KYOCERA

ECOSYS P6021cdn
ECOSYS P6026cdn

SERVICE MANUAL

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842PT113
2PTSM063
Rev.3

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.

For the purpose of this service manual, products are identified by print speed at A4.
TASKalfa P6021cdn : 21 ppm model
TASKalfa P6026cdn : 26 ppm model

Revision history

Revision	Date	Pages	Revised contents
1	20 January 2014	Contents	Added: 2-4-1 (4) and page numbers of contents
		1-3-8	Added: Supplement of the (59)/(60)/(61)
		1-5-28, 29	Correction: Number of screw. (3→4)
		2-4-9	Added: (4)Maintenance Commands
		2-4-10	Correction: (4) → (5)
		Address	Correction
2	17 February 2014	1-1-2	Correction: Power source → Rated input
		1-2-1	Correction: 8.5 A → 9.0 A, 4.5 A → 5.0 A
		1-3-7	Added: into the description of (49) Media type attributes
		1-6-1	Correction: The statement of a safe mode
		1-6-2	Correction: SD CARD → USB memory
		2-4-1	Added: Exchange time of MK
		2-4-2	Added: Comment to (2)Repetitive defects gauge
		2-4-9	Added: The comment about three steps is written in the preset value column.
3	18 March 2014	1-1-1,1-1-2	Correction: Sleep mode, USB host

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Safety precautions

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

Safety warnings and precautions

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

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

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

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

Symbols

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

 General warning.

 Warning of risk of electric shock.

 Warning of high temperature.

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

 General prohibited action.

 Disassembly prohibited.

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

 General action required.

 Remove the power plug from the wall outlet.

 Always ground the copier.

1. Installation Precautions

⚠ WARNING

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

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

⚠ CAUTION:

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

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

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

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

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

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

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

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

2. Precautions for Maintenance

⚠WARNING

- Always remove the power plug from the wall outlet before starting machine disassembly. 
- Always follow the procedures for maintenance described in the service manual and other related brochures. 
- Under no circumstances attempt to bypass or disable safety features including safety mechanisms and protective circuits. 
- Always use parts having the correct specifications. 
- Always use the thermostat or thermal fuse specified in the service manual or other related brochure when replacing them. Using a piece of wire, for example, could lead to fire or other serious accident. 
- When the service manual or other serious brochure specifies a distance or gap for installation of a part, always use the correct scale and measure carefully. 
- Always check that the copier is correctly connected to an outlet with a ground connection. 
- Check that the power cable covering is free of damage. Check that the power plug is dust-free. If it is dirty, clean it to remove the risk of fire or electric shock. 
- Never attempt to disassemble the optical unit in machines using lasers. Leaking laser light may damage eyesight. 
- Handle the charger sections with care. They are charged to high potentials and may cause electric shock if handled improperly. 

⚠CAUTION

- Wear safe clothing. If wearing loose clothing or accessories such as ties, make sure they are safely secured so they will not be caught in rotating sections. 
- Use utmost caution when working on a powered machine. Keep away from chains and belts. 
- Handle the fixing section with care to avoid burns as it can be extremely hot. 
- Check that the fixing unit thermistor, heat and press rollers are clean. Dirt on them can cause abnormally high temperatures. 

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

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

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

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

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

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

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

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

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

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

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

3. Miscellaneous

⚠WARNING

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

- Keep the machine away from flammable liquids, gases, and aerosols. A fire or an electric shock might occur. .....

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1-6 Requirements on PWB Replacement

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2-3 Operation of the PWBs

2-4 Appendixes

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1-1-1 Specifications

Item		Specifications	
		21/23 ppm model (A4/Letter)	26/28 ppm model (A4/Letter)
Type		Desktop	
Printing method		Electrophotography by semiconductor laser, tandem (4) drum system	
Paper weight	Cassette	60 to 163 g/m^2	
	MP tray	60 to 220 g/m^2	
Paper type	Cassette	Plain, Recycled, Preprinted, Bond, Color (Colour), Prepunched, Letterhead, Thick, High quality, Custom 1 to 8 (Duplex: Same as simplex)	
	MP tray	Plain, Transparency, Vellum, Labels, Recycled, Preprinted, Bond, Cardstock, Color (Colour), Prepunched, Letterhead, Thick, Envelope, Coated, High quality, Custom 1 to 8	
Paper size	Cassette	A4, A5, A6, B5, ISO B5, Letter, Legal, Statement, Executive, Oficio II, Folio, 16K, Envelope C5, Custom	
	MP tray	A4, A5, A6, B5, ISO B5, B6, Letter, Legal, Statement, Executive, Oficio II, Folio, 16K, Envelope #10, Envelope #9, Envelope #6, Envelope Monarch, Envelope DL, Envelope C5, Postcards, Return postcard, Youkei 2, Youkei 4, Custom, 216 x 340 mm	
Copying speed	Simplex	A4 : 21 sheets/min Letter : 23 sheets/min Legal : 18 sheets/min B5 : 23 sheets/min A5 : 23 sheets/min A6 : 23 sheets/min	A4 : 26 sheets/min Letter : 28 sheets/min Legal : 23 sheets/min B5 : 28 sheets/min A5 : 28 sheets/min A6 : 28 sheets/min
	Duplex	A4 : 11 sheets/min Letter : 11 sheets/min Legal : 10 sheets/min	A4 : 13 sheets/min Letter : 13 sheets/min Legal : 12 sheets/min
First print time (A4, feed from cassette)		B/W : 10.5 s or less Color: 12.0 s or less	B/W : 9.0 s or less Color: 10.5 s or less
		(Excluding time for system stabilization immediately after turning on the main power.)	
Warm-up time (22 °C/71.6 °F, 60% RH)		Power on : 32 s or less Low power mode : 13 s or less Sleep mode : 18 s or less	Power on : 29 s or less Low power mode : 11 s orless Sleep mode : 20 s or less
Paper capacity	Cassette	250 sheets (80g/m^2)	500 sheets (80g/m^2)
	MP tray	50 sheets (80 g/m^2)	50 sheets (80 g/m^2)
Output tray capacity		250 sheets (80g/m^2)	
Photoconductor		OPC drum (diameter 30 mm)	
Image write system		Semiconductor laser	
Charging system		Charger roller	
Developing system		Touch down developing system Developer: 2-component Toner replenishing: Automatic from the toner container	

Item		Specifications	
		21/23 ppm model (A4/Letter)	26/28 ppm model (A4/Letter)
Transfer system		Primary: Transfer belt Secondary: Transfer roller	
Separation system		Small diameter separation	
Cleaning system		Drum: Counter blade	
Charge erasing system		Exposure by cleaning lamp (LED)	
Fusing system		Heat and pressure fusing with the heat roller and the press roller Heat source: halogen heater Abnormally high temperature protection devices: thermostat	
CPU		PowerPC465S (667MHz)	
Main memory	Standard	512 MB	
	Maximum	1536 MB	
Operating system		Windows 2000, Windows XP, Windows XP Professional Windows Server 2003, Windows Server 2003 x64 Edition Windows Vista x86 Edition, Windows Vista x64 Edition Windows 7 x86 Edition, Windows 7 x64 Edition, Windows Server 2008 Windows Server 2008 x64 Edition, Windows Server 2012 x64 Edition Apple Macintosh OS 10.x	
Interface	Standard	Network interface: 1 (10BASE-T/100BASE-TX/1000BASE-T) USB interface connector: 1 (USB Hi-speed)	
		USB host: 1 (USB Hi-speed)	USB host: 2 (USB Hi-speed)
	Option	e-KUIO slot: 1	
Page description language		PRESCRIBE	
Resolution		600 dpi	
Operating environment	Temperature	10 to 32.5 °C/50 to 90.5 °F	
	Humidity	15 to 80% RH	
	Altitude	2,500 m/8,202 ft or less	
	Brightness	1,500 lux or less	
Dimensions (W × D × H)		390 × 523 × 370 mm 15 3/8 × 20 9/16 × 14 9/16”	390 × 523 × 397 mm 15 3/8 × 20 9/16 × 15 5/8”
Weight		Approx. 29.3 kg / 64.6 lbs (with toner container)	Approx. 30.2 kg / 66.6 lbs (with toner container)
Space required (W × D)		440 × 1020 mm (using MP tray) 17 5/16 × 40 3/16” (using MP tray)	
Rated input		120 V AC, 60 Hz, max. 8.5 A 220 - 240 V AC, 50/60 Hz, max. 4.5 A	
Options		Paper feeder × 2, Expanded memory, Network interface card	Paper feeder × 3, Expanded memory, SSD(HD-6/7), Network interface card

NOTE: These specifications are subject to change without notice.

1-1-2 Parts names

(1) Machine (front side)

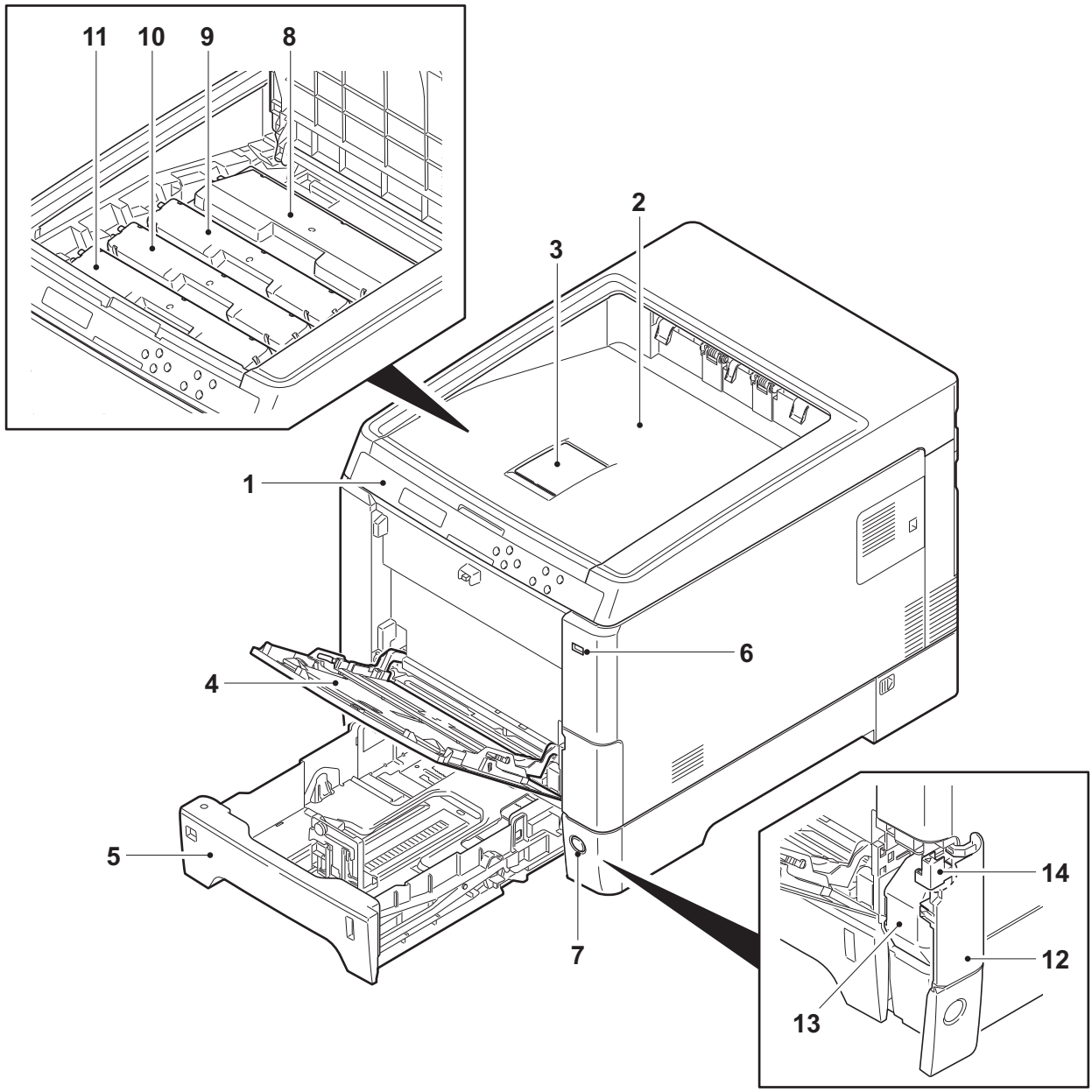

Figure 1-1-1

1. Operation panel
2. Top tray (Top cover)
3. Paper stopper
4. MP (Multi-Purpose) tray
5. Cassette
6. USB memory slot
7. Main power switch
8. Toner container K
9. Toner container M
10. Toner container C
11. Toner container Y
12. Waste toner cover
13. Waste toner box
14. Lock release button

