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SERVICE MANUAL

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CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

It may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for proper disposal.

ATTENTION

IL Y A UN RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACEE PAR UN MODELE DE TYPE INCORRECT. METTRE AU REBUT LES BATTERIES UTILISEES SELON LES INSTRUCTIONS DONNEES.

Il peut être illégal de jeter les batteries dans des eaux d'égout municipales. Vérifiez avec les fonctionnaires municipaux de votre région pour les détails concernant des déchets solides et une mise au rebut appropriée.

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Revision history

Revision	Date	Replaced pages	Remarks
1	August 31, 2009	1-2-10, 1-2-11, 1-2-13, 1-3-2, 1-3-3, 1-3-17, 1-3-47, 1-5-2, 1-5-13	-
2	September 26, 2009	Contents, 1-6-3	-

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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.

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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.

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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. .....

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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. .....

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- 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. .....

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1-1-1 Specifications

Type ..... Desktop
Printing system ..... Indirect electrostatic system
Supported original types ..... Sheets, books and three-dimensional objects
Maximum original size: A3/Ledger
Original feed system ..... Fixed
Paper weight ..... Cassette: 64 - 105 g/m²
MP tray: 45 - 160 g/m²
Paper type ..... Cassette: Plain, Rough, Recycled, Preprinted, Bond, Color (Colour), Prepunched, Letterhead, High Quality, Custom 1 to 8
MP tray: Plain, Transparency (OHP film), Rough, Vellum, Labels, Recycled, Preprinted, Bond, Cardstock, Color (Colour), Prepunched, Letterhead, Thick, Envelope, High Quality, Custom 1 to 8
Paper size ..... Cassette: A3, B4, A4, A4R, B5, B5R, A5R, Folio, Ledger, Legal, Letter, LetterR, StatementR, Oficio II, 8K, 16K
MP tray: A3, B4, A4, A4R, B5, B5R, A5R, B6R, A6R, Folio, Ledger, Legal, Letter, LetterR, Statement, Oficio II, 8K, 16K
A3, B4, A4, A4R, B5, B5R, A5R, B6R, A6R, Folio, Ledger, Legal, Letter, LetterR, Hagaki, Oufuku Hagaki, Envelope DL, Envelope C5, Envelope C4, Envelope #10 (Comm. #10), Envelope #9 (Comm. #9), Envelope #6 (Comm. #6 3/4), Envelope Monarch, ISO B5, Youkei 2, Youkei 4, Executive, Statement, Oficio II, 8K, 16K, 16KR,
Zoom level ..... Manual mode: 25 to 400%, 1% increments
Auto mode: Preset zoom
Printing speed ..... 18 ppm model
A4/Letter: 18 sheets/min.
A4R/LetterR: 13 sheets/min.
A3/Ledger: 8 sheets/min.
B4/Legal: 8 sheets/min.
B5: 16 sheets/min.
B5R: 13 sheets/min.
A5R: 10 sheets/min.
22 ppm model
A4/Letter: 22 sheets/min.
A4R/LetterR: 13 sheets/min.
A3/Ledger: 10 sheets/min.
B4/Legal: 11 sheets/min.
B5: 20 sheets/min.
B5R: 13 sheets/min.
A5R: 10 sheets/min.
First copy time ..... 5.7 s or less
Warm-up time ..... Room temperature 22 °C/71.6 °F, 60% RH
Power on: 17.2 s
Low power mode: 10 s
Sleep mode: 17.2 s
Paper capacity ..... Cassette: 300 sheets (80 g/m²), 150 sheets (90 g/m² or more)
MP tray: 100 sheets (A4/Letter or less), 25 sheets (B4/Legal or more)
Output tray capacity ..... Top tray: 250 sheets (80 g/m²)
Continuous copying ..... 1 to 999 sheets
Light source ..... Inert gas lamp
Scanning system ..... Flat bed scanning by CCD image sensor
Photoconductor ..... OPC (drum diameter 30 mm)
Image write system ..... Semiconductor laser
Charging system ..... Single positive corona charging
Developing system ..... Single component developing system
Toner: magnetism toner
Toner replenishing: Automatic from a toner container
Transfer system ..... Transfer roller
Separation system ..... Curvature separation and separation electrode
Cleaning system ..... Blade and cleaning roller

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Charge erasing system	Exposure by cleaning lamp
Fusing system	Heat roller
	Heat source: Halogen heaters
	Abnormally high temperature protection devices: thermostats
Main memory	Standard: 32 MB
	Maximum: 160 MB
Interface	USB interface connector: 1 (USB Hi-speed)
	Network interface: 1 (10 BASE-T/100 BASE-TX)
Resolution	600 x 600 dpi
Operating environment	Temperature: 10 to 32.5°C/50 to 90.5°F
	Humidity: 15 to 80% RH
	Altitude: 2500 m/8,202 ft maximum
	Brightness: 1500 lux maximum
Dimensions	568 (W) x 546 (D) x 502 (H) mm (main body only)
	22 3/8" (W) x 21 1/2" (D) x 19 3/4" (H) (main body only)
Weight	33 kg/72.8 lbs
Space required	838 mm (W) x 546 (D) mm (using MP tray)
	33" (W) x 21 1/2" (D) (using MP tray)
Power source	120 V AC, 60 Hz, 9.7 A
	220 to 240 V AC, 50 Hz, 5.1 A
Options	Document processor, paper feeder, duplex unit, key counter, printer kit and expansion memory

Duplex unit

Type	Internal type
Paper weight	64 - 105 g/m^2
Paper type	Plain, Recycled
Paper size	A3, B4, A4, A4R, B5, B5R, A5R, Folio, Ledger, Legal, Letter, LetterR, StatementR, Oficio II, 8K, 16K
Power source	Electrically connected to the machine.
Dimensions	363 (W) x 54 (D) x 181 (H) mm
	14 5/16" (W) x 2 1/8" (D) x 7 1/8" (H)
Weight	0.5 kg or less / 1.1 lbs or less

NOTE: These specifications are subject to change without notice.

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1-1-2 Parts names

(1) Body

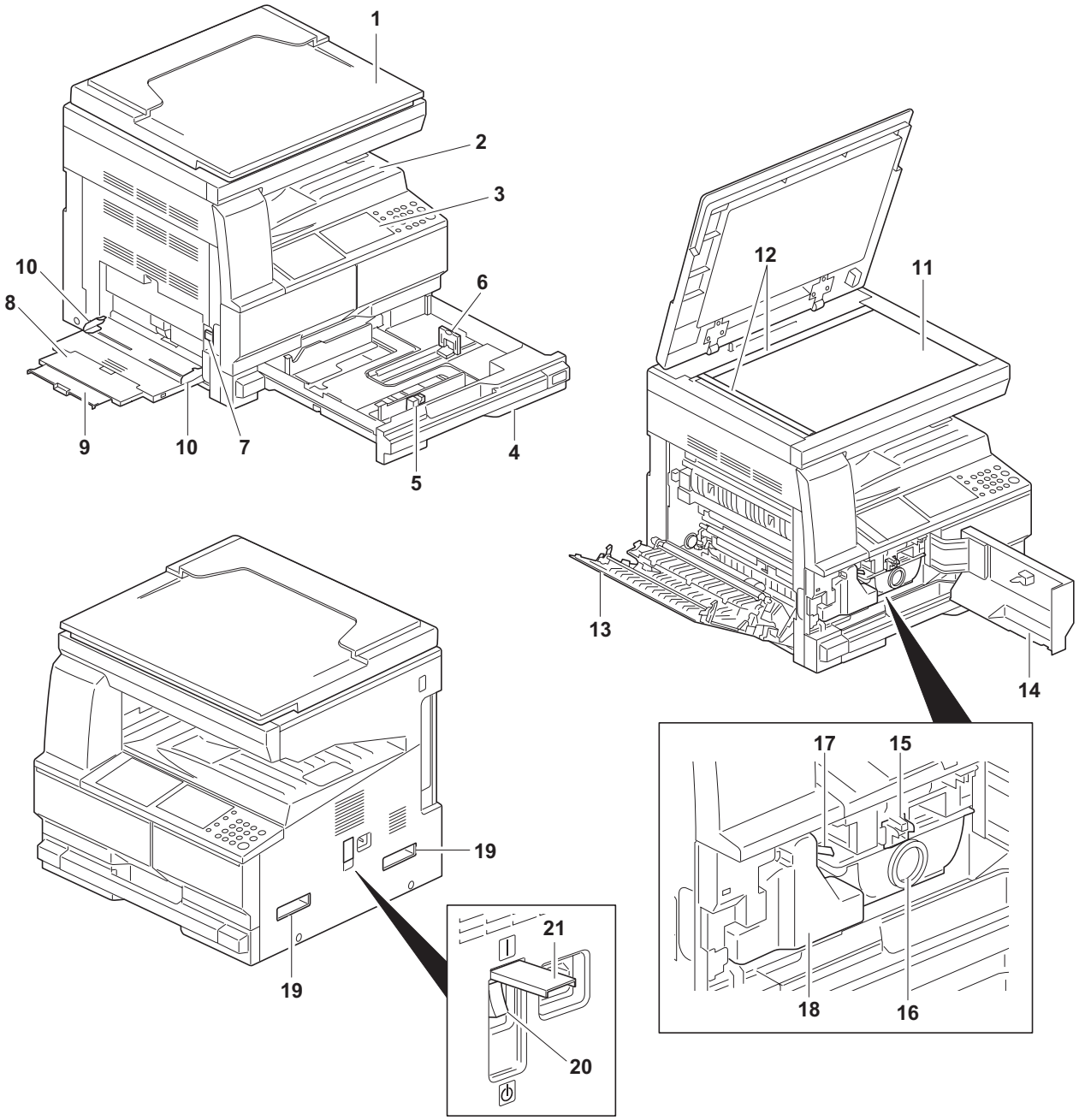

Figure 1-1-1

1. Original cover (option)
2. Output tray
3. Operation panel
4. Cassette
5. Paper width adjusting tab
6. Paper length adjusting tab
7. Left cover handle
8. MP tray
9. MP tray extension
10. Slider
11. Contact glass
12. Original size indicator plates
13. Left cover
14. Front cover
15. Toner container release lever
16. Toner container
17. Charger cleaner rod
18. Waste toner box
19. Handles for transport
20. Main power switch
21. Main power switch cover

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(2) Operation panel

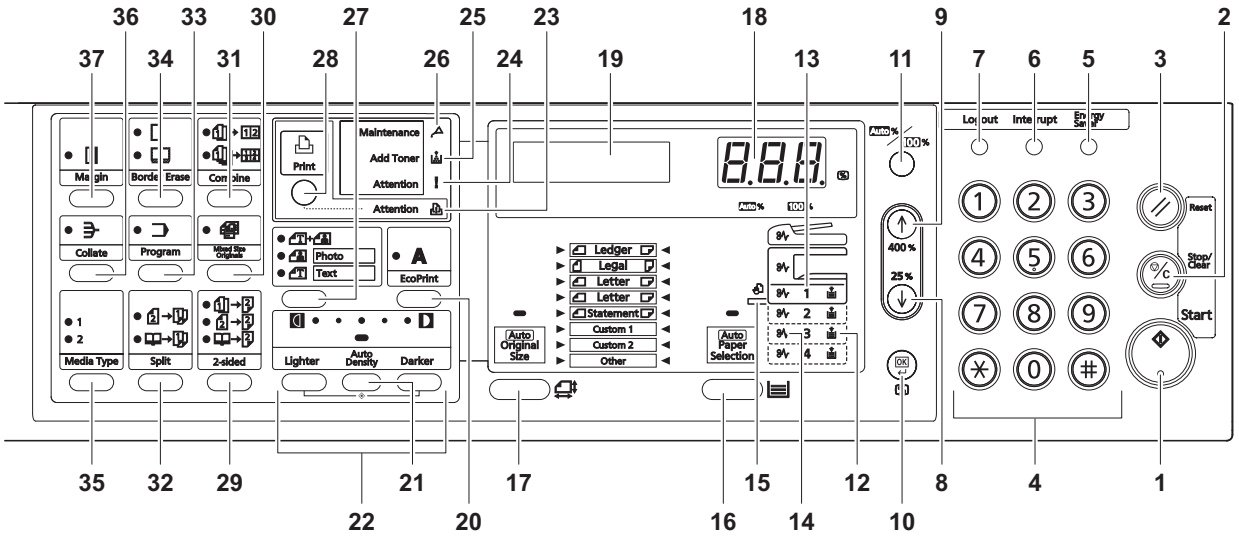

Figure 1-1-2

1. Start key
2. Stop/Clear key
3. Reset key
4. Numeric keys
5. Energy saver key
6. Interrupt key
7. Logout key
8. Zoom + key
9. Zoom - key
10. OK Key
11. Auto%100% key
12. Paper supply indicator
13. Paper supply level indicator
14. Paper misfeed indicator
15. MP indicator
16. Paper selection key
17. Original size key
18. No. of copies/Zoom display
19. Message display
20. EcoPrint key
21. Auto density key
22. Density adjustment key/Density display
23. Attention indicator
24. Error Indicator
25. Add toner indicator
26. Maintenance indicator
27. Image quality selection key
28. Printer Key
29. 2-sided key
30. Mixed original size key
31. Combine key
32. Split key
33. Program key
34. Border erase key
35. Media type key
36. Collate key
37. Margin key

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1-1-3 Machine cross section

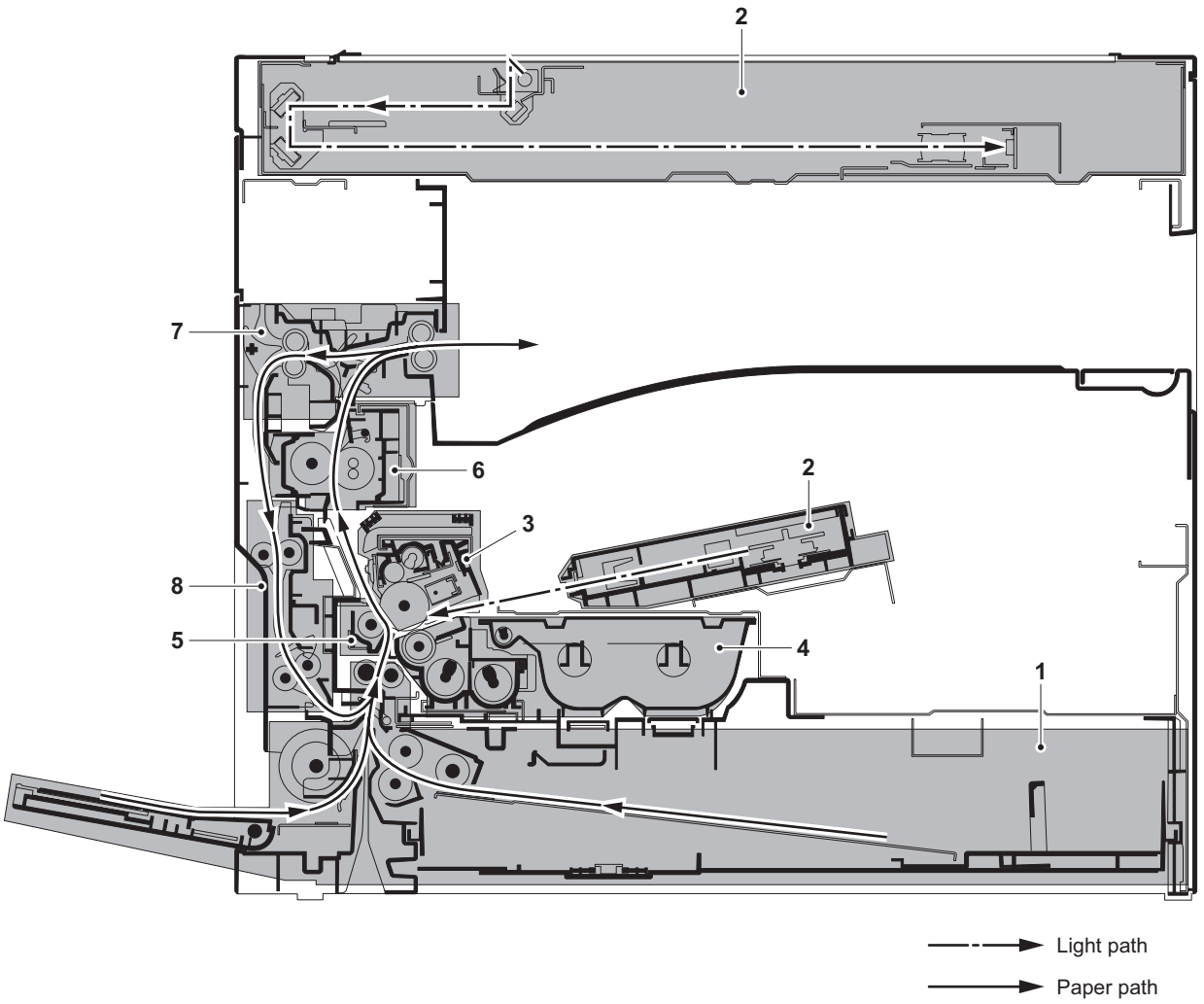

Figure 1-1-3 Machine cross section

1. Paper feed section
2. Optical section
3. Drum section
4. Developing section
5. Transfer and separation sections
6. Fuser section
7. Eject and switchback sections
8. Duplex section

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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, 9.7 A
   220 to 240 V AC, 5.1 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 locations subject to high temperature and high humidity or low temperature and low humidity; an abrupt change in the environmental temperature; and cool or hot, direct air.
   Avoid places subject to dust and vibrations.
   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 well-ventilated location.
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

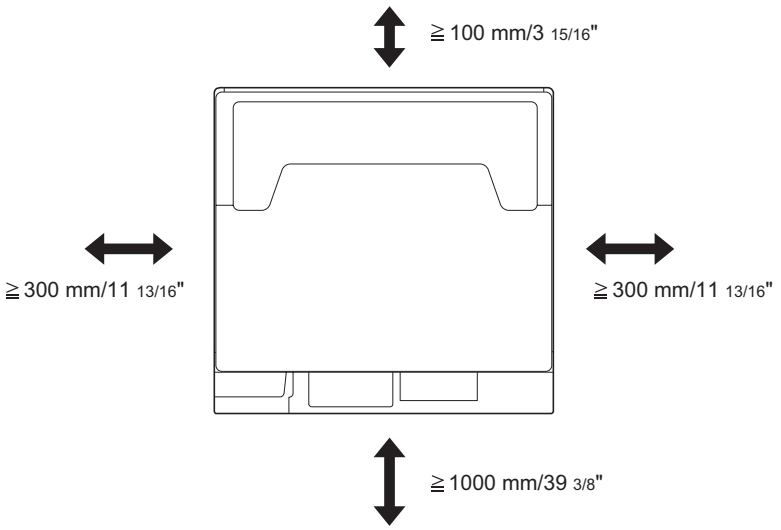

Figure 1-2-1 Installation dimensions

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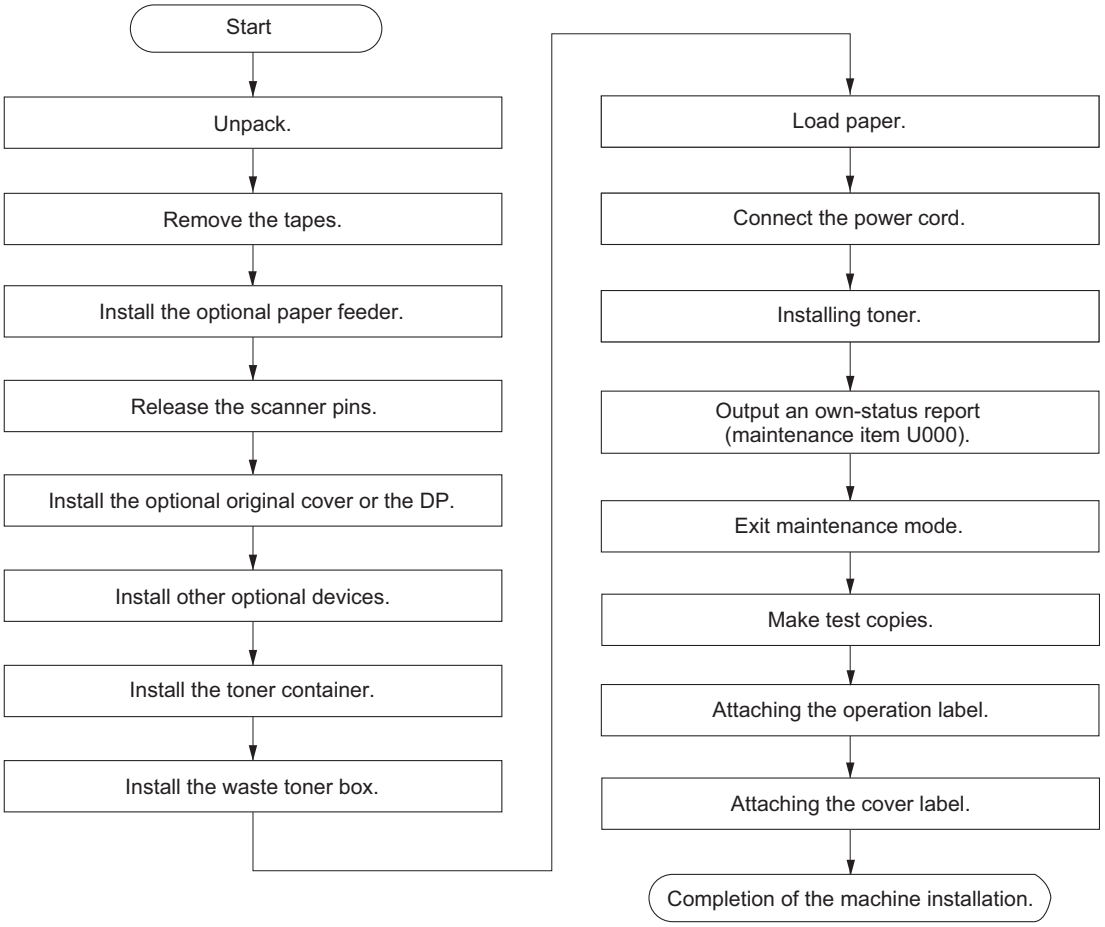
1-2-2 Unpacking and installation

(1) Installation procedure



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Unpacking.

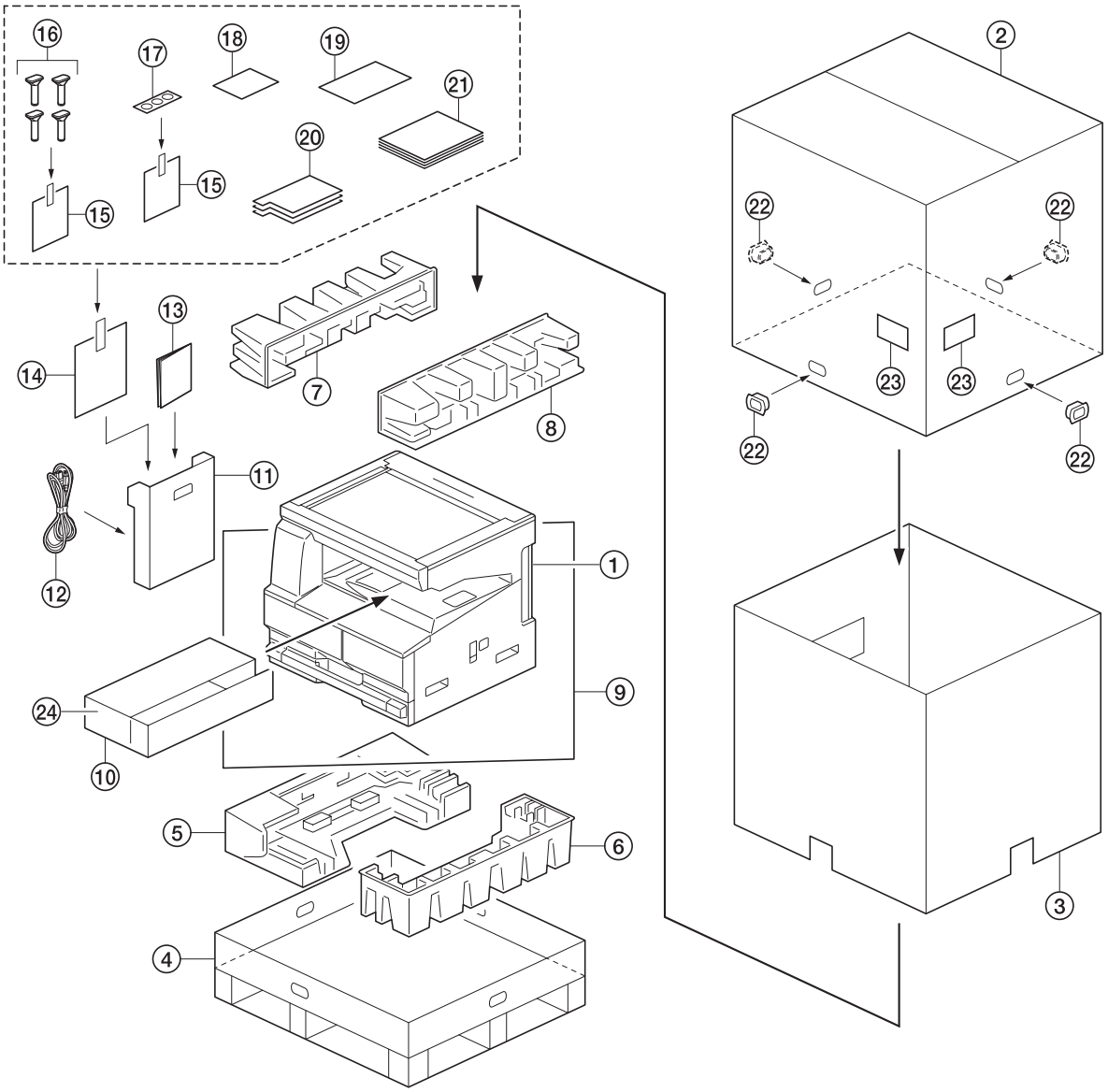

Figure 1-2-2 Unpacking

1. Machine
2. Outer case
3. Inner frame
4. Skid
5. Bottom left pad
6. Bottom right pad
7. Top left pad
8. Top right pad
9. Machine cover
10. Eject spacer
11. Document tray
12. Power cord
13. Paper storage bags
14. Plastic bag
15. Plastic bag
16. Cursor pins
17. Cover label
18. Cassette size labels
19. Operation label A
20. Operation label B
21. Operation guide*
22. Hinge joints
23. Barcode labels
24. Toner container

*: 120 V specifications only

Caution: Place the machine on a level surface.

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Remove the tapes.

1. Remove four tapes and remove the plastic sheet.

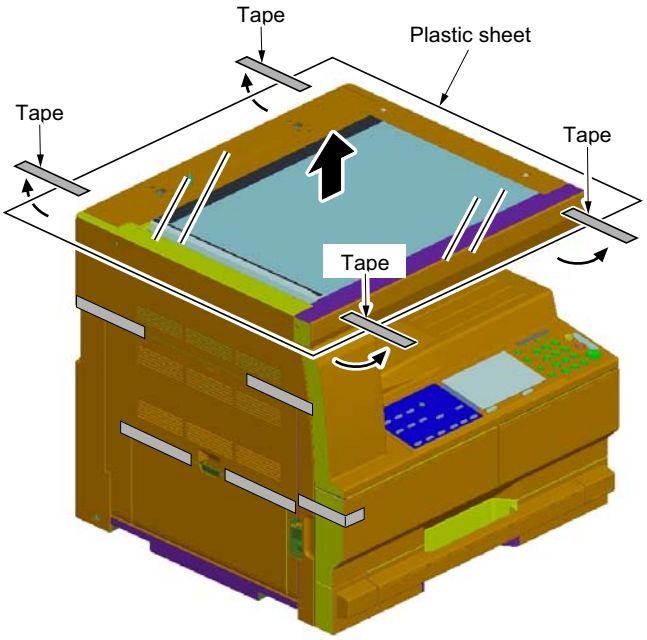

Figure 1-2-3

2. Remove five tapes.

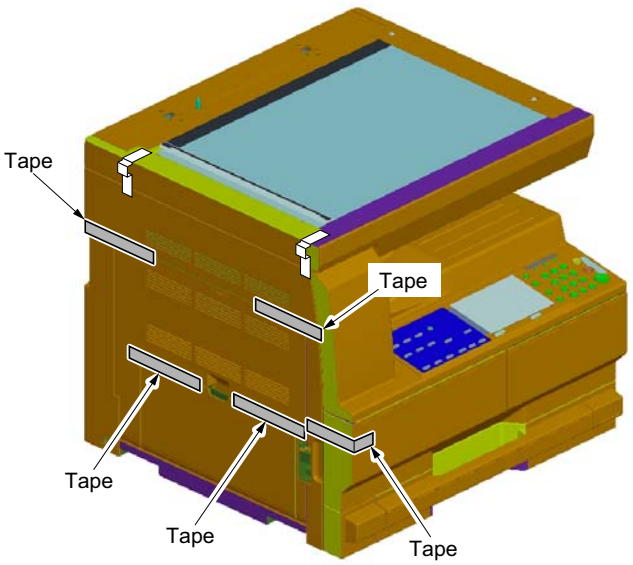

Figure 1-2-4

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3. Pull the cassette out.
4. Remove the tapes.
5. Push the cassette back in.

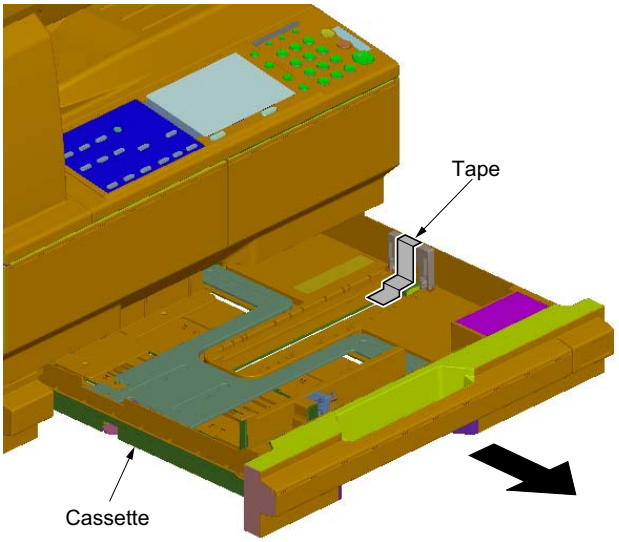

Figure 1-2-5

Install the optional paper feeder.

1. Install the optional paper feeder as necessary.

Release the scanner pins.

1. Remove two tapes.
2. Remove two scanner pins.

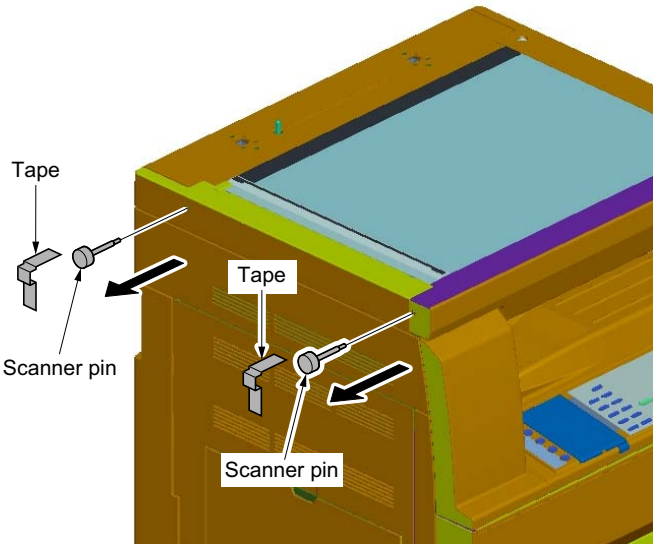

Figure 1-2-6

Install the optional original cover or the DP.

1. Install the optional original cover or DP.

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Install other optional devices.

1. Install the optional devices (duplex unit and/ or printer kit etc.) as necessary.

Install the toner container.

1. Open the front cover.
2. Hold the toner container vertically and tap the upper part five times or more.
   Turn the toner container upside down and tap the upper part five times or more.

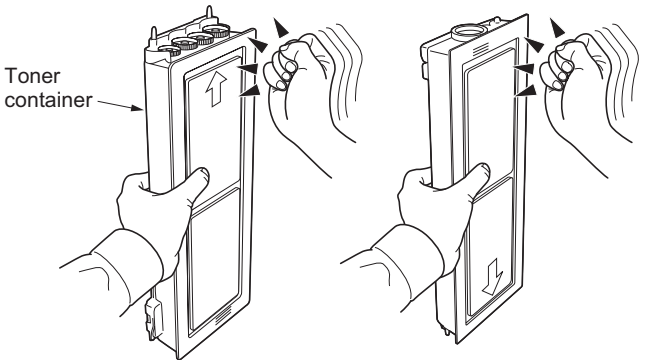

Figure 1-2-7

3. Shake the toner container up and down five times or more.
   Turn the toner container upside down and shake it five times or more.

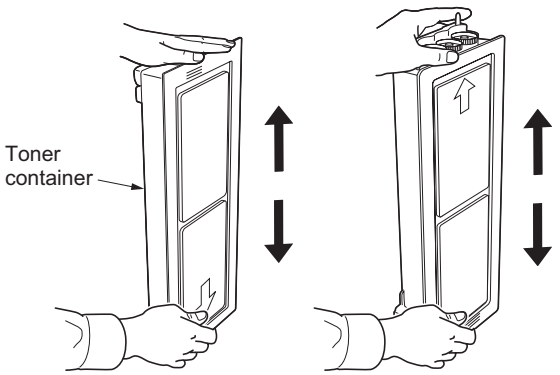

Figure 1-2-8

4. Shake the toner container approximately five times in the horizontal direction to stir toner.

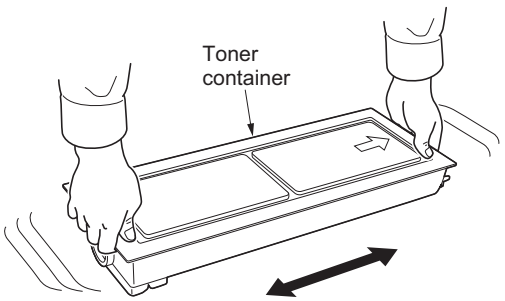

Figure 1-2-9

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

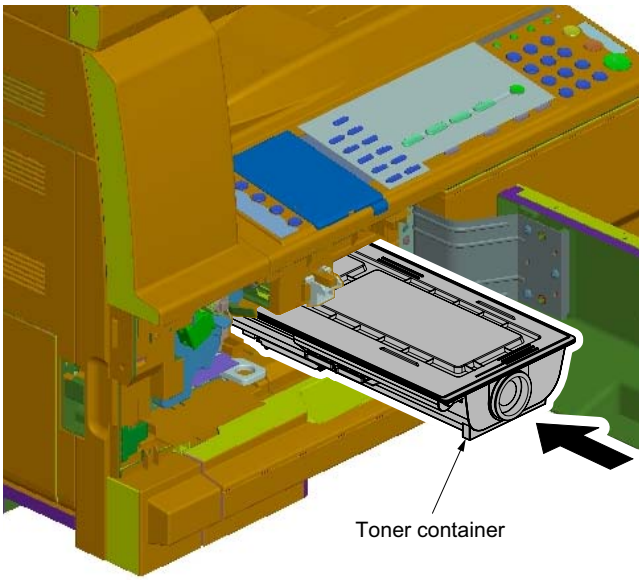

Figure 1-2-10

Install the waste toner box.

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

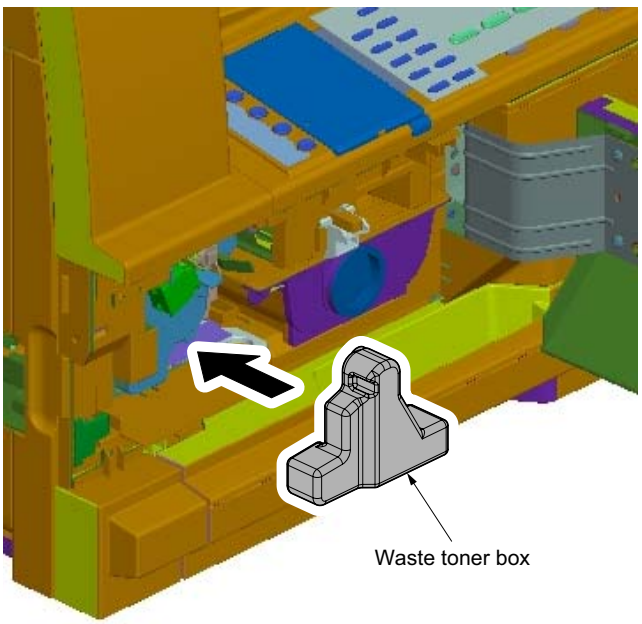

Figure 1-2-11

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Load paper.

1. Load paper in the cassette.

Connect the power cord.

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

Installing toner.

1. Turn the main power switch on. Toner installation is started.
2. The drive chain is disengaged when toner installation is completed.
   Run maintenance mode U130 if [Add Toner] remains displayed even after the drive chain is disengaged.

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

1. Enter the maintenance mode by entering 10871087 using the numeric keys.
2. Enter 000 using the numeric keys and press the start key.
3. Select d-L and press the start key to output a list of the current settings of the maintenance items.
4. Press the stop/clear key.

Exit maintenance mode.

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

Make test copies.

1. Place an original and make test copies.

Attaching the operation label.

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

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Attaching the cover label.

1. Attach the cover labels to three screw holes in the machine.
   Right side: Two
   Left side: One

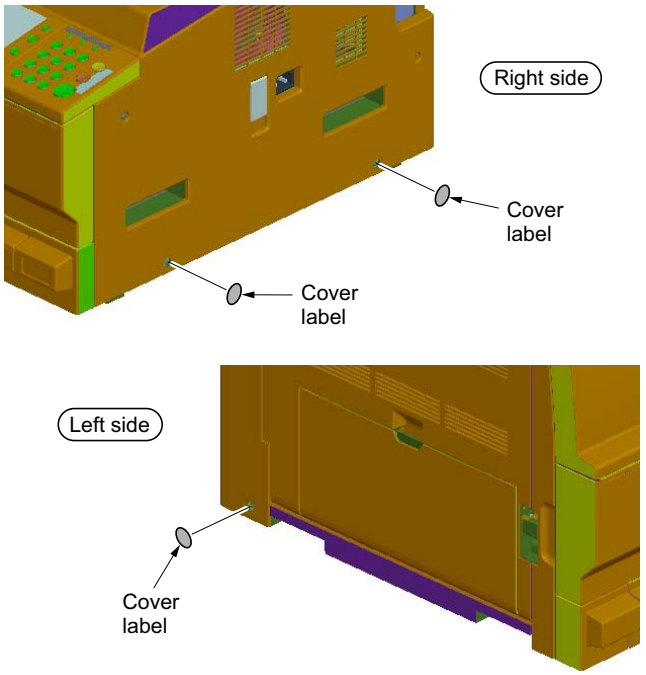

Figure 1-2-12

Completion of the machine installation.

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(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(A3/LEDGER)
U254	Turning auto start function on/off	ON
U260	Selecting the timing for copy counting	After ejection
U277	Setting auto application change time	30 s
U285	Setting service status page	ON
U342	Setting the ejection restriction	ON
U343	Switching between duplex/simplex copy mode	OFF
U344	Setting the low-power mode	ENERGY STAR (inch specifications) GEEA (metric specifications)

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

Installing the key counter requires the following component:
Key counter (P/N 3025418011)
Key counter set (P/N 302A369708)
Key counter wire set (P/N 302KK94590)
Key counter mounting plate (P/N 2C960100)

Supplied parts of key counter set:
Key counter socket assembly (P/N 3029236241)
Key counter cover (P/N 3066060011)
Key counter mount (P/N 3066060041)
Key counter retainer (P/N 302GR03020)
Key counter cover retainer (P/N 302GR03010)
Two (2) Edgings (P/N 7YZM210006++H01)
One (1) Band (P/N M21AH010)
One (1) M3 × 8 tap-tight P screw (P/N 5MBTPB3008PW++R)
Two (2) M4 × 10 tap-tight P screws (P/N 5MBTPB4010PW++R)
Two (2) M4 × 10 tap-tight S screws (P/N 5MBTPB4010TW++R)
Two (2) M3 × 6 bronze flat-head screws (P/N 7BB003306H)
One (1) M4 × 20 tap-tight S screw (P/N 7BB100420H)
One (1) M3 bronze nut (P/N 7BC1003055++H01)
One (1) M3 × 8 bronze binding screw (P/N B1B03080)
One (1) M4 × 30 tap-tight S screw (P/N B1B54300)
Five (5) M4 × 6 chrome TP screws (P/N B4A04060)
Two (2) M4 × 10 chrome TP screws (P/N B4A04100)

Supplied parts of key counter wire set:
Key counter wire (P/N 302KK46300)
One (1) Wire saddle RLWC-1SV (P/N 7YZM610001++H01)
One (1) Wire saddle RLWT-0.5V (P/N 7YZM610009++H01)
One (1) Edging (P/N 7YZM210003++H01)

Procedure

1. Turn the main power switch off and unplug the power cable from the wall outlet.
2. Fit the key counter socket assembly to the key counter retainer using two screws and nut.
3. Fit the key counter mount to the key counter cover using two screws.
4. Fit the key counter retainer to the key counter mount using two screws.

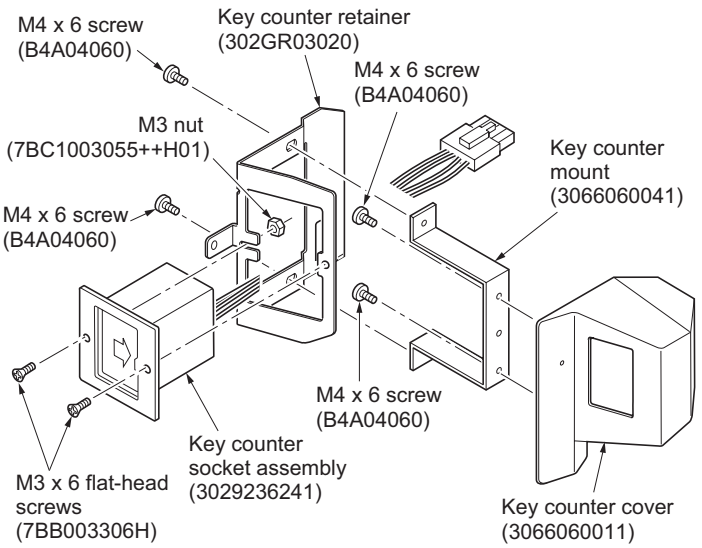

Figure 1-2-13

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5. Remove five screws and remove the rear cover.

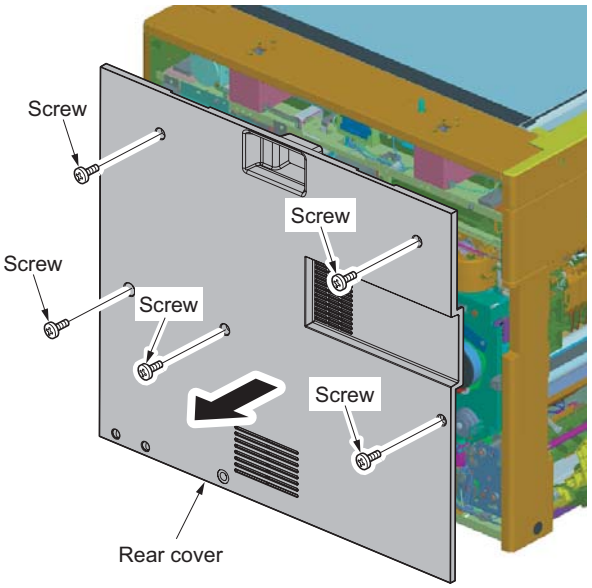

Figure 1-2-14

6. Cut out the aperture on the right middle cover using nippers.

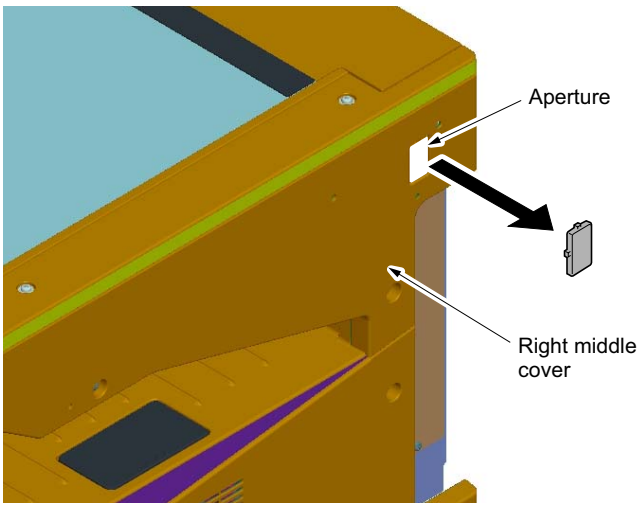

Figure 1-2-15

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7. Fit the wire saddle and the edging to machine.

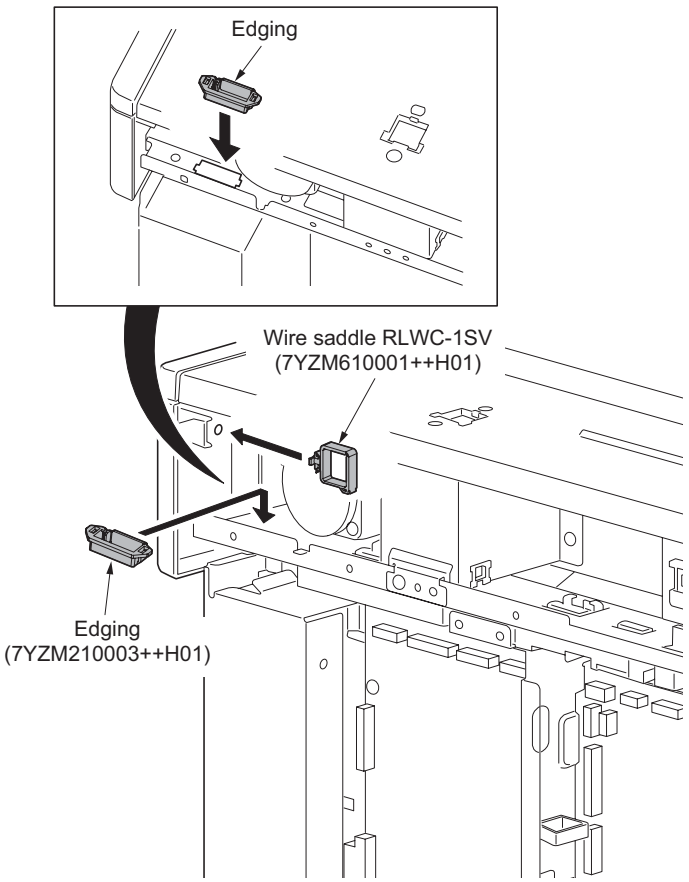

Figure 1-2-16

8. Pass the key counter wire through the wire saddle, edging and hole of the wire guide.

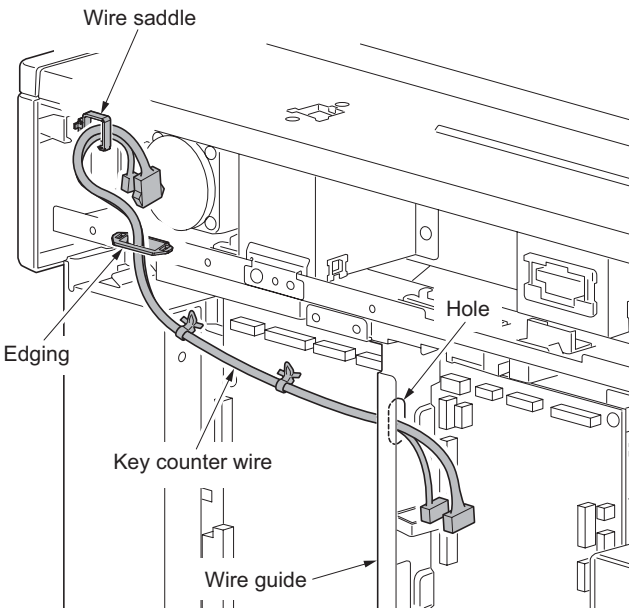

Figure 1-2-17

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9. Insert two bands of the key counter wire to the machine.

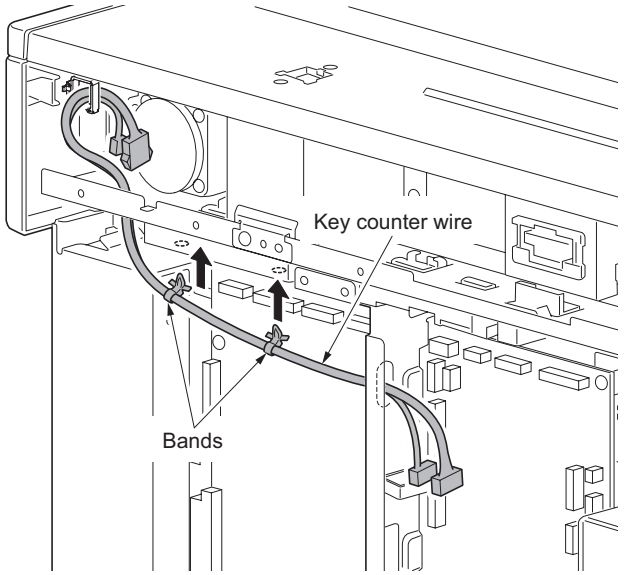

Figure 1-2-18

10. Connect the 4-pin connector of the key counter wire to the YC12 on the main/ engine PWB.
11. Pull the other 4-pin connector out from the aperture of the right middle cover.
12. Refit the rear cover.

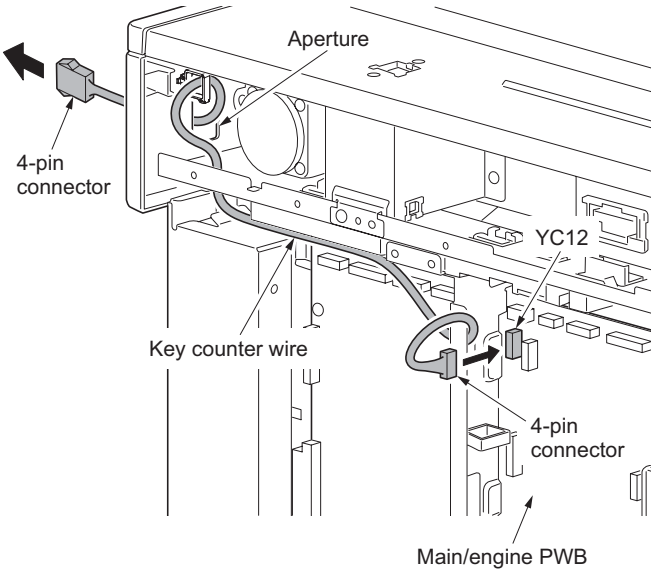

Figure 1-2-19

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13. Pass the 4-pin connector of the key counter signal cable through the aperture in the key counter mounting plate.
14. Hook the square hole on the key counter cover onto the key counter mounting plate.

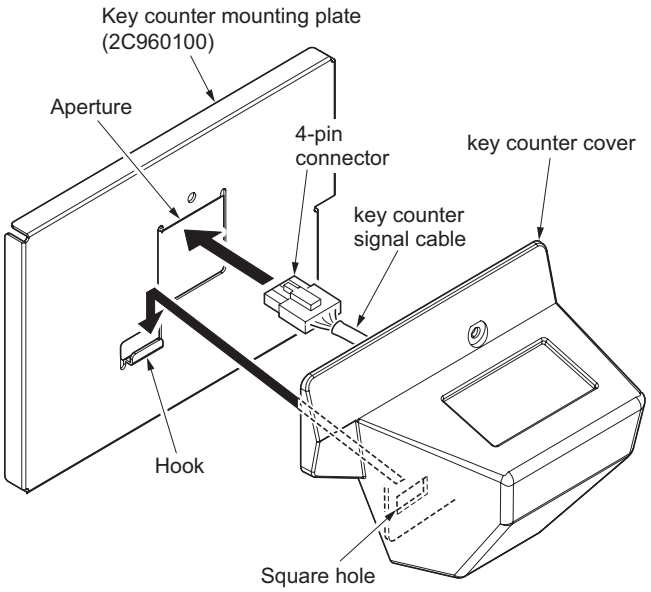

Figure 1-2-20

15. Connect the 4-pin connector of the key counter signal cable to the 4-pin connector of the key counter wire.
16. Insert the hook of the key counter mounting plate in the aperture of the right middle cover.
17. Fit the key counter cover and the key counter mounting plate using the M4 x 30 screw.
18. Insert the key counter into the key counter socket assembly.

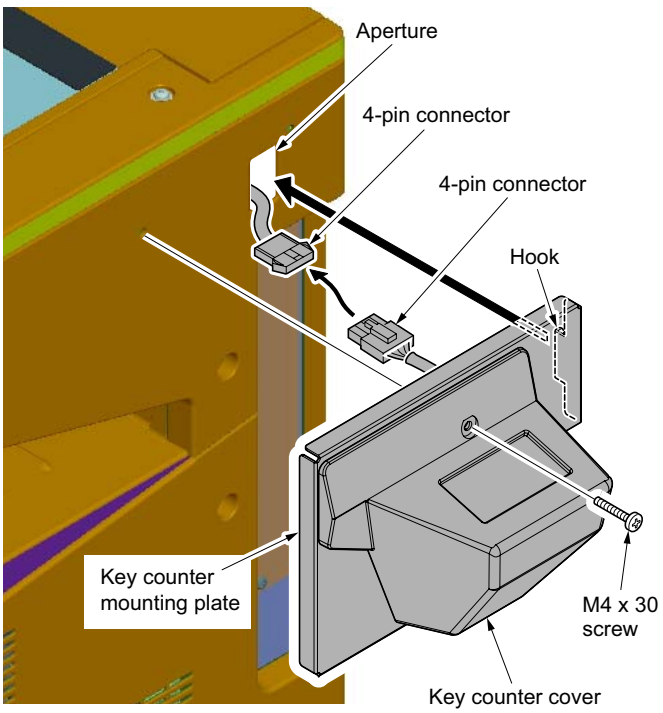

Figure 1-2-21

19. Turn the main power switch on and enter the maintenance mode.
20. Run maintenance item U204 and select "Key counter".
21. Exit the maintenance mode.
22. Check that the message requesting the key counter to be inserted is displayed on the message display when the key counter is pulled out.
23. Check that the counter counts up as copies are made.

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1-2-4 Installing the cassette heater (option)

Installing the cassette heater requires the following component:
Cassette heater (P/N 302KK94470): for 220 to 240 V specifications only
Cassette heater (P/N 302KK94460): for 120 V specifications
One (1) M3 x 8 S tight screw (P/N 7BB700308H)

Procedure

1. Open the front cover.
2. Remove the screw and release three hooks and then remove the front right cover.
3. Pull out the cassette.

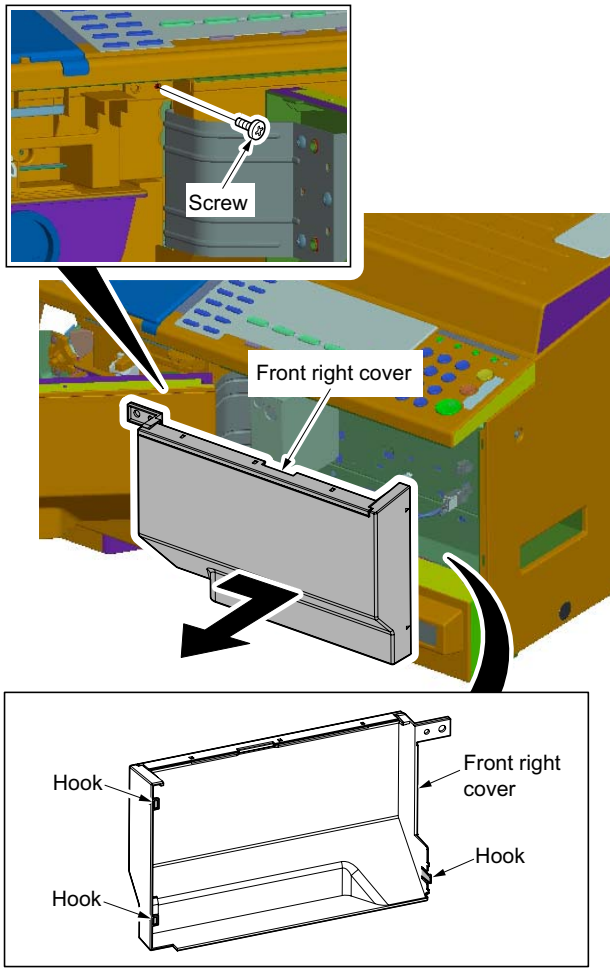

Figure 1-2-22

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4. Pass the cassette heater cable through the edging and fit the cassette heater to the machine.

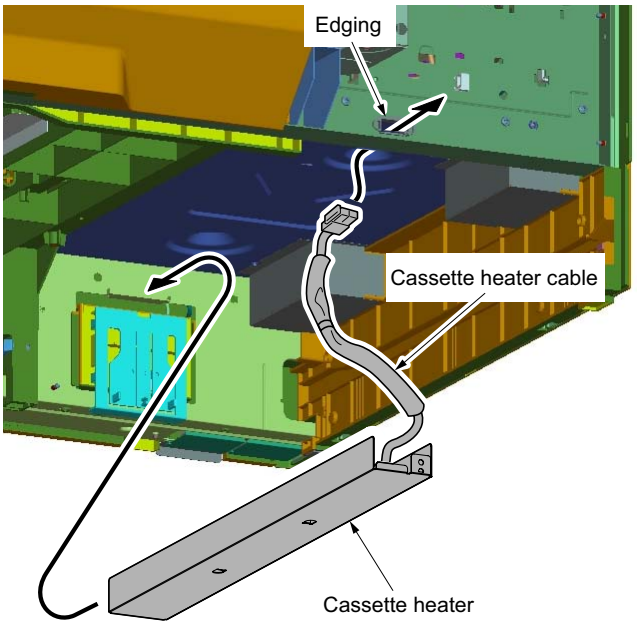

Figure 1-2-23

5. Attach the cassette heater using the M3 x 8 S tight screw.
6. Pass the cassette heater cable through the clamp. Connect the connector of the cassette heater cable to the connector of the machine.
7. Refit all the removed parts.

