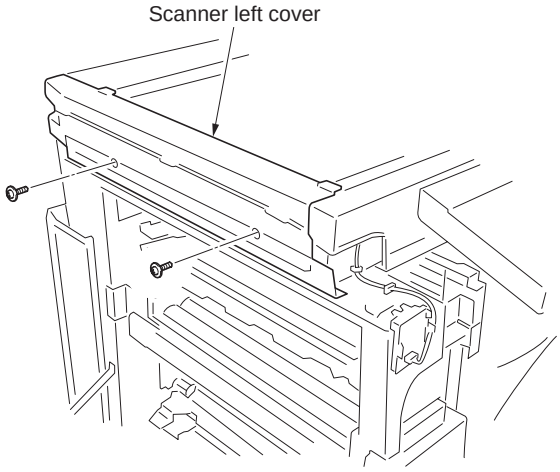


Figure 1-5-31

7. Remove each screw and then remove front and rear wire holder plates from mirror 1 frame.
8. Remove the mirror 1 frame.

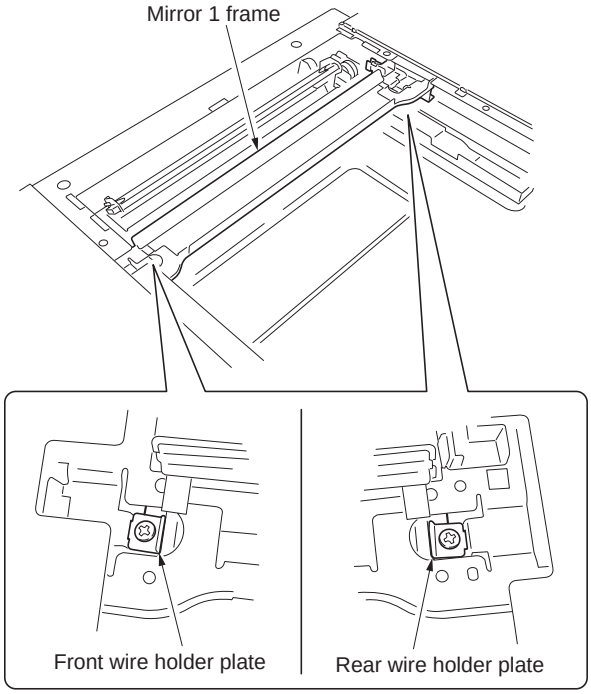


Figure 1-5-32

9. Remove the round terminals from the scanner wire springs on scanner unit left side.
10. Remove the scanner wire.

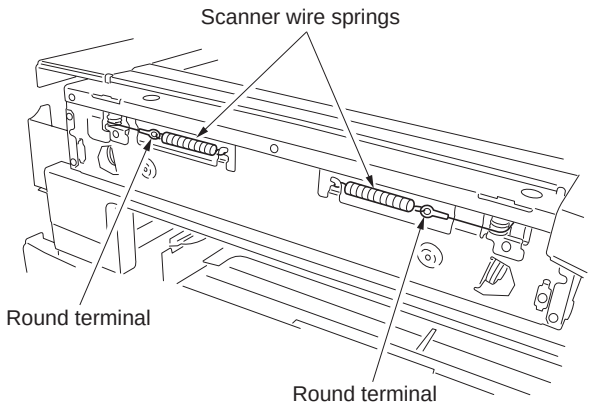


Figure 1-5-33

Fitting the scanner wires

11. Move the mirror 2 frame as shown in the figure and insert two frame securing tools into the positioning holes at the front and rear of the machine center to fix the mirror 2 frame in position.

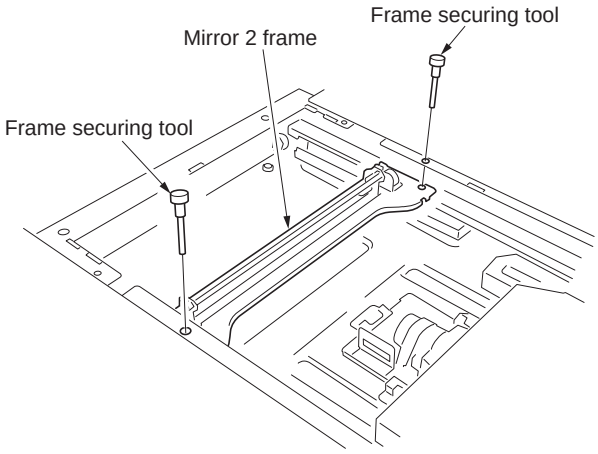


Figure 1-5-34

12. Hook the round terminals onto the catches inside of the scanner unit. (1)
13. Loop the scanner wires around the outer grooves in the pulleys on the mirror 2 frame, winding from below to above. (2)
14. Loop the scanner wire around the groove in the scanner wire pulley at the scanner unit right, winding from above to below. (3)
15. Wind the scanner wires around the scanner wire drum five turns from the rear toward the hole in the drum. (4)
16. Insert the locating ball on the scanner wire into the hole in the scanner wire drum. (5)
17. Wind the scanner wires three turns from the inner toward the hole in the drum. (6)
18. Install the scanner wire stoppers to the scanner wire drum to fix the wires. (7)
19. Loop the scanner wire around the groove in the scanner wire pulley at the scanner unit left, winding from below to above. (8)
20. Loop the scanner wires around the inner grooves in the pulleys on the mirror 2 frame, winding from below to above. (9)
21. Hook the scanner wires around the scanner wire guides at the machine left. (10)
22. Hook the round terminal onto the scanner wire spring. (11)

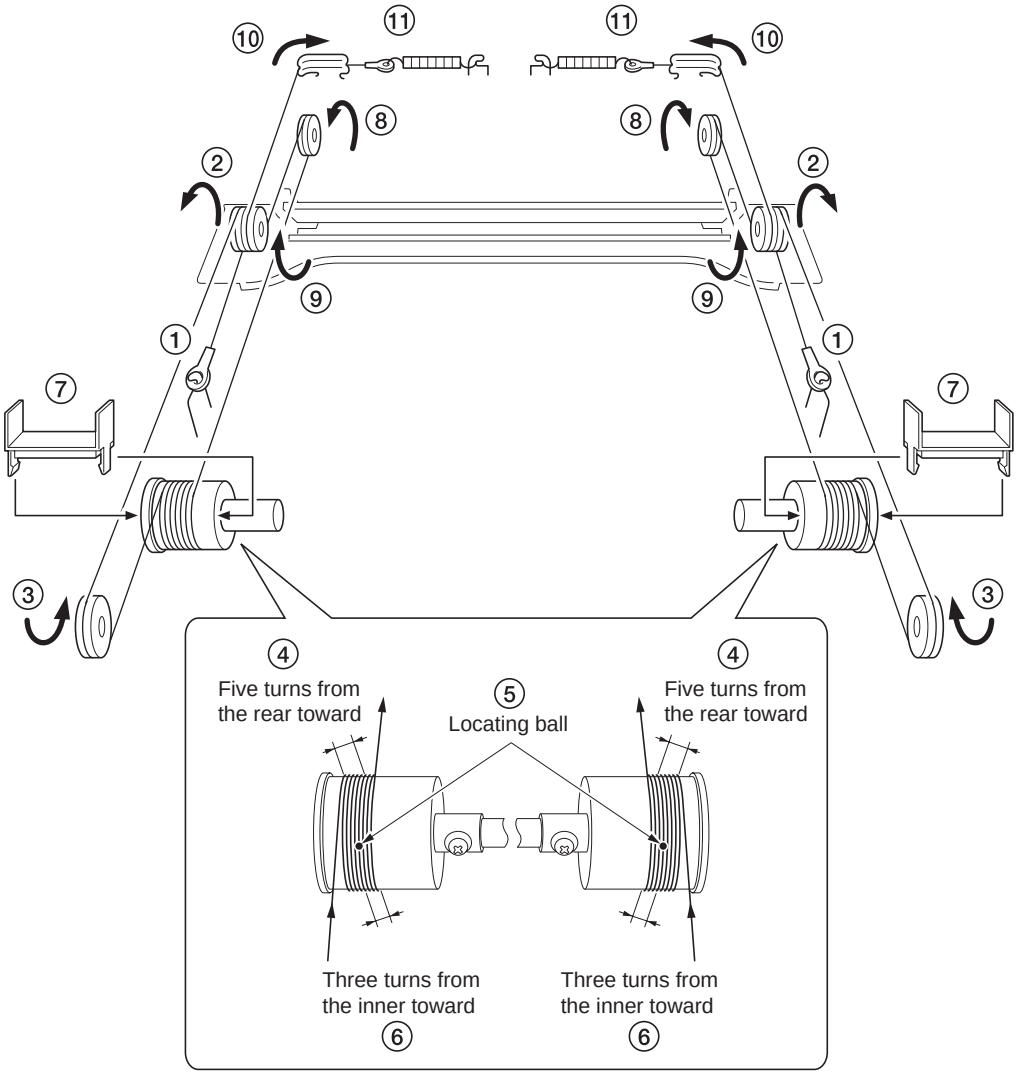


Figure 1-5-35

23. Remove the two scanner wire stoppers and frame securing tools.
24. Focusing on the locating ball of the wire drum, move aside the wires to inside.
25. Move the mirror 2 frame from side to side to correctly locate the wires in position.
26. Refit the mirror 1 frame.
27. Move the mirror 1 and 2 frames to the machine left, and insert the two frame securing tools into the positioning holes at the front and rear of the scanner unit to secure the frames in position.
28. Hold the wires and fix each front and rear wire holder plate to mirror 1 frame with the screw.
29. Remove the two frame securing tools.
30. Refit the exposure lamp.

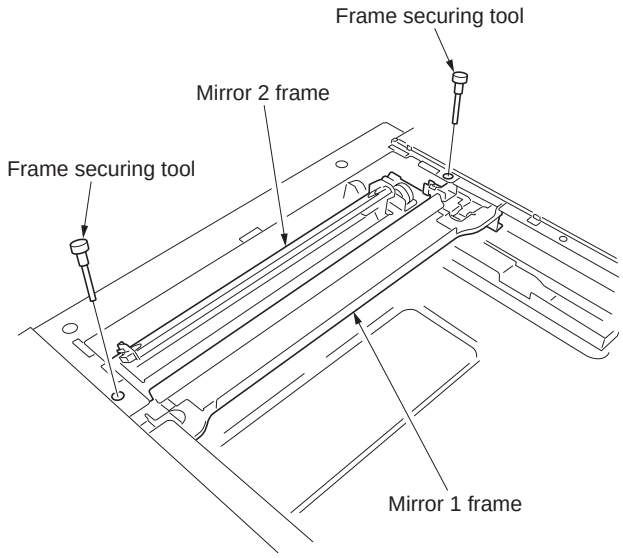


Figure 1-5-36

(3) Detaching and refitting the ISU (reference)

Follow the procedure below to replace the ISU.

Fitting requires the following tools
Two positions pins (P/N 1856812)

Procedure

Detaching the ISU

1. Remove the platen (see page 1-5-11).
2. Remove seven screws and then remove the ISU cover.

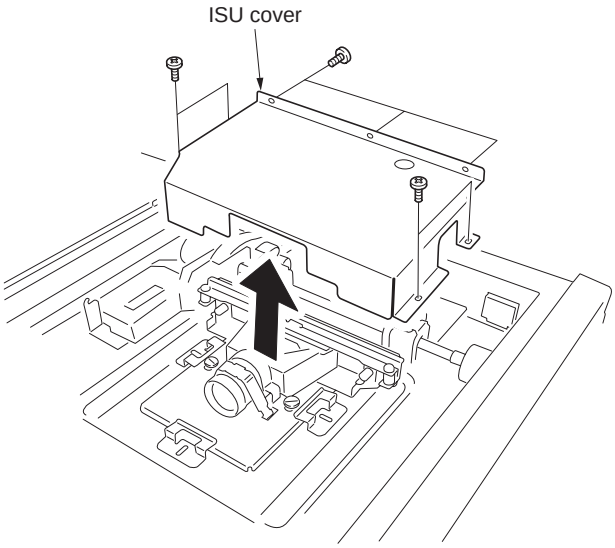


Figure 1-5-37

3. Remove three screws and two connectors, and then remove the ISU.
4. Replace the ISU.

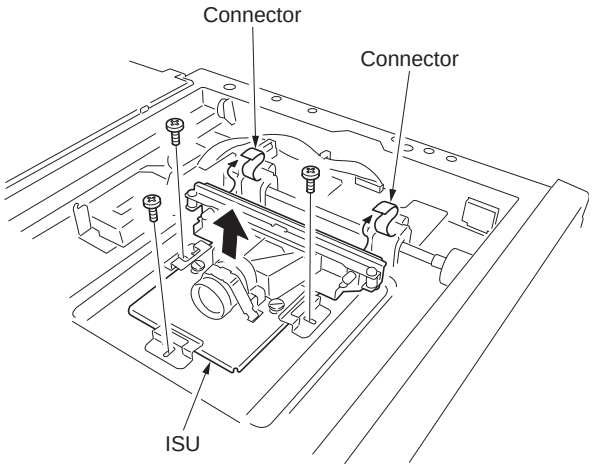


Figure 1-5-38

Fitting the ISU

5. Adjust the position of ISU to the frame hole of number and the same number which are recorded in the lens of ISU and then insert two positioning pins.
   Example: When a lens number is 5, move ISU so that the positioning hole of 5 of the number stamped in the scanner unit suit and insert two pins.
6. Remove two positioning pins after fixing ISU with three screws.
7. Refit two connectors and ISU cover.
8. Refit the platen.

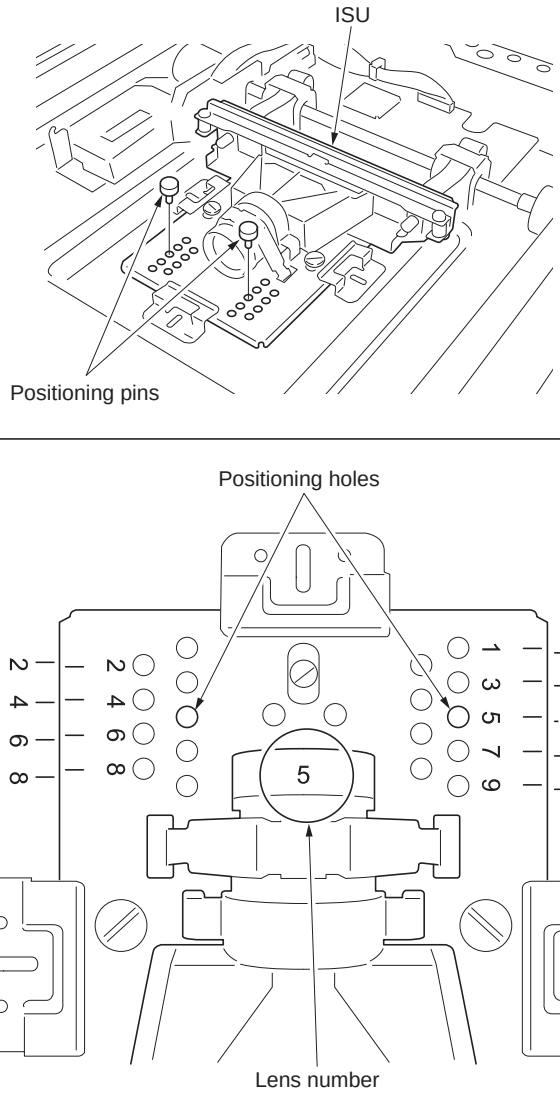


Figure 1-5-39

(4) Adjusting the position of the ISU (reference)

Perform the following adjustment if the leading and trailing edges of the copy image are laterally skewed (lateral squareness not obtained).

Caution:
Adjust the amount of slack in the paper at the registration roller first (see page 1-3-20). Check for the longitudinal squareness of the copy image, and if it is not obtained, perform the longitudinal squareness adjustment.
Before making the following adjustment, output a VTC-PG2 pattern in maintenance item U993 to use as the original for the adjustment.

Procedure

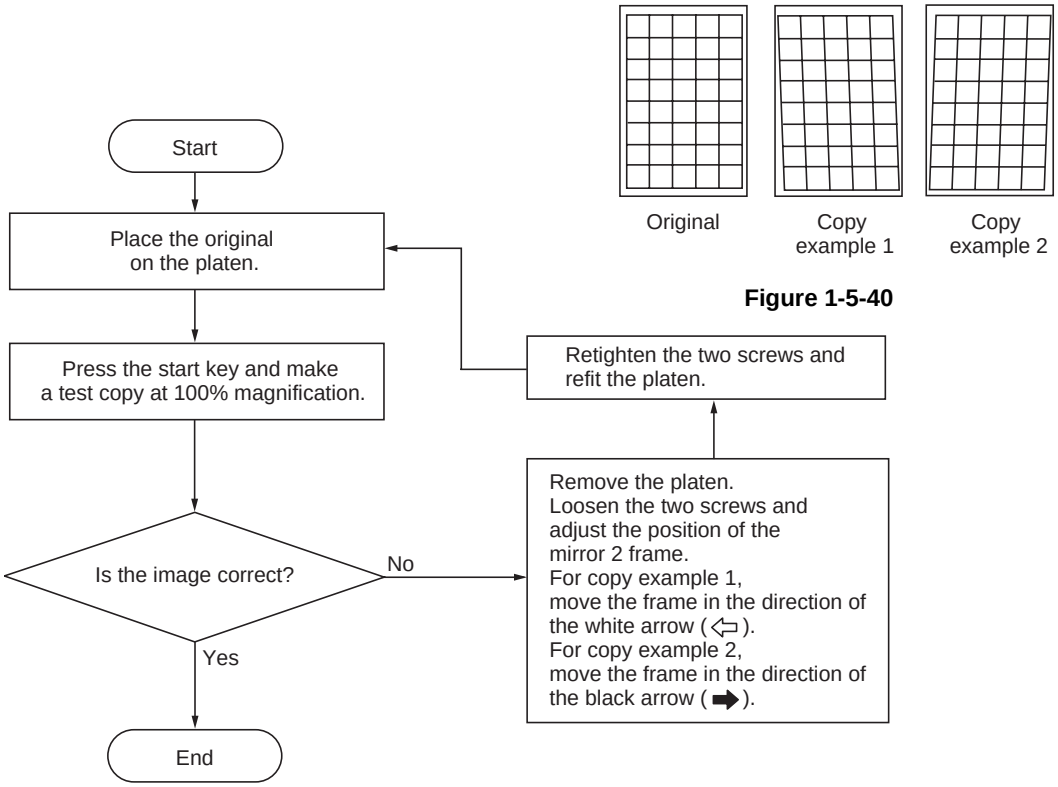


Figure 1-5-40

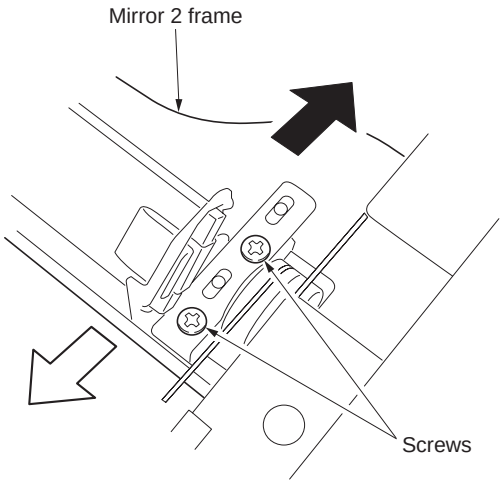


Figure 1-5-41

(5) Detaching and refitting the laser scanner unit

Take the following procedure when the laser scanner unit is to be replaced.

Procedure

1. Remove the developing unit and drum unit (see pages 1-5-24 and 26).
2. Remove the right lower cover and front left cover (see pages 1-5-4 and 13).
3. Remove four screws and remove the front right cover.

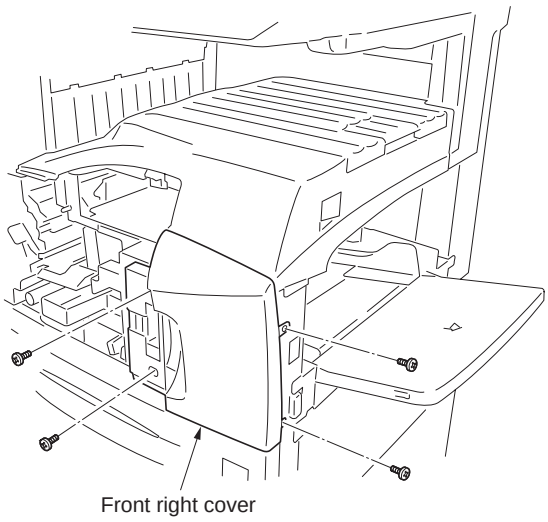


Figure 1-5-42

4. Remove three screws and remove the top tray.

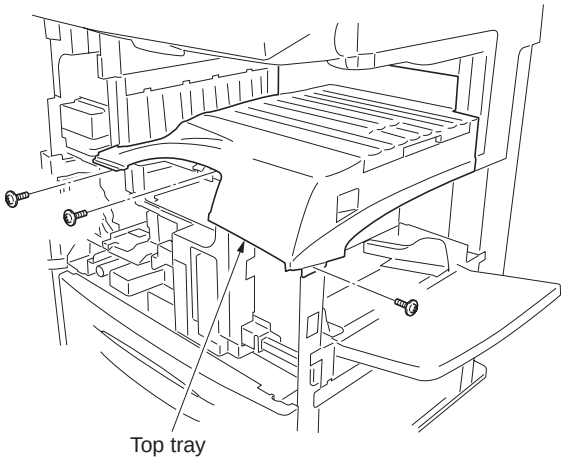


Figure 1-5-43

5. Remove five screws and remove the inner cover.

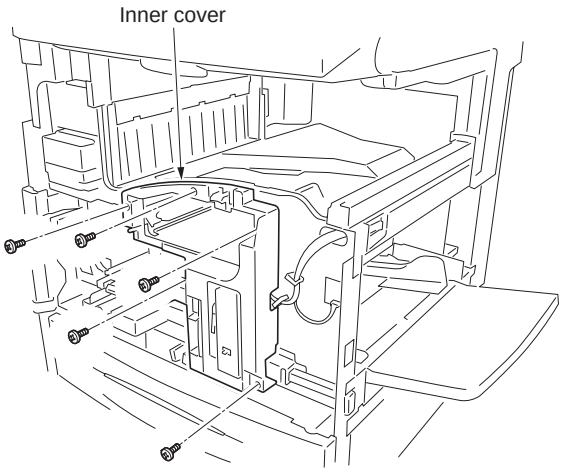


Figure 1-5-44

6. Remove two screws and two connectors, and then remove the fan duct.

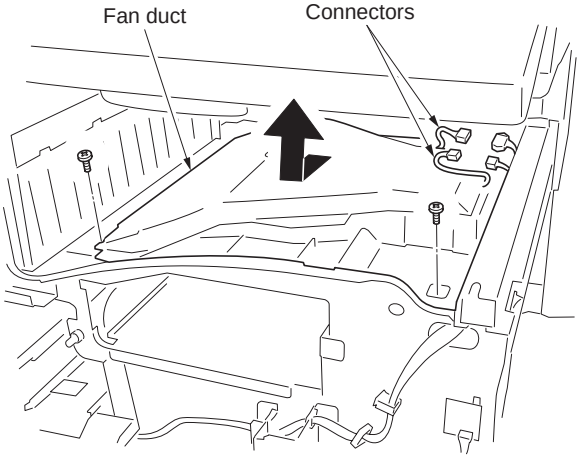


Figure 1-5-45

7. Remove six screws and remove the toner container retainer.

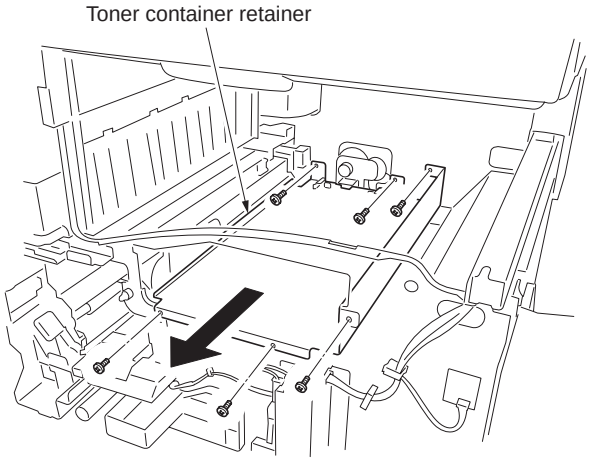


Figure 1-5-46

8. Remove four screws and the connector, and then remove the laser scanner unit.
9. Replace the laser scanner unit and install the unit.
10. Refit the toner container retainer, fan duct and inner cover.
11. Refit the top tray, front right cover, right lower cover and front left cover.
12. Refit the drum unit and the developing unit.

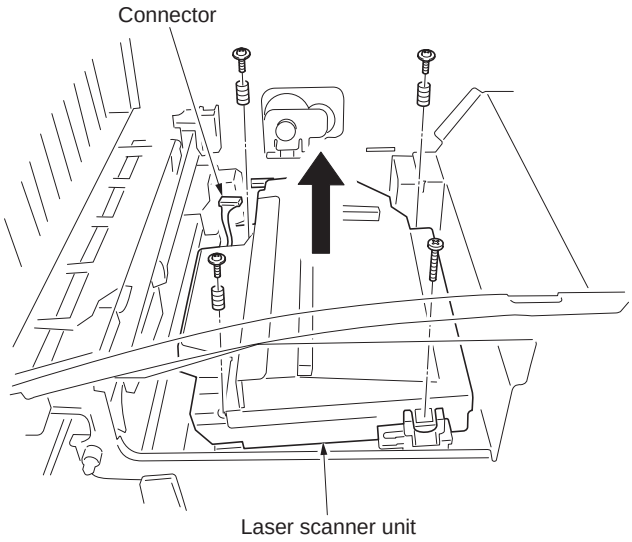


Figure 1-5-47

(6) Adjusting the skew of the laser scanner unit (reference)

Perform the following adjustment if the leading and trailing edges of the copy image are laterally skewed (lateral squareness not obtained).