(2) Machine (rear side)

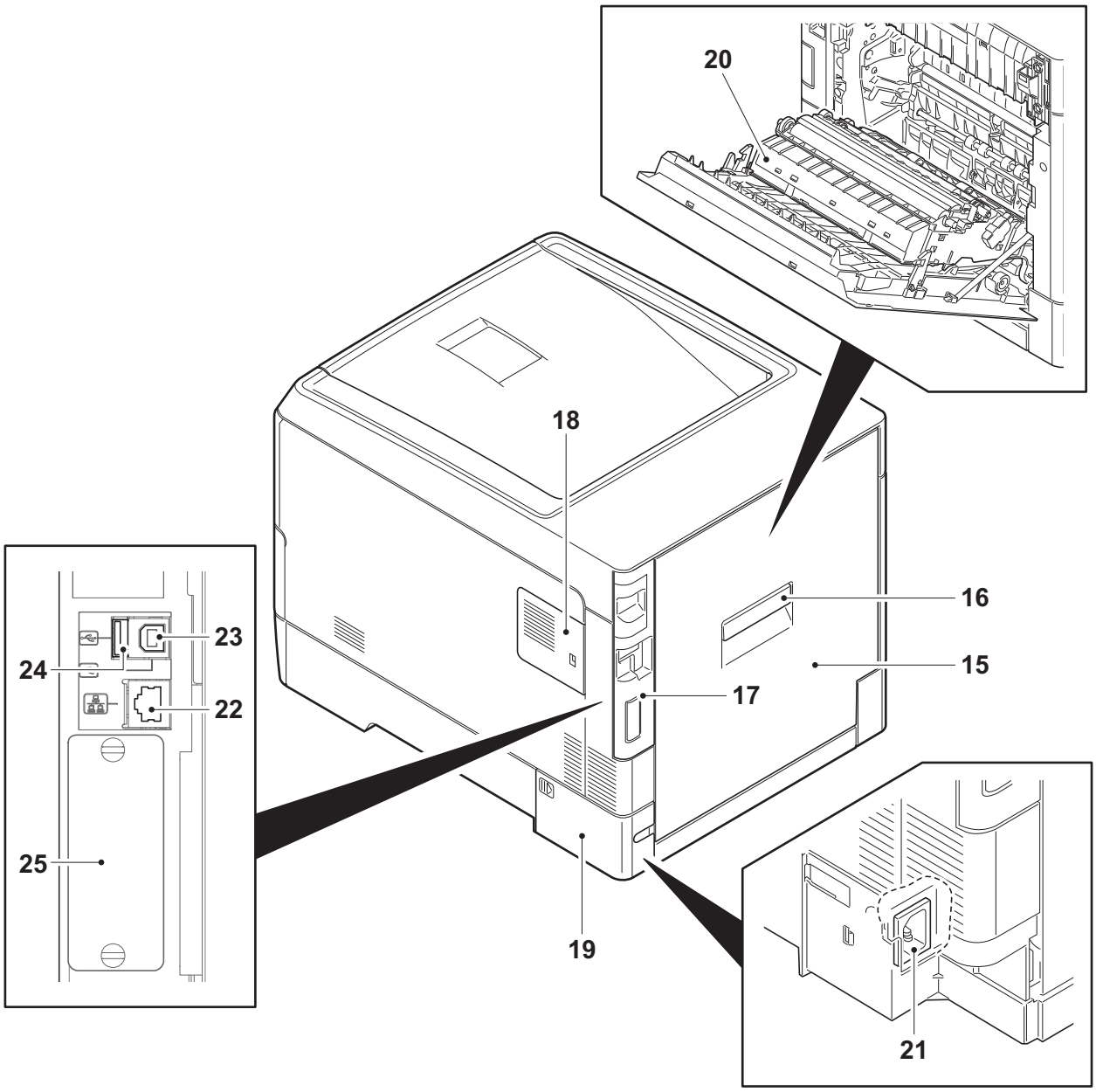

Figure 1-1-2

15. Rear cover
16. Rear cover lever
17. IF cover
18. Memory cover
19. Power cord cover
20. Paper conveying unit
21. Power cord connector
22. Network interface connector
23. USB interface connector
24. USB memory slot
25. Interface slot

(3) Operation panel

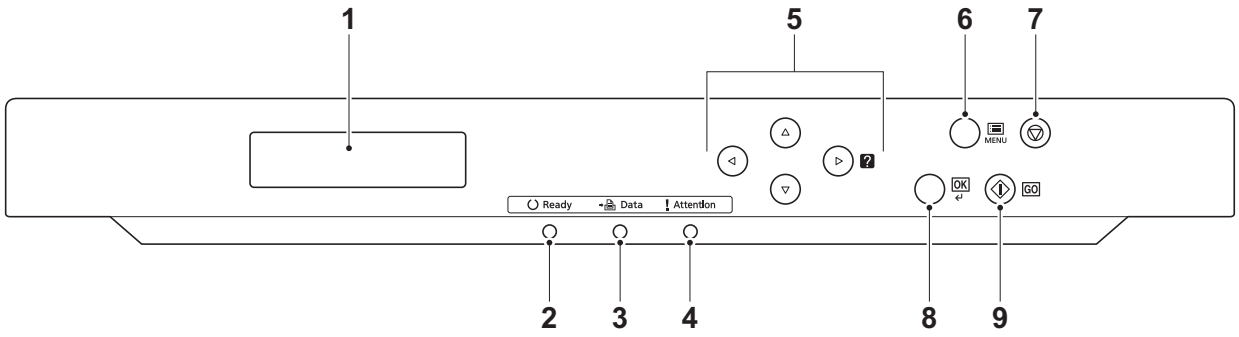

Figure 1-1-3

1. Message display
2. Ready indicator
3. Data indicator
4. Attention indicator
5. Cursor keys
6. MENU key
7. Cancel key
8. OK key
9. GO key

1-1-3 Machine cross section

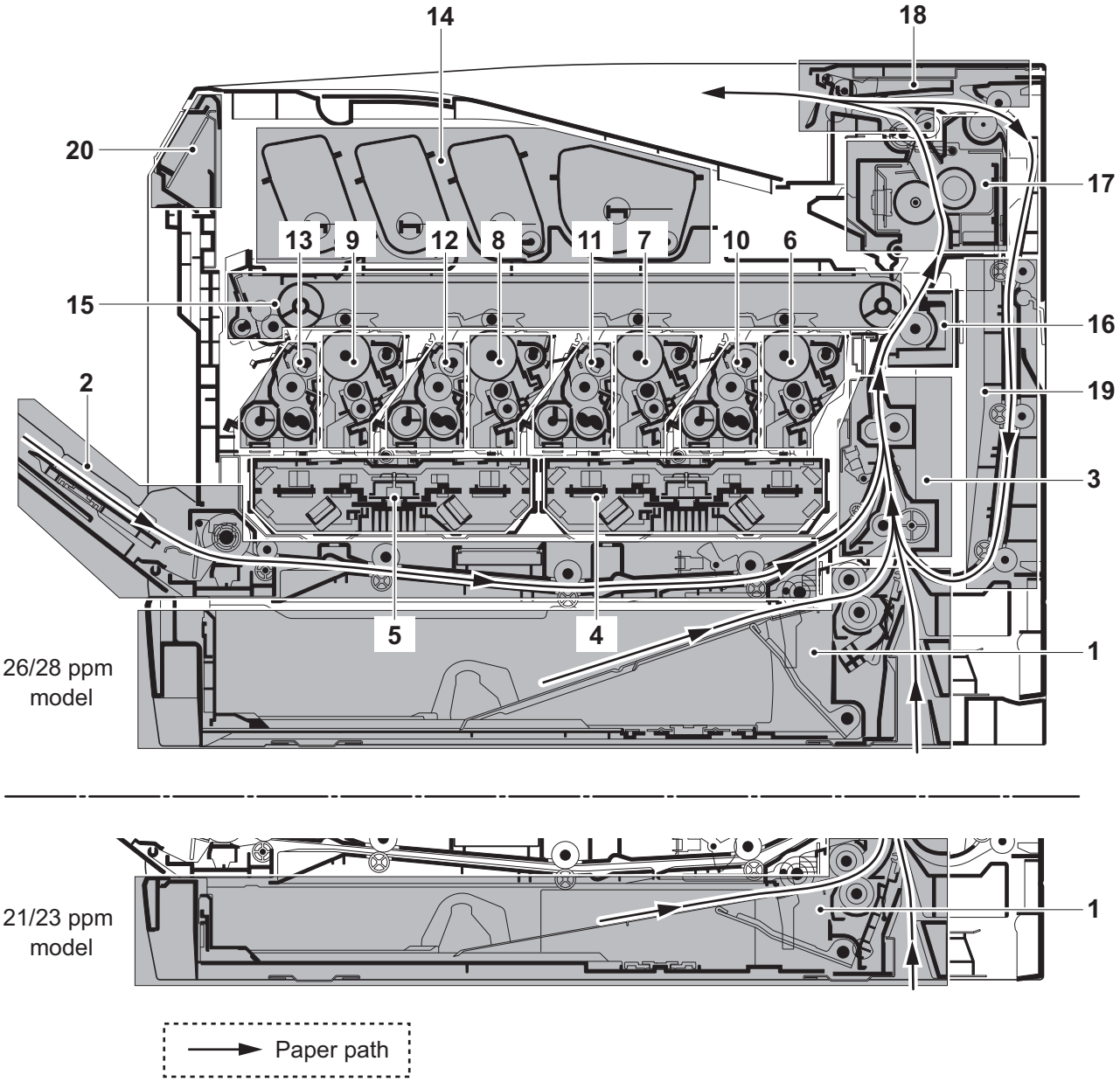

Figure 1-1-4

1. Cassette paper feed section
2. MP tray paper feed section
3. Paper conveying section
4. Laser scanner unit KM
5. Laser scanner unit CY
6. Drum unit K
7. Drum unit M
8. Drum unit C
9. Drum unit Y
10. Developing unit K
11. Developing unit M
12. Developing unit C
13. Developing unit Y
14. Toner container section
15. Primary transfer section
16. Secondary transfer/Separation sections
17. Fuser section
18. Eject/Feed shift sections
19. Duplex section
20. Operation panel section

1-2-1 Installation environment

1. Temperature: 10 to 32.5°C/50 to 90.5°F
2. Humidity: 15 to 80% RH
3. Power supply: 120 V AC, 9.0 A
   220 - 240 V AC, 5.0 A
4. Power source frequency: 50 Hz ±2%/60 Hz ±2%
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.