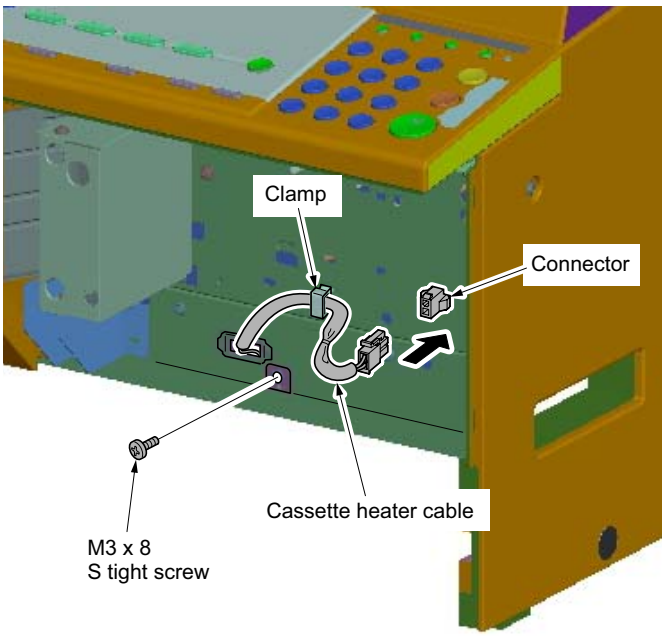

Figure 1-2-24

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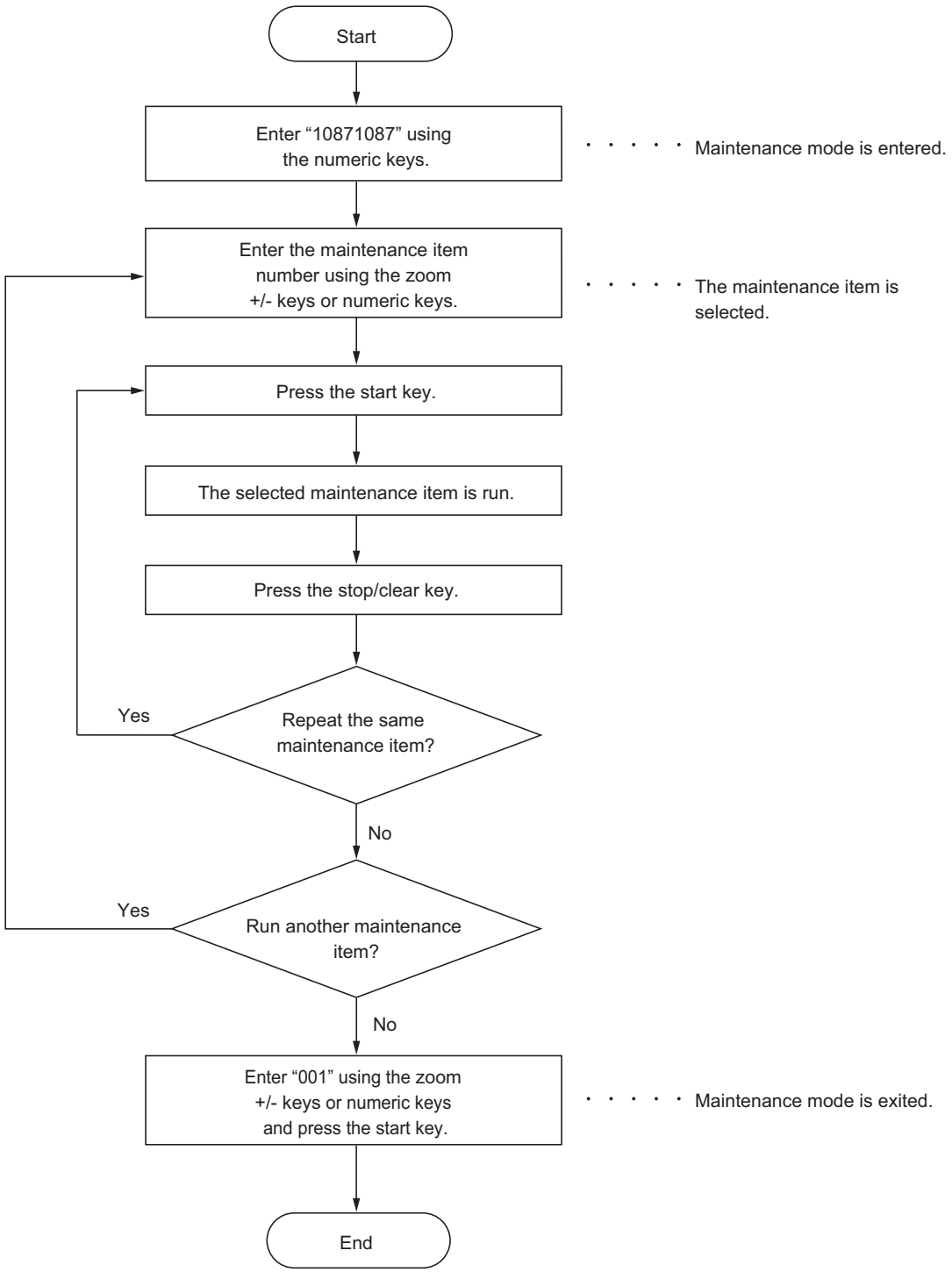
1-3-1 Maintenance mode

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

(1) Executing a maintenance item



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(2) Maintenance mode 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	-
	U004	Checking the machine number	-
	U005	Copying without paper	-
	U019	Displaying the ROM version	-
Initialization	U020	Initializing all data	-
	U021	Initializing memories	-
Drive, paper feed and paper convey-ing system	U030	Checking motor operation	-
	U031	Checking switches for paper conveying	-
	U032	Checking clutch operation	-
	U034	Adjusting the print start timing Adjusting the leading edge registration Adjusting the center line Adjusting the trailing edge margin Adjusting the leading edge registration	 2.8/0.0/0.0/0.0/0.0/0.8*1 -2.4/0.0/0.0/0.0/0.0/0.0*1 2.0*1 2.0/2.0/2.0/2.0/2.0/2.0*1
	U035	Setting folio size Length/Width	 330/210*1
	U051	Adjusting the deflection in the paper	30/20/ 0/ -20/ -20/20*1
	U053	Performing fine adjustment of the motor speed	0.4/0.6/-0.5/0/0/0/0.5*1 -0.1/-0.2/-0.3*1
Optical	U060	Adjusting the scanner input properties	12*1
	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 -10*1
	U066	Adjusting the scanner leading edge registration	0*1
	U067	Adjusting the scanner center line	-10*1
	U068	Adjusting the scanning position for originals from the DP	0*1
	U070	Adjusting the DP magnification	0/0*1
	U071	Adjusting the DP scanning timing	0/0/0/0*1
	U072	Adjusting the DP center line	0/0*1
	U073	Checking scanner operation	-
	U074	Adjusting the DP input light luminosity	1*1
	U076	Adjusting the DP automatically	-
	U087	Setting DP reading position modification operation	ON/35*1
	U088	Setting the input filter (moire reduction mode)	Off*1
	U089	Outputting a MIP-PG pattern	-
	U092	Adjusting the scanner automatically	-
	U093	Setting the exposure density gradient Text/text and photo/photo mode	 0/0/0*1
	U099	Adjusting original size detection	170/30/240*1

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

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Section	Item No.	Content of maintenance item	Initial setting*
High voltage	U100	Setting the main high voltage Grid control voltage Copy interval Copy quantity Correction amount	 107*1 60*1 50*1 10*1
	U101	Setting the other high voltages	27/45/22/45/123/126/33/31*1 1/20/42/2*1
	U110	Checking the drum count	-
Developing	U130	Initial setting for the developing unit	-
	U144	Setting toner loading operation	Off/5/30*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 Primary stabilization fuser temperature Secondary stabilization fuser temperature Copying operation temperature 1 Copying operation temperature 2 Number of sheets for fuser control Number of sheets for fuser control (thick paper)	 145*1 165*1 175*1 185*1 1*1 2*1
	U162	Stabilizing fuser forcibly	-
	U163	Resetting the fuser problem data	-
	U167	Checking the fuser count	-
	U198	Setting the fuser phase control	Off*1,*2
	U199	Checking the fuser temperature	-
Operation panel and support equipment	U200	Turning all LEDs on	-
	U203	Checking DP separately	-
	U204	Setting the presence or absence of a key card or key counter	Off*1
	U207	Checking the operation panel keys	-
	U243	Checking the operation of the DP motors	-
	U244	Checking the DP switches	-
	U245	Checking messages	-
Mode setting	U250	Setting the maintenance cycle	150000*1,*2
	U251	Checking/clearing the maintenance count	0*1,*2
	U252	Setting the destination	Japan*1
	U253	Switching between double and single counts	A3*1,*2
	U254	Turning auto start function on/off	On*1,*2
	U260	Selecting the timing for copy counting	After ejection*1,*2
	U265	Setting the destination specifications	0*1
	U277	Setting auto application change time	30*1,*2
	U285	Setting service status page	On*1,
	U286	Setting the optional language	0*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

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

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Section	Item No.	Content of maintenance item	Initial setting*
Mode setting	U343	Switching between duplex/simplex copy mode	Simplex copy*1
	U344	Setting the low-power mode	ENERGY STAR (inch)*1,*2 GEEA (metric)*1,*2
	U345	Setting the value for maintenance due indication	0*1,*2
Image processing	U402	Adjusting margins of image printing	3.0/3.5/4.5*1
	U403	Adjusting margins for scanning an original on the contact glass	2.0/3.0/2.0/2.0*1
	U404	Adjusting margins for scanning an original from the DP	2.0/3.0/2.0/2.0*1
	U407	Adjusting the leading edge registration for memory image printing	0.0
Other	U901	Checking/clearing copy counts by paper feed locations	-
	U903	Checking/clearing the paper jam counts	-
	U904	Checking/clearing the service call counts	-
	U905	Checking counts by optional devices	-
	U908	Checking the total count	-
	U910	Clearing the black ratio data	-
	U911	Checking/clearing copy counts by paper sizes	-
	U920	Checking the accounting counts	
	U927	Clearing the all copy counts and machine life counts (one time only)	-
	U928	Checking the machine life count	-
	U931	Setting the automatic toner install	Off*1
	U941	Setting the default magnification ratio of the default cassette	100%*1
	U942	Setting of amount of slack for feeding from DP	0/0*1
	U955	Setting operation panel type	0/0*1,*2
	U969	Checking of toner area code	-
	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

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(3) Contents of maintenance mode items

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U000</td><td>
Outputting an own-status report
Description
Outputs lists of the current settings of the maintenance items, and paper jam and service call occurrences.
Purpose
To check the current setting of the maintenance items, or paper jam or service call occurrences. Before initializing 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 using the exposure adjustment keys.
<table>
<tr><th>Display</th><th>Output list</th></tr>
<tr><td>d-L</td><td>List of the current settings of the maintenance modes</td></tr>
<tr><td>J-L</td><td>List of the paper jam occurrences</td></tr>
<tr><td>C-L</td><td>List of the service call occurrences</td></tr>
</table>
3. Press the start key. A list is output.
When A4/Letter paper is available, a report of this size is output. If not, specify the paper feed location.
Completion
Press the stop/clear 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. Select [on] using the zoom +/- keys.
3. Press the start key.The mirror frame of the scanner returns to the position for transport.
Completion
The power switch turns off.
</td></tr>
</table>

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Maintenance item No.	Description
U004	**Checking the machine number** **Description** Displays the machine number. **Purpose** To check the machine number. **Method** 1. Press the start key. 2. Change the indication of the copy quantity display using the exposure adjustment keys.

Exposure indicator	Copy quantity display
Exp. 1 (lit)	1st digit of machine number
Exp. 2 (lit)	2nd digit of machine number
Exp. 3 (lit)	3rd digit of machine number
Exp. 4 (lit)	4th digit of machine number
Exp. 5 (lit)	5th digit of machine number
Exp. 1 (flashing)	6th digit of machine number
Exp. 2 (flashing)	7th digit of machine number
Exp. 3 (flashing)	8th digit of machine number
Exp. 4 (flashing)	9th digit of machine number
Exp. 5 (flashing)	10th digit of machine number

Code Corresponding Table

0: 30	A: 41	K: 4B	U: 55
1: 31	B: 42	L: 4C	V: 56
2: 32	C: 43	M: 4D	W: 57
3: 33	D: 44	N: 4E	X: 58
4: 34	E: 45	O: 4F	Y: 59
5: 35	F: 46	P: 50	Z: 5A
6: 36	G: 47	Q: 51	
7: 37	H: 48	R: 52	
8: 38	I: 49	S: 53	
9: 39	J: 4A	T: 54	

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

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></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 using the exposure adjustment keys.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>P</td><td>Only the machine operates.</td></tr>
<tr><td>P-d</td><td>Both the machine and DP operate (continuous operation).</td></tr>
</table>
3. Press the interrupt key.
4. Set the operation conditions required. Changes in the following settings can be made.
Paper feed locations
Magnifications
Number of copies: continuous copying is performed when set to 250.
Copy density
Keys on the operation panel other than the energy saver (preheat) key
5. To control the paper feed pulley, remove all the paper in the cassettes, or the cassettes. With the paper present, the paper feed pulley does not operate.
6. Press the start key.
Copy operation is simulated without paper under the set conditions.
7. To stop continuous operation, press the stop/reset key.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U019</td><td>
Displaying the ROM version
Description
Displays the part number of the ROM fitted to each board.
Purpose
To check the part number or to decide if the ROM version is new from the last digit of the number.
Method
1. Press the start key.
2. Select the item to be displayed using the image mode selection key and exposure adjustment keys.
<table>
<tr><th>Image mode LEDs</th><th>Exposure indicator</th><th>Copy quantity display</th></tr>
<tr><td>○ Text & Photo
○ Photo
● Text</td><td>Exp. 1 (lit)
Exp. 2 (lit)
Exp. 3 (lit)
Exp. 4 (lit)</td><td>“A” Part Code: Main PWB
Change history of the main PWB
Number of the main ROM
Number of the main ROM sub</td></tr>
<tr><td>○ Text & Photo
● Photo
● Text</td><td>Exp. 1 (lit)
Exp. 2 (lit)
Exp. 3 (lit)
Exp. 4 (lit)
Exp. 5 (lit)
Exp. 1 (flashing)</td><td>“E” Part Code: Engine PWB
Change history of the engine PWB
Number of the engine ROM
Number of the engine ROM sub
Change history of the engine PWB BOOT
Number of the engine PWB BOOT</td></tr>
<tr><td>● Text & Photo
● Photo
● Text</td><td>Exp. 1 (lit)
Exp. 2 (lit)
Exp. 3 (lit)
Exp. 4 (lit)
Exp. 5 (lit)</td><td>“L” Part Code: Language
Change history of the standard language
Number of the standard language ROM
Change history of the optional language
Number of the optional language ROM</td></tr>
<tr><td>● Text & Photo
● Photo
☼ Text</td><td>Exp. 1 (lit)
Exp. 2 (lit)
Exp. 3 (lit)
Exp. 4 (lit)</td><td>“C” Part Code: Cassette
Number of the optional first paper feeder ROM
Number of the optional second paper feeder ROM
Number of the optional third paper feeder ROM</td></tr>
<tr><td>● Text & Photo
☼ Photo
☼ Text</td><td>Exp. 1 (lit)
Exp. 2 (lit)</td><td>“d” Part Code: DP
Number of the optional DP ROM</td></tr>
<tr><td>☼ Text & Photo
☼ Photo
☼ Text</td><td>Exp. 1 (lit)
Exp. 2 (lit)
Exp. 3 (lit)</td><td>“P” Part Code: Printer
Change history of the optional printer
Number of the optional printer ROM</td></tr>
</table>
○ : Off, ● : On, ☼ : Flashing
When the optional equipment is not installed, [non] is displayed.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U020</td><td>
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.
Reset each intialized mode based on an own-status report U000 printed at installing the machine.
Purpose
Run as needed.
Method
1. Press the start key.
2. Select "on" using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>- - -</td><td>Canceling initialization</td></tr>
<tr><td>on</td><td>Executing initialization</td></tr>
</table>
3. Press the start key. All data in the backup RAM is initialized, and the original settings for Japan specifications are set.
4. When initialization is complete, the machine automatically returns to the same status as when the power switch is turned on.
</td></tr>
<tr><td>U021</td><td>
Initializing memories
Description
Initializes all settings, except those pertinent to the type of machine, 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
Used to return the machine settings to the factory settings.
Method
1. Press the start key.
2. Select "on" using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>- - -</td><td>Canceling initialization</td></tr>
<tr><td>on</td><td>Executing initialization</td></tr>
</table>
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. When initialization is complete, the machine automatically returns to the same status as when the power switch is turned on.
</td></tr>
</table>

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></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 using the exposure adjustment keys.
<table>
<tr><th>Display</th><th>Motor</th></tr>
<tr><td>A</td><td>Drive motor (DM) is turned ON</td></tr>
<tr><td>2F</td><td>Drum motor (DRM) is turned ON</td></tr>
<tr><td>F1</td><td>Cassette drive motor 1 (CDM1) is turned ON (option)</td></tr>
<tr><td>F2</td><td>Cassette drive motor 2 (CDM2) is turned ON (option)</td></tr>
<tr><td>F3</td><td>Cassette drive motor 3 (CDM3) is turned ON (option)</td></tr>
<tr><td>EJ1</td><td>Eject motor (EM) forward rotation is turned ON</td></tr>
<tr><td>EJ2</td><td>Eject motor (EM) reverse rotation is turned ON</td></tr>
</table>
3. Press the start key. The selected motor operates.
4. To stop operation, press the stop/reset key.
Completion
Press the stop/clear key after operation stops. 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 the on-status of a switch is detected, the original size indicator corresponding to the operated switch lights.
<table>
<tr><th>Original size indicator</th><th>Switch</th></tr>
<tr><td>A3R/Ledger</td><td>Eject switch (ESW)</td></tr>
<tr><td>A4R/Legal</td><td>Registration switch (RSW)</td></tr>
<tr><td>A5R/Legal</td><td>Cassette feed switch 1 (CFSW1) (option)</td></tr>
<tr><td>A4/Letter-R</td><td>Cassette feed switch 2 (CFSW2) (option)</td></tr>
<tr><td>B4R/Letter</td><td>Feedshift switch (FSSW)</td></tr>
<tr><td>B5R/Statement</td><td>Duplex paper conveying switch (DUPPCSW) (option)</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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Maintenance item No.	Description
U032	**Checking clutch operation** **Description** Turns each clutch or solenoid on. **Purpose** To check the operation of each clutch or solenoid. **Method** 1. Press the start key. 2. Select the clutch or solenoid to be operated using the exposure adjustment keys. 3. Press the start key. The selected clutch turns on for 1 s.

Display	Clutch
P1	Paper feed clutch (PFCL)
Pb	MP solenoid (MPSOL)
A1	Registration clutch (RCL)
d1	Duplex feed clutch (DUPFCL) (option)
P2	Cassette paper feed clutch 1 (CPFCL1) (option)
P3	Cassette paper feed clutch 2 (CPFCL2) (option)
P4	Cassette paper feed clutch 3 (CPFCL3) (option)

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

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Maintenance item No.	Description
U034	**Adjusting the print start timing** **Description** Adjusts the leading edge registration, center line or trailing edge margin. **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. Make the adjustment if there is a regular error between the trailing edges of the copy image and original. **Method** 1. Press the start key. 2. Select the item using the image mode selection key.

Image mode LEDs (group No.)		Description
1	○ Text & Photo ○ Photo ● Text	Leading edge registration adjustment
2	○ Text & Photo ● Photo ● Text	Center line adjustment
3	● Text & Photo ● Photo ● Text	Trailing edge margin adjustment
4	● Text & Photo ● Photo ☼ Text	Leading edge registration adjustment for printer

○ : Off, ● : On, ☼ : Flashing

Adjustment: leading edge registration adjustment

1. Select group 1 using the image mode selection key.
2. Select the item using the exposure adjustment keys.

Exposure indicator	Description	Setting range	Initial setting	Change in value per step
Exp. 1 (lit)	Paper feed from cassette	-5.0 to 10.0	2.8	0.1 mm
Exp. 2 (lit)	Paper feed from MP tray	-5.0 to 10.0	0.0	0.1 mm
Exp. 3 (lit)	Paper feed from optional first paper feeder	-5.0 to 10.0	0.0	0.1 mm
Exp. 4 (lit)	Paper feed from optional second paper feeder	-5.0 to 10.0	0.0	0.1 mm
Exp. 5 (lit)	Paper feed from optional third paper feeder	-5.0 to 10.0	0.0	0.1 mm
Exp. 1 (flashing)	Duplex mode	-5.0 to 10.0	0.8	0.1 mm

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

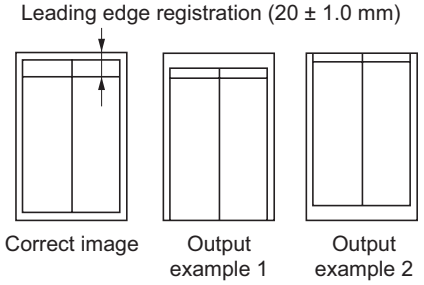

Figure 1-3-1

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Maintenance item No.	Description
U034 (cont.)	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 → U066 (P.1-3-20) → U071 (P.1-3-24) **Adjustment: center line adjustment** 1. Select group 2 using the image mode selection key. 2. Select the item using the exposure adjustment keys.

Exposure indicator	Description	Setting range	Initial setting	Change in value per step
Exp. 1 (lit)	Paper feed from cassette	-7.0 to 10.0	-2.4	0.1 mm
Exp. 2 (lit)	Paper feed from MP tray	-7.0 to 10.0	0.0	0.1 mm
Exp. 3 (lit)	Paper feed from optional first paper feeder	-7.0 to 10.0	0.0	0.1 mm
Exp. 4 (lit)	Paper feed from optional second paper feeder	-7.0 to 10.0	0.0	0.1 mm
Exp. 5 (lit)	Paper feed from optional third paper feeder	-7.0 to 10.0	0.0	0.1 mm
Exp. 1 (flashing)	Duplex mode	-7.0 to 10.0	0.0	0.1 mm

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

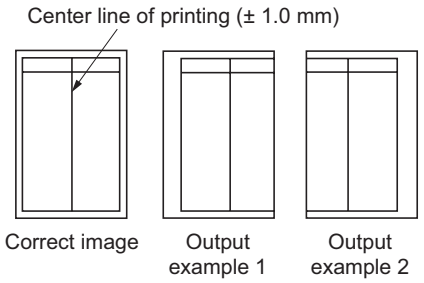

Figure 1-3-2

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.1-3-21) → U072 (P.1-3-25)

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Maintenance item No.	Description
U034 (cont.)	**Adjustment: trailing edge margin adjustment** 1. Select group 3 using the image mode selection key.

Description	Setting range	Initial setting	Change in value per step
Trailing edge margin adjustment	-4.0 to 10.0	2.0	0.1 mm

2. Press the interrupt key.
3. Press the start key to output a test pattern.
4. Change the setting value using the zoom +/- keys.
   For output example, increase the value.

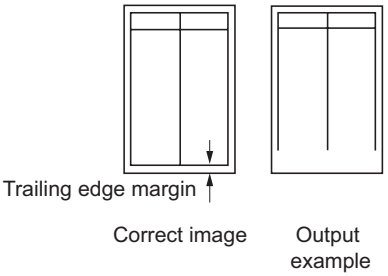

Figure 1-3-3

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

Adjustment: leading edge registration adjustment for printer

1. Select group 4 using the image mode selection key.
2. Select the item using the exposure adjustment keys.

Exposure indicator	Description	Setting range	Initial setting	Change in value per step
Exp. 1 (lit)	Paper feed from cassette	-5.0 to 10.0	2.0	0.1 mm
Exp. 2 (lit)	Paper feed from MP tray	-5.0 to 10.0	2.0	0.1 mm
Exp. 3 (lit)	Paper feed from optional first paper feeder	-5.0 to 10.0	2.0	0.1 mm
Exp. 4 (lit)	Paper feed from optional second paper feeder	-5.0 to 10.0	2.0	0.1 mm
Exp. 5 (lit)	Paper feed from optional third paper feeder	-5.0 to 10.0	2.0	0.1 mm
Exp. 1 (flashing)	Duplex mode	-5.0 to 10.0	2.0	0.1 mm

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

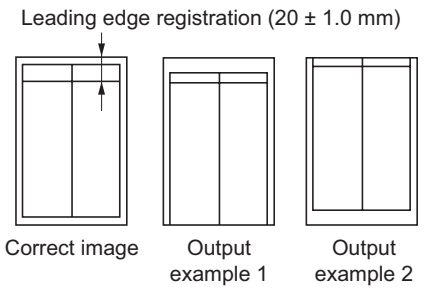

Figure 1-3-4

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

Completion

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

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U035</td><td>
Setting folio size
Description
Changes the image area for copying onto folio size paper.
Purpose
To prevent the image at the trailing edge, or right or left side of the paper from not being copied by setting the actual size of the folio paper used.
Method
Press the start key.
Setting
1. Select the item to be set using the exposure adjustment keys.
2. Change the setting using the zoom +/- keys.
<table>
<tr><th>Exposure indicator</th><th>Setting</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1</td><td>Length</td><td>330 to 356 mm</td><td>330</td></tr>
<tr><td>Exp. 2</td><td>Width</td><td>200 to 220 mm</td><td>210</td></tr>
</table>
3. Press the start key. The value is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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Maintenance item No.	Description
U051	**Adjusting the deflection in the paper** **Description** Adjusts the deflection 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 using the exposure adjustment keys.

Exposure indicator	Description	Setting range	Initial setting	Change in value per step
Exp. 1 (lit)	Paper feed from cassette	-50 to 127	30	0.32 mm
Exp. 2 (lit)	Paper feed from MP tray	-50 to 127	20	0.32 mm
Exp. 3 (lit)	Paper feed from optional first paper feeder	-50 to 127	0	0.32 mm
Exp. 4 (lit)	Paper feed from optional second paper feeder	-50 to 127	-20	0.32 mm
Exp. 5 (lit)	Paper feed from optional third paper feeder	-50 to 127	-20	0.32 mm
Exp. 1 (flashing)	Duplex mode	-50 to 127	20	0.32 mm

3. Press the interrupt key.
4. Place an original and press the start key to make a test copy.
5. Change the setting value using the zoom +/- 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.

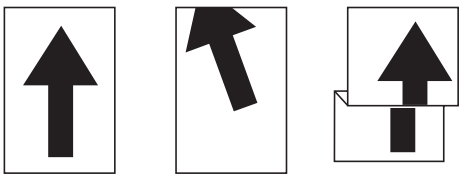

Figure 1-3-5

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

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

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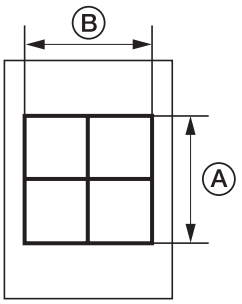
Maintenance item No.	Description
U053	**Performing fine adjustment of the motor speed** **Description** Performs fine adjustment of the speeds of the motors. **Purpose** Used to adjust the speed of the respective motors when the magnification is not correct. Also speed adjustment for each paper source can be performed in group 2. **Method** **Setting** 1. Press the start key. 2. Select the group using the image mode selection key. 3. Select the item to be set using the exposure adjustment keys.

Image mode LEDs	Exposure indicator	Description	Setting range	Initial setting
○ Text & Photo ○ Photo ● Text	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit) Exp. 5 (lit) Exp. 1 (flashing) Exp. 2 (flashing)	Drive motor speed adjustment Polygon motor speed adjustment Eject motor speed adjustment Drum motor speed adjustment Eject motor speed adjustment 2 Eject motor speed adjustment 3 Eject motor speed adjustment 4	-5.0 to 5.0 -5.0 to 4.0 -5.0 to 5.0 -5.0 to 5.0 -5.0 to 5.0 -5.0 to 5.0 0.0 to 5.0	0.4 0.6 -0.5 0 0 0 0.5
○ Text & Photo ● Photo ● Text	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit)	Motor speed adjustment (for paper feed from MP tray) Motor speed adjustment (for paper feed from optional paper feeder) Motor speed adjustment (in duplex mode)	-5.0 to 5.0 -5.0 to 5.0 -5.0 to 5.0	-0.1 -0.2 -0.3

○ : Off, ● : On

Adjustment

1. Press the interrupt key.
2. Press the start key to output a VTC pattern.



Correct values for an A3/Ledger output are:
A = 300 ± 1.0 mm
B = 270 ± 1.0 mm

Figure 1-3-6

3. Change the setting value using the zoom +/- 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 decreasing it makes the image longer in the main scanning direction.
4. Press the start key. The value is set.

Completion

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

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U060</td><td>
Adjusting the scanner input properties
Description
Adjusts the image scanning density.
Purpose
Used when the entire image appears too dark or light.
Method
Press the start key.
Setting
1. Press the start key.
2. Change the setting using the zoom +/- keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Image scanning density</td><td>0 to 23</td><td>12</td></tr>
</table>
Increasing the setting makes the density lower, and decreasing it makes the density higher.
3. Press the start key. The value is set.
Supplement
While this maintenance item is being executed, copying from an original is available in interrupt copying mode (which is activated by pressing the interrupt key).
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
Caution
The following settings are also reset to the initial values by performing this maintenance item:
Exposure density gradient set in maintenance mode (U093)
Exposure set in the copy default item of the copier management mode
</td></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. "on" appears.
2. Press the start key. The exposure lamp lights.
3. To turn the exposure lamp off, press the stop/clear key.
Completion
Press the stop/clear 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.
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.
Setting
1. Press the start key.
2. Change the setting using the zoom +/- 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>-5 to 5</td><td>0</td><td>0.17 mm</td></tr>
</table>
Increasing the setting moves the shading position toward the machine left, and decreasing it moves the position toward the machine right.
3. Press the start key. The value is set.
Supplement
While this maintenance item is being executed, copying from an original is available in interrupt copying mode (which is activated by pressing the interrupt key).
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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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.1-3-17) → U065 (main scanning direction) → U065 (auxiliary scanning direction) → U067 (P.1-3-21) → U070 (P.1-3-23) **Method** 1. Press the start key. 2. Select the item using the exposure adjustment keys.

Exposure indicator	Description	Setting range	Initial setting
Exp. 1	Scanner magnification in the main scanning direction	-25 to 25	0
Exp. 2	Scanner magnification in the auxiliary scanning direction	-25 to 25	-10

Adjustment: main scanning direction

1. Light exp. 1 using the exposure adjustment key.
2. Press the interrupt key.
3. Place an original and press the start key to make a test copy.
4. Change the setting value using the zoom +/- keys.
   For copy example 1, increase the value. For copy example 2, decrease the value.

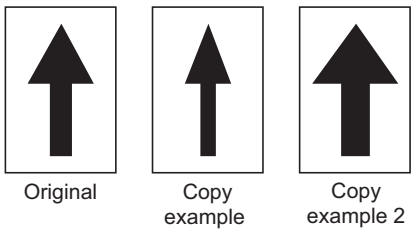

Figure 1-3-7

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

Adjustment: auxiliary scanning direction

1. Light exp. 2 using the exposure adjustment key.
2. Press the interrupt key.
3. Place an original and press the start key to make a test copy.
4. Change the setting value using the zoom +/- keys.
   For copy example 1, increase the value. For copy example 2, decrease the value.

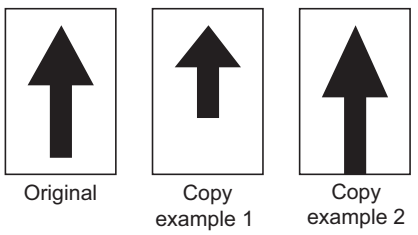

Figure 1-3-8

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

Completion

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

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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.

Description	Setting range	Initial setting	Change in value per step
Scanner leading edge registration	-32 to 20	0	0.17 mm

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

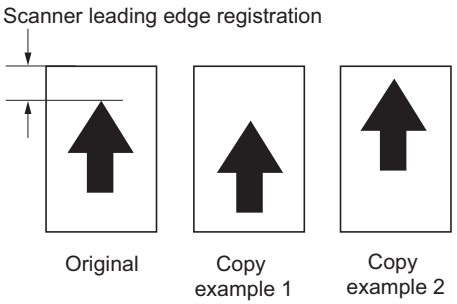
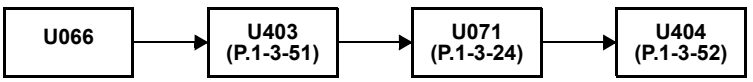


Figure 1-3-9

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.



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

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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. **CAdjustment** 1. Press the start key.

Description	Setting range	Initial setting	Change in value per step
Scanner center line	-66 to 66	-10	0.17 mm

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

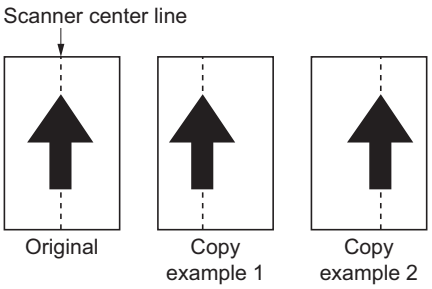
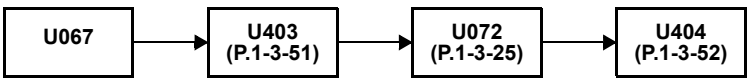


Figure 1-3-10

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.



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

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<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.
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.
2. Change the setting using the zoom +/- keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr>
<tr><td>Scanning position</td><td>-17 to 17</td><td>0</td><td>0.17 mm</td></tr>
</table>
Increasing the value moves the image backward, and decreasing it moves the image forward.

Supplement
While this maintenance item is being executed, copying from an original is available in interrupt copying mode (which is activated by pressing the interrupt key).
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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Maintenance item No.	Description
U070	**Adjusting the DP magnification** **Description** Adjusts the DP original scanning speed. **Purpose** Make the adjustment if the magnification is incorrect in the auxiliary scanning direction when the optional DP is used. **Adjustment** 1. Press the start key. 2. Select the item using the exposure adjustment keys.

Display	Description	Setting range	Initial setting	Change in value per step
Exp. 1	Magnification in the auxiliary scanning direction (first page)	-25 to 25	0	0.2 mm
Exp. 2	Magnification in the auxiliary scanning direction (second page)	-25 to 25	0	0.2 mm

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

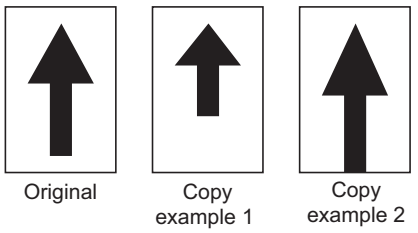
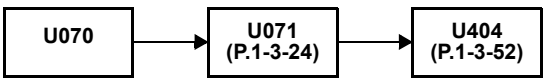


Figure 1-3-11

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.



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

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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 using the exposure adjustment keys.

Exposure indicator	Description	Setting range	Initial setting	Change in value per step
Exp. 1	DP leading edge registration (first side)	-32 to 32	0	0.2 mm
Exp. 2	DP trailing edge registration (first side)	-42 to 32	0	0.2 mm
Exp. 3	DP leading edge registration (second side)	-32 to 32	0	0.2 mm
Exp. 4	DP trailing edge registration (second side)	-42 to 32	0	0.2 mm

3. Press the interrupt key.
4. Place an original on the DP and press the start key to make a test copy.
5. Change the setting value using the zoom +/- keys.
   For copy example 1, decrease the value of exp.1.
   For copy example 2, increase the value of exp.1.

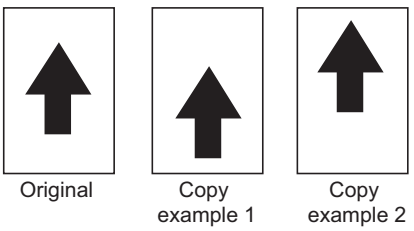
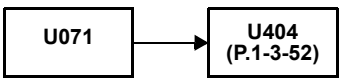


Figure 1-3-12

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.



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

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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 using the exposure adjustment keys.

Exposure indicator	Description	Setting range	Initial setting	Change in value per step
Exp. 1	DP center line (first side)	-6.6 to 6.6	0	0.15 mm
Exp. 2	DP center line (second side)	-3.0 to 3.0	0	0.15 mm

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

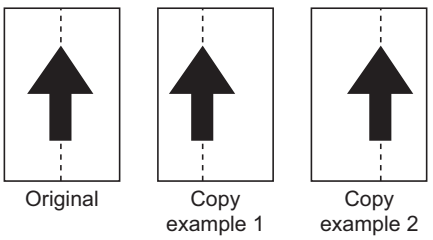
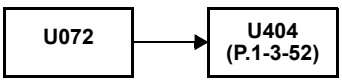


Figure 1-3-13

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.



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

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U073</td><td>
Checking scanner operation
Description
Simulates the scanner operation under arbitrary conditions.
Purpose
To check scanner operation.
Method
1. Press the start key.
2. Select the item to be changed using the exposure adjustment keys.
3. Change the setting using the zoom +/- keys.
<table>
<tr><th>Exposure indicator</th><th>Operating conditions</th><th>Setting range</th></tr>
<tr><td>Exp. 1</td><td>Magnification</td><td>25 to 400%</td></tr>
<tr><td>Exp. 2</td><td>Paper size</td><td>See below.</td></tr>
<tr><td>Exp. 3</td><td>On and off of the exposure lamp</td><td>on or off</td></tr>
</table>
Paper size for each setting
<table>
<tr><th>Setting</th><th>Paper size</th><th>Setting</th><th>Paper size</th></tr>
<tr><td>8</td><td>A4</td><td>42</td><td>A5R</td></tr>
<tr><td>9</td><td>B5</td><td>47</td><td>Folio</td></tr>
<tr><td>24</td><td>11" x 8 1/2"</td><td>52</td><td>11" x 17"</td></tr>
<tr><td>36</td><td>A3</td><td>53</td><td>11" x 15"</td></tr>
<tr><td>39</td><td>B4</td><td>55</td><td>8 1/2" x 14"</td></tr>
<tr><td>40</td><td>A4R</td><td>56</td><td>8 1/2" x 11"</td></tr>
<tr><td>41</td><td>B5R</td><td>58</td><td>5 1/2" x 8 1/2"</td></tr>
</table>
4. Press the start key. The setting is set.
5. Press the interrupt key.
6. Press the start key. Scanning starts under the selected conditions.
7. To stop operation, press the stop/clear key.
Completion
Press the stop/clear key when scanning stops. The screen for selecting a maintenance item No. is displayed.
</td></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 platen and when scanning an original from the DP.
Setting
1. Press the start key.
2. Change the setting using the zoom +/- keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>DP input light luminosity</td><td>0 to 8</td><td>1</td></tr>
</table>
Increasing the setting makes the luminosity higher, and decreasing it makes the luminosity lower.
3. Press the start key. The value is set.
Supplement
While this maintenance item is being executed, copying from an original is available in interrupt copying mode (which is activated by pressing the interrupt key).
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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Maintenance item No.	Description
U076	**Adjusting the DP automatically** **Description** Uses a specified original and automatically adjusts the following items in the DP scanning section. Adjusting the DP magnification (U070) Adjusting the DP scanning timing (U071) Adjusting the DP center line (U072) When you run this maintenance mode, the preset values of U070, U071 and U072 will also be updated. **Purpose** To perform automatic adjustment of various items in the DP scanning section. **Method** 1. Set a specified original (P/N: 302AC68243) in the DP. Cut the trailing edge of the original.

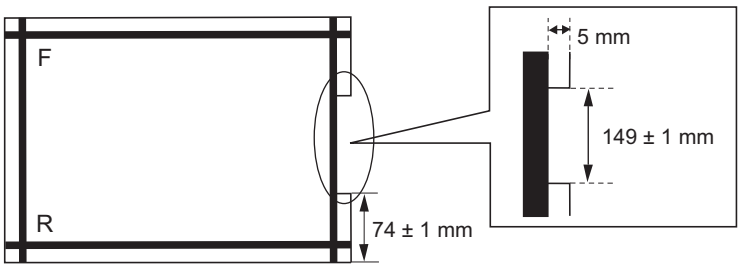

Figure 1-3-14

2. Press the start key. "on" appears.
3. Press the start key. Auto adjustment starts. When adjustment is complete, "Gd" appears.
4. Display each setting value after adjustment using the exposure adjustment keys.

Exposure indicator	Description
Exp. 1	Execution result
Exp. 2	DP scanning timing
Exp. 3	DP center line
Exp. 4	DP magnification

If a problem occurs during auto adjustment, "nG" is displayed and operation stops. 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.

Completion

Press the stop/clear key after auto adjustment is complete.The screen for selecting a maintenance item No. is displayed.

If the stop/clear key is pressed during auto adjustment, adjustment stops and no settings are changed.

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Maintenance item No.	Description
U087	**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 DP, to solve the problem when black lines occurs due to the dust with respect to original reading position. **Setting** 1. Press the start key. 2. Select the item to be set using the exposure adjustment keys. **Exposure indicator** / **Description** Exp. 1 / Setting the mode on/off Exp. 2 / Setting the reference data for identifying dust **Setting the mode on/off** 1. Select "on" or "oFF" using the zoom +/- keys. **Display** / **Description** on / DP scanning position adjust mode on oFF / DP scanning position adjust mode off Initial setting: on 2. Press the start key. The setting is set. **Setting the reference data for identifying dust** Available only when the mode is turned on. 1. Change the setting using the zoom +/- keys. **Description** / **Setting range** / **Initial setting** Minimum density to be regarded as dust / 10 to 95 / 35 Example The figure indicates the density in 256 levels of gray (0: white, 255: black). When the setting is 35, data of the level of 35 or higher is regarded as dust and data of lower level is regarded as the background (scan data taken when there is no original). 2. Press the start key. The value is set. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U088</td><td>
Setting the input filter (moire reduction mode)
Description
Turns moire reduction mode on and off by switching the input filter on and off.
Purpose
Used to prevent regular density unevenness (moiré) on halftone image areas of the copy image in text mode and text and photo mode. Such moire is more likely to appear when an enlargement or reduction copy is made in text mode from an original containing large halftone image areas.
Method
Press the start key.
Setting
1. Press the start key.
2. Select "on" or "oFF" using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>on</td><td>Moiré reduction mode</td></tr>
<tr><td>oFF</td><td>Normal copy mode</td></tr>
</table>
Initial setting: oFF
If moire on the copy image is significant, change the setting to "on". Note that when the moire reduction mode is turned on, the resolution may be slightly reduced.
3. Press the start key. The value is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U089</td><td>
Outputting a MIP-PG pattern
Description
Selects and outputs a MIP-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 MIP-PG pattern.
Method
1. Press the start key.
2. Select the MIP-PG pattern to be output using the exposure adjustment keys.
<table>
<tr><th>Exposure indicator</th><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1</td><td>G-S</td><td>Gray scale</td><td>-</td><td>-</td></tr>
<tr><td>Exp. 2</td><td>0 (setting value)</td><td>Mono level</td><td>0 to 255</td><td>0</td></tr>
<tr><td>Exp. 3</td><td>FFL</td><td>256 level</td><td>-</td><td>-</td></tr>
<tr><td>Exp. 4</td><td>1-d</td><td>1-dot level</td><td>-</td><td>-</td></tr>
</table>
3. Press the interrupt key.
4. Press the start key. A MIP-PG pattern is output.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U092</td><td>
Adjusting the scanner automatically
Description
Makes auto scanner adjustments in the order below using the specified original.
Adjusting the scanner center line (U067)
Adjusting the scanner leading edge registration (U066)
Adjusting scanner magnification in the auxiliary direction (U065)
When this maintenance item is performed, the settings in U065, U066 and U067 are also changed.
Purpose
Used to make respective auto adjustments for the scanner.
Method
1. Place the specified original (P/N: 302FZ56990) on the contact glass.
2. Press the start key. "on" appears.
3. Press the start key. Auto adjustment starts. When adjustment is complete, "Gd" appears.
4. Display each setting value after adjustment using the exposure adjustment keys.
<table>
<tr><th>Exposure indicator</th><th>Description</th></tr>
<tr><td>Exp. 1</td><td>Execution result</td></tr>
<tr><td>Exp. 2</td><td>Scanner magnification in the auxiliary scanning direction</td></tr>
<tr><td>Exp. 3</td><td>Scanner leading edge registration</td></tr>
<tr><td>Exp. 4</td><td>Scanner magnification in the main scanning direction</td></tr>
<tr><td>Exp. 5</td><td>Scanner center line</td></tr>
</table>
If a problem occurs during auto adjustment, "nG" is displayed and operation stops. 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.
Completion
Press the stop/clear key after auto adjustment is complete. The screen for selecting a maintenance item No. is displayed.
If the stop/clear key is pressed during auto adjustment, adjustment stops and no settings are changed.
</td></tr>
</table>

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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 mode to be adjusted using the image mode selection key.

Image mode LEDs	Description
○ Text & Photo ○ Photo ● Text	Density in text mode
○ Text & Photo ● Photo ● Text	Density in text and photo mode
● Text & Photo ● Photo ● Text	Density in photo mode

○ : Off, ● : On

Setting

1. Select the item to be set using the exposure adjustment keys.
2. Adjust the setting using the zoom +/- keys.

Exposure indicator	Description	Setting range	Initial setting
Exp. 1	Change in density when manual density is set dark	0 to 3	0
Exp. 2	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.

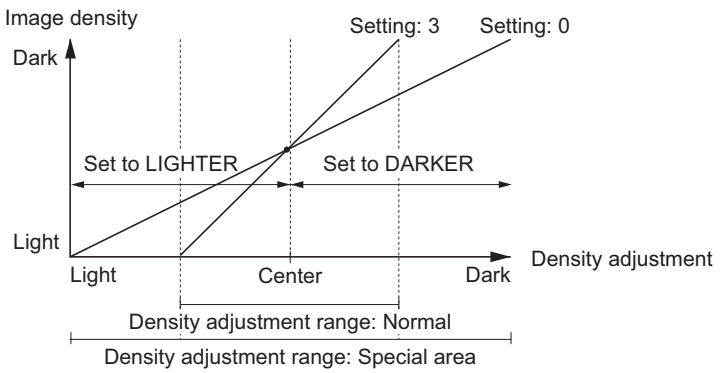

Figure 1-3-15

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

Supplement

While this maintenance item is being executed, copying from an original is available in interrupt copying mode (which is activated by pressing the interrupt key).

Completion

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

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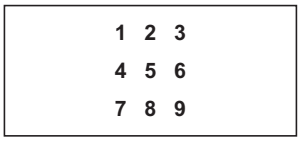
Maintenance item No.	Description
U099	**Adjusting original size detection** **Description** Checks the operation of the original size detection sensor and sets the sensing threshold value. **Purpose** To adjust the sensitiveness of the sensor and size judgement time if the original size detection sensor malfunctions frequently due to incident light or the like. **Method** 1. Press the start key. 2. Select the item using the exposure adjustment keys 3. Press the start key. The machine enters the execution mode.

Display	Description
dA	Displaying detection sensor transmission data
LE	Setting detection sensor threshold value Setting original size judgment time

Method to display the data for the sensor

1. Place an original on the contact glass and turn the original detection switch on. The exposure lamp turns on and the width of the original is detected. The scanner data taken at the nine points from (1) at the machine rear to (9) at the machine front is displayed. The data is displayed within the range of 000 to 255, 000 indicating white (original present) and 255 indicating black (no original).
2. Change the point to display the detection data using the exposure adjustment keys. For the correspondence between the detection point and the exposure indicators, see Figure 1-3-16.



Point	Exposure indicator
1	exp. 1 (lit)
2	exp. 2 (lit)
3	exp. 3 (lit)
4	exp. 4 (lit)
5	exp. 5 (lit)
6	exp. 1 (flashing)
7	exp. 2 (flashing)
8	exp. 3 (flashing)
9	exp. 4 (flashing)

Figure 1-3-16

3. Press the stop/clear key. The selected item appears.

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Maintenance item No.	Description
U099 (cont.)	**Method to set or check the original size detection threshold** 1. Place an original on the contact glass and turn the original detection switch on. The original size detection starts and detection data is displayed. 2. Change the detection item using the exposure adjustment keys.

Exposure indicator	Description	Setting range	Initial setting
Exp. 1	Detection sensor threshold value	0 to 255	170
Exp. 2	Original size judgment time	0 to 100 ms	30
Exp. 3	Threshold value in the main scan direction for A4R detection	220/240 mm	240
Exp. 4	Original size detection position display (mm)	0 to 350 mm	-
Exp. 5	Detected original size display	0 to 63*	-

3. To change the original size detection threshold, light exp. 1, 2 or 3 and change the setting using the zoom +/- keys.
4. Press the start key. The value is set.
5. Press the stop/clear key. The selected item appears.

Completion

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

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Maintenance item No.	Description
U100	**Setting the main high voltage** **Description** Changes the surface potential by changing the grid control voltage. Also performs main charging. Also changes the setting of main charging copy quantity correction. **Purpose** To set the surface potential or check main charging. Also used when reentering data after initializing the set data. **Start** 1. Press the start key. 2. Select the item using the exposure adjustment keys.

Exposure indicator	Description
Exp. 1 (lit)	Changing the grid control voltage
Exp. 2 (lit)	Turning the main charger on
Exp. 3 (lit)	Turning the main charger on and the laser scanner unit on and off
Exp. 4 (lit)	Main charging copy quantity correction, copy interval
Exp. 5 (lit)	Main charging copy quantity correction, copy quantity
Exp. 1 (flashing)	Main charging copy quantity correction, correction amount

Method for main charger output

1. Press the start key. The selected operation starts.
2. To stop operation, press the stop/clear key.

Setting the grid control voltage

1. Change the setting using the zoom +/- keys.

Description	Setting range	Initial setting
Grid control voltage	0 to 255	107

Increasing the setting makes the surface potential higher, and decreasing it makes the potential lower.

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

Setting the main charging copy quantity correction

1. Change the setting using the zoom +/- keys.

Display	Setting	Setting range	Initial setting
Exp. 4 (lit)	Copy interval	1 to 255 (minute)	60
Exp. 5 (lit)	Copy quantity	1 to 255 (10 sheets)	50
Exp. 1 (flashing)	Correction amount	0 to 50 (bit)	10

Copy interval: Sets the time interval from the previous copying. If the time from the previous copying exceeds this preset value, the copy quantity counter will be reset.
Copy quantity: Sets the copy quantity from which copy quantity correction starts. When the copy quantity counter reaches this preset value, correction will start.
Correction amount: Sets the correction amount for copy quantity correction.
Set the values in the range from 5 to 120 minutes for copy interval, from 10 to 2,000 sheets for copy quantity, and from 5 to 50 bits for correction amount.

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

Supplement

While this maintenance item is being executed, copying from an original is available in interrupt copying mode (which is activated by pressing the interrupt key).

Completion

Press the stop/clear key when main charger output stops while a selection item is displayed. The screen for selecting a maintenance item No. is displayed.

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Maintenance item No.	Description
U101	**Setting the other high voltages** **Description** Changes the developing bias clock, the transfer and separation charging output timing. **Purpose** To check the developing bias clock, the transfer and separation charging output timing. Do not change the preset value. **Method** Press the start key. **Setting** 1. Select the group to be set or checked using the image mode selection key. 2. Select the item to be set using the exposure adjustment keys.

Image mode LEDs	Exposure indicator	Description	Setting range	Initial setting
○ Text & Photo ○ Photo ● Text	Exp. 1 (lit)	Developing bias clock frequency (copier)	2 to 255	27
	Exp. 2 (lit)	Developing bias clock duty (copier)	1 to 99	45
	Exp. 3 (lit)	Developing bias clock frequency (printer)	2 to 255	22
	Exp. 4 (lit)	Developing bias clock duty (printer)	1 to 99	45
	Exp. 5 (lit)	Transfer control voltage (large size)	0 to 255	123
	Exp. 1 (flashing)	Transfer control voltage (small size)	0 to 255	126
	Exp. 2 (flashing)	Transfer charging output OFF timing	0 to 255	33
	Exp. 3 (flashing)	Transfer charging output ON timing	0 to 255	31
○ Text & Photo ● Photo ● Text	Exp. 1 (lit)	Separation control voltage	0 to 255	1
	Exp. 2 (lit)	Separation charging output ON timing	0 to 255	20
	Exp. 3 (lit)	Separation charging output OFF timing	0 to 255	42
	Exp. 4 (lit)	Separation control mode	0 to 3	2

○ : Off, ● : On

3. Change the setting using the zoom +/- keys.
4. Press the start key. The value is set.

Supplement
While this maintenance item is being executed, copying from an original is available in interrupt copying mode (which is activated by pressing the interrupt key).
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U110</td><td>
Checking the drum count
Description
Displays the drum counts for checking.
Purpose
To check the drum status.
Method
1. Press the start key.
2. Select the item using the exposure adjustment keys.
<table>
<tr><th>Exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1</td><td>First 3 digits</td><td>000 to 999</td><td>000</td></tr>
<tr><td>Exp. 2</td><td>Last 3 digits</td><td>000 to 999</td><td>000</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></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. "on" appears.
2. Press the start key.
Installation of toner starts and "10" is indicated in the copy quantity display. Each time one minute elapses, the indicated value decrements. When the installation is complete, "Gd" will be displayed if the installation is successful or "nG" will be displayed if it has failed.
3. To stop the installation in the middle, press the stop/clear key.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></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.
3. Change the setting using the zoom +/- keys.
<table>
<tr><th>Exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1</td><td>Toner loading operation</td><td>1 (ON) / 0(OFF)</td><td>0</td></tr>
<tr><td>Exp. 2</td><td>Number of pages set</td><td>1 to 50</td><td>5</td></tr>
<tr><td>Exp. 3</td><td>Printing ratio</td><td>10 to 40</td><td>30</td></tr>
</table>
4. Press the start key. The value is set.
Completion
Press the stop/clear 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 sensor related to toner.
Purpose
To check if the sensor operate correctly.
Method
1. Press the start key.
2. Turn sensor on and off manually to check the status.
When the on-status of a sensor is detected, that sensor is displayed in reverse.
<table>
<tr><th>Original size indicator</th><th>Sensor</th></tr>
<tr><td>A4/Letter-R</td><td>Toner container sensor (TCS)</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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<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, clearing or changing a figure.
Purpose
To check the developing drive time after replacing the developer unit.
Method
1. Press the start key.
2. Select the item using the exposure adjustment keys.
<table>
<tr><th>Exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1</td><td>First 3 digits</td><td>000 to 999</td><td>000</td></tr>
<tr><td>Exp. 2</td><td>Last 3 digits</td><td>000 to 999</td><td>000</td></tr>
<tr><td>Exp. 3</td><td>Clearing the drive time</td><td>-</td><td>-</td></tr>
</table>
Clearing
1. Light exp. 3.
2. Press the start key. The drive time is cleared.
Setting
1. Change the drive time using the numeric or zoom +/- keys.
2. Press the start key. The drive time is set.
Completion
Press the stop/clear 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.
Purpose
To check the developing count.
Method
1. Press the start key.
2. Select the item using the exposure adjustment keys.
<table>
<tr><th>Exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1</td><td>First 3 digits</td><td>000 to 999</td><td>000</td></tr>
<tr><td>Exp. 2</td><td>Last 3 digits</td><td>000 to 999</td><td>000</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></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.
Setting
1. Press the start key.
1. Select the item to be set using the exposure adjustment keys.
2. Change the setting using the zoom +/- keys.
<table>
<tr><th>Exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1 (lit)</td><td>Primary stabilization fuser temperature</td><td>120 to 185 (°C)</td><td>145</td></tr>
<tr><td>Exp. 2 (lit)</td><td>Secondary stabilization fuser temperature</td><td>120 to 185 (°C)</td><td>165</td></tr>
<tr><td>Exp. 3 (lit)</td><td>Copying operation temperature 1</td><td>160 to 220 (°C)</td><td>175</td></tr>
<tr><td>Exp. 4 (lit)</td><td>Copying operation temperature 2</td><td>160 to 220 (°C)</td><td>185</td></tr>
<tr><td>Exp. 5 (lit)</td><td>Number of sheets for fuser control</td><td>1 to 99</td><td>1</td></tr>
<tr><td>Exp. 1 (flashing)</td><td>Number of sheets for fuser control (thick paper)</td><td>1 to 99</td><td>2</td></tr>
</table>
Copying operation temperature 1: Temperature in copying operation at the start of copying
Copying operation temperature 2: Temperature in copying operation after the specified number of sheets for fuser control have passed
Number of sheets for fuser control: The number of sheets to be counted for switching from copying operation temperature 1 to copying operation temperature 2
The temperatures are to be set such that Secondary stabilization ≧ Primary stabilization.
3. Press the start key. The value is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U162</td><td>
Stabilizing fuser forcibly
Description
Stops the stabilization fuser drive forcibly, regardless of fuser temperature.
Purpose
To forcibly stabilize the machine before the fuser section reaches stabilization temperature.
Method
1. Press the start key. "on" appears.
2. Press the start key. The forced stabilization mode is entered, and stabilization operation stops regardless of fuser temperature. The screen for selecting a maintenance item No. is Displayed.To exit the forced stabilization mode, turn the power off and on.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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<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. "CLE" appears.
2. Press the start key. The fuser problem data is initialized.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U167</td><td>
Checking the fuser count
Description
Displays the fuser count.
Purpose
To check the fuser count.
Method
1. Press the start key.
2. Select the item using the exposure adjustment keys.
<table>
<tr><th>Exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1</td><td>First 3 digits</td><td>000 to 999</td><td>000</td></tr>
<tr><td>Exp. 2</td><td>Last 3 digits</td><td>000 to 999</td><td>000</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U198</td><td>
Setting the fuser phase control
Description
Sets the use of fuser phase control to reduce electrical noise generated by the machine.
Purpose
Normally no change is necessary. If electrical noise generated by the machine causes flickering of the lights around the machine, select fuser phase control to reduces the noise.
Setting
1. Press the start key.
2. Select either "on" or "oFF" using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>on</td><td>Fuser phase control present</td></tr>
<tr><td>oFF</td><td>Fuser phase control absent</td></tr>
</table>
Initial setting: oFF
3. Press the start key. The setting is set.
Completion
Press the stop/clear key. The screen for selecting a 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
1. Press the start key.
2. Display each temperature using the exposure adjustment keys.
<table>
<tr><th>Exposure indicator</th><th>Description</th></tr>
<tr><td>Exp. 1</td><td>Fuser temperature (°C)</td></tr>
<tr><td>Exp. 2</td><td>Ambient temperature (°C)</td></tr>
<tr><td>Exp. 3</td><td>Absolute humidity (%)</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U200</td><td>
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/clear key or wait for 10 s. The LEDs turns off, and the screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U203</td><td>
Checking DP separately
Description
Simulates the original conveying operation separately in the DP.
Purpose
To check the DP operation.
Method
1. Press the start key.
2. Place an original on the DP if running this simulation with paper.
3. Select the item to be operated using the exposure adjustment keys.
<table>
<tr><th>Exposure indicator</th><th>Display</th><th>Motor</th></tr>
<tr><td>Exp. 1</td><td>d-P</td><td>With paper</td></tr>
<tr><td>Exp. 2</td><td>d-n</td><td>Without paper (continuous operation)</td></tr>
<tr><td>Exp. 3</td><td>dp2</td><td>With paper (duplex mode)</td></tr>
<tr><td>Exp. 4</td><td>dn2</td><td>Without paper (duplex mode)</td></tr>
</table>
4. Press the start key. The operation starts.
5. To stop continuous operation, press the stop/clear key.
Completion
Press the stop/clear key when the operation stops. 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.
Setting
1. Press the start key.
2. Select the item using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>oFF</td><td>None</td></tr>
<tr><td>Crd</td><td>The key card is installed</td></tr>
<tr><td>Cnt</td><td>The key counter is installed</td></tr>
</table>
Initial setting: oFF
3. Press the start key. The setting is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U207</td><td>
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.
2. "1" appears on the copy quantity display and the leftmost LED on the operation panel lights.
3. As the keys on the operation panel are pressed in order from the left to right, the figure shown on the copy quantity display increases in increments of 1. If there is an LED corresponding to the key pressed, the LED will light.
4. When all the keys on the operation panel have been pressed, all the LEDs light for up to 10 seconds.
5. When the LEDs go off, press the start key. All the LEDs light for 10 seconds again.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U243</td><td>
Checking the operation of the DP motors
Description
Turns the motors or solenoids in the optional DP on.
Purpose
To check the operation of the DP motors or solenoids.
Method
1. Press the start key.
2. Select the motor or solenoid to be operated using the exposure adjustment keys.
3. Press the start key. The operation starts.
<table>
<tr><th>Exposure indicator</th><th>Display</th><th>Motor</th></tr>
<tr><td>Exp. 1</td><td>F-0</td><td>Original feed motor (OFM)</td></tr>
<tr><td>Exp. 2</td><td>C-0</td><td>Original conveying motor (OCM)</td></tr>
<tr><td>Exp. 3</td><td>r-0</td><td>Original switchback motor (OSBM)</td></tr>
<tr><td>Exp. 4</td><td>b-S</td><td>Switchback feedshift solenoid (SBFSSOL)</td></tr>
<tr><td>Exp. 5</td><td>P-S</td><td>Switchback pressure solenoid (SBPSOL)</td></tr>
</table>
4. To turn each motor off, press the stop/clear key.
Completion
Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U244</td><td>
Checking the DP switches
Description
Displays the status of the respective switches in the DP.
Purpose
To check if respective switches in the DP 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, the LEDs on the operation panel corresponding to the operated switch lights.
<table>
<tr><th>LEDs</th><th>Switch</th></tr>
<tr><td>Auto Exp.</td><td>Original set switch (OSSW)</td></tr>
<tr><td>Text & Photo</td><td>DP timing switch (DPTSW)</td></tr>
<tr><td>Photo</td><td>Original detection switch (ODSW)</td></tr>
<tr><td>Text</td><td>DP original cover switch (DPOCSW)</td></tr>
<tr><td>EcoPrint</td><td>Original switchback switch (OSBSW)</td></tr>
<tr><td>Program</td><td>Original size length switch (OSLSW)</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U245</td><td>
Checking messages
Description
Displays a list of messages on 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. Displays the message one by one using zoom +/- keys.
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/clear key. The screen for selecting a maintenance item No. is displayed.
</td></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
1. Press the start key.
2. Select the item using the exposure adjustment keys.
<table>
<tr><th>Exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1</td><td>First 3 digits</td><td>000 to 999</td><td>150</td></tr>
<tr><td>Exp. 2</td><td>Last 3 digits</td><td>000 to 999</td><td>000</td></tr>
</table>
3. Change the setting using the numeric or zoom +/- keys.
4. Press the start key. The value is set.
Completion
Press the stop/clear 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
1. Press the start key.
2. Select the item using the exposure adjustment keys.
<table>
<tr><th>Exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1</td><td>First 3 digits</td><td>000 to 999</td><td>000</td></tr>
<tr><td>Exp. 2</td><td>Last 3 digits</td><td>000 to 999</td><td>000</td></tr>
<tr><td>Exp. 3</td><td>Clearing the count</td><td>-</td><td>-</td></tr>
</table>
Clearing
1. Light exp. 3.
2. Press the start key. The count is cleared.
Setting
1. Change the count using the numeric or zoom +/- keys.
2. Press the start key. The count is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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<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 return the destination setting to its default setting after initializing the backup RAM by running maintenance item U020.
Setting
1. Press the start key.
2. Select the destination using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Jpn</td><td>Metric (Japan) specifications</td></tr>
<tr><td>Inc</td><td>Inch (North America) specifications</td></tr>
<tr><td>EUP</td><td>Metric (Europe) specifications</td></tr>
<tr><td>ASA</td><td>Metric (Asia Pacific) specifications</td></tr>
<tr><td>Chn</td><td>Chinese specifications</td></tr>
</table>
3. Press the start key. The setting is set.
4. The machine automatically returns to the same status as when the power is turned 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, China</th></tr>
<tr><td>253</td><td>Switching between double and single counts</td><td>Single</td><td>Double</td><td>Double</td></tr>
<tr><td>344</td><td>Setting the low-power mode</td><td>ENERGY STAR</td><td>ENERGY STAR</td><td>GEEA</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
According to user (copy service provider) request, select 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 the item using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Sin</td><td>Single count for all size paper</td></tr>
<tr><td>-b4</td><td>Double count for B4 size or larger</td></tr>
<tr><td>-A3</td><td>Double count for A3/Ledger paper only</td></tr>
<tr><td>-Fo</td><td>Double count for Folio/Legal size or larger</td></tr>
</table>
Initial setting: -A3
3. Press the start key. The setting is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U254</td><td>
Turning auto start function on/off
Description
Selects if the auto start function is turned on.
Purpose
Normally no change is necessary. If incorrect operation occurs, turn the function off: this may solve the problem.
Setting
1. Press the start key.
2. Select either "on" or "oFF" using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>on</td><td>Auto start function on</td></tr>
<tr><td>oFF</td><td>Auto start function off</td></tr>
</table>
Initial setting: on
3. Press the start key. The setting is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></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 eject section 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 using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>FEd</td><td>When secondary paper feed starts</td></tr>
<tr><td>EJE</td><td>When the paper is ejected</td></tr>
</table>
Initial setting: EJE
3. Press the start key. The setting is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U265</td><td>
Setting the destination specifications
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. Change the preset value using the zoom +/- keys.
3. Press the start key. The value is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U277</td><td>
Setting auto application change time
Description
Sets the time that passes until the machine starts automatically printing after completing copying or operation when the machine is used as a printer.
Purpose
According to user request, changes the setting.
Setting
1. Press the start key.
2. Change the setting using the zoom +/- keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Switching time</td><td>30 to 270 (s)</td><td>30</td></tr>
</table>
The setting can be changed by 30 s per step.
3. Press the start key. The value is set.
Completion
Press the stop/clear 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 digital dot coverage report on reporting.
Purpose
According to user request, changes the setting.
Setting
1. Press the start key.
2. Select "on" or "oFF" using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>on</td><td>Displays the digital dot coverage</td></tr>
<tr><td>oFF</td><td>Not to display the digital dot coverage</td></tr>
</table>
Initial setting: on
3. Press the start key. The setting is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U286</td><td>
Setting the optional language
Description
Assign an optional language to add to the user language options.
Purpose
Perform this step to add an optional language.
Method
Press the start key.
Setting
1. Change the setting using the zoom +/- keys.
<table>
<tr><th>Setting</th><th>Description</th><th>Setting</th><th>Description</th></tr>
<tr><td>0</td><td>No selection</td><td>7</td><td>Finnish</td></tr>
<tr><td>1</td><td>Dutch</td><td>8</td><td>Portuguese</td></tr>
<tr><td>2</td><td>Turkish</td><td>9</td><td>Czech</td></tr>
<tr><td>3</td><td>Polish</td><td>10</td><td>Hungarian</td></tr>
<tr><td>4</td><td>Norwegian</td><td>11</td><td>Greek</td></tr>
<tr><td>5</td><td>Swedish</td><td>12</td><td>Lithuanian</td></tr>
<tr><td>6</td><td>Danish</td><td>13</td><td>Hebrew</td></tr>
</table>
Initial setting: 0
2. Press the start key. The value is set.
Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
</table>

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<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 for copying and printing respectively.
Setting
1. Press the start key.
2. Change the setting using the zoom +/- keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Size conversion factor</td><td>0.0 to 3.0</td><td>1.0</td></tr>
</table>
3. Press the start key. The value is set.
Completion
Press the stop/clear 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 using the exposure adjustment keys.
3. Select "on" or "oFF" using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Exp. 1</td><td>Cassette</td></tr>
<tr><td>Exp. 2</td><td>Optional first paper feeder</td></tr>
<tr><td>Exp. 3</td><td>Optional second paper feeder</td></tr>
<tr><td>Exp. 4</td><td>Optional third paper feeder</td></tr>
</table>
4. Press the start key. The setting is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></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 restriction is set, the number of sheets that can be ejected continuously will be limited to 250.
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" using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>on</td><td>The number of sheets restricted.</td></tr>
<tr><td>oFF</td><td>The number of sheets not restricted.</td></tr>
</table>
Initial setting: on
3. Press the start key. The setting is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></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, to the more frequently used mode.
Setting
1. Press the start key.
2. Select "on"or "oFF"using the zoom +/- keys.
<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: Simplex copy
3. Press the start key. The setting is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U344</td><td>
Setting the low-power mode
Description
Changes the control for low-power mode.
Purpose
According to user request, selects which has priority, the recovery time from low-power or energy saver.
Setting
1. Press the start key.
2. Change the setting using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>0</td><td>ENERGY STAR</td></tr>
<tr><td>1</td><td>GEEA</td></tr>
</table>
Initial setting: ENERGY STAR
If GEEA is set, the Auto off mode setting is fixed to ON and cannot be changed. The maximum time for entering the low power mode and the off mode becomes 120 minutes.
3. Press the start key. The setting is set.
Completion
Press the stop/clear 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.
Purpose
To change the time for maintenance due indication.
Setting
1. Press the start key.
2. Select the item using the exposure adjustment keys.
<table>
<tr><th>Exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1</td><td>First 3 digits</td><td>000 to 999</td><td>000</td></tr>
<tr><td>Exp. 2</td><td>Last 3 digits</td><td>000 to 999</td><td>000</td></tr>
</table>
3. Change the setting using the zoom +/- keys.
4. Press the start key. The value is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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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 using the exposure adjustment keys.