Procedure

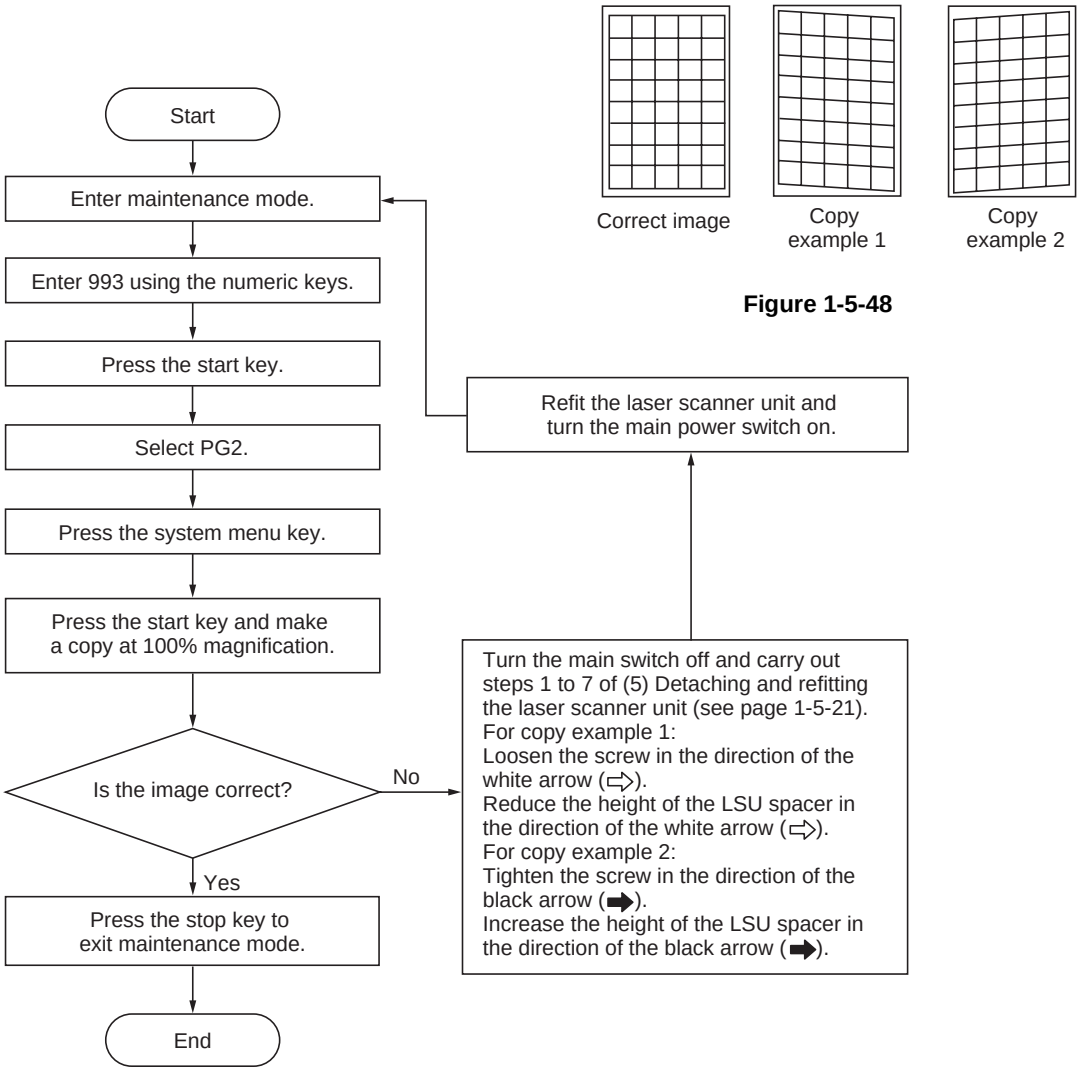


Figure 1-5-48

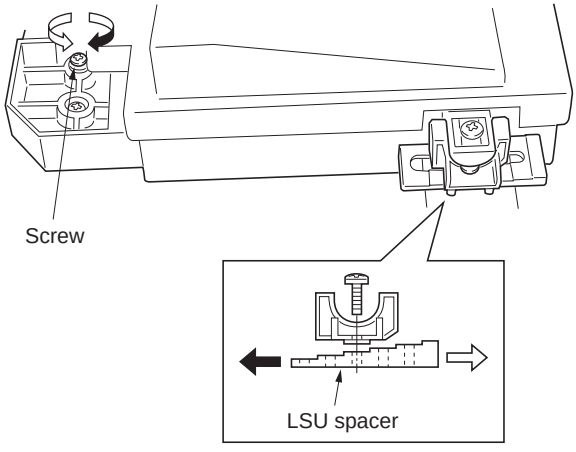


Figure 1-5-49

1-5-4 Drum section

(1) Detaching and refitting the drum unit

Follow the procedure below to replace the drum unit.

Cautions:
Avoid direct sunlight or strong light when detaching and refitting the drum unit.
Never touch the drum surface when holding the drum unit.

Procedure

1. Remove the developing unit (see page 1-5-26).
2. Remove the main charger unit (see page 1-5-25).
3. Remove the screw and the drum unit.
4. Replace the drum unit and install the unit.
5. Perform maintenance mode U110 to clear the counter value (see page 1-3-39).

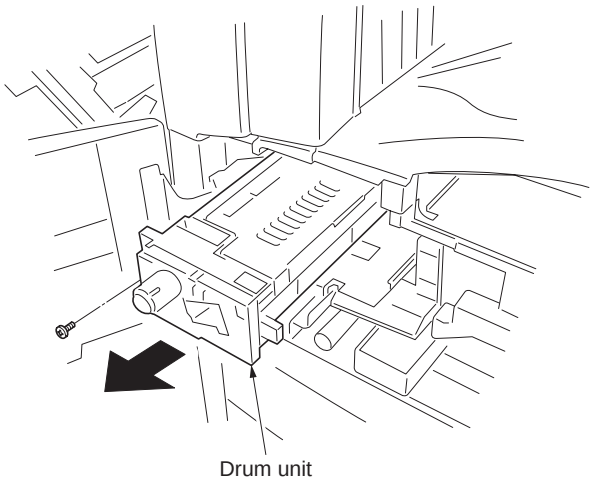


Figure 1-5-50

(2) Detaching and refitting the main charger unit

Follow the procedure below to replace the main charger unit.

Procedure

1. Remove the developing unit (see page 1-5-26).
2. Release the inserted part and remove the connector cover.
3. Remove the connector.

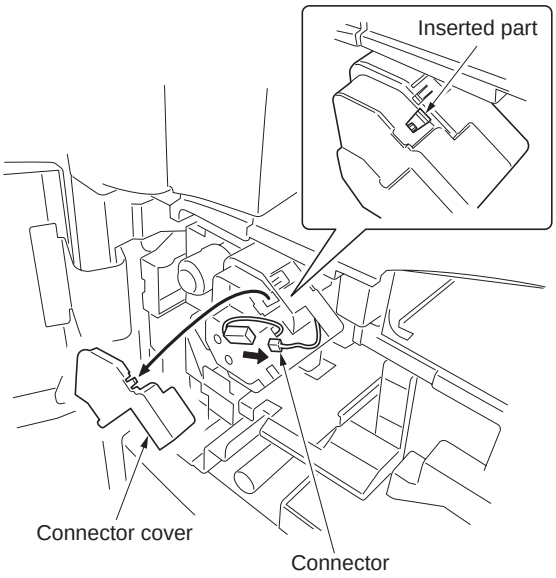


Figure 1-5-51

4. While pushing the hole with a sharp-pointed object, remove the main charger unit.

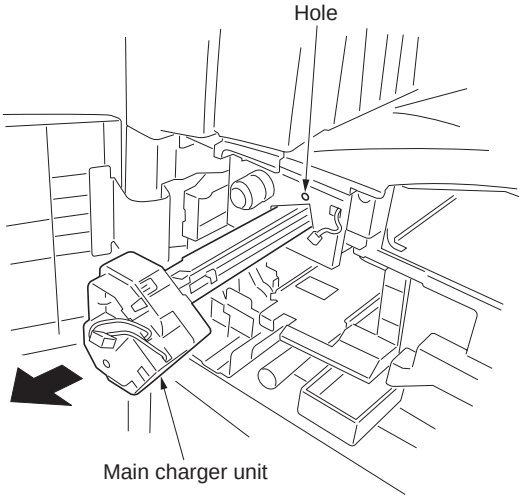


Figure 1-5-52

5. Release the inserted part and remove the cleaning motor unit from the main charger unit.
6. Replace the main charger unit.
7. Refit the cleaning motor unit to the main charger unit.
8. Install the main charger unit

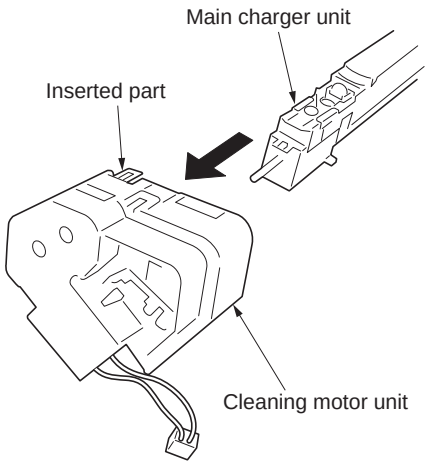


Figure 1-5-53

1-5-5 Developing section

(1) Detaching and refitting the developing unit

Follow the procedure below to replace the developing unit.

Procedure

1. Open the front cover.
2. Remove the toner container and waste toner box.
3. Remove the pin and turn the developing release lever in the direction of the arrow.

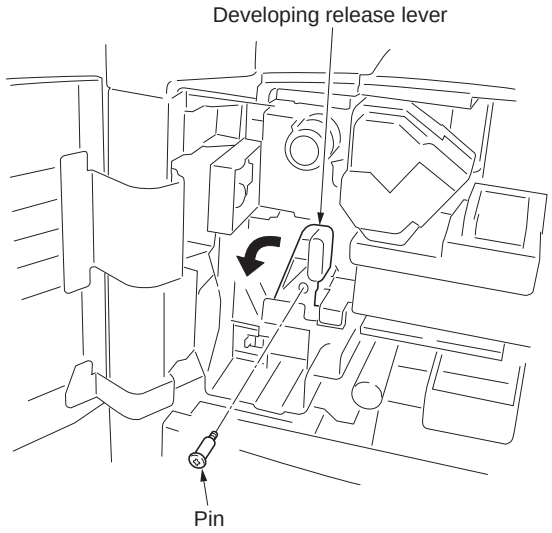


Figure 1-5-54

4. Remove the developing unit.
5. Replace the developing unit and install the unit.
6. Perform maintenance mode U157 and U158 to clear the counter value (see page 1-3-42, 42).

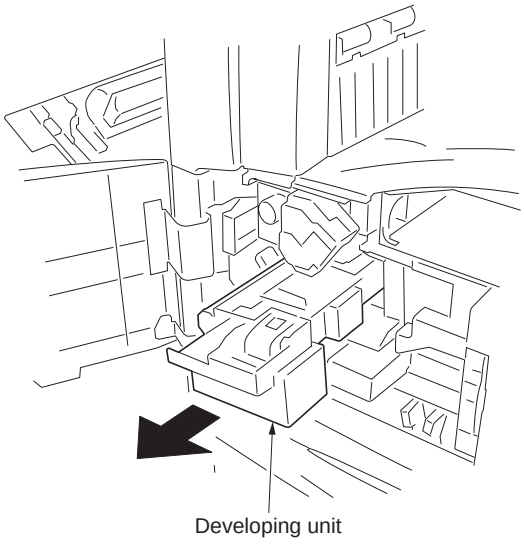


Figure 1-5-55

1-5-6 Transfer section

(1) Detaching and refitting the transfer roller unit

Follow the procedure below to replace the transfer roller unit.

Procedure

1. Open the left cover 1.
2. While holding down the projection, slide the transfer roller unit toward the front to remove it.
3. Replace the transfer roller unit and install the unit.

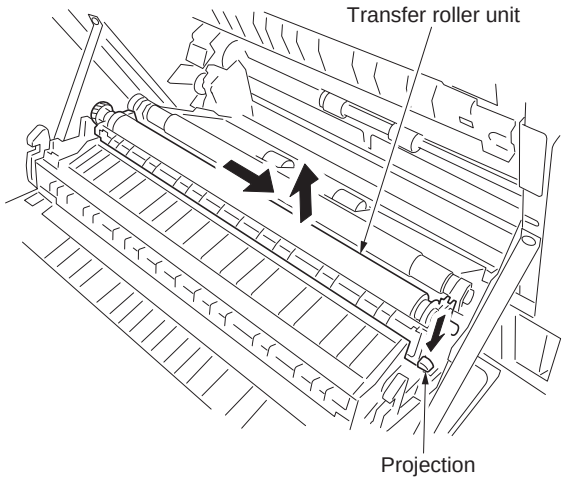


Figure 1-5-56

1-5-7 Fuser section

(1) Detaching and refitting the fuser unit

Follow the procedure below to check or replace the fuser unit.

Procedure

1. Remove the clip holder.
2. Open the front cover and left cover 1.
3. Remove four screws and remove front left cover.

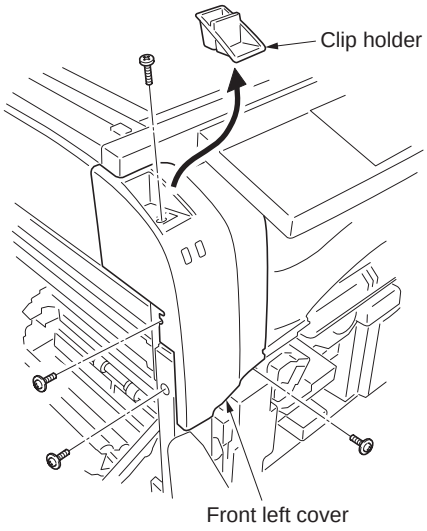


Figure 1-5-57

4. Remove the screw and remove the fuser unit.
5. Check or replace the fuser unit and install the unit.
6. Perform maintenance mode U167 to clear the counter value (see page 1-3-43).

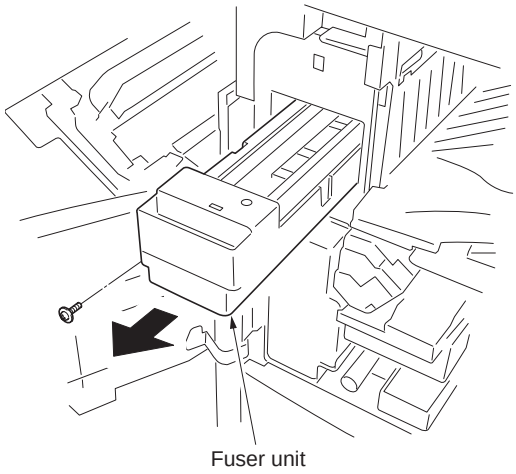


Figure 1-5-58

(2) Detaching and refitting the heat roller separation claws

Follow the procedure below to replace the heat roller separation claws.

Procedure

1. Remove the fuser unit. (see page 1-5-28)
2. Remove the two screws and remove the upper fuser cover while holding the four claws.

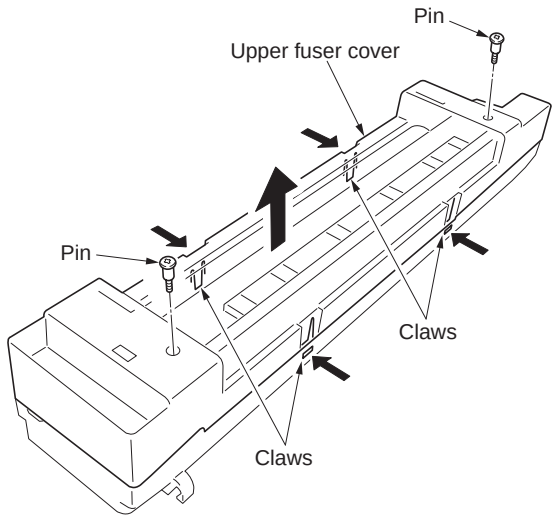


Figure 1-5-59

3. Remove the heat roller separation claws from the upper fuser cover.
4. Replace the heat roller separation claws and install the claws to upper fuser cover.
5. Refit the upper fuser cover.
6. Refit the fuser unit.

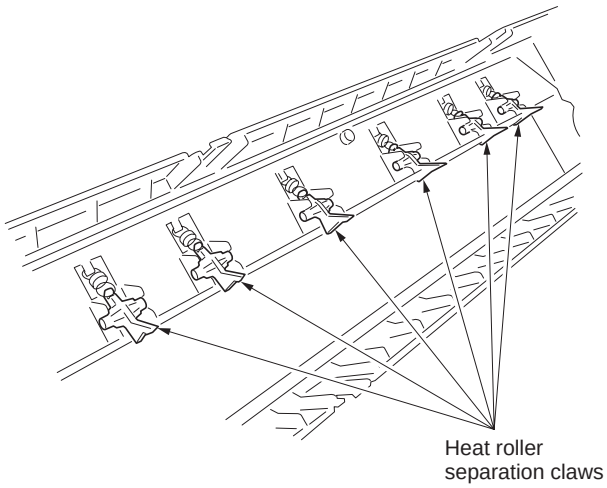


Figure 1-5-60

(3) Detaching and refitting the press roller

Follow the procedure below to replace the press roller.

Procedure

1. Remove the fuser unit (see page 1-5-28).
2. Remove the upper fuser cover (see page 1-5-29).
3. Remove the front and rear press springs.

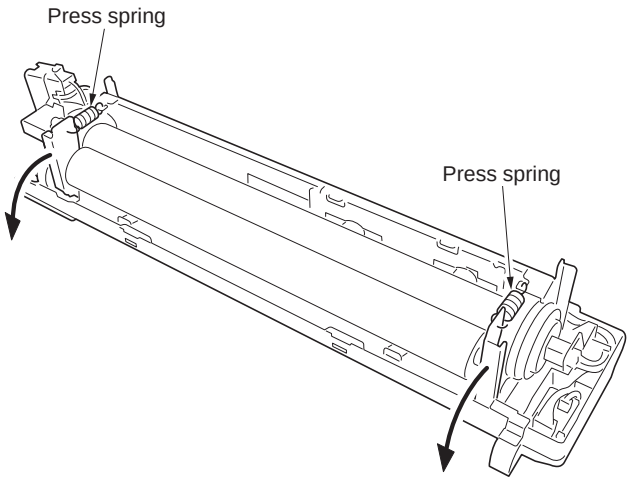


Figure 1-5-61

4. Remove the press roller from the fuser unit.
5. Replace the press roller and install the roller to fuser unit.
6. Refit the upper fuser cover.
7. Refit the fuser unit.

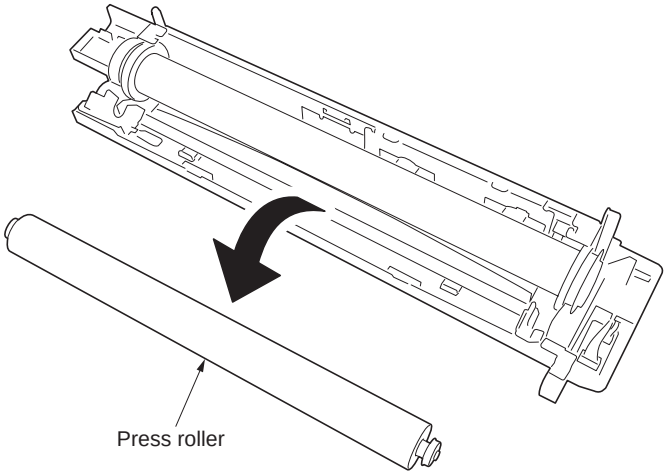


Figure 1-5-62

(4) Detaching and refitting the fuser heater

Follow the procedure below to replace the fuser heater.

Procedure

1. Remove the fuser unit (see page 1-5-28).
2. Remove the upper fuser cover (see page 1-5-29).
3. Remove two screws and the connector.

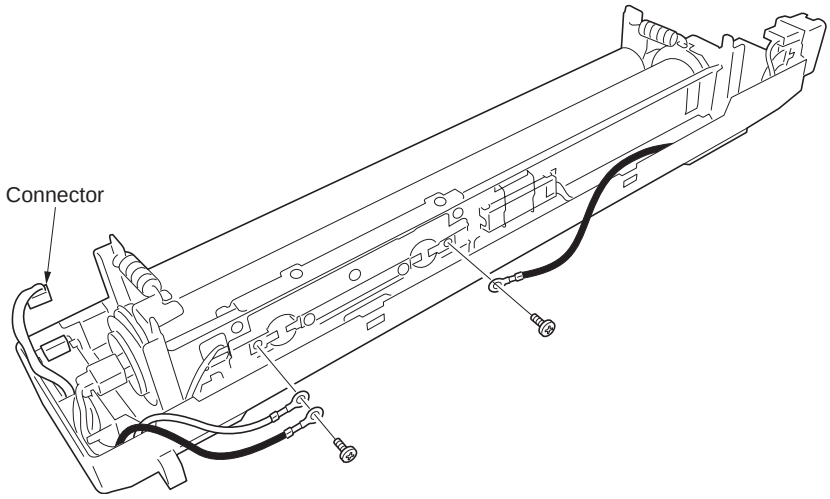


Figure 1-5-63

4. Pull out the fuser heater from the fuser unit.

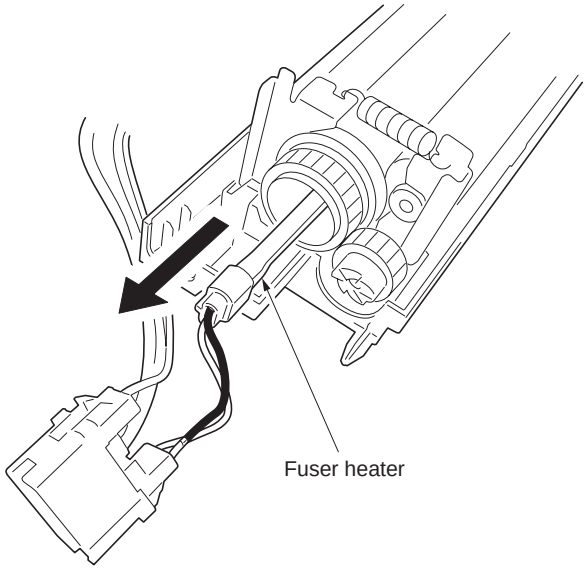


Figure 1-5-64

5. Replace the fuser heater and install the heater to fuser unit.
6. Refit the upper fuser cover.
7. Refit the fuser unit.

(5) Detaching and refitting the heat roller

Follow the procedure below to replace the heat roller.

Procedure

1. Remove the fuser unit (see page 1-5-28).
2. Remove the upper fuser cover (see page 1-5-29).
3. Remove the press roller and fuser heater (see page 1-5-30 and 31).
4. Remove the fuser gear.

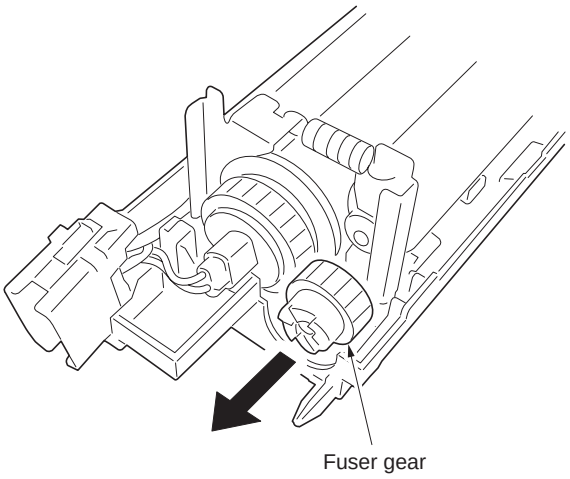


Figure 1-5-65

5. Remove the heat roller from the fuser unit. Remove the C ring, gear, bearing and bushing on the rear side of the heat roller and remove the C ring, ground plate, bearing and bushing on the front side.
6. Replace the heat roller and install the roller to fuser unit.

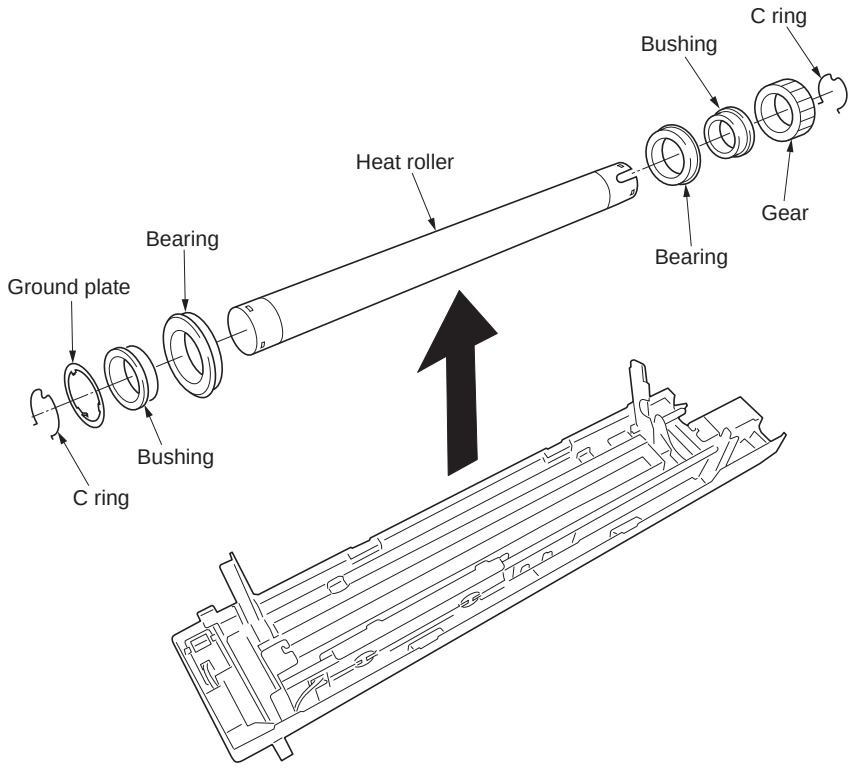


Figure 1-5-66

7. Refit the fuser gear.
8. Refit the fuser heater, press roller and upper fuser cover.
9. Refit the fuser unit.

(6) Detaching and refitting the fuser unit thermistor 1 and 2

Follow the procedure below to replace the fuser unit thermistor 1 and 2.