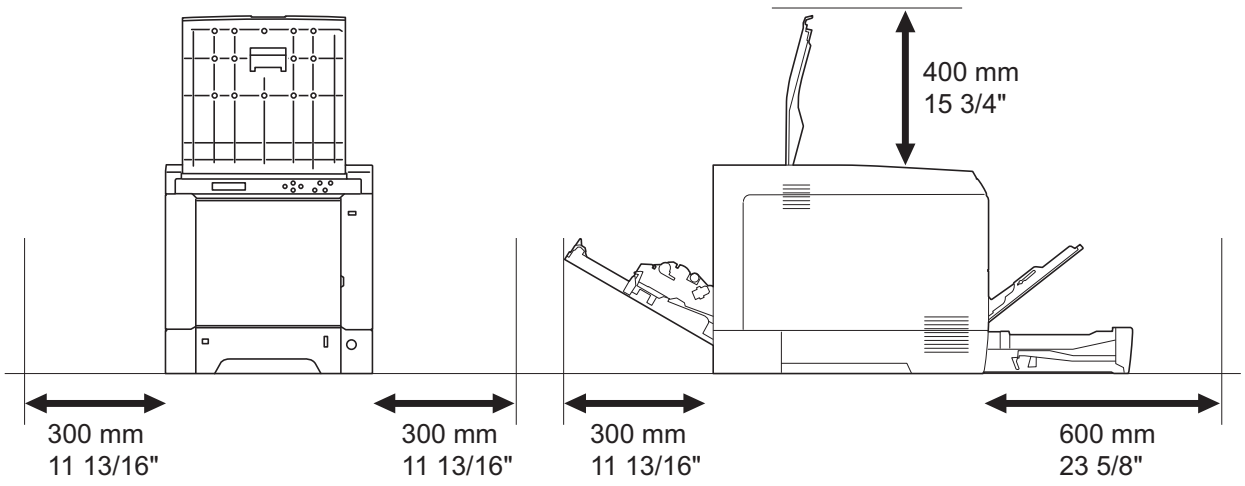

Figure 1-2-1

1-2-2 Unpacking

Unpacking

120V AC model

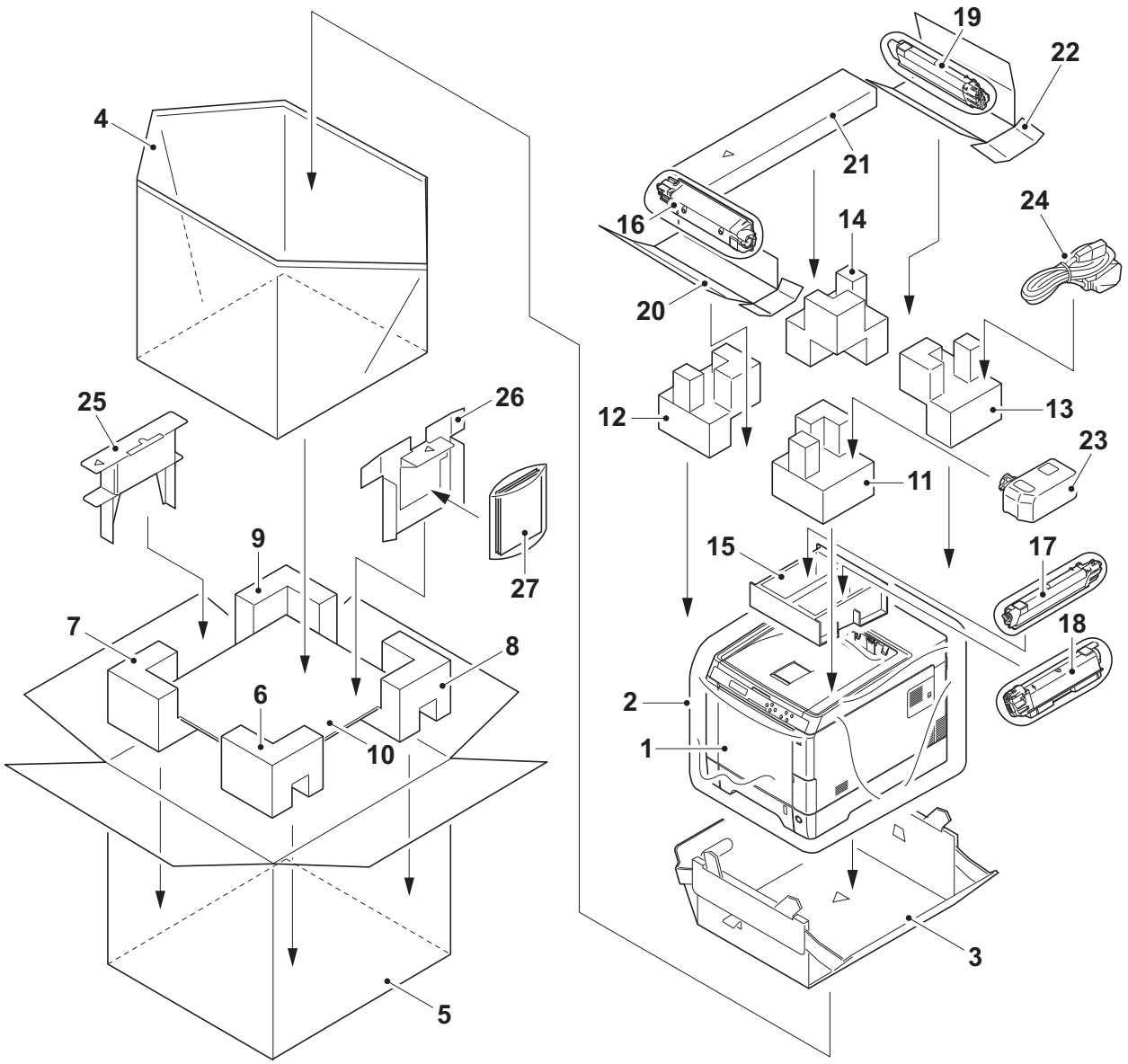

Figure 1-2-2

1. Machine
2. Plastic bag
3. Bottom spacer
4. Machine cover
5. Outer case
6. Bottom front right pad
7. Bottom front left pad
8. Bottom back right pad
9. Bottom back left pad
10. Bottom pad
11. Top front right pad
12. Top front left pad
13. Top back right pad
14. Top back left pad
15. Mid containerspacer
16. Toner container K
17. Toner container Y
18. Toner container C
19. Toner container M
20. Front container spacer
21. Left spacer
22. Back container spacer
23. Waste toner box
24. Power cord
25. Left spacer
26. Right spacer
27. Operation guide etc.

Place the machine on a level surface.

220-240V AC model

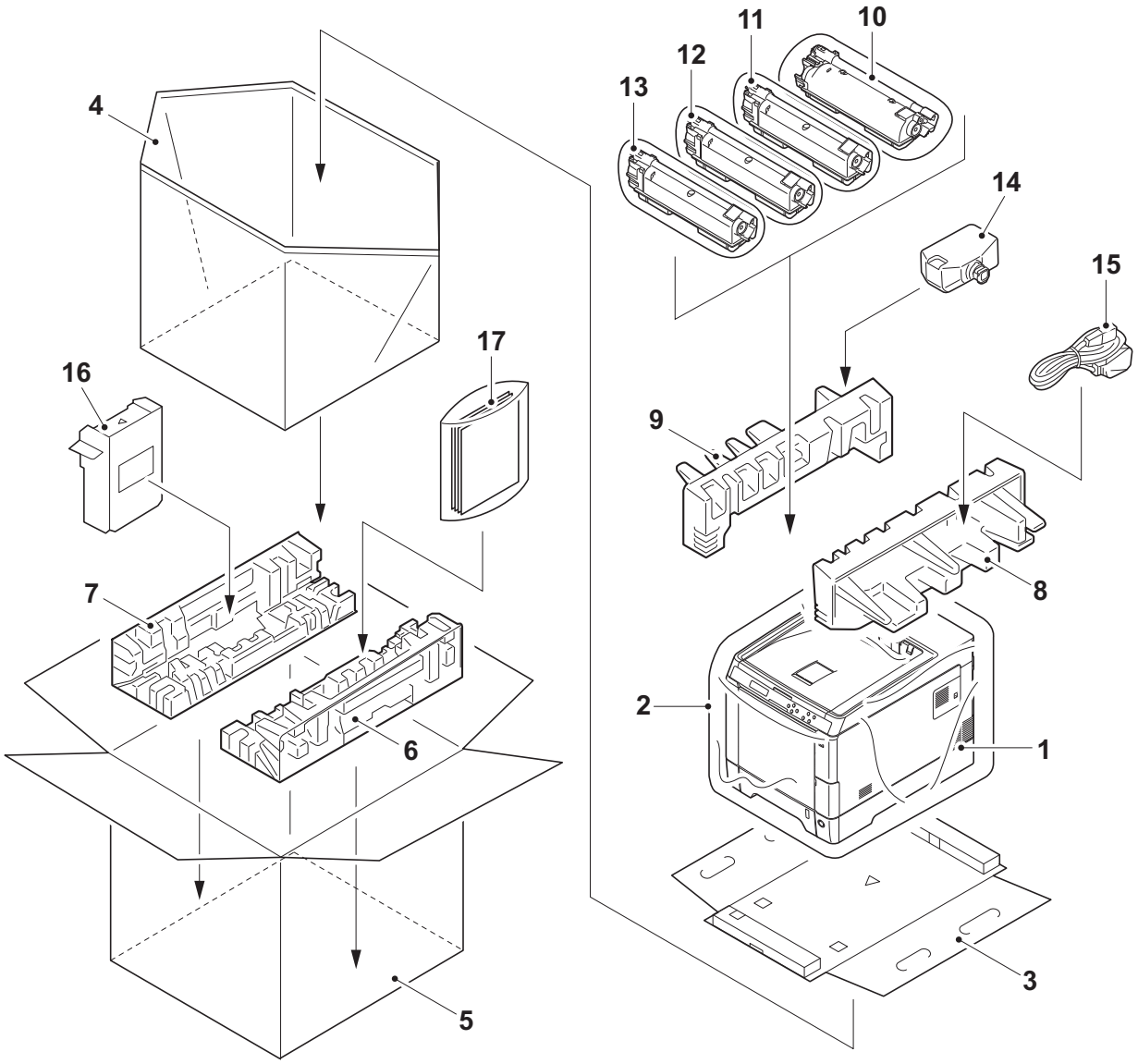

Figure 1-2-3

1. Machine
2. Plastic bag
3. Bottom spacer
4. Machine cover
5. Outer case
6. Bottom right pad
7. Bottom left pad
8. Top right pad
9. Top left pad
10. Toner container K
11. Toner container M
12. Toner container C
13. Toner container Y
14. Waste toner box
15. Power cord
16. Left spacer
17. Operation guide etc.

Place the machine on a level surface.