Exposure indicator	Description	Setting range	Initial setting	Change in value per step
Exp. 1	Printer leading edge margin	0.0 to 10.0	3.0	0.5 mm
Exp. 2	Printer left/right margins	-3.0 to 10.0	3.5	0.5 mm
Exp. 3	Printer trailing edge margin	-5.0 to 10.0	4.5	0.5 mm

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

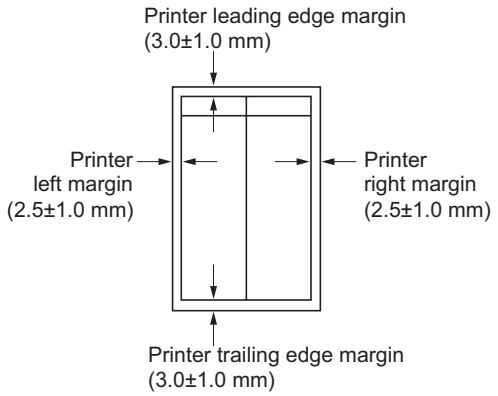
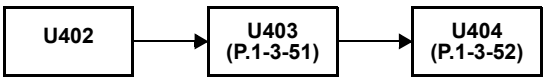


Figure 1-3-17

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.



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

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Maintenance item No.	Description
U403	**Adjusting margins for scanning an original on the contact glass** **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 using the exposure adjustment keys.

Exposure indicator	Description	Setting range	Initial setting	Change in value per step
Exp. 1	Scanner left margin	0.0 to 10.0	2.0	0.5 mm
Exp. 2	Scanner leading edge margin	0.0 to 10.0	3.0	0.5 mm
Exp. 3	Scanner right margin	0.0 to 10.0	2.0	0.5 mm
Exp. 4	Scanner trailing edge margin	0.0 to 10.0	2.0	0.5 mm

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

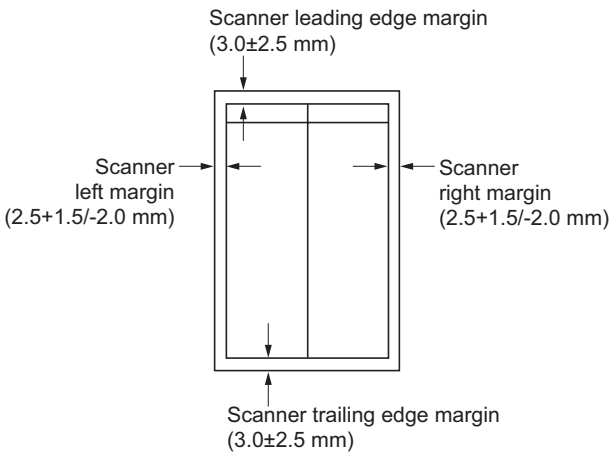
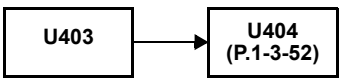


Figure 1-3-18

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.



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

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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.1-3-50) → U403 (P.1-3-51) → U404 **Adjustment** 1. Press the start key. 2. Select the item using the exposure adjustment keys.

Exposure indicator	Description	Setting range	Initial setting	Change in value per step
Exp. 1	Left margin	0.0 to 10.0	2.0	0.5 mm
Exp. 2	Leading edge margin	0.0 to 10.0	3.0	0.5 mm
Exp. 3	Right margin	0.0 to 10.0	2.0	0.5 mm
Exp. 4	Trailing edge margin	0.0 to 10.0	2.0	0.5 mm

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

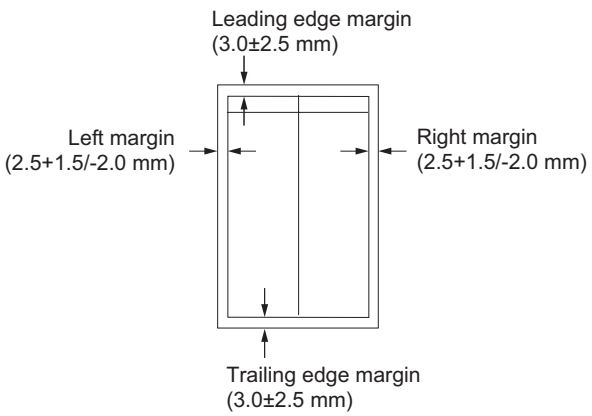

Figure 1-3-19

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

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

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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 following adjustment if there is a regular error between the leading edge of the copy image on the front face and that on the reverse face during duplex switchback copying. **Caution** Before making this adjustment, ensure that the following adjustments have been made in maintenance mode.

U034 (P.1-3-12) → U402 (P.1-3-50) → U066 (P.1-3-20) → U403 (P.1-3-51) → U071 (P.1-3-24) →

U404 (P.1-3-52) → U407

Adjustment

1. Press the start key.

Description	Setting range	Initial setting	Change in value per step
Leading edge registration for memory image printing	-10.0 to 10.0	0.0	1.0 mm

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

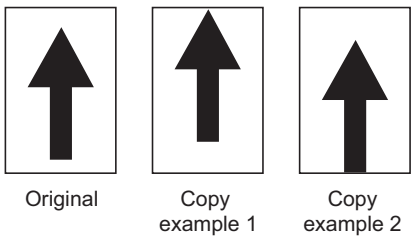

Figure 1-3-20

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

Completion

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

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Maintenance item No.	Description
U901	**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** 1. Press the start key. 2. Select the paper feed location (group No.) for which the count is to be checked or cleared using the image mode selection key. 3. Select the item using the exposure adjustment keys.

Image mode LED (group No.)		Exposure indicator	Copy quantity display (count value)
1	○ Text & Photo ○ Photo ● Text	Exp. 1 Exp. 2 Exp. 3	First 3 digits of MP copy count Last 3 digits of MP copy count Clearing the count (CLE)
2	○ Text & Photo ● Photo ● Text	Exp. 1 Exp. 2 Exp. 3	First 3 digits of the cassette copy count Last 3 digits of the cassette copy count Clearing the count (CLE)
3	● Text & Photo ● Photo ● Text	Exp. 1 Exp. 2 Exp. 3	First 3 digits of the first paper feeder copy count Last 3 digits of the first paper feeder copy count Clearing the count (CLE)
4	● Text & Photo ● Photo ☼ Text	Exp. 1 Exp. 2 Exp. 3	First 3 digits of the second paper feeder copy count Last 3 digits of the second paper feeder copy count Clearing the count (CLE)
5	● Text & Photo ☼ Photo ☼ Text	Exp. 1 Exp. 2 Exp. 3	First 3 digits of the third paper feeder copy count Last 3 digits of the third paper feeder copy count Clearing the count (CLE)
6	☼ Text & Photo ☼ Photo ☼ Text	Exp. 1 Exp. 2 Exp. 3	First 3 digits of the duplex unit copy count Last 3 digits of the duplex unit copy count Clearing the count (CLE)

○ : Off, ● : On, ☼ : Flashing

When no optional paper feed device is installed, the counts corresponding to optional paper feed devices will not appear.

Clearing copy counts by paper feed locations

1. Select the paper feed location to clear the count.
   Paper feeder copy count cannot be cleared.
2. Light exp. 3 using the exposure adjustment key.
3. Press the start key. The count is cleared.

Completion

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

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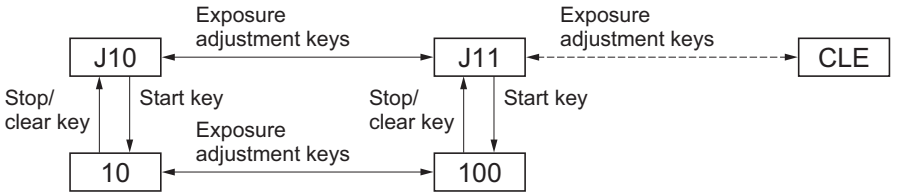
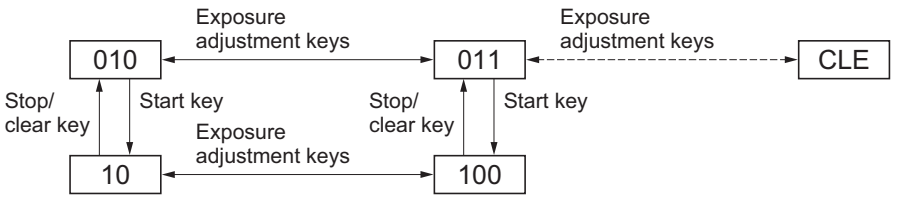
Maintenance item No.	Description
U903	**Checking/clearing the paper jam counts** **Description** Displays or clears the jam counts by jam locations. **Purpose** To check the paper jam status. Also to clear the jam counts after replacing consumable parts. **Method** 1. Press the start key. 2. Display the jam code to check the count using the exposure adjustment keys. 3. Press the start key. The jam count appears. If the jam count is a 4-digit value, the first digit and the last 3 digits are displayed alternately. 4. Press the stop/clear key. The jam code appears again.  **Figure 1-3-21** **Clearing all jam counts** 1. Display "CLE" using the exposure adjustment keys. Jam counts cannot be cleared individually. 2. Press the start key. The counts are cleared. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U904	**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. Display the service call code to check the count using the exposure adjustment keys. 3. Press the start key. The service call count appears. If the service call count is a 4-digit value, the first digit and the last 3 digits are displayed alternately. 4. Press the stop/clear key. The service call code appears again.  **Figure 1-3-22** **Clearing counts by service call codes** 1. Display the service call code to clear the count. 2. Press the reset key. The count is cleared. **Clearing all service call counts** 1. Display "CLE" using the exposure adjustment keys. 2. Press the start key. The counts are cleared. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

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Maintenance item No.	Description
U905	**Checking counts by optional devices** **Description** Displays the counts of DP or finisher. **Purpose** To check the use of DP and finisher. **Method** 1. Press the start key. 2. Select the count (group No.) to be checked using the image mode selection key. 3. Select the item using the exposure adjustment keys.

Image mode LED (group No.)		Exposure indicator	Copy quantity display (count value)
1	○ Text & Photo ○ Photo ● Text	Exp. 1 Exp. 2	First 3 digits of the no. of single-sided originals that has passed through the DP Last 3 digits of the no. of single-sided originals that has passed through the DP
2	○ Text & Photo ● Photo ● Text	Exp. 1 Exp. 2	First 3 digits of the no. of double-sided originals that has passed through the DP Last 3 digits of the no. of double-sided originals that has passed through the DP

○ : Off, ● : On

Completion

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

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U908</td><td>
Checking the total count
Description
Display the total count value.
Purpose
To check the total count value.
Method
1. Press the start key.
2. Select the item using the exposure adjustment keys.
<table>
<tr><th>Exposure indicator</th><th>Copy quantity display (count value)</th></tr>
<tr><td>Exp. 1</td><td>First 3 digits of the total count</td></tr>
<tr><td>Exp. 2</td><td>Last 3 digits of the total count</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U910</td><td>
Clearing the black ratio data
Description
Clears the accumulated black ratio data for A4/Letter sheets.
Purpose
To clear data as required at times such as during maintenance service.
Method
1. Press the start key.
2. Select "on" using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>- - -</td><td>Canceling the clearing</td></tr>
<tr><td>on</td><td>Executing the clearing</td></tr>
</table>
3. Press the start key. The accumulated black ratio data is cleared.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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Maintenance item No.	Description
U911	**Checking/clearing copy counts by paper sizes** **Description** Displays or clears the paper feed count value by paper size. **Purpose** To check the time to replace consumable parts. Also to clear the counts after replacing the consumable parts. **Method** 1. Press the start key. 2. Select the paper size (group No.) for which the count is to be checked or cleared using the image mode selection key. 3. Select the item using the exposure adjustment keys.

Image mode LED (group No.)		Exposure indicator	Copy quantity display (count value)
1	○ Text & Photo ○ Photo ● Text	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit)	"-A3" display the A3 size First 3 digits of A3 size copy count Last 3 digits of A3 size copy count Clearing the count (CLE)
2	○ Text & Photo ● Photo ● Text	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit)	"-b4" display the B4 size First 3 digits of B4 size copy count Last 3 digits of B4 size copy count Clearing the count (CLE)
3	● Text & Photo ● Photo ● Text	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit)	"-A4" display the A4 size First 3 digits of A4 size copy count Last 3 digits of A4 size copy count Clearing the count (CLE)
4	● Text & Photo ● Photo ☼ Text	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit)	"-b5" display the B5 size First 3 digits of FOLIO size copy count Last 3 digits of FOLIO size copy count Clearing the count (CLE)
5	● Text & Photo ☼ Photo ☼ Text	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit)	"-A5" display the A5 size First 3 digits of Legal size copy count Last 3 digits of Legal size copy count Clearing the count (CLE)
6	☼ Text & Photo ☼ Photo ☼ Text	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit)	"-A6" display the A6 size First 3 digits of Letter size copy count Last 3 digits of Letter size copy count Clearing the count (CLE)
7	● Text & Photo ● Photo ☼ Text	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit)	"-Fo" display the FOLIO size First 3 digits of FOLIO size copy count Last 3 digits of FOLIO size copy count Clearing the count (CLE)
8	● Text & Photo ☼ Photo ☼ Text	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit)	"-Ld" display the Ledger size First 3 digits of Ledger size copy count Last 3 digits of Ledger size copy count Clearing the count (CLE)
9	☼ Text & Photo ☼ Photo ☼ Text	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit)	"-Lg" display the Legal size First 3 digits of Legal size copy count Last 3 digits of Legal size copy count Clearing the count (CLE)

○ : Off, ● : On, ☼ : Flashing

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Maintenance item No.	Description

U911 (cont.)

Image mode LED (group No.)		Exposure indicator	Copy quantity display (count value)
10	● Text & Photo ● Photo ☼ Text	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit)	"-Lt" display the Letter size First 3 digits of Letter size copy count Last 3 digits of Letter size copy count Clearing the count (CLE)
11	● Text & Photo ☼ Photo ☼ Text	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit)	"-St" display the Statement size First 3 digits of Statement size copy count Last 3 digits of Statement size copy count Clearing the count (CLE)
12	☼ Text & Photo ☼ Photo ☼ Text	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit)	"-ot" display the other size First 3 digits of other size copy count Last 3 digits of other size copy count Clearing the count (CLE)
13	● Text & Photo ● Photo ☼ Text	Exp. 1 (lit)	Clearing all counts (CLE)

○ : Off, ● : On, ☼ : Flashing

Clearing copy counts by paper size

1. Select the paper size to clear the count.
2. Display "CLE" using the exposure adjustment keys.
3. Press the start key. The count is cleared.

Clearing copy counts for all paper size

1. Select group 13.
2. Press the start key. The counts are cleared.

Completion

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

U920

Checking the accounting counts

Description

Checks the accounting counts.

Purpose

To check the accounting counts.

Method

1. Press the start key.
2. Select the item for which the count is to be checked using the image mode selection key.
3. Select the item using the exposure adjustment keys.

Image mode LED (group No.)		Exposure indicator	Copy quantity display (count value)
1	○ Text & Photo ○ Photo ● Text	Exp. 1 Exp. 2	First 3 digits of copy count Last 3 digits of copy count
2	○ Text & Photo ● Photo ● Text	Exp. 1 Exp. 2	First 3 digits of printer count Last 3 digits of printer count

○ : Off, ● : On

Completion

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

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U927</td><td>
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. If the counters have been already cleared or either of the total counter or the scanner counter exceeds 1,000, this mode cannot be run and "nG" is displayed.
2. Select "on" using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>- - -</td><td>Canceling the clearing</td></tr>
<tr><td>on</td><td>Executing the clearing</td></tr>
</table>
3. Press the start key. The accounting counter is cleared.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U928</td><td>
Checking the machine life count
Description
Displays the machine life counts for checking a figure.
Purpose
To check machine status.
Method
1. Press the start key.
2. Select the item using the exposure adjustment keys.
<table>
<tr><th>Exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1</td><td>First 3 digits</td><td>000 to 999</td><td>000</td></tr>
<tr><td>Exp. 2</td><td>Last 3 digits</td><td>000 to 999</td><td>000</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U931</td><td>
Setting the automatic toner install
Description
Sets automatic toner installation on or off when power is turned on.
Purpose
Changed to off when deactivating automatic toner installation.
Setting
1. Press the start key.
2. Select ON or OFF using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON</td><td>Automatic toner install function ON</td></tr>
<tr><td>OFF</td><td>Automatic toner install function OFF</td></tr>
</table>
Initial setting: ON
3. Press the start key. The setting is set.
4. The machine automatically returns to the same status as when the power is turned on.
</td></tr>
</table>

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U941</td><td>
Setting the default magnification ratio of the default cassette
Description
Sets the default magnification ratio when paper selection of copy default setting is set to the default cassette.
Purpose
To be set according to user request.
Setting
1. Press the start key.
2. Select the magnification using the exposure adjustment keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>100</td><td>100% magnification</td></tr>
<tr><td>Aut</td><td>Auto magnification selection</td></tr>
</table>
Initial setting: 100% magnification
3. Press the start key. The setting is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U942</td><td>
Setting of amount of slack for feeding from DP
Description
Adjusts the deflection generated when the 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 using the exposure adjustment keys.
<table>
<tr><th>Exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1</td><td>Original feed motor (OFM)
(in simplex feed)</td><td>-10 to 20</td><td>0</td></tr>
<tr><td>Exp. 2</td><td>Original switchback motor (OSBM)
(in duplex feed)</td><td>-10 to 20</td><td>0</td></tr>
</table>
3. Press the interrupt key.
4. Place an original on the DP and press the start key to make a test copy.
5. Change the setting value using the zoom +/- 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.
6. Press the start key. The value is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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Maintenance item No.	Description
U955	**Setting operation panel type** **Description** Sets the type of operation panel and LCD device. **Purpose** To set the type of operation panel and LCD device when the setting value is initialized by U020 on the machine with the operation panel for Taiwan or the LCD that displays Kanji. **Start** 1. Press the start key. 2. Select the item to be adjusted using the image mode selection key.

Image mode LEDs	Description
○ Text & Photo ○ Photo ● Text	Sets the type of operation panel
○ Text & Photo ● Photo ● Text	Sets the type of LCD device type

○ : Off, ● : On

Setting: operation panel type

1. Change the setting using the zoom +/- keys.

Display	Description
0	Off
1	Operation panel for Taiwan

Initial setting: 0

2. Press the start key. The setting is set.

Setting: LCD device type

1. Change the setting using the zoom +/- keys.

Display	Description
0	General LCD
1	Kanji display LCD

Initial setting: 0

2. Press the start key. The setting is set.

Completion

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

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<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U969</td><td>
Checking of toner area code
Description
Displays the toner area code.
Purpose
To check the toner area code.
Method
1. Press the start key. The toner area code is displayed.
Completion
Press the stop/clear 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 or clears 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
1. Press the start key.
2. Select the item using the exposure adjustment keys.
<table>
<tr><th>Exposure indicator</th><th>Copy quantity display</th></tr>
<tr><td>Exp. 1</td><td>First 3 digits of the lamp-on time (minutes)</td></tr>
<tr><td>Exp. 2</td><td>Last 3 digits of the lamp-on time (minutes)</td></tr>
<tr><td>Exp. 3</td><td>Clearing the lamp-on time (CLE)</td></tr>
</table>
Clearing
1. Light exp. 3.
2. Press the start key. The accumulated time is cleared.
Setting
1. Change the accumulated time using the numeric or zoom +/- keys.
2. Press the start key. The accumulated time is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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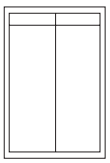
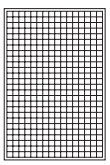
<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U991</td><td>
Checking the scanner count
Description
Displays the scanner operation count.
Purpose
To check the status of use of the scanner.
Method
1. Press the start key.
2. Select the item using the exposure adjustment keys.
<table>
<tr><th>Exposure indicator</th><th>Copy quantity display (count value)</th></tr>
<tr><td>Exp. 1</td><td>First 3 digits of the scanner count</td></tr>
<tr><td>Exp. 2</td><td>Last 3 digits of the scanner count</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></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 using the exposure adjustment keys.
<table>
<tr><th>Display</th><th>PG pattern to be output</th><th>Purpose</th></tr>
<tr><td>0</td><td>  </td><td>Leading edge registration adjustment
Center line adjustment
Margin adjustment</td></tr>
<tr><td>1</td><td>  </td><td>Lateral squareness adjustment
Magnification adjustment</td></tr>
<tr><td>2</td><td>  </td><td>Checking the fuser performance (fuser pressure)</td></tr>
</table>
3. Press the interrupt key.
4. Press the start key. A VTC-PG pattern is output.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

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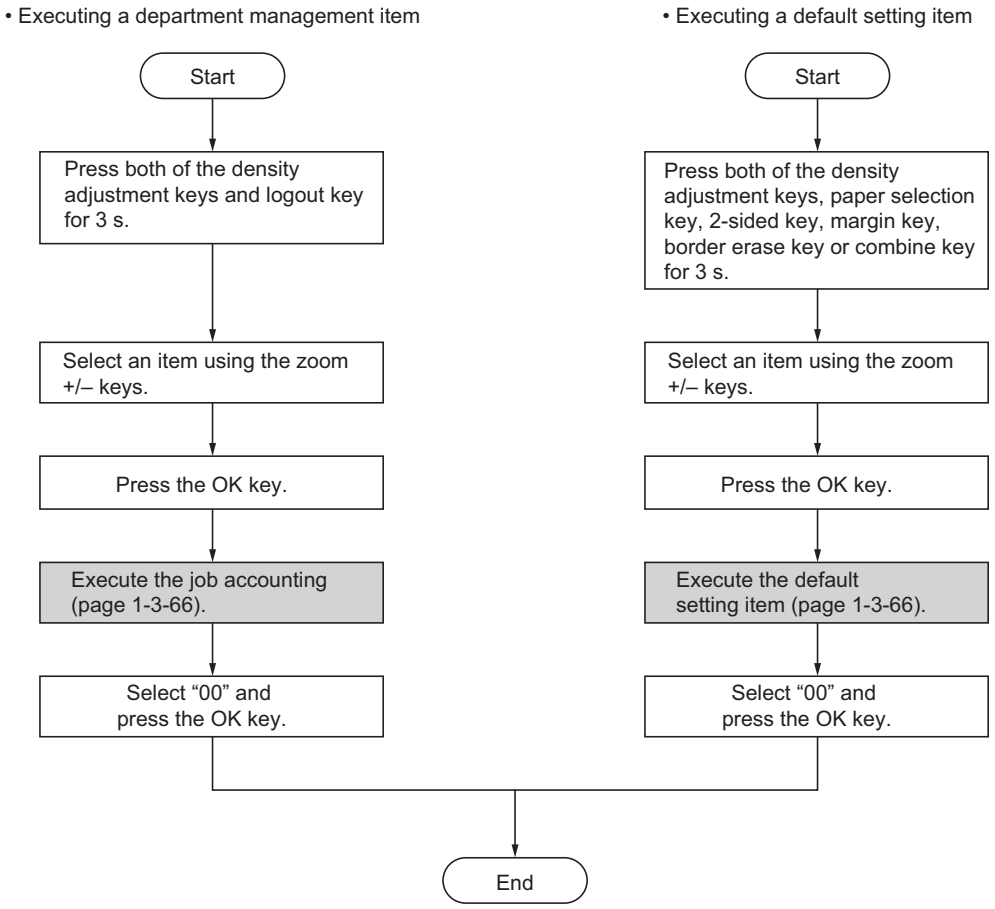
1-3-2 Management mode

In addition to a maintenance function for service, the machine is equipped with a management function which can be operated by users (mainly by the administrator). In this management mode, settings such as default settings can be changed.

(1) Using the management mode



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(2) Job accounting

Job accounting on/off setting

1. Press logout key and both of the density adjustment keys for 3 s.
2. Select [01.JobAccounting] and press the OK key.
3. Select [ON] or [OFF] and press the OK key.

Department ID code registration

1. Press logout key and both of the density adjustment keys for 3 s.
2. Select [02.Register code] and press the OK key.
3. Enter a department ID code using the numeric keys and press the OK key.
   Setting range: 0 to 99999999

Deleting department ID codes

1. Press logout key and both of the density adjustment keys for 3 s.
2. Select [03.Delete code] and press the OK key.
3. Enter the department ID code to be deleted using the numeric keys
4. Select [YES] or [NO] and press the OK key.

Clearing the job accounting count

1. Press logout key and both of the density adjustment keys for 3 s.
2. Select [04.Count Clear] and press the OK key.
3. Select [YES] or [NO] and press the OK key.

Outputting the job accounting list

1. Press logout key and both of the density adjustment keys for 3 s.
2. Select [05.Print list] and press the OK key.
   Check to make sure that A4/Letter size paper is loaded in the cassette.
3. Select [YES] and press the OK key.
   List is printed out.

(3) Default setting

User status report

Prints the details of the default settings.

1. Press both of the density adjustment keys for 3 s.
2. Select [01.Copy Status] and press the OK key.
   Check to make sure that A4/Letter size paper is loaded in the cassette.
3. Select [YES] and press the OK key.
   Report is printed out

Message language

Selects the language displayed on the message display.

1. Press both of the density adjustment keys for 3 s.
2. Select [02.Language] and press the OK key.
3. Select the language and press the OK key.

Original image quality

Selects the image quality at power-on.

1. Press both of the density adjustment keys for 3 s.
2. Select [03.Image Quality] and press the OK key.
3. Select [text + ph Dens.], [Photo Density] or [Text Density] and press the OK key.

Initial density

Selects the exposure mode at power-on.

1. Press both of the density adjustment keys for 3 s.
2. Select [04.Initial Dens.] and press the OK key.
3. Select [Manual] or [Auto] and press the OK key.

EcoPront

Selects the EcoPrint mode at power-on.

1. Press both of the density adjustment keys for 3 s.
2. Select [05.EcoPrint] and press the OK key.
3. Select [On] or [Off] and press the OK key.

Density steps

Sets the number of density steps for the manual density mode.

1. Press both of the density adjustment keys for 3 s.
2. Select [06.Density steps] and press the OK key.
3. Select [1 step] or [0.5 step] and press the OK key.

Auto density adjustment

Adjusts the density for the auto density mode.

1. Press both of the density adjustment keys for 3 s.
2. Select [07.Auto Density] and press the OK key.
3. Select the setting and press the OK key.
   Setting range: 1 (lightest) to 7 (darkest)

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Text + photo mode density adjustment

Adjusts the density to be used when text and photo original is selected for the image mode.

1. Press both of the density adjustment keys for 3 s.
2. Select [08.Text+Ph Dens.] and press the OK key.
3. Select the setting and press the OK key.
   Setting range: 1 (lightest) to 7 (darkest)

Photo density adjustment

Adjusts the density to be used when photo original is selected for the image mode.

1. Press both of the density adjustment keys for 3 s.
2. Select [09.Photo Density] and press the OK key.
3. Select the setting and press the OK key.
   Setting range: 1 (lightest) to 7 (darkest)

Text density adjustment

Adjusts the density to be used when text original is selected for the image mode.

1. Press both of the density adjustment keys for 3 s.
2. Select [10.Text Density] and press the OK key.
3. Select the setting and press the OK key.
   Setting range: 1 (lightest) to 7 (darkest)

Processing to reduce black lines

Reduces black lines that may be caused when the DP is used.

1. Press both of the density adjustment keys for 3 s.
2. Select [11.ReduceStreaks] and press the OK key.
3. Select [OFF], [Weak] or [Strong] and press the OK key.

Photo processing

Select the image processing method for photo originals.

1. Press both of the density adjustment keys for 3 s.
2. Select [12.OptimezePhoto] and press the OK key.
3. Select [ErrorDiffusion] or [Dither Matrix] and press the OK key.

Back ground adjustment

The ground color adjusting after copying.

1. Press both of the density adjustment keys for 3 s.
2. Select [13.OptimezBackgr] and press the OK key.
3. Select the setting and press the OK key.
   Setting range: 1 (lightest) to 5 (darkest)

Cassette selection

Select the auto paper select function based on the original size or priority cassette selection.

1. Press both of the density adjustment keys for 3 s.
2. Select [14.Initial Paper] and press the OK key.
3. Select [Auto] or [DefaultCassette] and press the OK key.

Selecting paper types for automatic paper selection

Selects the cassette that is to be automatically be given priority for use.

1. Press both of the density adjustment keys for 3 s.
2. Select [15.AutoSel Paper] and press the OK key.
3. Select the paper type and press the OK key.

Selected cassette

Selects the cassette that is to be automatically be given priority for use.

1. Press both of the density adjustment keys for 3 s.
2. Select [16.DefaultCasset] and press the OK key.
3. Select [Cassette1], [Cassette2], [Cassette3] or [Cassette4] and press the OK key.

Auto cassette switching

Sets whether the auto cassette switching function is available.

1. Press both of the density adjustment keys for 3 s.
2. Select [17.AutoCassetSel] and press the OK key.
3. Select [Disting. paper] or [Not disting] and press the OK key.
   This will be displayed when the optional paper feeder is installed.

Auto sizing

Selects whether auto magnification selection or 100% magnification is to be given priority when the sizes of the original and copy paper are different.

1. Press both of the density adjustment keys for 3 s.
2. Select [18.PriorAutoZoom] and press the OK key.
3. Select [On] or [Off] and press the OK key.

Cassette paper size (cassette 1)

Sets the paper size for the cassette so that it will be automatically selected.

1. Press paper selection keys for 3 s.
2. Select [19.Cassette1Size] and press the OK key.
3. Select the paper size and press the OK key.

Cassette paper size (cassette 2)

Sets the paper size for the first paper feeder so that it will be automatically selected.

1. Press paper selection keys for 3 s.
2. Select [20.Cassette2Size] and press the OK key.
3. Select the paper size and press the OK key.
   This will be displayed when the optional paper feeder is installed.

Cassette paper size (cassette 3)

Sets the paper size for the second paper feeder so that it will be automatically selected.

1. Press paper selection keys for 3 s.
2. Select [21.Cassette3Size] and press the OK key.
3. Select the paper size and press the OK key.
   This will be displayed when the optional paper feeder is installed.

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Cassette paper size (cassette 4)

Sets the paper size for the third paper feeder so that it will be automatically selected.

1. Press paper selection keys for 3 s.
2. Select [22.Cassette4Size] and press the OK key.
3. Select the paper size and press the OK key.
   This will be displayed when the optional paper feeder is installed.

MP tray paper size

Sets the paper size for the MP tray so that it will be automatically selected.

1. Press paper selection keys for 3 s.
2. Select [23.MPTray Config] and press the OK key.
3. Select the paper size and press the OK key.

Custom 1 size

Sets the size of the paper to be set to the custom 1 size.

1. Press both of the density adjustment keys for 3 s.
2. Select [24.Custom Size 1] and press the OK key.
3. Select the paper size and press the OK key.

Custom 2 size

Sets the size of the paper to be set to the custom 2 size.

1. Press both of the density adjustment keys for 3 s.
2. Select [25.Custom Size 2] and press the OK key.
3. Select the paper size and press the OK key.

Selecting media type (cassette 1)

Sets the paper type to the cassette.

1. Press both of the density adjustment keys for 3 s.
2. Select [26.Casst1MedType] and press the OK key.
3. Select the paper type and press the OK key.

Selecting media type (cassette 2)

Sets the paper type to the first paper feeder.

1. Press both of the density adjustment keys for 3 s.
2. Select [27.Casst2MedType] and press the OK key.
3. Select the paper type and press the OK key.
   This will be displayed when the optional paper feeder is installed.

Selecting media type (cassette 3)

Sets the paper type to the second paper feeder.

1. Press both of the density adjustment keys for 3 s.
2. Select [28.Casst3MedType] and press the OK key.
3. Select the paper type and press the OK key.
   This will be displayed when the optional paper feeder is installed.

Selecting media type (cassette 4)

Sets the paper type to the third paper feeder.

1. Press both of the density adjustment keys for 3 s.
2. Select [29.Casst4MedType] and press the OK key.
3. Select the paper type and press the OK key.
   This will be displayed when the optional paper feeder is installed.

Specifying the paper weight and 2-sided copying to custom paper

Sets the paper weights and 2-sided copying to the custom 1 to 8.

1. Press both of the density adjustment keys for 3 s.
2. Select [30.CustmMedType1] to [37.CustmMedType8] and press the OK key.
3. Select the paper weight and press the OK key.
4. Select [On] or [Off] and press the OK key.

Auto detect originals

Predetermines what paper size is selected for printing when copying an original document of non-standard sizes.

1. Press both of the density adjustment keys for 3 s.
2. Select [38.Hagaki/A6RDet] and press the OK key.
3. Select [Hagaki] or [A6 R] and press the OK key.

Auto detect originals

Predetermines what paper size is selected for printing when copying an original document of non-standard sizes.

1. Press both of the density adjustment keys for 3 s.
2. Select [39.B4R/Folio Det] and press the OK key.
3. Select [B4 R] or [Folio R] and press the OK key.

Auto detect originals

When the size of original document is 11" x15", the original document is automatically zoomed.

1. Press both of the density adjustment keys for 3 s.
2. Select [40.11x15" Detect] and press the OK key.
3. Select [On] or [Off] and press the OK key.

Copy limit

Sets the number of copies limit for multiple copying.

1. Press both of the density adjustment keys for 3 s.
2. Select [41.Copy Limit] and press the OK key.
3. Enter the setting and press the OK key.
   Setting range: 1 to 999

2-sided copy reverse-side rotation setting

Select whether or not the image on the reverse side is rotated 180 degrees in the 2-sided copy mode.

1. Press 2-sided key for 3 s.
2. Select [42.Duplex 2nd] and press the OK key.
3. Select [On] or [Off] and press the OK key.

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Margin shift

Sets the default setting of the margin width for the margin copying.

1. Press margin key for 3 s.
2. Select [43.Stitch Width] and press the OK key.
3. Select the setting and press the OK key.
   Setting range: 1 to 18 mm/0.13" to 0,75"

Border width

Sets the default setting of the border width for the border erase mode.

1. Press border erase key for 3 s.
2. Select [44.Border Erase] and press the OK key.
3. Select the setting and press the OK key.
   Setting range: 1 to 18 mm/0.13" to 0,75"

4 in 1 layout order

Sets the layout for the order in which the originals will appear in the 4 in 1 layout mode.

1. Press combine key for 3 s.
2. Select [45.4 in 1 Layout] and press the OK key.
3. Select the setting and press the OK key.
   Portrait 1/Portrait 2/Landscape 1/Landscape 2

Combine mode borderline

Selects the type of borderline to be used in the layout mode.

1. Press combine key for 3 s.
2. Select [46.Combine Border] and press the OK key.
3. Select the [Off], [Solid] or [Dotted] and press the OK key.

Rotate collate setting

Sets whether or not to perform rotate sorting when the sort mode is selected.

1. Press both of the density adjustment keys for 3 s.
2. Select [47.Rotate/Offset] and press the OK key.
3. Select [On] or [Off] and press the OK key.

Selecting auto rotation

Sets whether the automatic rotation by default.

1. Press both of the density adjustment keys for 3 s.
2. Select [48.Auto Rotation] and press the OK key.
3. Select [On] or [Off] and press the OK key.

Silent mode transition time

Set the silent mode transition time after copying.

1. Press both of the density adjustment keys for 3 s.
2. Select [49.Silent mode] and press the OK key.
3. Select the setting and press the OK key.
   0 sec/5 sec/10 sec/15 sec/30 sec

Auto clear setting

Sets whether the auto clear function is available.

1. Press both of the density adjustment keys for 3 s.
2. Select [50.Auto Clear] and press the OK key.
3. Select [On] or [Off] and press the OK key.

Auto sleep setting

Sets whether the auto off function is available.

1. Press both of the density adjustment keys for 3 s.
2. Select [51.Auto Sleep] and press the OK key.
3. Select [On] or [Off] and press the OK key.

Auto clear time

Sets the auto clear time.

1. Press both of the density adjustment keys for 3 s.
2. Select [52.AutoClearTime] and press the OK key.
3. Select the setting and press the OK key.
   Setting range: 10 to 270 sec

Low power mode transition time

Sets the auto preheat time.

1. Press both of the density adjustment keys for 3 s.
2. Select [53.LowPower Time] and press the OK key.
3. Select the setting and press the OK key.
   1 min/5 min/15 min/30 min/45 min/60 min/90 min/120 min/180 min/240 min

Sleep mode transition time

Sets the auto shutoff time.

1. Press both of the density adjustment keys for 3 s.
2. Select [54.AutoSleep Time] and press the OK key.
3. Select the setting and press the OK key.
   1 min/5 min/15 min/30 min/45 min/60 min/90 min/120 min/180 min/240 min

Alarm

The alarm can be set to sound when errors occur.

1. Press both of the density adjustment keys for 3 s.
2. Select [55.Alarm] and press the OK key.
3. Select [On] or [Off] and press the OK key.

Digital dot coverage report

Prints out a report that shows the number of copies made and the blackness ratio for each paper size.

1. Press both of the density adjustment keys for 3 s.
2. Select [56.CoverageRepo] and press the OK key.
   Check to make sure that A4/Letter size paper is loaded in the cassette.
3. Select [YES] and press the OK key.
   Report is printed out

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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.
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.

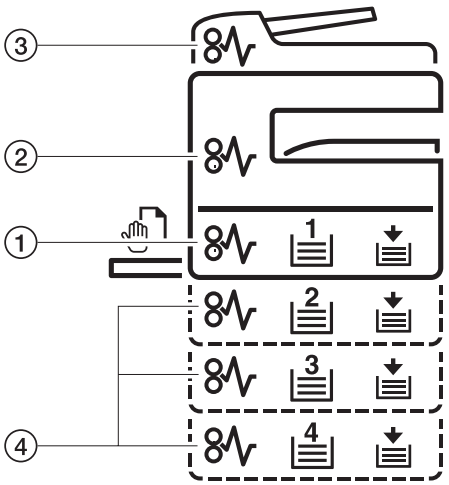

Figure 1-4-1

(1) Misfeed in paper feed section
(2) Misfeed in paper conveying section
(3) Misfeed in document processor
(4) Misfeed in paper feeder

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(2) Paper misfeed detection conditions

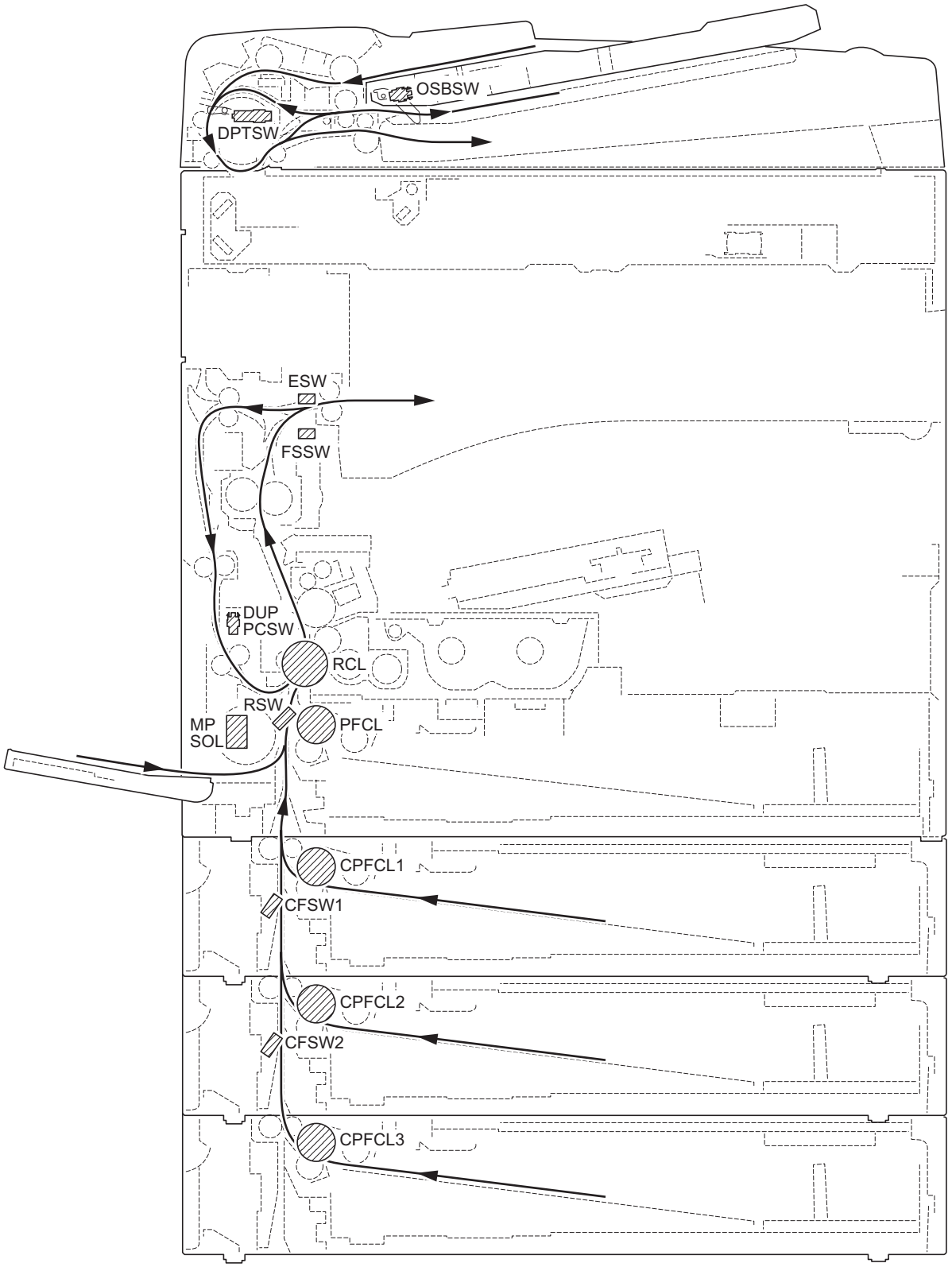

Figure 1-4-2

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Section	Description	Conditions	Specified time
System	00 No paper feed	The power is turned on when a sensor in the conveying system is on.	-
		The document processor is opened while originals fed from the document processor are scanned.	-
	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
Paper feed section	10 No paper feed from MP tray	The registration switch (RSW) does not turn on within the specified time of paper MP solenoid (MPSOL) turning on and cannot be detected at the same timing even after retry.	1570 ms
	11 No paper feed from cassette	The registration switch (RSW) does not turn on within the specified time of paper feed clutch 1 (PFCL1) turning on and cannot be detected at the same timing even after retry.	1327 ms
	12 No paper feed from first paper feeder	The registration switch (RSW) does not turn on within the specified time of cassette paper feed clutch 1 (CPFCL1) turning on and cannot be detected at the same timing even after retry.	2290 ms
	13 No paper feed from second paper feeder	Cassette feed switch 1 (CFSW1) does not turn on within the specified time of cassette paper feed clutch 2 (CPFCL2) turning on and cannot be detected at the same timing even after retry.	1953 ms
	14 No paper feed from third paper feeder	Cassette feed switch 2 (CFSW2) does not turn on within the specified time of cassette paper feed clutch 3 (CPFCL3) turning on and cannot be detected at the same timing even after retry.	1953 ms
	15 Misfeed in vertical paper conveying section 1	The registration switch (RSW) does not turn on within specified time of cassette feed switch 1 (CFSW1) turning on.	2243 ms
		Cassette feed switch 1 (CFSW1) does not turn off within specified time of cassette feed switch 2 (CFSW2) turning on.	1916 ms
		Cassette feed switch 1 (CFSW1) does not turn off within specified time of cassette feed switch 2 (CFSW2) turning off.	1916 ms
		Left cover is opened in prior to the cassette feed switch 1 (CFSW1) is turned off.	-
	16 Misfeed in vertical paper conveying section 2	Cassette feed switch 1 (CFSW1) does not turn on within specified time of cassette feed switch 2 (CFSW2) turning on.	1916 ms
		Left cover is opened in prior to the cassette feed switch 2 (CFSW2) is turned off.	-
	20 Multiple sheets in MP tray	The registration switch (RSW) does not turn off within specified time of its turning on.	5907 ms
		The registration switch (RSW) does not turn off within the specified time of paper MP solenoid (MPSOL) turning on.	1570 ms

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Section	Description	Conditions	Specified time
Paper feed section	21 Multiple sheets in cassette	The registration switch (RSW) does not turn off within specified time of its turning on.	5907 ms
		The registration switch (RSW) does not turn off within the specified time of paper feed clutch (PFCL) turning on.	1327 ms
	22 Multiple sheets in first paper feeder	The registration switch (RSW) does not turn off within specified time of its turning on.	5907 ms
		The registration switch (RSW) does not turn off within the specified time of cassette paper feed clutch 1 (CPFCL1) turning on.	2290 ms
	23 Multiple sheets in second paper feeder	Cassette feed switch 1 (CFSW1) does not turn off within specified time of its turning on.	5907 ms
		Cassette feed switch 1 (CFSW1) does not turn off within the specified time of cassette paper feed clutch 2 (CPFCL2) turning on.	1953 ms
	24 Multiple sheets in third paper feeder	Cassette feed switch 2 (CFSW2) does not turn off within specified time of its turning on.	5907 ms
		Cassette feed switch 2 (CFSW2) does not turn off within the specified time of cassette paper feed clutch 3 (CPFCL3) turning on.	1953 ms
Paper conveying section	30 Misfeed in registration/ transfer section	A message, which is not the one indicating start of secondary paper feed, is received when the machine waits for start of secondary paper feed.	-
		The registration switch (RSW) does not turn off within specified time of the cassette feed switch 1 (CFSW1) turning on (paper feed from second paper feeder).	2523 ms
		The registration switch (RSW) does not turn off within specified time of the cassette feed switch 1 (CFSW1) turning on (paper feed from third paper feeder).	2243 ms
		The registration switch (RSW) does not turn off within specified time of the cassette feed switch 1 (CFSW1) turning off.	2243 ms
		The registration switch (RSW) does not turn off within specified time of the duplex paper conveying switch (DUPPCSW) turning on.	1589 ms
Fuser section	40 Misfeed in fuser section (MP tray)	The eject switch (ESW) does not turn on within specified time of the registration clutch (RCL) turning on.	2766 ms
		The feedshift switch (FSSW) does not turn on within specified time of the registration clutch (RCL) turning on.	2766 ms
	41 Misfeed in fuser section (cassette)	The eject switch (ESW) does not turn on within specified time of the registration clutch (RCL) turning on.	2766 ms
		The feedshift switch (FSSW) does not turn on within specified time of the registration clutch (RCL) turning on.	2766 ms
	42 Misfeed in fuser section (first paper feeder)	The eject switch (ESW) does not turn on within specified time of the registration clutch (RCL) turning on.	2766 ms
	43 Misfeed in fuser section (second paper feeder)	The eject switch (ESW) does not turn on within specified time of the registration clutch (RCL) turning on.	2766 ms

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Section	Description	Conditions	Specified time
Fuser section	44 Misfeed in fuser section (third paper feeder)	The eject switch (ESW) does not turn on within specified time of the registration clutch (RCL) turning on.	2766 ms
	45 Misfeed in fuser section (duplex section)	The eject switch (ESW) does not turn on within specified time of the registration clutch (RCL) turning on.	2766 ms
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.	2766 ms
		The eject switch (ESW) does not turn off within specified time of the registration clutch (RCL) turning on.	2766 ms
Feedshift section	52 Misfeed in feedshift section (MP tray)	The job eject switch (JBESW) does not turn on within specified time of the feedshift switch (FSSW) turning on.	2056 ms
		The feedshift switch (FSSW) does not turn on within specified time of paper switchback operation.	1364 ms
		The feedshift switch (FSSW) does not turn off within specified time of the registration clutch (RCL) turning on.	2766 ms
		The feedshift switch (FSSW) does not turn off within specified time of the its turning on.	5907 ms
	53 Misfeed in feedshift section (cassette)	The job eject switch (JBESW) does not turn on within specified time of the feedshift switch (FSSW) turning on.	2056 ms
		The feedshift switch (FSSW) does not turn on within specified time of paper switchback operation.	1364 ms
		The feedshift switch (FSSW) does not turn off within specified time of the registration clutch (RCL) turning on.	2766 ms
		The feedshift switch (FSSW) does not turn off within specified time of the its turning on.	5907 ms
	54 Misfeed in feedshift section (first paper feeder)	The job eject switch (JBESW) does not turn on within specified time of the feedshift switch (FSSW) turning on.	2056 ms
		The feedshift switch (FSSW) does not turn on within specified time of paper switchback operation.	1364 ms
		The feedshift switch (FSSW) does not turn off within specified time of the registration clutch (RCL) turning on.	2766 ms
		The feedshift switch (FSSW) does not turn off within specified time of the its turning on.	5907 ms
	55 Misfeed in feedshift section (second paper feeder)	The job eject switch (JBESW) does not turn on within specified time of the feedshift switch (FSSW) turning on.	2056 ms
		The feedshift switch (FSSW) does not turn on within specified time of paper switchback operation.	1364 ms
		The feedshift switch (FSSW) does not turn off within specified time of the registration clutch (RCL) turning on.	2766 ms
		The feedshift switch (FSSW) does not turn off within specified time of the its turning on.	5907 ms

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Section	Description	Conditions	Specified time
Feedshift section	56 Misfeed in feedshift section (third paper feeder)	The job eject switch (JBESW) does not turn on within specified time of the feedshift switch (FSSW) turning on.	2056 ms
		The feedshift switch (FSSW) does not turn on within specified time of paper switchback operation.	1364 ms
		The feedshift switch (FSSW) does not turn off within specified time of the registration clutch (RCL) turning on.	2766 ms
		The feedshift switch (FSSW) does not turn off within specified time of the its turning on.	5907 ms
	57 Misfeed in feedshift section (duplex section)	The job eject switch (JBESW) does not turn on within specified time of the feedshift switch (FSSW) turning on.	2056 ms
		The feedshift switch (FSSW) does not turn on within specified time of paper switchback operation.	1364 ms
		The feedshift switch (FSSW) does not turn off within specified time of the registration clutch (RCL) turning on.	2766 ms
		The feedshift switch (FSSW) does not turn off within specified time of the its turning on.	5907 ms
Duplex section	60 Misfeed in duplex paper conveying section	The duplex paper conveying switch (DUPPCSW) does not turn off within specified time of the feedshift switch (FSSW) turning on.	3037 ms
		The duplex paper conveying switch (DUPPCSW) does not turn on within specified time of the feedshift switch (FSSW) turning on.	3037 ms
		The duplex paper conveying switch (DUPPCSW) does not turn off within specified time of the feedshift switch (FSSW) turning off.	3037 ms
	61 Misfeed in duplex eject section	The registration switch (RSW) does not turn on within specified time of the duplex paper conveying switch (DUPPCSW) turning on.	1589 ms
		The registration switch (RSW) does not turn off within specified time of the duplex paper conveying switch (DUPPCSW) turning off.	1589 ms
Document processor	70 No original feed	During primary feed of the second original in the simplex or duplex mode, even if retry operation is performed five times, primary original feed is not performed.	-
	71 An original jam in the original conveying section 1	During the secondary original feed in the simplex mode, DP timing switch (DPTSW) does not turn off within specified time of the original conveying motor (OCM) turning on.	9900 pulses
	72 An original size error jam	DP timing switch (DPTSW) turns off within the specified time of period of the original conveying motor (OCM) turning on in the simplex or duplex mode.	1145 pulses
	73 An original jam in the original conveying section 2	During original conveying in the duplex mode, DP timing switch (DPTSW) does not turn off within specified time of the original conveying motor (OCM) turning on.	9900 pulses
	74 An original jam in the original conveying section 3	During secondary original feed in the duplex mode, DP timing switch (DPTSW) does not turn on within specified time of the original switchback motor (OSBM) turning on.	2300 pulses

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Section	Description	Conditions	Specified time
Document processor	75 An original jam in the original switchback section	During original switchback in the duplex mode, the original switchback switch (OSBSW) does not turn on within specified time of the original conveying motor (OCM) turning on.	10700 pulses
	78 Document processor cover open	The document processor or document processor top cover is opened during original feeding. The original set switch (OSSW) or original size length switch (OSLSW) turns on when starting the original paper feed.	-

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(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 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 is not light. Registration switch, eject switch, feedshift switch
(2) A paper jam in the paper feed section is indicated during copying (no paper feed from MP tray). Jam code 10	Paper is extremely curled.	Change the paper.
	Check if the MP paper feed pulley is deformed.	Check visually and replace any deformed pulley.
	Broken registration switch actuator.	Check visually and replace switch.
	Defective registration switch.	Run maintenance item U031 and turn registration switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the MP solenoid malfunctions.	Run maintenance item U032 and select the MP solenoid to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the MP solenoid.	Check (see page 1-4-28).
(3) A paper jam in the paper feed section is indicated during copying (no paper feed from cassette). Jam code 11	Paper is extremely curled.	Change the paper.
	Check if the paper feed pulley, separation pulley or forwarding pulley is deformed.	Check visually and replace any deformed pulley.
	Broken registration switch actuator.	Check visually and replace switch.
	Defective registration switch.	Run maintenance item U031 and turn registration switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the paper feed clutch malfunctions.	Run maintenance item U032 and select the paper feed clutch to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the paper feed clutch.	Check (see page 1-4-28).
(4) A paper jam in the paper feed section is indicated during copying (no paper feed from first paper feeder). Jam code 12	Paper is extremely curled.	Change the paper.
	Check if the paper feed pulley, separation pulley or forwarding pulley is deformed.	Check visually and replace any deformed pulley.
	Broken registration switch actuator.	Check visually and replace switch.
	Defective registration switch.	Run maintenance item U031 and turn registration switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the cassette paper feed clutch 1 malfunctions.	Run maintenance item U032 and select the cassette paper feed clutch 1 to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the cassette paper feed clutch 1.	Check (see page 1-4-28).

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Problem	Causes/check procedures	Corrective measures
(5) A paper jam in the paper feed section is indicated during copying (no paper feed from second paper feeder). Jam code 13	Paper is extremely curled.	Change the paper.
	Check if the paper feed pulley, separation pulley or forwarding pulley is deformed.	Check visually and replace any deformed pulley.
	Broken cassette feed switch 1 actuator.	Check visually and replace switch.
	Defective cassette feed switch 1.	Run maintenance item U031 and turn cassette feed switch 1 on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the cassette paper feed clutch 2 malfunctions.	Run maintenance item U032 and select the cassette paper feed clutch 2 to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the cassette paper feed clutch 2.	Check (see service manual of paper feeder).
(6) A paper jam in the paper feed section is indicated during copying (no paper feed from third paper feeder). Jam code 14	Paper is extremely curled.	Change the paper.
	Check if the paper feed pulley, separation pulley or forwarding pulley is deformed.	Check visually and replace any deformed pulley.
	Broken cassette feed switch 2 actuator.	Check visually and replace switch.
	Defective cassette feed switch 2.	Run maintenance item U031 and turn cassette feed switch 2 on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the cassette paper feed clutch 3 malfunctions.	Run maintenance item U032 and select the cassette paper feed clutch 3 to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the cassette paper feed clutch 3.	Check (see service manual of paper feeder).
(7) A paper jam in the paper feed section is indicated during copying (misfeed in vertical paper conveying section 1). Jam code 15	Broken registration switch, cassette feed switch 1 or 2 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 is not light. Registration switch, cassette feed switch 1, 2
	Check if the paper feed clutch, cassette paper feed clutch 1, 2 or 3 malfunctions.	Run maintenance item U032 and select the clutch to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the paper feed clutch, cassette paper feed clutch 1, 2 or 3.	Check (see service manual of paper feeder).
	Defective feed pulleys or feed rollers.	Check visually and replace.

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Problem	Causes/check procedures	Corrective measures
(8) A paper jam in the paper feed section is indicated during copying (misfeed in vertical paper conveying section 2). Jam code 16	Broken cassette feed switch 1 or 2 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 is not light. Cassette feed switch 1, 2
	Check if the paper feed clutch, cassette paper feed clutch 1 or 2 malfunctions.	Run maintenance item U032 and select the clutch to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the paper feed clutch, cassette paper feed clutch 1 or 2.	Check (see service manual of paper feeder).
	Defective feed pulleys or feed rollers.	Check visually and replace.
(9) A paper jam in the paper feed section is indicated during copying (multiple sheets in MP tray). Jam code 20	Deformed guides along the paper conveying path.	Check visually and replace.
	Broken registration switch actuator.	Check visually and replace switch.
	Defective registration switch.	Run maintenance item U031 and turn registration switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the MP solenoid malfunctions.	Run maintenance item U032 and select the MP solenoid to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the MP solenoid.	Check (see page 1-4-28).
	Check if the right and left registration rollers contact each other.	Check visually and replace.
(10) A paper jam in the paper feed section is indicated during copying (multiple sheets in cassette). Jam code 21	Deformed guides along the paper conveying path.	Check visually and replace.
	Broken registration switch actuator.	Check visually and replace switch.
	Defective registration switch.	Run maintenance item U031 and turn registration switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the paper feed clutch malfunctions.	Run maintenance item U032 and select the paper feed clutch to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the paper feed clutch.	Check (see page 1-4-28).
	Check if the right and left registration rollers contact each other.	Check visually and replace.