Procedure

1. Remove the fuser unit (see page 1-5-28).
2. Remove the upper fuser cover (see page 1-5-29).
3. Release the stopper of the fuser unit thermistor 1.
4. Remove the connector and remove the fuser unit thermistor 1.
5. Replace the fuser unit thermistor 1 and install the thermistor to fuser unit.

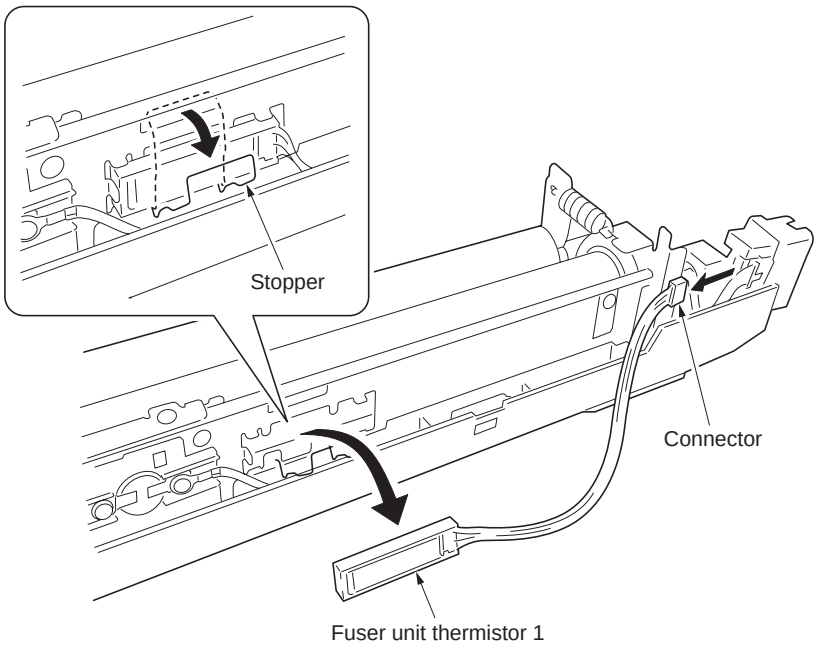


Figure 1-5-67

6. Remove the press roller and fuser heater (see page 1-5-30 and 31).
7. Remove the heat roller (see page 1-5-32).
8. Remove the screw and the connector, and then remove the fuser unit thermistor 2.
9. Replace the fuser unit thermistor 2 and install the thermistor to fuser unit.
10. Refit the heat roller, fuser heater, press roller and upper fuser cover.
11. Refit the fuser unit.

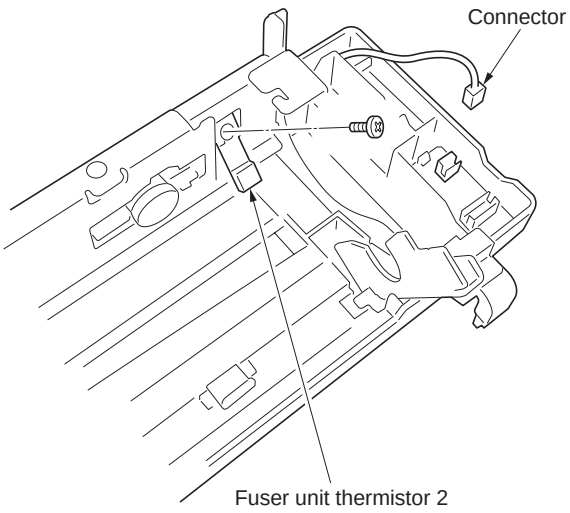


Figure 1-5-68

(7) Adjusting front position of the fuser unit (adjusting lateral squareness)

Follow the procedure below if the drum is not parallel to the fuser unit and therefore paper is not fed straight to the fuser section and the trailing edge of image on either the front or rear side becomes longer.

Procedure

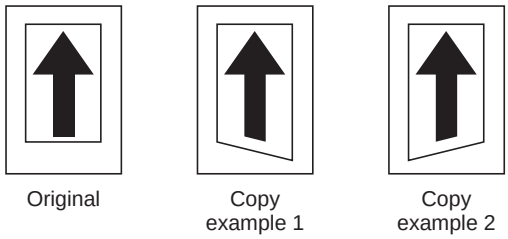
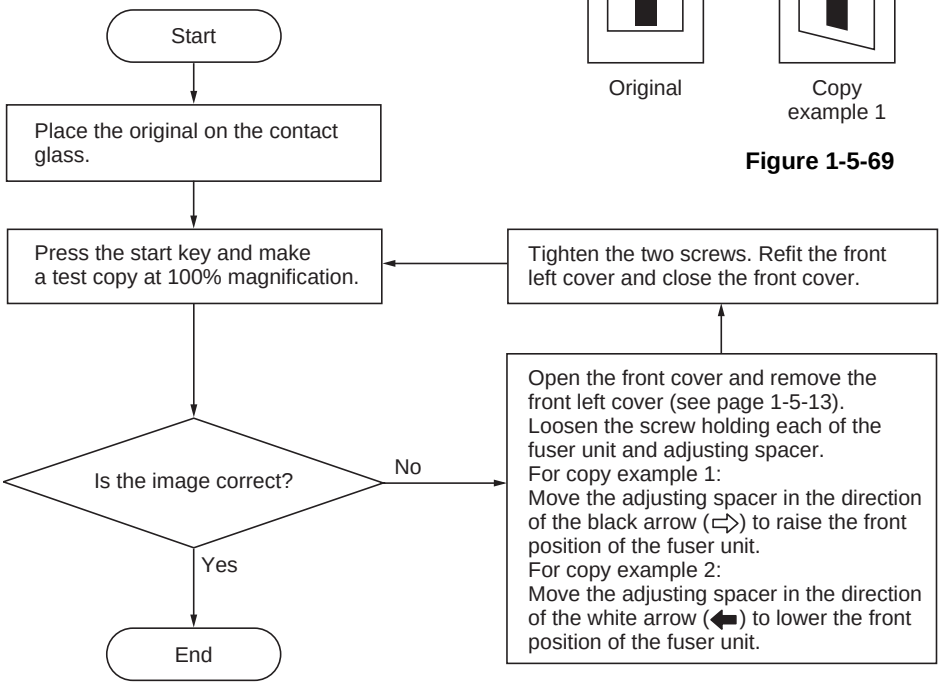


Figure 1-5-69



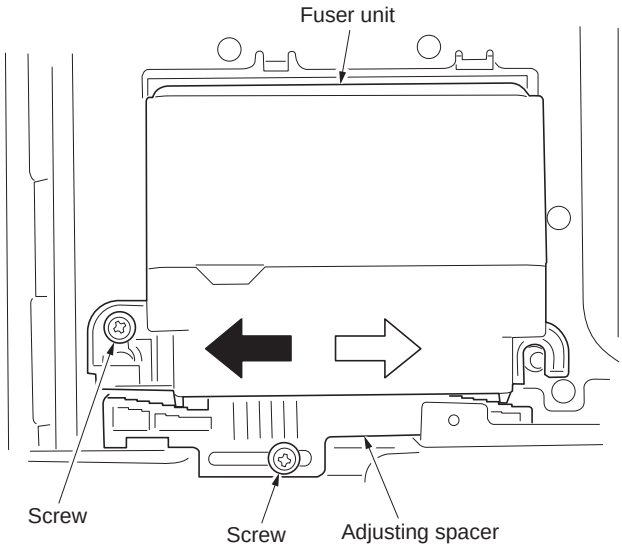


Figure 1-5-70

1-5-8 Others

(1) Detaching and refitting the ozone filter 1 and 2

Follow the procedure below to replace the ozone filter 1 and 2

Procedure

1. Remove the ozone filter 1 from the machine left side.

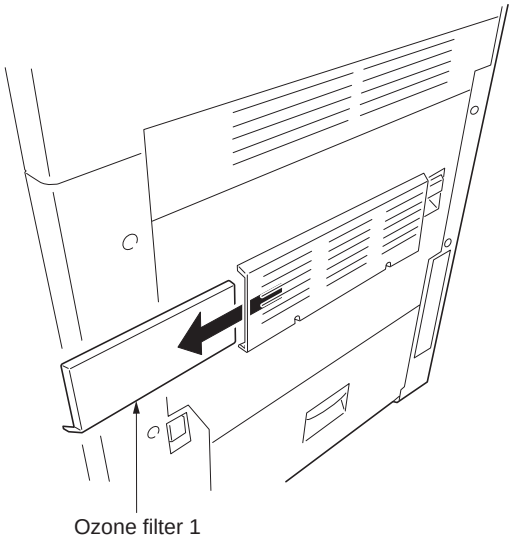


Figure 1-5-71

2. Open the filter cover of the machine rear side and remove the ozone filter 2.
3. Replace the ozone filter 1 and 2 and install the filter.

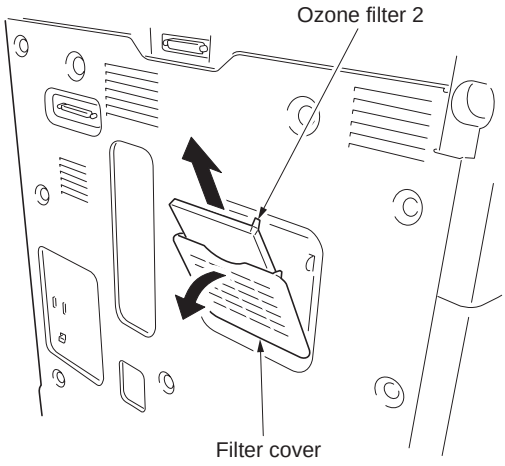


Figure 1-5-72

(2) Detaching and refitting the dust filter 1 and 2

Follow the procedure below to replace the dust filter 1 and 2

Procedure

1. Open the MP tray.
2. Remove the dust filter 1 and 2 from the machine.
3. Replace the dust filter 1 and 2 and install the filter.

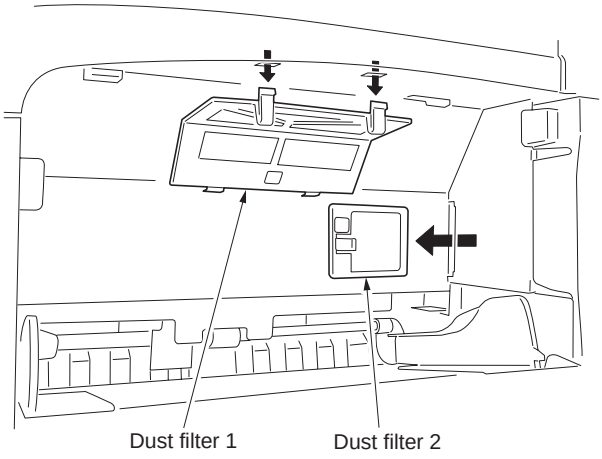


Figure 1-5-73

1-6-1 Upgrading the firmware

Follow the procedure below to upgrade the firmware of main PWB, engine PWB, scanner PWB and MMI.

Firmware upgrading requires the following tools:
Compact Flash (Products manufactured by SANDISK are recommended.) or USB memory

NOTE
When writing data to a new Compact Flash from a computer, be sure to format it in advance.

Procedure

1. Press the Power key on the operation panel to off. Make sure that the Power indicator and the Memory indicator are off before turning off the main power switch. And then unplug the power cable from the wall outlet.
2. Insert Compact Flash or USB memory in a notch hole of the machine.
   The Compact Flash must be inserted into the machine with its rear side facing up.
3. Insert the power plug and turn the main power switch on. Upgrading firmware starts for 9 minutes.
   Caution:
   Never turn the main power switch off during upgrading.

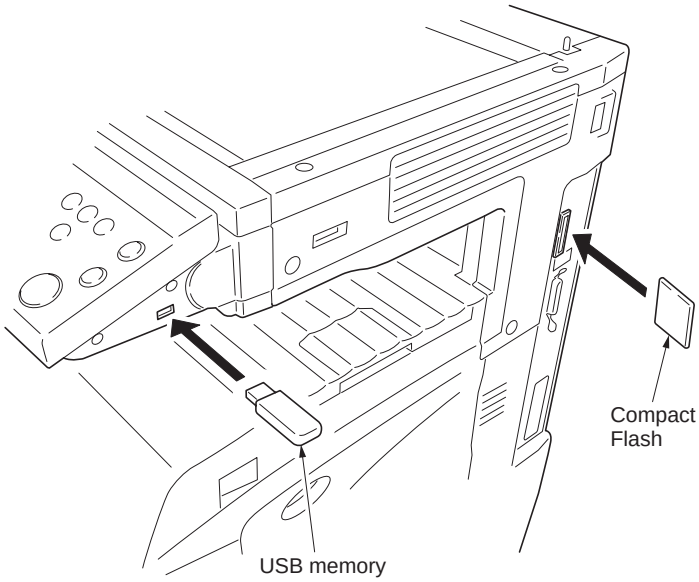


Figure 1-6-1

4. [Completed] is displayed on the touch panel when upgrading is complete.
5. Press the Power key on the operation panel to off. Make sure that the Power indicator and the Memory indicator are off before turning off the main power switch. And then unplug the power cable from the wall outlet.
6. Remove Compact Flash or USB memory from the machine.
7. Insert the power plug and turn the main power switch on.

1-6-2 Adjustment-free variable resistors (VR)

The variable resistors listed below are set at the factory prior to shipping and cannot be adjusted in the field.
High voltage PWB: VR2, VR42, VR201, VR204

1-6-3 Remarks on main PWB replacement

When replacing the main PWB, remove EEPROM from the main PWB that has been removed and then reattach it to the new main PWB.

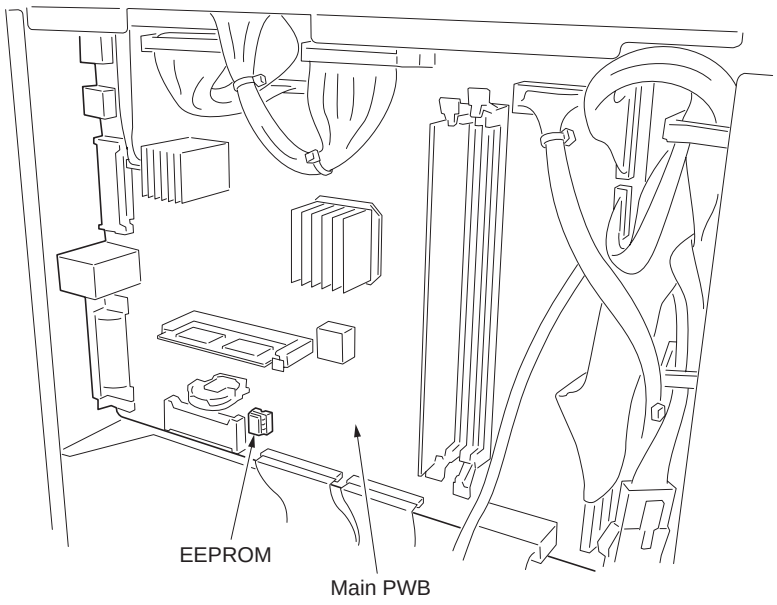


Figure 1-6-2

1-6-4 Remarks on scanner PWB replacement

When replacing the scanner PWB, remove the EEPROM from the scanner PWB that has been removed and then reattach it to the new scanner PWB.

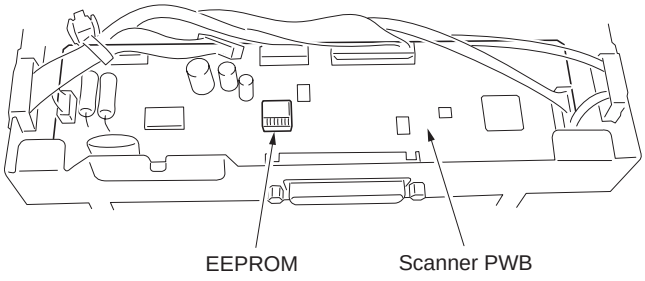


Figure 1-6-3

2-1-1 Paper feed section

The paper feed section consists of the primary feed and secondary feed subsections. Primary feed conveys paper from the cassettes 1, 2 or MP tray to the left and right registration rollers, at which point secondary feed takes place and the paper travels to the transfer section in sync with the printing timing.
Each cassette consists of a lift driven by the lift motor and other components. Each cassette can hold up to 500 sheets of paper. Paper is fed from the cassette by the rotation of the forwarding pulley and paper feed pulley. The separation pulley prevents multiple sheets from being fed at one time, via the torque limiter.

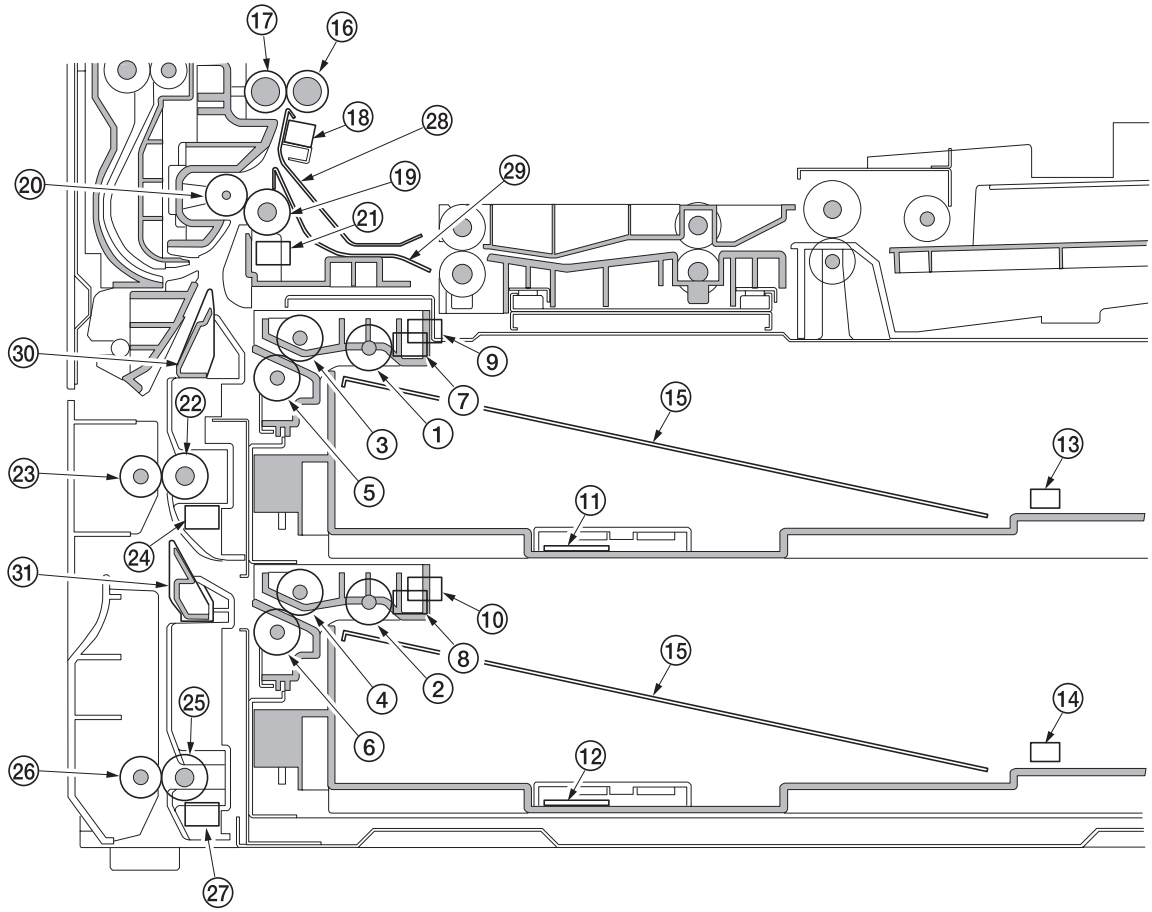


Figure 2-1-1 Paper feed from the cassettes 1 and 2

(1) Upper forwarding pulley
(2) Lower forwarding pulley
(3) Upper paper feed pulley
(4) Lower paper feed pulley
(5) Upper separation pulley
(6) Lower separation pulley
(7) Upper paper switch (PSW-U)
(8) Lower paper switch (PSW-L)
(9) Upper lift limit switch (LICSW-U)
(10) Lower lift limit switch (LICSW-L)
(11) Upper paper width switch (PWSW-U)
(12) Lower paper width switch (PWSW-L)
(13) Upper paper length switch (PLSW-U)
(14) Lower paper length switch (PLSW-L)
(15) Cassette lift
(16) Right registration roller
(17) Left registration roller
(18) Registration switch (RSW)
(19) Feed roller 1
(20) Feed pulley
(21) Feed switch 1 (FSW1)
(22) Feed roller 2
(23) Feed pulley
(24) Feed switch 2 (FSW2)
(25) Feed roller 3
(26) Feed pulley
(27) Feed switch 3 (FSW3)
(28) Front registration guide
(29) Paper conveying guide
(30) Vertical paper conveying guide 1
(31) Vertical paper conveying guide 2

The MP tray can be hold up to 200 sheets of paper at one time. Paper is fed from the MP tray by the rotation of the MP forwarding pulley and MP paper feed pulley. Also during paper feed, the MP separation pulley prevents multiple sheets from being fed at one time by the torque limiter.

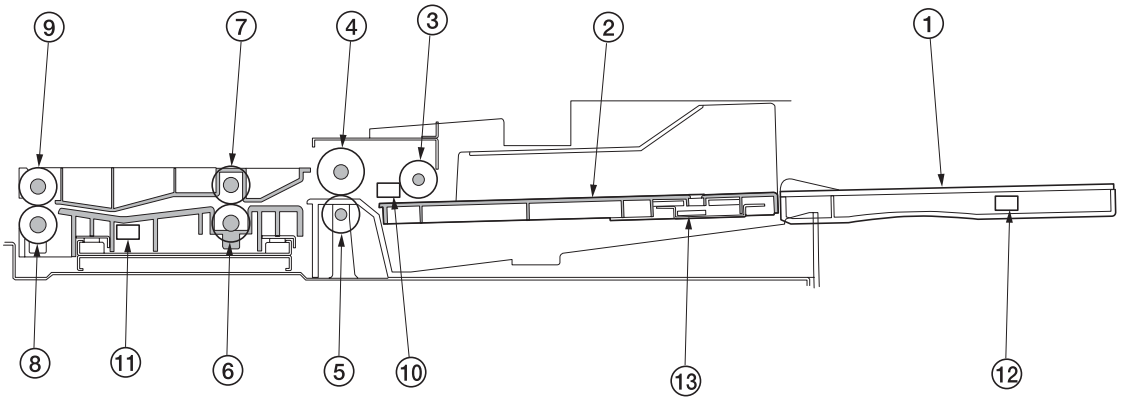


Figure 2-1-2 Paper feed from the MP tray

(1) MP tray
(2) MP lift guide
(3) MP forwarding pulley
(4) MP paper feed pulley
(5) MP separation pulley
(6) MP feed pulley
(7) MP feed roller 1
(8) MP feed pulley
(9) MP feed roller 2
(10) MP paper switch (MPPSW)
(11) MP feed switch (MPFSW)
(12) MP paper length switch (MPPLSW)
(13) MP paper width switch (MPPWSW)

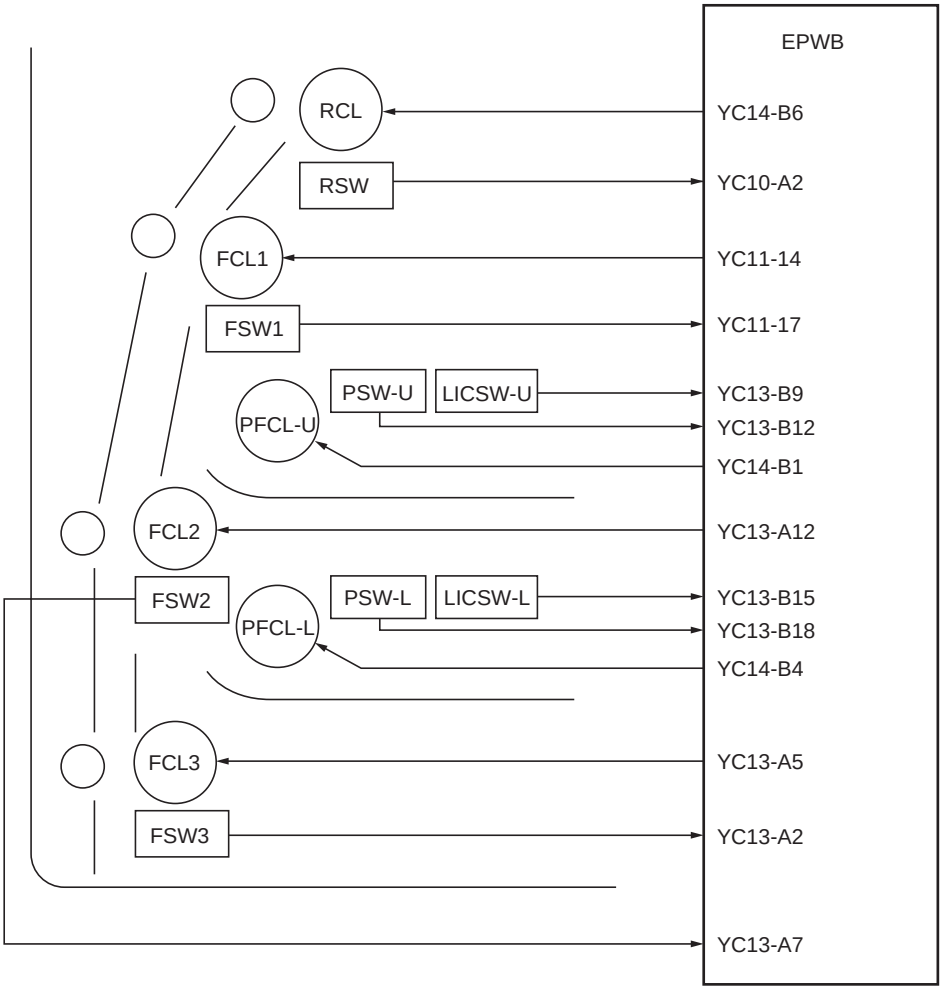


Figure 2-1-3 Paper feed section block diagram (cassettes 1 and 2)

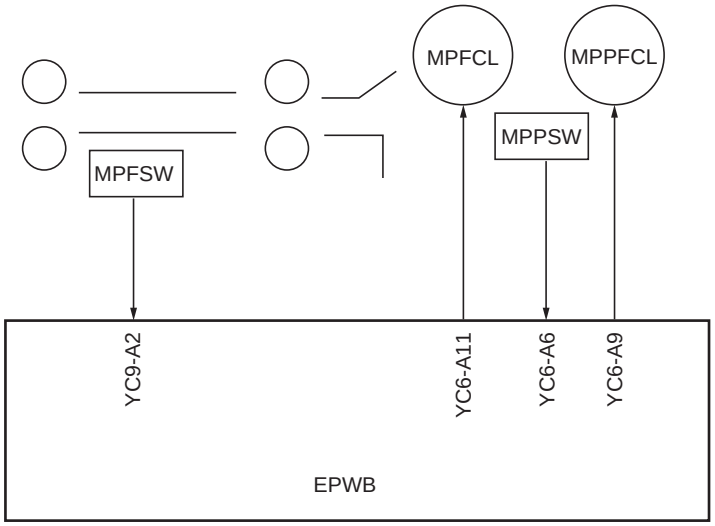


Figure 2-1-4 Paper feed section block diagram (MP tray)

2-1-2 Main charging section

The main charging section consists of the main charger assembly, drum and so on. The drum is electrically charged uniformly by means of a grid to form a latent image on the surface.
The main charger unit charges the drum so that a latent image is formed on the surface, the shield grid ensuring the charge is applied uniformly.
In addition, the main charger unit is equipped with the main charger cleaning motor, and it is cleaning automatically.