Removing the tapes and pads

1. Remove four tapes.

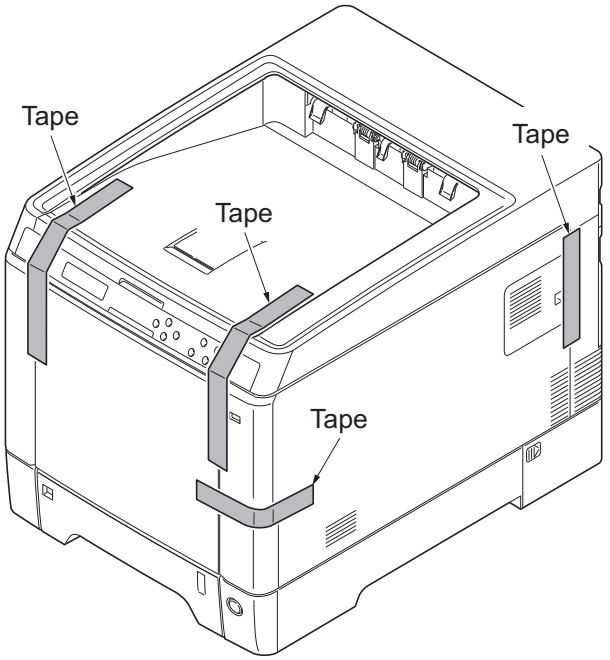

Figure 1-2-4

2. Remove the tape.

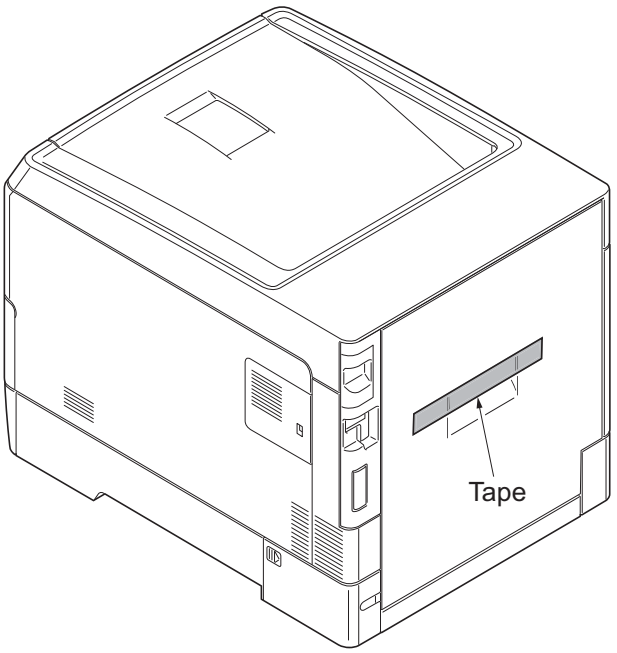

Figure 1-2-5

3. Open the top cover.
4. Remove pads A and B.

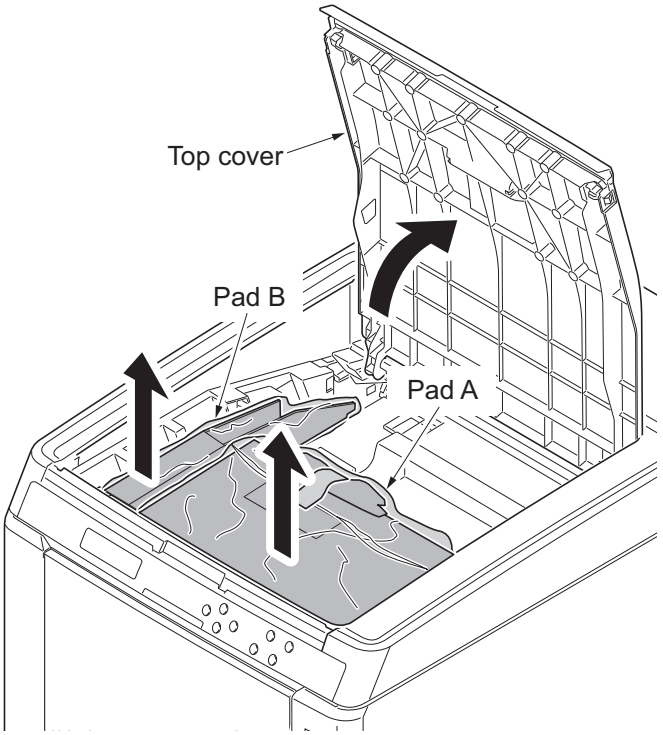

Figure 1-2-6

Installing the toner containers

1. Slide the release lever backward.

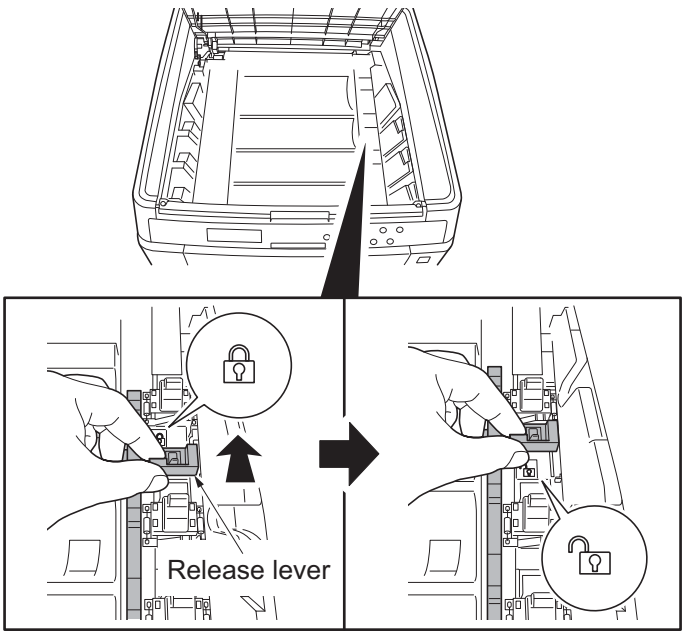

Figure 1-2-7

2. Facing the toner feed slot up and shake the toner container 5 to 6 times.

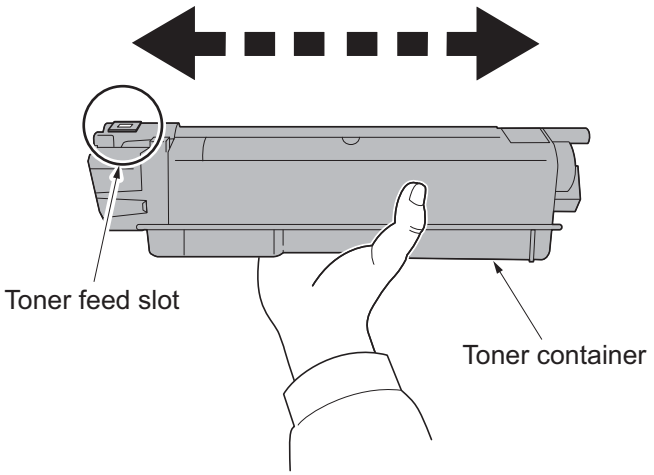

Figure 1-2-8

3. Install toner containers (K, M, C, Y).
4. Close the top cover.

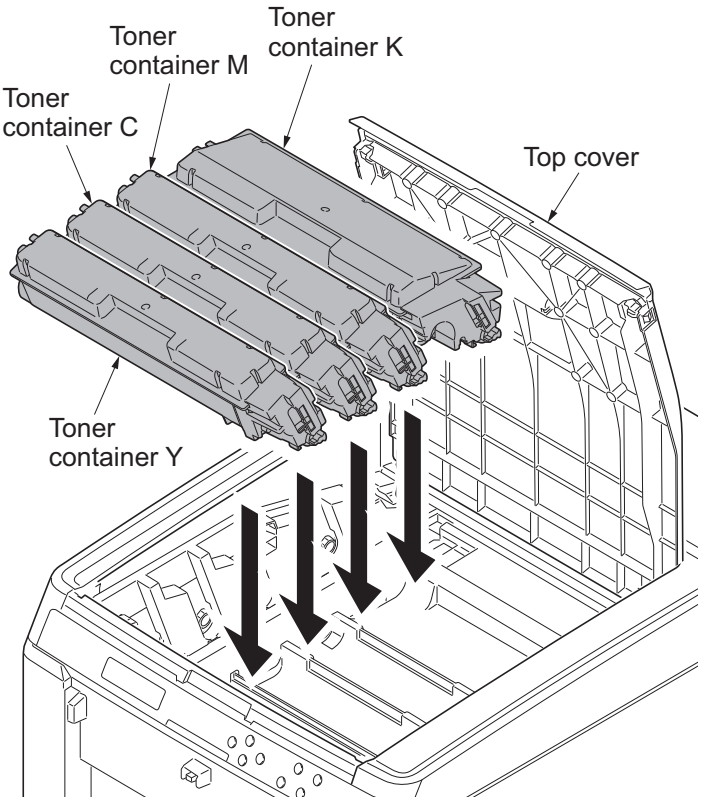

Figure 1-2-9

Installing the waste toner box

1. Open the waste toner cover.
2. Open the cap of the waste toner box.
3. Install the waste toner box.
4. Close the waste toner cover.

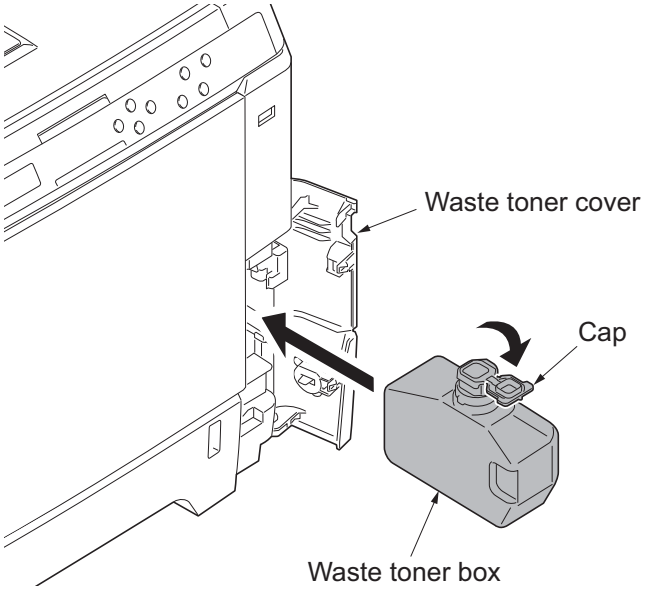

Figure 1-2-10

Loading paper

1. Pull the cassette out.
2. While pressing the width lever, adjust the paper width guides to fit the paper size.
3. While pressing the length lever, adjust the paper length guide to fit the paper size.

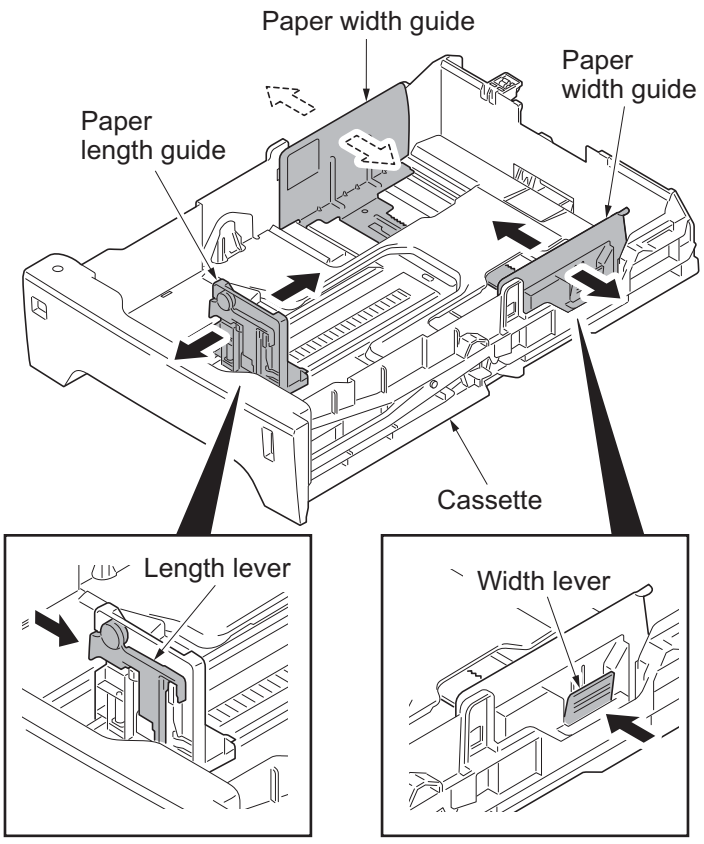

Figure 1-2-11

4. Load the paper in the cassette.
5. Turn the paper size dial so that it shows the paper size you are going to use.
6. Insert the cassette.