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Problem	Causes/check procedures	Corrective measures
(11) A paper jam in the paper feed section is indicated during copying (multiple sheets in first paper feeder). Jam code 22	Deformed guides along the paper conveying path.	Check visually and replace.
	Broken registration switch actuator.	Check visually and replace switch.
	Defective registration switch.	Run maintenance item U031 and turn registration switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the cassette paper feed clutch 1 malfunctions.	Run maintenance item U032 and select the cassette paper feed clutch 1 to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the cassette paper feed clutch 1.	Check (see page 1-4-28).
	Check if the right and left registration rollers contact each other.	Check visually and replace.
(12) A paper jam in the paper feed section is indicated during copying (multiple sheets in second paper feeder). Jam code 23	Deformed guides along the paper conveying path.	Check visually and replace.
	Broken cassette feed switch 1 actuator.	Check visually and replace switch.
	Defective cassette feed switch 1.	Run maintenance item U031 and turn cassette feed switch 1 on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the cassette paper feed clutch 2 malfunctions.	Run maintenance item U032 and select the cassette paper feed clutch 2 to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the cassette paper feed clutch 2.	Check (see page 1-4-28).
(13) A paper jam in the paper feed section is indicated during copying (multiple sheets in third paper feeder). Jam code 24	Deformed guides along the paper conveying path.	Check visually and replace.
	Broken cassette feed switch 2 actuator.	Check visually and replace switch.
	Defective cassette feed switch 2.	Run maintenance item U031 and turn cassette feed switch 2 on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the cassette paper feed clutch 3 malfunctions.	Run maintenance item U032 and select the cassette paper feed clutch 3 to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the cassette paper feed clutch 3.	Check (see page 1-4-28).

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Problem	Causes/check procedures	Corrective measures
(14) A paper jam in the paper conveying section is indicated during copying (misfeed in registration/transfer section). Jam code 30	Deformed guides along the paper conveying path.	Check visually and replace.
	Broken registration switch, cassette feed switch 1 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 is not light. Registration switch, cassette feed switch 1, duplex paper conveying switch
(15) A paper jam in the fuser section is indicated during copying (misfeed in fuser section). Jam codes 40, 41, 42, 43, 44 and 45	Check if the front fuser guide is deformed.	Check visually and replace.
	Check if the press roller is extremely dirty or deformed.	Clean or replace if necessary.
	Check if the heat roller separation claws are dirty or deformed.	Clean or replace if necessary.
	Check if the heat roller and its separation claws contact each other.	Check visually and replace.
	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 is not light. Eject switch, feedshift switch
	Check if the registration clutch malfunctions.	Run maintenance item U032 and select the registration clutch to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the registration clutch.	Check (see page 1-4-28).
(16) A paper jam in the eject section is indicated during copying (misfeed in eject section). Jam code 50	Broken eject switch or registration 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 is not light. Eject switch, registration switch
	Check if the registration clutch malfunctions.	Run maintenance item U032 and select the registration clutch to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the registration clutch.	Check (see page 1-4-28).

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Problem	Causes/check procedures	Corrective measures
(17) A paper jam in the feedshift section is indicated during copying (misfeed in feedshift section). Jam code 52, 53, 54, 55, 56, 57	Broken feedshift switch, registration switch or job 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 is not light. Feedshift switch, registration switch, job eject switch
	Check if the eject motor malfunctions.	Run maintenance item U030 and select the eject motor to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the eject motor.	Check (see page 1-4-28).
(18) A paper jam in the duplex section is indicated during copying (misfeed in duplex paper conveying section). 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 is not light. Feedshift switch, duplex paper conveying switch
	Check if the eject motor malfunctions.	Run maintenance item U030 and select the eject motor to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the eject motor.	Check (see page 1-4-28).
	Check if the duplex feed clutch malfunctions.	Run maintenance item U032 and select the duplex feed clutch to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the duplex feed clutch.	Check (see page 1-4-28).
(19) A paper jam in the duplex section is indicated during copying (misfeed in duplex eject section). Jam code 61	Broken duplex paper conveying switch or registration 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 is not light. Duplex paper conveying switch, registration switch
	Check if the duplex feed clutch malfunctions.	Run maintenance item U032 and select the duplex feed clutch to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the duplex feed clutch.	Check (see page 1-4-28).
(20) An original jams in DP is indicated during copying (no original feed). Jam code 70	Defective original set switch.	Run maintenance item U244 and turn the original set switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the original feed motor malfunctions.	Run maintenance item U243 and select the original feed motor to be turned on and off. Check the status and remedy if necessary.
	Check if the DP paper feed pulley or DP separation pad is deformed.	Check visually and replace.

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Problem	Causes/check procedures	Corrective measures
(21) An original jams in DP is indicated during copying (an original jam in the original conveying section 1). Jam code 71	Defective DP timing switch.	Run maintenance item U244 and turn the DP timing switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the original conveying motor malfunctions.	Run maintenance item U243 and select the original conveying motor to be turned on and off. Check the status and remedy if necessary.
(22) An original jams in DP is indicated during copying (an original size error jam). Jam code 72	Defective DP timing switch.	Run maintenance item U244 and turn the DP timing switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the original conveying motor malfunctions.	Run maintenance item U243 and select the original conveying motor to be turned on and off. Check the status and remedy if necessary.
(23) An original jams in DP is indicated during copying (an original jam in the original conveying section 2). Jam code 73	Defective DP timing switch.	Run maintenance item U244 and turn the DP timing switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the original conveying motor malfunctions.	Run maintenance item U243 and select the original conveying motor to be turned on and off. Check the status and remedy if necessary.
(24) An original jams in DP is indicated during copying (an original jam in the original conveying section 3). Jam code 74	Defective DP timing switch.	Run maintenance item U244 and turn the DP timing switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the original conveying motor malfunctions.	Run maintenance item U243 and select the original conveying motor to be turned on and off. Check the status and remedy if necessary.
(25) An original jams in DP is indicated during copying (an original jam in the original switchback section). Jam code 75	Defective DP timing switch.	Run maintenance item U244 and turn the DP timing switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the original switchback motor malfunctions.	Run maintenance item U243 and select the original switchback motor to be turned on and off. Check the status and remedy if necessary.

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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 the main power switch off and back on.

List of system errors
When an unexpected error is detected for some reason, a system error (A call error) will be indicated. After a system error (A call error) is indicated, the error can be cleared by turning the main power switch off and then on. If a system error (A call error) occurs frequently, a fault may have occurred. Check the details of the C call to take proper measures.

System error	Contents
0410	Document processor communication problem
0420	First paper feeder communication problem
0500	Second paper feeder communication problem
0510	Third paper feeder communication problem

Table 1-4-1

Measures against the service codes detecting fuser problems
If one of the following service codes is detected, take actions to clear the cause of the trouble and perform maintenance item U163 to reset the service code.

Code	Contents
C6000	Fuser heater break
C6020	Abnormally high fuser thermistor center temperature
C6050	Abnormally low fuser thermistor center temperature
C6400	Zero-cross signal error

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(2) Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0100	**Backup memory (EEPROM) device problem (main)** Reading from or writing to EEPROM cannot be performed.	Defective main/ engine PWB.	Replace the main/engine PWB and check for correct operation.
C0110	**Backup memory data problem (main)** Data in the specified area of the backup memory does not match the specified values.	Data damage of EEPROM.	Contact the Service Administrative Division.
C0150	**Backup memory device problem (engine EEPROM)** Reading from or writing to EEPROM cannot be performed.	Defective main/ engine PWB.	Replace the main/engine PWB and check for correct operation.
		Device damage of EEPROM.	Contact the Service Administrative Division.
C0160	**Backup memory data problem (engine EEPROM)** Reading data from EEPROM is abnormal.	Data damage of EEPROM.	Contact the Service Administrative Division.
C0170	**Copy counts problem** When the power is turned on, the total count and the scan count are abnormal both on the main and engine.	Data damage of EEPROM.	Contact the Service Administrative Division.
		Defective main/ engine PWB.	Replace the main/engine PWB and check for correct operation.
C0180	**Machine number mismatch** Machine number of main and engine does not match.	Data damage of EEPROM.	Contact the Service Administrative Division.
C0210	**Communication problem between the main and engine** When the power is turned on, the machine does not detect the low level of SBSY and the high level of SDIR for 10 s.	Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective main/ engine PWB.	Replace the main/engine PWB and check for correct operation.
C0240	**Printer PWB communication problem** The printer PWB does not respond 120 s after the power is turned on.	Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective main/ engine PWB.	Replace the main/engine PWB and check for correct operation.
A0410	**Document processor communication problem** Communication fails five times successively.	Document processor installed incorrectly.	Check the installation state of the document processor and adjust it if it is not properly installed.
		Defective PWB.	Replace the main/engine PWB or DP driver PWB and check for correct operation.
A0420	**First paper feeder communication problem** Communication fails five times successively.	First paper feeder installed incorrectly.	Check the installation state of the first paper feeder and adjust it if it is not properly installed.
		Defective PWB.	Replace the main/engine PWB or cassette main PWB and check for correct operation.

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Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
A0500	**Second paper feeder communication problem** Communication fails five times successively.	Second paper feeder installed incorrectly.	Check the installation state of the second paper feeder and adjust it if it is not properly installed.
		Defective PWB.	Replace the main/engine PWB or cassette main PWB and check for correct operation.
A0510	**Third paper feeder communication problem** Communication fails five times successively.	Third paper feeder installed incorrectly.	Check the installation state of the third paper feeder and adjust it if it is not properly installed.
		Defective PWB.	Replace the main/engine PWB or cassette main PWB and check for correct operation.
C0610	**Bitmap (DIMM) problem** There is a problem with the data or address bus of the bitmap DRAM.	Defective main/ engine PWB.	Replace the main/engine PWB and check for correct operation.
		DIMM installed incorrectly.	Check if the DIMM is inserted into the socket on the main/engine PWB correctly.
		Defective DIMM.	Replace the DIMM and check for correct operation.
C0620	**Memory input interface problem** Reading-in of an image does not complete within 10 s of the start of image transmission.	Defective main/ engine PWB.	Replace the main/engine PWB and check for correct operation.
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/ engine PWB.	Replace the main/engine PWB and check for correct operation.
C0800	**Image processing problem** JAM05 is detected twice.	Defective main/ engine PWB.	Replace the main/engine PWB and check for correct operation.
C2000	**Drive motor problem** A stable state does not continue for 1 s from 1 s after the drive motor is activated.	Poor contact in the connector terminals.	Check the connection of connector YC6 on the main/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 main/ engine PWB.	Replace the main/engine PWB and check for correct operation.
		Defective drive motor.	Replace the drive motor.

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Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C2200	**Drum motor problem** A stable state does not continue for 1 s from 1 s after the drum motor is activated.	Poor contact in the connector terminals.	Check the connection of connector YC6 on the main/engine PWB and the connector on the drum 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 main/ engine PWB.	Replace the main/engine PWB and check for correct operation.
		Defective drum motor.	Replace the drum 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 YC5 on the main/engine PWB and the connector on the home position switch, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective home position switch.	Replace the 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.
		Defective main/ engine PWB.	Replace the main/engine PWB and check for correct operation.
C3200	**Exposure lamp problem** Non-lighting of the exposure lamp is detected at the beginning of copying.	Poor contact in the connector terminals.	Check the connection of connector YC16 on the main/engine PWB and the connector on the inverter PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective exposure lamp.	Replace the exposure lamp.
		Incorrect shading position.	Adjust the position of the contact glass (shading plate). If the problem still occurs, replace the home position switch.
		Defective PWB.	Replace the main/engine PWB or inverter PWB and check for correct operation.
C3300	**AGC problem** After AGC, correct input is not obtained at CCD.	Poor contact in the connector terminals.	Check the connection of connector YC27 on the main/engine 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.
		Defective PWB.	Replace the main/engine PWB or CCD PWB and check for correct operation.

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Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
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 YC3 on the main/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 main/ engine PWB.	Replace the main/engine PWB and check for correct operation.
C4010	**Polygon motor steady-state problem** Stable OFF is detected for 5 s continuously after polygon motor stability.	Poor contact in the connector terminals.	Check the connection of connector YC3 on the main/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 main/ engine PWB.	Replace the main/engine PWB and check for correct operation.
C4200	**BD steady-state problem** ASIC detects a BD error for 600 ms after the polygon motor rotation has been stabilized.	Poor contact in the connector terminals.	Check the connection of connector YC3 on the main/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 main/ engine PWB.	Replace the main/engine PWB and check for correct operation.
C6000	**Fuser heater break** The temperature does not reach 70 °C/ 158°F in 15 s before secondary stabilization. Temperature rise of 1°C/1.8°F does not occur in 5 s before secondary stabilization (except during printing).	Poor contact in the fuser thermistor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Fuser thermistor installed incorrectly.	Check and reinstall if necessary.
		Fuser thermostat triggered.	Check for continuity. If none, replace the fuser thermostat.
		Fuser heater installed incorrectly.	Check and reinstall if necessary.
		Broken fuser heater wire.	Check for continuity. If none, replace the fuser heater.
C6020	**Abnormally high fuser thermistor temperature** Fuser thermistor is detected 230°C/ 446°F or more for 40 ms.	Shorted thermistor.	Measure the resistance. If it is 0 Ω, replace the thermistor.
		Broken heater control circuit on the power source PWB.	Replace the power source PWB and check for correct operation.

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Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C6050	**Abnormally low fuser thermistor temperature** Fuser thermistor remains below 90°C/194°F for 1 s.	Poor contact in the fuser thermistor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Broken fuser thermistor wire.	Measure the resistance. If it is ∞ Ω, replace the fixing thermistor.
		Fuser thermistor installed incorrectly.	Check and reinstall if necessary.
		Fuser thermostat triggered.	Check for continuity. If none, replace the fuser thermostat.
		Fuser heater installed incorrectly.	Check and reinstall if necessary.
		Broken fuser heater wire.	Check for continuity. If none, replace the fuser heater.
C6400	**Zero-cross signal error** Interrupt of the zero-cross signal does not occur more than 1 s.	Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective power source PWB.	Check if the zero-crossing signal is output from YC2-2 on the power source PWB. If not, replace the power source PWB.
		Defective main/engine PWB.	Replace the main/engine PWB if C6400 is detected while YC2-2 on the power source PWB outputs the zero-crossing signal.
C7800	**Broken external thermistor wire** The thermistor output value is 0.5 V or less.	Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective humidity sensor.	Replace the cassette PWB and check for correct operation.
C7810	**Short-circuited external thermistor wire** The thermistor output value is 4.5 V or more.	Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective humidity sensor.	Replace the cassette PWB and check for correct operation.

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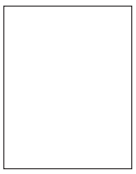
1-4-3 Image formation problems

(1)No image appears (entirely white).



See page 1-4-22.

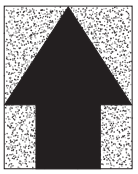
(2)No image appears (entirely black).

See page 1-4-22.

(3)Image is too light.

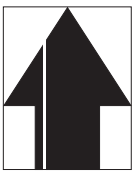
See page 1-4-23.

(4)Background is visible.



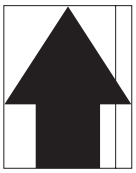
See page 1-4-23.

(5)A white line appears longitudinally.



See page 1-4-23.

(6)A black line appears longitudinally.

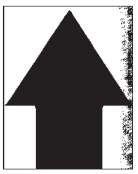


See page 1-4-24.

(7)A black line appears laterally.

See page 1-4-24.

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

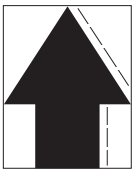


See page 1-4-24.

(9)Black dots appear on the image.

See page 1-4-24.

(10)Image is blurred.



See page 1-4-25.

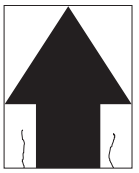
(11)The leading edge of the image is consistently misaligned with the original.

See page 1-4-25.

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

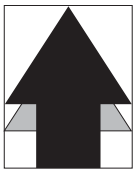
See page 1-4-25.

(13)Paper creases.



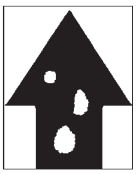
See page 1-4-25.

(14)Offset occurs.



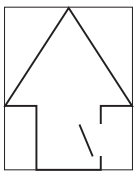
See page 1-4-26.

(15)Image is partly missing.



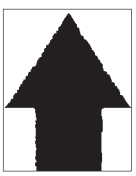
See page 1-4-26.

(16)Fusing is poor.



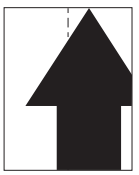
See page 1-4-26.

(17)Image is out of focus.



See page 1-4-26.

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



See page 1-4-27.

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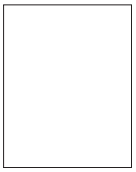
(1) No image appears (entirely white).

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 high voltage PWB.	Check if transfer charging takes place when CN1-4 on the high voltage PWB goes low while maintenance item U101 is run. If not, replace the high voltage PWB.
		Defective main/engine PWB.	Check if YC8-4 on the main/engine PWB goes low when maintenance item U101 is run. If not, replace the engine PWB.
	No LSU laser is output.	Defective laser scanner unit.	Replace the laser scanner unit (see page 1-5-28).
		Defective main/engine PWB.	Check if YC35-5 on the main/engine PWB goes low when maintenance item U100 is run. If not, replace the main/engine 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 high voltage PWB.	Check if developing bias is output when CN1-9 on the high voltage PWB goes low while maintenance item U101 is run. If not, replace the high voltage PWB.
		Defective engine PWB.	Check if YC8-9 on the engine PWB goes low when maintenance item U101 is run. If not, replace the engine 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 1-5-36).
		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 high voltage PWB.	Check if main charging takes place when CN1-7 on the high voltage PWB goes low while maintenance item U100 is run. If not, replace the high voltage PWB.
		Defective main/engine PWB.	Check if YC8-7 on the main/engine PWB goes low when maintenance item U100 is run. If not, replace the main/engine 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 main/engine PWB.	Check if YC16-4 on the main/engine PWB goes low when maintenance item U061 is run. If not, replace the main/engine PWB.

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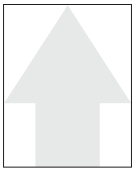
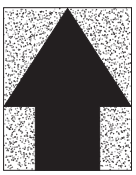
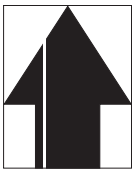
(3) Image is too light.

Copy example	Causes		Check procedures/corrective measures
	Insufficient toner.		If the display shows the message requesting toner replenishment, replace the container.
	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 high voltage PWB.	Check if transfer charging takes place when CN1-4 on the high voltage PWB goes low while maintenance item U101 is run. If not, replace the high voltage PWB.
		Defective main/engine PWB.	Check if YC8-4 on the main/engine PWB goes low when maintenance item U101 is run. If not, replace the main/engine PWB.
	Dirty main charger wire.		Clean the wire or, if it is extremely dirty, replace the main charger unit (see page 1-5-36).
	Dirty main charger grid.		Clean the grid or, if it is extremely dirty, replace the main charger unit (see page 1-5-36).

(4) Background is visible.

Copy example	Causes	Check procedures/corrective measures
	The developing bias voltage is not properly.	Replace the high voltage PWB and check for correct operation.
	Dirty main charger wire.	Clean the wire or, if it is extremely dirty, replace the main charger unit (see page 1-5-36).

(5) A white line appears longitudinally.

Copy example	Causes	Check procedures/corrective measures
	Dirty main charger wire.	Clean the wire or, if it is extremely dirty, replace the main charger unit (see page 1-5-36).
	Foreign matter in the developing unit.	Check if the magnetic brush is formed uniformly. Replace the developing unit if any foreign matter (see page 1-5-37).
	Dirty shading plate.	Clean the shading plate.

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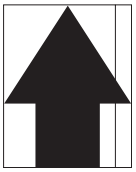
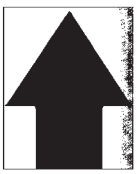
(6) A black line appears longitudinally.

Copy example	Causes	Check procedures/corrective measures
	Dirty contact glass.	Clean the contact glass.
	Dirty or flawed drum.	Clean the drum or, if it is flawed, replace the drum unit (see page 1-5-34).
	Dirty scanner mirror.	Clean the scanner mirror.
	Dirty main charger wire.	Clean the wire or, if it is extremely dirty, replace the main charger unit (see page 1-5-36).

(7) A black line appears laterally.

Copy example	Causes	Check procedures/corrective measures
	Dirty contact glass.	Clean the contact glass.
	Dirty or flawed drum.	Clean the drum or, if it is flawed, replace the drum unit (see page 1-5-34).
	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 the main charger unit (see page 1-5-36).
	Defective exposure lamp.	Check if the exposure lamp light is distributed evenly. If not, replace the exposure lamp (see page 1-5-17).

(9) Black dots appear on the image.

Copy example	Causes	Check procedures/corrective measures
	Dirty contact glass.	Clean the contact glass.
	Dirty or flawed drum.	Clean the drum or, if it is flawed, replace the drum unit (see page 1-5-34).
	Deformed or worn cleaning blade.	Replace the drum unit (see page 1-5-34).
	Dirty drum separation claws.	Clean the drum separation claws.
	Dirty the heat roller separation claws.	Clean the heat roller separation claws.

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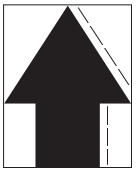
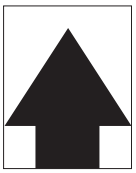
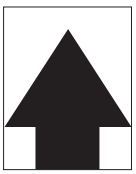
(10) Image is blurred.

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 1-5-42).
	Paper conveying section drive problem.	Check the gears and belts and, if necessary, grease them.

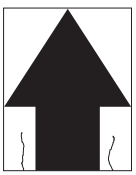
(11) The leading edge of the image is consistently misaligned with the original.

Copy example	Causes	Check procedures/corrective measures
	Misadjusted leading edge registration.	Run maintenance mode U034 to readjust the leading edge registration (see page 1-3-12).
	Misadjusted scanner leading edge registration.	Run maintenance mode U066 to readjust the scanner leading edge registration (see page 1-3-20).

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

Copy example	Causes	Check procedures/corrective measures
	Paper feed clutch, MP solenoid or registration clutch installed or operating incorrectly.	Check the installation position and operation of each clutch or solenoid. 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.

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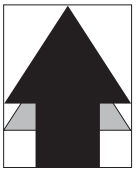
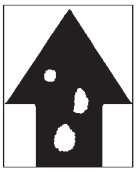
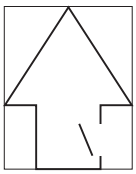
(14) Offset occurs.

Copy example	Causes	Check procedures/corrective measures
	Defective cleaning blade.	Replace the drum unit (see page 1-5-34).
	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.
	Dirty or flawed drum.	Clean the drum or, if it is flawed, replace the drum unit (see page 1-5-34).
	Dirty transfer roller.	Clean the transfer roller.

(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 1-5-42).
	Flawed fuser heater.	Replace the fuser heaters (see page 1-5-44).

(17) Image is out of focus.

Copy example	Causes	Check procedures/corrective measures
	Defective image scanning unit.	Replace the image scanning unit (see page 1-5-26).
	Drum condensation.	Clean the drum.

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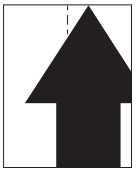
(18) Image center does not align with the original center.

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 1-3-13).
	Misadjusted scanner center line.	Run maintenance item U067 to readjust the scanner leading edge registration (see page 1-3-21).
	Original is not placed correctly.	Place the original correctly.

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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 YC1-2, YC1-3 and YC1-4 on the power source PWB. 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 main/engine PWB.	Run maintenance item U030 and check if the eject motor operates. If not, replace the main/engine PWB.
(3) The scanner motor or cooling fan motor 1, 2 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 paper 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 cassette PWB.	Run maintenance item U032 and check if following terminals on the cassette PWB goes low. If not, replace the cassette PWB. Paper feed clutch: YC7-2 on the cassette PWB Registration clutch: YC6-2 on the cassette PWB Duplex feed clutch: YC5-6 on the cassette PWB
	4. Defective main/engine PWB.	Run maintenance item U032 and check if following terminals on the main/engine PWB goes low. If not, replace the main/engine PWB. Paper feed clutch: YC7-17 on the main/engine PWB Registration clutch: YC7-18 on the main/engine PWB Duplex feed clutch: YC7-12 on the main/engine PWB

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Problem	Causes	Check procedures/corrective measures
(5) The MP 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 cassette PWB.	Run maintenance item U032 and check if following terminals on the cassette PWB goes low. If not, replace the cassette PWB. MP solenoid: YC8-2 on the cassette PWB
	4. Defective main/engine PWB.	Run maintenance item U032 and check if following terminals on the main/engine PWB goes low. If not, replace the main/engine PWB. MP solenoid: YC7-16 on the main/engine PWB
(6) The cleaning lamp does not turn on.	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 cleaning lamp.	Check for continuity. If none, replace the cleaning lamp.
	3. Defective main/engine PWB.	If YC3-B6 and YC3-B7 on the main/engine PWB is always low, replace the main/engine PWB.
(7) 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 exposure lamp.	Run maintenance item U061 and check if the exposure lamp turns on with YC2-1 and YC2-4 on the inverter PCB go low. If not, replace the exposure lamp.
	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 main/engine PWB.	Run maintenance item U061 and check if YC16-4 on the main/engine PWB goes low. If not, replace the main/engine PWB.
		If YC16-4 on the main/engine PWB is always low, replace the main/engine PWB.
(8) Main charging is not performed.	1. Broken main charger wire.	Replace the main charger unit (see page 1-5-36).
	2. Leaking main charger housing.	Clean the main charger wire and grid.
	3. 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.
	4. Defective high voltage PWB.	Check if main charging takes place when CN1-7 on the high voltage PWB goes low while maintenance item U100 is run. If not, replace the high voltage PWB.
	5. Defective main/engine PWB.	Check if YC8-7 on the main/engine PWB goes low when maintenance item U100 is run. If not, replace the main/engine PWB.
(9) No developing bias is output.	1. 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.
	2. Defective high voltage PWB.	Check if developing bias is output when CN1-9 on the high voltage PWB goes low while maintenance item U101 is run. If not, replace the high voltage PWB.
	3. Defective main/engine PWB.	Check if YC8-9 on the main/engine PWB goes low when maintenance item U101 is run. If not, replace the main/engine PWB.

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Problem	Causes	Check procedures/corrective measures
(10) Transfer charging is not performed.	1. 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.
	2. Defective high voltage PWB.	Check if transfer charging takes place when CN1-4 on the high voltage PWB goes low while maintenance item U101 is run. If not, replace the high voltage PWB.
	3. Defective main/engine PWB.	Check if YC8-4 on the main/engine PWB goes low when maintenance item U101 is run. If not, replace the main/engine PWB.
(11) 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 YC5-B8 on the main/engine 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.
(12) The message requesting paper to be loaded is shown when paper is present on the cassette or MP tray.	1. Poor contact in the connector terminals of 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 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. Paper switch: YC2-2 on the cassette PWB MP paper switch: YC5-12 on the cassette PWB
(13) The size of paper on the cassette or MP tray is not displayed correctly.	1. Poor contact in the connector terminals of 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 paper size length switch or MP paper size width switch.	If the level of following terminal on PWB does not go low when the switch is turned on and off, replace the switch. Paper size length switch: YC9-B3, B4, B6 on the main/engine PWB MP paper size width switch: YC5-2 on the cassette PWB
(14) A paper jam in the paper feed, paper conveying, 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 registration switch, eject switch or duplex paper conveying switch.	Check visually and remove it, if any.
	2. Defective switch.	Run maintenance item U031 and turn switch on and off manually. Replace the switch if indication of the corresponding switch is not light. Registration switch, eject switch, duplex paper conveying switch

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Problem	Causes	Check procedures/corrective measures
(15) The message requesting cover to be closed is displayed when the front cover or left cover is closed.	1. Poor contact in the connector terminals of front cover safety switch or left cover safety switch.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	2. Defective front cover safety switch or left cover safety 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.

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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: forwarding pulley, paper feed pulley, separation pulley, registration roller, MP paper feed pulley and MP separation pad.	Clean with isopropyl alcohol.
	Check if the upper/lower forwarding pulleys, forwarding pulley, paper feed pulley or separation pulley is deformed.	Replace the pulley if it is deformed (see page 1-5-3).
	Check if the MP paper feed pulley or MP separation pad is deformed.	Replace the pulley if it is deformed (see page 1-5-11).
	Electrical problem with the following clutches and solenoid: paper feed clutch, registration clutch and MP solenoid.	See page 1-4-28.
(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 1-4-28.
(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 1-5-19).
	The scanner motor malfunctions.	See page 1-4-28.
(5) Multiple sheets of paper are fed at one time.	Paper is extremely curled.	Change the paper.
	Check if the separation pulley is worn.	Replace the separation pulley if it is worn (see page 1-5-3).
	Check if the MP separation pad is worn.	Replace the MP separation pad if it is worn (see page 1-5-11).
(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 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.
(7) Toner drops on the paper conveying path.	Check if the developing unit is extremely dirty.	Clean the developing unit.

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Problem	Causes/check procedures	Corrective measures
(8) Abnormal noise is heard.	Check if the pulleys, rollers and gears operate smoothly.	Grease the bearings and gears.
	Check if the following clutches and solenoid are installed correctly: paper feed clutch, registration clutch and MP solenoid.	Correct.

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1-5-1 Precautions for assembly and disassembly

(1) Precautions

Before starting disassembly, turning off the main power switch. And then unplug the power cable from the wall outlet.
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 removing the hook of the connector, be sure to release the hook.
Take care not to get the cables caught.
To reassemble the parts, use the original screws. If the types and the sizes of screws are not known, refer to the PARTS LIST.

(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 -20°C/-4°F and 40°C/104°F and at a relative humidity not higher than 90% 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.

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(4) How to tell a genuine Kyocera Mita toner container

As a means of brand protection, the Kyocera Mita toner container utilizes an optical security technology to enable visual validation. A validation viewer is required to accomplish this.

Hold the validation viewer over the left side part of the brand protection seal on the toner container. Through each window of the validation viewer, the left side part of the seal should be seen as follows:

A black-colored band when seen through the left side window
A shiny or gold-colored band when seen through the right side window

The above will reveal that the toner container is a genuine Kyocera Mita branded toner container, otherwise, it is a counterfeit.

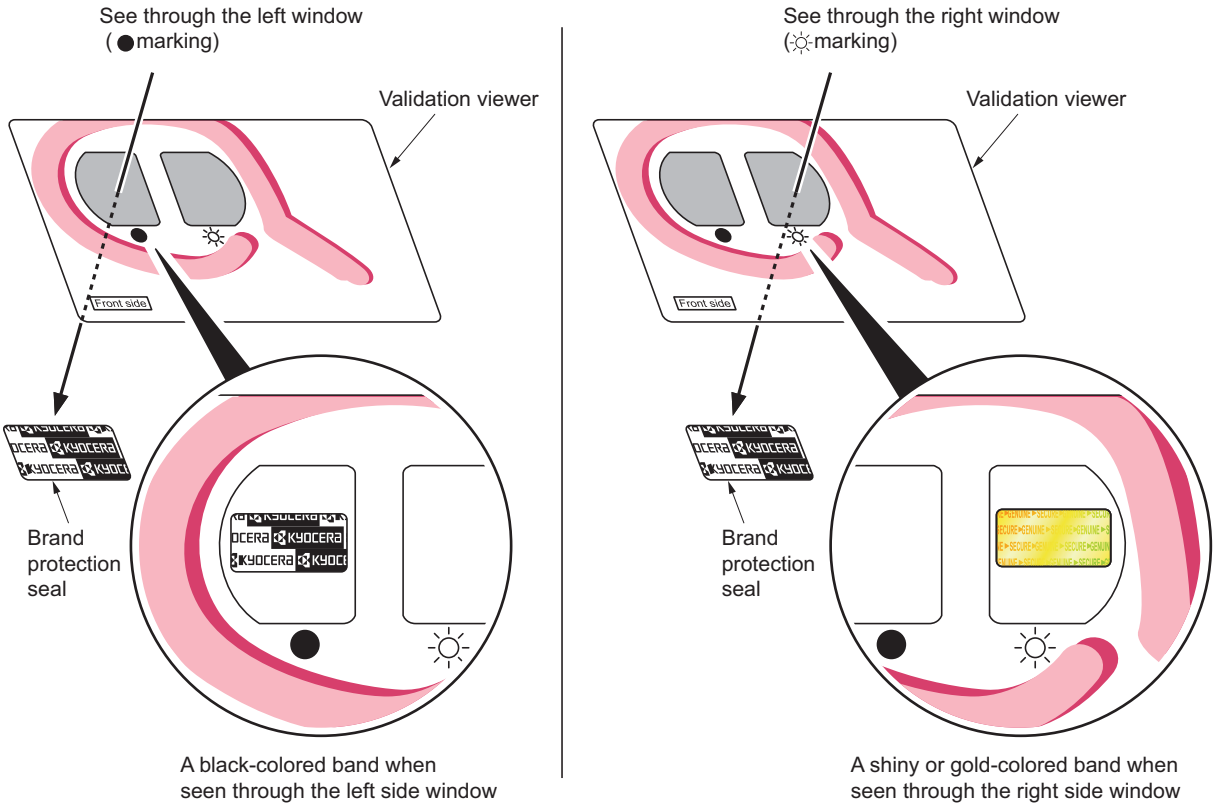

Figure 1-5-1

The brand protection seal has an incision as shown below to prohibit reuse.

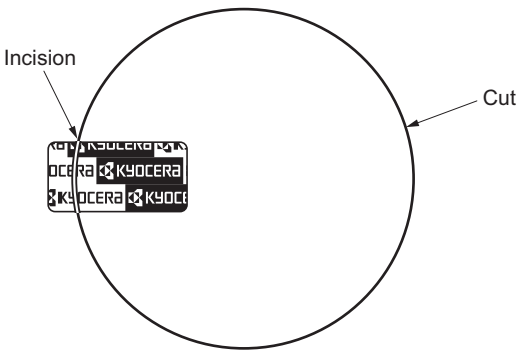

Figure 1-5-2

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1-5-2 Paper feed section

(1) Detaching and refitting the separation pulley

Follow the procedure below to replace the separation pulley.

Procedure

1. Open the front cover and left cover.
2. Pull out the cassette.

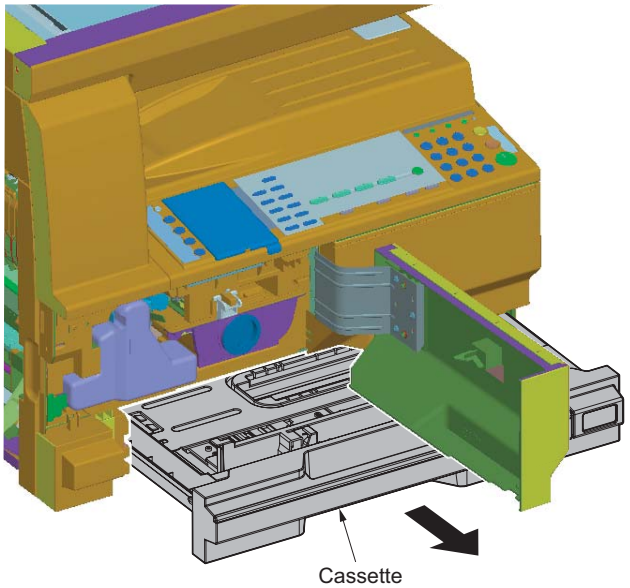

Figure 1-5-3

3. Remove the screw and remove the front left lower cover.

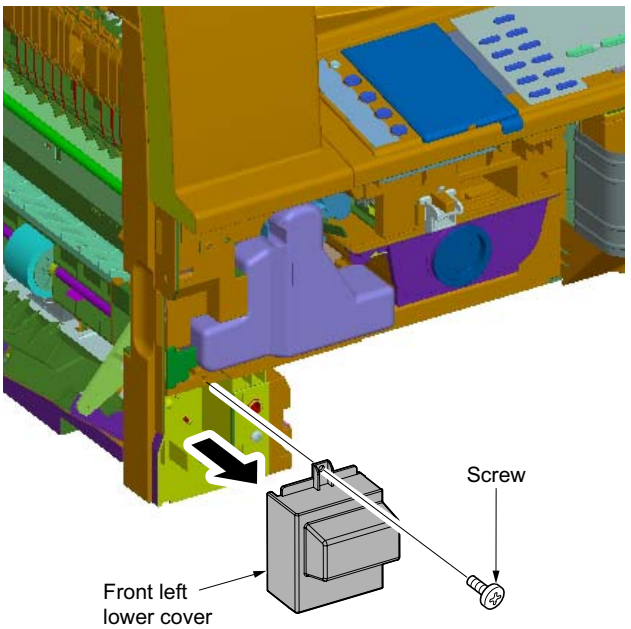

Figure 1-5-4

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4. Remove the screw and remove the lower paper feed unit.

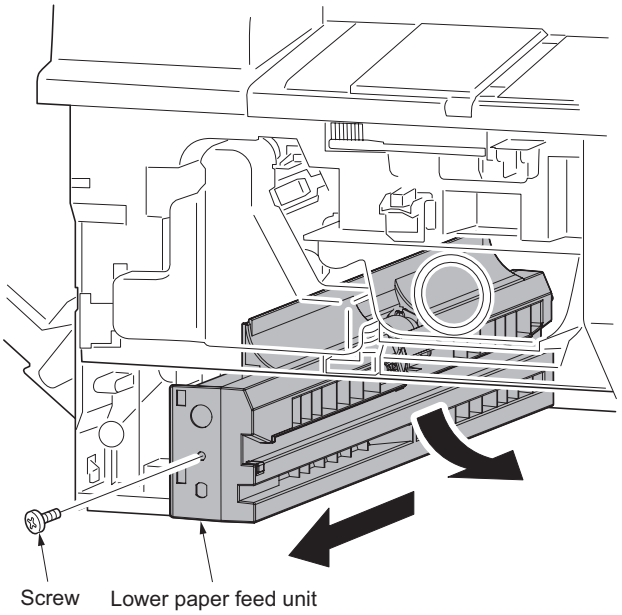

Figure 1-5-5

5. Release two hooks and remove the separation pulley unit from the lower paper feed unit.

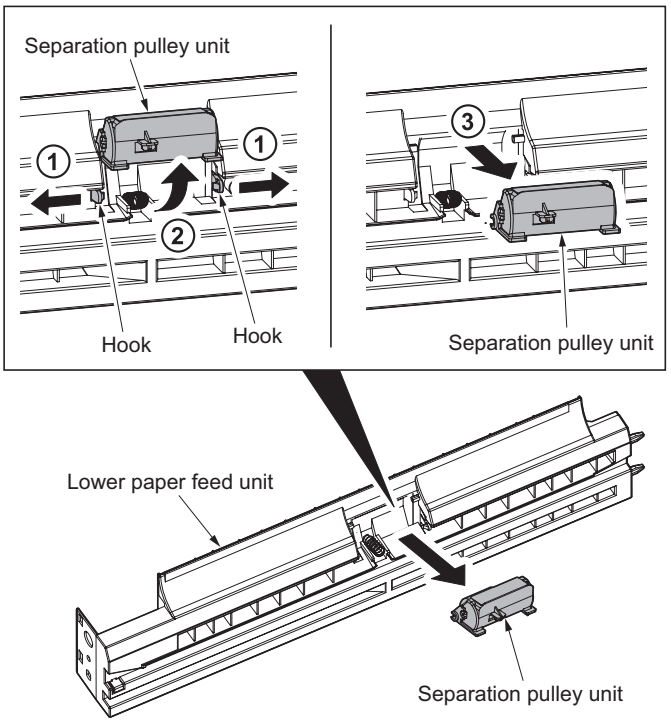

Figure 1-5-6

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6. Remove the separation pulley shaft from the separation pulley unit.
7. Remove the separation pulley from the separation pulley shaft.
8. Replace the separation pulley and refit all the removed parts.

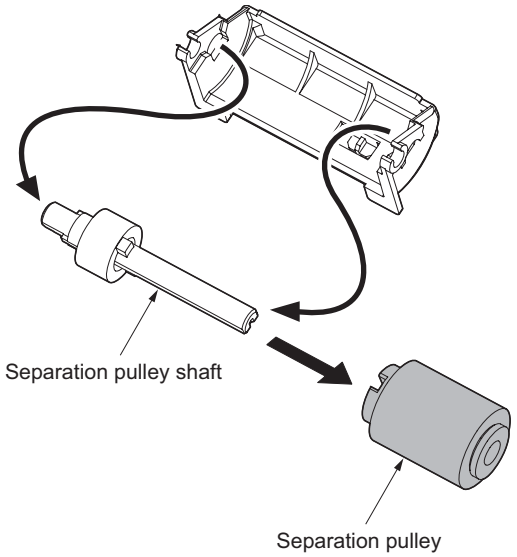

Figure 1-5-7

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(2) Detaching and refitting the forwarding pulley and paper feed pulley

Follow the procedure below to replace the forwarding pulley and paper feed pulley.

Procedure

1. Remove the lower paper feed unit (see page 1-5-3).
2. Remove the drum unit (see page 1-5-34).
3. Remove five screws and remove the rear cover.

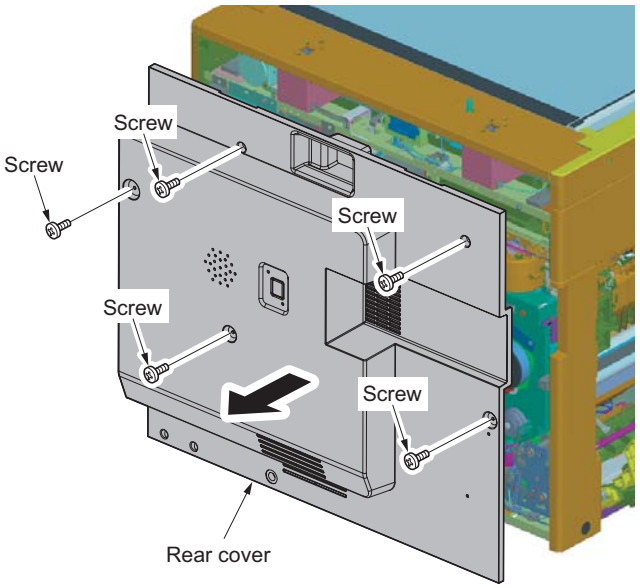

Figure 1-5-8

4. Remove the connector of the paper feed clutch.
5. Remove the paper feed clutch, stop ring and bush.

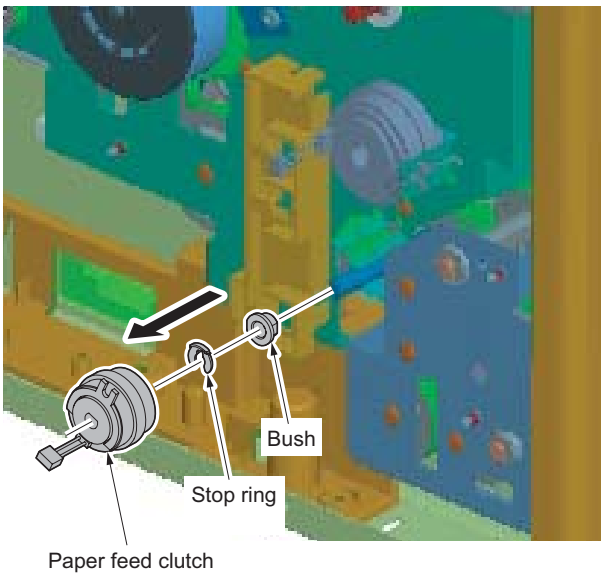

Figure 1-5-9

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6. Remove the screw and remove the registration guide.

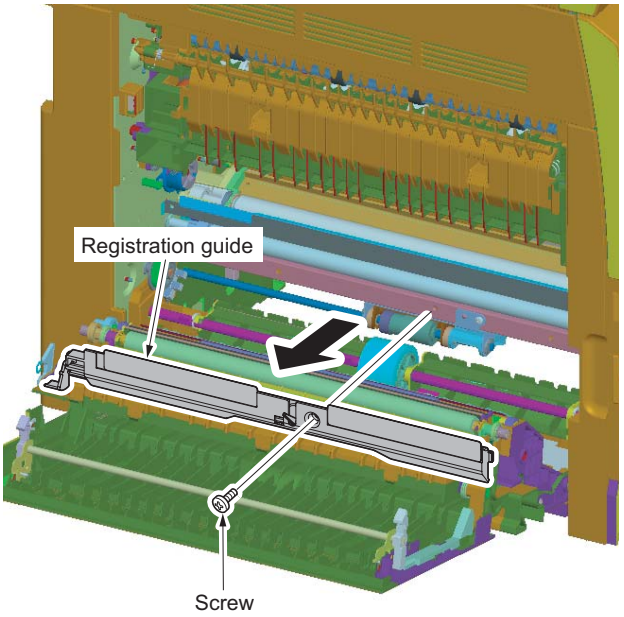

Figure 1-5-10

7. Remove the screw and remove the upper paper feed unit.

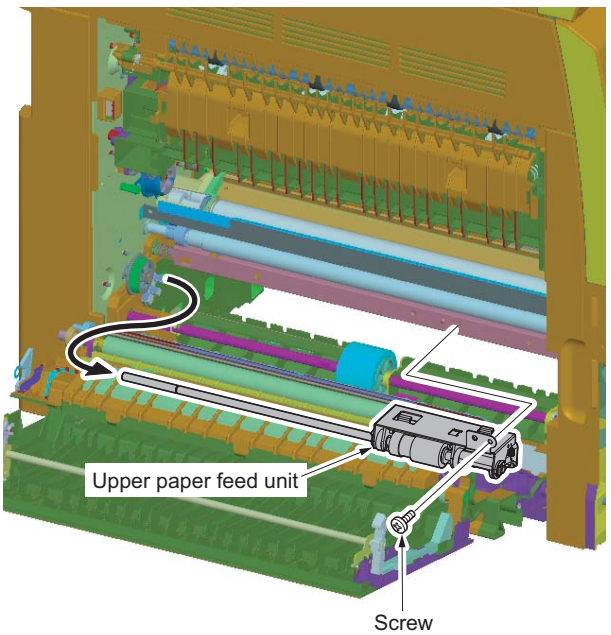

Figure 1-5-11

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8. Remove the springs, stop ring and bush and then remove the shaft holder from the upper paper feed unit.

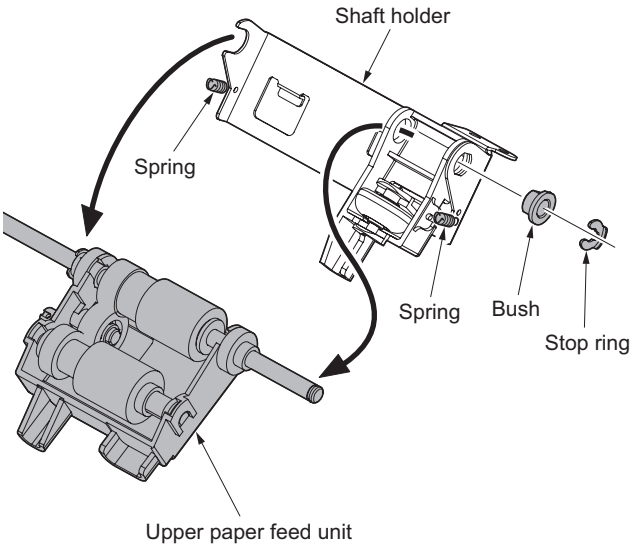

Figure 1-5-12

9. Remove the forwarding pulley from the upper paper feed unit.
10. Remove the paper feed pulley shaft from the upper paper feed unit.
11. Remove the collar and the paper feed pulley from the upper paper feed shaft.
12. Replace the forwarding pulley and paper feed pulley and refit all the removed parts.

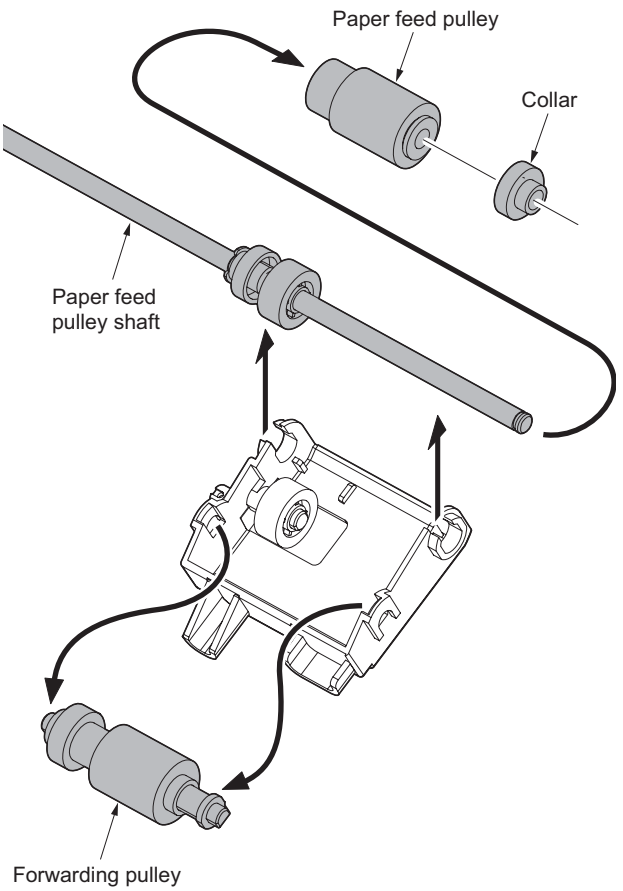

Figure 1-5-13

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(3) Detaching and refitting the paper conveying unit

Follow the procedure below to maintenance of the paper feed section.

Procedure

1. Remove the drum unit (see page 1-5-34).
2. Remove the lower paper feed unit (see page 1-5-3).
3. Remove the stop ring and strap from the rear side of the left cover.
   Remove the stop ring and stopper from the front side of the left cover.

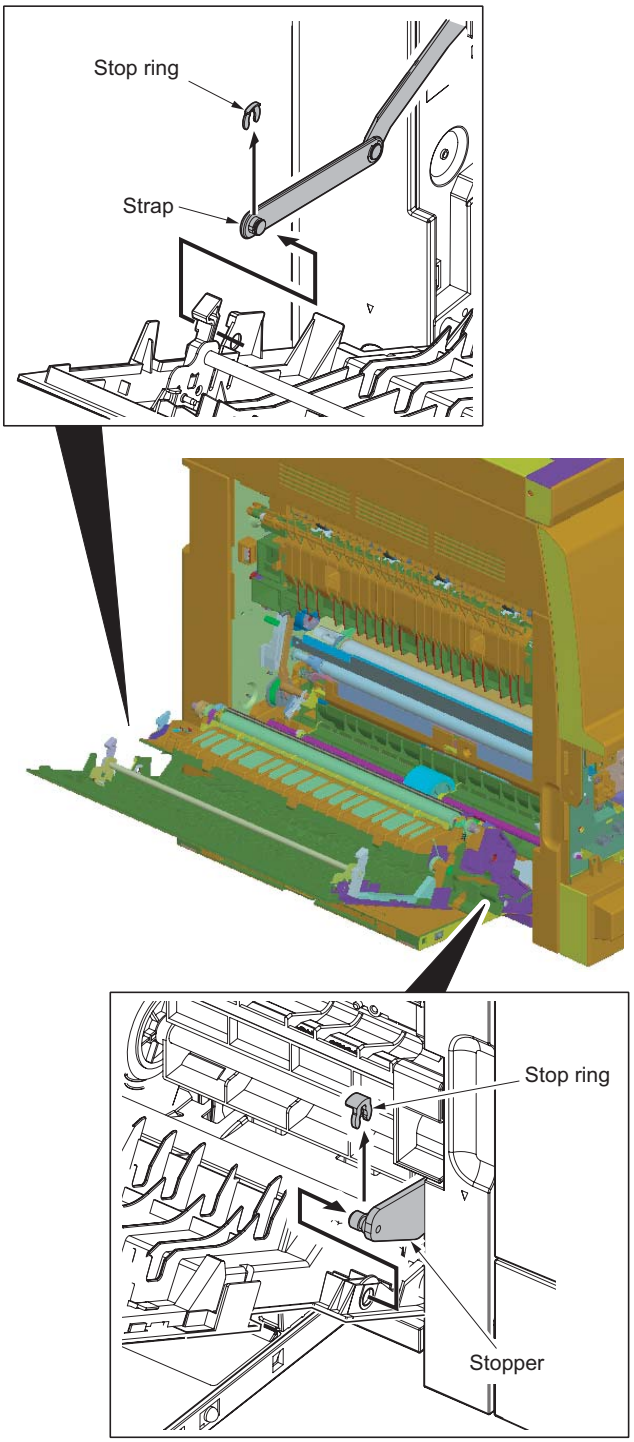

Figure 1-5-14

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4. Remove the left cover from machine.
5. Remove the paper conveying unit from the machine.

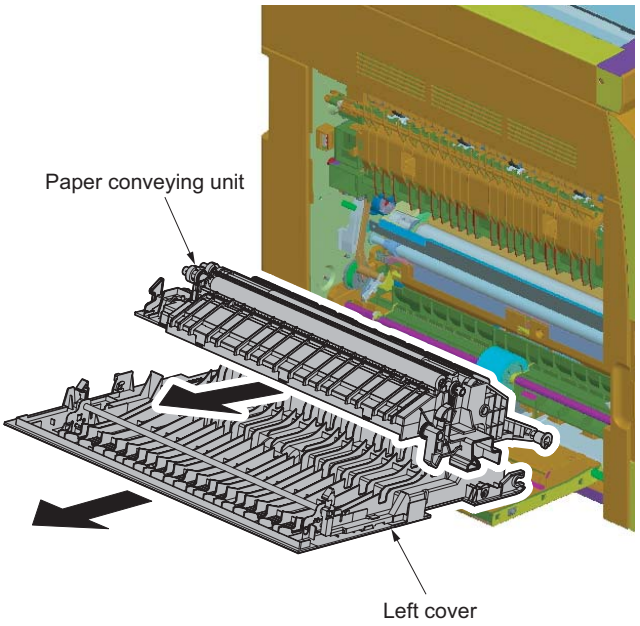

Figure 1-5-15

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(4) Detaching and refitting the MP paper feed pulley and MP separation pad

Follow the procedure below to replace the MP paper feed pulley and MP separation pad.

Procedure

1. Open the front cover and remove the waste toner box. Pull out the cassette.
2. Remove the screw and remove the front left lower cover (see page 1-5-3).
3. Remove the paper conveying unit (see page 1-5-9).
4. Remove the stop ring and bush from the front side of the machine.

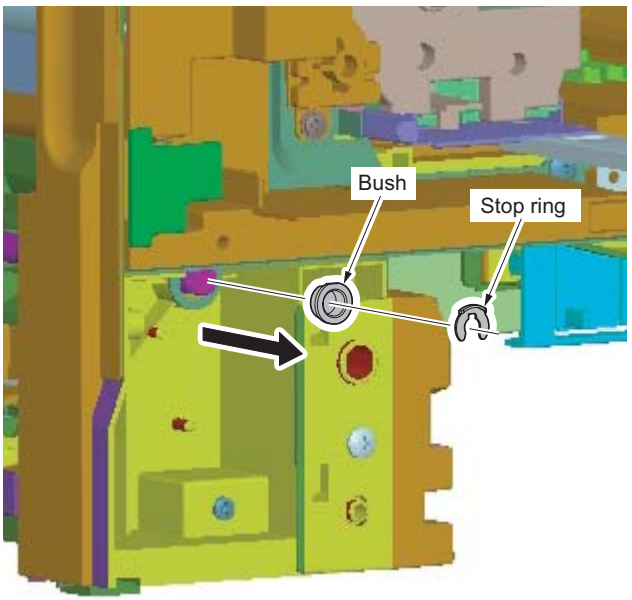

Figure 1-5-16

5. Remove the rear cover (see page 1-5-6).
6. Remove three screws and remove the MP drive unit.

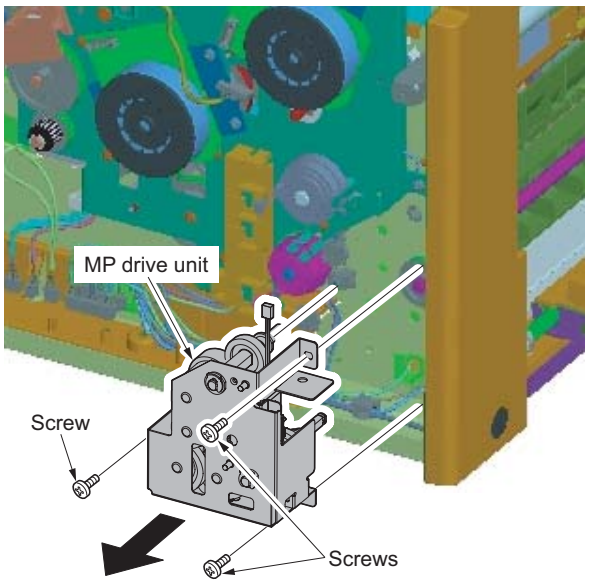

Figure 1-5-17

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7. Remove the stop ring, gear and bush.

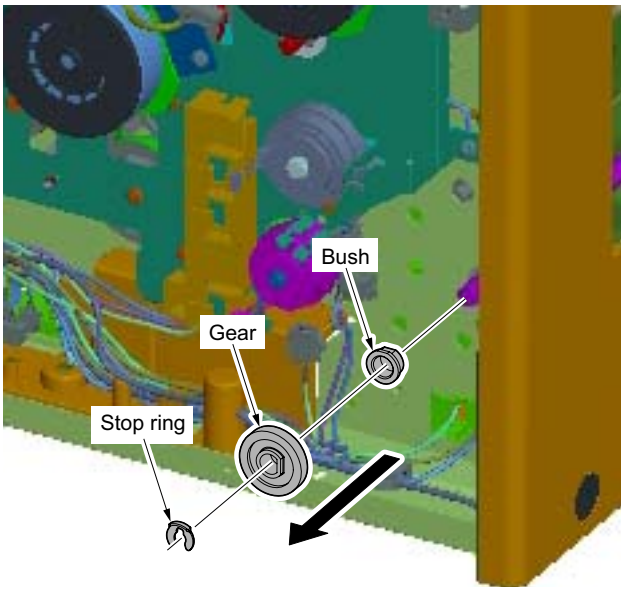

Figure 1-5-18

8. Temporarily push the MP paper feed pulley unit into the rear side to unlock the front side and then remove it from the machine.

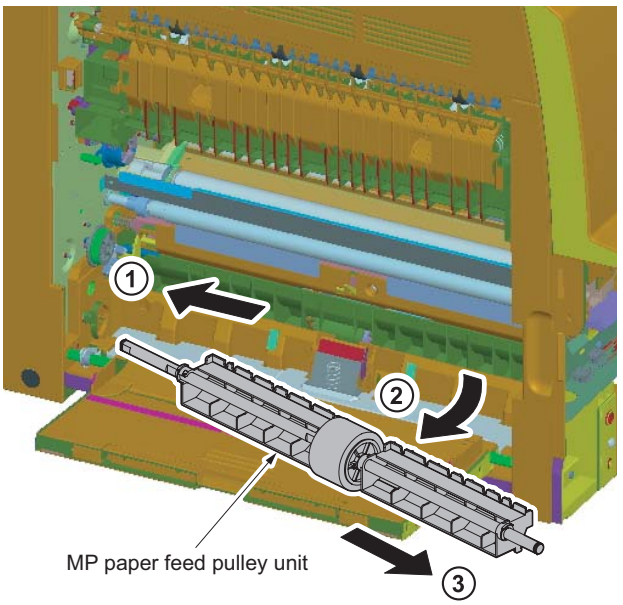

Figure 1-5-19

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9. Remove the stop ring, MP paper guide, spring pin and the MP paper feed pulley.

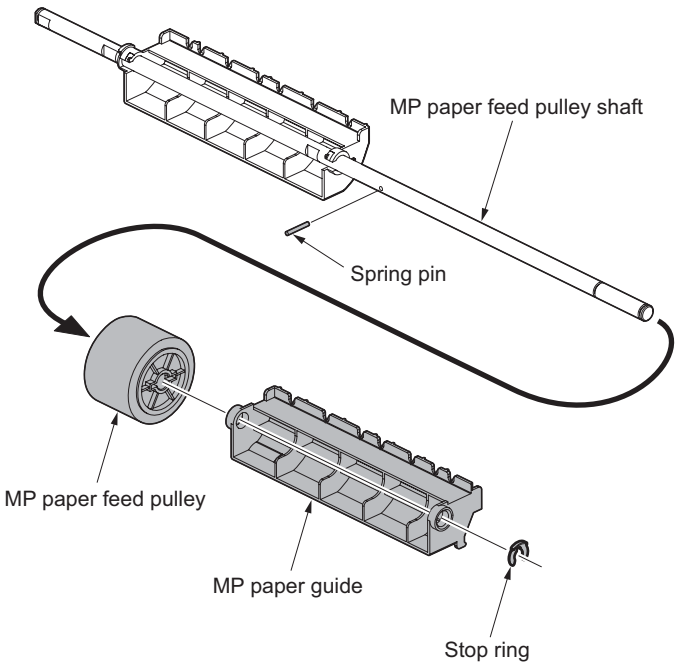

Figure 1-5-20

10. Push the inserted parts of the MP separation pad and remove the pad from the machine.
11. Replace the MP paper feed pulley and MP separation pad and refit all the removed parts.
    Cautions
    Confirm that the MP paper guide does not rotate (locked) after refit the MP paper feed pulley unit.