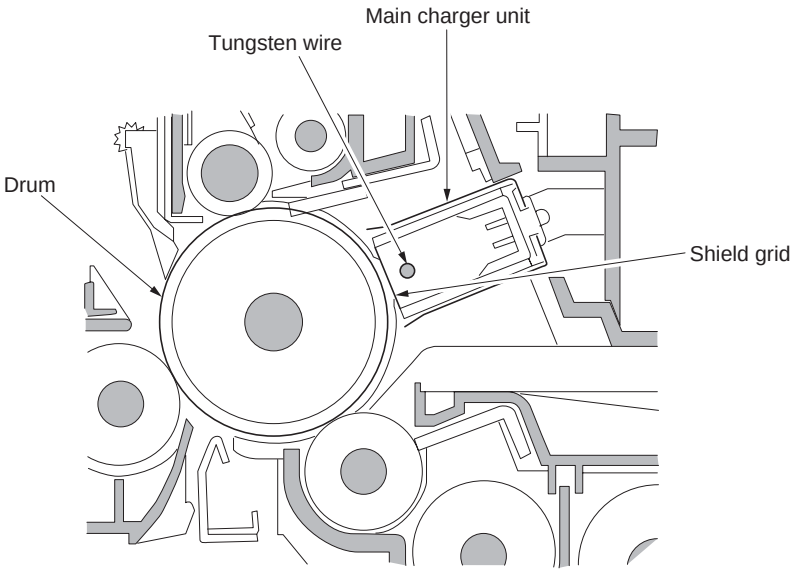


Figure 2-1-5 Main charging section

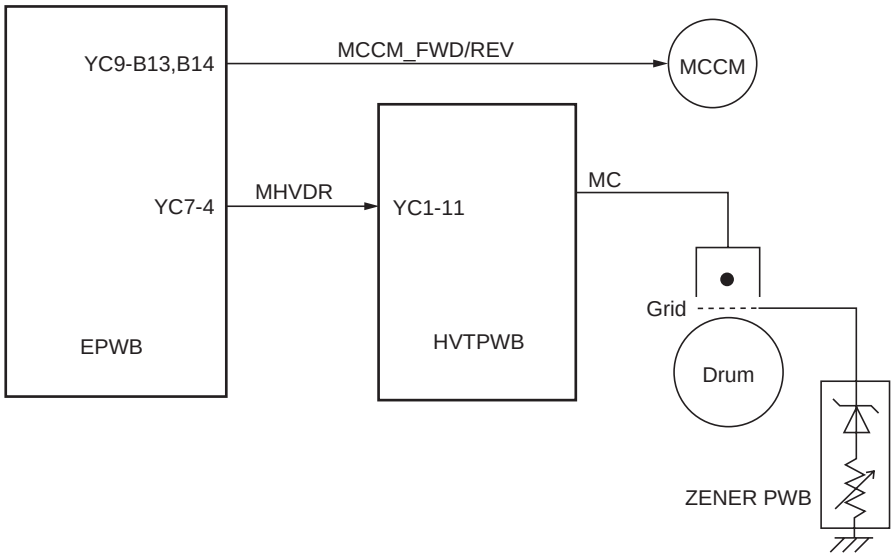


Figure 2-1-6 Main charging section block diagram

2-1-3 Optical section

The optical section consists of the scanner, mirror frame and image scanning unit for scanning and the laser scanner unit for printing.

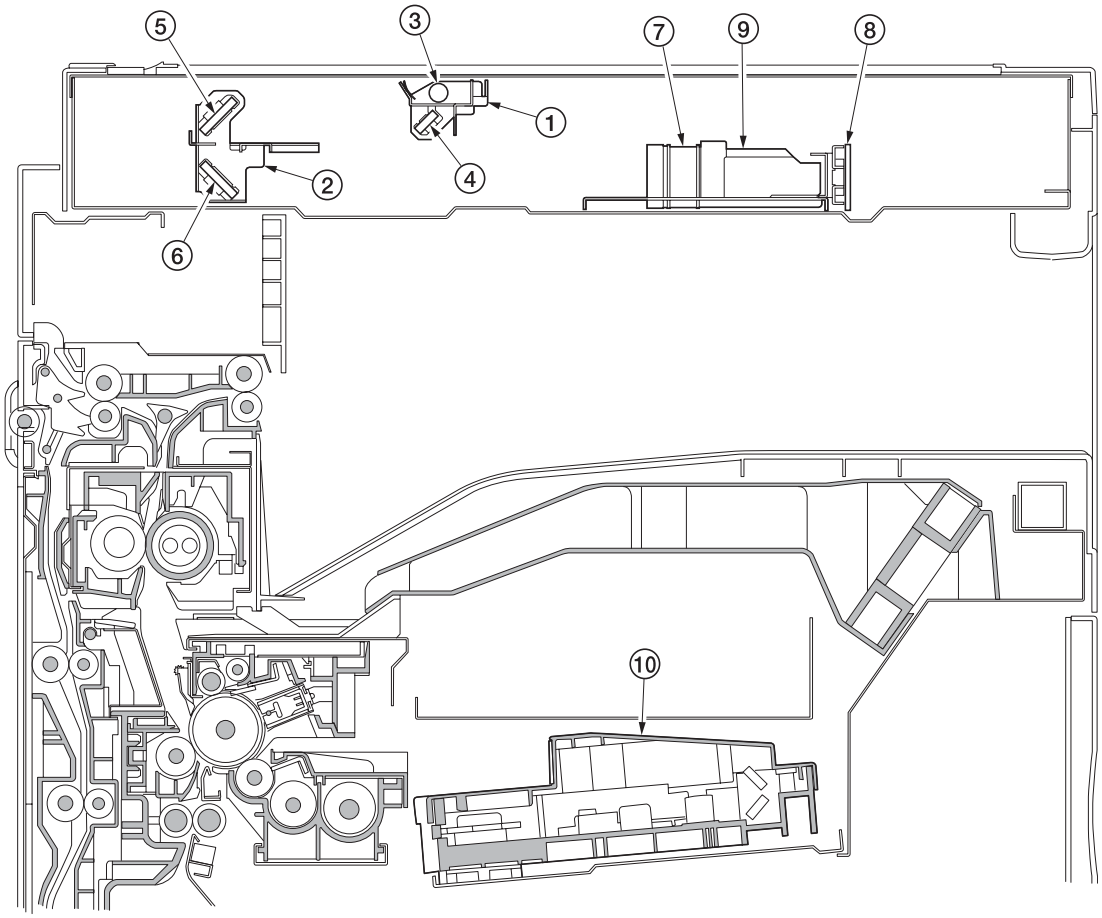


Figure 2-1-7 Optical section

(1) Mirror 1 frame
(2) Mirror 2 frame
(3) Exposure lamp (EL)
(4) Mirror 1
(5) Mirror 2
(6) Mirror 3
(7) Lens
(8) CCD PWB (CCDPWB)
(9) Image scanning unit
(10) Laser scanner unit (LSU)

(1) Original scanning

The original image is illuminated by the exposure lamp (EL) and scanned by the CCD PWB (CCDPWB) in the image scanning unit via the three mirrors, the reflected light being converted to an electrical signal.
The scanner and mirror frames travel to scan on the optical rails on the front and rear of the machine to scan from side to side. The speed of the mirror frames is half the speed of the scanner.
When the DP is used, the scanner and mirror frames stop at the DP original scanning position to start scanning.

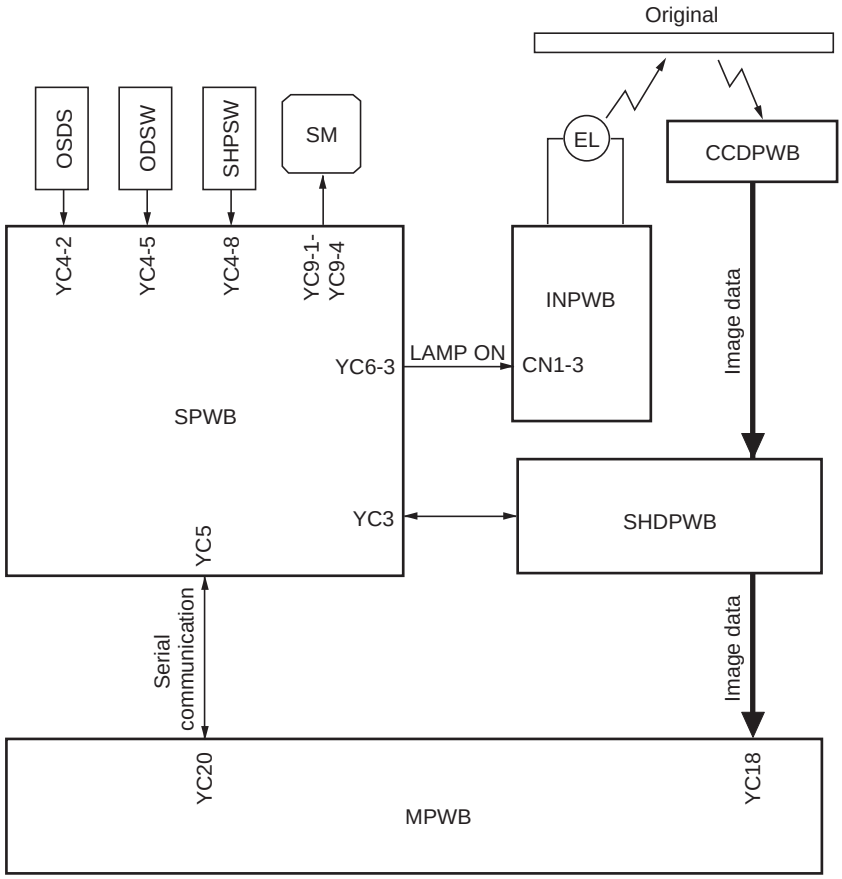


Figure 2-1-8 Optional section block diagram

(2) Image printing

The image data scanned by the CCD PWB (CCDPWB) is processed on the main PWB (MPWB) and transmitted as image printing data to the laser scanner unit (LSU). By repeatedly turning the laser on and off, the laser scanner unit forms a latent image on the drum surface.

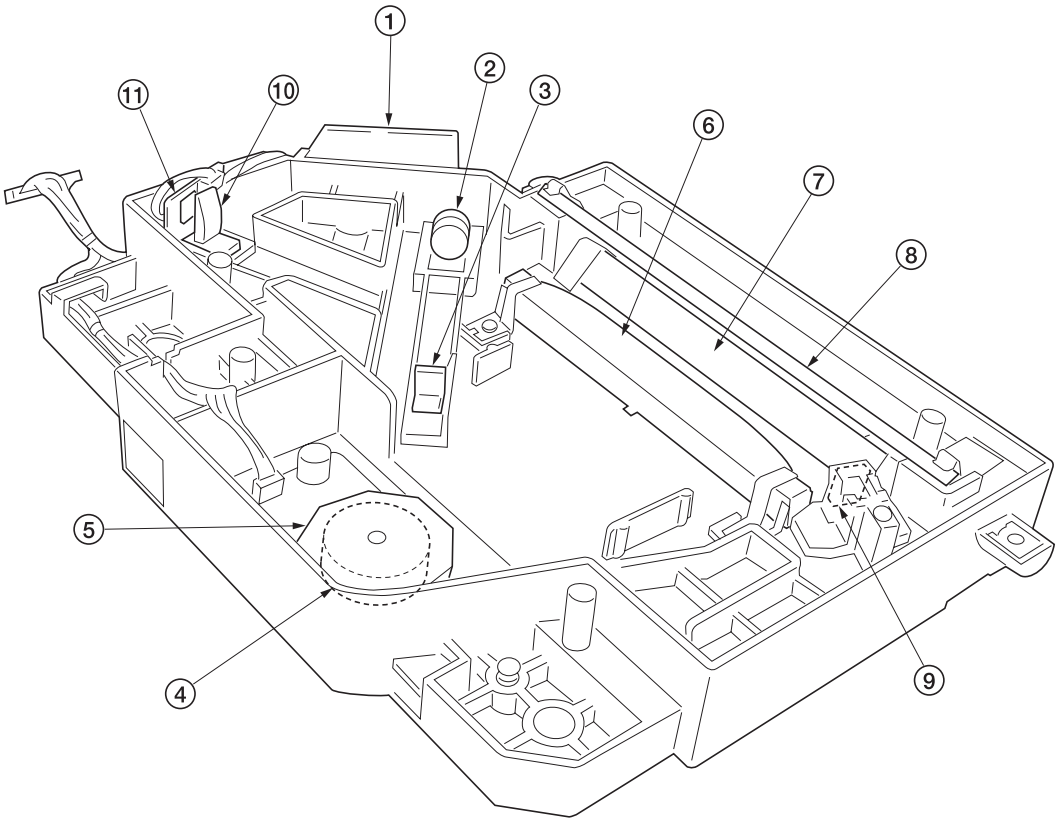


Figure 2-1-9 Laser scanner unit (1)

(1) Laser diode PWB (LDPWB)
(2) Collimator lens
(3) Cylindrical lens
(4) Polygon motor (PM)
(5) Polygon mirror
(6) fθ lens
(7) Mirror
(8) Mirror
(9) BD sensor mirror
(10) Cylindrical correcting lens
(11) BD sensor

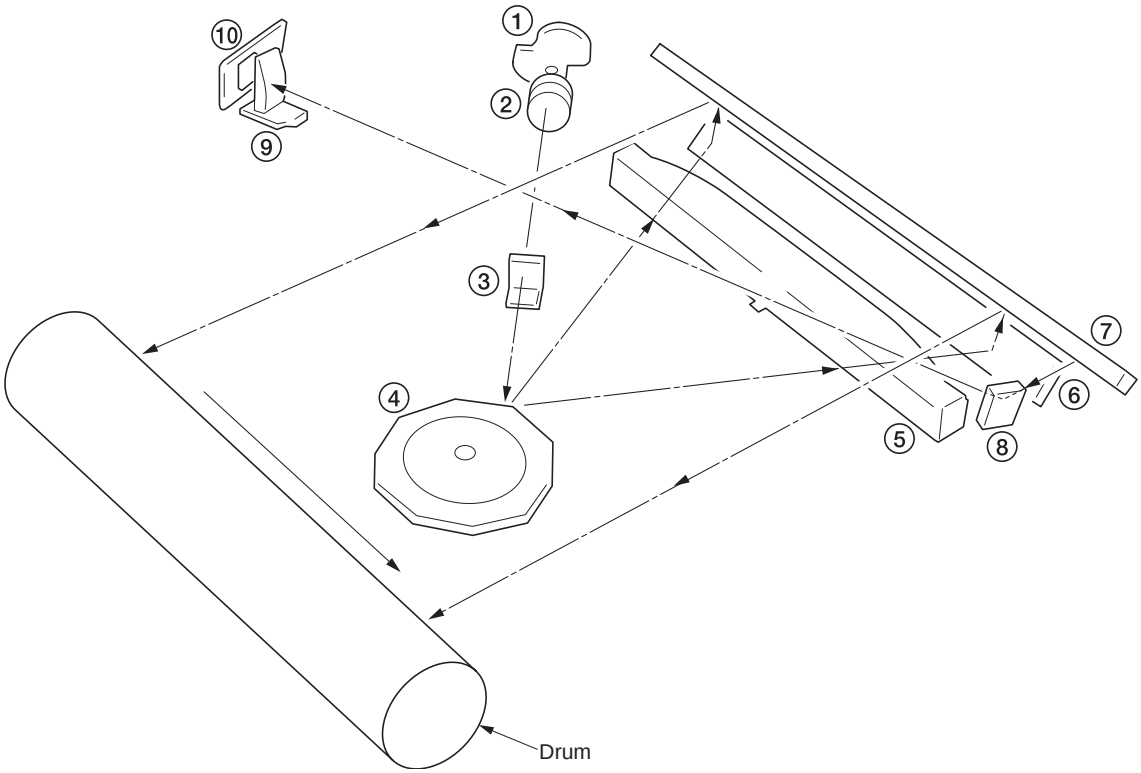


Figure 2-1-10 Laser scanner unit (2)

1. Laser diode: Generates the laser beam which forms a latent image on the drum.
2. Collimator lens: Collimates the diffused laser beam emitted from the laser diode to convert it into a cylindrical beam.
3. Cylindrical lens: Shapes the collimated laser beam to suit the printing resolution.
4. Polygon mirror: Nine-facet mirror that rotates with each face reflecting the laser beam toward the drum for one main-direction scan.
5. fθ lens: Corrects for non-linearity of the laser beam scanning speed on the drum surface, keeps the beam diameter constant and corrects for the vertical alignment of the polygon mirror to ensure that the focal plane of the laser beam is on the drum surface.
6. Mirror: Reflects the laser beam and changes the irradiation direction.
7. Mirror: Reflects the laser beam and changes the irradiation direction.
8. BD sensor mirror: Reflects the laser beam to the BD sensor to generate the main-direction (horizontal) sync signal.
9. Cylindrical correcting lens: Corrects for the deviation of the laser beam reflected by the BD sensor mirror to the BD sensor.
10. BD sensor: Detects the beam reflected by the BD sensor mirror, outputting a signal to the main PWB (MPWB) to provide timing for the main-direction sync signal.

The dimensions of the laser beam are as shown in Figure 2-1-11.

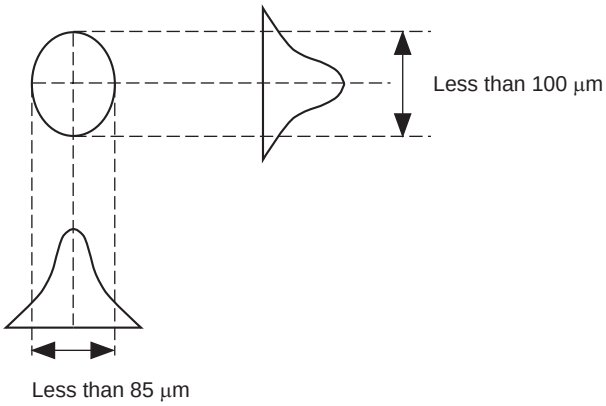


Figure 2-1-11

Scanning in the main direction is provided by the rotating polygon mirror, while scanning in the auxiliary direction is provided by the rotating drum, forming a static latent image on the drum.
The static latent image of the letter “A”, for example, is formed on the drum surface as shown in Figure 2-1-12. Electrical charge is dissipated on the area of the drum surface irradiated by the laser.
The focal point of the laser beam is moved line by line, and adjacent lines slightly overlap each other.

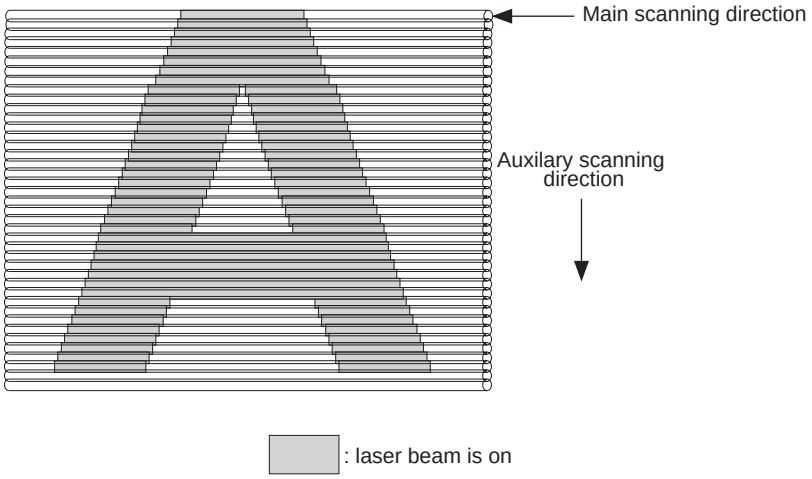
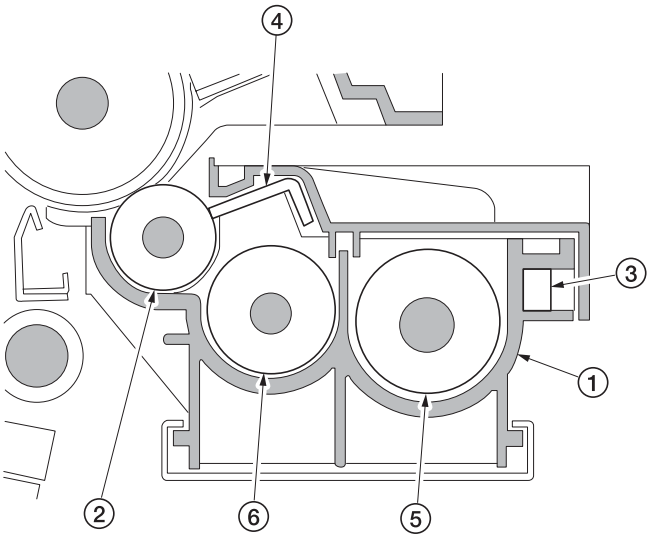


Figure 2-1-12

2-1-4 Developing section

The developing section consists of the developing unit and the toner container.
The developing unit consists of the developing roller where a magnetic brush is formed, the doctor blade and the developing spirals that agitate the toner.
When the toner sensor (TNS) detects a low toner level in the developing unit, the toner replenishment signal is output to the engine PWB (EPWB). The engine PWB (EPWB) that has received the signal turns on the toner replenishment solenoid (TNFSOL) and replenishes toner from the toner container to the developing unit.
Also, the toner container sensor (TCS) checks whether or not toner remains in the toner container.