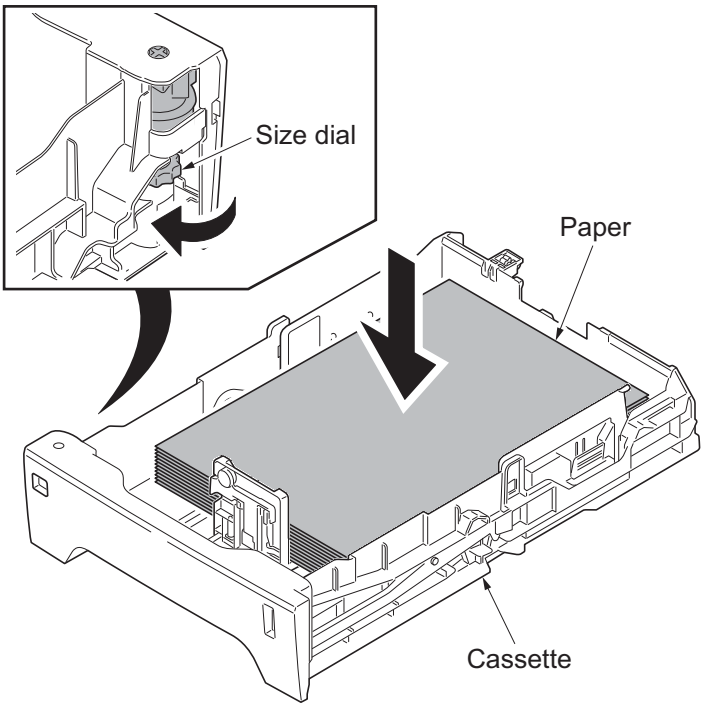

Figure 1-2-12

Connecting the interface cable

1. Connect the interface cable to the machine and PC or network.

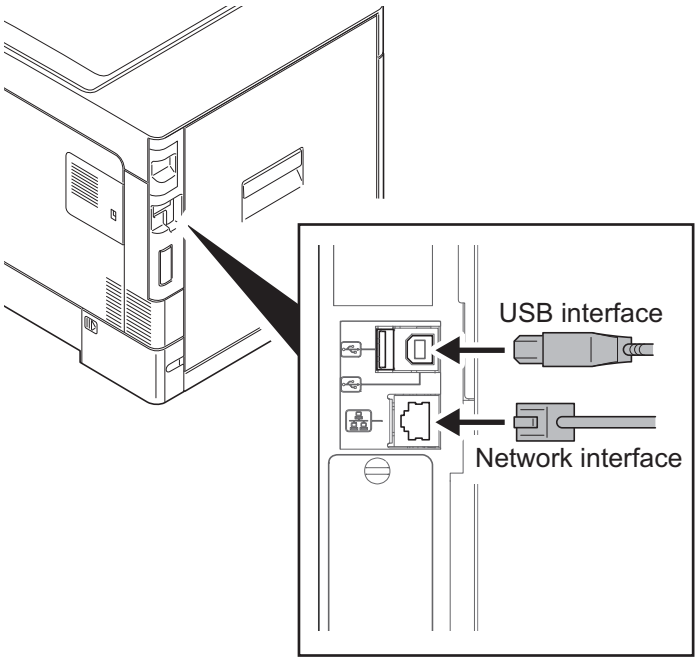

Figure 1-2-13

Connecting the power cord

1. Remove the power cord cover.
2. Connect the power cord to the machine and the wall outlet.
3. Refit the power cord cover.
4. Press the main power switch to turn power on.
5. Installing the printer driver (refer to operation guide).

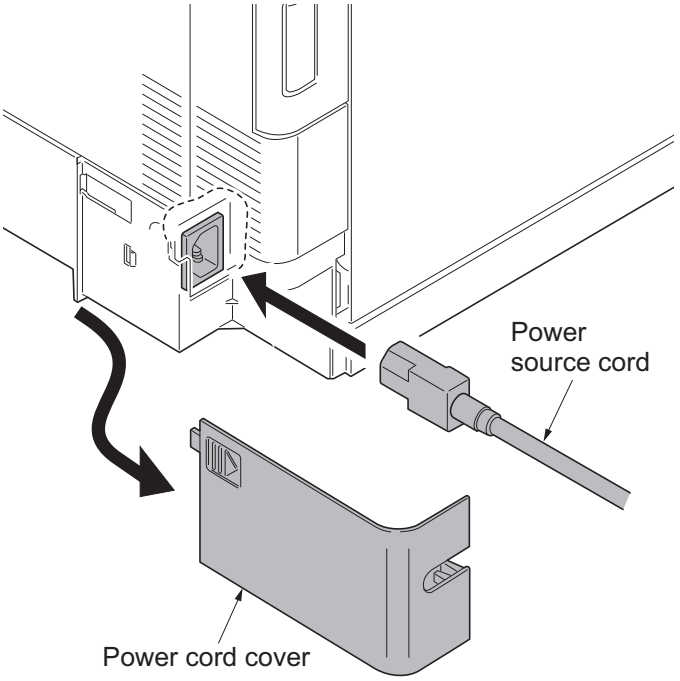

Figure 1-2-14

Completion of the machine installation

1-2-3 Installing the expansion memory (option)

Procedure

1. Turn off the main power switch.
   Caution: Do not insert or remove expansion memory while machine power is on.
   Doing so may cause damage to the machine and the expansion memory.
2. Remove the memory cover.

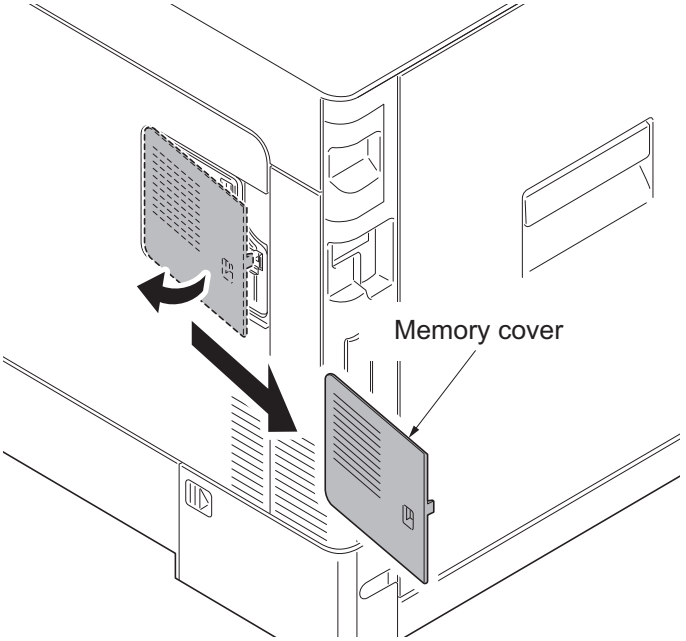

Figure 1-2-15

3. Release the hook and then open the bracket.

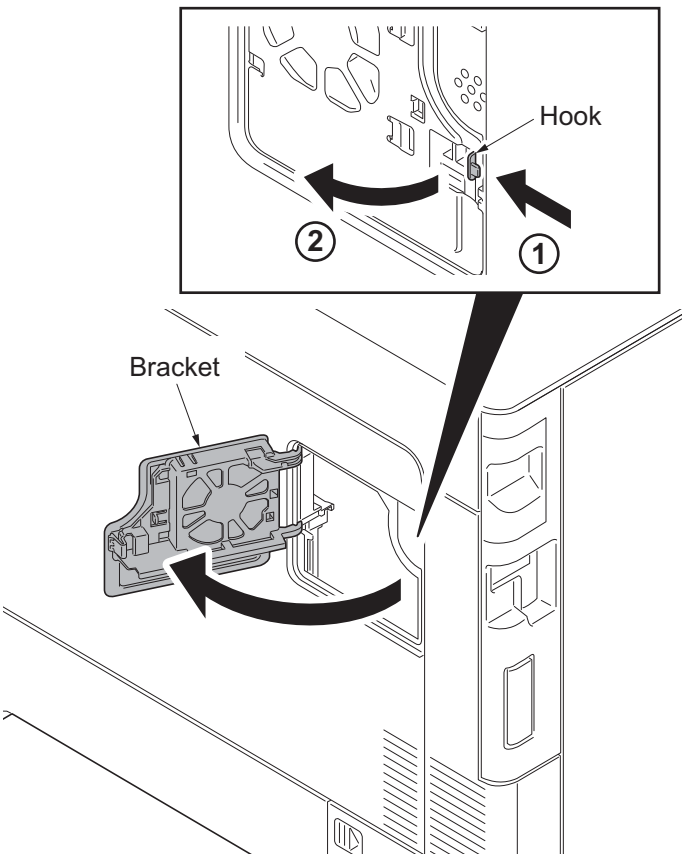

Figure 1-2-16

4. Insert the expansion memory into the memory socket so that the notches on the memory align with the corresponding protrusions in the slot.
5. Close the bracket.
6. Refit the memory cover.
7. Print a status page to check the memory expansion (see page 1-3-2).
   If memory expansion has been properly performed, information on the installed memory is printed with the total memory capacity has been increased. Standard memory capacity 512 MB.

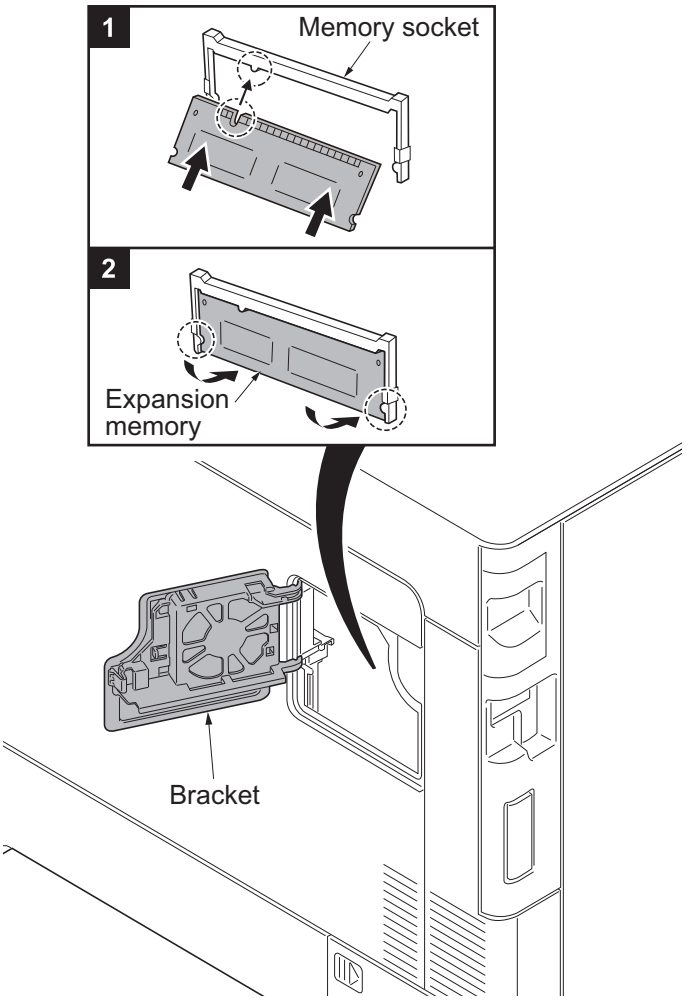

Figure 1-2-17

1-2-4 Installing the SSD (option for 26/28 ppm model only)

Procedure

1. Turn off the main power switch.
   Caution: Do not insert or remove SSD while machine power is on.
   Doing so may cause damage to the machine and the SSD.
2. Remove the IF cover.
3. Remove two pins and then remove the slot cover.