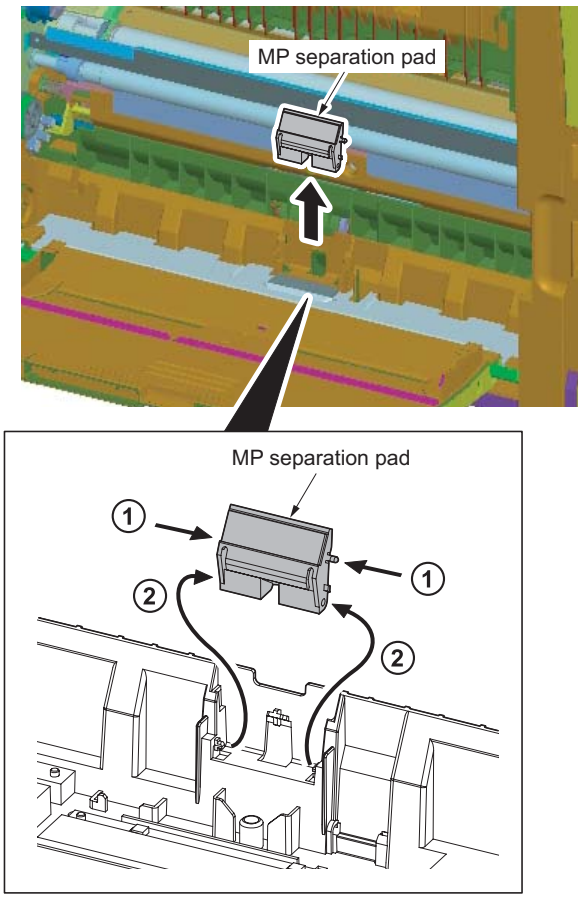

Figure 1-5-21

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(5) Detaching and refitting the left registration roller

Follow the procedure below to replace the left registration roller.

Procedure

1. Remove the paper conveying unit (see page 1-5-9).
2. Release the stoppers at the front and rear side, and then remove the left registration roller from the paper conveying unit.

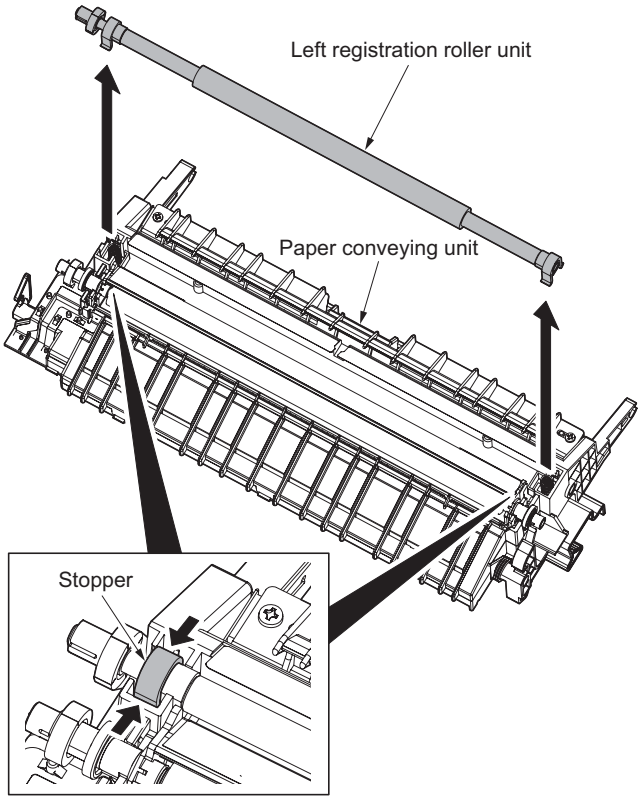

Figure 1-5-22

3. Remove two stoppers, gear and two bushes.
4. Replace the left registration roller and refit all the removed parts.

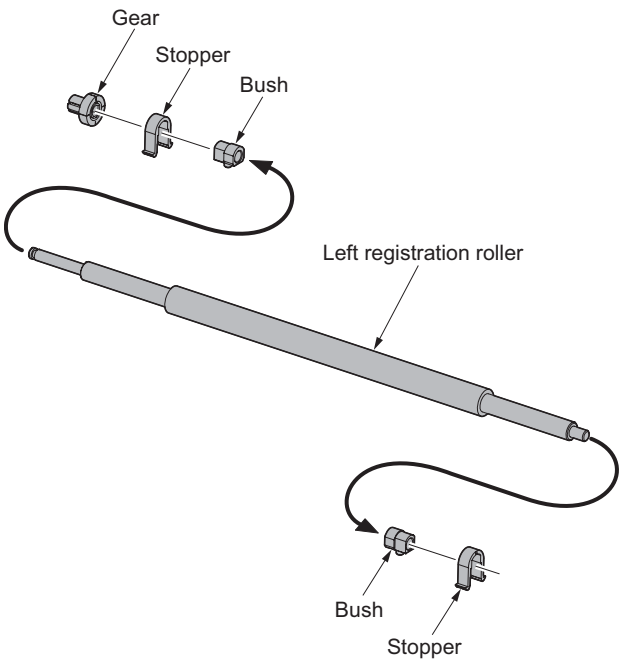

Figure 1-5-23

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(6) Detaching and refitting the right registration roller

Follow the procedure below to replace the right registration roller.

Procedure

1. Remove the drum unit (see page 1-5-34).
2. Remove the rear cover (see page 1-5-6).
3. Remove the connector and remove the registration clutch.

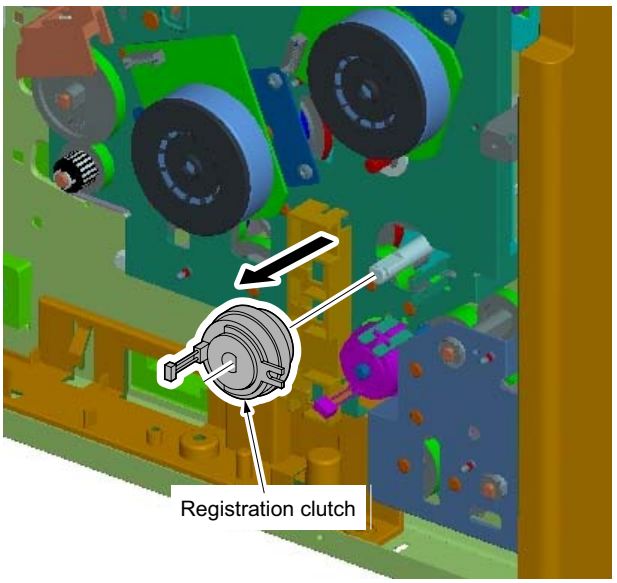

Figure 1-5-24

4. Remove the stop ring.
5. Remove the right registration roller from the machine.

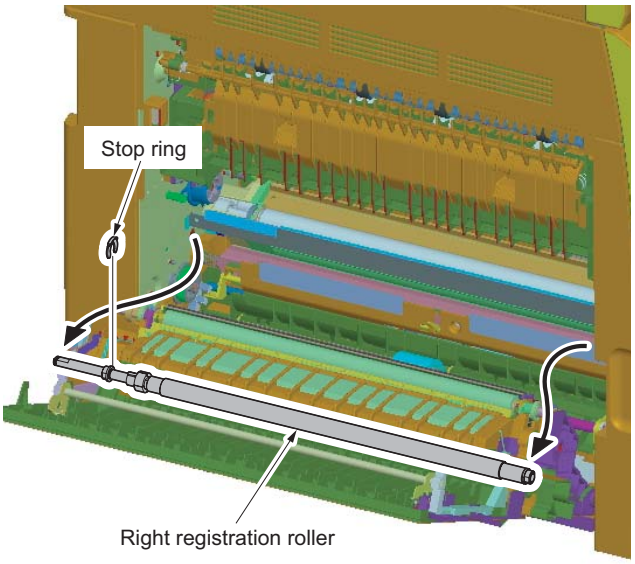

Figure 1-5-25

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6. Remove two bushes and gear.
7. Replace the right registration roller and refit all the removed parts.

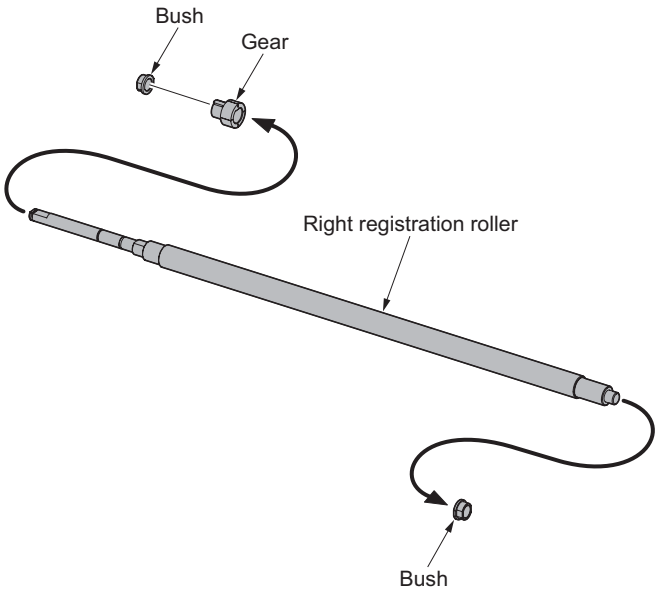

Figure 1-5-26

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1-5-3 Optical section

(1) Detaching and refitting the exposure lamp

Follow the procedure below to replace the exposure lamp.

Procedure

1. Remove the original cover or the document processor.
2. Remove two screws and remove the right upper cover.
   Remove the contact glass.

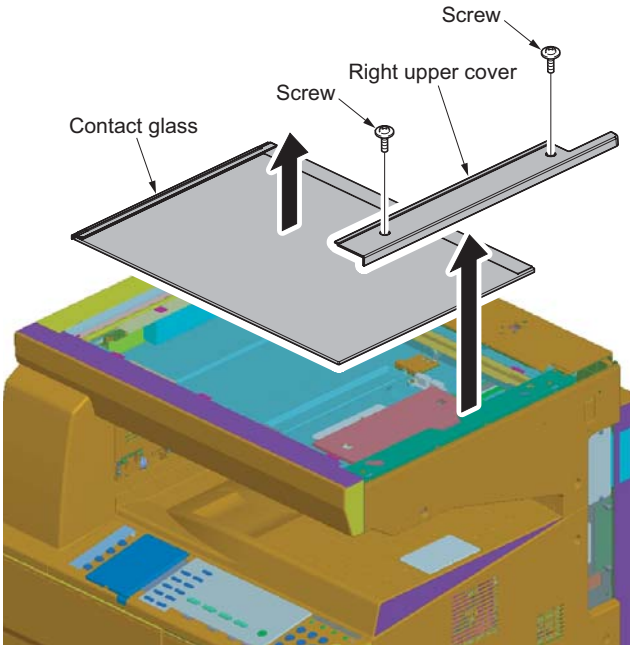

Figure 1-5-27

3. Open the front cover and left cover.
4. Remove the front left cover (see page 1-5-40).
5. Release five hooks and both and then remove the front scanner cover.
6. Remove two screws and remove the rear upper cover.

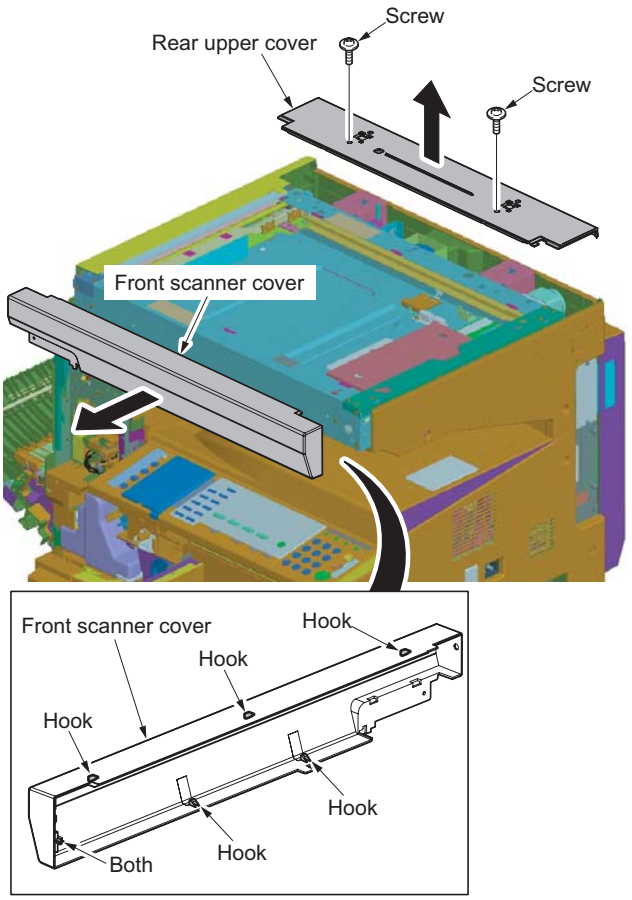

Figure 1-5-28

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7. Remove two films from the scanner unit.
8. Move the mirror 1 frame to notch position. When moving the mirror 1 frame, do not touch the exposure lamp and the inverter PWB.

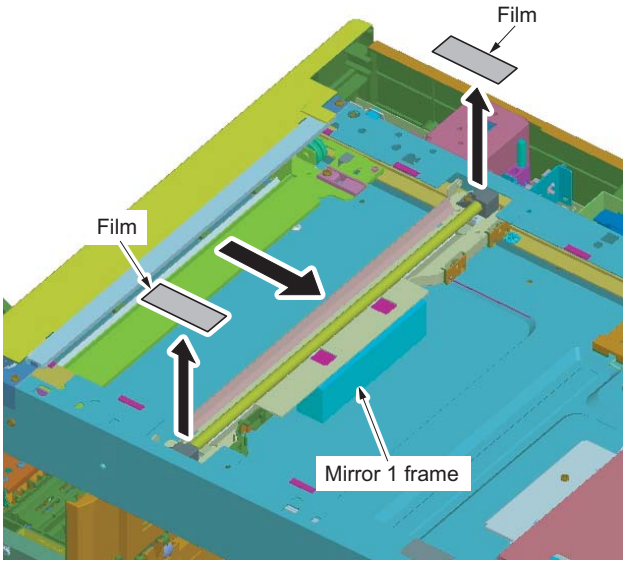

Figure 1-5-29

9. Remove the connector of the exposure lamp from inverter PWB and remove the lamp wire from ribs.

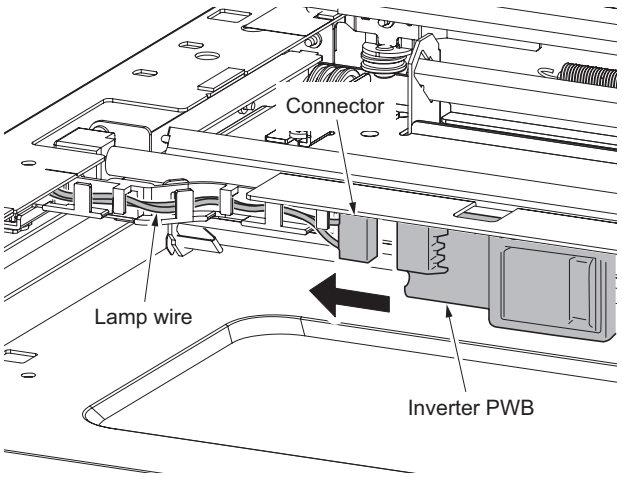

Figure 1-5-30

10. Remove two screws and remove the exposure lamp.
11. Replace the exposure lamp and refit all the removed parts.

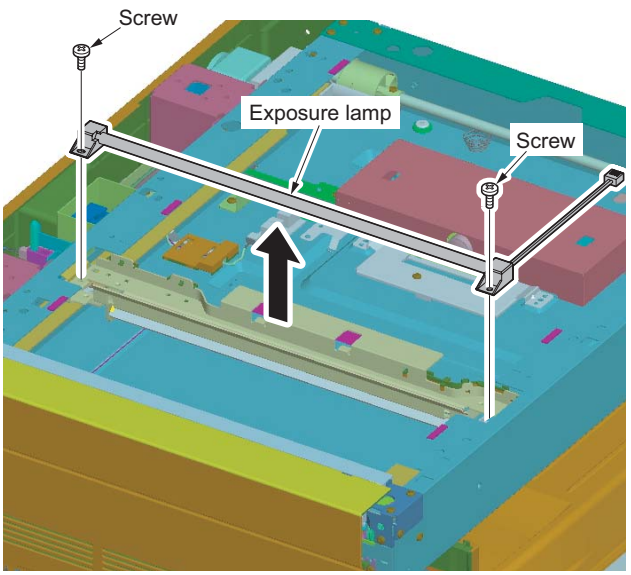

Figure 1-5-31

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(2) Detaching and refitting the scanner wires

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

(2-1) Detaching the scanner wires

Procedure

1. Remove the exposure lamp (see page 1-5-17).
2. Open the left cover.
3. Release six hooks and both and then remove the left middle cover.

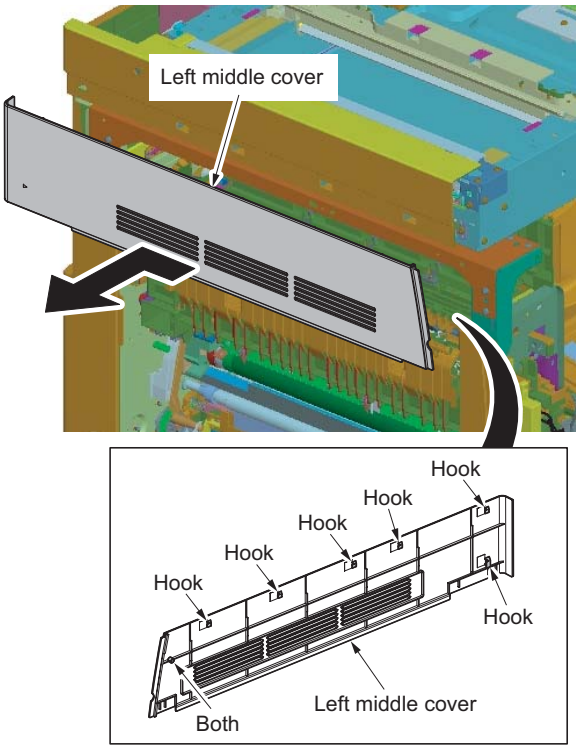

Figure 1-5-32

4. Release five hooks and two bothes and then remove the left upper cover.

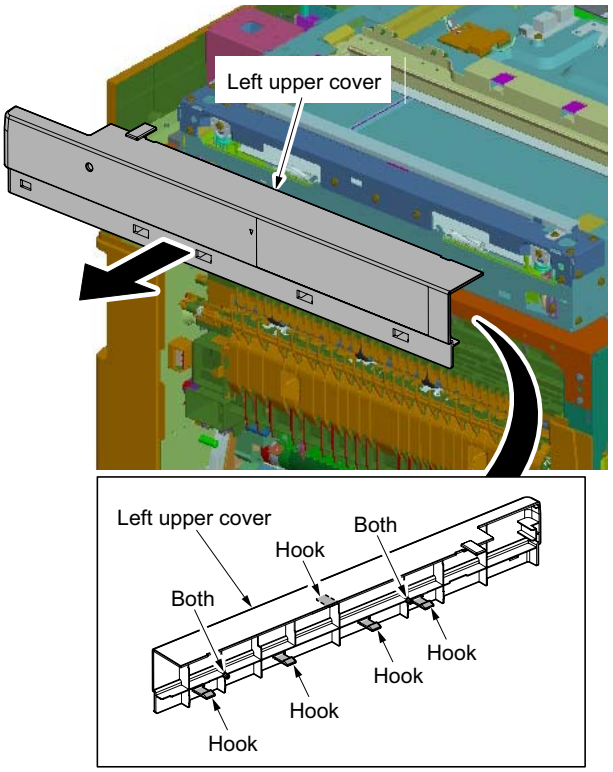

Figure 1-5-33

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5. Remove the screw and remove the slit retainer and slit glass.

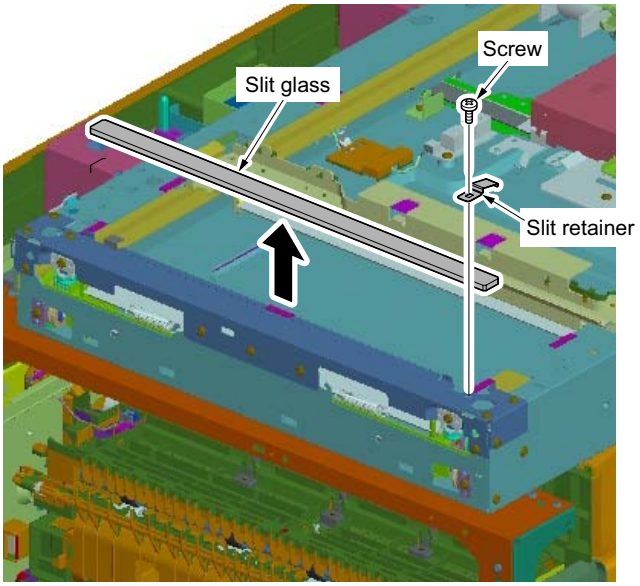

Figure 1-5-34

6. Remove two wire guides.
7. Remove the inverter wire from the inverter PWB.

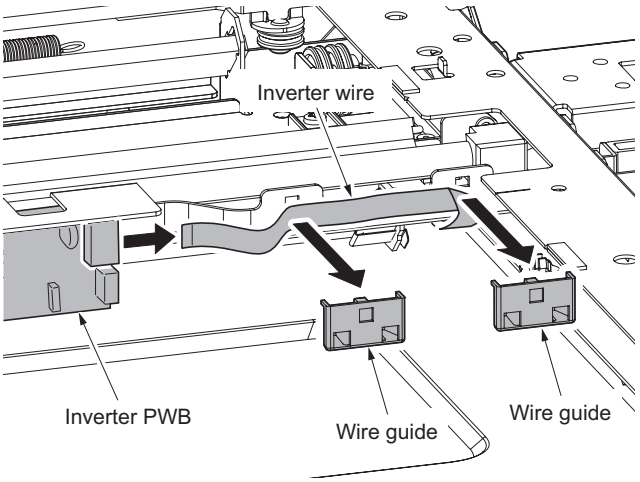

Figure 1-5-35

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

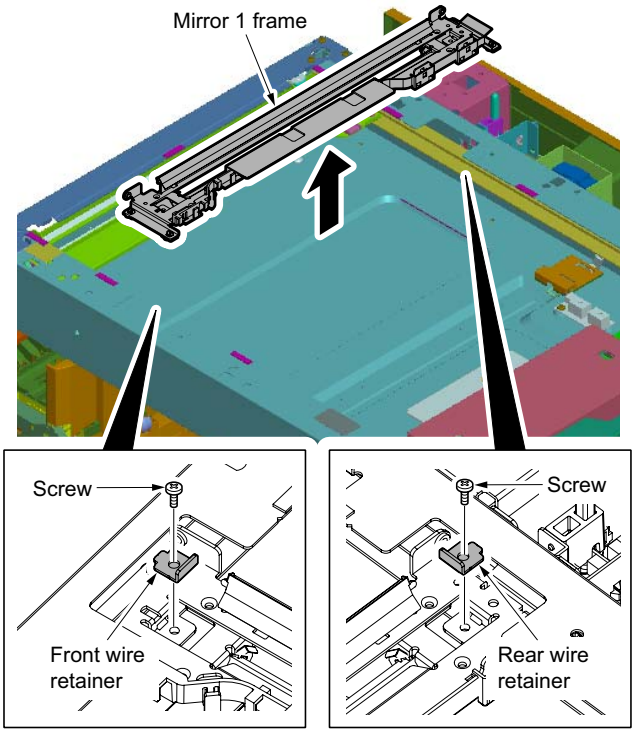

Figure 1-5-36

9. Remove the round terminals from the scanner wire springs.
10. Remove the scanner wires.

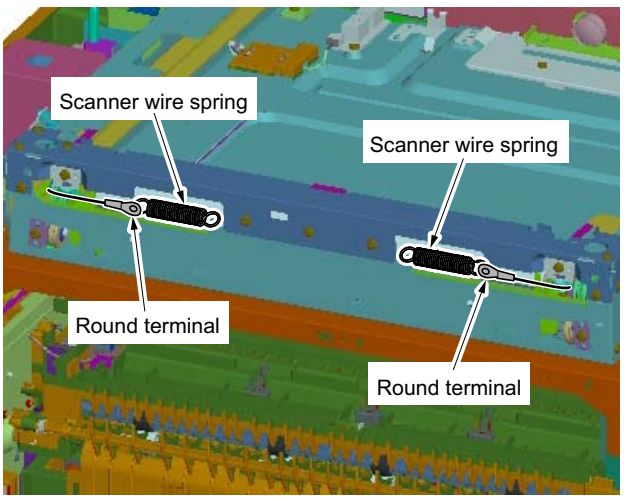

Figure 1-5-37

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(2-2) Fitting the scanner wires

NOTE
When fitting the wires, be sure to use those specified below.
Machine front: (P/N: 2C91236), gray
Machine rear: (P/N: 2C91235), black

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

Procedure
1. Remove the rear cover.

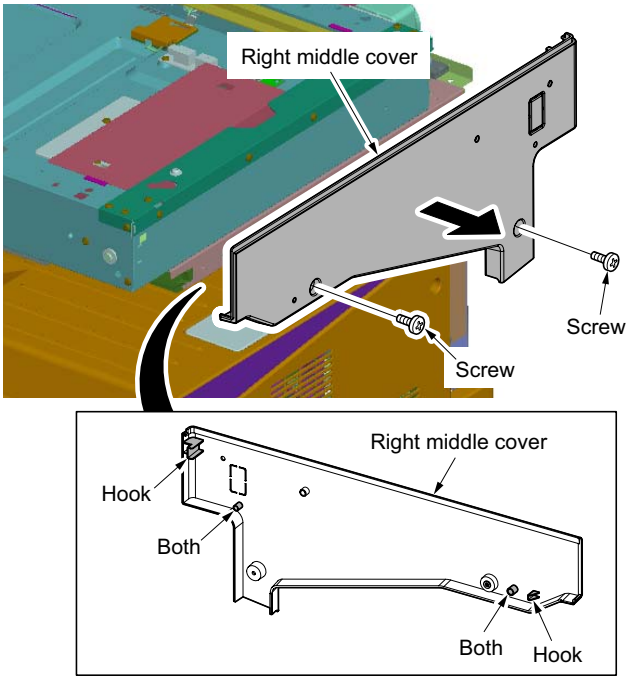

Figure 1-5-38

2. Remove the screw and remove the scanner wire drum gear from the rear side of the machine.
3. Remove the stop ring and bush.

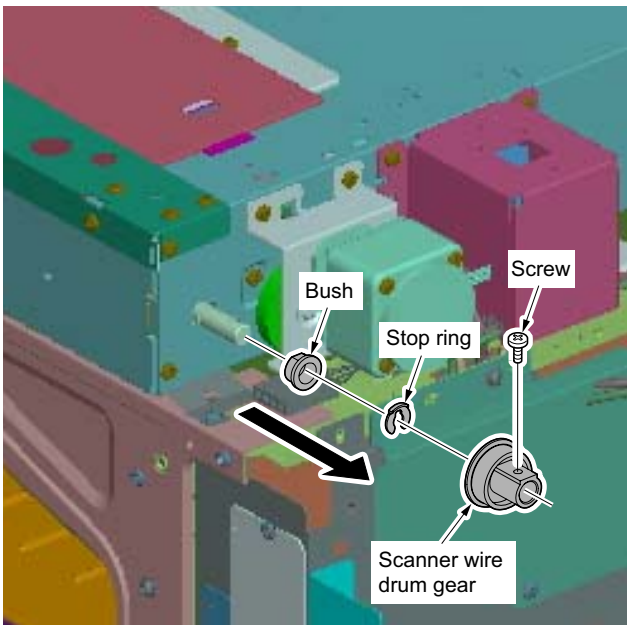

Figure 1-5-39

WWW.SERVICE-MANUAL.NET

4. Remove the stop ring and bush from the front of the machine.
5. Remove the scanner wire drum shaft from the scanner unit.

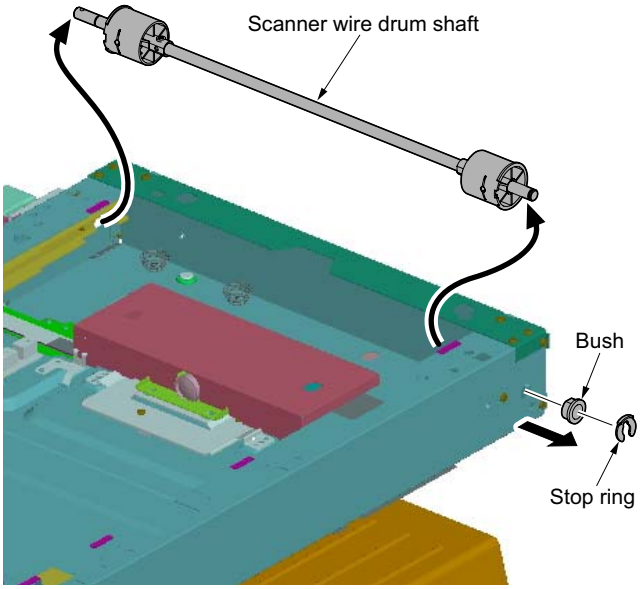

Figure 1-5-40

6. Insert the locating ball on each of the scanner wires into the hole in the respective scanner wire drum and wind the scanner wire three turns inward and four turns outward.
   With the locating ball as the reference point, wind the shorter end of each of the wires outward.
7. Secure the scanner wires using the scanner wire stoppers.

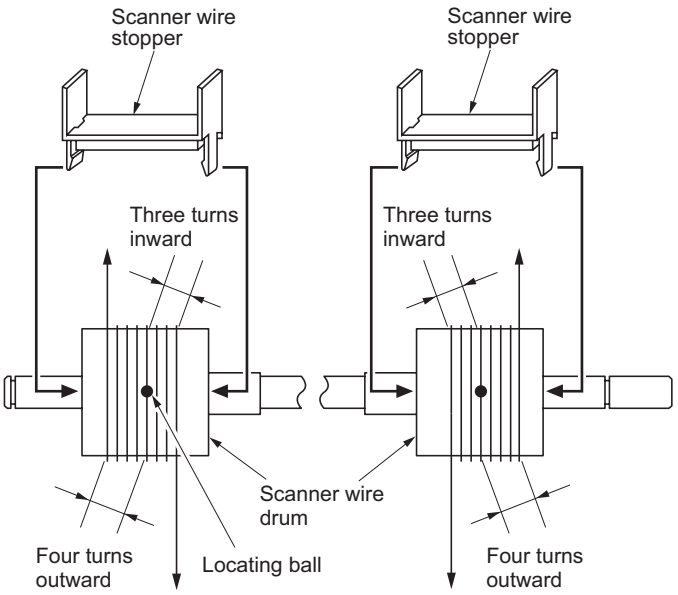

Figure 1-5-41

WWW.SERVICE-MANUAL.NET

8. Refit the scanner wire drum shaft to the scanner unit.
9. Insert the two frame securing tools into the positioning holes at the front and rear of the scanner unit to fix the mirror 2 frame in position.

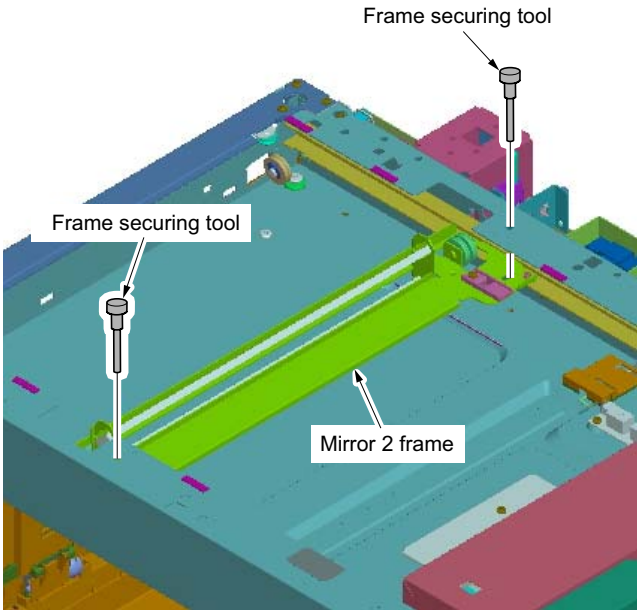

Figure 1-5-42

10. Loop the outer ends of the scanner wires around the outer grooves in the pulleys on the mirror 2 frame, winding from below to above. ..... (1)
11. Hook the round terminals onto the catches inside the scanner unit. ..... (2)
12. Loop the inner ends of the scanner wires around the grooves in the pulleys at the left of the scanner unit, winding from below to above. ..... (3)
13. Loop the scanner wires around the inner grooves in the pulleys on the mirror 2 frame, winding from above to below. ..... (4)
14. Wind the scanner wires around the grooves in the scanner wire guides at the left of the scanner unit. ..... (5)
15. Hook the round terminals onto the scanner wire springs. ..... (6)

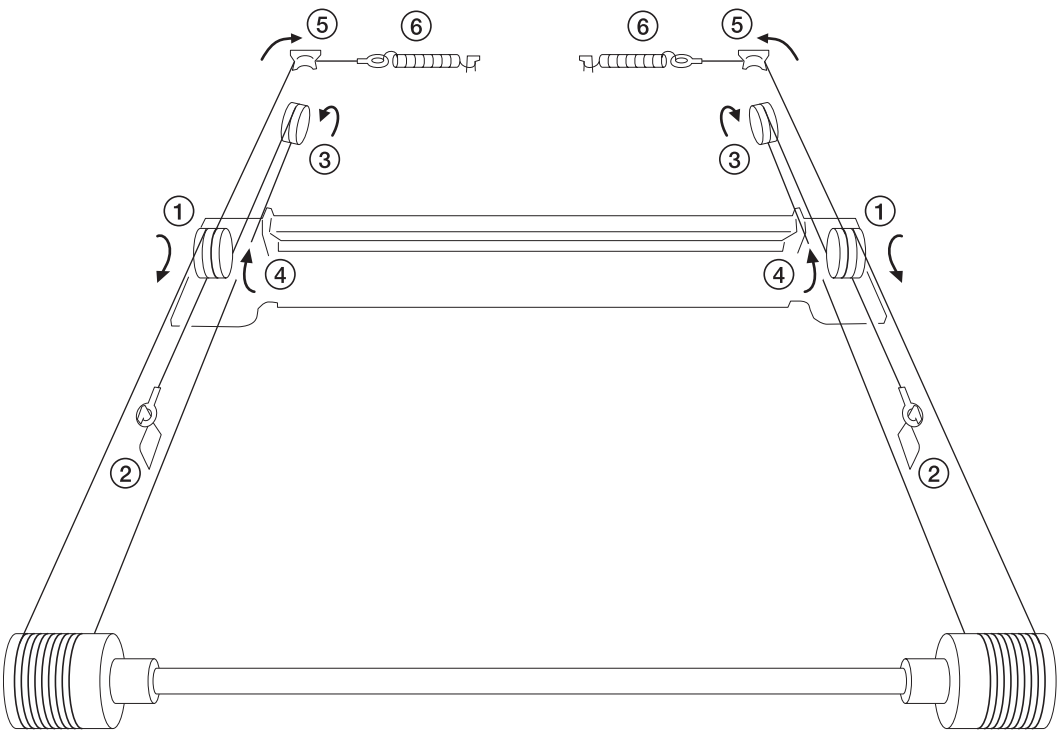

Figure 1-5-43

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16. Remove two scanner wire stoppers and frame securing tools.
17. Focusing on the locating ball of the wire drum, move aside the wires to inside.
18. Move the mirror 2 frame from side to side to correctly locate the wires in position.
19. Put the mirror 1 frame on the scanner rail and move it toward the left side of the machine.
20. Insert the frame securing tools into the positioning holes (leftmost holes) at the front and rear of the scanner unit and screw the mirror 1 frame while securing both the mirror 1 frame and the mirror 2 frame.
21. Remove two frame securing tools.
22. Refit all the removed parts.

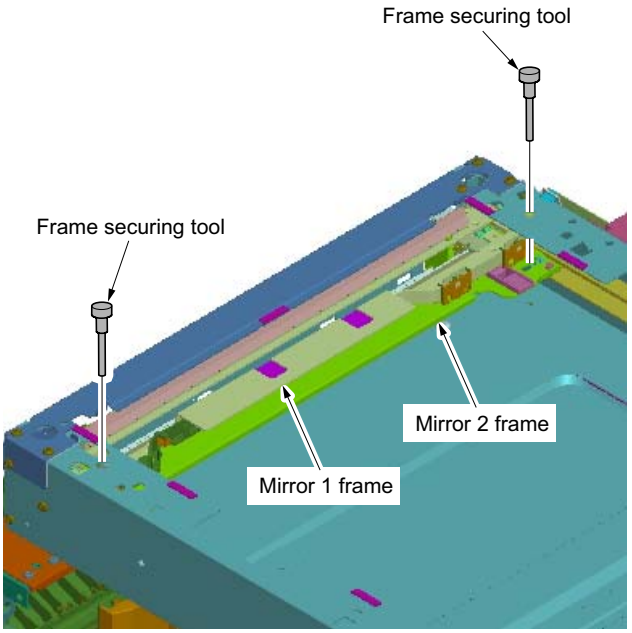

Figure 1-5-44

WWW.SERVICE-MANUAL.NET

(3) Detaching and refitting the ISU (reference)

Follow the procedure below to replace the ISU.

Procedure

1. Remove the contact glass (see page 1-5-17).
2. Remove four screws and remove the ISU cover.

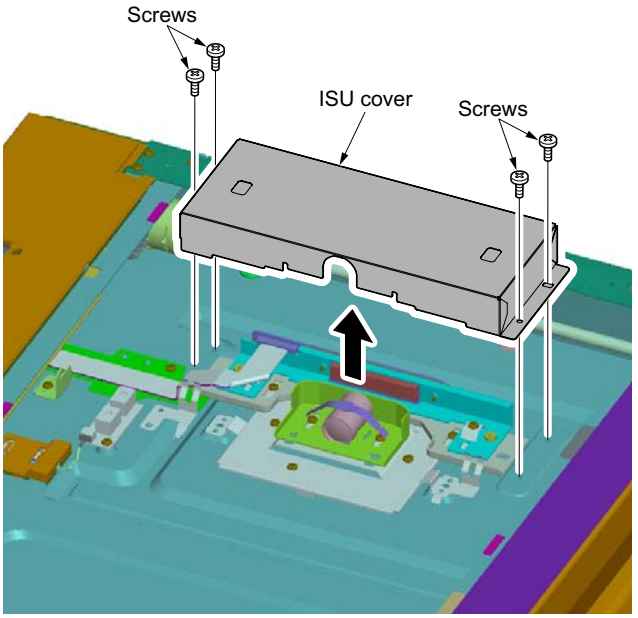

Figure 1-5-45

3. Remove the CCD wire from the CCD PWB.

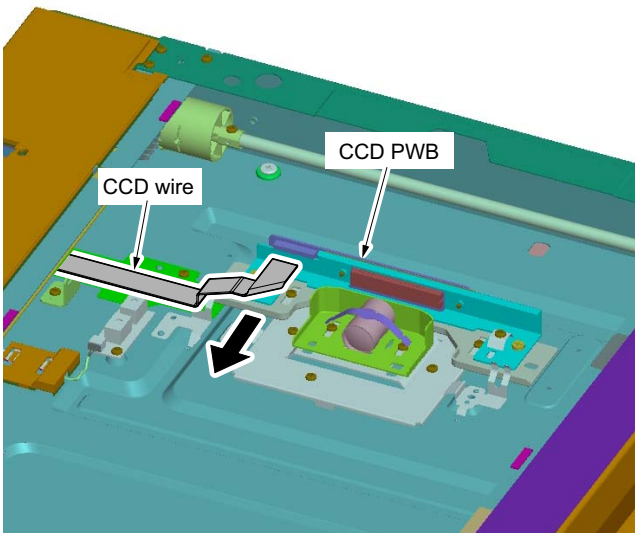

Figure 1-5-46

WWW.SERVICE-MANUAL.NET

4. Remove each screw and remove two plates.
5. Remove three screws and remove the ISU
6. Replace the ISU.
7. Refit all the removed parts.

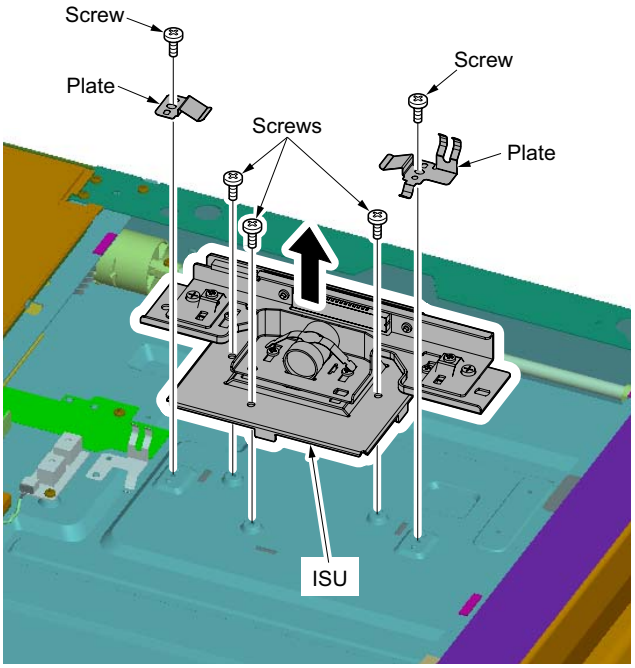

Figure 1-5-47

WWW.SERVICE-MANUAL.NET

(4) Detaching and refitting the laser scanner unit

Follow the procedure below to replace the laser scanner unit.

Procedure

1. Remove the original cover or the document processor.
2. Remove the rear cover (see page 1-5-6).
   Remove the front left cover (see page 1-5-40).
   Remove the right upper cover, contact glass, rear upper cover and front scanner cover (see page 1-5-17).
   Remove the left middle cover, left upper cover and slit glass (see page 1-5-19).
   Remove the right middle cover (see page 1-5-22).
3. Remove the screw and release three hooks and then remove the front right cover.

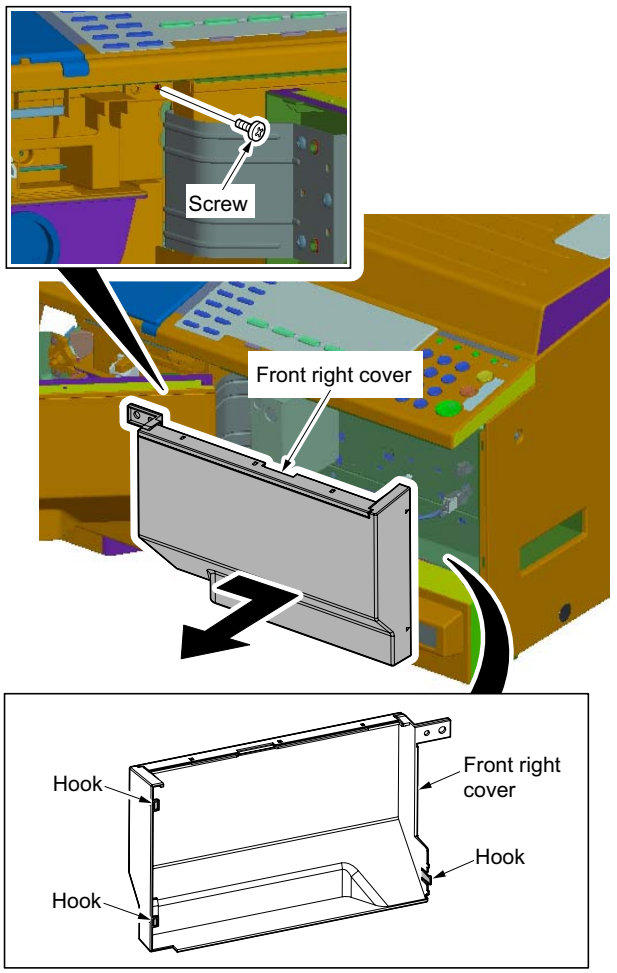

Figure 1-5-48

WWW.SERVICE-MANUAL.NET

4. Remove two screws and release six hooks and two both, and then remove the right middle cover.

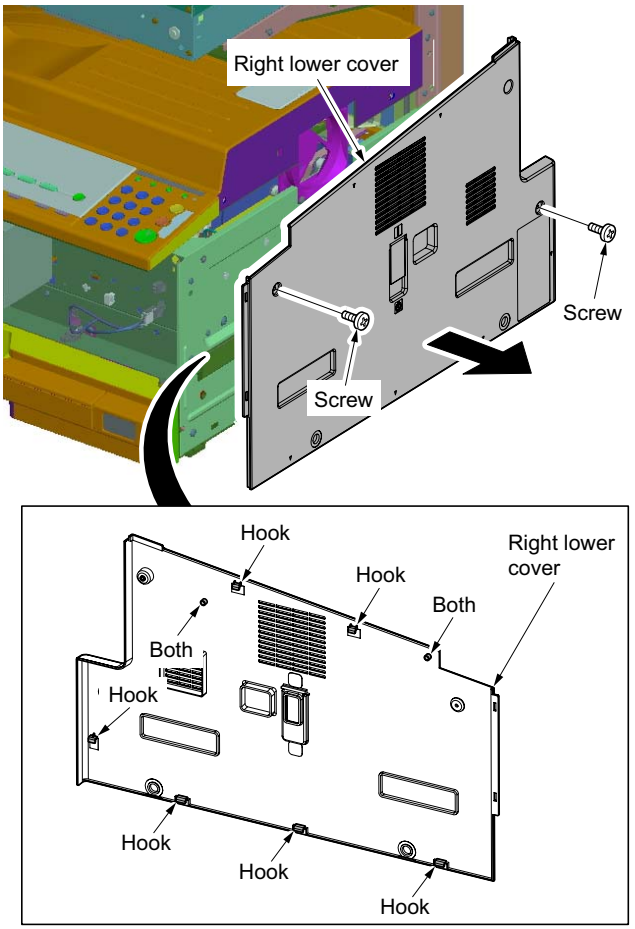

Figure 1-5-49

5. Remove YC5, YC15, YC16 and YC27 connectors of the main/engine PWB.

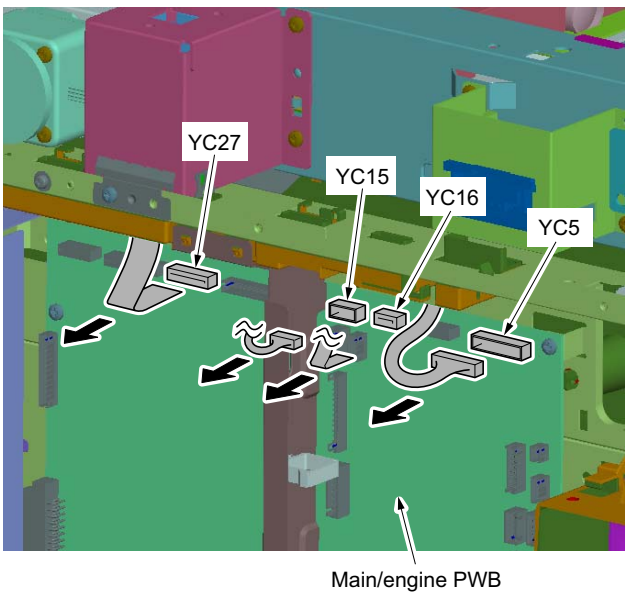

Figure 1-5-50

WWW.SERVICE-MANUAL.NET

6. Remove four pins and remove the scanner unit.

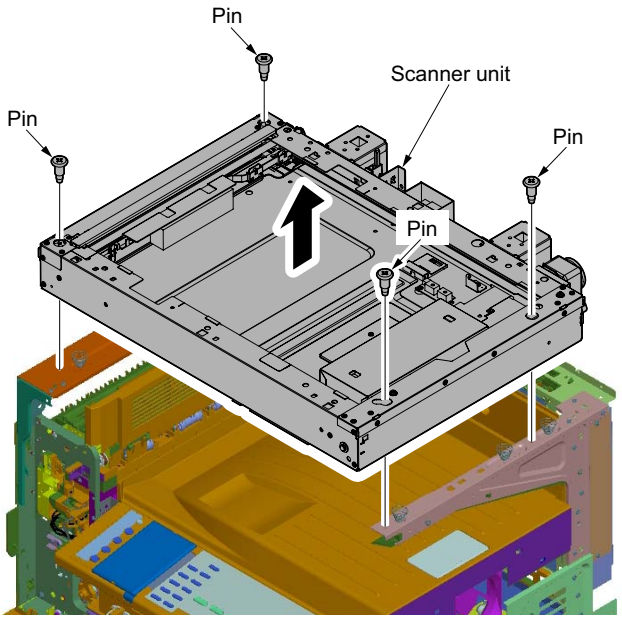

Figure 1-5-51

7. Remove the screw and remove the eject cover.

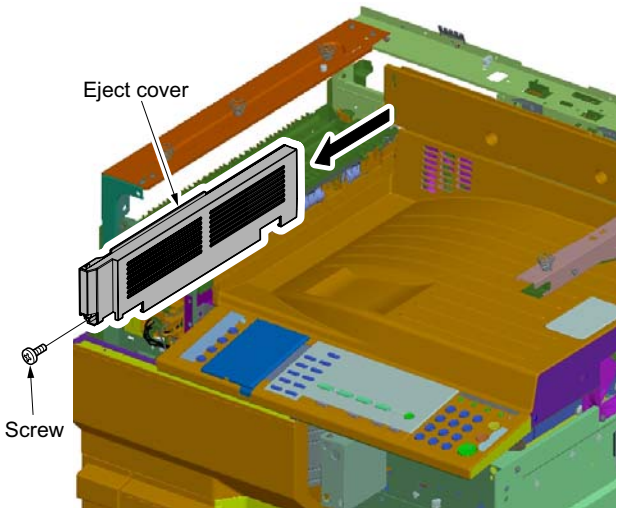

Figure 1-5-52

WWW.SERVICE-MANUAL.NET

8. Remove the screw and remove the inner rear cover.

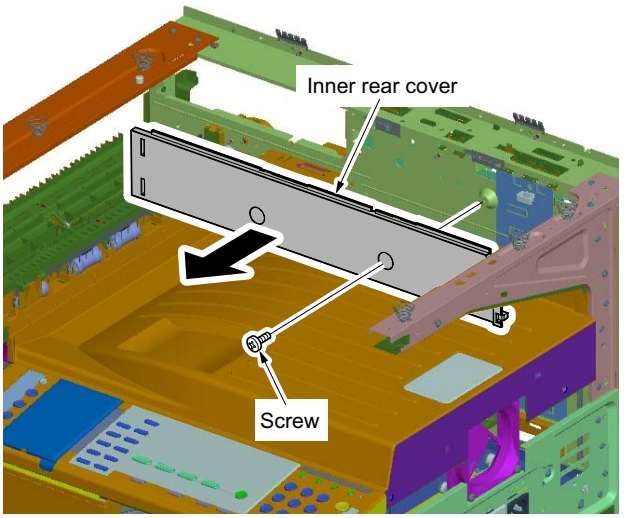

Figure 1-5-53

9. Release two hooks and both and then remove the eject tray.

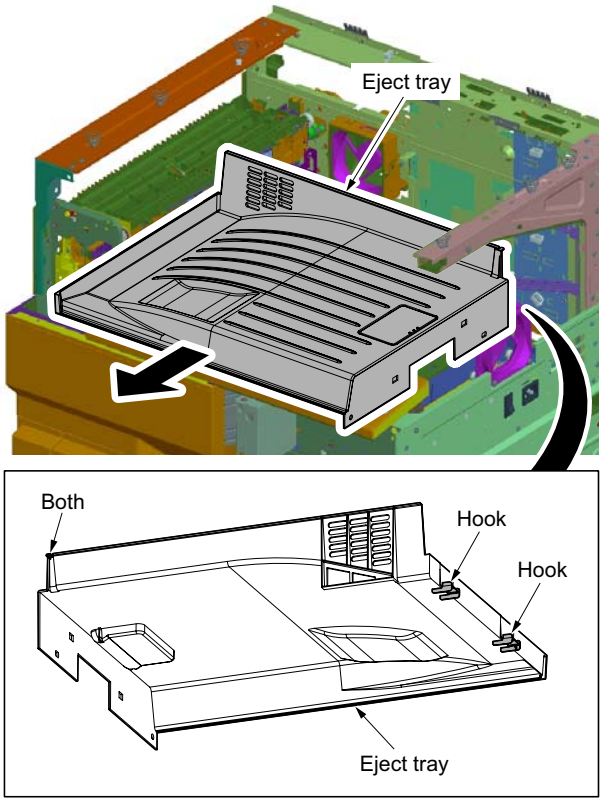

Figure 1-5-54

WWW.SERVICE-MANUAL.NET

10. Remove four screws and two connectors and remove the laser scanner unit.
11. Replace the laser scanner unit and refit all the removed parts.

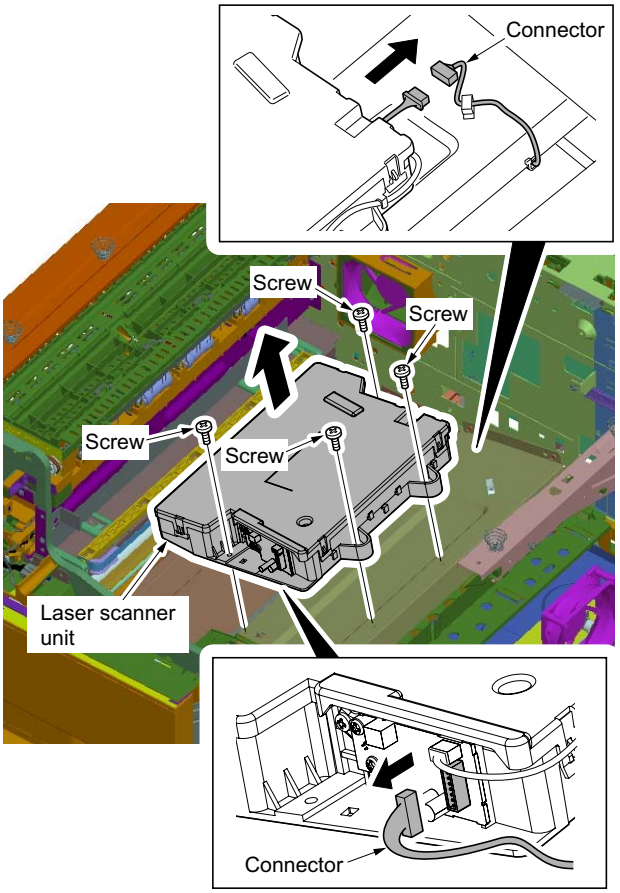

Figure 1-5-55

WWW.SERVICE-MANUAL.NET

(5) Adjusting the longitudinal squareness (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 deflection in the paper at the registration roller first (see page 1-3-16). 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

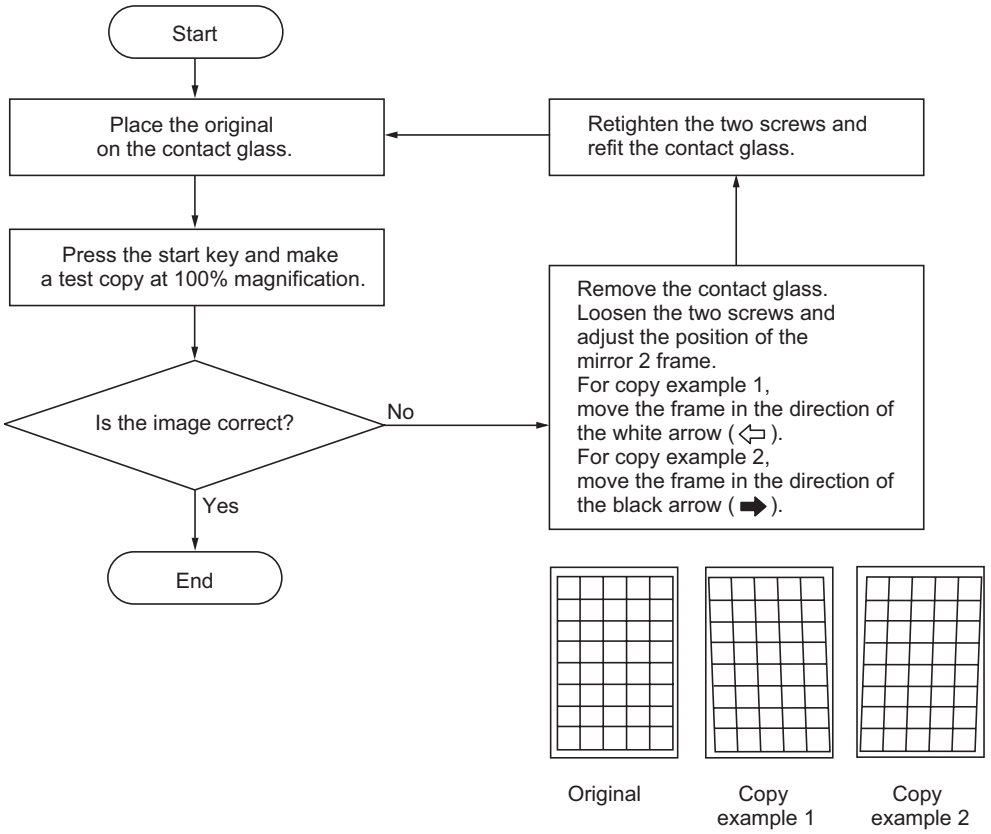

Figure 1-5-56

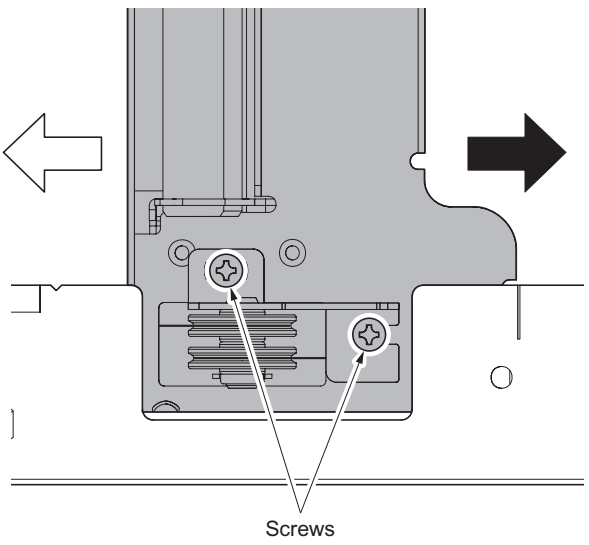

Figure 1-5-57

WWW.SERVICE-MANUAL.NET

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. Open the front cover and left cover. Remove the waste toner box and toner container.
2. Remove the screw holding the developing release lever.
3. Pull the developing release lever and release the developing unit.

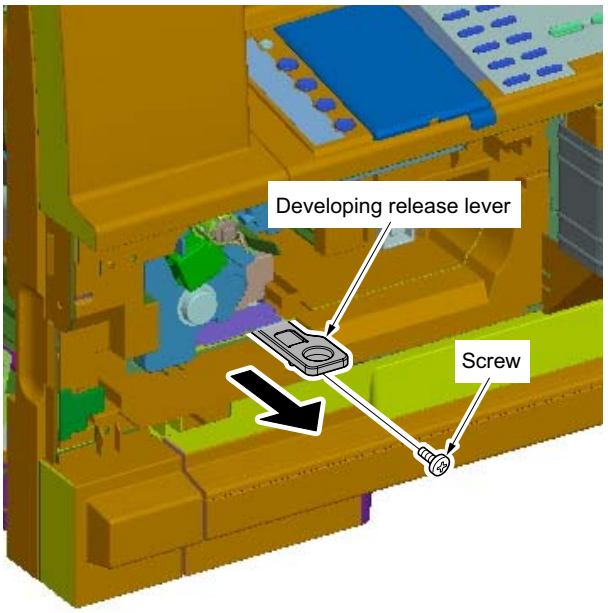

Figure 1-5-58

4. Remove the screw and the connector and then remove the drum unit.
5. Replace the drum unit and refit all the removed parts.
6. when the periodic maintenance, perform maintenance mode U251 (clearing the maintenance count) (see page 1-3-44).

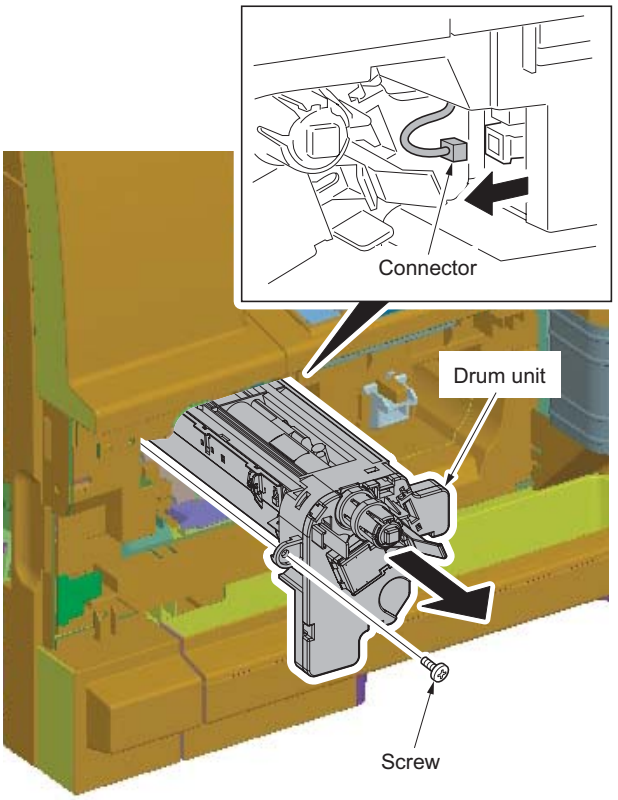

Figure 1-5-59

WWW.SERVICE-MANUAL.NET

(2) Detaching and refitting the drum separation claws

Follow the procedure below to replace the drum separation claws.