(1) Developing unit housing
(2) Developing roller
(3) Toner sensor (TNS)
(4) Doctor blade
(5) Right developing spiral
(6) Left developing spiral

Figure 2-1-13 Developing section

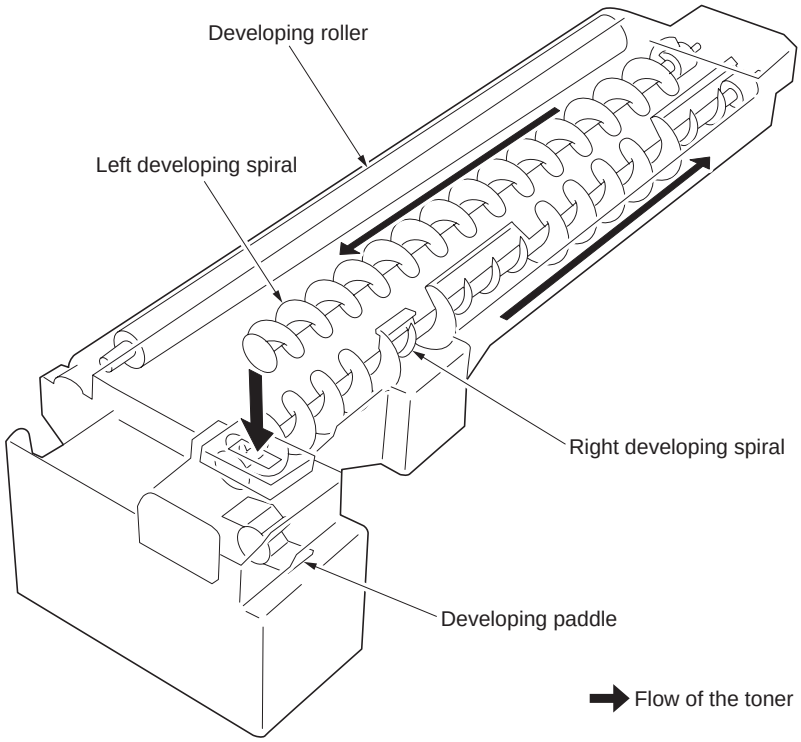


Figure 2-1-14 Flow of the toner

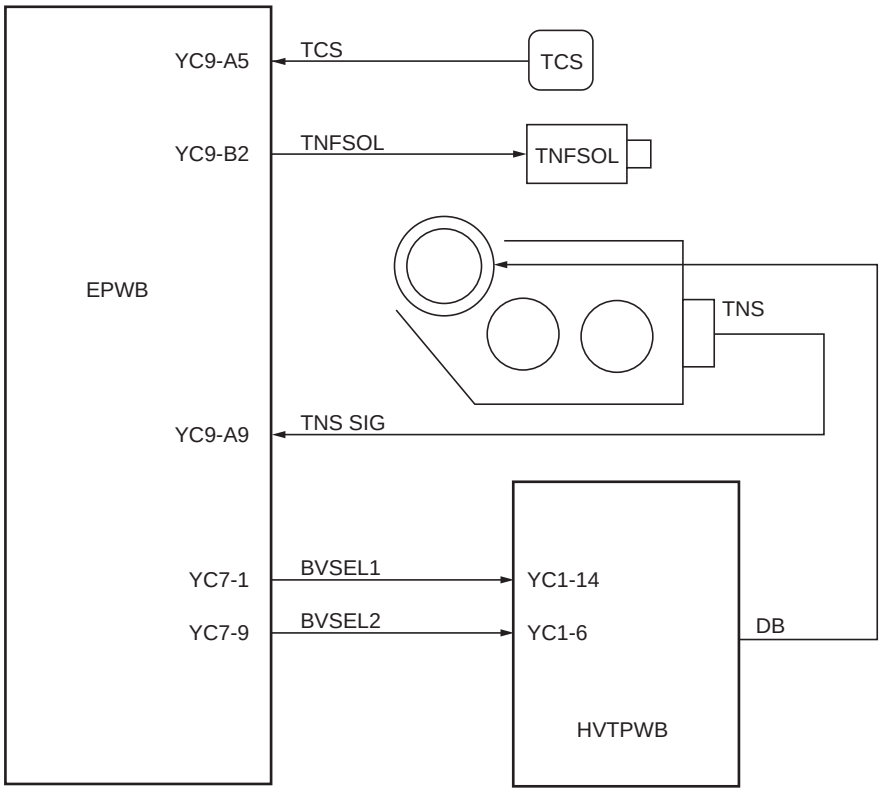


Figure 2-1-15 Developing section block diagram

(1) Single component developing system

This machine uses the single component developing system, and reversal processing is performed with a + charged drum (a-Si) and a + charged magnetic toner.
With the single component developing system, toner is electrically charged by friction with the developing sleeve and + charged when it passes through the magnetic toner blade. The toner that has passed through the magnetic toner blade forms a uniform layer on the developing sleeve. When the toner layer comes to the location where the developing sleeve is the nearest to the drum, toner moves between the drum and the developing sleeve by an electric field of the magnetic pole. Then, when the developing sleeve rotates and passes through the nearest location to the drum, on the portion of the drum that has been exposed to light, toner is attracted toward the drum by potential difference between the developing bias and the drum surface and development is performed. On the other hand, on the portion of the drum that has not been exposed to light, toner is attracted toward the sleeve and development is not performed. When toner comes to an area where the gap between the drum and the developing sleeve is large, an electric field disappears and toner does not leave the developing sleeve. Development is complete.

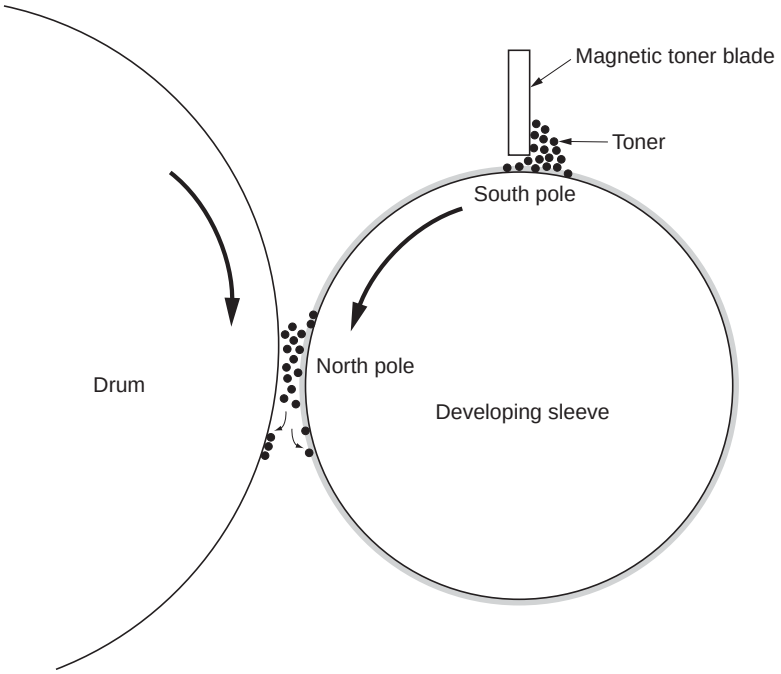


Figure 2-1-16 Single component developing system

2-1-5 Transfer and separation sections

The transfer and separation section consists mainly of the transfer roller, separation electrode and drum separation claws. A high voltage generated by the high-voltage transformer PWB (HVTPWB) is applied to the transfer roller for transfer charging.
Paper after transfer is separated from the drum by applying separation bias that is output from the high-voltage transformer PWB (HVTPWB) to the separation electrode.

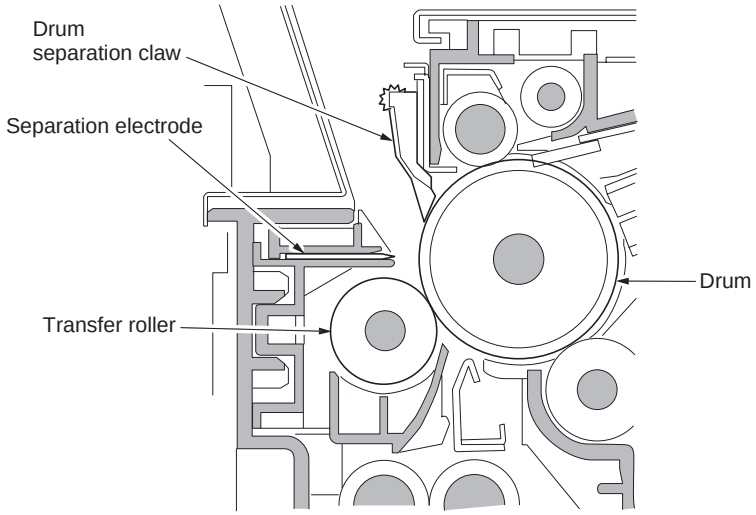


Figure 2-1-17 Transfer and separation sections

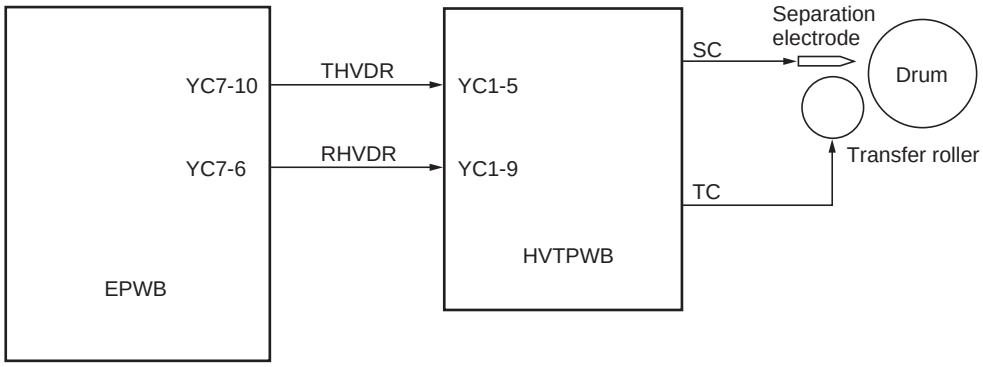


Figure 2-1-18 Transfer and separation sections block diagram

2-1-6 Cleaning and charge erasing sections

The cleaning section consists of the cleaning blade that removes residual toner from the drum surface after the transfer process, and the cleaning spiral that carries the residual toner back to the waste toner box.
The cleaning lamp (CL) consists of LEDs and removes residual charge on the drum before main charging.
Also the toner quantity in the waste toner box is sensed with the overflow sensor (OFS).

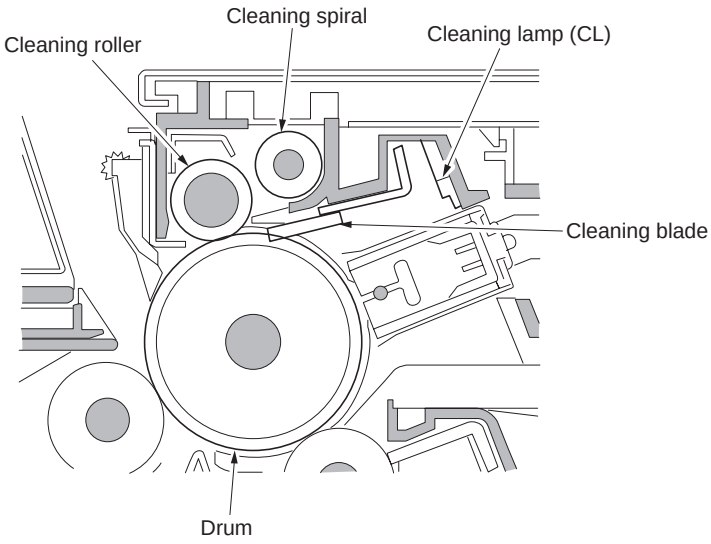


Figure 2-1-19 Cleaning and charge erasing sections

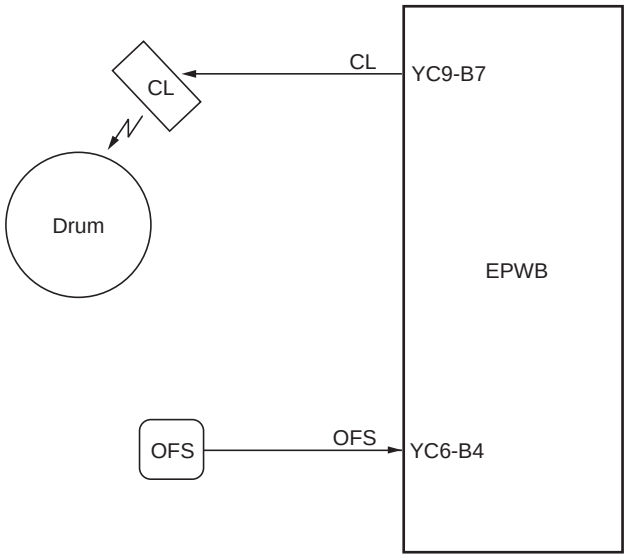
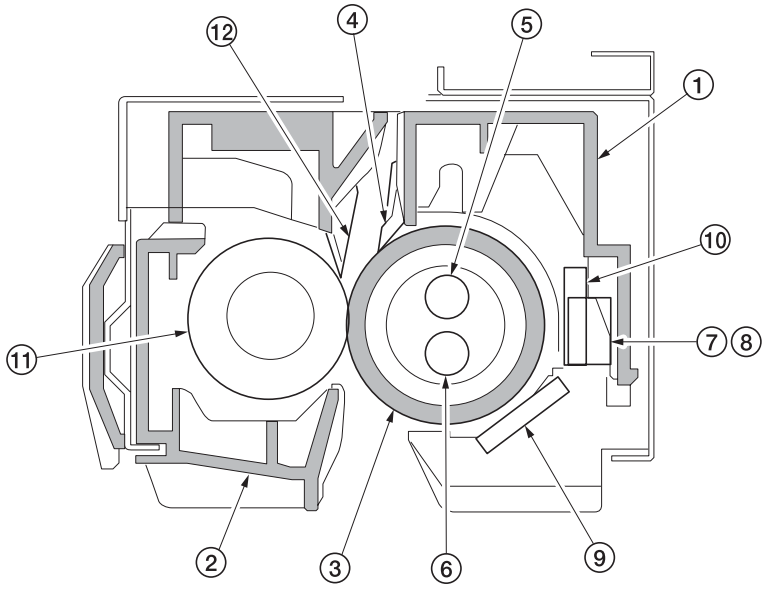


Figure 2-1-20 Cleaning and charge erasing sections block diagram

2-1-7 Fuser section

The fuser section consists of the parts shown in Figure 2-1-21. When paper reaches the fuser section after the transfer process, it passes between the press roller and heat roller, which is heated by fuser heaters M or S (FH-M or FH-S). Pressure is applied by the fuser unit pressure springs so that the toner on the paper is melted, fused and fixed onto the paper. The heat roller is heated by fuser heaters M or S (FH-M or FH-S) inside it; its surface temperature is detected by the fuser unit thermistor 1 and 2 (FTH1/2), and is regulated by the fuser heaters turning on and off.
If the fuser section becomes abnormally hot, fuser unit thermostat 1 and 2 (FTS1/2) operates shutting the power to the fuser heaters off. When the fusing process is completed, the paper is separated from the heat roller by its separation claws and is conveyed from the machine to eject and switchback section.



(1) Upper fuser unit cover
(2) Fuser housing
(3) Heat roller
(4) Heat roller separation claw
(5) Fuser heater M (FH-M)
(6) Fuser heater S (FH-S)
(7) Fuser unit thermostat 1 (FTS1)
(8) Fuser unit thermostat 2 (FTS2)
(9) Fuser unit thermistor 1 (FTH1)
(10) Fuser unit thermistor 2 (FTH2)
(11) Press roller
(12) Press roller separation claw

Figure 2-1-21 Fuser section

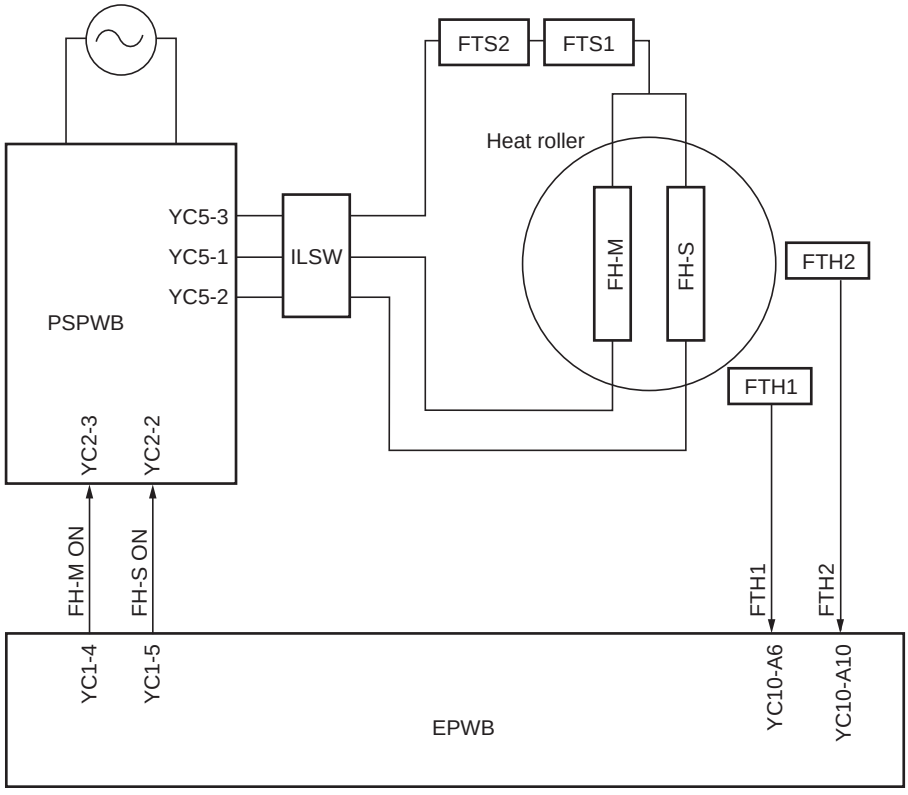
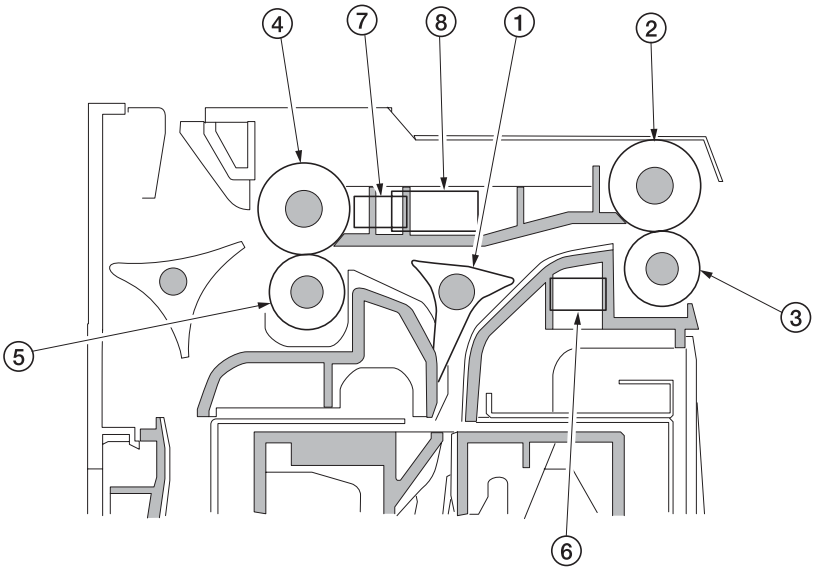


Figure 2-1-22 Fuser section block diagram

2-1-8 Eject and switchback sections

The eject and switchback sections eject paper on which fixing has ended with the eject roller that is rotated by forward rotation of the eject motor.
In duplex copying, paper is turned over by reverse rotation of the eject motor. When paper is transferred to the job separator or the internal finisher, the feedshift solenoid (FSSOL) is turned on to activate the feedshift guide to switch the paper transfer path.



(1) Feedshift guide
(2) Eject roller
(3) Eject pulley
(4) Switchback roller
(5) Switchback pulley
(6) Eject switch (ESW)
(7) Feedshift switch (FSSW)
(8) Feedshift solenoid (FSSOL)

Figure 2-1-23 Eject and switchback sections

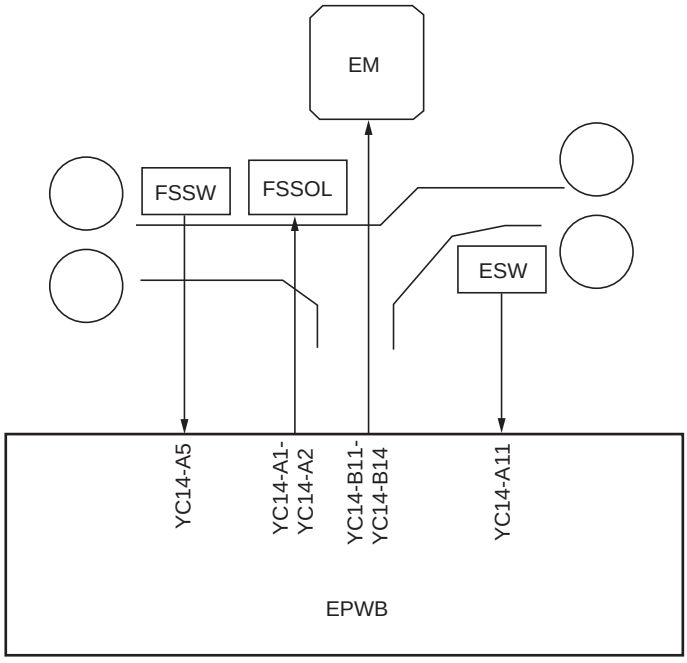
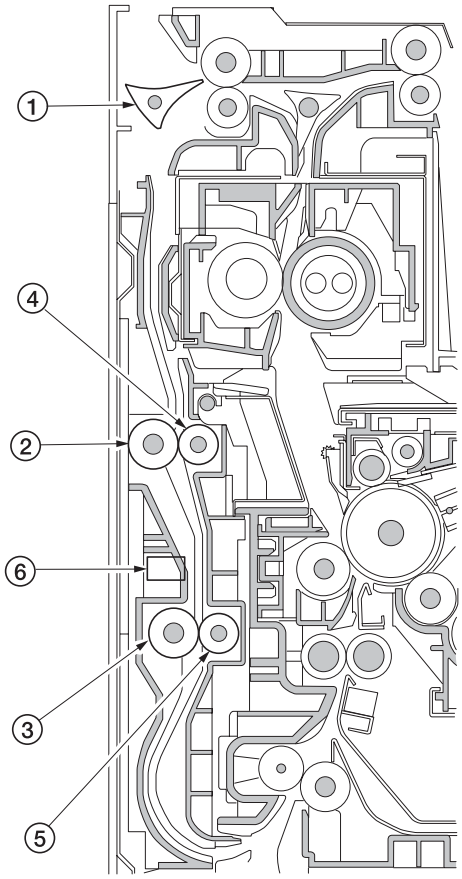


Figure 2-1-24 Eject and switchback sections block diagram

2-1-9 Duplex section

The duplex section consists of the components shown in figure. In duplex mode, after copying on to the reverse face of the paper, the paper is reversed in the switchback section and conveyed to the duplex section. The paper is then conveyed to the paper feed section by the upper and lower duplex feed rollers.



(1) Feedshift guide
(2) Upper duplex feed roller
(3) Lower duplex feed roller
(4) Duplex feed pulley
(5) Duplex feed pulley
(6) Duplex paper conveying switch (DUPPCSW)

Figure 2-1-25 Duplex section

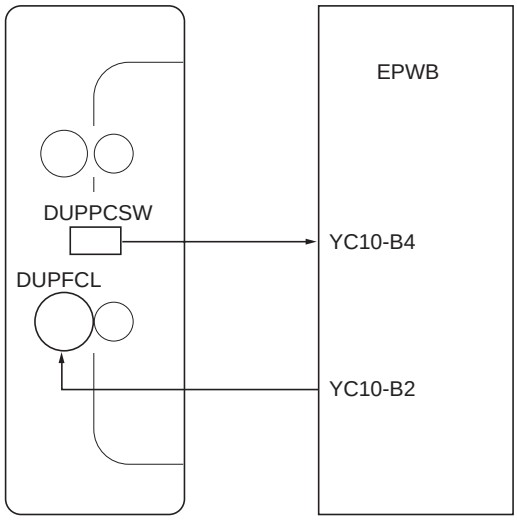


Figure 2-1-26 Duplex section block diagram

(1) Paper conveying operation in duplex copying

Paper of which copying onto the reverse side is complete is conveyed to the switchback section, the eject motor switches from normal rotation to reverse rotation to switch the eject roller to reverse rotation, and the paper conveying direction is reversed. Paper that has been switched back is conveyed to the duplex section via the eject roller and the switchback roller.
Paper that has been conveyed to the duplex section is conveyed to the paper feed section again by rotation of the upper duplex feed roller and the lower duplex feed roller and copying onto the front side is performed.