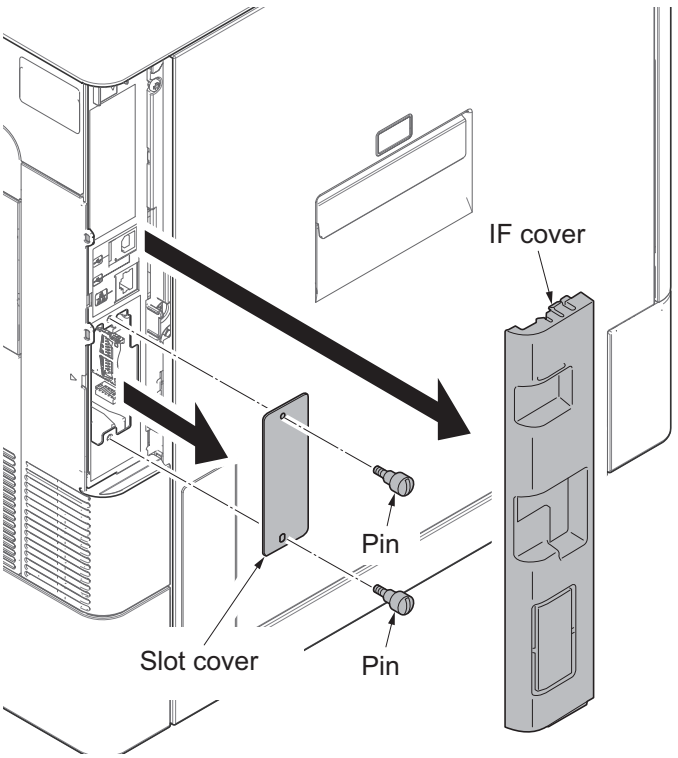

Figure 1-2-18

4. Insert the SSD into the interface slot.
5. Secure the SSD by using two pins.

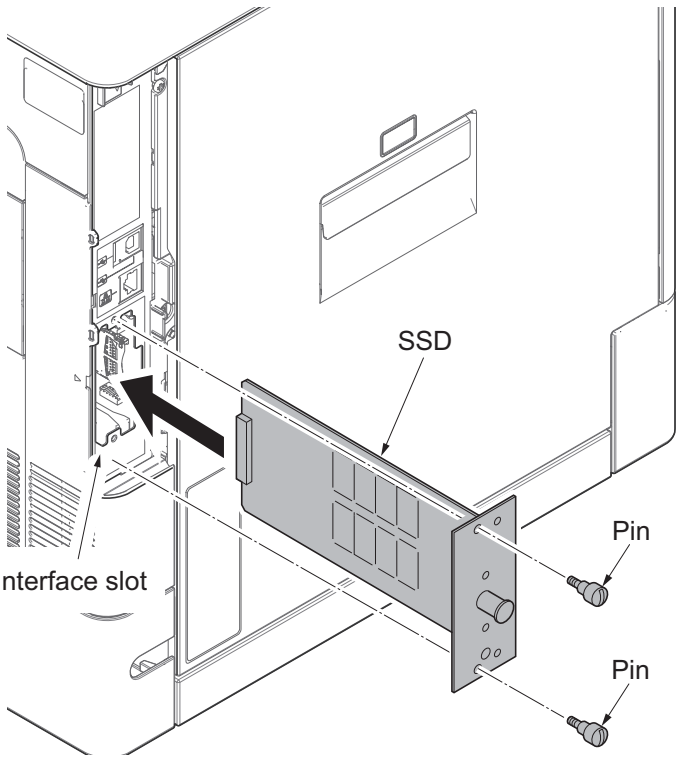

Figure 1-2-19

1-2-5 Installing the network interface card (option)

Procedure

1. Turn off the main power switch.
2. Remove the IF cover.
3. Remove two pins and then remove the slot cover.

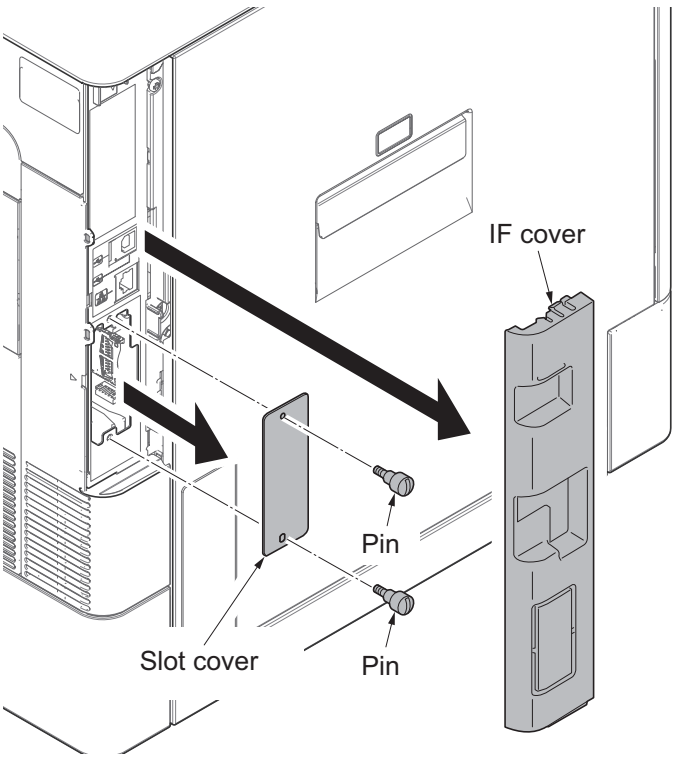

Figure 1-2-20

4. Insert the network interface card into the interface slot.
5. Secure the network interface card by using two pins.

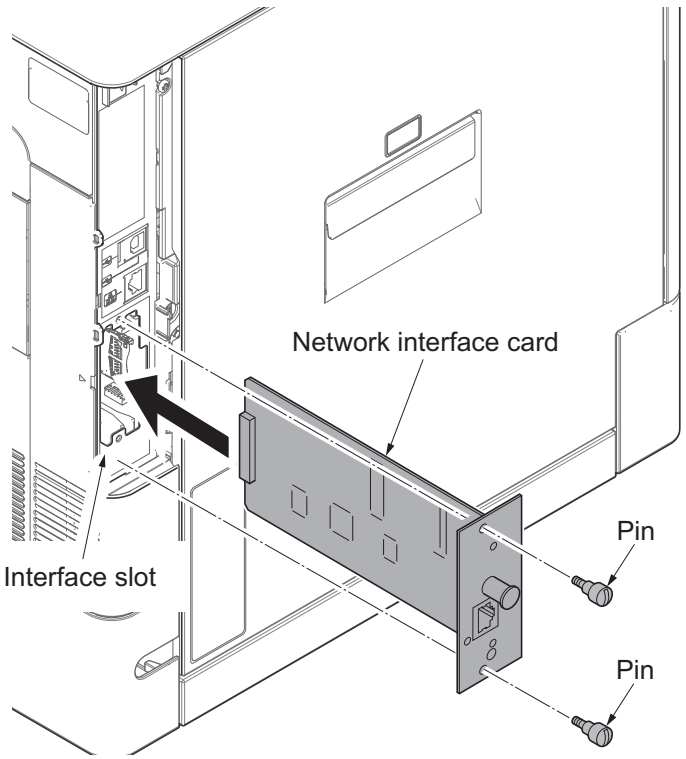

Figure 1-2-21

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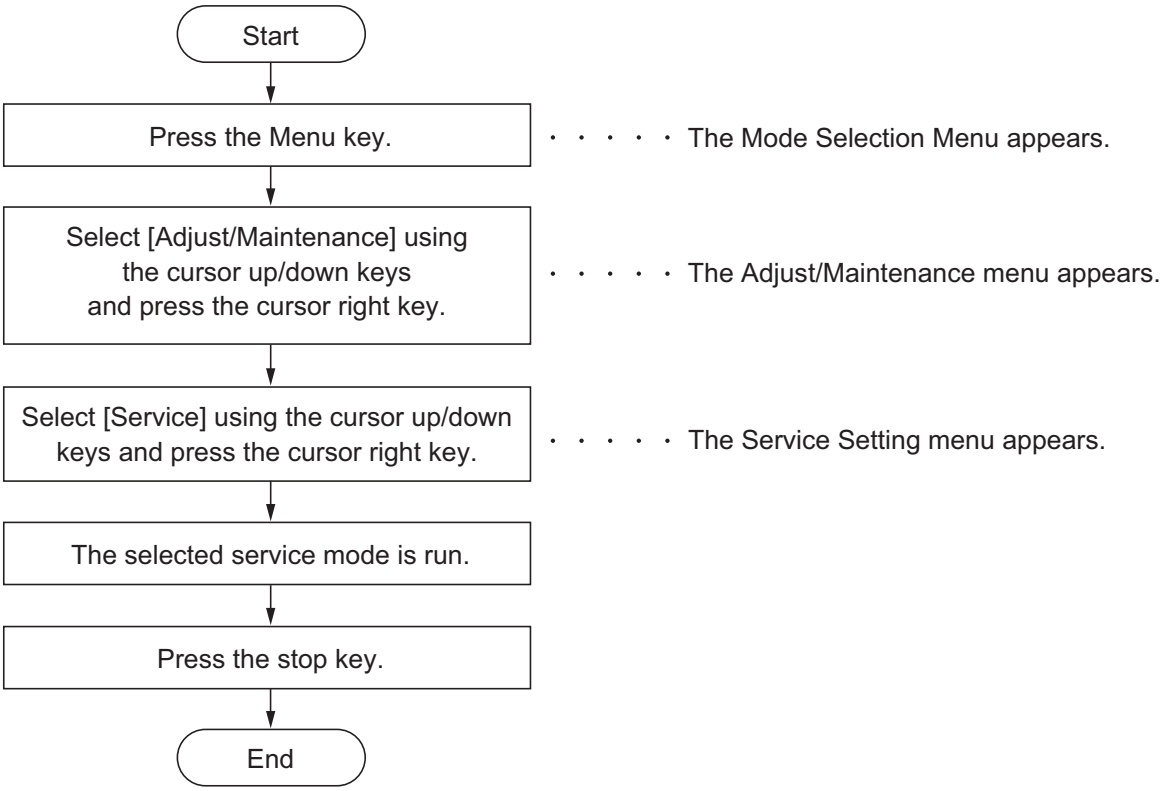
1-3-1 Service mode

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

(1) Executing a service mode



(2) Description of service mode

Service items	Description
Service Status	**Printing a status page for service purpose** **Description** Prints a status page for service purpose. The status page includes various settings and service cumulative. **Purpose** To acquire the current printing environmental parameters and cumulative information. **Method** 1. Enter the Service Setting menu. 2. Select [Print Status Page] using the cursor up/down keys. 3. Press the OK key. 4. Press the OK key. Two pages will be printed.