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 drum unit (see page 1-5-34).
2. Push the drum separation claws with the minus driver from the top of the hole and remove the claws.
3. Replace the drum separation claws and refit all the removed parts.

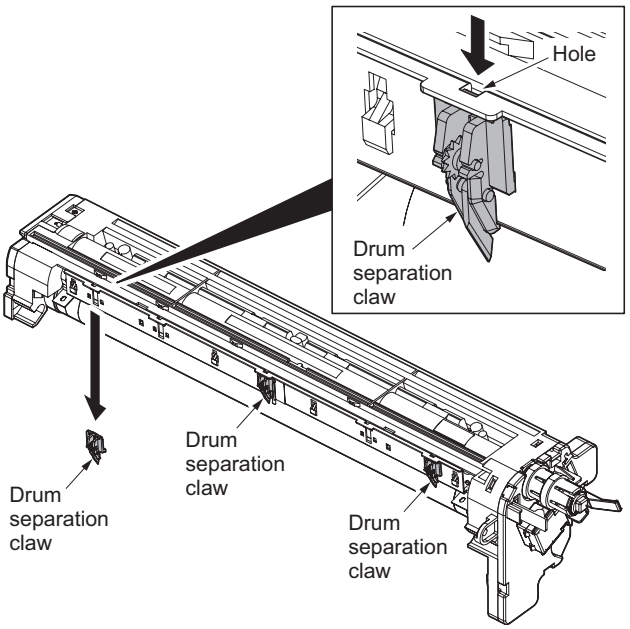

Figure 1-5-60

WWW.SERVICE-MANUAL.NET

(3) Detaching and refitting the main charger unit

Follow the procedure below to replace the main charger unit.

Procedure

1. Open the front cover and remove the waste toner box.
2. While lifting the main charger unit toward the upper right, remove the unit.
3. While pressing the main charger release lever in the direction indicated by the arrow at the removal stopper position to release the removal stopper, remove the main charger unit from the machine.
4. Replace the main charger unit and refit all the removed parts.

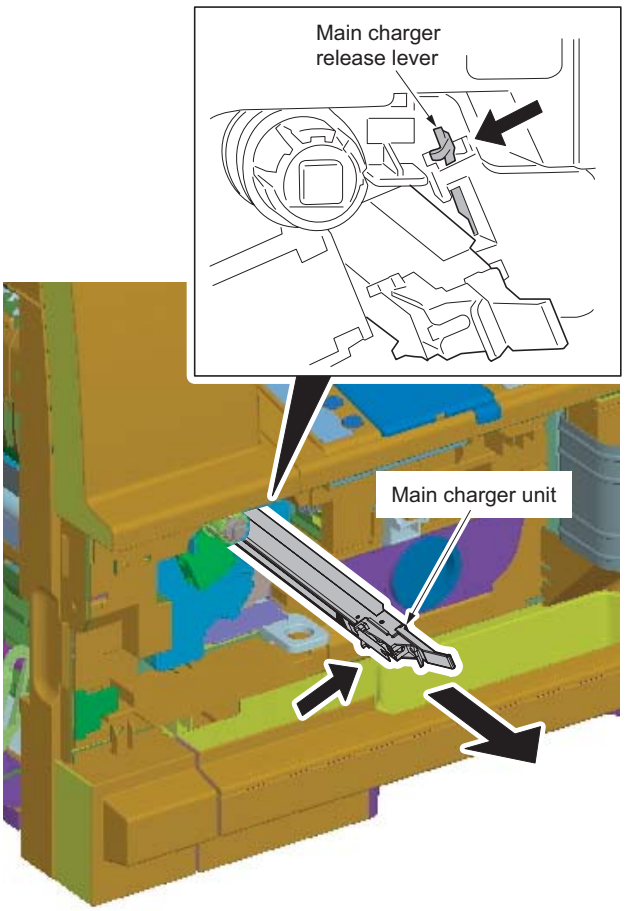

Figure 1-5-61

WWW.SERVICE-MANUAL.NET

1-5-5 Developing section

(1) Detaching and refitting the developing unit

Follow the procedure below to replace the developing unit.

Procedure

1. Remove the drum unit (see page 1-5-34).
2. While lifting the developing unit a little, remove the unit from the machine.
3. Replace the developing unit and refit all the removed parts.
4. Perform maintenance mode U130 (initial setting for the developing unit) (see page 1-3-36).
5. Perform maintenance mode U157 (clearing the developing drive time) (see page 1-3-38).

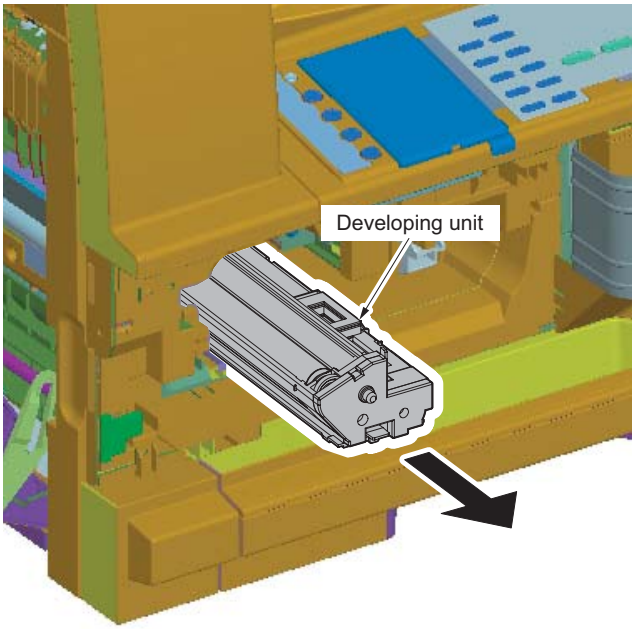

Figure 1-5-62

WWW.SERVICE-MANUAL.NET

1-5-6 Transfer section

(1) Detaching and refitting the transfer roller

Follow the procedure below to replace the transfer roller.

Procedure

1. Remove the paper conveying unit (see page 1-5-9).
2. Remove front and rear inserted parts and remove the transfer roller unit from the paper conveying unit.

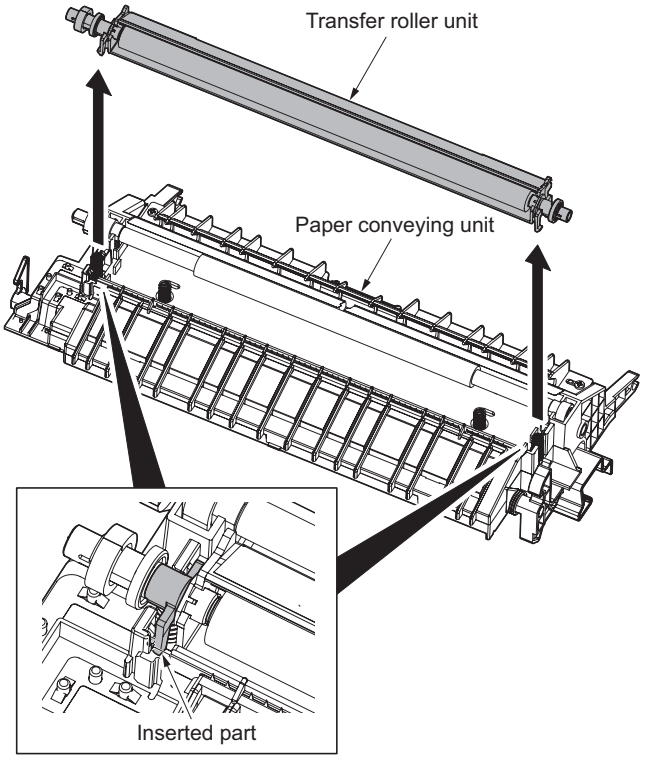

Figure 1-5-63

3. Remove two collars A, two collars B, gear, two stoppers and two bushes from transfer roller.

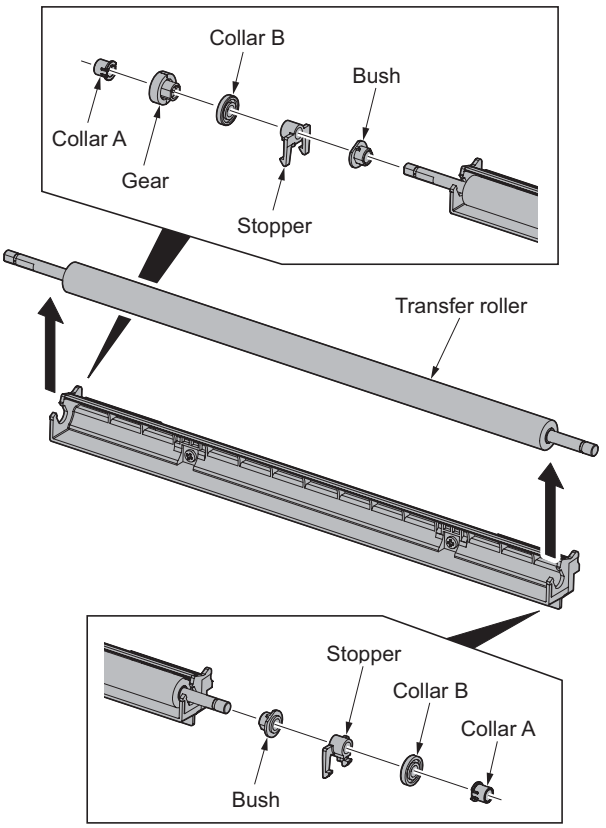

Figure 1-5-64

WWW.SERVICE-MANUAL.NET

4. Replace the transfer roller and refit all the removed parts.
   When refitting the transfer roller unit, make sure that the transfer springs are securely fit into the protrusions.

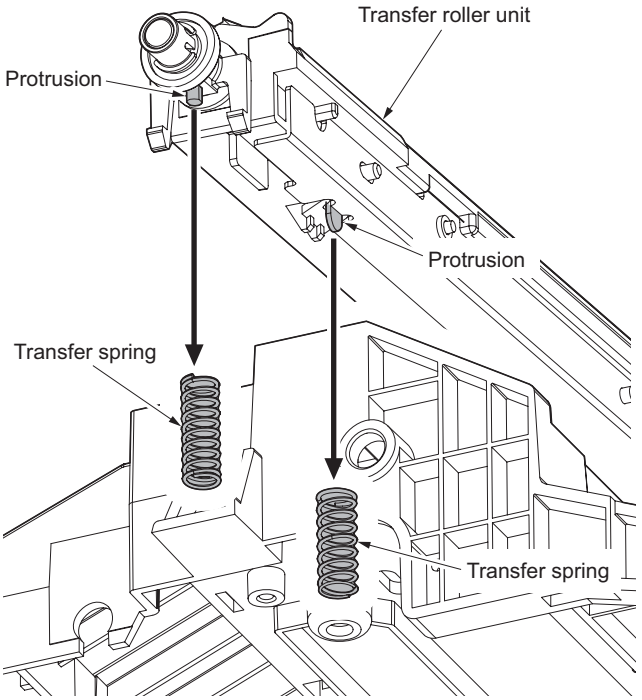

Figure 1-5-65

WWW.SERVICE-MANUAL.NET

1-5-7 Fuser section

Caution

(1) Detaching and refitting the fuser unit

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

Procedure

1. Open the front cover and left cover.
2. Remove the screw and release three inserted parts and then remove the front left cover.

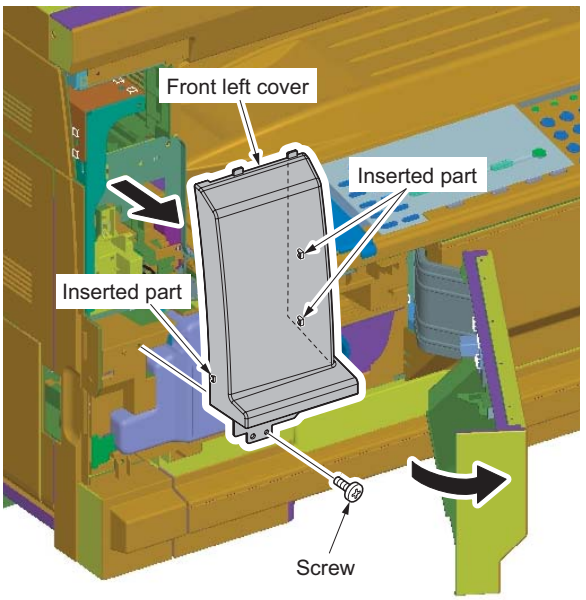

Figure 1-5-66

3. Remove the screw and two connectors and then remove the fuser unit.

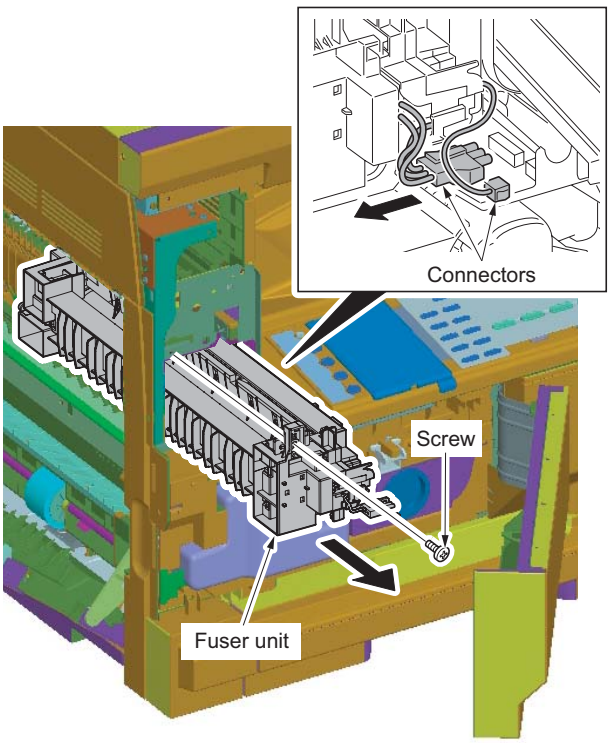

Figure 1-5-67

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4. Replace the fuser unit and refit all the removed parts.
   After connecting the connector, be sure to hitch the fuser thermistor wire to both the notch position and the hook of the fuser unit.

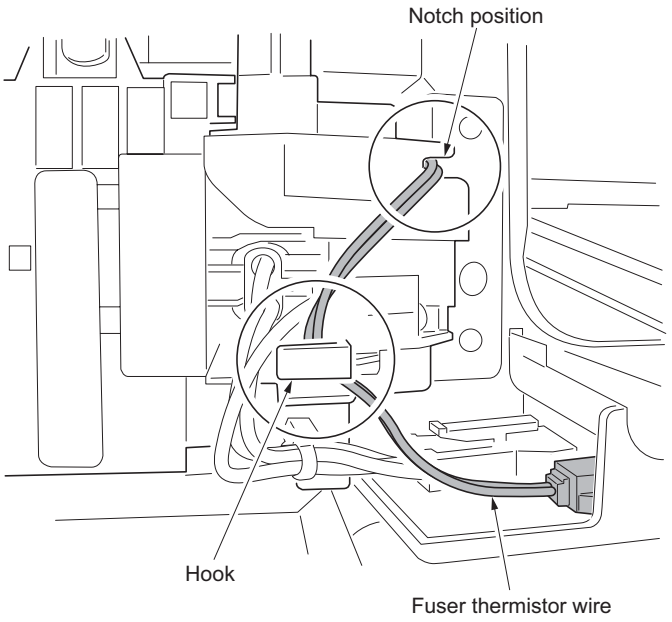

Figure 1-5-68

WWW.SERVICE-MANUAL.NET

(2) Detaching and refitting the press roller

Follow the procedure below to replace the press roller.

Procedure

1. Remove the fuser unit (see page 1-5-40).
2. Remove two screws and open the fuser unit.
3. Separate the right and left fuser unit.

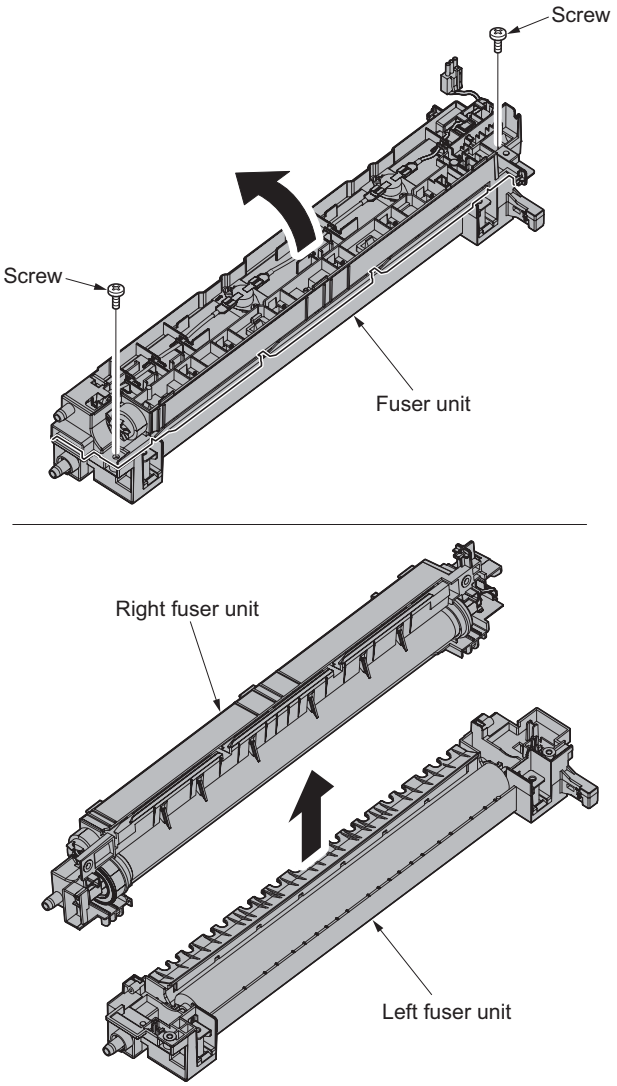

Figure 1-5-69

4. Remove the screw and release two hooks and then remove the press roller guide from the left fuser unit.

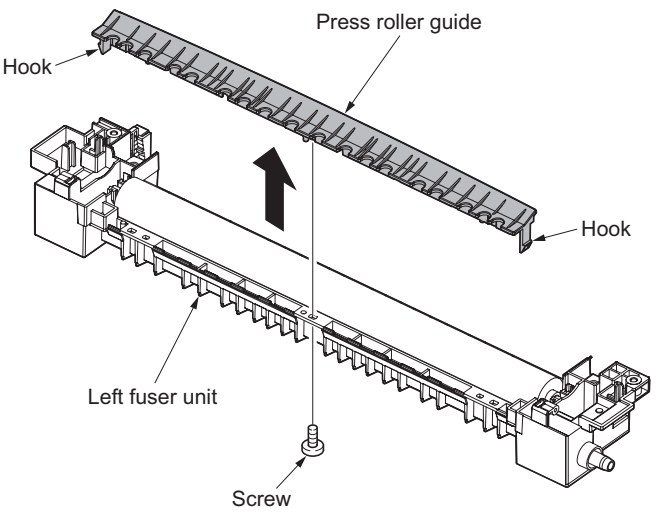

Figure 1-5-70

WWW.SERVICE-MANUAL.NET

5. Remove the press roller from left fuser unit.
   Cautions
   Remove the press roller carefully not to scratch its surface.
   When removing it, be careful not to drop and lose the bush.
6. Replace the press roller and refit all the removed parts.

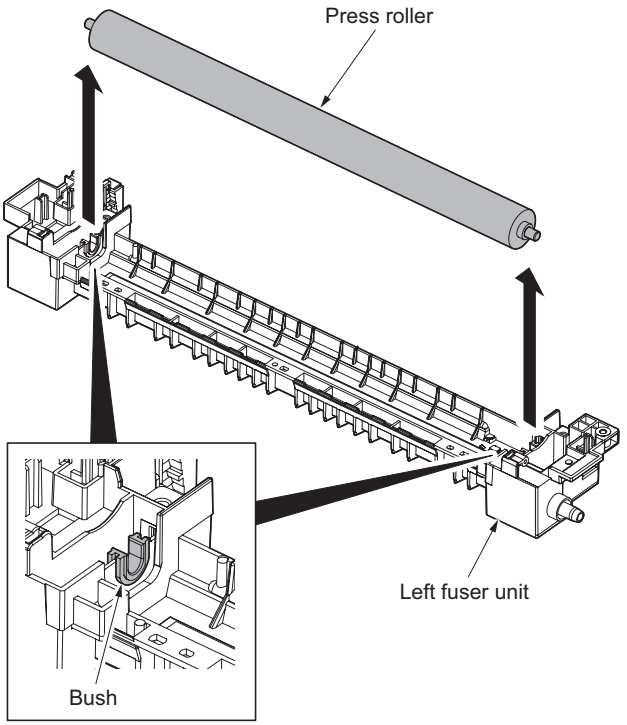

Figure 1-5-71

WWW.SERVICE-MANUAL.NET

(3) Detaching and refitting the fuser heater

Follow the procedure below to replace the fuser heater.

Procedure

1. Remove the fuser unit (see page 1-5-40).
2. Remove two positive terminals of fuser heater wires from the fuser unit.
   Caution
   Remove the positive terminals while pressing their protrusions.
3. Remove two fuser heater wires from ribs of the fuser unit.
   Caution
   Make sure that the fuser heater wires are not removed from the positive terminals.

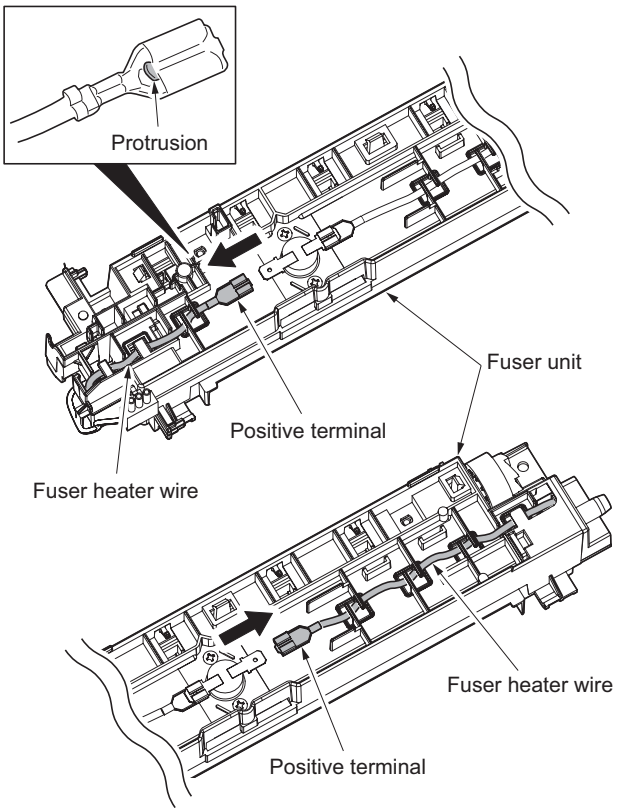

Figure 1-5-72

4. Separate the right and left fuser unit (see page 1-5-42).
5. Pull out the fuser heater wire from the rear side of the right fuser unit and stretch it straight.

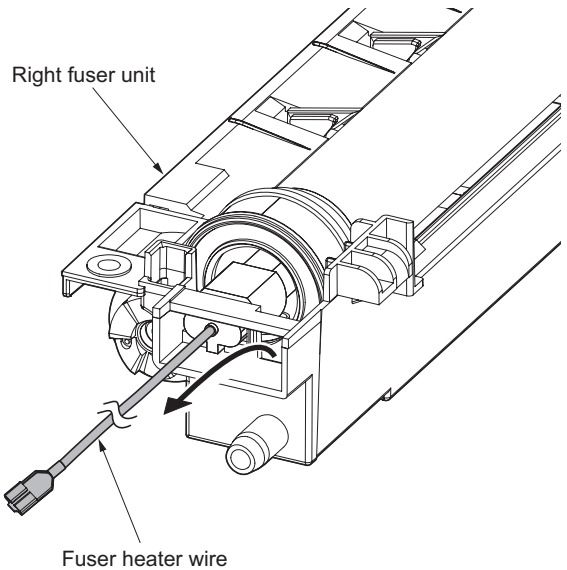

Figure 1-5-73

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6. Release hooks at the front side of the right fuser unit and pull out the fuser heater.
   Caution
   Do not touch the glass section of the fuser heater.

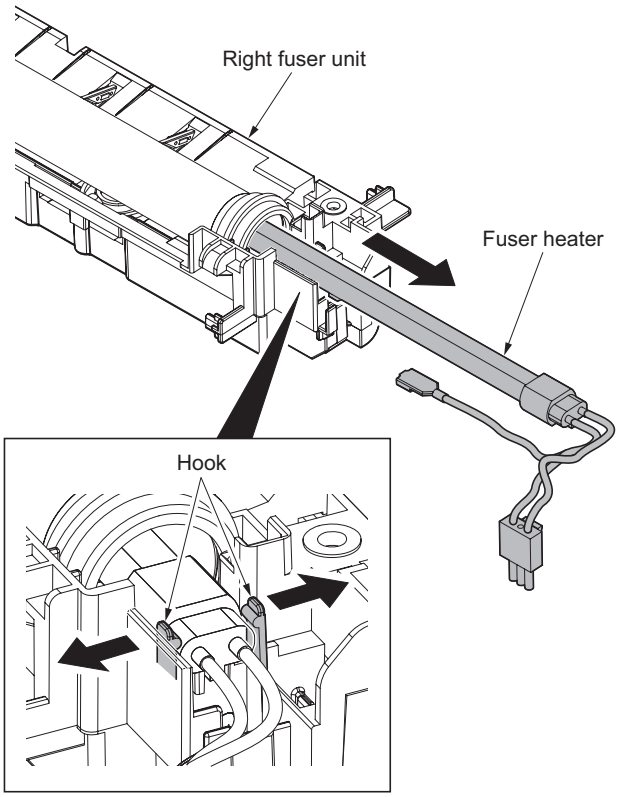

Figure 1-5-74

7. Replace the fuser heater.
8. Straighten the fuser heater wire in the rear side of the new fuser heater, and insert it from the front side of the right fuser unit.
9. Fit both the protrusions in the front and rear sides of the fuser heater into the notch positions of the right fuser unit.
   Insert the wire between the hooks in the front side of the right fuser unit until it clicks to secure it.

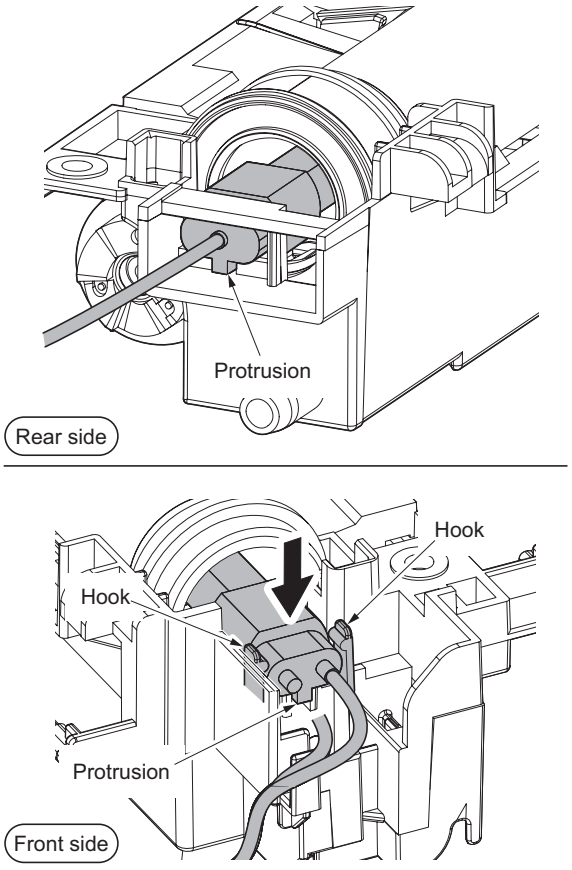

Figure 1-5-75

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10. Lace the fuser heater wire in the rear side through the aperture of the right fuser unit and pull it out.
11. Refit the right and left fuser unit.

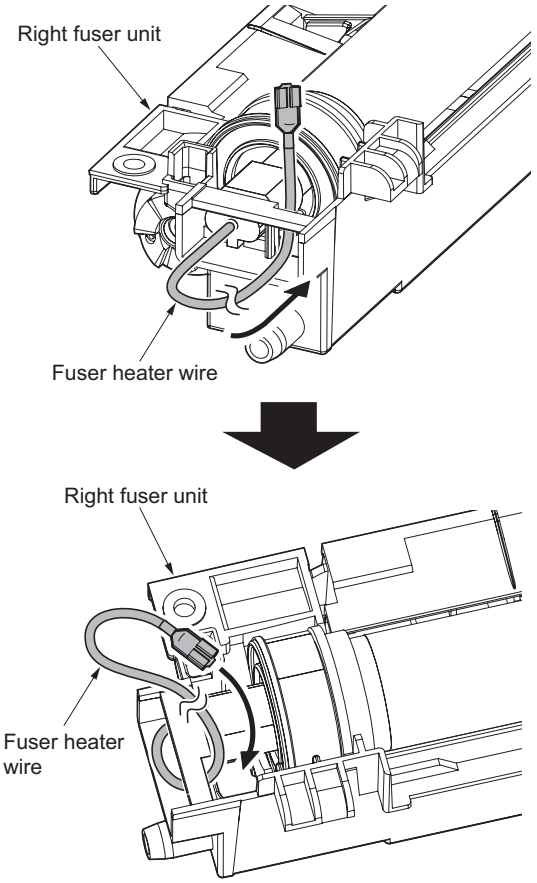

Figure 1-5-76

12. Connect front and rear positive terminal to thermostats.
    Cautions
    Insert the terminal all the way into the unit.
    Put the slack of electric wire toward the front side of the machine.
    Push each terminal and heater wire into the housing so as not to exceed the height of the rib of the fuser unit (because they may come in contact with the machine frame at the time of installation of the machine).

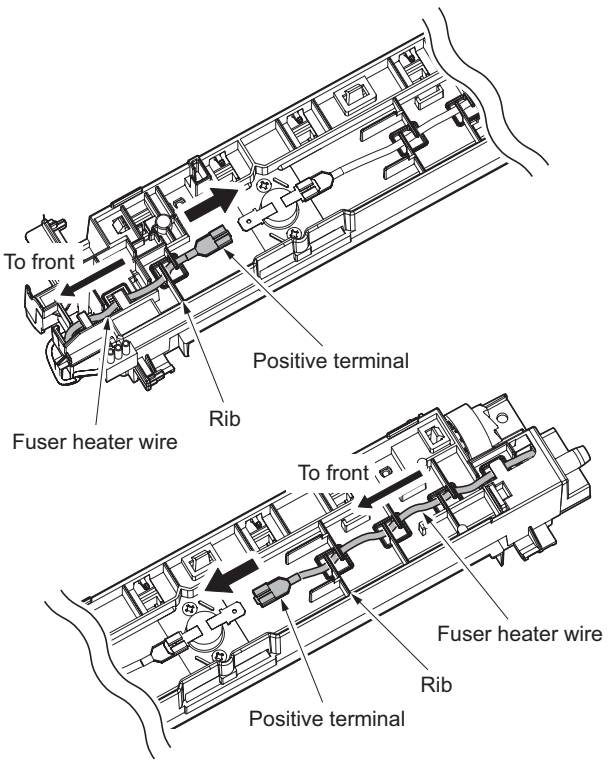

Figure 1-5-77

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(4) Detaching and refitting the heat roller separation claws

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

Procedure

1. Separate the right and left fuser unit (see page 1-5-42).
2. Release four hooks and remove the fuser guide from the right fuser unit.

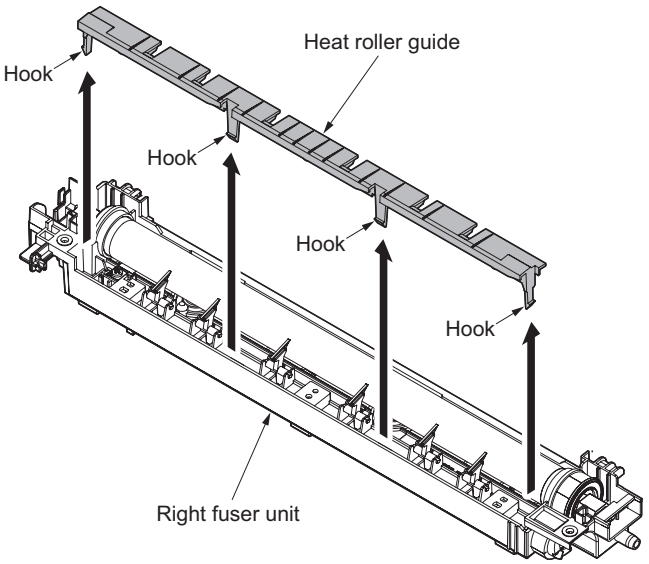

Figure 1-5-78

3. Remove the springs and remove the heat roller separation claws.
   Caution
   When removing them, be careful not to touch the tip of the claw.
4. Replace the heat roller separation claws and refit all the removed parts.
   Caution
   When fitting the separation claws, be careful not to scratch the surface of the heat roller.

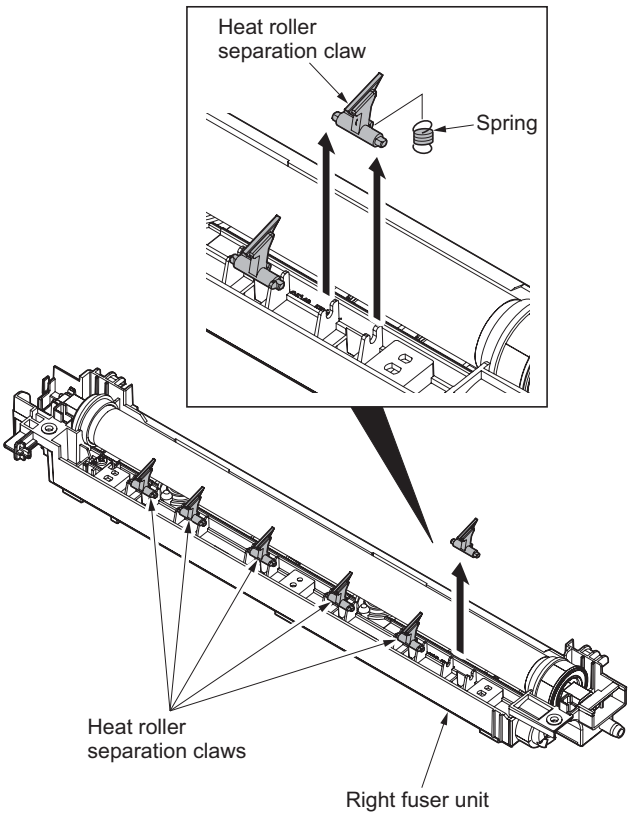

Figure 1-5-79

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(5) Detaching and refitting the heat roller

Follow the procedure below to replace the heat roller.

Procedure

1. Separate the right and left fuser unit (see page 1-5-42).
2. Remove the fuser heater (see page 1-5-44).
3. Remove the heat roller separation claws (see page 1-5-47).
4. Press the heat roller bush in the rear side of the right fuser unit from outside to make the roller removable.

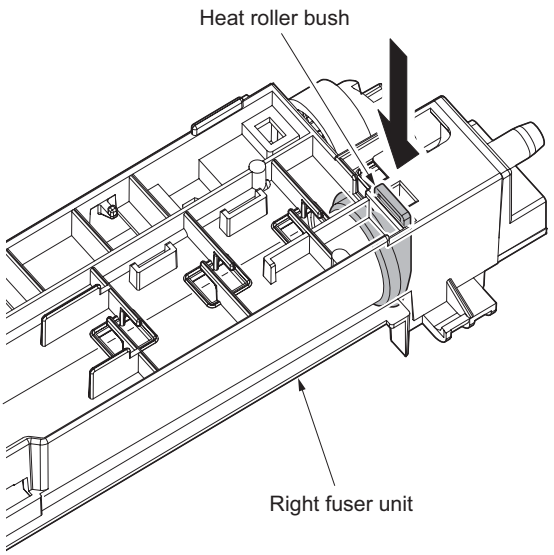

Figure 1-5-80

5. Remove the heat roller, heat roller bush and heat roller gear.
   Caution
   Remove the heat roller, with the heat roller bush in the front side being mounted.

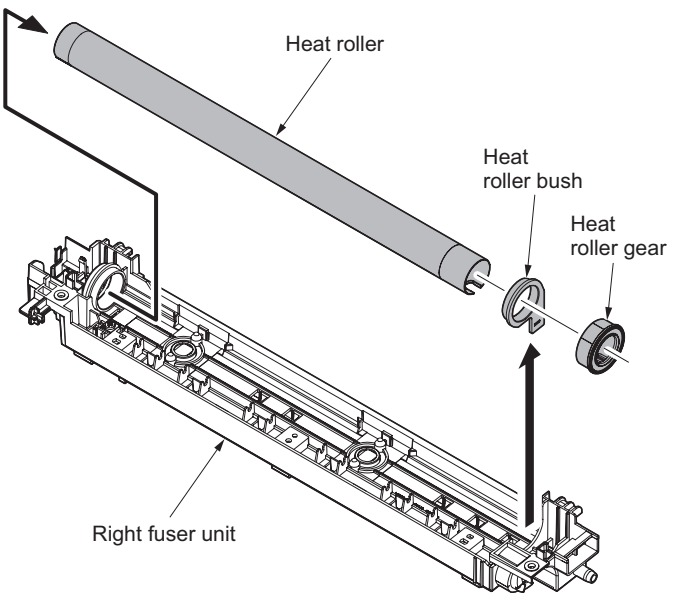

Figure 1-5-81

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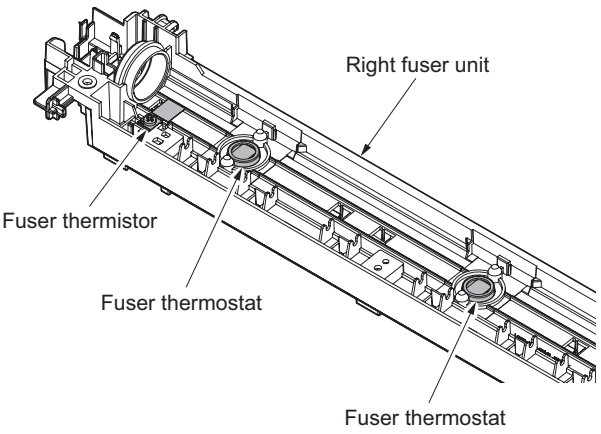
6. Replace the heat roller and refit all the removed parts.
   Caution
   When replacing the heat roller, make sure that the surface of the fuser thermistor is cleaned with alcohol and is not deformed. Also make sure that no foreign matter adheres to the fuser thermostats.
   Refit the heat roller gear while pushing the idle gear in the direction indicated with the arrow. Also make sure that the gears are properly engaged.
   After refitting the heat roller, push the roller lightly to check that the detection surface of the fuser thermistor comes in contact with the roller.



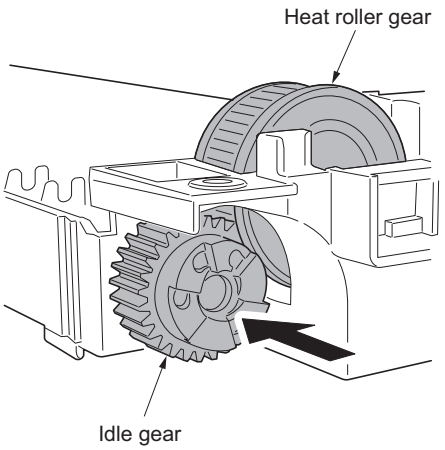


Figure 1-5-82

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(6) Detaching and refitting the fuser thermistor

Follow the procedure below to replace the fuser thermistor.

Procedure

1. Separate the right and left fuser unit (see page 1-5-42).
2. Remove the heat roller (see page 1-5-48).
3. Remove the screw and remove the fuser thermistor.
4. Replace the fuser thermistor and refit all the removed parts.
   Caution
   Restore the fuser thermistor wire to its original correct position.
   After refitting the heat roller, push the roller lightly to check that the detection surface of the fuser thermistor comes in contact with the roller.

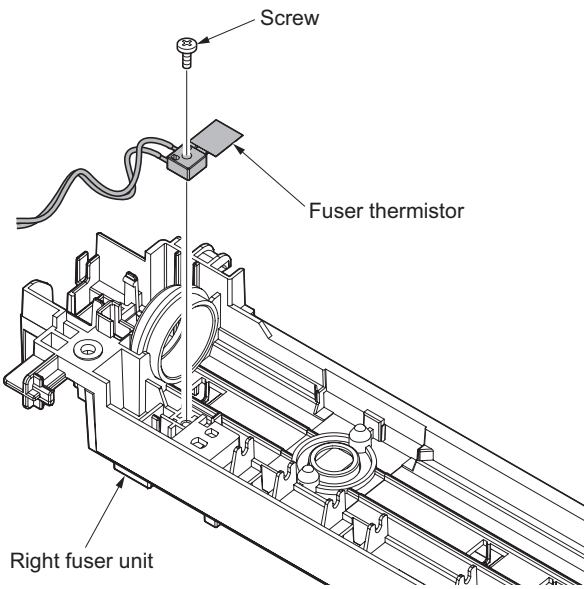

Figure 1-5-83

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(7) Detaching and refitting the fuser thermostat

Follow the procedure below to replace the fuser thermostat.

Cautions
Be sure to replace it after finding the cause of failure.
If the cause is not found, do not replace only the component in question but the entire unit.
If C6000 or C6020 occurs, replace the thermostat after resolving the problem.
Before replacement, conduct continuity check for the thermostat.

Procedure

1. Remove the fuser unit (see page 1-5-40).
2. Remove two positive terminals from fuser thermostat.
3. Remove two screws and remove the fuser thermostat.
4. Replace the fuser thermostat and refit all the removed parts.
   Cautions
   Insert the terminal all the way into the unit.
   Put the slack of electric wire toward the front side of the machine.
   Push each terminal and heater wire into the housing so as not to exceed the height of the rib of the fuser unit (because they may come in contact with the machine frame at the time of installation of the machine).

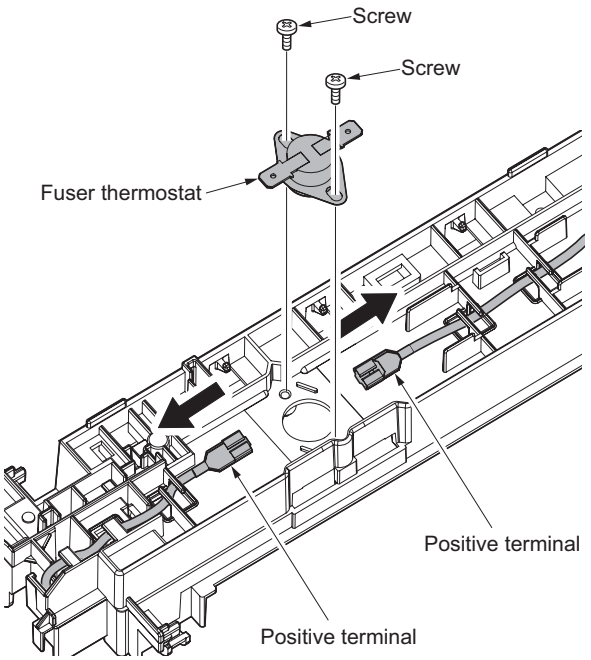

Figure 1-5-84

5. Use a thickness gauge to check that the clearance between the fuser thermostat and the heat roller is within the reference value.
   Reference value: 0.7 to 1.5 mm

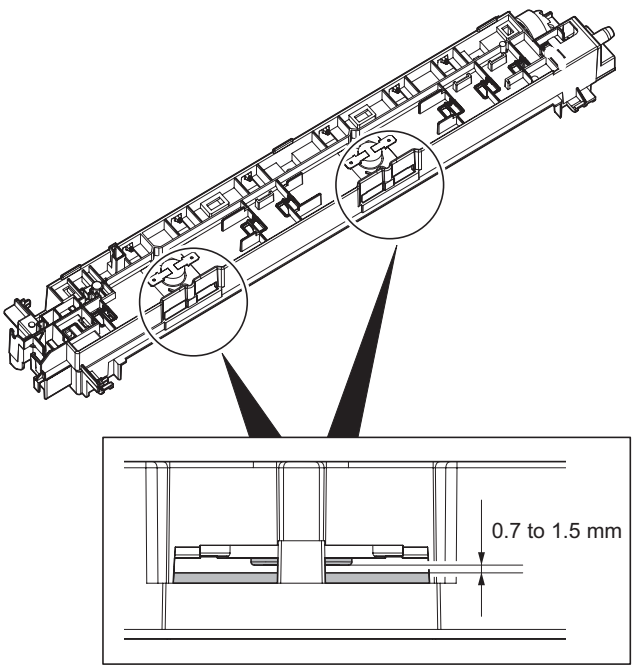

Figure 1-5-85

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(8) 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

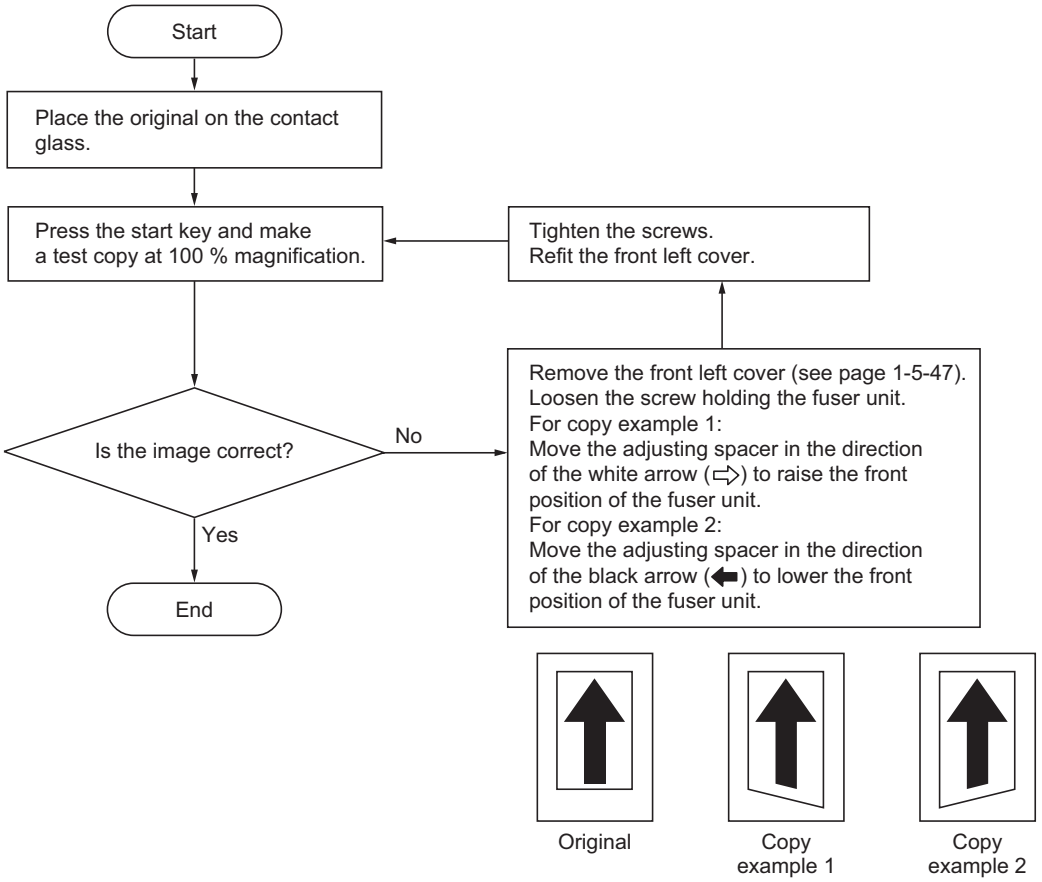

Figure 1-5-86

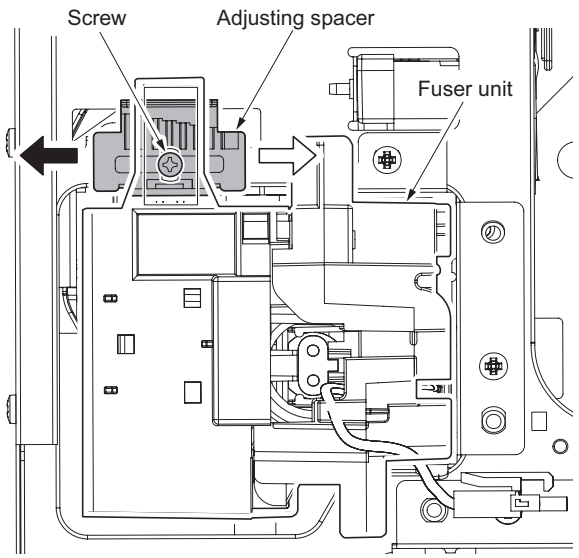

Figure 1-5-87

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1-5-8 Others

(1) Detaching and refitting the eject unit

Follow the procedure below to replace the eject unit.

Procedure

1. Remove the rear cover (see page 1-5-6).
2. Remove YC14 connector of the main/engine PWB.
3. Remove the wire of the connector from the ribs.

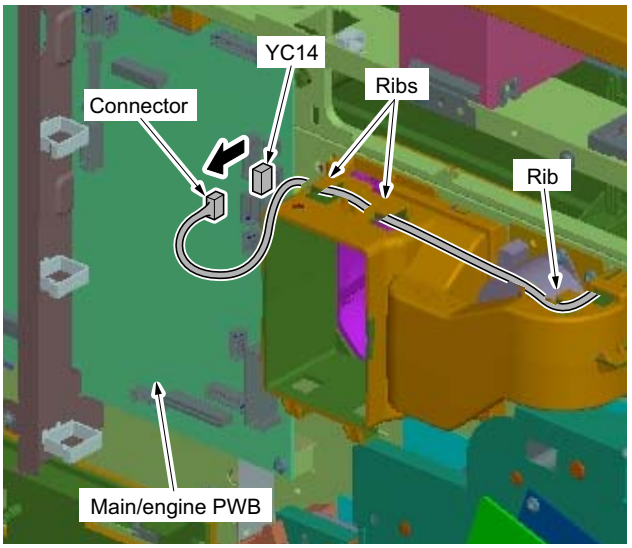

Figure 1-5-88

4. Remove the front left cover (see page 1-5-40).
5. Remove the left middle cover (see page 1-5-19).
6. Remove the eject cover (see page 1-5-30).
7. Remove the screw. Slide the eject unit toward the front side and pull out the inserted part section.

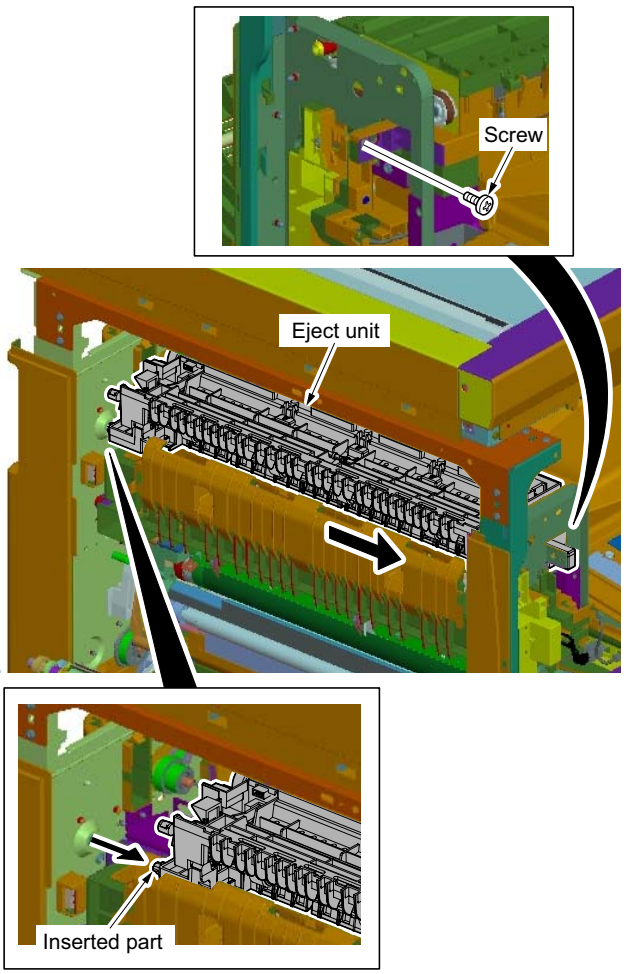

Figure 1-5-89

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8. Lift the eject unit, pull at the rear side of the unit first, and remove the unit from the machine.
9. Replace the eject unit and refit all the removed parts.

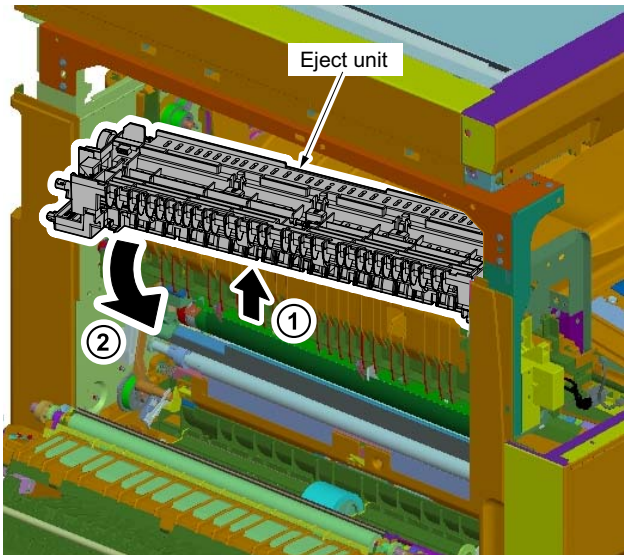

Figure 1-5-90

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(2) Direction of installing the principal fan motors

When detaching or refitting the cooling fan motor 1 or 2, be careful of the airflow direction (intake or exhaust).

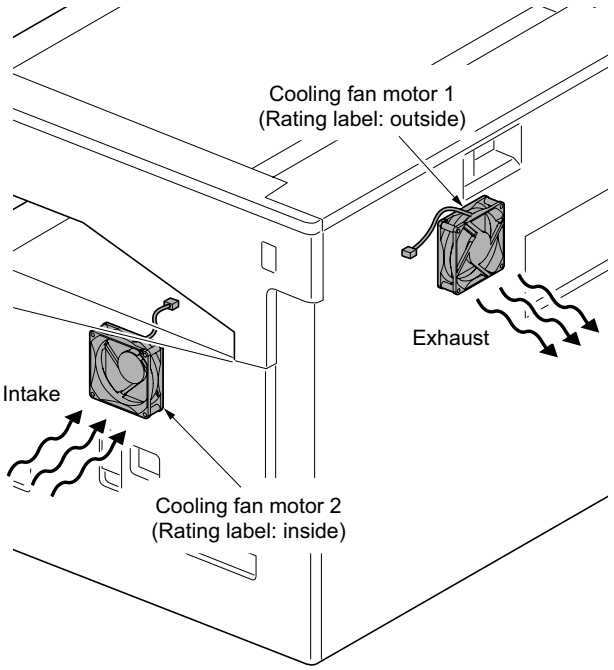

Figure 1-5-91

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1-6-1 Upgrading the firmware

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

Firmware upgrading requires the following tools:
Flash DIMM

Procedure

1. Perform maintenance item U000 (maintenance report output) and check U019 ROM version.
2. Turn the main power switch off and unplug the power cable from the wall outlet.
3. Remove five screws and remove the rear cover.
4. Change the position of the jumper switch (SW1) on the main/engine PWB from upper side (3-2) to lower side (2-1).
5. Insert the DIMM into the DIMM slot on the main/engine PWB.
6. Insert the power plug and turn the main power switch on. Upgrading firmware starts.
   Caution:
   Never turn the main power switch off during upgrading.

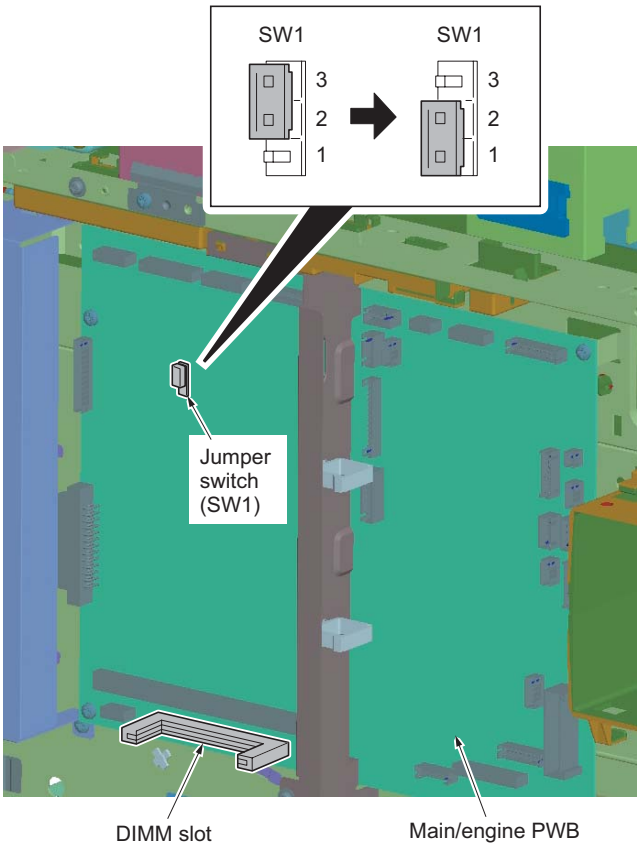

Figure 1-6-1

7. When the upgrade operation is complete, the checksum will be displayed.
8. Turn the main power switch off and unplug the power cable from the wall outlet.
9. Remove the DIMM from the main/engine PWB, and return the jumper switch (SW1) to its original position.
10. Refit the rear cover.
11. Insert the power plug and turn the main power switch on.
12. Perform maintenance item U000 (maintenance report output) and check that U019 ROM version has been upgraded.

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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: VR401
APC PWB: VR1

1-6-3 Remarks on main/engine PWB replacement

When replacing the main/engine PWB, remove the EEPROM (YC37) and EEPROM (YC38) from the PWB that has been removed and then reattach it to the new PWB.

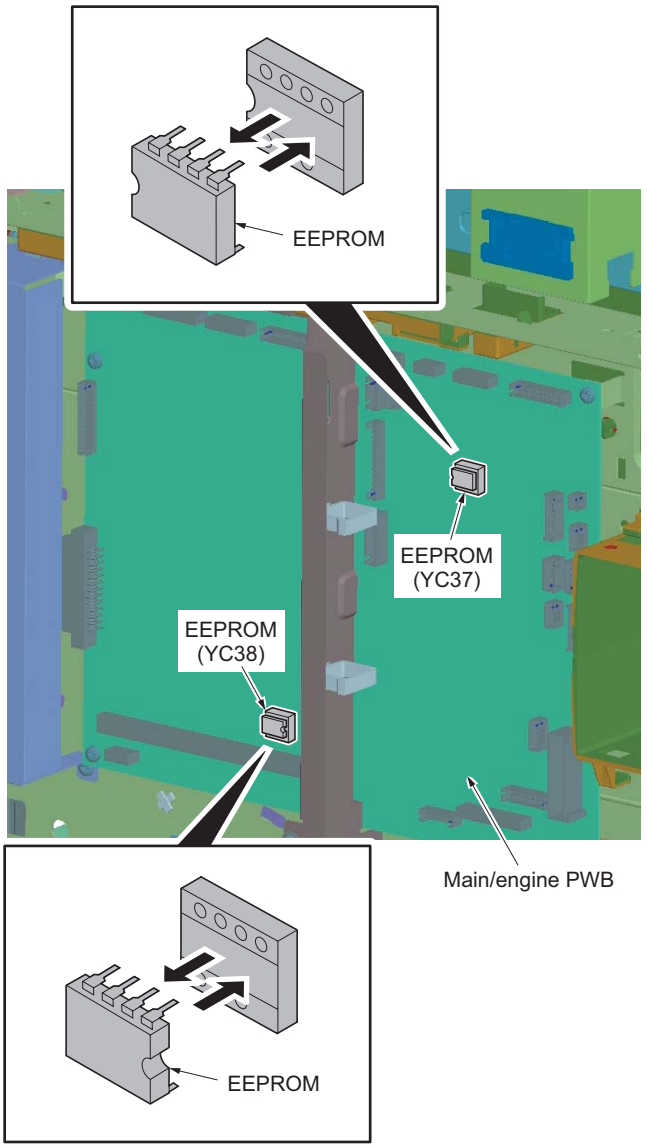

Figure 1-6-2

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1-6-4 Upgrading the printing system firmware

(1) Upgrade using PC/USB

It is necessary to have GDI printer driver installed.
Please make sure the OS of PC is WINDOWS2000 or WINDOWS XP.
Please make sure not to turn off the main power switch or pull out the USB cable during upgrading.