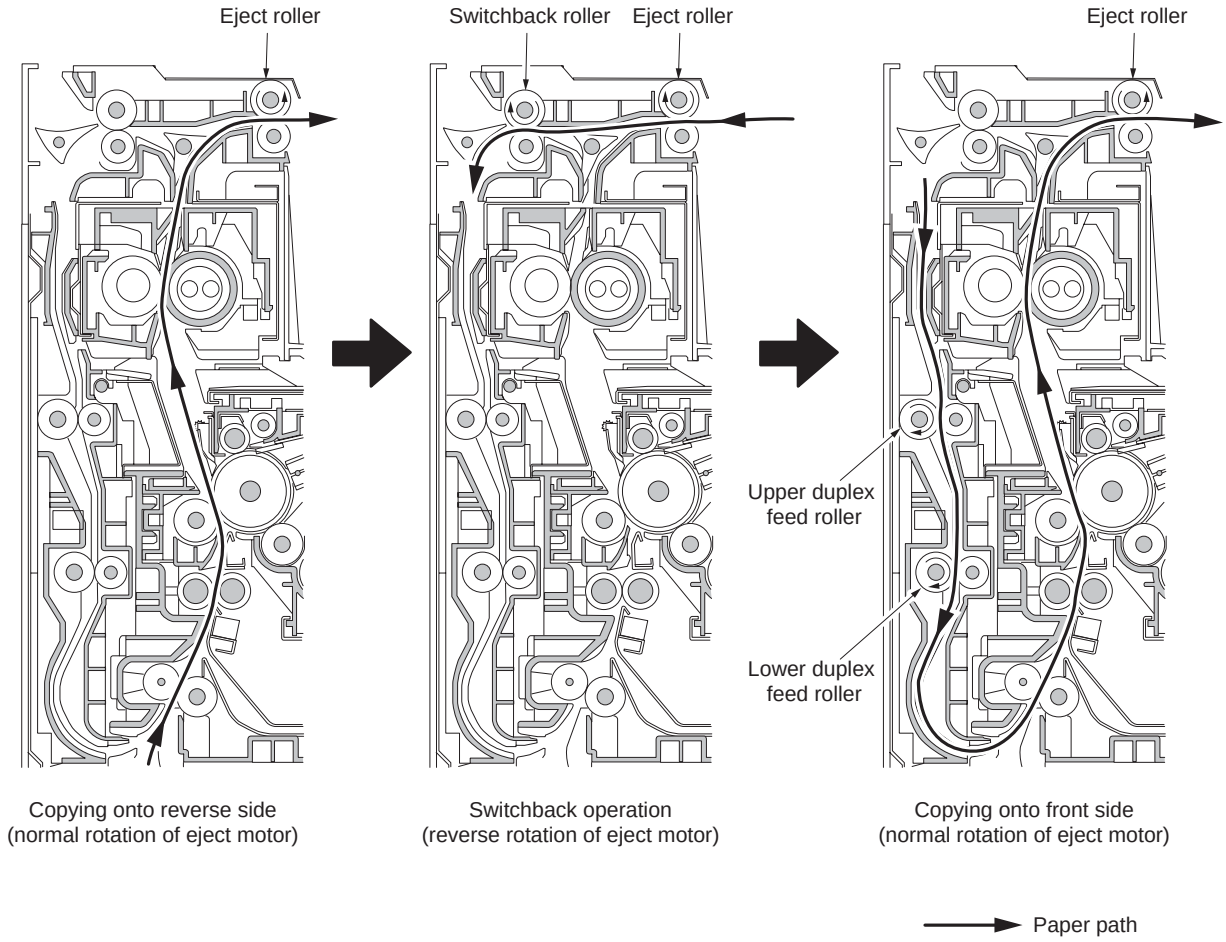


Figure 2-1-27

2-2-1 Electrical parts layout

(1) PWBs

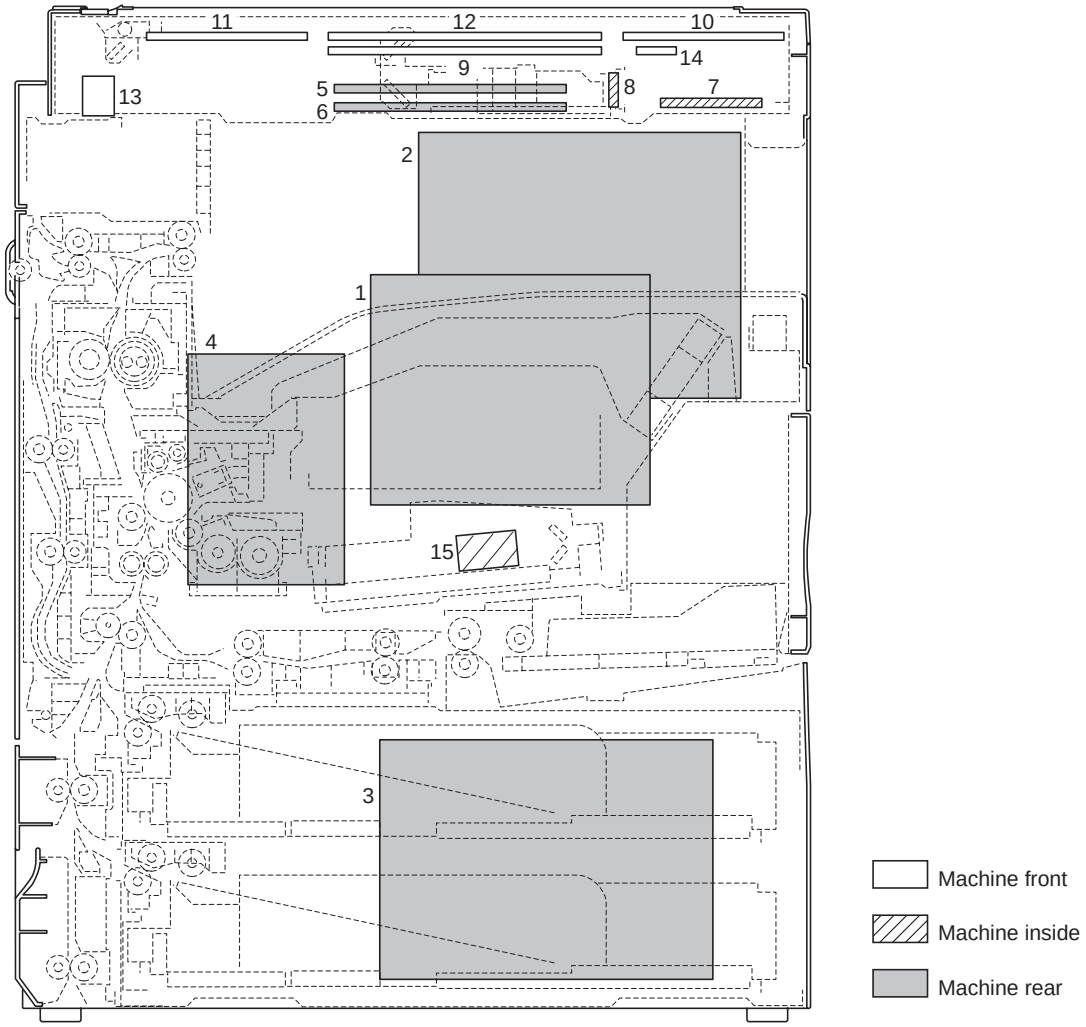


Figure 2-2-1 PWBs

1. Engine PWB (EPWB)..... Controls the other PWBs, electrical components and optional devices.
2. Main PWB (MPWB) ..... Controls the image processing and operation panel.
3. Power source PWB (PSPWB) ..... Generates +24 V DC, 5 V DC and 3.3 V DC; controls the fuser heater.
4. High voltage PWB (HVTPWB)..... Main charging. Generates developing bias and high voltages for transfer.
5. Scanner PWB (SPWB) ..... Controls the scanning section.
6. Inverter PWB (INPWB) ..... Controls the exposure lamp.
7. SHD PWB (SHDPWB)..... Controls the shading correction and AGC of CCD.
8. CCD PWB (CCDPWB)..... Reads the image off originals.
9. Main operation unit PWB (OPWB-M)..... Controls touch panel and LCD indication.
10. Right operation unit PWB (OPWB-R) ..... Consists of the operation keys and display LEDs.
11. Left operation unit PWB (OPWB-L) ..... Consists of the operation keys and display LEDs.
12. Upper operation unit PWB (OPWB-U)..... Consists of the operation keys and display LEDs.
13. Front operation unit PWB (OPWB-F)..... Consists of the display LEDs.
14. LCD inverter PWB (LINPWB) ..... Controls LCD indication.
15. Laser diode PWB (LDPWB)..... Generates and controls the laser light.

(2) Switches and sensors

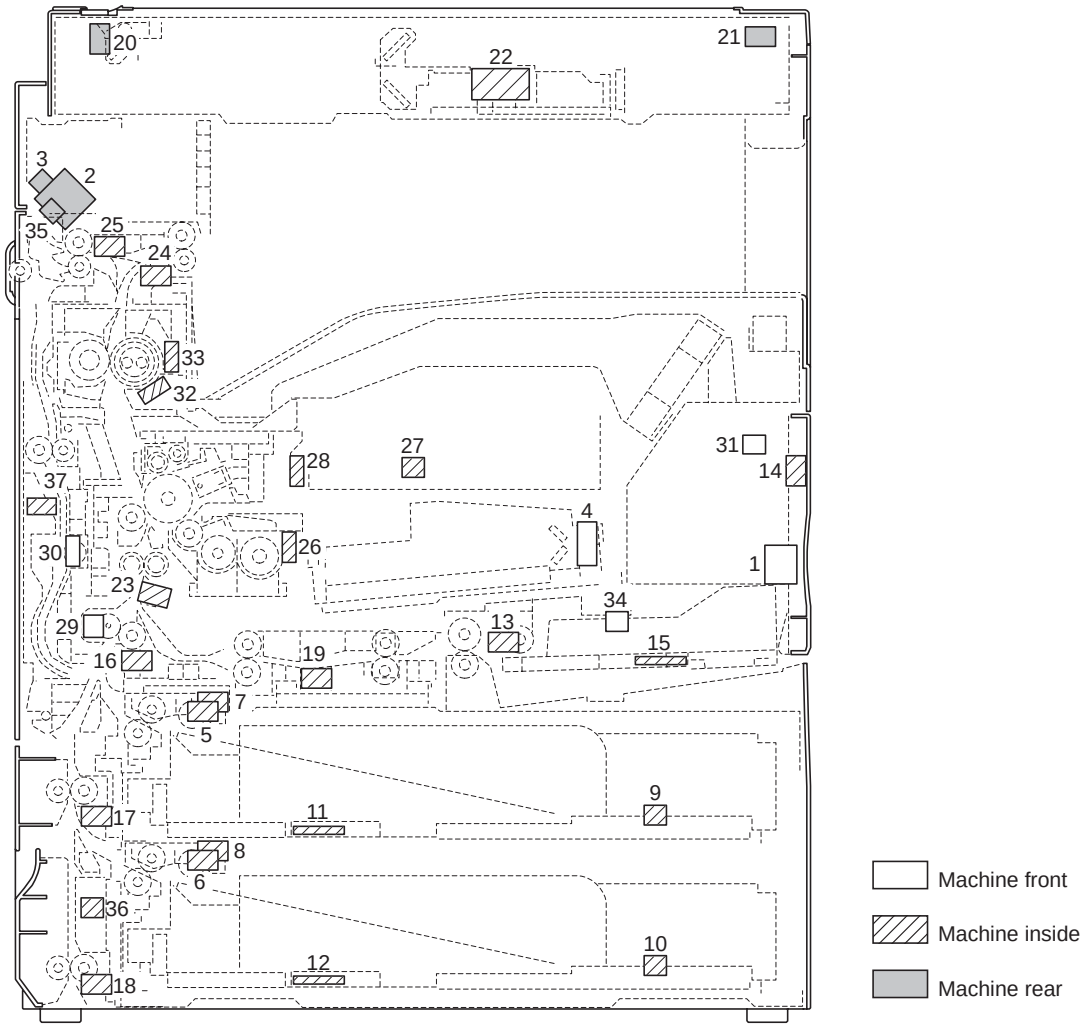


Figure 2-2-2 Switches and sensors

1. Main power switch (MSW) ..... Turns the AC power on and off.
2. Interlock switch (ILSW) ..... Turns the AC power for the fuser heater on and off.
3. Safety switch 1 (SSW1) ..... Breaks the safety circuit when the left cover 1 is opened.
4. Safety switch 2 (SSW2) ..... Breaks the safety circuit when the front cover is opened.
5. Upper paper switch (PSW-U)..... Detects the presence of paper in the cassette 1.
6. Lower paper switch (PSW-L) ..... Detects the presence of paper in the cassette 2.
7. Upper lift limit switch (LICSW-U)..... Detects the cassette 1 lift reaching the upper limit.
8. Lower lift limit switch (LICSW-L) ..... Detects the cassette 2 lift reaching the upper limit.
9. Upper paper size length switch (PLSW-U) ..... Detects the length of paper in the cassette 1.
10. Lower paper size length switch (PLSW-L) ..... Detects the length of paper in the cassette 2.
11. Upper paper size width switch (PWSW-U) ..... Detects the width of paper in the cassette 1.
12. Lower paper size width switch (PWSW-L)..... Detects the width of paper in the cassette 2.
13. MP paper switch (MPPSW) ..... Detects the presence of paper on the MP tray.
14. MP paper size length switch (MPPLSW)..... Detects the length of paper on the MP tray.
15. MP paper size width switch (MPPWSW)..... Detects the width of paper on the MP tray.

16. Feed switch 1 (FSW1) ..... Controls feed clutch 1 drive timing.
17. Feed switch 2 (FSW2) ..... Controls feed clutch 2 drive timing
18. Feed switch 3 (FSW3) ..... Controls feed clutch 3 drive timing
19. MP feed switch (MPFSW)..... Controls MP feed clutch drive timing
20. Scanner home position switch (SHPSW)..... Detects the optical system in the home position.
21. Original detection switch (ODSW) ..... Operates the original size detection sensor.
22. Original size detection sensor (OSDS) ..... Detects the size of the original.
23. Registration switch (RSW)..... Controls the secondary paper feed start timing.
24. Eject switch (ESW) ..... Detects a paper misfeed in the fuser section.
25. Feedshift switch (FSSW) ..... Detects a paper misfeed in the switchback section in a duplex copy.
26. Toner sensor (TNS)..... Detects the toner density in the developing unit.
27. Toner container detection switch (TCDSW) ..... Detects the presence of the toner container.
28. Toner container sensor (TCS)..... Detects the quantity of toner in a toner container.
29. Waste toner box detection switch (WTDSW)..... Detects the presence of the waste toner box.
30. Overflow sensor (OFS) ..... Detects when the waste toner box is full.
31. Humidity sensor (HUMS) ..... Detects absolute humidity.
32. Fuser unit thermistor 1 (FTH1)..... Detects the heat roller temperature.
33. Fuser unit thermistor 2 (FTH2)..... Detects the heat roller temperature.
34. Front cover switch (FRCSW) ..... Detects the opening and closing of the front cover.
35. Left cover 1 switch (LC1SW) ..... Detects the opening and closing of the left cover 1.
36. Left cover 2 switch (LC2SW) ..... Detects the opening and closing of the left cover 2.
37. Duplex paper conveying switch (DUPPCSW) ..... Detects a paper jam in the duplex section.

(3) Motors

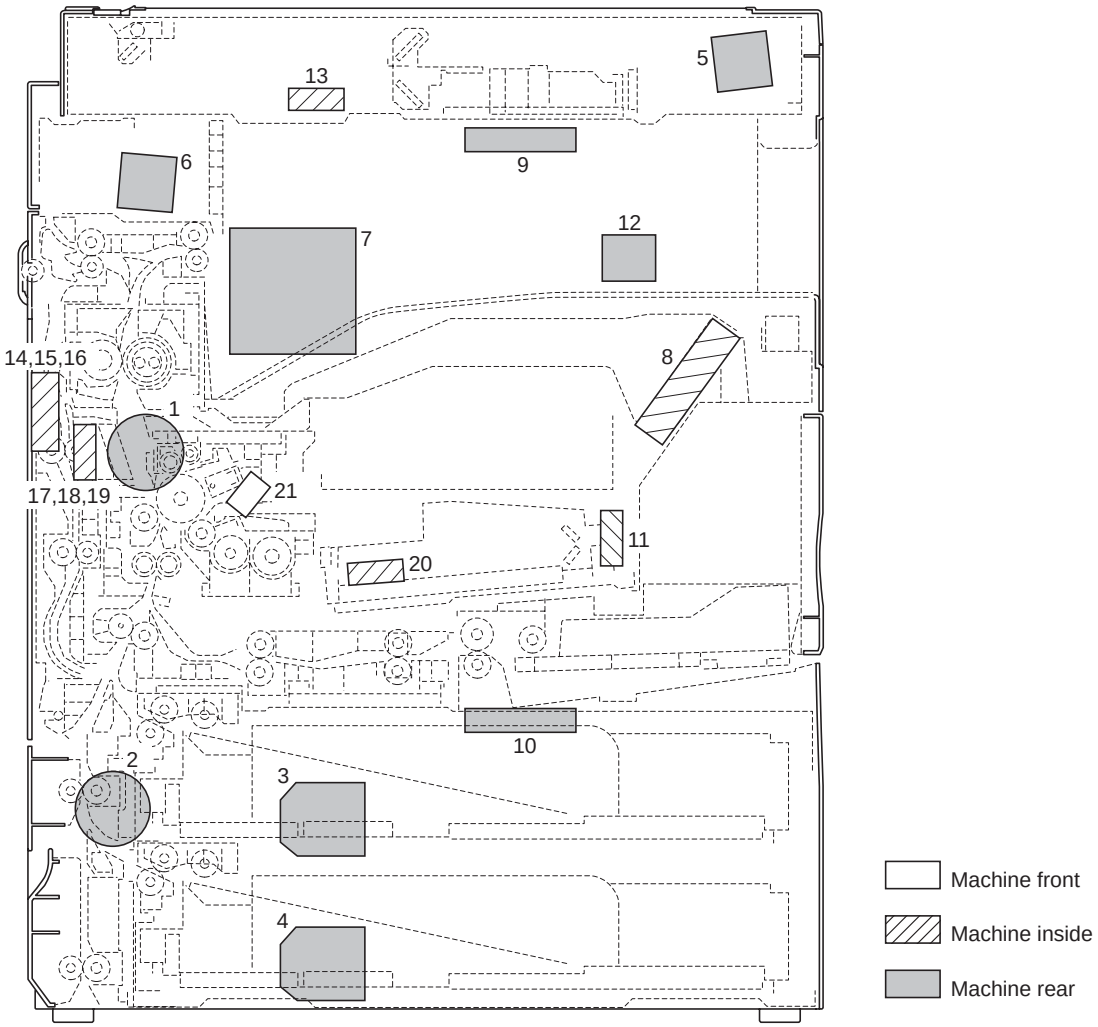


Figure 2-2-3 Motors

1. Drive motor (DM) ..... Drives the machine.
2. Paper feed motor (PFM) ..... Drives paper feed section.
3. Upper lift motor (LM-U) ..... Drives cassette 1 lift.
4. Lower lift motor (LM-L)..... Drives cassette 2 lift.
5. Scanner motor (SM)..... Drives the optical system.
6. Eject motor (EM)..... Drives the eject section.
7. Cooling fan motor 1 (CFM1) ..... Cools the machine interior.
8. Cooling fan motor 2 (CFM2) ..... Cools the machine interior.
9. Cooling fan motor 3 (CFM3) ..... Cools the machine interior.
10. Cooling fan motor 4 (CFM4) ..... Cools the machine interior (around the power supply unit).
11. Cooling fan motor 5 (CFM5) ..... Cools the machine interior (around the LSU).
12. Cooling fan motor 6 (CFM6) ..... Cools the machine interior (controller box).
13. Cooling fan motor 7 (CFM7) ..... Cools the machine interior (operation panel).
14. Cooling fan motor 8 (CFM8)..... Cools the machine interior and supports paper transfer for duplex copying.
15. Cooling fan motor 9 (CFM9)..... Cools the machine interior and supports paper transfer for duplex copying.
16. Cooling fan motor 10 (CFM10)..... Cools the machine interior and supports paper transfer for duplex copying.
17. Cooling fan motor 11 (CFM11)..... Cools the machine interior (around the paper conveying).
18. Cooling fan motor 12 (CFM12) ..... Cools the machine interior (around the paper conveying).
19. Cooling fan motor 13 (CFM13) ..... Cools the machine interior (around the paper conveying).
20. Polygon motor (PM) ..... Drives the polygon mirror.
21. Main charger cleaning motor (MCCM)..... Drives the main charger auto cleaning.

(4) Other electrical components

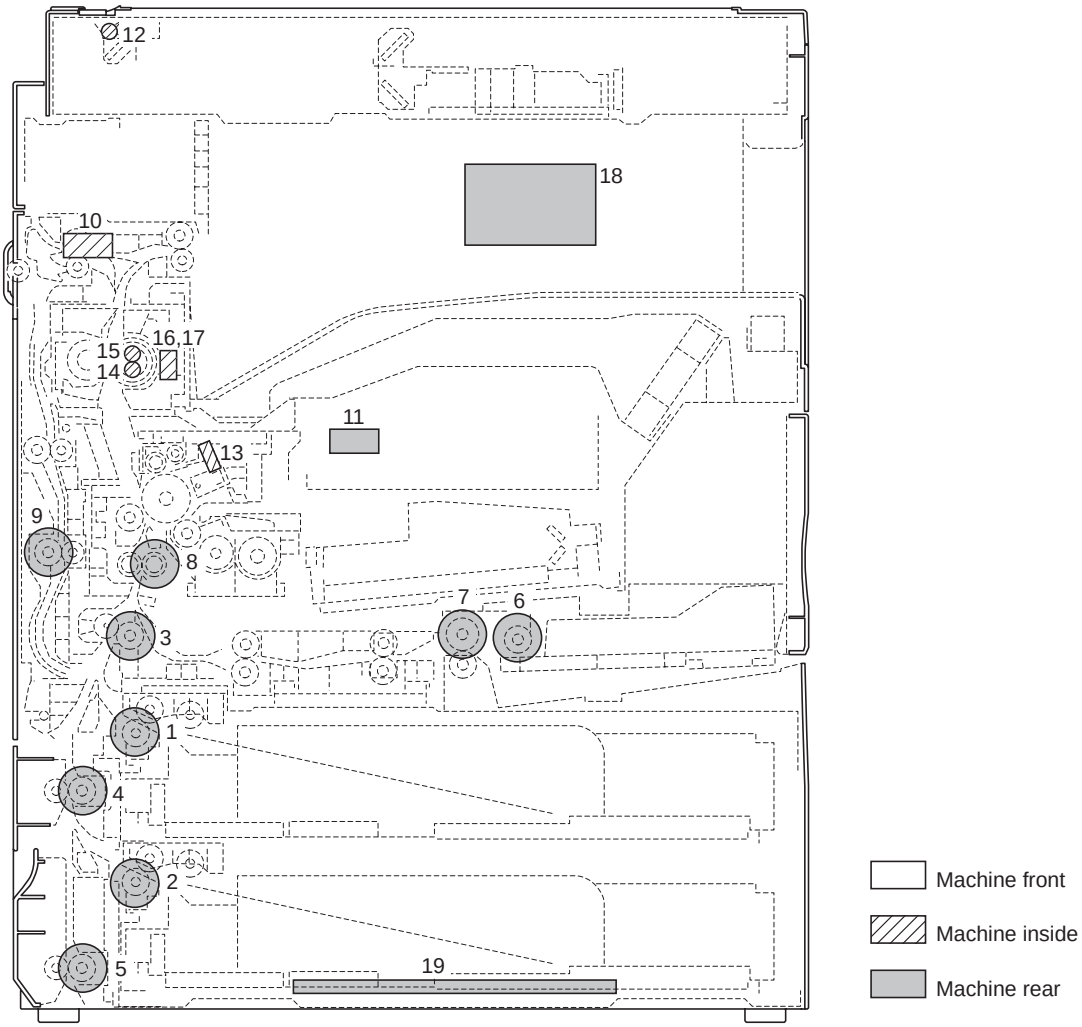


Figure 2-2-4 Other electrical components

1. Upper paper feed clutch 1 (PFCL-U) ..... Primary paper feed from the cassette 1.
2. Lower paper feed clutch 2 (PFCL-L)..... Primary paper feed from the cassette 2.
3. Feed clutch 1 (FCL1) ..... Controls the drive of feed roller.
4. Feed clutch 2 (FCL2) ..... Controls the drive of feed roller.
5. Feed clutch 3 (FCL3) ..... Controls the drive of feed roller.
6. MP paper feed clutch (MPPFCL) ..... Primary paper feed from the MP tray.
7. MP feed clutch (MPFCL)..... Controls the drive of MP feed roller.
8. Registration clutch (RCL)..... Secondary paper feed.
9. Duplex feed clutch (DUPFCL)..... Controls the drive of the duplex feed roller.
10. Feedshift solenoid (FSSOL)..... Operates the feedshift guide.
11. Toner feed solenoid (TNFSOL) ..... Replenishes toner.
12. Exposure lamp (EL) ..... Exposes originals.
13. Cleaning lamp (CL) ..... Removes residual charge from the drum surface.
14. Fuser heater M (FH-M) ..... Heats the heat roller.
15. Fuser heater S (FH-S) ..... Heats the heat roller.
16. Fuser unit thermostat 1 (FTS1)..... Prevents overheating in the fuser section.
17. Fuser unit thermostat 2 (FTS2)..... Prevents overheating in the fuser section.
18. Hard disk unit (HDD)..... Storages the image data and information of job accounting mode.
19. Cassette heater (CH) ..... Dehumidifies the cassette section.