Service items	Description

Service status page (1)

Service Status Page

Printer

(2) 2013/0607 15:15

(1) Firmware version 2PT_2000.000.000 2013.06.07 **(3)** [XXXXXXXX] **(4)** [XXXXXXXX] **(5)** [XXXXXXXX]

Controller Information

Memory status

(7) Standard Size 128.0 KB
(8) Option Slot 128.0 KB
(9) Total Size 2.0 GB

Time

(10) Local Time Zone +01:00 Tokio
(11) Date and Time 28/07/2010 16:39
(12) Time Server 10.183.53.13

Installed Options

(13) Paper feeder2 Installed
(14) Paper feeder3 Installed
(15) Paper feeder4 Not Installed
(16) Memory card Installed
(17) SSD Installed
(18) UG-33 Installed

(19) **Ptint Coverage**
(20) Average(%) / Usage Page(A4/Letter Conversion)
K: 1.10 / 1111111.11
C: 2.20 / 2222222.22
M: 3.30 / 3333333.33
Y: 4.40 / 4444444.44
Period (07/11/2005 - 07/12/2005 08:05)
(21) Last Page K/C/M/Y(%) 1.00 / 2.22 / 3.33 / 4.44

PDF mode Y5 00

(22) **FRPO Status**
User Top Margin A1+A2/100 0.00
User Left Margin A3+A4/100 0.00

1

(6) [XXXXXXXXXXXXXXXX]

Figure 1-3-1

Service items	Description

Service status page (2)

Service Status Page

Printer 2013/06/07 15:15

Firmware version 2PT_2000.000.000 2013.06.07 [XXXXXXXX] [XXXXXXXX] [XXXXXXXX]

Engine Information

(23) NVRAM Version _1F31225_1F31225
(24) MAC Address 00:C0:EE:D0:01:0D

Send Information

(25) Date and Time 10/07/28 16:39
(26) Address

1/2 **(27) (28)**
(29) 100/100
(30) 0/0/0/0/0/0/
(31) 0/0/0/0/0/0/
(32) 0/0/0/0
(33) 0000000/0000000/0000000/0000000/0000000/0000000/0000000/
0000000/0000000/0000000/0000000/0000000/0000000/0000000/0000000/0000000/
F00/U00/0/0/0/0/0/30/35/70/65/abcde/1/0/1/ **(34)(35)(36)(37)(38)(39)(40)(41)(42)(43)(44)(45)(46)(47)(48)**
(49) 0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
(50) 0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
(51) 12345678/11223344/00001234abcd567800001234abcd5678/01234567890123456789012345678901/0008/00/07
12345678/11223344/00001234abcd567800001234abcd5678/01234567890123456789012345678901/0008/00/07
12345678/11223344/00001234abcd567800001234abcd5678/01234567890123456789012345678901/0008/00/07
12345678/11223344/00001234abcd567800001234abcd5678/01234567890123456789012345678901/0008/00/07
(52) 2PT_D100.001.005
(53) 000000000000000/000000000000000/000000000000000/000000000000000/000000000000000/000000000000000/
000000000000000/000000000000000/000000000000000/000000000000000/000000000000000/000000000000000/
000000000000000/000000000000000/000000000000000/000000000000000/000000000000000/000000000000000/
000000000000000/000000000000000/000000000000000/000000000000000/000000000000000/000000000000000/
000000000000000/000000000000000/000000000000000/000000000000000/000000000000000/000000000000000/
000000000000000/000000000000000/000000000000000/000000000000000/000000000000000/000000000000000/
000000000000000/000000000000000/000000000000000/000000000000000/000000000000000/000000000000000/
(54) [ ] [ ] [ ]
[2PT_81BR.001.010] [ABCDEFGHIJ] [ABCDEFGHIJ] **(55) (56) (57)**
(58) 0/
0/12. 3/56. 7/ **(59) (60) (61)**
1/5 **(62) (63)**
(64) 1/
0/15:47 **(65) (66)**
(67) 1/
(68) ABCDEFGHIJ/ABCDEFGHIJ/ABCDEFGHIJ/ABCDEFGHIJ/

2 [XXXXXXXXXXXXXXXX]

Figure 1-3-2

Service items	Description

Detail of service status page

No.	Description	Supplement
(1)	Firmware version	-
(2)	System date	-
(3)	Engine soft version	-
(4)	Engine boot version	-
(5)	Operation panel mask version	-
(6)	Machine serial number	-
(7)	Standard memory size	-
(8)	Optional memory size	-
(9)	Total memory size	-
(10)	Local time zone	-
(11)	Report output date	Day/Month/Year hour:minute
(12)	NTP server name	-
(13)	Presence or absence of the optional paper feeder 1	Installed/Not Installed
(14)	Presence or absence of the optional paper feeder 2	Installed/Not Installed
(15)	Presence or absence of the optional paper feeder 3	Installed/Not Installed
(16)	Presence or absence of the optional memory card	Installed/Not Installed
(17)	Presence or absence of the optional SSD	Installed/Not Installed
(18)	Presence or absence of the optional UG-33	Installed/Not Installed
(19)	Page of relation to the A4/Letter	* :Print Coverage provides a close-matching reference of toner consumption and will not match with the actual toner consumption.
(20)	Average coverage for printer	Black/Cyan/Magenta/Yellow
(21)	Coverage on the final output page	-
(22)	FRPO setting	-

Service items	Description

No.	Description	Supplement
(23)	NV RAM version	_ 1F3 1225 _ 1F3 1225 (a) (b) (c) (d) (e) (f) (a) Consistency of the present software version and the database _ (underscore): OK * (Asterisk): NG (b) Database version (c) The oldest time stamp of database version (d) Consistency of the present software version and the ME firmware version _ (underscore): OK * (Asterisk): NG (e) ME firmware version (f) The oldest time stamp of the ME database version Normal if (a) and (d) are underscored, and (b) and (e) are identical with (c) and (f).
(24)	Mac address	-
(25)	The last sent date and time	-
(26)	Transmission address	-
(27)	Destination information	-
(28)	Area information	-
(29)	Margin settings	Top margin/Left margin
(30)	Top offset for each paper source	MP tray/Paper feeder 1/Paper feeder 2/ Paper feeder 3/Duplex/Page rotation
(31)	Left offset for each paper source	MP tray/Paper feeder 1/Paper feeder 2/ Paper feeder 3/Duplex/Page rotation
(32)	Margin/Page length/Page width settings	Top margin integer part/Top margin decimal part/ Left margin integer part/Left margin decimal part
(33)	Life counter (The first line)	Machine life/MP tray/Cassette/Paper feeder 1/ Paper feeder 2/Paper feeder 3/Duplex
	Life counter (The second line)	Drum unit K/Drum unit C/Drum unit M/Drum unit Y/ Intermediate transfer unit/Developing unit K/ Developing unit C/Developing unit M/ Developing unit Y/Maintenance kit
(34)	Panel lock information	F00: OFF F01 to F03: Partial lock F04: Full lock
(35)	USB information	U00: Not installed/U01: Full speed/U02: Hi speed
(36)	Paper handling information	0: Paper source unit select/1: Paper source unit
(37)	Auto cassette change mode	0: Prohibition of the Auto cassette change 1: Permission of the Auto cassette change

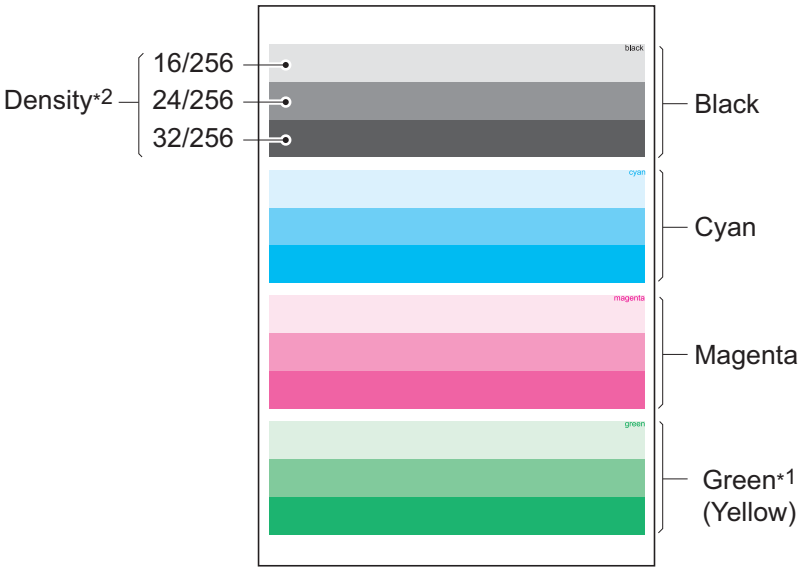
Service items	Description

No.	Description	Supplement
(38)	Color printing double count mode	0: All single counts 3: Folio, Single count, Less than 330 mm (length)
(39)	Black and white printing double count mode	0: All single counts 3: Folio, Single count, Less than 330 mm (length)
(40)	Billing counting timing	-
(41)	Temperature (machine inside)	-
(42)	Temperature (machine outside)	-
(43)	Relative temperature (machine outside)	-
(44)	Absolute temperature (machine outside)	-
(45)	Fixed assets number	-
(46)	Job end judgment time-out time	-
(47)	Job end detection mode	-
(48)	Reset the prescribe environmental	0: OFF 1: ON
(49)	Media type attributes 1 to 28 (Not used: 18, 19, 20) * : For details on settings, refer to MDAT command in “Prescribe Commands Reference Manual.	Weight settings 0: Light 1: Normal 1 2: Normal 2 3: Normal 3 4: Heavy 1 5: Heavy 2 6: Heavy 3 7: Extra Heavy Fuser settings 0: High 1: Middle 2: Low 3: Vellum Duplex settings 0: Disable 1: Enable
(50)	Calibration information	Black/Cyan/Magenta/Yellow
(51)	RFID information	-
(52)	RFID reader/writer version information	-
(53)	Engine parameter information	-
(54)	Soft version of the optional paper feeder	Paper feeder 1/Paper feeder 2/Paper feeder 3
(55)	Version of the optional message	-
(56)	Color table version	-
(57)	2th color table version	-
(58)	Altitude	0: Standard 1: High altitude 1 2: High altitude 2

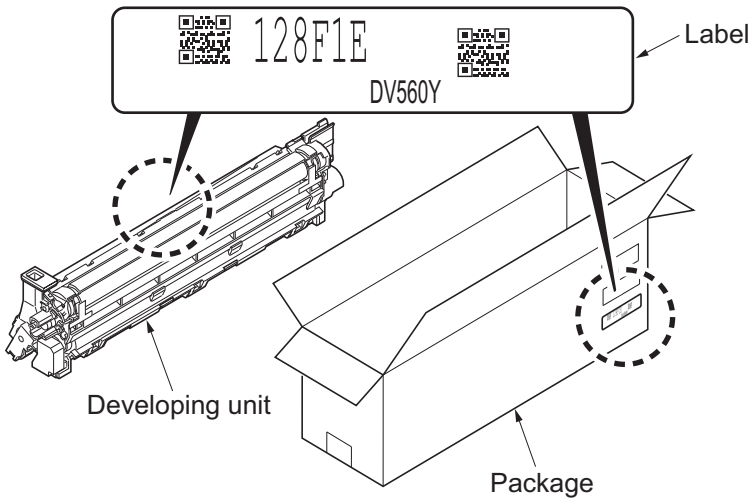
<table>
<tr><th>Service items</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>No.</th><th>Description</th><th>Supplement</th></tr>
<tr><td>(59)</td><td>The counter according to toner coverage</td><td>0: Full color counter
1: Color coverage counter</td></tr>
<tr><td>(60)</td><td>Low coverage setting</td><td>0.1 to 100.0
* : For details, refer to a 2-4 appendix (4) maintenance commands. (page 2-4-9)</td></tr>
<tr><td>(61)</td><td>Middle coverage setting</td><td>0.1 to 100.0</td></tr>
<tr><td>(62)</td><td>Toner low setting</td><td>0: Invalidity
1: Effective</td></tr>
<tr><td>(63)</td><td>Toner low detection level</td><td>0 to 100(%)</td></tr>
<tr><td>(64)</td><td>Full page printing Mode</td><td>0: Normal Mode
1: Full Page Mode</td></tr>
<tr><td>(65)</td><td>Wake Up Mode</td><td>0: OFF, 1: ON</td></tr>
<tr><td>(66)</td><td>Wake Up timer</td><td>Wake Up Time</td></tr>
<tr><td>(67)</td><td>BAM conformity Mode setting</td><td>0: Un-suiting Mode
1: Conformity Mode</td></tr>
<tr><td>(68)</td><td>Drum serial number</td><td>Black/Cyan/Magenta/Yellow</td></tr>
<tr><td></td><td colspan="2">Code conversion
<table>
<tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td></tr>
<tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr>
</table>
</td></tr>
</table>
</td></tr>
<tr><td>Network Status</td><td>Printing a status page for network

Description
Prints a status page for network.
Purpose
To acquire the detailed network setting information.