Procedure

Check and set the driver

1. [Start] → [Setting] → [Printer] → find [Kyocera TASKalfa 180 GX]
2. Select [Kyocera TASKalfa 180 GX], click right button of the mouse to select [Shared], then check [Share]
3. Open Command prompt and type c:\>hostname (EX: aaaa)
4. To apply printer to LPT2, type c:\>net use lpt2 \\aaaa\TASKalfa180 (or 220)
5. Check to see if this is done correctly. Type c:\>net use
6. If displayed on the screen, [OK LPT2 \\aaaa\TASKalfa180 (or 220) Microsoft Windows Network], setting is finished.

Upgrade printer firmware

7. Put the right printer firmware right under the C drive.
8. Open Command prompt and type c:\ >copy /b file_name* lpt2
   (Put the file name of printer firmware in * section.)
9. [Downloading] is displayed on main unit LCD (Now downloading).
10. After that, [Downloaded] is displayed (Download is completed).
11. After completing the download, printer is started up again.
12. Check the status report if the version is upgraded.

(2) Upgrade using DIMM

Procedure

1. Turn the main power switch off and unplug the power cable from the wall outlet.
2. Remove Printer Board from the main unit and insert the DIMM into the slot in Printer Board.
3. Change the position of the jumper switch (SW1) on the Printer Board from NORMAL to BOOT.
4. Insert the Printer Board into the main unit.
5. Insert the power plug and turn the main power switch on. Upgrading firmware starts. During upgrading the firmware, LED (D3) on Printer Board will be blinking.
6. After completion of the version up, LED (D3) stops to blink and lights up.
7. Turn the main power switch off and unplug the power cable from the wall outlet.
8. Remove Printer Board from the main unit and remove DIMM from Printer Board.
9. Return the jumper switch (SW1) to its original position.
10. Insert Printer Board into the main unit.
11. Check the status report if the version is upgraded.

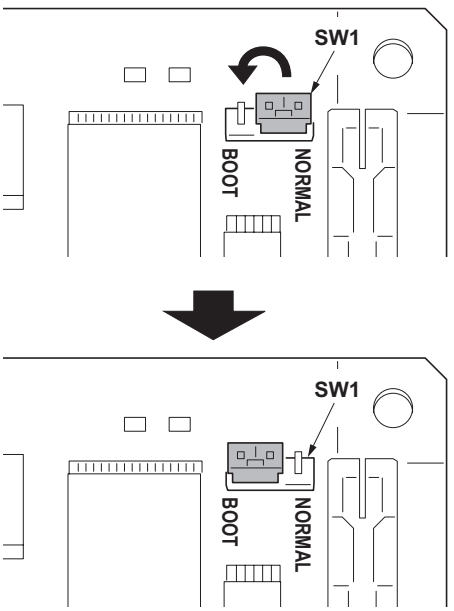

Figure 1-6-3

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2-1-1 Paper feed section

The paper feed section conveys paper from the cassette 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.
Cassette can hold up to 300 (80 g/m^2) 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.
The MP tray can hold up to 100 (80 g/m^2) sheets of paper. Paper is fed from the MP tray by the rotation of the MP paper feed pulley.

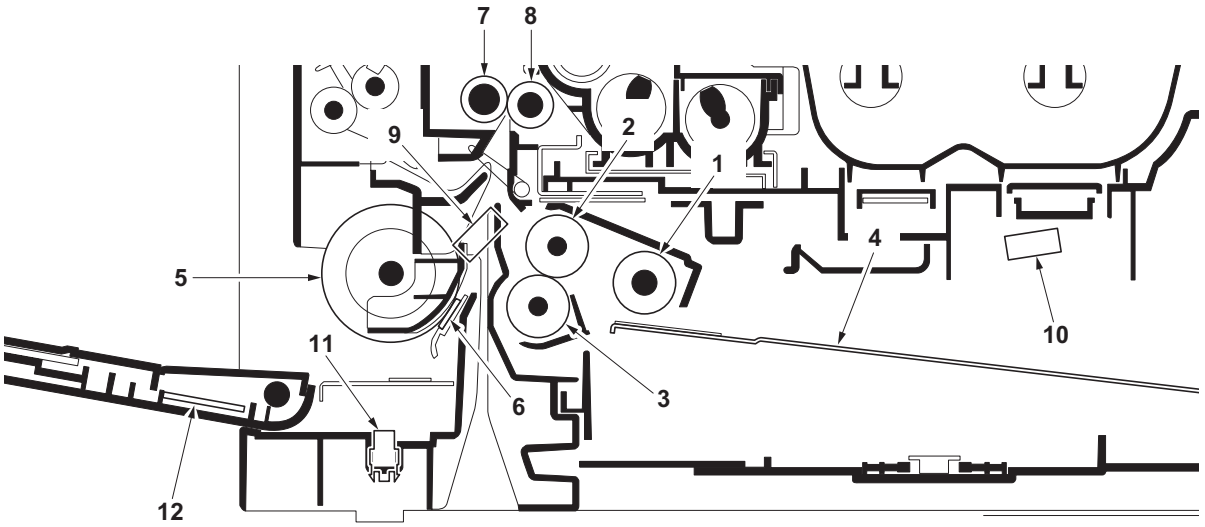

Figure 2-1-1 Paper feed section

(1) Forwarding pulley
(2) Paper feed pulley
(3) Separation pulley
(4) Cassette base
(5) MP paper feed pulley
(6) MP separation pad
(7) Left registration roller
(8) Right registration roller
(9) Registration switch (RSW)
(10) Paper switch (PSW)
(11) MP paper switch (MPPSW)
(12) MP paper size width switch (MPPWSW)

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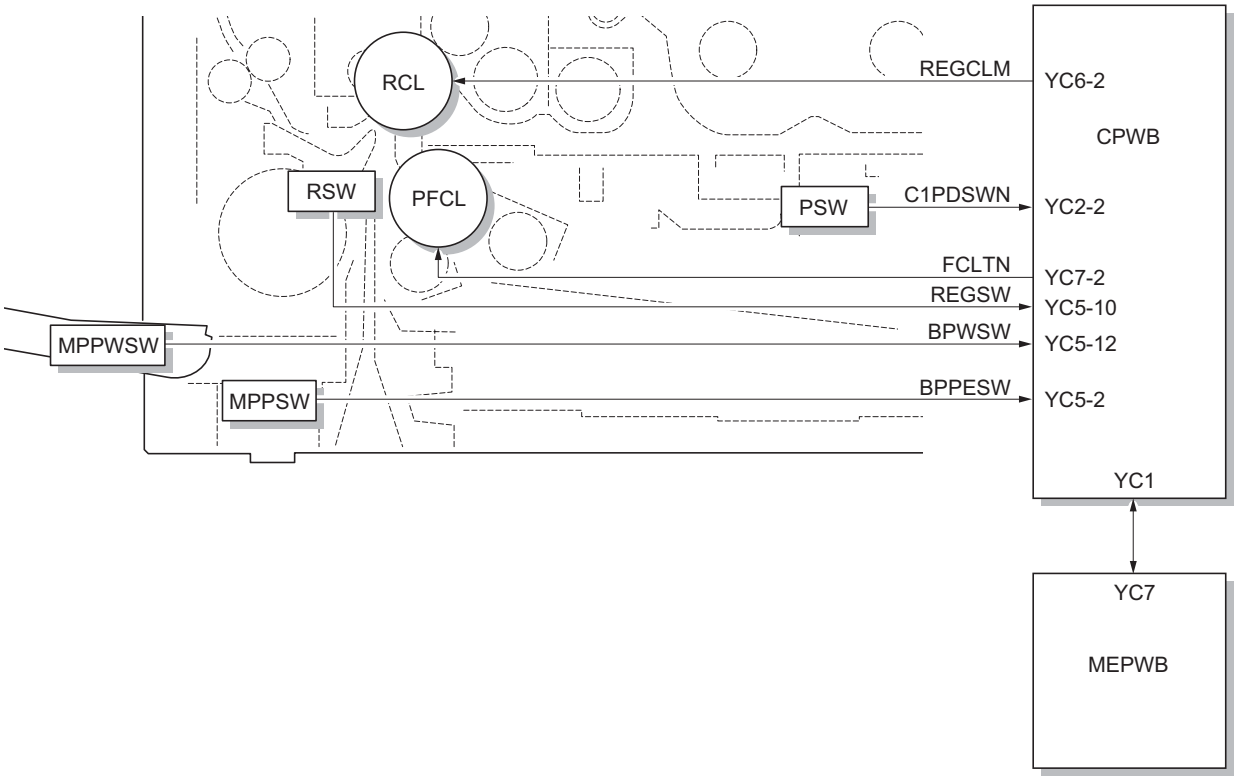

Figure 2-1-2 Paper feed section block diagram

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2-1-2 Optical section

The optical section consists of the image scanner section for scanning and the laser scanner section for printing.

(1) Image scanner section

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.

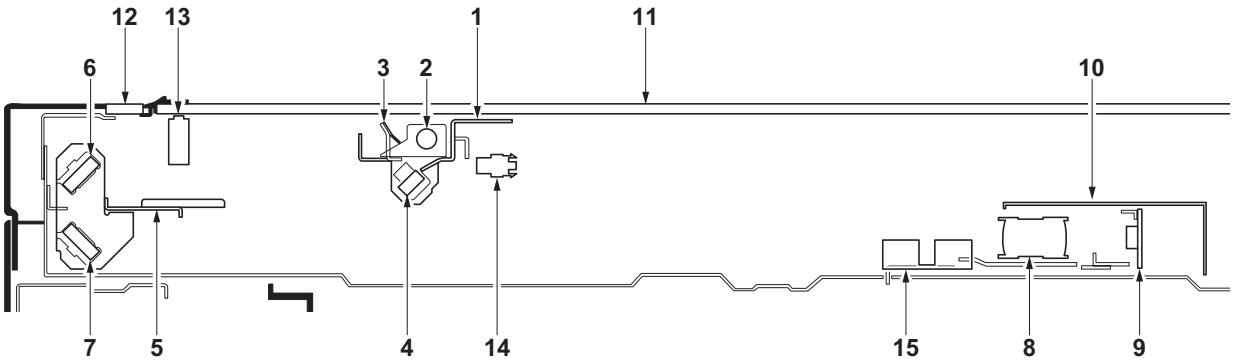

Figure 2-1-3 Image scanner section

(1) Mirror 1 frame
(2) Exposure lamp (EL)
(3) Mirror 1
(4) Scanner reflector
(5) Mirror 2 frame
(6) Mirror 2
(7) Mirror 3
(8) ISU
(9) CCD PWB (CCDPWB)
(10) ISU cover
(11) Contact glass
(12) Slit glass
(13) Home position switch (HPSW)
(14) Original detection switch (ODSW)
(15) Original size detection sensor (OSDS)

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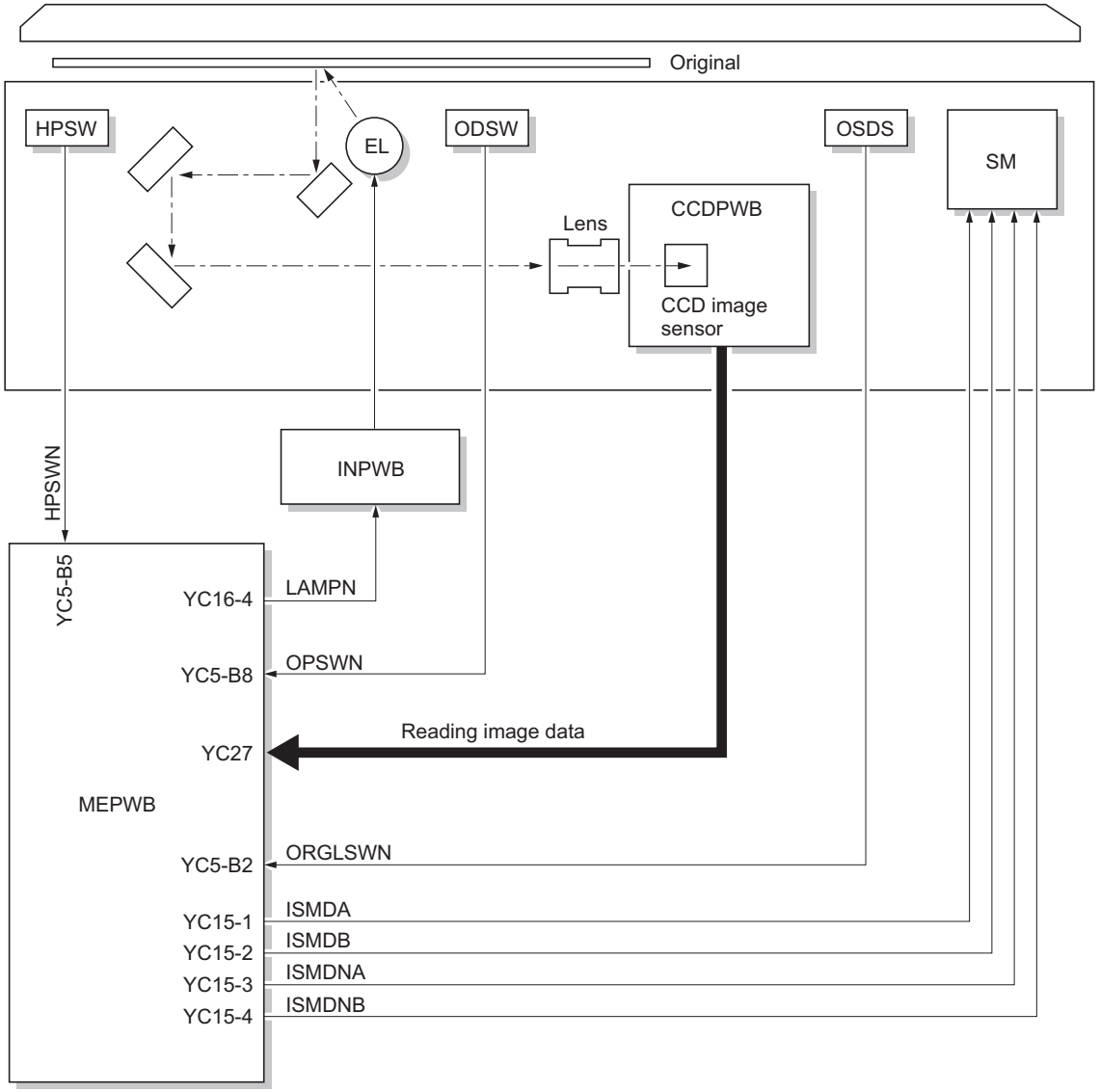

Figure 2-1-4 Image scanner section block diagram

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(2) Laser scanner section

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.

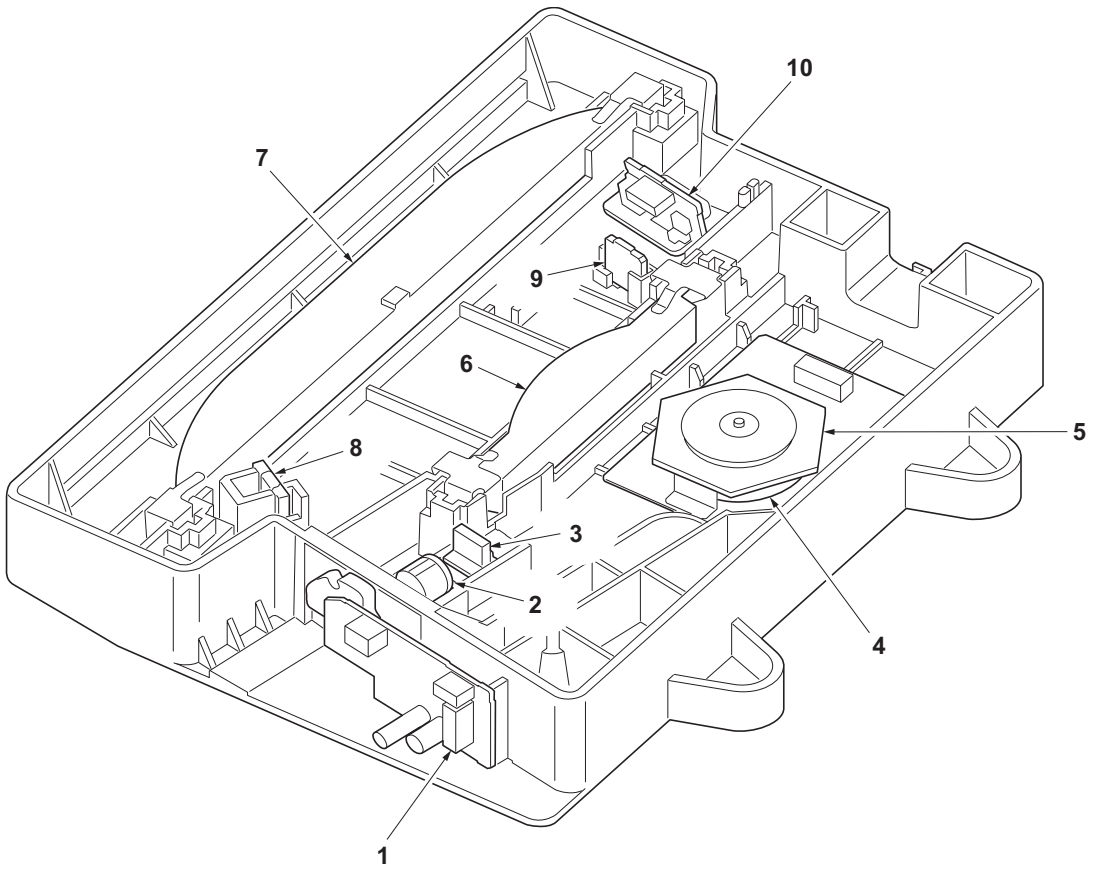

Figure 2-1-5 Laser scanner section

(1) APC PWB (APCPWB)
(2) Laser diode
(3) Cylindrical lens
(4) Polygon motor (PM)
(5) Polygon mirror
(6) fθ lens
(7) fθ lens
(8) PD sensor mirror
(9) Cylindrical correcting lens
(10) PD PWB (PDPWB)

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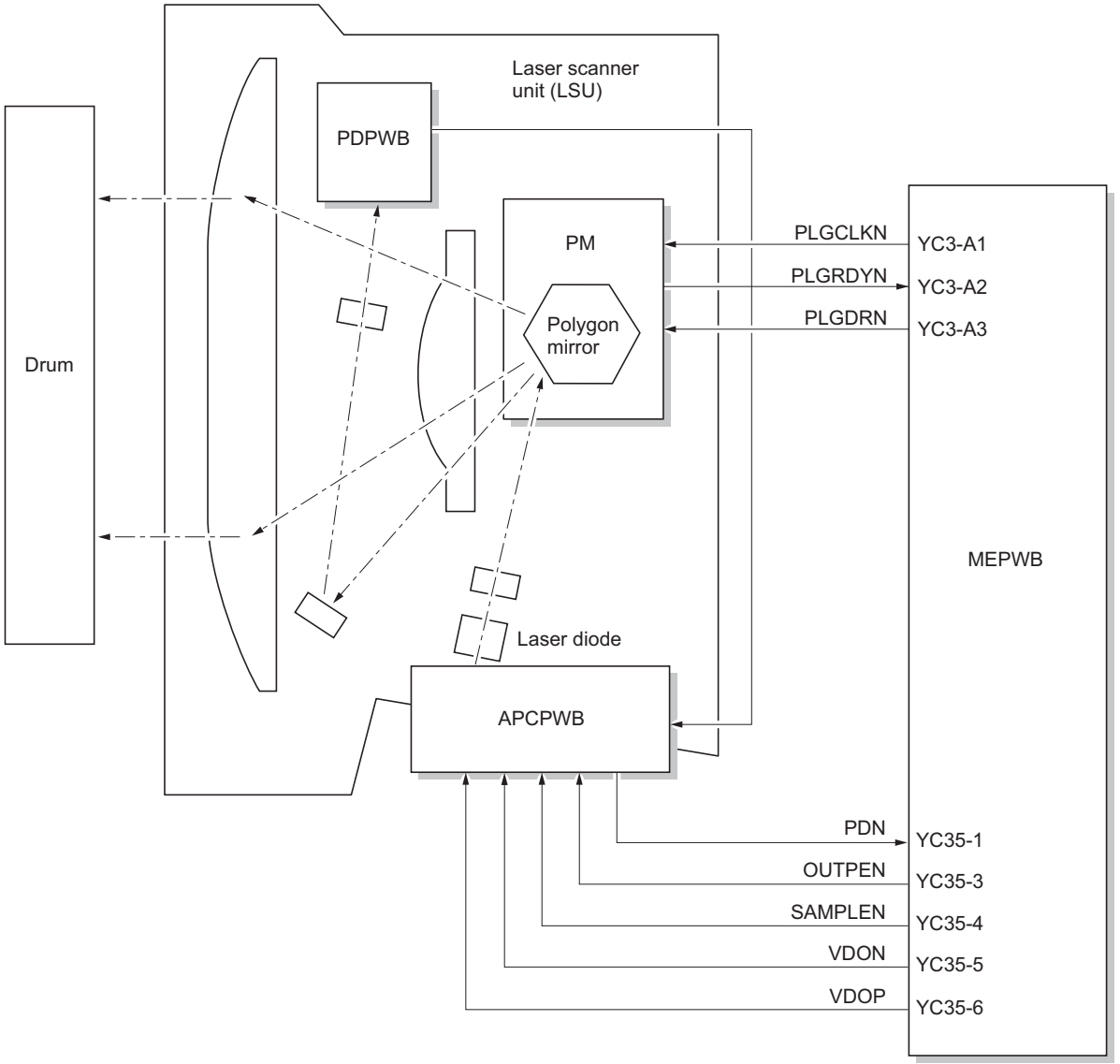

Figure 2-1-6 Laser scanner section block diagram

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2-1-3 Drum section

The drum section consists of the drum, main charger section, cleaning section and cleaning lamp.
The main charger section consists of main charger wire and main charger grid, and the drum is charged by a high voltage applied to the main charger wire.
The cleaning section consists of the cleaning blade and cleaning roller 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 which remove residual charge from the drum surface.

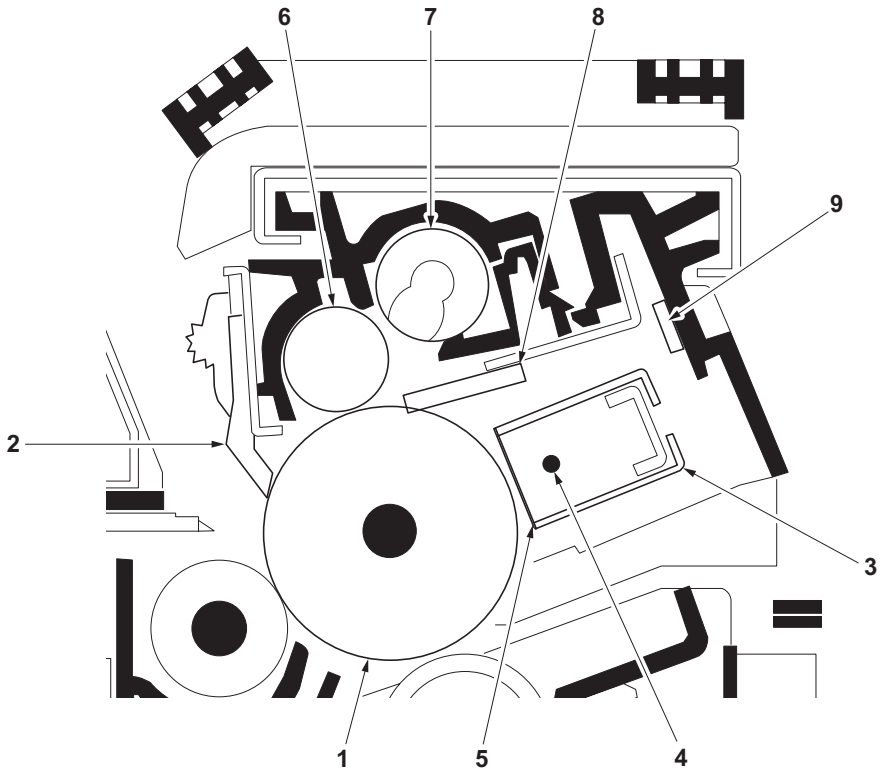

Figure 2-1-7 Drum section

(1) Drum
(2) Drum separation claws
(3) Main charger unit
(4) Main charger wire
(5) Main charger grid
(6) Cleaning roller
(7) Cleaning spiral
(8) Cleaning blade
(9) Cleaning lamp (CL)

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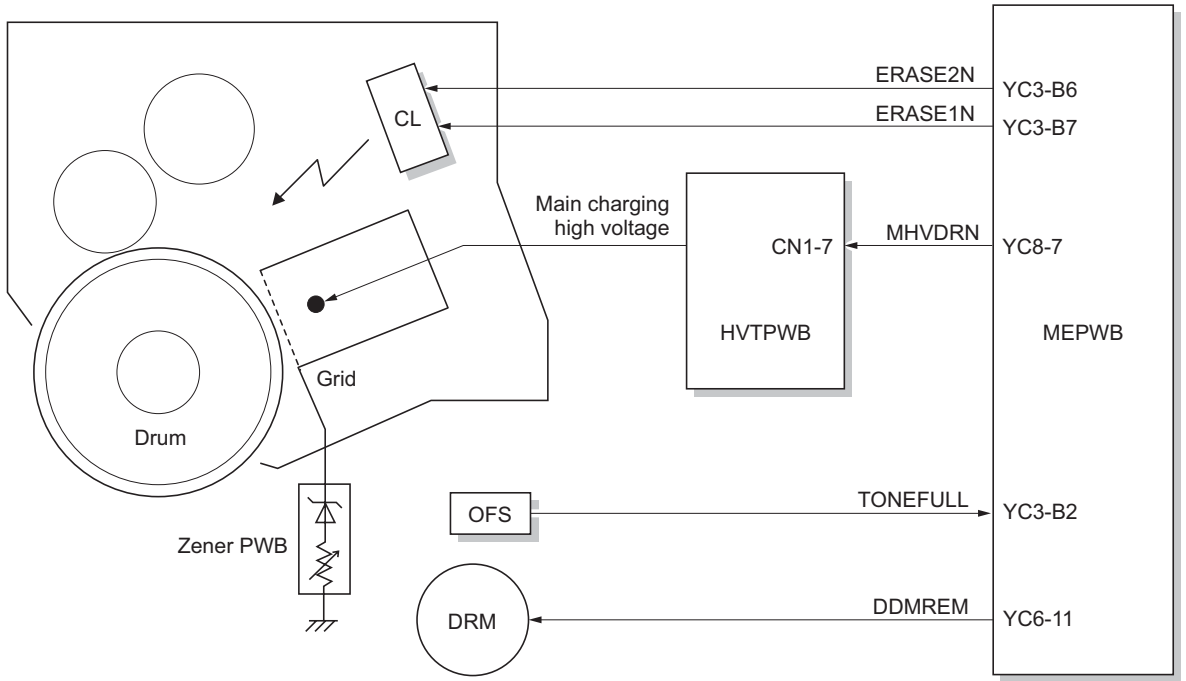

Figure 2-1-8 Drum section block diagram

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2-1-4 Developing section

The developing section consists of the developing unit and the toner container.
The developing unit consists of the developing sleeve where a magnetic brush is formed, the magnetic toner blade and the developing spirals that agitate the toner.
Also, the toner container sensor (TCS) checks whether or not toner remains in the toner container.

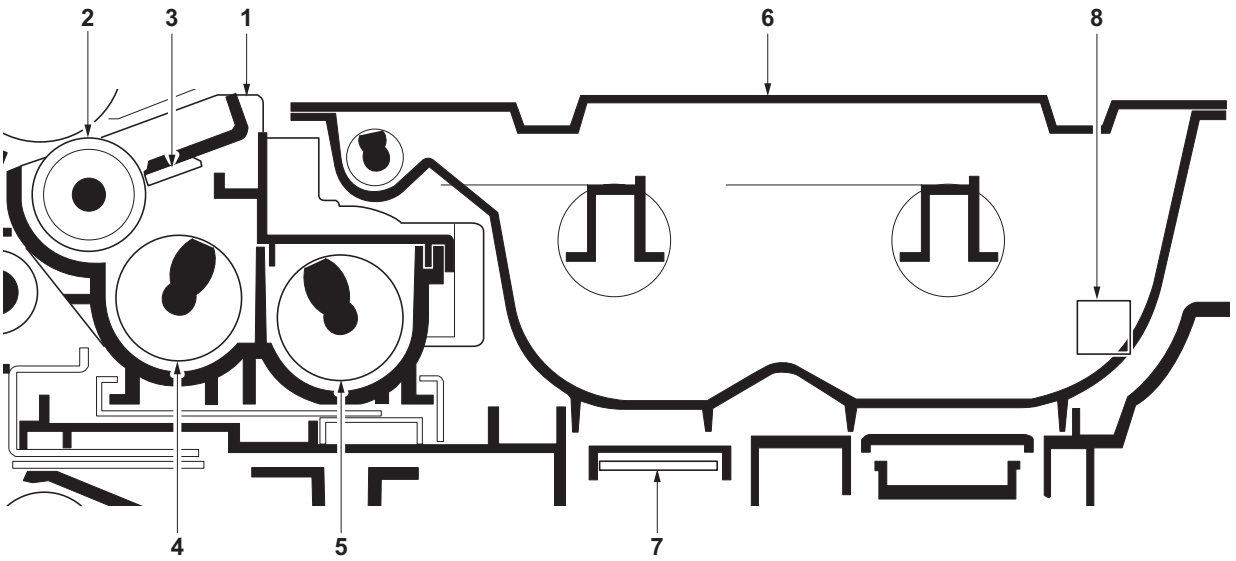

Figure 2-1-9 Developing section

(1) Developing unit
(2) Developing sleeve
(3) Magnetic toner blade
(4) Left developing spiral
(5) Right developing spiral
(6) Toner container
(7) Toner container sensor (TCS)
(8) Toner container detection switch (TCDSW)

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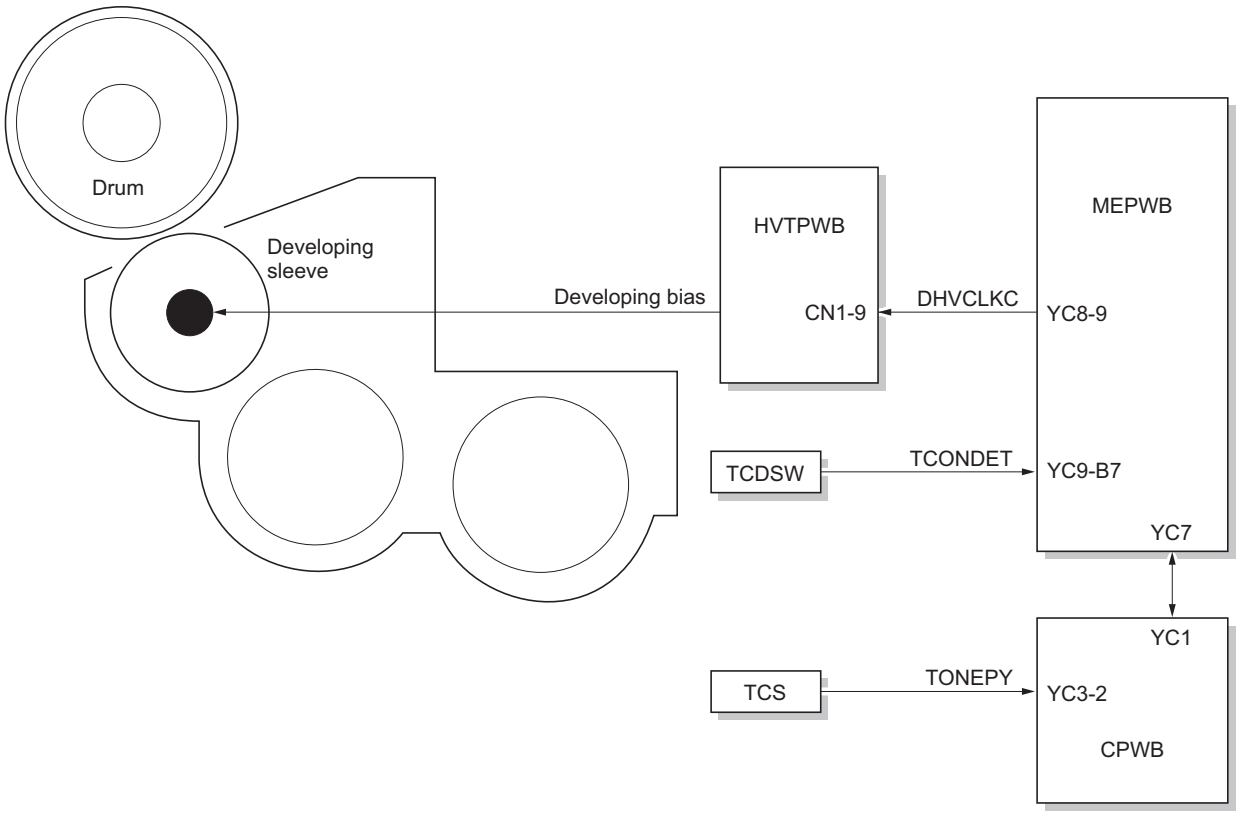

Figure 2-1-10 Developing section block diagram

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(1) Single component developing system

This machine uses the single component developing system, and reversal processing is performed with a + charged drum 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.

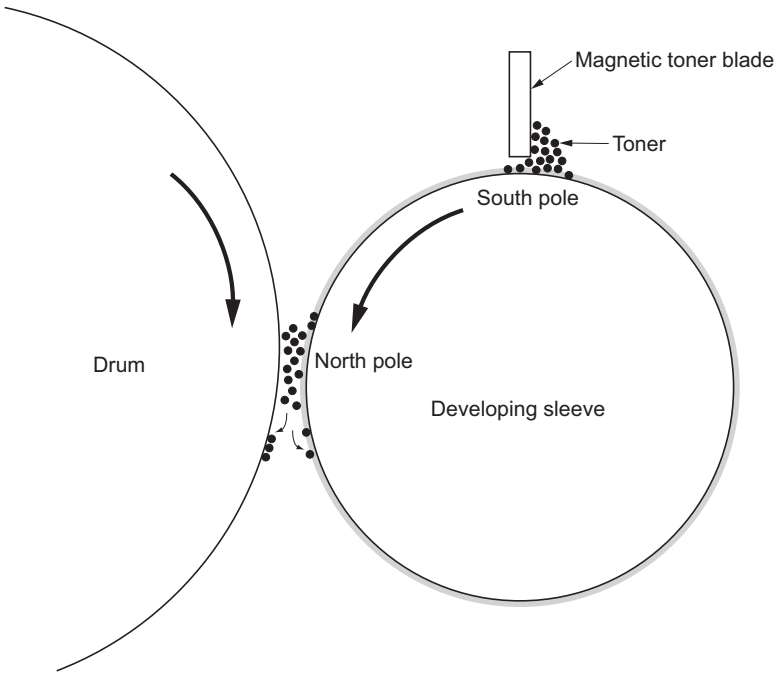

Figure 2-1-11 Single component developing system

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2-1-5 Transfer and separation sections

The transfer and separation sections consists of the transfer roller, separation electrode and drum separation claws.
A high voltage generated by the high voltage 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 PWB (HVTPWB) to the separation electrode.

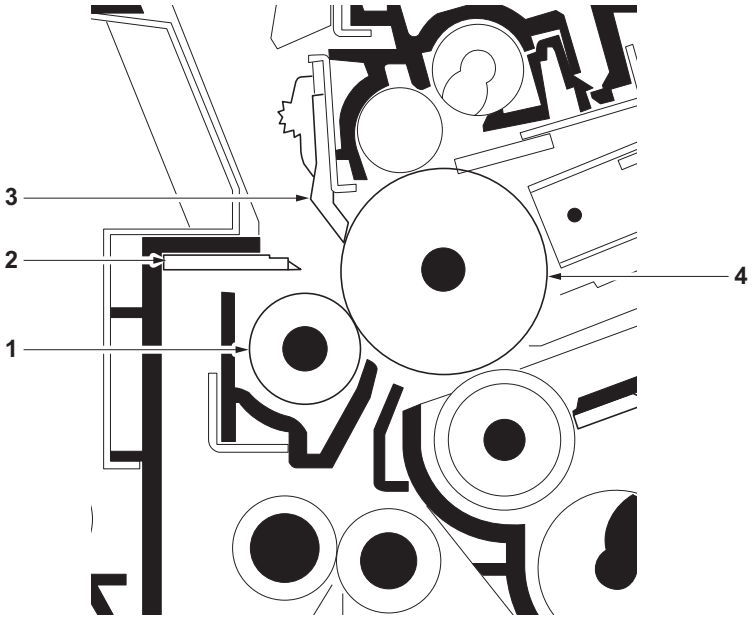

Figure 2-1-12 Transfer and separation sections

(1) Transfer roller
(2) Separation electrode
(3) Drum separation claw
(4) Drum

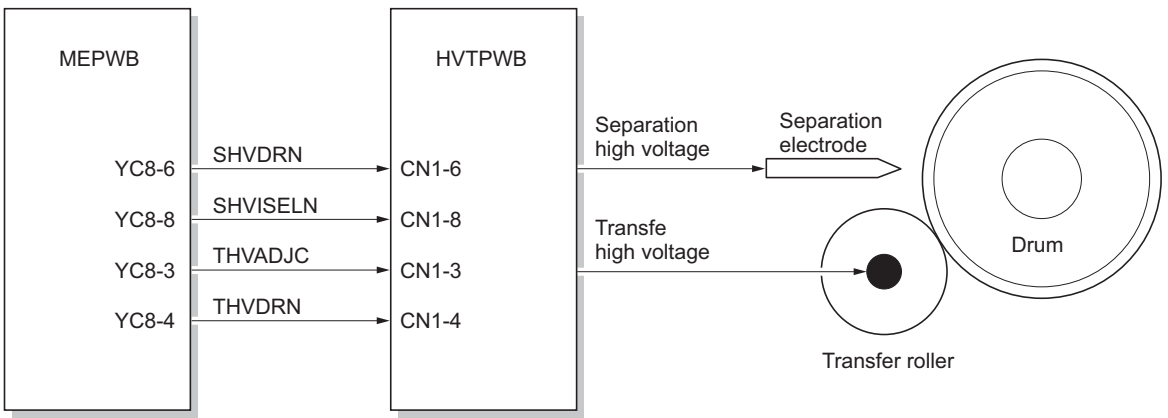

Figure 2-1-13 Transfer and separation sections block diagram

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2-1-6 Fuser section

The fuser section consists of the parts shown in figure. 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 and S (FH-M/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 and S (FH-M/S) inside it; its surface temperature is detected by the fuser thermistor (FTH) and is regulated by the fuser heaters turning on and off. If the fuser section becomes abnormally hot, fuser thermostat (FTS) operates shutting the power to the fuser heaters off.
When the fuser process is completed, the paper is separated from the heat roller by its separation claws and is conveyed to eject and switchback section.

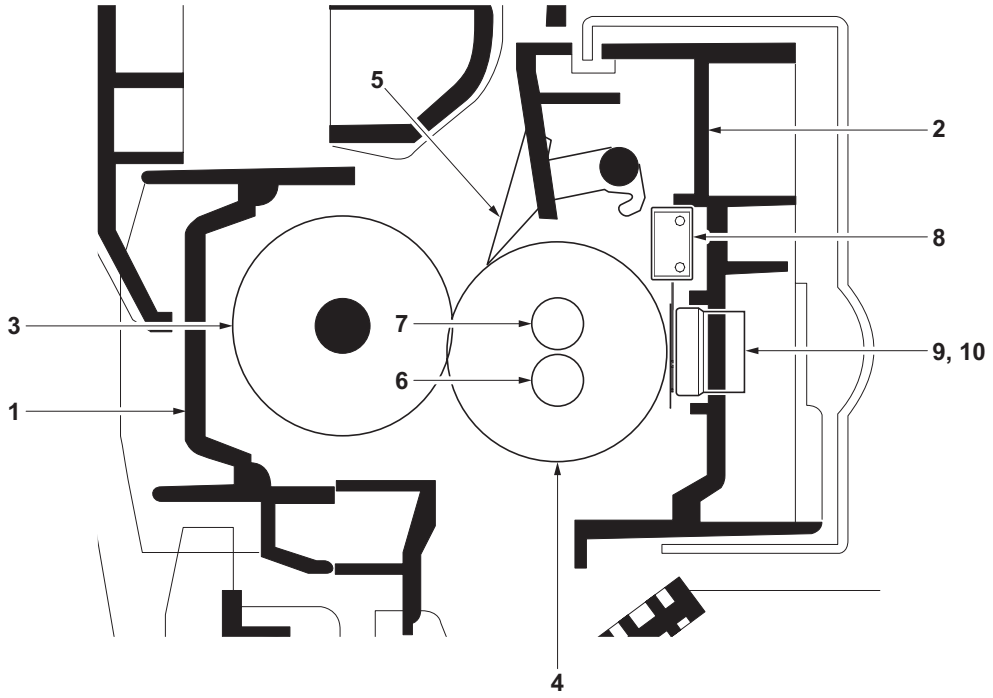

Figure 2-1-14 Fuser section

(1) Left fuser unit
(2) Right fuser unit
(3) Press roller
(4) Heat roller
(5) Heat roller separation claws
(6) Fuser heater M (FH-M)
(7) Fuser heater S (FH-S)
(8) Fuser thermistor (FTH)
(9) Fuser thermostat 1 (FTS1)
(10) Fuser thermostat 2 (FTS2)

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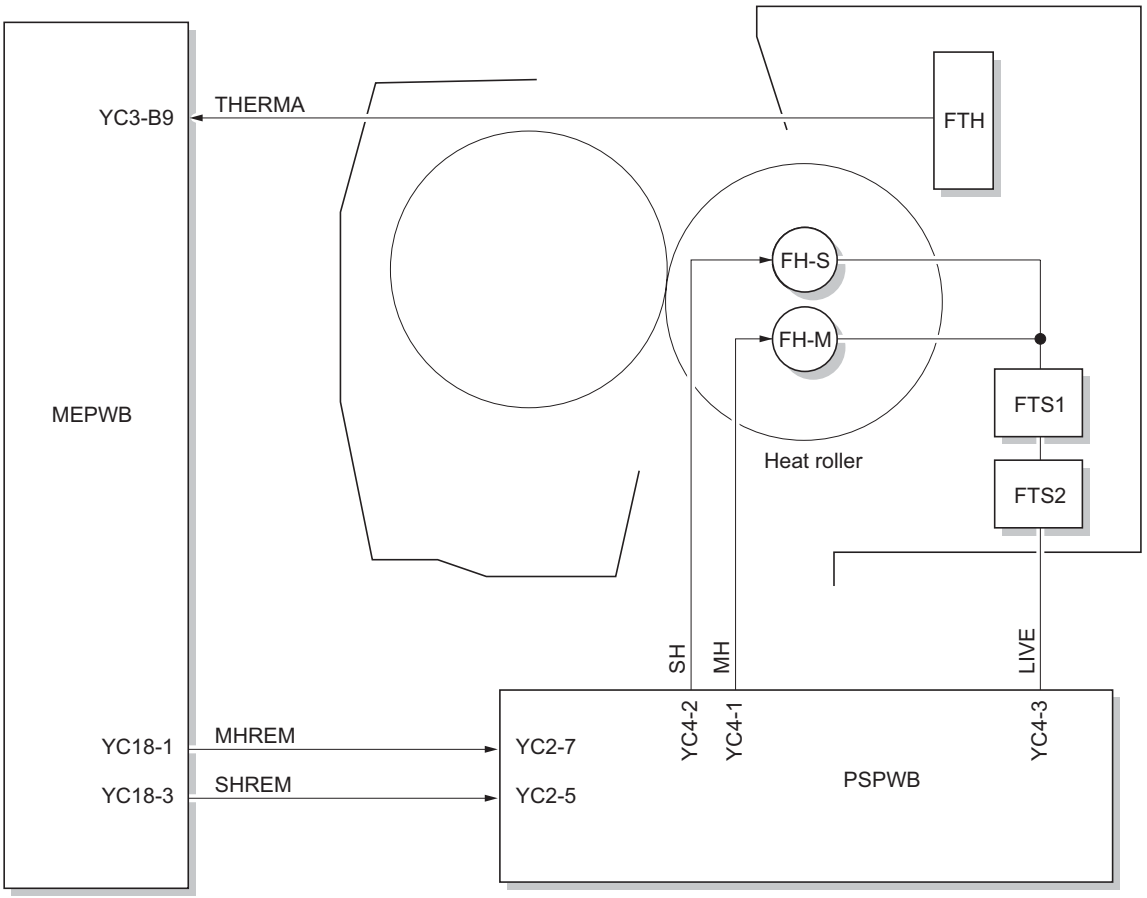

Figure 2-1-15 Fuser section block diagram

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2-1-7 Eject and switchback sections

The eject and switchback sections eject paper on which fuser 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.
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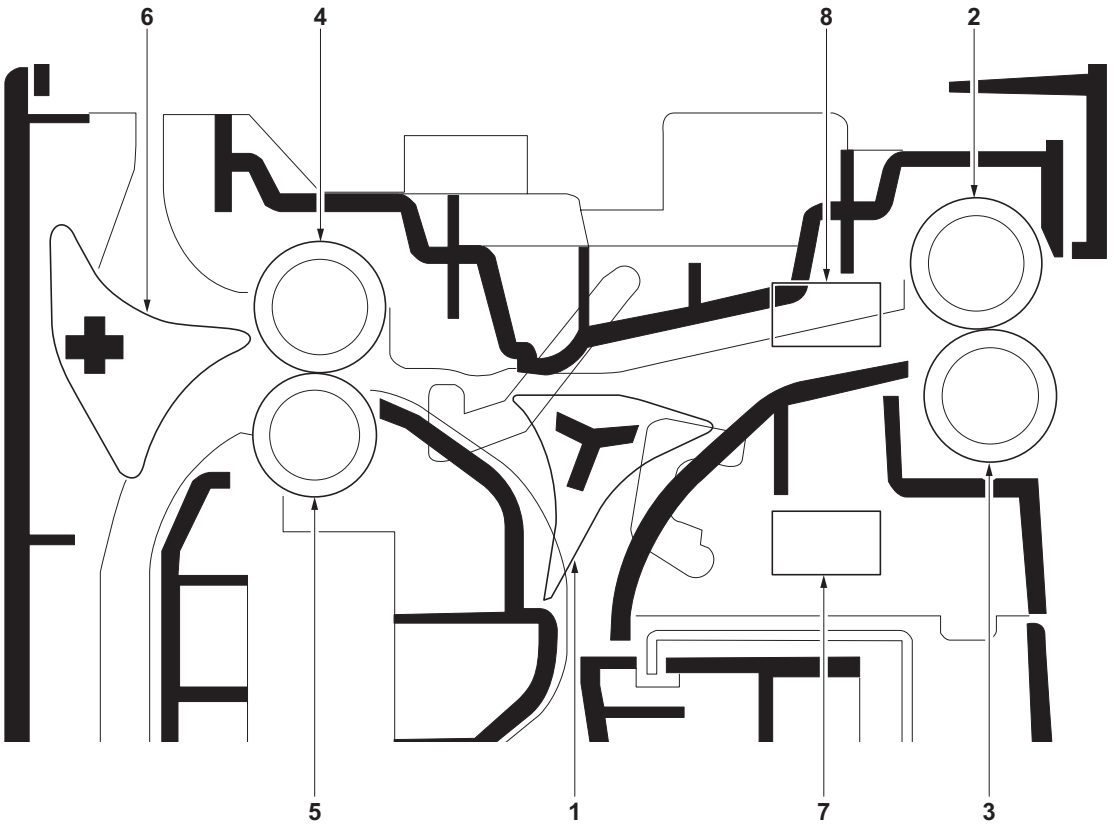

Figure 2-1-16 Eject and switchback sections

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

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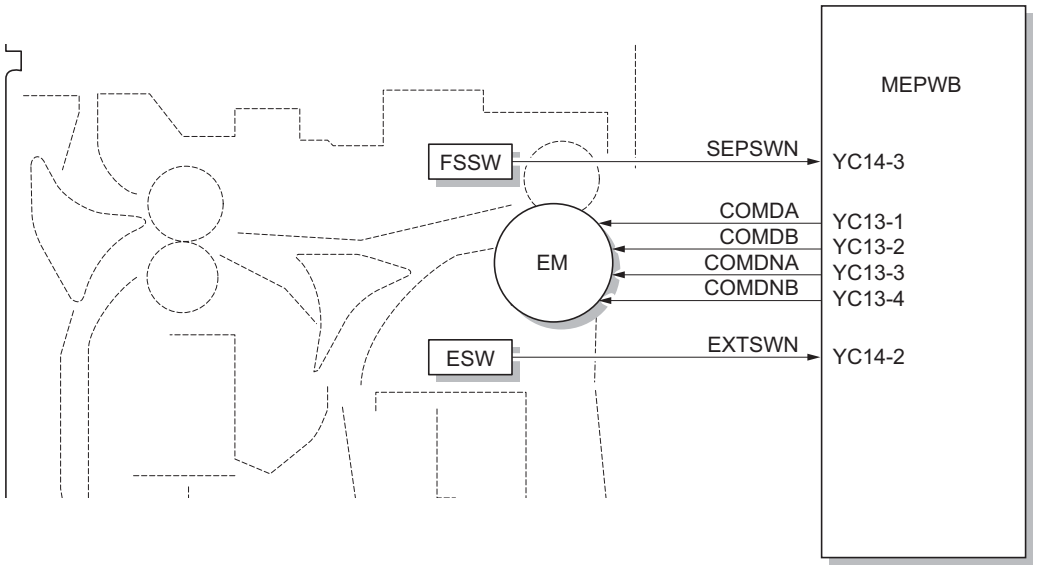

Figure 2-1-17 Eject and switchback sections block diagram

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2-1-8 Duplex section

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 unit. The paper is then conveyed to the paper feed section by the upper and lower duplex feed rollers.

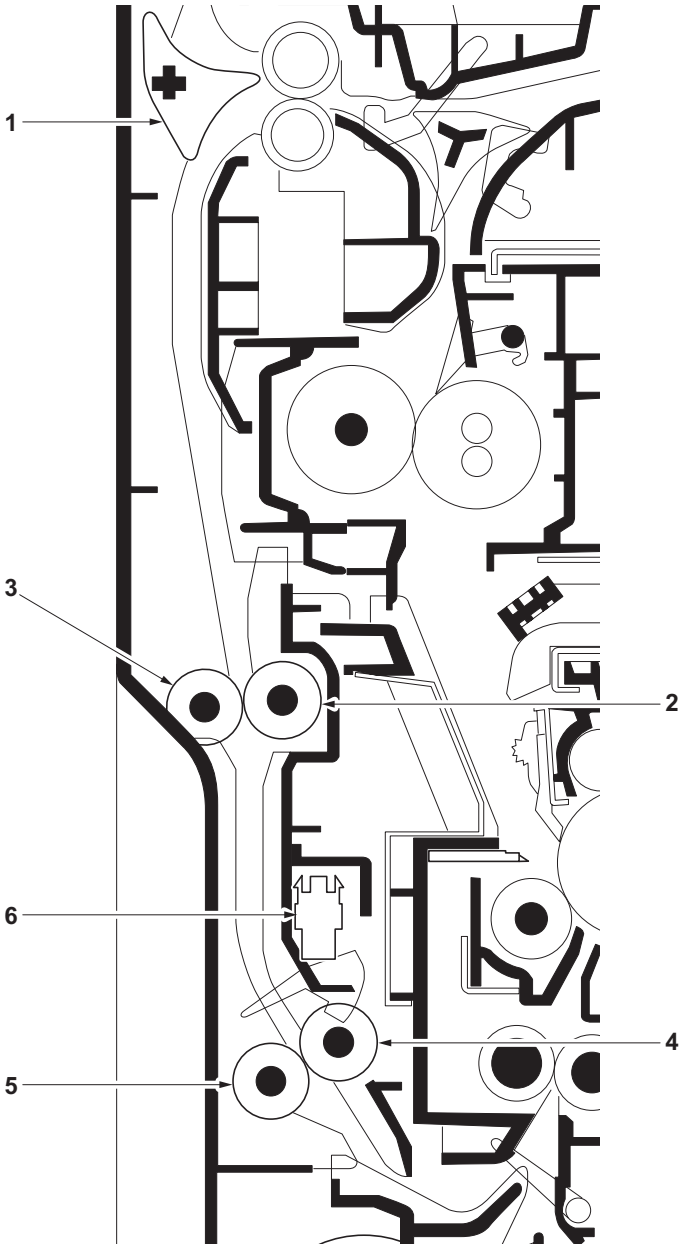

Figure 2-1-18 Duplex section

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

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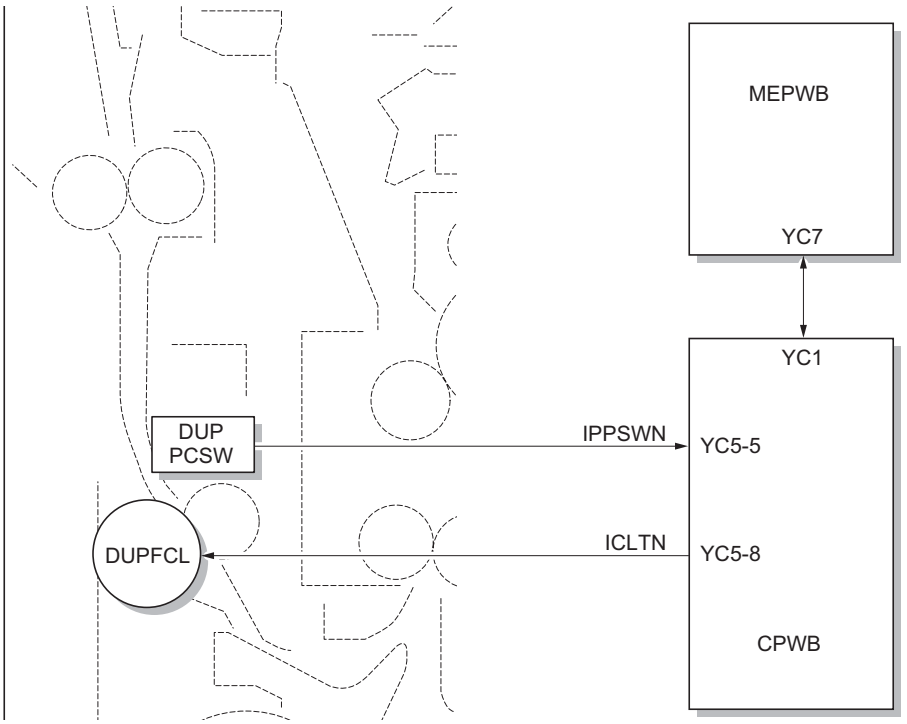

Figure 2-1-19 Duplex section block diagram

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2-2-1 Electrical parts layout

(1) PWBs

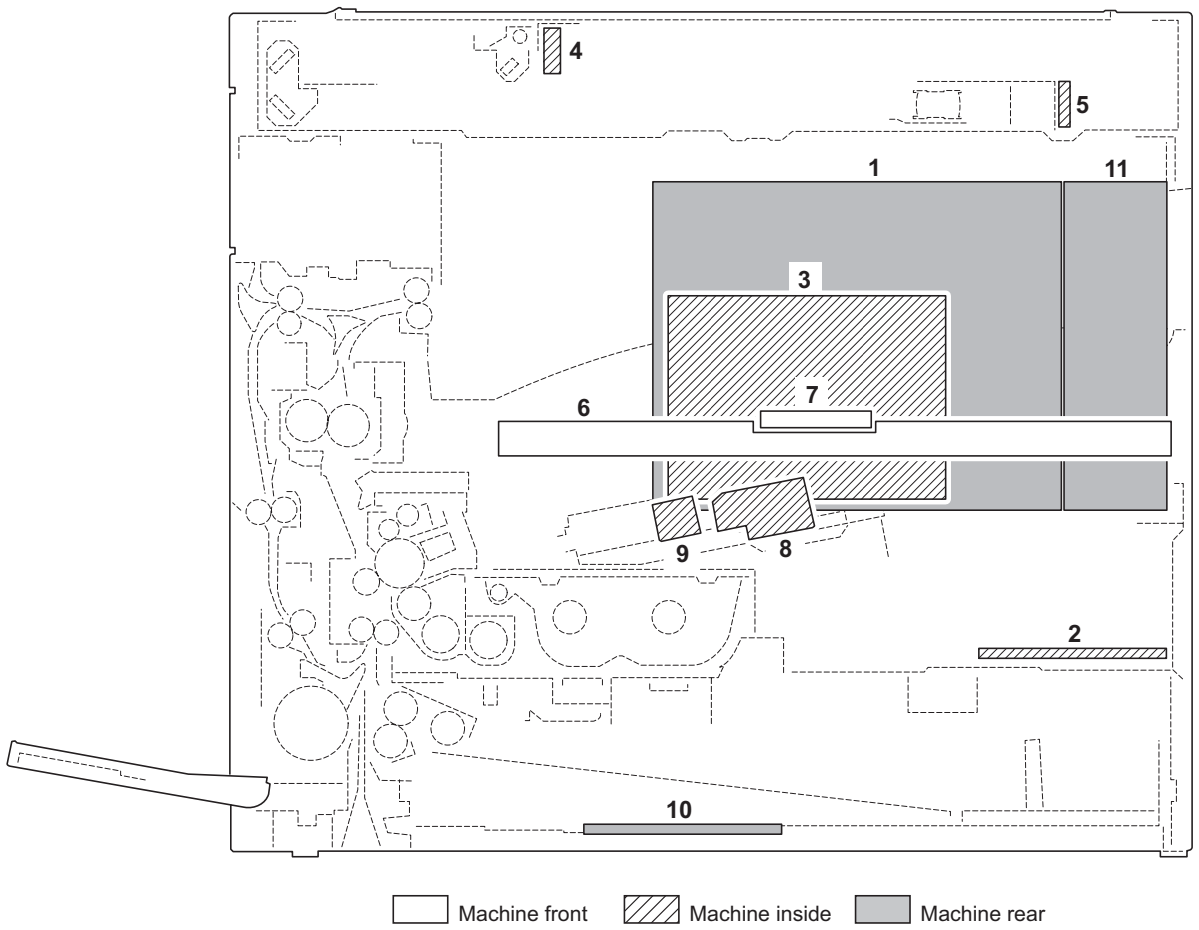

Figure 2-2-1 PWBs

1. Main/engine PWB (MEPWB) ..... Controls the other PWBs, electrical components and optional devices. Controls the operation panel and laser scanner unit.
2. Power source PWB (PSPWB) ..... Generates +24 V DC; controls the fuser heaters.
3. High voltage PWB (HVTPWB) ..... Main charging. Generates high voltages for transfer and high voltages for separation.
4. Inverter PWB (INPWB) ..... Controls the exposure lamp.
5. CCD PWB (CCDPWB)..... Reads the image of originals.
6. Operation unit PWB (OPWB)..... Consists of the operation keys and display LEDs.
7. LCD PWB (LCDPWB)..... Controls LCD indication.
8. APC PWB (APCPWB) ..... Generates and controls the laser beam.
9. PD PWB (PDPWB) ..... Controls horizontal synchronizing timing of laser beam.
10. Cassette PWB (CPWB) ..... Relays wirings from electrical components.
11. Printer PWB (PRNPWB)*..... Controls the printer functions.