2-3-1 Power source PWB

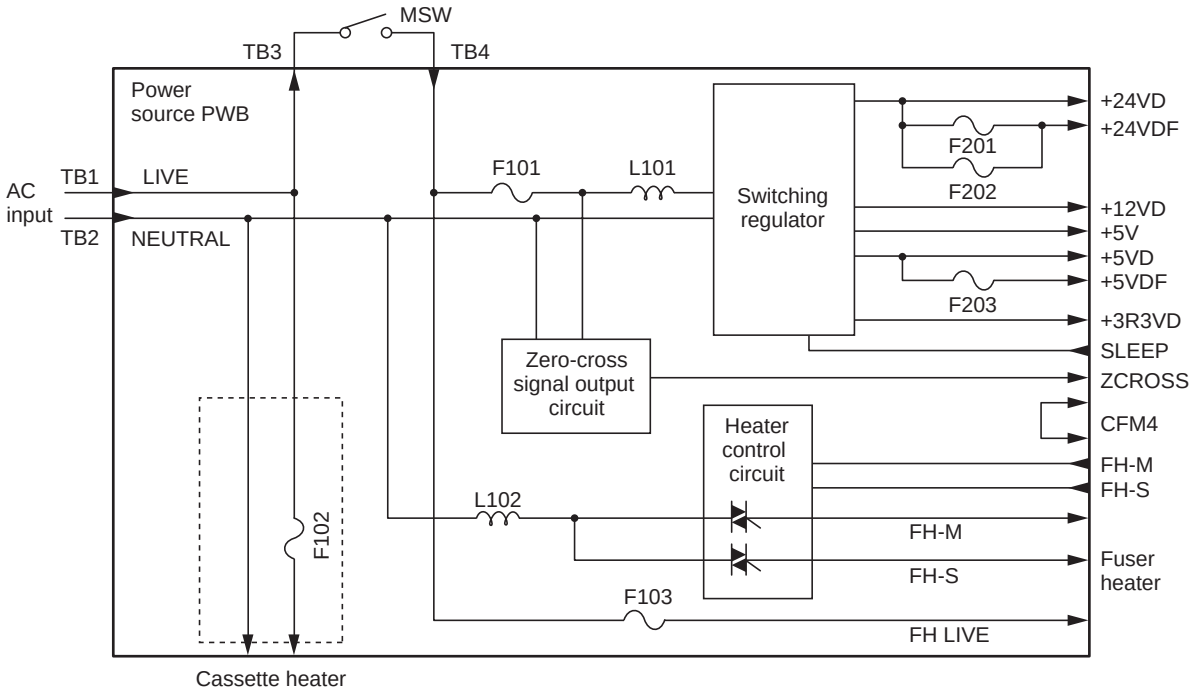


Figure 2-3-1 Power source PWB diagram

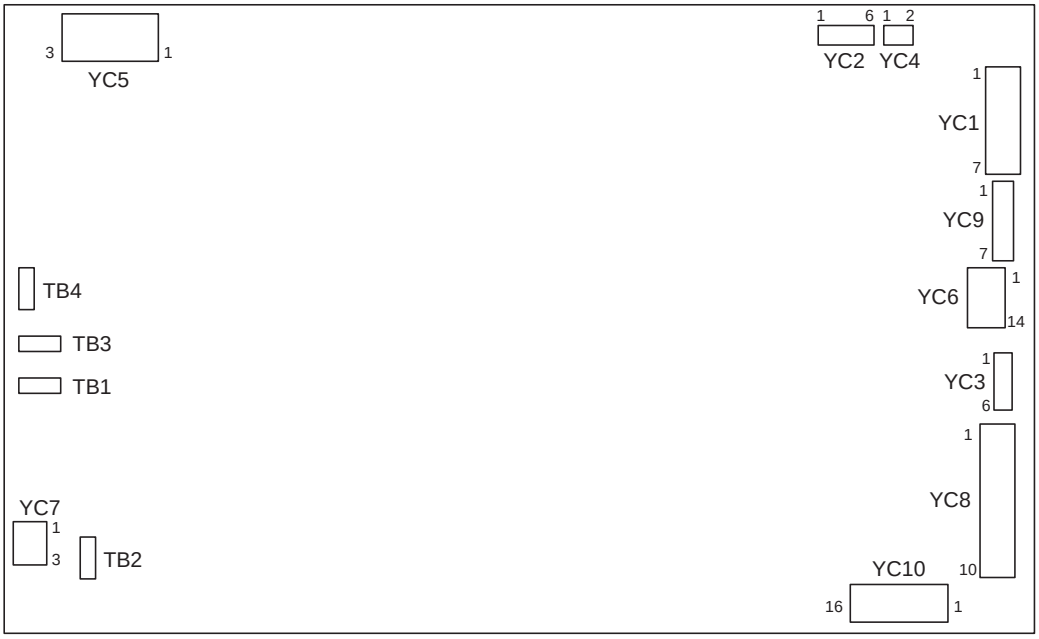


Figure 2-3-2 Power source PWB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
TB	TB1	LIVE	I	120 V AC 220-240 V AC	AC power input
Connected to the AC inlet	TB2	COM	I	120 V AC 220-240 V AC	AC power input
	TB3	LIVE	I	120 V AC 220-240 V AC	AC power output
	TB4	LIVE	O	120 V AC 220-240 V AC	AC power input
YC1	1	+24VDR	O	24 V DC	24 V DC power output
Connected to the engine PWB	2	GND	-	-	Ground
	3	GND	-	-	Ground
	4	GND	-	-	Ground
	5	+3.3VD	O	3.3 V DC	3.3 V DC power output
	6	+5VD	O	5 V DC	5 V DC power output
	7	+24VD	O	24 V DC	24 V DC power output
YC2	1	GND	-	-	Ground
Connected to the engine PWB	2	FH-S ON	I	0/5 V DC	FH-S On/Off
	3	FH-M ON	I	5 V DC	FH-M On/Off
	4	+5VD	O	5 V DC	5 V DC power output
	5	ZCROSS	O	0/5 V DC (pulse)	Zero-cross signal
	6	CFM3,4	I	0/24 V DC	CFM3,4 On/Off
YC3	1	SGND	-	-	Ground
Connected to the optional document finisher	2	SGND	-	-	Ground
	3	SGND	-	-	Ground
	4	SGND	-	-	Ground
	5	SGND	-	-	Ground
	6	SGND	-	-	Ground
YC4	1	CFM3,4	O	DC0V/24V	CFM3,4 On/Off
Connected to the cooling fan motor 3/4	2	+24VD	O	24 V DC	24 V DC power output
YC5	1	FH-M ON	O	120/0 V AC 220-240/0 V AC	FH-M On/Off
Connected to the fuser heater M/S	2	FH-S ON	O	120/0 V AC 220-240/0 V AC	FH-S On/Off
	3	FH LIVE	O	120 V AC 220-240 V AC	AC power output

Connector	Pin No.	Signal	I/O	Voltage	Description
YC6	1	24V	O	24 V DC	24 V DC power output
Connected to the scanner PWB	2	24V	O	24 V DC	24 V DC power output
	3	24V	O	24 V DC	24 V DC power output
	4	PGND	-	-	Ground
	5	PGND	-	-	Ground
	6	PGND	-	-	Ground
	7	SGND	-	-	Ground
	8	SGND	-	-	Ground
	9	SGND	-	-	Ground
	10	SGND	-	-	Ground
	11	12V	O	12 V DC	12 V DC power output
	12	5V	O	5 V DC	5 V DC power output
	13	3.3V	O	3.3 V DC	3.3 V DC power output
	14	3.3V	O	3.3 V DC	3.3 V DC power output
YC7	1	LIVE	O	120 V AC 220-240 V AC	AC power output
Connected to the optional cassette heater	3	NEUTRAL	O	120 V AC 220-240 V AC	AC power output
YC8	1	V24V	O	24 V DC	24 V DC power output
Connected to the optional paper feeder, optional document finisher and hard disk	2	V24V	O	24 V DC	24 V DC power output
	3	5.1V	O	5 V DC	5 V DC power output
	4	PGND	-	-	Ground
	5	FGND	-	-	Ground
	6	PGND	-	-	Ground
	7	+12VD	O	12 V DC	12 V DC power output
	8	GND	-	-	Ground
	9	GND	-	-	Ground
	10	+5VD	O	5 V DC	5 V DC power output
YC9	1	+24VD	O	24 V DC	24 V DC power output
Connected to the main operation PWB	2	+5VD	O	5 V DC	5 V DC power output
	3	+5VD	O	5 V DC	5 V DC power output
	4	GND	-	-	Ground
	5	GND	-	-	Ground
	6	GND	-	-	Ground
	7	N.C	-	-	Not used

Connector	Pin No.	Signal	I/O	Voltage	Description
YC10	1	SLEEP	I	0/5 V DC	SLEEP signal
Connected to the main PWB	2	+5V	O	5 V DC	5 V DC power output
	3	+5V	O	5 V DC	5 V DC power output
	4	+5V	O	5 V DC	5 V DC power output
	5	+5V	O	5 V DC	5 V DC power output
	6	+5V	O	5 V DC	5 V DC power output
	7	+5V	O	5 V DC	5 V DC power output
	8	+5V	O	5 V DC	5 V DC power output
	9	GND	-	-	Ground
	10	GND	-	-	Ground
	11	GND	-	-	Ground
	12	GND	-	-	Ground
	13	GND	-	-	Ground
	14	GND	-	-	Ground
	15	GND	-	-	Ground
	16	GND	-	-	Ground

2-3-2 Engine PWB

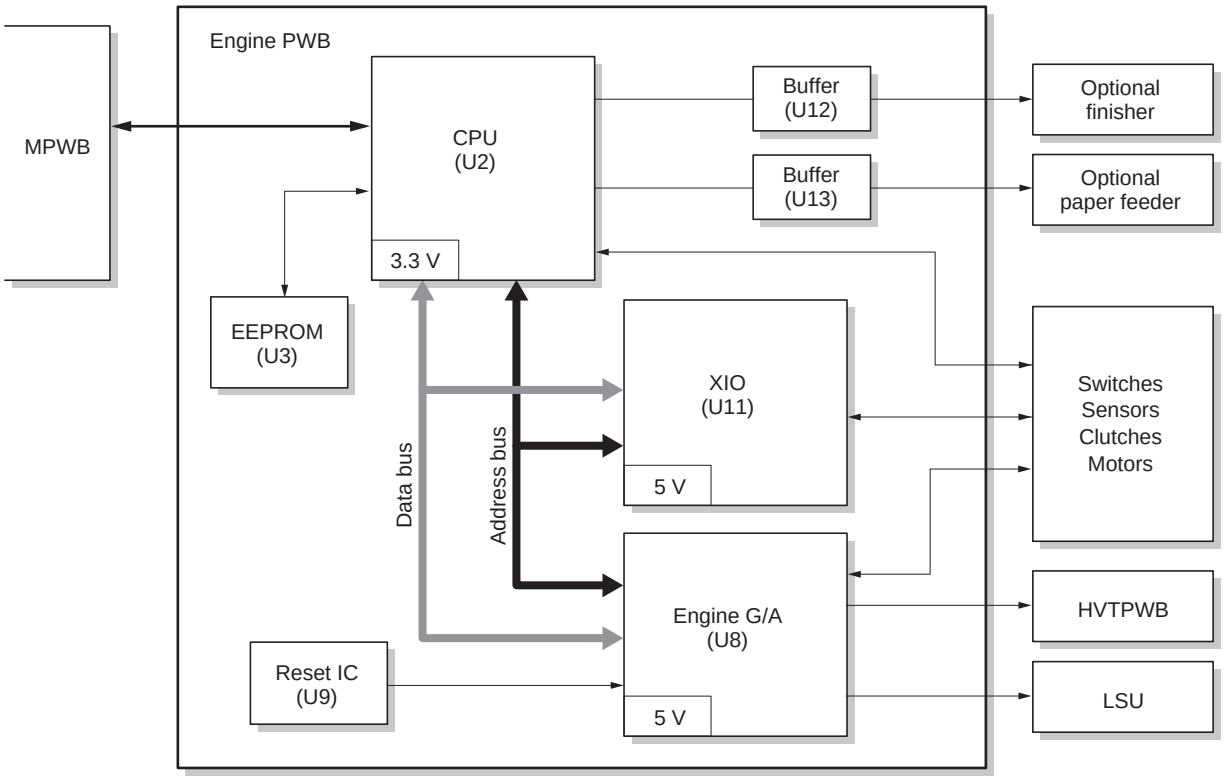


Figure 2-3-3 Engine PWB diagram

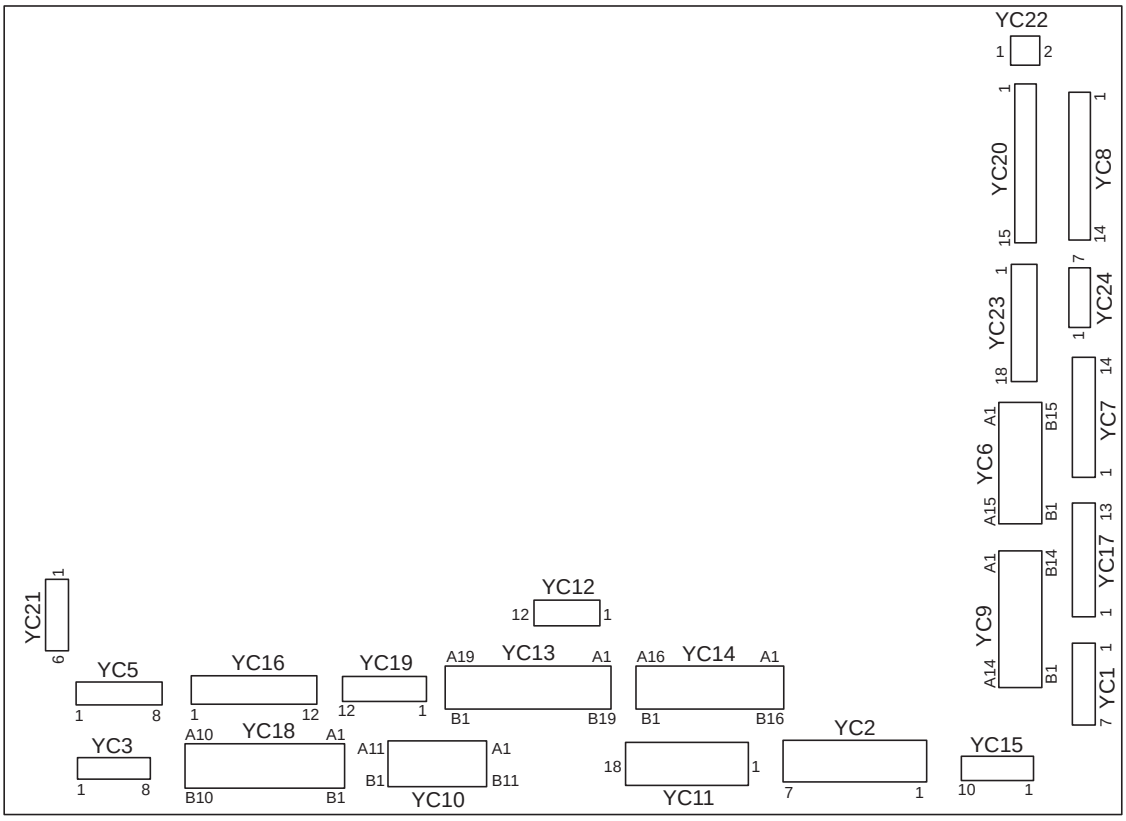


Figure 2-3-4 Engine PWB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
YC1	1	CFM3,4	O	0/24 V DC	CFM3,4: On/Off
Connected to the power source PWB	2	ZCROSS	I	0/5 V DC (pulse)	Zero-cross signal
	3	+5VD	I	5 V DC	5 V DC power input
	4	FH-M ON	O	0/5 V DC	FH-M: On/Off
	5	FH-S ON	O	0/5 V DC	FH-S: On/Off
	6	GND	-	-	Ground
YC2	1	+24VDR	I	24 V DC	24 V DC power input
Connected to the power source PWB	2	GND	-	-	Ground
	3	GND	-	-	Ground
	4	GND	-	-	Ground
	5	3.3V	I	3.3 V DC	3.3 V DC power input
	6	+5VD	I	5 V DC	5 V DC power input
	7	+24VDR	I	24 V DC	24 V DC power input
YC3	1	SET SIG	I	0/5 V DC	Document finisher connection signal
Connected to the optional document finisher	2	DFSDO	O	0/5 V DC (pulse)	Document finisher serial communication data signal
	3	DFSDI	I	0/5 V DC (pulse)	Document finisher serial communication data signal
	4	DFSCLK	O	0/5 V DC (pulse)	Document finisher CLOCK signal
	5	DFSEL	O	0/5 V DC	Document finisher SELECT signal
	6	SISEL	-	-	Not used
	7	DFRDY	I	0/5 V DC	Document finisher READY signal
	8	SIRDY	-	-	Not used
YC5	1	GND	-	-	Ground
Connected to the optional paper feeder	2	+5VD	O	5 V DC	5 V DC power output
	3	PFSEL	O	0/5 V DC	Paper feeder SELECT signal
	4	PFSCLK	O	0/5 V DC (pulse)	Paper feeder CLOCK signal
	5	PFSDI	I	0/5 V DC (pulse)	Paper feeder serial communication data signal
	6	PFSDO	O	0/5 V DC (pulse)	Paper feeder serial communication data signal
	7	PFRDY	I	0/5 V DC	Paper feeder READY signal
	8	PFFEED	O	0/5 V DC	Paper feeder FEED signal
YC6	A1	MPPWSW0	I	0/5 V DC	MPPWSW: On/Off
Connected to the MP unit, waste toner box detection switch, overflow sensor, front cover switch and cooling fan motor 1/2	A2	MPPWSW1	I	0/5 V DC	MPPWSW: On/Off
	A3	MPPWSW2	I	0/5 V DC	MPPWSW: On/Off
	A4	GND	-	-	Ground
	A5	+5VD	O	5 V DC	5 V DC power output
	A6	MPPSW	I	0/5 V DC	MPPSW: On/Off
	A7	GND	-	-	Ground
	A8	+24VDR	O	24 V DC	24 V DC power output
	A9	MPPFCL	O	0/24 V DC	MPPFCL: On/Off
	A10	+24VDR	O	24 V DC	24 V DC power output
	A11	MPFCL	O	0/24 V DC	MPFCL: On/Off
	B1	NC	-	-	Not used
	B2	GND	-	-	Ground
	B3	CFM2	O	0/24 V DC	CFM2: On/Off
	B4	+5VD	O	5 V DC	5 V DC power output

Connector	Pin No.	Signal	I/O	Voltage	Description
YC6	B5	WTDSW	I	0/5 V DC	WTDSW: On/Off
Connected to the MP unit, waste toner box detection switch, over-flow sensor, front cover switch and cooling fan motor 1/2	B6	GND	-	-	Ground
	B7	OFS	I	0/5 V DC	OFS: On/Off
	B8	GND	-	-	Ground
	B9	FRCSW	I	0/5 V DC	FRCSW: On/Off
	B10	GND	-	-	Ground
	B11	CFM1	O	0/24 V DC	CFM1: On/Off
	B12	GND	-	-	Ground
	B13	+5VD	O	5 V DC	5 V DC power output
	B14	MPPLSW	I	0/5 V DC	MPPLSW: On/Off
	B15	GND	-	-	Ground
YC7	1	BVSEL1	O	0 to 5 V DC	Developing bias control voltage
Connected to the high-voltage PWB	2	+24VDR	O	24 V DC	24 V DC power output
	3	GND	-	-	Ground
	4	MHVDR	O	0/5 V DC	Main charging: On/Off
	5	HVCLK	O	0/5 V DC (pulse)	Developing bias CLOCK signal
	6	RHVDR	O	0/5 V DC	Separation charging: On/Off
	7	RISEL	O	0 to 5 V DC	Separation charging control voltage
	8	TICTL	O	0 to 5 V DC	Transfer charging control voltage
	9	BVSEL2	O	0 to 5 V DC	Developing bias control voltage
	10	THVDR	O	0/5 V DC	Transfer charging: On/Off
	11	NC	-	-	Not used
	12	NC	-	-	Not used
	13	NC	-	-	Not used
	14	NC	-	-	Not used
YC8	1	NC	-	-	Not used
Connected to the laser scanner unit	2	NC	-	-	Not used
	3	NC	-	-	Not used
	4	NC	-	-	Not used
	5	NC	-	-	Not used
	6	NC	-	-	Not used
	7	NC	-	-	Not used
	8	NC	-	-	Not used
	9	NC	-	-	Not used
	10	+24VDR	O	24 V DC	24 V DC power output
	11	GND	-	-	Ground
	12	SCAN	O	0/24 V DC	PM: On/Off
	13	SCRDYN	I	0/5 V DC	PM READY signal
	14	SCCLK	O	0/5 V DC (pulse)	PM CLOCK signal

Connector	Pin No.	Signal	I/O	Voltage	Description
YC9	A1	GND	-	-	Ground
Connected to the MP feed switch, toner container sensor, developing unit, toner feed solenoid, toner container detection switch and drum unit	A2	MPFSW	I	0/5 V DC	MPFSW: On/Off
	A3	+5VD	O	5 V DC	5 V DC power output
	A4	+5VD	O	5 V DC	5 V DC power output
	A5	TCS	I	0/5 V DC	TCS: On/Off
	A6	GND	-	-	Ground
	A7	DEVP0	I	0/5 V DC	Developing unit distinction signal
	A8	+5VD	O	5 V DC	5 V DC power output
	A9	TNS	I	0/5 V DC	TNS: On/Off
	A10	GND	-	-	Ground
	A11	DVUNITN	I	0/5 V DC	Developing unit detection signal
	A12	FUSE_CUT	O	0/5 V DC	Developing unit FUSE CUT signal
	A13	EEDATA	I	0/5 V DC	Developing unit EEPROM DATA signal
	A14	EESCLK	O	0/5 V DC (pulse)	Developing unit EEPROM CLOCK signal
	B1	+24VDR	O	24 V DC	24 V DC power output
	B2	TNFSOL	O	0/24 V DC	TNFSOL: On/Off
	B3	TCDSW	I	0/5 V DC	TCDSW: On/Off
	B4	GND	-	-	Ground
	B5	DRUMP0	I	0/5 V DC	Drum unit distinction signal
	B6	GND	-	-	Ground
	B7	CL	O	0/5 V DC	CL: On/Off
	B8	EEDATA	I	0/5 V DC	Drum unit EEPROM DATA signal
	B9	EESCLK	O	0/5 V DC (pulse)	Drum unit EEPROM CLOCK signal
	B10	GND	-	-	Ground
	B11	DRUNITN	I	0/5 V DC	Drum unit detection signal
	B12	+5VD	O	5 V DC	5 V DC power output
	B13	MCCM_FWD	O	0/24 V DC	MCCM: On/Off
	B14	MCCM_REV	O	0/24 V DC	MCCM: On/Off
YC10	A1	GND	-	-	Ground
Connected to the registration switch, fuser unit, duplex feed clutch, duplex paper conveying switch and cooling fan motor 8 to 13	A2	RSW	O	0/5 V DC	RSW: On/Off
	A3	+5VD	O	5 V DC	5 V DC power output
	A4	FUSER P0	I	0/5 V DC	Fuser unit distinction signal
	A5	3VD	O	3.3 V DC	3.3 V DC power output
	A6	FTH1	I	0 to 5 V DC	FTH1 detection voltage signal
	A7	FUSE CUT	O	0/5 V DC	FTH1 FUSE CUT signal
	A8	GND	-	-	Ground
	A9	GND	-	-	Ground
	A10	FTH2 STD	I	0 to 5 V DC	FTH2 detection voltage signal
	A11	FTH2	I	0 to 5 V DC	FTH2 detection voltage signal
	B1	+24VDR	O	24 V DC	24 V DC power output
	B2	DUPFCL	O	0/24 V DC	DUPFCL: On/Off
	B3	GND	-	-	Ground
	B4	DUPPCSW	I	0/5 V DC	DUPPCSW: On/Off
	B5	+5VD	O	5 V DC	5 V DC power output
	B6	GND	-	-	Ground

Connector	Pin No.	Signal	I/O	Voltage	Description
YC10	B7	CFM11,12,13	O	0/24 V DC	CFM11,12,13: On/Off
Connected to the registration switch, fuser unit, duplex feed clutch, duplex paper conveying switch and cooling fan motor 8 to 13	B8	DUP P0	I	0/5 V DC	Duplex unit distinction signal
	B9	+24VDR	O	24 V DC	24 V DC power output
	B10	CFM8,9,10	O	0/24 V DC	CFM8,9,10: On/Off
	B11	NC	-	-	Not used
YC11	1	R24VDR	O	24 V DC	24 V DC power output
Connected to the drive motor, paper feed motor, feed clutch 1 and feed switch 1	2	R24VDR	O	24 V DC	24 V DC power output
	3	GND	-	-	Ground
	4	GND	-	-	Ground
	5	+5VD	O	5 V DC	5 V DC power output
	6	+5VD	O	5 V DC	5 V DC power output
	7	GND	-	-	Ground
	8	GND	-	-	Ground
	9	DM_ON	O	0/24 V DC	DM: On/Off
	10	PFM_ON	O	0/24 V DC	PFM: On/Off
	11	DM_LOCK	I	0/5 V DC	DM LOCK signal
	12	PFM_LOCK	I	0/5 V DC	PFM LOCK signal
	13	DM_CLK	O	0/5 V DC (pulse)	DM CLOCK signal
	14	FCL1	O	0/24 V DC	FCL1: On/Off
	15	+24VDR	O	24 V DC	24 V DC power output
	16	GND	-	-	Ground
	17	FSW1	I	0/5 V DC	FSW1: On/Off
	18	+5VD	O	5 V DC	5 V DC power output
YC12	1	+24VDR	O	24 V DC	24 V DC power output
Connected to the Upper and lower paper size width switches	2	+24VUP	I	24 V DC	24 V DC power input
	3	PWSW-U0	I	0/5 V DC	PWSW-U: On/Off
	4	PWSW-U1	I	0/5 V DC	PWSW-U: On/Off
	5	PWSW-U2	I	0/5 V DC	PWSW-U: On/Off
	6	GND	-	-	Ground
	7	+24VDR	O	24 V DC	24 V DC power output
	8	+24VLO	I	24 V DC	24 V DC power input
	9	PWSW-L0	I	0/5 V DC	PWSW-L: On/Off
	10	PWSW-L1	I	0/5 V DC	PWSW-L: On/Off
	11	PWSW-L2	I	0/5 V DC	PWSW-L: On/Off
	12	GND	-	-	Ground

Connector	Pin No.	Signal	I/O	Voltage	Description
YC13	A1	GND	-	-	Ground
Connected to the feed switch 2/3, feed clutch 2/3, left cover 2 switch, upper/lower lift motors, lower lift motor, upper/lower paper size length switches, upper/lower lift limit switches and upper/ lower paper switches	A2	FSW3	I	0/5 V DC	FSW3: On/Off
	A3	+5VD	O	5 V DC	5 V DC power output
	A4	R24VDR	O	24 V DC	24 V DC power output
	A5	FCL3	O	0/24 V DC	FCL3: On/Off
	A6	GND	-	-	Ground
	A7	FSW2	I	0/5 V DC	FSW2: On/Off
	A8	+5VD	O	5 V DC	5 V DC power output
	A9	GND	-	-	Ground
	A10	LC2SW	I	0/5 V DC	LC2SW: On/Off
	A11	+24VDR	O	24 V DC	24 V DC power output
	A12	FCL2	O	0/24 V DC	FCL2: On/Off
	A13	LM-U SW2	I	0/5 V DC	LM-U SW2: On/Off
	A14	GND	-	-	Ground
	A15	LM-U SW1	I	0/5 V DC	LM-U SW1: On/Off
	A16	GND	-	-	Ground
	A17	LM-U REM	O	0/24 V DC	LM-U: On/Off
	A18	GND	-	-	Ground
	A19	PLSW-L	I	0/5 V DC	PLSW-L: On/Off
	B1	GND	-	-	Ground
	B2	PLSW-U	I	0/5 V DC	PLSW-U: On/Off
	B3	LM-L SW2	I	0/5 V DC	LM-L SW2: On/Off
	B4	GND	-	-	Ground
	B5	LM-L SW1	I	0/5 V DC	LM-L SW1: On/Off
	B6	GND	-	-	Ground
	B7	LM-L REM	O	0/24 V DC	LM-L: On/Off
	B8	GND	-	-	Ground
	B9	LICSW-U	I	0/5 V DC	LICSW-U: On/Off
	B10	+5VD	O	5 V DC	5 V DC power output
	B11	GND	-	-	Ground
	B12	PSW-U	I	0/5 V DC	PSW-U: On/Off
	B13	+5VD	O	5 V DC	5 V DC power output
	B14	GND	-	-	Ground
	B15	LICSW-L	I	0/5 V DC	LICSW-L: On/Off
	B16	+5VD	O	5 V DC	5 V DC power output
	B17	GND	-	-	Ground
	B18	PSW-L	I	0/5 V DC	PSW-L: On/Off
	B19	+5VD	O	5 V DC	5 V DC power output

Connector	Pin No.	Signal	I/O	Voltage	Description
YC14	A1	FSSOL2	O	0/24 V DC	FSSOL: On/Off (return)
Connected to the feed-shift sole-noid, feedshift switch, eject switch, cool-ing fan motor 5, left cover 1 switch, upper/lower paper feed clutches, humidity sensor eject motor	A2	FSSOL1	O	0/24 V DC	FSSOL: On/Off (activate)
	A3	+24VDR	O	24 V DC	24 V DC power output
	A4	GND	-	-	Ground
	A5	FSSW	I	0/5 V DC	FSSW: On/Off
	A6	+5VD	O	5 V DC	5 V DC power output
	A7	GND	-	-	Ground
	A8	NC	-	-	Not used
	A9	+5VD	O	5 V DC	5 V DC power output
	A10	GND	-	-	Ground
	A11	ESW	I	0/5 V DC	ESW: On/Off
	A12	+5VD	O	5 V DC	5 V DC power output
	A13	CFM5	O	0/24 V DC	CFM5: On/Off
	A14	GND	-	-	Ground
	A15	GND	-	-	Ground
	A16	LC1SW	I	0/5 V DC	LC1SW: On/Off
	B1	PFCL-U	O	0/24 V DC	PFCL-U: On/Off
	B2	+24VDR	O	24 V DC	24 V DC power output
	B3	+24VDR	O	24 V DC	24 V DC power output
	B4	PFCL-L	O	0/24 V DC	PFCL-L: On/Off
	B5	+24VDR	O	24 V DC	24 V DC power output
	B6	RCL	O	0/24 V DC	RCL: On/Off
	B7	+3VD	O	3.3 V DC	3.3 V DC power output
	B8	HUMS	I	0 to 5 V DC	HUMS detection voltage signal
	B9	GND	-	-	Ground
	B10	THOUT	I	0 to 5 V DC	Thermistor detection voltage signal
	B11	EM_B	O	0/24 V DC (pulse)	EM drive control signal
	B12	EM B	O	0/24 V DC (pulse)	EM drive control signal
	B13	EM_A	O	0/24 V DC (pulse)	EM drive control signal
	B14	EM A	O	0/24 V DC (pulse)	EM drive control signal
	B15	NC	-	-	Not used
	B16	NC	-	-	Not used
YC15	1	+24VDR	O	24 V DC	24 V DC power output
Connected to the total counter, optional key card and optional key counter	2	T_COUNT	O	0/5 V DC	Total counter signal
	3	GND	-	-	Ground
	4	SET SIG	I	0/5 V DC	Connection signal
	5	GND	-	-	Ground
	6	SET SIG	I	0/5 V DC	Key counter connection signal
	7	+24VDR	O	24 V DC	24 V DC power output
	8	K_COUNT	O	0/5 V DC	Key counter signal
	9	GND	-	-	Ground
	10	SET SIG	I	0/5 V DC	Connection signal

Connector	Pin No.	Signal	I/O	Voltage	Description
YC16	1	+24VDR	O	24 V DC	24 V DC power output
Connected to the optional built-in finisher	2	+24VDR	O	24 V DC	24 V DC power output
	3	GND	-	-	Ground
	4	GND	-	-	Ground
	5	+5VD	O	5 V DC	5 V DC power output
	6	GND	-	-	Ground
	7	SELECT	O	0/5 V DC	Built-in finisher SELECT signal
	8	READY	I	0/5 V DC	Built-in finisher READY signal
	9	SDI	I	0/5 V DC (pulse)	Built-in finisher serial communication data signal
	10	SDO	O	0/5 V DC (pulse)	Built-in finisher serial communication data signal
	11	SCLK	O	0/5 V DC (pulse)	Built-in finisher CLOCK signal
	12	NC	-	-	Not used
YC17	1	JBESW	I	0/5 V DC	JBESW: On/Off
Connected to the optional job separator	2	+5VD	O	5 V DC	5 V DC power output
	3	GND	-	-	Ground
	4	GND	-	-	Ground
	5	SET SIG	I	0/5 V DC	Job separator connection signal
	6	GND	-	-	Ground
	7	EPDSW	I	0/5 V DC	EPDSW: On/Off
	8	+5VD	O	5 V DC	5 V DC power output
	9	LED REM	O	0/5 V DC	LED: On/Off
	10	+5VD LED	O	5 V DC	5 V DC power output
	11	FSSOL2	O	0/24 V DC	FSSOL: On/Off (return)
	12	FSSOL1	O	0/24 V DC	FSSOL: On/Off (activate)
	13	+24VDR	O	24 V DC	24 V DC power output
YC20	1	SCKN	I	0/5 V DC (pulse)	CLOCK signal
Connected to the main PWB	2	EGSI	I	0/5 V DC (pulse)	Serial communication data signal
	3	EGSO	O	0/5 V DC (pulse)	Serial communication data signal
	4	SBSY	O	0/5 V DC	SBSY signal
	5	SDIR	O	0/5 V DC	SDIR signal
	6	EGIRN	O	0/5 V DC	EGIRN signal
	7	OUTPEN	O	0/5 V DC	OUTPEN signal
	8	PVSYNC	O	0/5 V DC (pulse)	PVSYNC signal
	9	+5VD	O	5 V DC	5 V DC power output
	10	SGND	-	-	Ground
	11	SGND	-	-	Ground
	12	LDON	O	0/5 V DC	LDON signal
	13	PRST	I	0/5 V DC	PRST signal
	14	PMD	I	0/5 V DC	PMD signal
	15	HLDENG	I	0/5 V DC	HLDENG signal

Maintenance parts list

Maintenance part name		Part No.	Alternative part No.	Fig. No.	Ref. No.
Name used in service manual	Name used in parts list				
Upper/lower paper feed pulley	PULLEY,PAPER FEED	2AR07220	-	4	2
Upper/lower separation pulley	PULLEY,SEPARATION	2AR07230	-	4	3
Upper/lower forwarding pulley	PULLEY FEED A	2BJ06010	-	4	5
MP paper feed pulley	UPPER PULLEY,BYPASS	61706770	-	11	49
MP separation pulley	PULLEY,SEPARATION	2AR07230	-	11	2
MP forwarding pulley	PULLEY FEED A	2BJ06010	-	11	6
MP feed roller 1	ROLLER2 BYPASSFEED	302BL06541	2BL06541	12	13
MP feed roller 2	ROLLER4 BYPASSFEED	302BL06561	2BL06561	12	14
MP feed pulley	RIGHT PULLEY,FEED	33906660	-	12	22
Left registration roller	ROLLER REGIST	2FG16021	-	7	35
Right registration roller	RIGHT ROLLER REGIST	302FG06211	2FG06211	5	51
Feed pulley	PULLEY FEED	2BL16080	-	6/7	47/19
Feed roller 1	PULLEY MIDDLE FEED A	302GR06010	2GR06010	5	72
Feed roller 1	PULLEY MIDDLE FEED B	302GR06020	2GR06020	5	73
Feed roller 2	ROLLER B FEED	302BL06081	2BL06081	5	22
Feed roller 3	ROLLER C FEED	302BL06091	2BL06091	5	23
Registration switch	SWITCH REGISTRATION	2FG27110	-	5	46
Left registration cleaner	UNDER CLEANER REGIST	2BL07950	-	7	15
Registration guide	GUIDE REGIST F	2BL16130	-	7	22
Right registration cleaner	PARTS,REGISTRATION CLEAN	2BL93450	-	5	44
Laser scanner unit	LK-710	302GR93090	2GR93090	13	1
Platen	PARTS CONTACT GLASS (M) ASSY	302GR93310	2GR93310	10	1
Platen	PARTS CONTACT GLASS (I) ASSY	302GR93320	2GR93320	10	1
Slit glass	PARTS CONTACT GLASS DP ASSY	302GR94380	2GR94380	10	2
Mirror 1	MIRROR A	2FB12140	-	9	25
Mirror 2 and mirror 3	MIRROR B	302GR17280	2GR17280	9	17
Reflector	REFLECTOR SCANNER	302GR17250	2GR17250	9	27
Exposure lamp	PARTS,LAMP SCANNER SP	302GR94330	2GR94330	9	32
Original size detection switch	SENSOR ORIGINAL	2C927090	-	9	44
Transfer roller unit	TR-710	302GR93280	2GR93280	7	A02
Developing unit	DV-715	302GR93030	2GR93030	14	1
Drum unit	DK-715 (30 ppm)	302GN93010	2GN93010	16	A01
Drum unit	DK-716 (40/50 ppm)	302GR93040	2GR93040	16	A01
Main charger unit	MC-710	302GR93070	2GR93070	16	13
Drum separation claw	PARTS CLAW SEPARATION ASSY	302GR93190	2GR93190	16	14
Fuser unit	FK-715 U	302GR93050	2GR93050	15	A01
Fuser unit	FK-715 E	302GR93060	2GR93060	15	A01
Heat roller	PARTS,ROLLER HEAT SP	302GR94270	2GR94270	15	32
Heat roller separation claw	CLAW HEAT ROLLER	2BL20080	-	15	1
Press roller	PARTS,ROLLER PRESS SP	302GR94280	2GR94280	15	A02
Press roller separation claw	CLAW PRESS ROLLER	2BL20350	-	6	34

Maintenance part name		Part No.	Alternative part No.	Fig. No.	Ref. No.
Name used in service manual	**Name used in parts list**				
Upper duplex feed roller	ROLLER DU FEED UP	2BL07020	-	7	4
Lower duplex feed roller	ROLLER DU FEED LOW	2BL07030	-	7	5
Duplex feed pulley	PULLEY DU	2BL07040	-	7	6
Eject roller	ROLLER EXIT	302BL21021	2BL21021	8	24
Switchback roller	ROLLER FEED SHIFT	302BL21031	2BL21031	8	25
Eject pulley	PULLEY EXIT C	2BL21520	-	8	22
Eject pulley	PULLEY EXIT	302GR28060	2GR28060	8	32
Switchback pulley	PULLEY FEED SHIFT	2BL21330	-	6	36
Dust filter 1	PARTS FILTER DUST F1 ASSY	302GR94430	2GR94430	13	13
Dust filter 1	PARTS FILTER DUST F2 ASSY	302GR94440	2GR94440	13	14

Periodic maintenance procedures

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Test copy and test print	Perform at the maximum copy size	Test copy	Every service		

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Paper feed section	Upper/lower paper feed pulley	Replace	400K (30) 500K (40/50)	Replace.*	P.1-5-2
	Upper/lower separation pulley	Replace	400K (30) 500K (40/50)	Replace.*	P.1-5-2
	Upper/lower forwarding pulley	Replace	400K (30) 500K (40/50)	Replace.*	P.1-5-2
	MP paper feed pulley	Replace	400K (30) 500K (40/50)	Replace.*	P.1-5-4
	MP separation pulley	Replace	400K (30) 500K (40/50)	Replace.*	P.1-5-4
	MP forwarding pulley	Replace	400K (30) 500K (40/50)	Replace.*	P.1-5-4
	MP feed roller 1	Clean	400K (30) 500K (40/50)	Clean with alcohol.*	
	MP feed pulley	Clean	400K (30) 500K (40/50)	Clean with alcohol.*	
	MP feed roller 2	Clean	400K (30) 500K (40/50)	Clean with alcohol.*	
	Left registration roller	Clean	400K (30) 500K (40/50)	Clean with alcohol.*	
	Right registration roller	Clean	400K (30) 500K (40/50)	Clean with alcohol.*	
	Feed pulley	Clean	400K (30) 500K (40/50)	Clean with alcohol.*	
	Feed roller 1	Clean	400K (30) 500K (40/50)	Clean with alcohol.*	
	Feed roller 2	Clean	400K (30) 500K (40/50)	Clean with alcohol.*	
	Feed roller 3	Clean	400K (30) 500K (40/50)	Clean with alcohol.*	
	Registration switch	Clean	400K (30) 500K (40/50)	Clean with a dry cloth.	
	Left registration cleaner	Replace	400K (30) 500K (40/50)	Replace.	P.1-5-9
	Registration guide	Replace	400K (30) 500K (40/50)	Replace.	
	Right registration cleaner	Replace	400K (30) 500K (40/50)	Replace.	P.1-5-9

*Check and clean with alcohol when user call occurs.

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Optical section	Laser scanner unit	Check or clean	User call	Clean the shield glass with a dry cloth.	P.1-5-21
	Platen	Clean	400K (30) 500K (40/50)	Clean with alcohol and then a dry cloth.	
	Slit glass	Clean	400K (30) 500K (40/50)	Clean with a dry cloth or alcohol.	
	Mirror 1	Clean	User call	Clean with alcohol and then a dry cloth only if vertical black lines appear on the copy image.	
	Mirror 2 and mirror 3	Clean	User call	Clean with alcohol and then a dry cloth only if vertical black lines appear on the copy image.	
	Lens	Clean	User call	Clean with a dry cloth only if vertical black lines appear on the copy image.	
	Reflector	Clean	User call	Clean with a dry cloth only if vertical black lines appear on the copy image.	
	Exposure lamp	Check or replace	User call	Replace if an image problem occurs.	P.1-5-11
	Optical rail	Grease	User call	Check noise and shifting and then apply scanner rail grease EM-50L.	
	Original size detection sensor	Check or clean	User call	Clean the sensor emitter and sensor receiver with alcohol or a dry cloth only if there is a problem.	

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Transfer/ separation section	Transfer roller unit	Replace	400K (30) 500K (40/50)	Replace. (Clean when user call occurs.)	P.1-5-27

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Developing section	Developing unit	Replace	400K (30) 500K (40/50)	Replace. (Check and replace when user call occurs.)	P.1-5-26

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Main charging/drum section	Drum unit	Replace	400K (30) 500K (40/50)	Replace. (Check and replace when user call occurs.)	P.1-5-24
	Main charger unit	Clean	User call	Clean with a wet cloth and then a dry cloth.	P.1-5-25
	Drum separation claw	Check or replace	User call	Replace if the leading edge of the claws are damaged.	

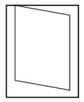
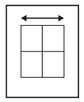
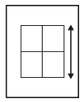
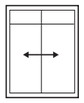
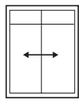
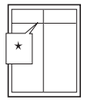
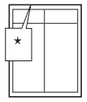
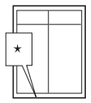
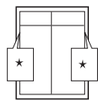
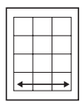
Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Fuser section	Fuser unit	Replace	400K (30) 500K (40/50)	Replace. (Check and replace when user call occurs.)	P.1-5-28
	Heat roller	Check or replace	User call	Check and replace when user call occurs.	P.1-5-32
	Heat roller separation claw	Clean	400K (30) 500K (40/50)	Clean with alcohol. (Check and replace when user call occurs.)	P.1-5-29
	Press roller	Check or replace	User call	Check and replace when user call occurs.	P.1-5-30
	Press roller separation claw	Clean	400K (30) 500K (40/50)	Clean with alcohol. (Check and replace when user call occurs.)	

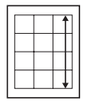
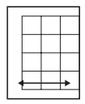
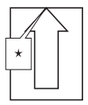
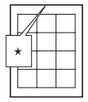
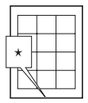
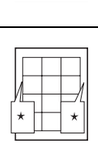
Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Eject section	Eject roller	Clean	400K (30) 500K (40/50)	Clean with alcohol. (Check and clean with alcohol when user call occurs.)	
	Eject pulley	Clean	400K (30) 500K (40/50)	Clean with alcohol. (Check and clean with alcohol when user call occurs.)	
	Switchback roller	Clean	400K (30) 500K (40/50)	Clean with alcohol. (Check and clean with alcohol when user call occurs.)	
	Switchback pulley	Clean	400K (30) 500K (40/50)	Clean with alcohol. (Check and clean with alcohol when user call occurs.)	

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Covers	Covers	Clean	Every service	Clean with alcohol or a dry cloth.	
	Dust filter 1	Clean	Every service	Vacuum.	
	Dust filter 2	Clean	Every service	Vacuum.	

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Other	Image quality	Check and adjust	Every service		

Chart of image adjustment procedures

Adjusting order	Item	Image	Description	Maintenance mode		Original	Page	Remarks
				Item No.	Mode			
①	Adjusting the lateral squareness (printing adjustment)		Adjusting the skew of the laser scanner unit (printing adjustment)			U993 (PG2) Test chart	P.1-5-23	
②	Adjusting the magnification in the main scanning direction (printing adjustment)		Polygon motor speed adjustment	U053	POLYGON MOTOR	U053 test pattern	P.1-3-21	
③	Adjusting the magnification in the auxiliary scanning direction (printing adjustment)		Drive motor speed adjustment	U053	MAIN MOTOR	U053 test pattern	P.1-3-21	
④	Adjusting the center line (printing adjustment)		Adjusting the LSU print start timing	U034	LSU OUT LEFT	U034 test pattern	P.1-3-19	
⑤	Adjusting the center line of the cassettes and paper feeder (printing adjustment)		Adjusting the position of the rack adjuster	U034	LSU OUT LEFT	U034 test pattern	-	Adjusts the position of each paper source.
⑥	Adjusting the leading edge registration (printing adjustment)		Registration clutch turning on timing (secondary paper feed start timing)	U034	LSU OUT TOP	U034 test pattern	P.1-3-18	
⑦	Adjusting the leading edge margin (printing adjustment)		LSU illumination start timing	U402	LESD	U402 test pattern	P.1-3-65	
⑧	Adjusting the trailing edge margin (printing adjustment)		LSU illumination end timing	U402	TRAIL TRAIL(DUP) TRAIL(MP)	U402 test pattern	P.1-3-65	To make an adjustment for duplex copying, select TRAIL(DUP). To make an adjustment for MP tray, select TRAIL(MP).
⑨	Adjusting the left and right margins (printing adjustment)		LSU illumination start/end timing	U402	A C	U402 test pattern	P.1-3-65	
⑩	Adjusting magnification of the scanner in the main scanning direction (scanning adjustment)		Data processing	U065 U070	MAIN SCAN ADJ CIS MAIN ADJ	Test chart	P.1-3-23 P.1-3-26	

Adjusting order	Item	Image	Description	Maintenance mode		Original	Page	Remarks
				Item No.	Mode			
⑪	Adjusting magnification of the scanner in the auxiliary scanning direction (scanning adjustment)		Original scanning speed	U065 U070	SUB SCAN ADJ CONVEY SPEED/ CIS SUB ADJ	Test chart	P.1-3-23 P.1-3-26	U065: For copying an original placed on the platen. U070: For copying originals from the DP.
⑫	Adjusting the center line (scanning adjustment)		Adjusting the original scan data (image adjustment)	U067 U072	ADJUST DATA1/2 ADJUST DATA1/2/3	Test chart	P.1-3-25 P.1-3-30	U067: For copying an original placed on the platen. U072: For copying originals from the DP.
⑬	Adjusting the leading edge registration (scanning adjustment)		Original scan start timing (image adjustment)	U066 U071	ADJUST DATA1/2 ADJUST DATA1/2/ 3/4/5	Test chart	P.1-3-24 P.1-3-28	U066: For copying an original placed on the platen. U071: For copying originals from the DP.
⑭	Adjusting the leading edge margin (scanning adjustment)		Adjusting the original scan data (image adjustment)	U403 U404	B MARGIN B MARGIN/ B MARGIN(BACK)	Test chart	P.1-3-66 P.1-3-67	U403: For copying an original placed on the platen. U404: For copying originals from the DP.
⑮	Adjusting the trailing edge margin (scanning adjustment)		Adjusting the original scan data (image adjustment)	U403 U404	D MARGIN D MARGIN/ D MARGIN(BACK)	Test chart	P.1-3-66 P.1-3-67	U403: For copying an original placed on the platen. U404: For copying originals from the DP.
⑯	Adjusting the left and right margins (scanning adjustment)		Adjusting the original scan data (image adjustment)	U403 U404	A MARGIN C MARGIN A MARGIN/ A MARGIN(BACK) C MARGIN/ C MARGIN(BACK)	Test chart	P.1-3-66 P.1-3-67	U403: For copying an original placed on the platen. U404: For copying originals from the DP.

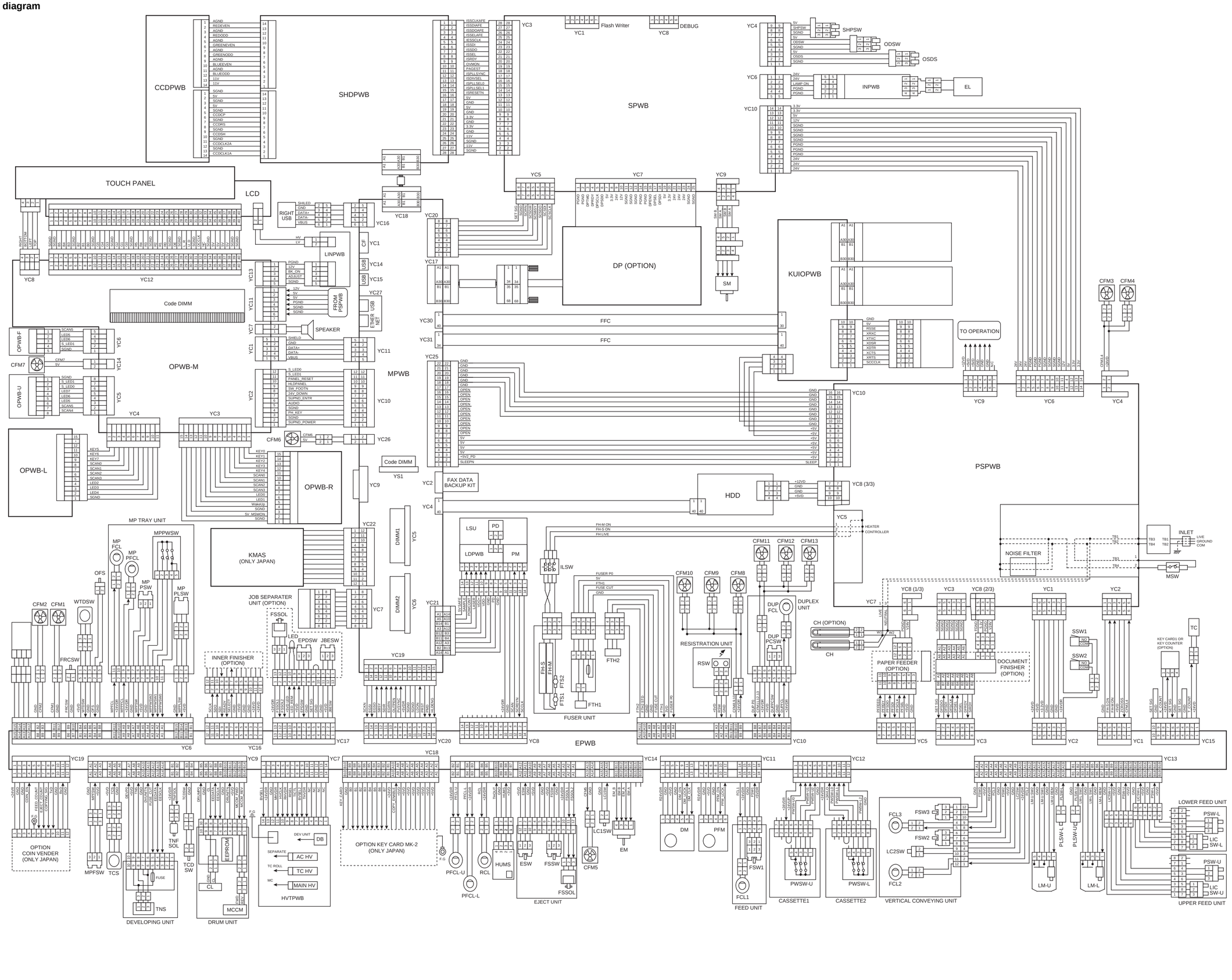
When maintenance item U411 (Adjusting the scanner automatically) is run using the specified original (P/N 302FZ56990), the following adjustments are automatically made:
Adjusting the scanner magnification (U065)
Adjusting the scanner leading edge registration (U066)
Adjusting the scanner center line (U067)

When maintenance item U411 (Adjusting the scanner automatically) is run using the specified original (P/N 2AC68241), the following adjustments are automatically made:
Adjusting the DP magnification (U070)
Adjusting the DP scanning timing (U071)
Adjusting the DP center line (U072)

Image quality

Item	Specifications
100% magnification	Machine: ±0.8% Using DP: ±1.5%
Enlargement/reduction	Machine: ±1.0% Using DP: ±1.5%
Lateral squareness	Machine: ±1.5 mm/375 mm Using DP: ±2.5 mm/375 mm
Leading edge registration	Cassette: ±2.5 mm MP tray: ±2.5 mm Duplex copying: ±2.5 mm
Skewed paper feed	Cassette: 1.5 mm or less MP tray: 1.5 mm or less Duplex copying: 2.0 mm or less
Left-right difference	Cassette: ±2.0 mm MP tray: ±2.0 mm Duplex mode: ±3.0 mm
Curling	Simplex mode: 10.0 mm or less Duplex mode: 10.0 mm or less

General wiring diagram



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