*: Option

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List of correspondences of PWB names

No.	Name used in service manual	Name used in parts list
1	Main/engine PWB (MEPWB)	PARTS PWB MAIN ENGINE ASSY SP
2	Power source PWB (PSPWB)	PARTS LVU100(M) SP / PARTS LVU200(M) SP
3	High voltage PWB (HVPWB)	PARTS HVU SP
4	Inverter PWB (INPWB)	PARTS LAMP INVERTER SP
5	CCD PWB (CCDPWB)	-
6	Operation PWB (OPWB)	PARTS PWB PANEL ASSY SP
7	LCD PWB (LCDPWB)	PARTS LCD OPERATION SP
8	APC PWB (APCPWB)	-
9	PD PWB (PDPWB)	-
10	Cassette PWB (CPWB)	PARTS PWB INTERFACE ASSY SP
11	Printer PWB (PRNPWB)	PARTS GDI PWB ASSY SP

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(2) Switches and sensors

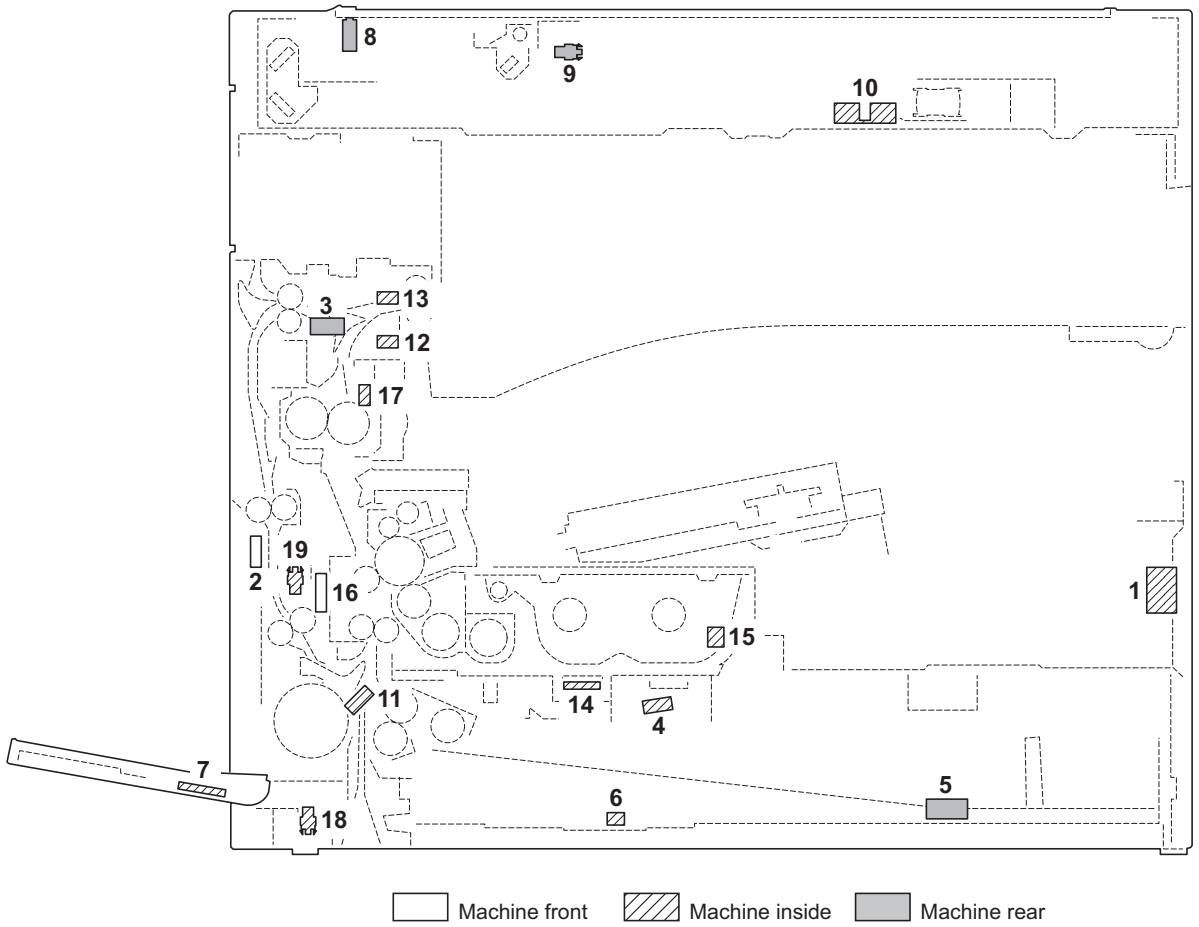

Figure 2-2-2 Switches and sensors

1. Main power switch (MSW) ..... Turns the AC power on and off.
2. Front cover safety switch (FCSSW)..... Breaks the safety circuit when the front cover is opened.
3. Left cover safety switch (LCSSW) ..... Breaks the safety circuit when the left cover is opened.
4. Paper switch (PSW)..... Detects the presence of paper in the cassette.
5. Paper size length switch (PLSW) ..... Detects the length of paper in the cassette.
6. Paper size width switch (PWSW)..... Detects the width of paper in the cassette.
7. MP paper size width switch (MPPWSW) ..... Detects the width of paper on the MP tray.
8. Home position switch (HPSW)..... Detects the optical system in the home position.
9. Original detection switch (ODSW) ..... Operates the original size detection sensor.
10. Original size detection sensor (OSDS) ..... Detects the size of the original.
11. Registration switch (RSW)..... Controls the secondary paper feed start timing.
12. Eject switch (ESW) ..... Detects a paper misfeed in the fuser section.
13. Feedshift switch (FSSW) ..... Detects a paper misfeed in the switchback section in a duplex copy.
14. Toner container sensor (TCS)..... Detects the quantity of toner in a toner container.
15. Toner container detection switch (TCDSW) ..... Detects the presence of the toner container.
16. Overflow sensor (OFS) ..... Detects when the waste toner box is full.
17. Fuser thermistor (FTH) ..... Detects the heat roller temperature.
18. MP paper switch (MPPSW) ..... Detects the presence of paper on the MP tray.
19. Duplex paper conveying switch (DUPPCSW)*..... Detects a paper jam in the duplex section.

*: Option

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(3) Motors

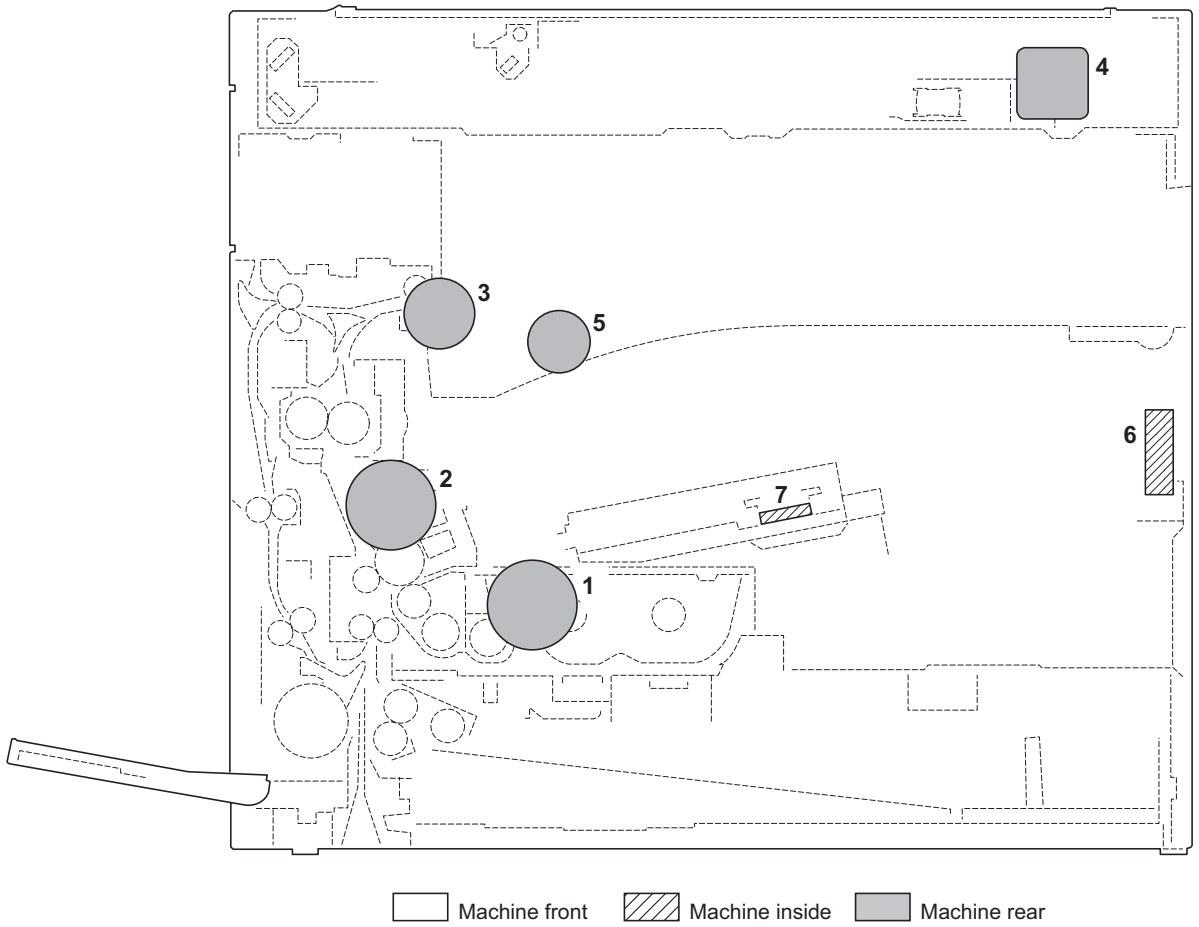

Figure 2-2-3 Motors

1. Drive motor (DM) ..... Drives the machine.
2. Drum motor (DRM) ..... Drives the drum.
3. Eject motor (EM) ..... Drives the eject section.
4. Scanner motor (SM) ..... Drives the optical system.
5. Cooling fan motor 1 (CFM1) ..... Cools the machine interior.
6. Cooling fan motor 2 (CFM2) ..... Cools the machine interior.
7. Polygon motor (PM) ..... Drives the polygon mirror.

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(4) Others

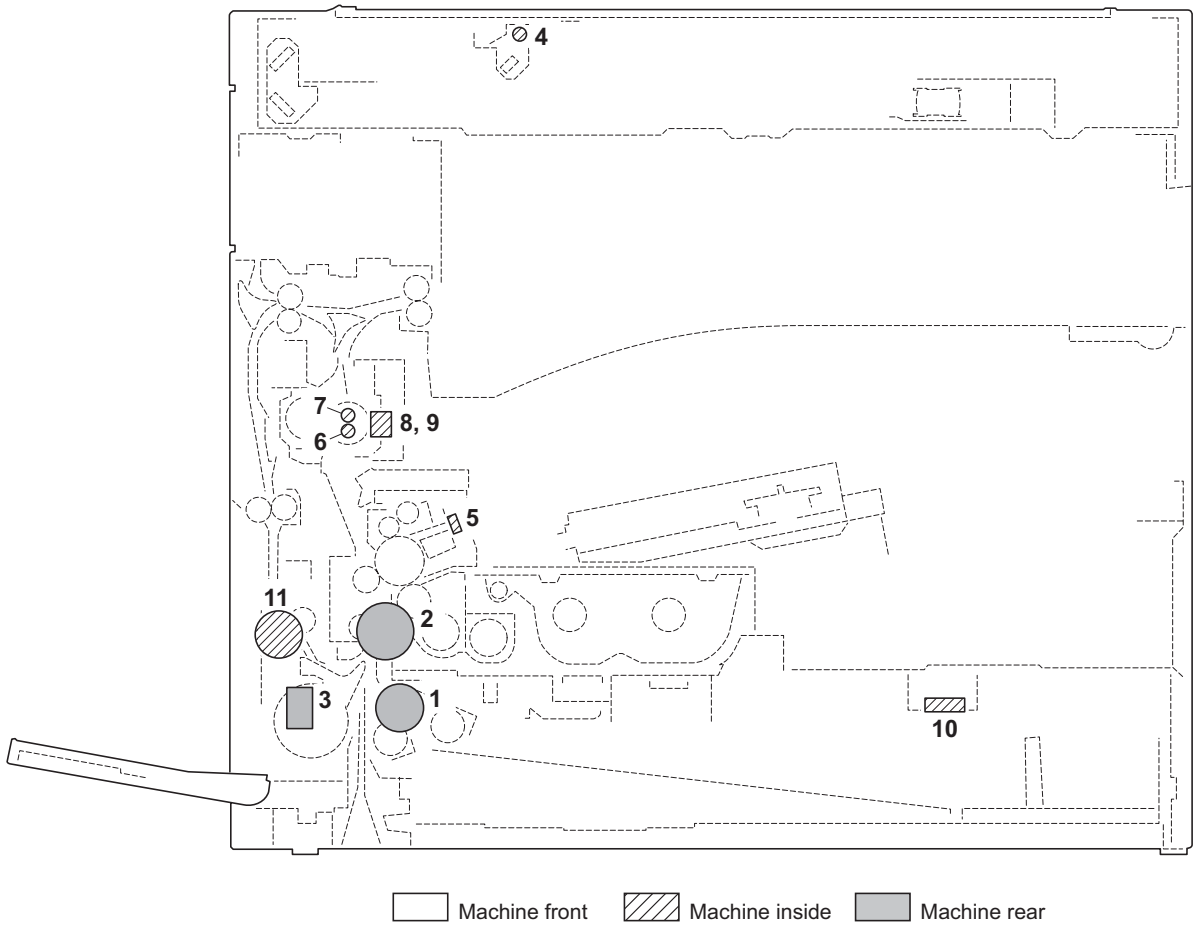

Figure 2-2-4 Other electrical components

1. Paper feed clutch (PFCL) ..... Primary paper feed from the cassette.
2. Registration clutch (RCL)..... Secondary paper feed.
3. MP solenoid (MPSOL) ..... Primary paper feed from the MP tray.
4. Exposure lamp (EL) ..... Exposes originals.
5. Cleaning lamp (CL)..... Removes residual charge from the drum surface.
6. Fuser heater M (FH-M) ..... Heats the heat roller.
7. Fuser heater S (FH-S) ..... Heats the heat roller.
8. Fuser thermostat 1 (FTS1)..... Prevents overheating in the fuser section.
9. Fuser thermostat 2 (FTS2)..... Prevents overheating in the fuser section.
10. Cassette heater (CH) ..... Dehumidifies the cassette section.
11. Duplex feed clutch (DUPFCL)..... Controls the drive of the duplex feed roller.

*: Option

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2-3-1 Power source PWB

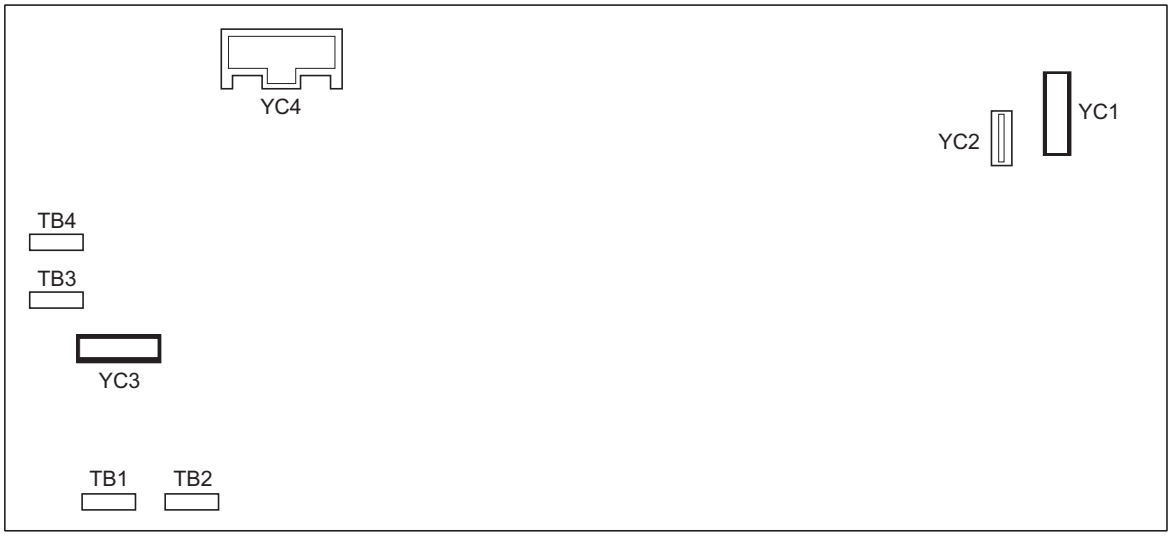

Figure 2-3-1 Power source PWB silk-screen diagram

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Connector	Pin No.	Signal	I/O	Voltage	Description
TB	1	AC_LIVE	I	120 V AC 220-240 V AC	AC power input
Connected to the AC inlet and main power switch	2	AC_COM	I	120 V AC 220-240 V AC	AC power input
	3	LIVE	O	120 V AC 220-240 V AC	AC power output to MSW
	4	LIVE	I	120 V AC 220-240 V AC	AC power input from MSW
YC1	1	GND	-	-	Ground
Connected to the main/ engine PWB	2	+24V	O	24 V DC	24 V DC power output to MEPWB
	3	+24V	O	24 V DC	24 V DC power output to MEPWB
	4	+24V	O	24 V DC	24 V DC power output to MEPWB
	5	GND	-	-	Ground
	6	GND	-	-	Ground
YC2	1	+24V2	O	24 V DC	24 V DC power output to MEPWB
Connected to the main/ engine PWB	2	ZCROSS	O	0/3.3 V DC (pulse)	Zero-cross signal
	3	RELAYREM	I	0/3.3 V DC	Relay signal
	4	GND	-	-	Ground
	5	SHREM	I	0/3.3 V DC	FH-S: On/Off
	6	SLEEP	I	0/3.3 V DC	Sleep signal: On/Off
	7	MHREM	I	0/3.3 V DC	FH-M: On/Off
YC3	1	LIVE	O	120 V AC 220-240 V AC	AC power output to CH
Connected to the cas-sette heater and paper feeder	2	LIVE	O	120 V AC 220-240 V AC	AC power output to CH
	3	NC	-	-	Not used
	4	NEUTRAL	O	120 V AC 220-240 V AC	AC power output to CH (paper feeder)
	5	NEUTRAL	O	120 V AC 220-240 V AC	AC power output to CH (paper feeder)
YC4	1	MH	O	120 V AC 220-240 V AC	FH-M: On/Off
Connected to the fuser heater M/S	2	SH	O	120 V AC 220-240 V AC	FH-S: On/Off
	3	LIVE	O	120 V AC 220-240 V AC	AC power output to FM-M/S

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2-3-2 Main/engine PWB

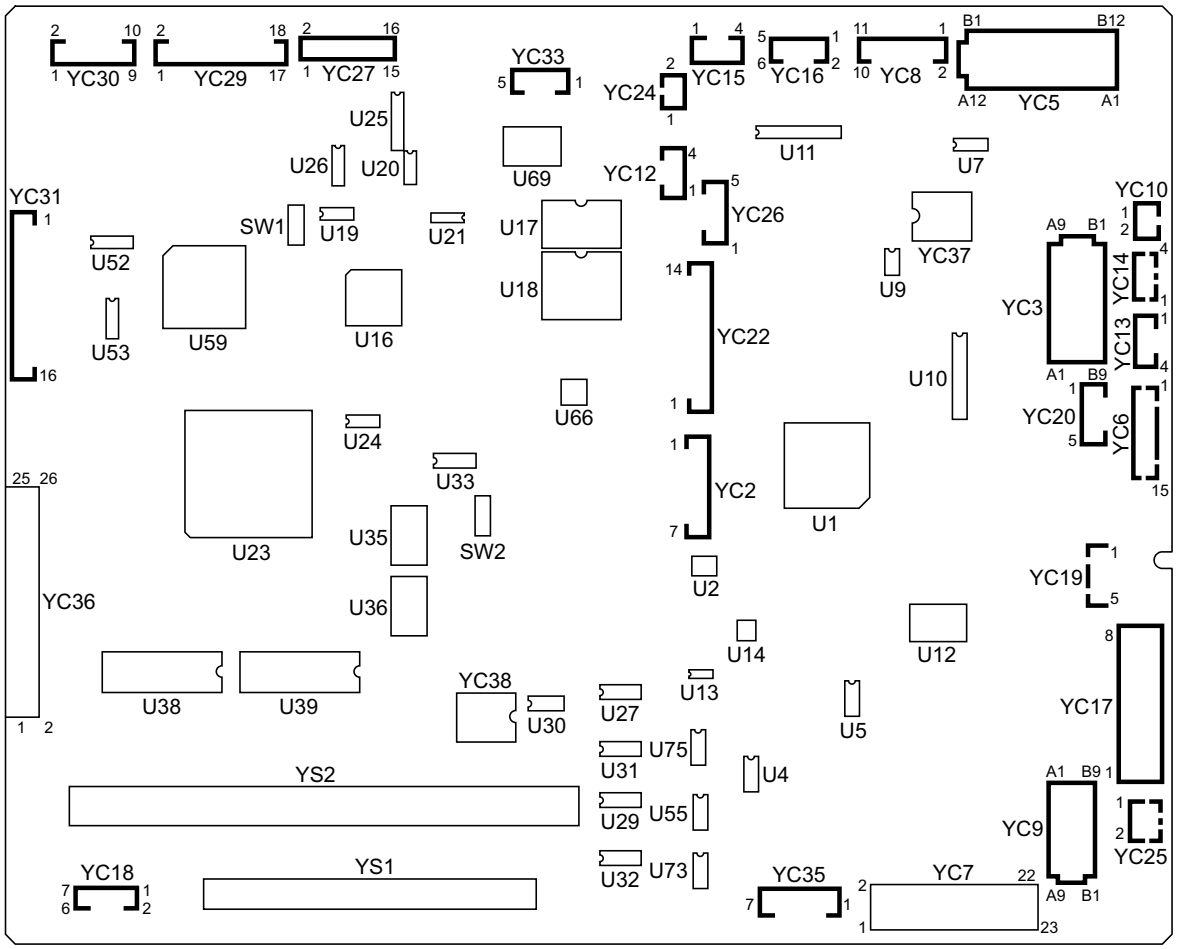

Figure 2-3-2 Main/engine PWB silk-screen diagram

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Connector	Pin No.	Signal	I/O	Voltage	Description
YC3	A1	PLGCLKN	O	0/3.3 V DC (pulse)	PM clock signal
Connected to the polygon motor, cooling fan motor 1, overflow sensor, cleaning lamp and fuser thermistor	A2	PLGRDYN	I	0/3.3 V DC	PM ready signal
	A3	PLGDRN	O	0/3.3 V DC	PM: On/Off
	A4	PLGGND	-	-	Ground
	A5	PLG+24V1	O	24 V DC	24 V DC power output to PM
	A6	FAN1DRN	O	0/24 V DC	CFM1: On/Off
	A7	FAN1+24V1	O	24 V DC	24 V DC power output to CFM1
	A8	NC	-	-	Not used
	A9	NC	-	-	Not used
	B1	TONEGND	-	-	Ground
	B2	TONEFULL	I	0/5 V DC	OFS: On/Off
	B3	TONE+5V2	O	5 V DC	5 V DC power output to OFS
	B4	ERASE+24V1	O	24 V DC	24 V DC power output to CL
	B5	NC	-	-	Not used
	B6	ERASE2N	O	0/24 V DC	CL: On/Off
	B7	ERASE1N	O	0/24 V DC	CL: On/Off
	B8	THERMAGND	I	-	Ground
	B9	THERMA	-	Analog	FTH detection signal
YC5	A1	ORGTIMN	I	0/5 V DC	Original scanning interval signal
Connected to the document processor, original size detection sensor, home position sensor and original detection switch	A2	DOPRDY	I	0/5 V DC	Document processor ready signal
	A3	DOPSEL	O	0/5 V DC	Document processor select signal
	A4	SGND	-	-	Ground
	A5	DOPCLK	O	0/5 V DC (pulse)	Document processor clock signal
	A6	DOPSDI	I	0/5 V DC (pulse)	Document processor serial communication data signal
	A7	DOPSDO	O	0/5 V DC (pulse)	Document processor serial communication data signal
	A8	+5V4	O	5 V DC	5 V DC power output to document processor
	A9	PGND	-	-	Ground
	A10	PGND	-	-	Ground
	A11	+24V1	O	24 V DC	24 V DC power output to document processor
	A12	NC	-	-	Not used
	B1	+5V4	O	5 V DC	5 V DC power output to OSDS
	B2	ORGLSWN	I	0/3.3 V DC	OSDS: On/Off
	B3	SGND	-	-	Ground
	B4	+5V4	O	5 V DC	5 V DC power output to HPSW
	B5	HPSWN	I	0/3.3 V DC	HPSW: On/Off
	B6	SGND	-	-	Ground
	B7	+5V4	O	5 V DC	5 V DC power output to ODSW
	B8	OPSWN	I	0/3.3 V DC	ODSW: On/Off
	B9	SGND	-	-	Ground
	B10	NC	-	-	Not used
	B11	NC	-	-	Not used
	B12	NC	-	-	Not used

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Connector	Pin No.	Signal	I/O	Voltage	Description
YC6	1	+24V2	O	-	24 V DC power output to DM
Connected to the drive motor and drum motor	2	PGND	-	-	Ground
	3	MDMREM	O	0/24 V DC	DM: On/Off
	4	MDMCLK	O	0/3.3 V DC (pulse)	DM clock signal
	5	3.3V	O	3.3 V DC	3.3 V DC power output to DM
	6	MDMRDY	I	0/3.3 V DC	DM ready signal
	7	3.3V	O	3.3 V DC	3.3 V DC power output to DM
	8	NC	-	-	Not used
	9	+24V2	O	24 V DC	24 V DC power output to DRM
	10	PGND	-	-	Ground
	11	DDMREM	O	0/24 V DC	DRM: On/Off
	12	DDMCLK	O	0/3.3 V DC (pulse)	DRM clock signal
	13	PGND	-	-	Ground
	14	DDMRDY	I	0/3.3 V DC	DRM ready signal
	15	PGND	-	-	Ground
	16	NC	-	-	Not used
YC7	1	TEMP	I	Analog	HUMS detection signal
Connected to the cassette PWB	2	HMCLK1	O	0/3.3 V DC (pulse)	HUMS clock signal
	3	HMCLK2	O	0/3.3 V DC (pulse)	HUMS clock signal
	4	HUMID	I	Analog	HUMS detection signal
	5	C1PWSWN	I	0/3.3 V DC	PWSW: On/Off
	6	C1PDSWN	I	0/3.3 V DC	PSW: On/Off
	7	+5V2	O	5 V DC	5 V DC power output to CPWB
	8	TONEPY	I	Analog	TCS detection signal
	9	SGND	-	-	Ground
	10	BPWSW	I	0/3.3 V DC	MPPWSW: On/Off
	11	REGSWN	I	0/3.3 V DC	RSW: On/Off
	12	ICLTN	O	0/24 V DC	DUPFCL: On/Off
	13	IPPSWN	I	0/3.3 V DC	DUPPCSW: On/Off
	14	BPPESW	I	0/3.3 V DC	MPPSW: On/Off
	15	SGND	-	-	Ground
	16	BSOLN	O	0/24 V DC	MPSOL: On/Off
	17	FCLTN	O	0/24 V DC	PFCL: On/Off
	18	REGCLN	O	0/24 V DC	RCL: On/Off
	19	+24V1	O	24 V DC	24 V DC power output to CPWB
	20	+24V1	O	24 V DC	24 V DC power output to CPWB
	23	+3.3V	O	3.3 V DC	3.3 V DC power output to CPWB

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Connector	Pin No.	Signal	I/O	Voltage	Description
YC8	1	+24V2	O	24 V DC	24 V DC power output to HVTPWB
Connected to the high voltage PWB	2	+24V2	O	24 V DC	24 V DC power output to HVTPWB
	3	THVADJC	O	Analog	Transfer high voltage control signal
	4	THVDRN	O	0/3.3 V DC	Transfer high voltage: On/Off
	5	MHVADJC	O	Analog	Main charger high voltage control signal
	6	SHVDRN	O	0/3.3 V DC	Separation high voltage: On/Off
	7	MHVDRN	O	0/3.3 V DC	Main charger high voltage: On/Off
	8	SHVISELN	O	0/3.3 V DC	Separation high voltage switching signal
	9	DHVCLKC	O	0/3.3 V DC (pulse)	Developing bias clock signal
	10	PGND	-	-	Ground
	11	PGND	-	-	Ground
YC9	A1	LOPSRDY	I	0/5 V DC	Paper feeder ready signal
Connected to the paper feeder, paper size length switch and toner container detection switch	A2	LOPSEL2	O	0/5 V DC	Paper feeder select signal 2
	A3	LOPSEL1	O	0/5 V DC	Paper feeder select signal 1
	A4	LOPSEL0	O	0/5 V DC	Paper feeder select signal 0
	A5	LOPSCLK	O	0/5 V DC (pulse)	Paper feeder clock signal
	A6	LOPSDI	I	0/5 V DC (pulse)	Paper feeder serial communication data signal
	A7	LOPSDO	O	0/5 V DC (pulse)	Paper feeder serial communication data signal
	A8	SGND	-	-	Ground
	A9	+5V2PF	O	5 V DC	5 V DC power output to paper feeder
	B1	SGND	-	-	Ground
	B2	+5V2PF	O	5 V DC	5 V DC power output to paper feeder
	B3	C1PLSW3N	I	0/3.3 V DC	PLSW: On/Off
	B4	C1PLSW2N	I	0/3.3 V DC	PLSW: On/Off
	B5	SGND	-	-	Ground
	B6	C1PLSW1N	I	0/3.3 V DC	PLSW: On/Off
	B7	TCONDET	I	0/3.3 V DC	TCDSW: On/Off
	B8	SGND	-	-	Ground
	B9	NC	-	-	Not used
YC10	1	FAN2+24V1	O	24 V DC	24 V DC power output to CFM2
Connected to the cooling fan motor 2	2	FAN2DRN	O	0/24 V DC	CFM2: On/Off
YC12	1	+24V1	O	24 V DC	24 V DC power output to key counter
Connected to the key counter	2	KEYCN	O	0/3.3 V DC	Key counter signal
	3	SGND	-	-	Ground
	4	KEYENBN	I	0/3.3 V DC	Key counter detection signal
YC13	1	COMDA	O	0/24 V DC (pulse)	EM drive control signal
Connected to the eject motor	2	COMDB	O	0/24 V DC (pulse)	EM drive control signal
	3	COMDNA	O	0/24 V DC (pulse)	EM drive control signal
	4	COMDNB	O	0/24 V DC (pulse)	EM drive control signal

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Connector	Pin No.	Signal	I/O	Voltage	Description
YC14	1	PGND	-	-	Ground
Connected to the eject switch and feedshift switch	2	EXTSWN	O	0/3.3 V DC	ESW: On/Off
	3	SEPSWN	O	0/3.3 V DC	FSSW: On/Off
	4	+5V4	O	5 V DC	5 V DC power output to ESW/FSSW
YC15	1	ISMDA	O	0/24 V DC (pulse)	SM drive control signal
Connected to the scanner motor	2	ISMDB	O	0/24 V DC (pulse)	SM drive control signal
	3	ISMDNA	O	0/24 V DC (pulse)	SM drive control signal
	4	ISMDNB	O	0/24 V DC (pulse)	SM drive control signal
YC16	1	+24V1	O	24 V DC	24 V DC power output to INPWB
Connected to the inverter PWB	2	+24V1	O	24 V DC	24 V DC power output to INPWB
	3	NC	-	-	Not used
	4	LAMPN	O	0/24 V DC	EL: On/Off
	5	PGND	-	-	Ground
	6	PGND	-	-	Ground
YC17	1	+24V	I	24 V DC	24 V DC power input from PSPWB
Connected to the power source PWB, left cover safety switch and front cover safety switch	2	+24V	I	24 V DC	24 V DC power input from PSPWB
	3	+24V1	O	24 V DC	24 V DC power output to LCSSW
	4	PGND	-	-	Ground
	5	+24VIL1	I	24 V DC	24 V DC power input from LCSSW
	6	+24VIL1	O	24 V DC	24 V DC power output to FCSSW
	7	PGND	-	-	Ground
	8	+24VIL2	I	24 V DC	24 V DC power input from FCSSW
YC18	1	MHREM	O	0/3.3 V DC	FH-M: On/Off
Connected to the power source PWB	2	SLEEP	O	0/3.3 V DC	Sleep signal: On/Off
	3	SHREM	O	0/3.3 V DC	FH-S: On/Off
	4	SGND	-	-	Ground
	5	RELAYREM	O	0/3.3 V DC	Relay signal
	6	ZCROSS	I	0/3.3 V DC (pulse)	Zero-cross signal
	7	+24V2	I	24 V DC	24 V DC power input from PSPWB
YC25	1	PGND	-	-	Ground
Connected to the paper feeder	2	+24V1	O	24 V DC	24 V DC power output to paper feeder

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Connector	Pin No.	Signal	I/O	Voltage	Description
YC27	1	5V	O	5 V DC	5 V DC power output to CCDPWB
Connected to the CCD PWB	2	NC	-	-	Not used
	3	TG	O	0/3.3 V DC	CCD control signal
	4	GND	-	-	Ground
	5	RS	I	0/3.3 V DC	CCD control signal
	6	GND	-	-	Ground
	7	CP	O	0/3.3 V DC	CCD control signal
	8	GND	-	-	Ground
	9	PHY2	-	0/3.3 V DC (pulse)	CCD clock signal
	10	GND	-	-	Ground
	11	GND	-	-	Ground
	12	Vout1		Analog	CCD output signal
	13	Vout2		Analog	CCD output signal
	14	GND	-	-	Ground
	15	NC	-	-	Not used
	16	CCDPWR	O	12 V DC	12 V DC power output to CCDPWB
YC29	1	KEY4	I	0/3.3 V DC (pulse)	Operation panel key scan return signal 4
Connected to the operation PWB	2	KEY3	I	0/3.3 V DC (pulse)	Operation panel key scan return signal 3
	3	KEY2	I	0/3.3 V DC (pulse)	Operation panel key scan return signal 2
	4	KEY1	I	0/3.3 V DC (pulse)	Operation panel key scan return signal 1
	5	KEY0	I	0/3.3 V DC (pulse)	Operation panel key scan return signal 0
	6	LED12	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 12
	7	LED11	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 11
	8	LED10	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 10
	9	LED9	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 9
	10	LED8	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 8
	11	LED7	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 7
	12	LED6	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 6
	13	LED5	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 5
	14	LED4	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 4
	15	LED3	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 3
	16	LED2	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 2
	17	LED1	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 1
	18	LED0	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 0
YC30	1	+5V	O	5 V DC	5 V DC power output to OPWB
Connected to the operation PWB	2	BUZERDRN	O	0/3.3 V DC	OPWB buzzer signal
	3	SCAN7	O	0/3.3 V DC (pulse)	Scan signal 7
	4	SCAN6	O	0/3.3 V DC (pulse)	Scan signal 6
	5	SCAN5	O	0/3.3 V DC (pulse)	Scan signal 5
	6	SCAN4	O	0/3.3 V DC (pulse)	Scan signal 4
	7	SCAN3	O	0/3.3 V DC (pulse)	Scan signal 3
	8	SCAN2	O	0/3.3 V DC (pulse)	Scan signal 2
	9	SCAN1	O	0/3.3 V DC (pulse)	Scan signal 1
	10	SCAN0	O	0/3.3 V DC (pulse)	Scan signal 0

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Connector	Pin No.	Signal	I/O	Voltage	Description
YC31	1	SGND	-	-	Ground
Connected to the LCD PWB	2	+3.3V	O	3.3 V DC	3.3 V DC power output to LCDPWB
	3	+3.3V	O	3.3 V DC	3.3 V DC power output to LCDPWB
	4	LCDRS	O	0/3.3 V DC (pulse)	LCD indicator control signal
	5	LCDR_W	O	0/3.3 V DC (pulse)	LCD indicator control signal
	6	LCDEN	O	0/3.3 V DC (pulse)	LCD indicator control signal
	7	LCDD0	O	0/3.3 V DC (pulse)	LCD indicator data signal 0
	8	LCDD1	O	0/3.3 V DC (pulse)	LCD indicator data signal 1
	9	LCDD2	O	0/3.3 V DC (pulse)	LCD indicator data signal 2
	10	LCDD3	O	0/3.3 V DC (pulse)	LCD indicator data signal 3
	11	LCDD4	O	0/3.3 V DC (pulse)	LCD indicator data signal 4
	12	LCDD5	O	0/3.3 V DC (pulse)	LCD indicator data signal 5
	13	LCDD6	O	0/3.3 V DC (pulse)	LCD indicator data signal 6
	14	LCDD7	O	0/3.3 V DC (pulse)	LCD indicator data signal 7
	15	SGND	-	-	Ground
	16	SGND	-	-	Ground
YC35	1	PDN	I	0/3.3 V DC	Laser sync signal
Connected to the APC PWB	2	SGND	-	-	Ground
	3	OUTREN	O	0/3.3 V DC	Laser diode output signal
	4	SAMPLEN	O	0/3.3 V DC	Sample hold signal
	5	VDON	O	-	Image data signal
	6	VDOP	O	-	Image data signal
	7	5V1	O	5 V DC	5 V DC power output to APCPWB
YC36	A1	PDGDIN	O	0/3.3 V DC	PRNPWB control signal
Connected to the printer PWB	A2	C2PRRSTN	O	0/3.3 V DC	PRNPWB reset signal
	A3	SAMPLEGDIN	I	0/3.3 V DC	PRNPWB control signal
	A4	PDMASKGDIN	O	0/3.3 V DC	PRNPWB control signal
	A5	C2PSDIR	O	0/3.3 V DC	PRNPWB control signal
	A6	C2PEGSI	I	0/3.3 V DC (pulse)	PRNPWB serial communication data signal
	A7	C2PEGSO	O	0/3.3 V DC (pulse)	PRNPWB serial communication data signal
	A8	C2PSBSY	O	0/3.3 V DC	PRNPWB control signal
	A9	G2PSCKN	I	0/3.3 V DC (pulse)	PRNPWB clock signal
	A10	C2PEGIRN	O	0/3.3 V DC	PRNPWB control signal
	A11	GDILVDS_ENBN	O	0/3.3 V DC	PRNPWB control signal
	A12	SGND	-	-	Ground
	A13	LDOUTP_GDI	I	0/3.3 V DC	PRNPWB control signal
	B1	+5V	O	5 V DC	5 V DC power output to PRNPWB
	B2	SGND	-	-	Ground
	B3	+5V	O	5 V DC	5 V DC power output to PRNPWB
	B4	SGND	-	-	Ground
	B5	+5V	O	5 V DC	5 V DC power output to PRNPWB
	B6	SGND	-	-	Ground
	B7	+5V	O	5 V DC	5 V DC power output to PRNPWB

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Connector	Pin No.	Signal	I/O	Voltage	Description
YC36	B8	SGND	-	-	Ground
Connected to the printer PWB	B9	SGND	-	-	Ground
	B10	SETN	I	0/3.3 V DC	PRNPWB control signal
	B11	GDIENB	O	0/3.3 V DC	PRNPWB control signal
	B12	+5V3	O	5 V DC	5 V DC power output to PRNPWB
	B13	LDOUTN_GDI	I	0/3.3 V DC	PRNPWB control signal

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2-3-3 Cassette PWB

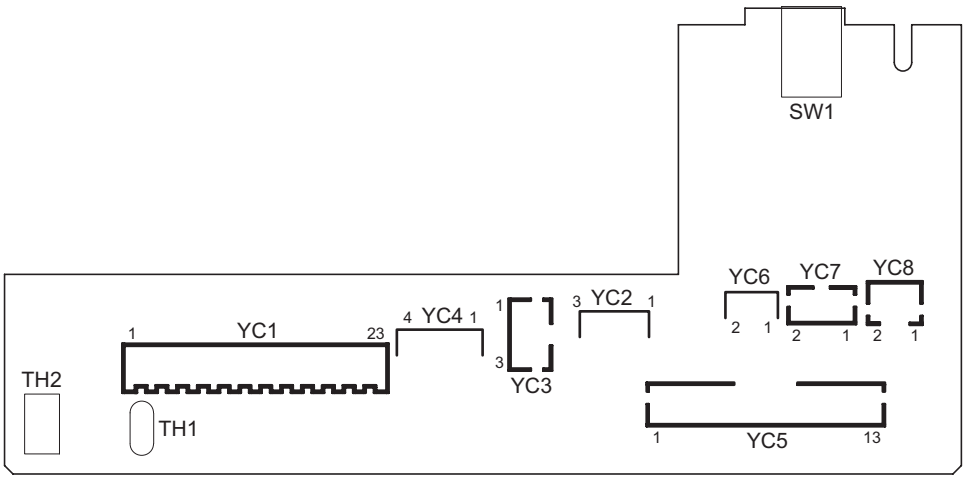

Figure 2-3-3 Cassette PWB silk-screen diagram

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Connector	Pin No.	Signal	I/O	Voltage	Description
YC1	1	TEMP	O	Analog	HUMS detection signal
Connected to the main/ engine PWB	2	HMCLK1	I	0/3.3 V DC (pulse)	Not used
	3	HMCLK2	I	0/3.3 V DC (pulse)	HUMS clock signal
	4	HUMID	O	Analog	HUMS detection signal
	5	C1PWSWN	O	0/3.3 V DC	PWSW: On/Off
	6	C1PDSWN	O	0/3.3 V DC	PSW: On/Off
	7	+5V2	I	5 V DC	5 V DC power input from MEPWB
	8	TONEPY	O	Analog	TCS detection signal
	9	SGND	-	-	Ground
	10	BPWSW	O	0/3.3 V DC	MPPWSW: On/Off
	11	REGSWN	O	0/3.3 V DC	RSW: On/Off
	12	ICLTN	I	Analog	DUPFCL: On/Off
	13	IPPSWN	O	0/3.3 V DC	DUPPCSW: On/Off
	14	BPPESW	O	0/3.3 V DC	MPPSW: On/Off
	15	SGND	-	-	Ground
	16	BSOLN	I	0/24 V DC	MPSOL: On/Off
	17	FCLTN	I	0/24 V DC	PFCL: On/Off
	18	REGCLN	I	0/24 V DC	RCL: On/Off
	19	+24V1	I	24 V DC	24 V DC power input from MEPWB
	20	+24V1	I	24 V DC	24 V DC power input from MEPWB
	23	+3.3V	I	3.3 V DC	3.3 V DC power input from MEPWB
YC2	1	SGND	-	-	Ground
Connected to the paper switch	2	C1PDSWN	I	0/3.3 V DC	PSW: On/Off
	3	+5V2	O	5 V DC	5 V DC power output to PSW
YC3	1	+5V2	O	5 V DC	5 V DC power output to TCS
Connected to the toner container sensor	2	TONEPY	I	Analog	TCS detection signal
	3	SGND	-	-	Ground
YC5	1	+5V2	O	5 V DC	5 V DC power output to MPPSW
Connected to the MP paper switch, duplex paper conveying switch, duplex feed clutch, registration switch and MP paper size width switch	2	BPPESW	I	0/3.3 V DC	MPPSW: On/Off
	3	SGND	-	-	Ground
	4	+5V2	O	5 V DC	5 V DC power output to MPPCSW
	5	IPPSWN	I	0/3.3 V DC	DUPPCSW: On/Off
	6	SGND	-	-	Ground
	7	+24V1	O	24 V DC	24 V DC power output to DUPFCL
	8	ICLTN	O	0/24 V DC	DUPFCL: On/Off
	9	+5V2	O	5 V DC	5 V DC power output to RSW
	10	REGSW	I	0/3.3 V DC	RSW: On/Off
	11	SGND	-	-	Ground
	12	BPWSW	I	0/3.3 V DC	MPPWSW: On/Off
	13	+3.3V	O	3.3 V DC	3.3 V DC power output to MPPWSW

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Connector	Pin No.	Signal	I/O	Voltage	Description
YC6	1	+24V1	O	24 V DC	24 V DC power output to RCL
Connected to the registration clutch	2	REGCLN	O	0/24 V DC	RCL: On/Off
YC7	1	+24V1	O	24 V DC	24 V DC power output to PFCL
Connected to the paper feed clutch	2	FCLTN	O	0/24 V DC	PFCL: On/Off
YC8	1	BSOLN	O	0/24 V DC	MPSOL: On/Off
Connected to the MP solenoid	2	+24V1	O	24 V DC	24 V DC power output to MPSOL

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2-3-4 Operation PWB

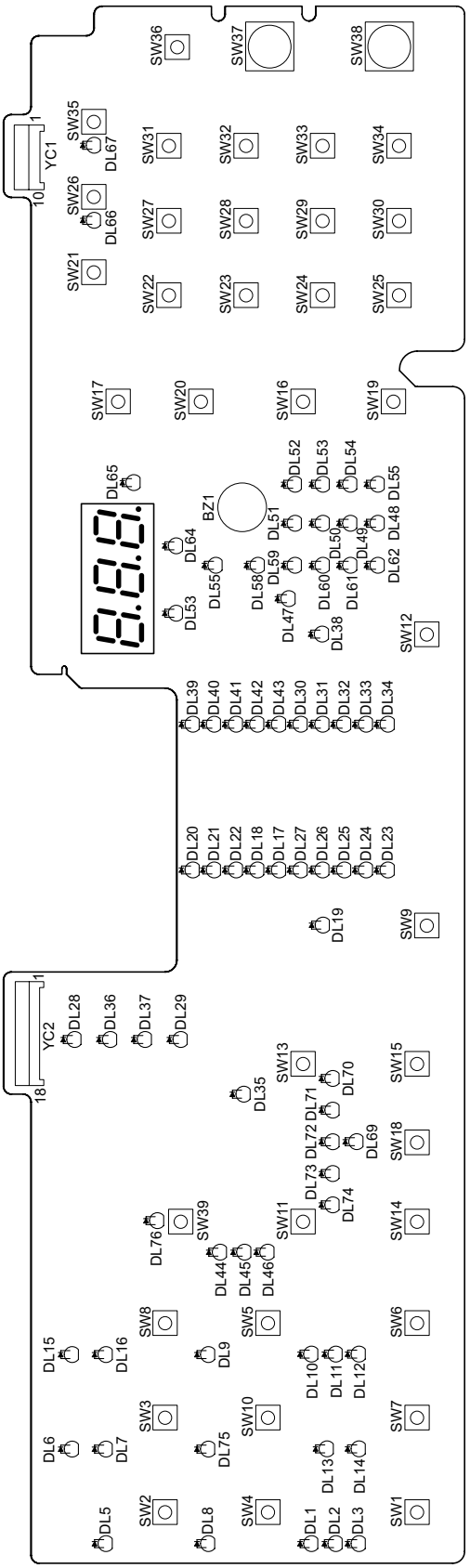

Figure 2-3-4 Operation PWB silk-screen diagram

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Connector	Pin No.	Signal	I/O	Voltage	Description
YC1	1	+5V	I	5 V DC	5 V DC power input from MEPWB
Connected to the main/ engine PWB	2	BUZERDRN	I	0/3.3 V DC	OPWB buzzer signal
	3	SCAN7	I	0/3.3 V DC (pulse)	Scan signal 7
	4	SCAN6	I	0/3.3 V DC (pulse)	Scan signal 6
	5	SCAN5	I	0/3.3 V DC (pulse)	Scan signal 5
	6	SCAN4	I	0/3.3 V DC (pulse)	Scan signal 4
	7	SCAN3	I	0/3.3 V DC (pulse)	Scan signal 3
	8	SCAN2	I	0/3.3 V DC (pulse)	Scan signal 2
	9	SCAN1	I	0/3.3 V DC (pulse)	Scan signal 1
	10	SCAN0	I	0/3.3 V DC (pulse)	Scan signal 0
YC2	1	LED0	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 0
Connected to the main/ engine PWB	2	LED1	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 1
	3	LED2	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 2
	4	LED3	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 3
	5	LED4	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 4
	6	LED5	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 5
	7	LED6	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 6
	8	LED7	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 7
	9	LED8	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 8
	10	LED9	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 9
	11	LED10	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 10
	12	LED11	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 11
	13	LED12	O	0/3.3 V DC (pulse)	Operation panel indicator LED drive signal 12
	14	KEY0	I	0/3.3 V DC (pulse)	Operation panel key scan return signal 0
	15	KEY1	I	0/3.3 V DC (pulse)	Operation panel key scan return signal 1
	16	KEY2	I	0/3.3 V DC (pulse)	Operation panel key scan return signal 2
	17	KEY3	I	0/3.3 V DC (pulse)	Operation panel key scan return signal 3
	18	KEY4	I	0/3.3 V DC (pulse)	Operation panel key scan return signal 4

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Maintenance parts list

Maintenance part name		Part No.	Alterna-tive part	Fig. No.	Ref. No.
Name used in service manual	Name used in parts list				
Paper feed pulley	PULLEY, PAPER FEED	2AR07220	-	3	4
Separation pulley	PULLEY, SEPARATION	2AR07230	-	3	5
Forwarding pulley	PULLEY, LEADING FEED	2AR07240	-	3	6
MP paper feed pulley	PULLEY BYPASS	302KK08210	2KK08210	5	38
MP separation pad	PARTS BYPASS PAD ASSY SP	302KK94450	2KK94450	4	A01
Left registration roller	PARTS ROLLER REGIST LEFT SP	302KK94230	2KK94230	5	40
Right registration roller	RIGHT ROLL REGIST	302KK24140	2KK24140	5	43
Slit glass	CONTACT GLASS ADF	2C912280	-	8	9
Contact glass	CONTACT GLASS	2C912250	-	8	19
Mirror 1	MIRROR A	302KK17320	2KK17320	7	36
Mirror 2 and mirror 3	MIRROR B	302KK17330	2KK17330	7	37
Lens	LENS	-	-	-	-
Reflector	REFLECTOR SCANNER	2C912110	-	7	16
Exposure lamp	PARTS LAMP SCANNER SP	302KK94220	2KK94220	7	35
Optical rail	RAIL SCANNER	-	-	-	-
Original size detection sensor	SENSOR ORIGINAL	2C927090	-	7	2
Laser scanner unit	LK-460	302KK93060	2KK93060	9	1
Transfer roller	ROLLER TRANSFER	302C917011	2C917011	5	12
Separation electrode	PLATE STA ELIMINATION	2C917080	-	5	24
Developing unit	DV-460	302KK93020	2KK93020	11	A01
Main charger unit	MC-460	302KK93080	2KK93080	10	A02
Fuser unit	FK-460(A)	302KK93040	2KK93040	12	A01
	FK-460(E)	302KK93050	2KK93050	12	A01
Heat roller	PARTS ROLLER HEAT SP	302KK94240	2KK94240	12	10
Press roller	PARTS ROLLER PRESS SP	302KK94290	2KK94290	12	13
Heat roller separation claw	SEPARATOR ASSY	302FT20120	2FT20120	12	5
Eject roller	PARTS ROLLER EXIT INNER SP	302KK94300	2KK94300	15	19
Eject pulley	PULLEY EXIT	302KK28030	2KK28030	15	12
Switchback roller	PARTS ROLLER FEED SHIFT SP	302KK94310	2KK94310	15	20
Switchback pulley	PULLEY FEED SHIFT	2C921040	-	4	26

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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	Paper feed pulley	Check or replace	User call	Clean it with alcohol if it is dirty. Replace it if any problem such as flawed or worn state is found.	P.1-5-6
	Separation pulley	Check or replace	User call	Clean it with alcohol if it is dirty. Replace it if any problem such as flawed or worn state is found.	P.1-5-3
	Forwarding pulley	Check or replace	User call	Clean it with alcohol if it is dirty. Replace it if any problem such as flawed or worn state is found.	P.1-5-6
	MP paper feed pulley	Check, replace or clean	Every service	Clean it with alcohol if it is dirty. Replace it if any problem such as flawed or worn state is found.	P.1-5-11
	MP separation pad	Check or replace	User call	Clean it with alcohol if it is dirty. Replace it if any problem such as flawed or worn state is found.	P.1-5-11
	Left registration roller	Check, replace or clean	Every service	Clean with alcohol or a dry cloth. Replace it if any problem such as flawed or worn state is found.	P.1-5-14
	Right registration roller	Check, replace or clean	Every service	Clean with alcohol or a dry cloth.	P.1-5-15

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Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Optical section	Slit glass	Clean	Every service	Clean with a dry cloth (do not clean with a wet cloth or alcohol).	
	Contact glass	Clean	Every service	Clean with alcohol and then a dry cloth.	
	Mirror 1	Clean	User call	Clean with a wet cloth and then a dry cloth only if vertical black lines appear on the print image.	
	Mirror 2 and mirror 3	Clean	User call	Clean with a wet cloth and then a dry cloth only if vertical black lines appear on the print image.	
	Lens	Clean	User call	Clean with a dry cloth only if vertical black lines appear on the print image.	
	Reflector	Clean	User call	Clean with a dry cloth only if vertical black lines appear on the print image.	
	Exposure lamp	Check or replace	User call	Replace if an image problem occurs or after the exposure lamp does not turn on.	P.1-5-17
	Optical rail	Check or grease	User call	Check noise and shifting and then apply optical rail grease EM-50LP.	
	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.	
	Laser scanner unit	Check or clean	User call	Clean the slit glass with alcohol and then a dry cloth.	P.1-5-28

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Transfer/ separation section	Transfer roller	Clean	User call	Vacuum or clean with a dry cloth when user call occurs.	P.1-5-38
	Separation electrode	Check or clean	User call	Clean with a cleaning brush.	

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Developing section	Developing unit	Check or replace	User call	Replace if the problem occurs.	P.1-5-37

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Drum section	Main charger unit	Check or replace	Every service	Replace if an image problem occurs.	P.1-5-36

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Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Fuser section	Fuser unit	Check or replace	User call	Replace if the problem occurs.	P.1-5-40
	Heat roller	Clean	150K	Clean with alcohol or a dry cloth.	P.1-5-48
	Press roller	Clean	150K	Clean with alcohol or a dry cloth.	P.1-5-42
	Heat roller separation claw	Check, replace or clean	Every service	Clean with alcohol. Replace if claw is flawed, deformed or worn.	P.1-5-47

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Eject section	Eject roller	Check or clean	User call	Clean it with alcohol if it is dirty.	
	Eject pulley	Check or clean	User call	Clean it with alcohol if it is dirty.	
	Switchback roller	Check or clean	User call	Clean it with alcohol if it is dirty.	
	Switchback pulley	Check or clean	User call	Clean it with alcohol if it is dirty.	

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Covers	Covers	Clean	Every service	Clean with alcohol or a dry cloth.	
	Original cover	Clean	Every service	Clean with alcohol or a dry cloth.	

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

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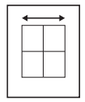
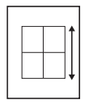
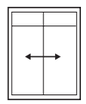
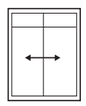
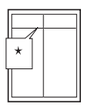
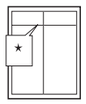
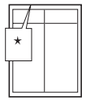
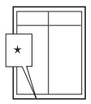
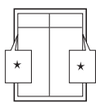
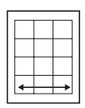
Chart of image adjustment procedures

Adjusting order	Item	Image	Description	Maintenance mode		Original	Page	Remarks
				Item No.	Mode			
1	Adjusting the magnification in the main scanning direction (printing adjustment)		Polygon motor speed adjustment	U053	Exp.2 (light)	U053 test pattern	P.1-3-17	
2	Adjusting the magnification in the auxiliary scanning direction (printing adjustment)		Drive motor speed adjustment	U053	Exp.1 (light)	U053 test pattern	P.1-3-17	
3	Adjusting the center line of the MP tray (printing adjustment)		Adjusting the LSU print start timing	U034	Exp.2 (light)	U034 test pattern	P.1-3-13	
4	Adjusting the center line of the cassettes (printing adjustment)		Adjusting the LSU print start timing	U034	Exp.1 (light)	U034 test pattern	P.1-3-13	First paper feeder: select exp.3 (light) Second paper feeder: select exp.4 (light) Third paper feeder: select exp.5 (light) Duplex copying: select exp.1 (flashing)
5	Adjusting the leading edge registration of the MP tray (printing adjustment)		Registration clutch turning on timing (secondary paper feed start timing)	U034	Exp.2 (light)	U034 test pattern	P.1-3-12	
6	Adjusting the leading edge registration of the cassettes (printing adjustment)		Registration clutch turning on timing (secondary paper feed start timing)	U034	Exp.1 (light)	U034 test pattern	P.1-3-12	First paper feeder: select exp.3 (light) Second paper feeder: select exp.4 (light) Third paper feeder: select exp.5 (light) Duplex copying: select exp.1 (flashing)
7	Adjusting the leading edge margin (printing adjustment)		LSU illumination start timing	U402	Exp.1 (light)	U402 test pattern	P.1-3-50	
8	Adjusting the trailing edge margin (printing adjustment)		LSU illumination end timing	U402	Exp.3 (light)	U402 test pattern	P.1-3-50	
9	Adjusting the left and right margins (printing adjustment)		LSU illumination start/end timing	U402	Exp.2 (light)	U402 test pattern	P.1-3-50	
10	Adjusting magnification of the scanner in the main scanning direction (scanning adjustment)		Data processing	U065	Exp.1 (light)	Test chart	P.1-3-19	No adjustment for copying using the DP.

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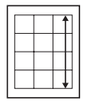
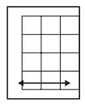
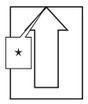
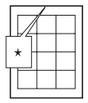
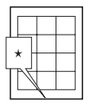
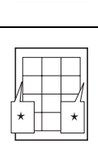
Adjusting order	Item	Image	Description	Maintenance mode		Original	Page	Remarks
				Item No.	Mode			
11	Adjusting magnification of the scanner in the auxiliary scanning direction (scanning adjustment)		Original scanning speed	U065 U070	Exp.2 (light) Exp.1 (light)	Test chart	P.1-3-19 P.1-3-23	U065: For copying an original placed on the contact glass. U070: For copying originals from the DP. Duplex copying: select exp.2 (light)
12	Adjusting the center line (scanning adjustment)		Adjusting the original scan data (image adjustment)	U067 U072	- Exp.1 (light)	Test chart	P.1-3-21 P.1-3-25	U067: For copying an original placed on the contact glass. U072: For copying originals from the DP. Duplex copying: select exp.2 (light)
13	Adjusting the leading edge registration (scanning adjustment)		Original scan start timing (image adjustment)	U066 U071	- Exp.1 (light)	Test chart	P.1-3-20 P.1-3-24	U066: For copying an original placed on the contact glass. U071: For copying originals from the DP. Duplex copying: select exp.3 (light)
14	Adjusting the leading edge margin (scanning adjustment)		Adjusting the original scan data (image adjustment)	U403 U404	Exp.2 (light) Exp.2 (light)	Test chart	P.1-3-51 P.1-3-52	U403: For copying an original placed on the contact glass. U404: For copying originals from the DP.
15	Adjusting the trailing edge margin (scanning adjustment)		Adjusting the original scan data (image adjustment)	U403 U404	Exp.4 (light) Exp.4 (light)	Test chart	P.1-3-51 P.1-3-52	U403: For copying an original placed on the contact glass. 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	Exp.1/Exp.3 (light) Exp.1/Exp.3 (light)	Test chart	P.1-3-51 P.1-3-52	U403: For copying an original placed on the contact glass. U404: For copying originals from the DP.

When maintenance item U092 (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 U076 (Adjusting the DP automatically) is run using the specified original (P/N 302AC68243), 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: ±3.0 mm/375 mm
Leading edge registration	Cassette: ±2.5 mm MP tray: ±2.5 mm Duplex mode: ±2.5 mm
Skewed paper feed	Cassette: 1.5 mm or less MP tray: 1.5 mm or less Duplex mode: 2.0 mm or less
Left-right difference	Cassette: 2.0 mm or less MP tray: 2.0 mm or less Duplex mode: 3.0 mm or less
Curling	Simplex mode: 10.0 mm or less Duplex mode: 10.0 mm or less

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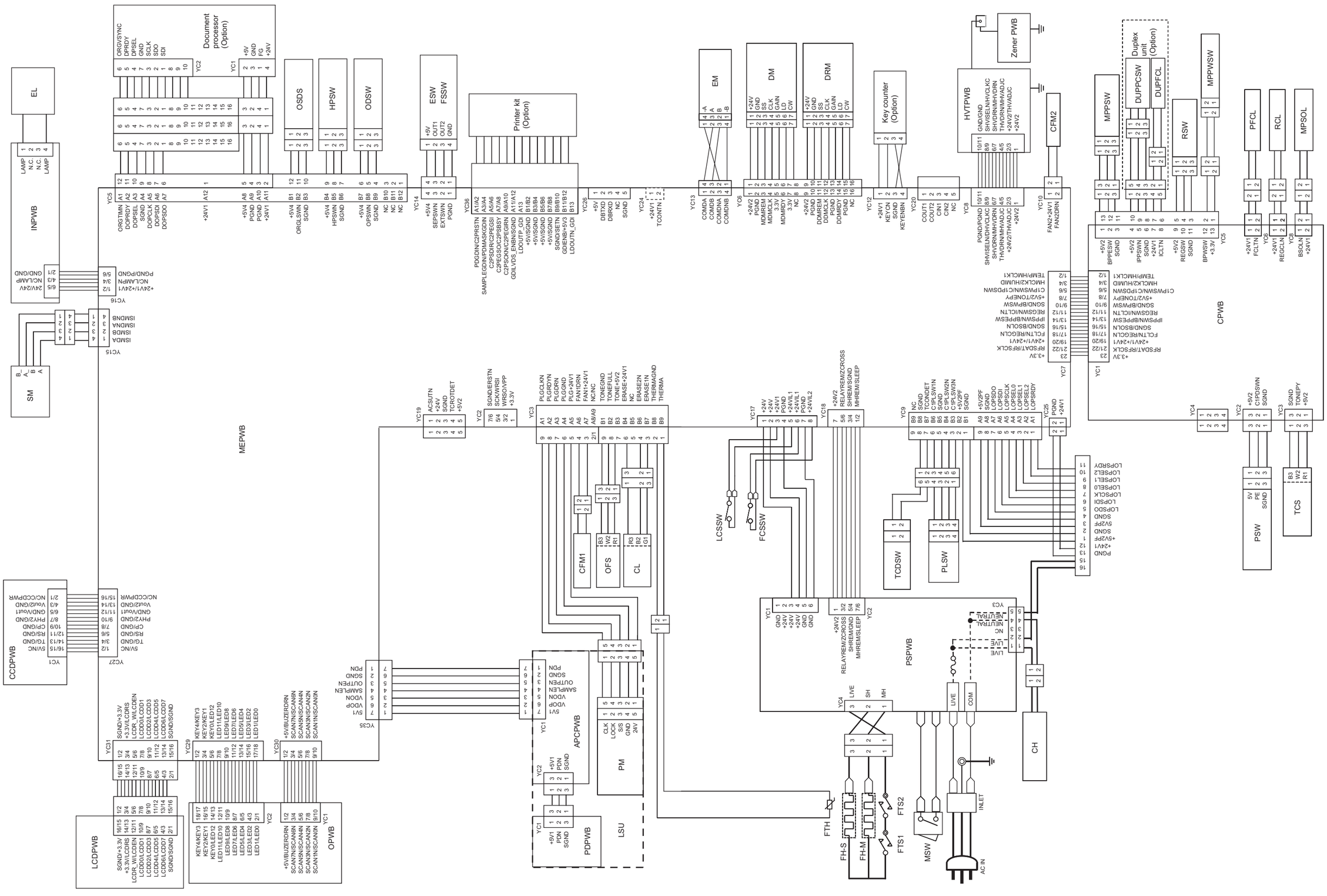
Wiring diagram



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