Method
1. Enter the Service Setting menu.
2. Select [Print Network Status Page] using the cursor up/down keys.
3. Press the OK key.
4. Press the OK key. Network status page will be printed.</td></tr>
</table>

Service items	Description
Test Page	**Printing a test page** **Description** Four colors are printed respectively with halftones of three different levels. **Purpose** To check the activation of the developer and drum units of four colors. **Method** 1. Enter the Service Setting menu. 2. Select [Print Test Page] using the cursor up/down keys. 3. Press the OK key. 4. Press the OK key. Test page will be printed.  *1: Since focusing in yellow is hardly readable, yellow is mixed with cyan for more readability, resulting in green. *2: Each portion of colors has three different magnitude of halftones (bands). If focus is excessively lost, dots are not recognizable with the 16/256 band, resulting in uneven density. It also results in vertical streaks in the 24/256 and/or 32/256 bands. **Figure 1-3-3**

Service items	Description
Maintenance	**Counter reset for the maintenance kit (26/28 ppm model only)** **Description** The "Install MK" message means that maintenance kit should be replaced at 200,000 pages of printing. The interval counter must be manually reset using this service item. Maintenance kit MK-592 (for 120 V specifications) Maintenance kit MK-590 (for 230 V specifications) Maintenance kit includes the following units: Drum unit x 4 Developing unit (K, M, C, Y) Intermediate transfer unit Fuser unit Paper feed roller unit Retard roller unit MP paper feed roller **Purpose** To reset the life counter for maintenance kit. **Procedure for replacing the maintenance kit** Drum unit (see page 1-5-20) Developing unit (see page 1-5-18) Intermediate transfer unit (see page 1-5-21) Fuser unit (see page 1-5-25) Paper feed roller unit (see page 1-5-14) Retard roller unit (see page 1-5-12) MP paper feed roller (see page 1-5-16) **Method** 1. Enter the Service Setting menu. 2. Select [Maintenance] using the cursor up/down keys. 3. Press the OK key. 4. Press the OK key. The counter for each component is reset immediately. **Note:** Occurrences of resetting the maintenance kits are recorded on the service status page or event log in number of pages at which the maintenance kit was replaced (see page 1-3-2, 1-3-15). This may be used to determine the possibility that the counter was erroneously or unintentionally reset.

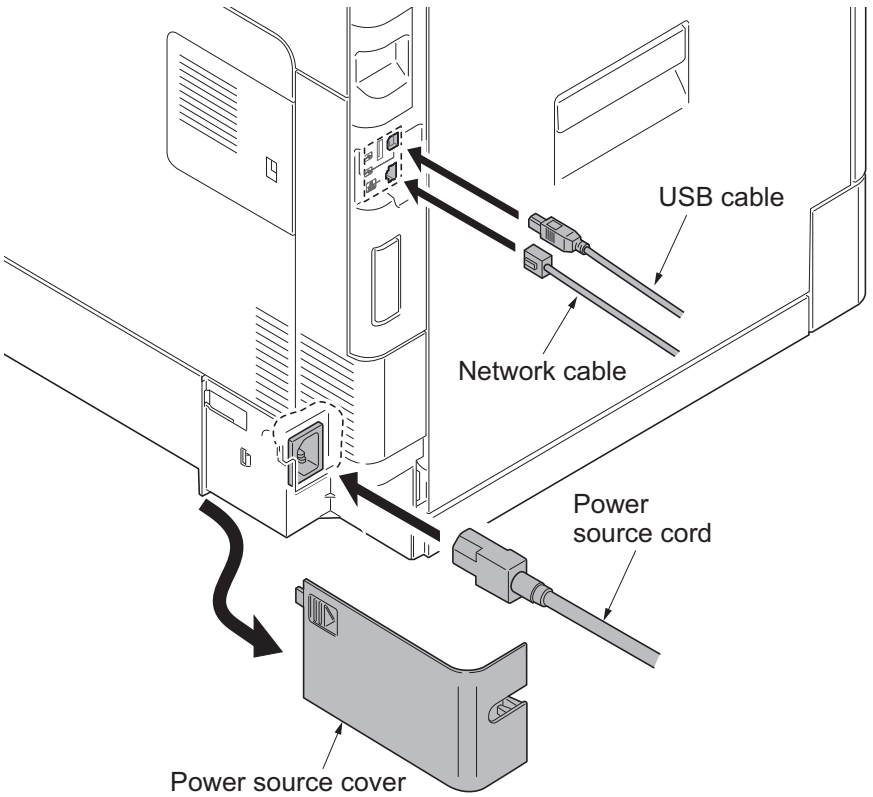
Service items	Description
Developer Setting	**Entering initial value for replacing the developing unit** **Description** After replacing the developing unit, enter the initial value (6-digit data) assigned on a label attached to the package or developing unit. **Purpose** To set the initial value after replacing the developing unit. **Method** 1. Enter the Service Setting menu. 2. Select [DEV-SET] using the cursor up/down keys. 3. Press the OK key. Enter the initial value (6-digit data) using the cursor keys. 4. Press the OK key. The initial value is set.  **Figure 1-3-4**

Service items	Description
Developer Refresh	**Performing developer refresh** **Description** The laser output of the image data for developer refreshing is carried out, and operation to exposure, developing, and primary transfer is performed by 10 pages (paper is not fed). **Purpose** To perform cleaning when faulty images occur and a line appears longitudinally. **Method** 1. Enter the Service Setting menu. 2. Select [DEV-CLN] using the cursor up/down keys. 3. Press the OK key. 4. Press the OK key. Developer refresh is performed.  **Figure 1-3-5**

Service items	Description
LSU Cleaning	**Performing LSU cleaning** **Description** The LSU cleaning motor drives the cleaning pad which in turn wipes clean the LSU dust shield glass. **Purpose** To perform cleaning when the printed image is bad and stripes are seen in the vertical direction. **Method** 1. Enter the Service Setting menu. 2. Select [LSU] using the cursor up/down keys. 3. Press the OK key. 4. Press the OK key. LSU cleaning is performed.
Drum surface refreshing	**Performing drum surface refreshing** **Description** Rotates the drum approximately 2 minutes with toner lightly on the overall drum. The cleaning blade in the drum unit scrapes toner off the drum surface to clean it. **Purpose** To clean the drum surface when image failure occurs due to the drum. This mode is effective when dew condensation on the drum occurs. **Method** 1. Enter the Service Setting menu. 2. Select [Drum] using the cursor up/down keys. 3. Press the OK key. 4. Press the OK key. Drum surface refreshing is performed.

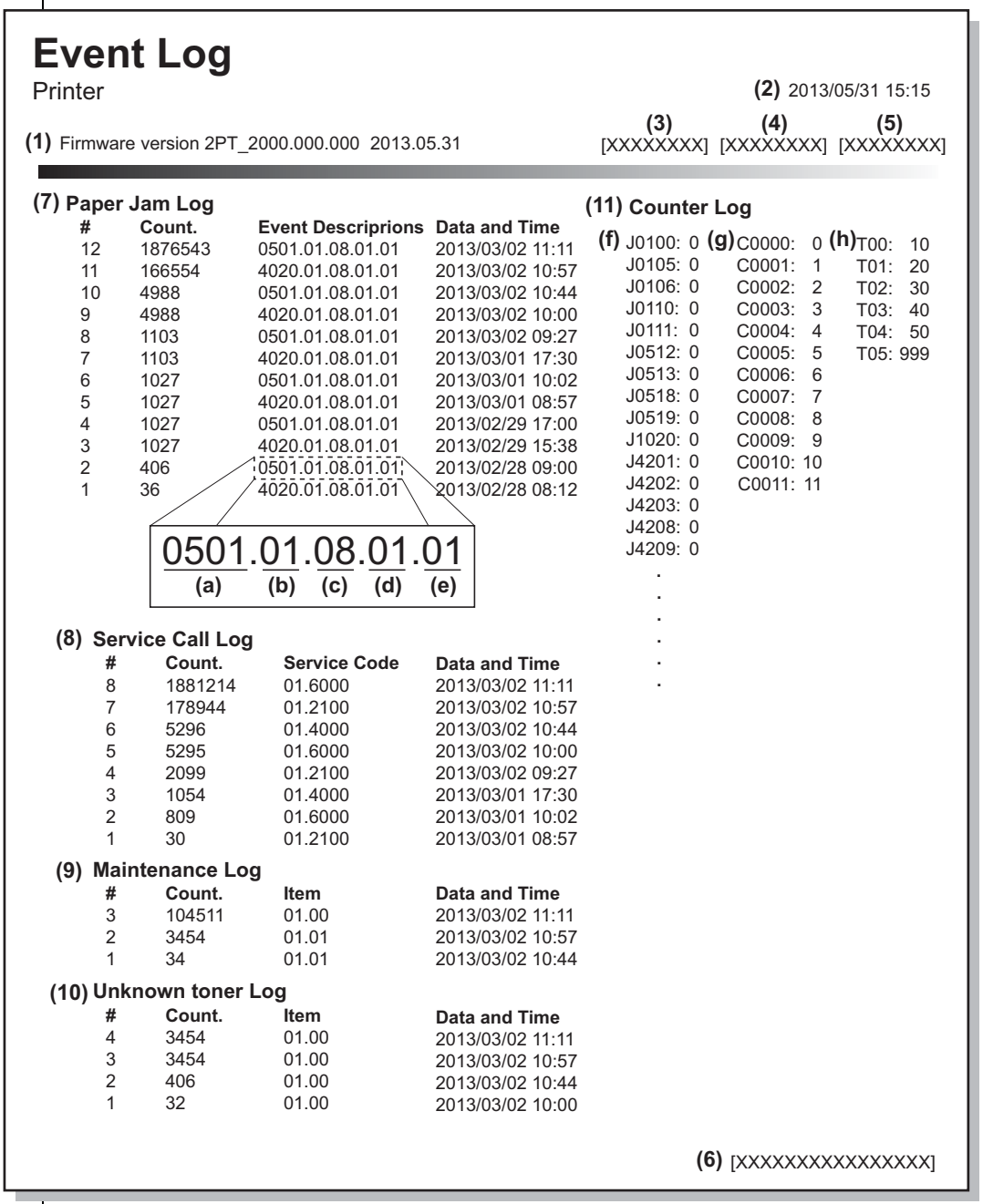
Service items	Description
Altitude adjustment	**Setting altitude adjustment** **Description** Sets the altitude adjustment mode. **Purpose** Used when print quality deteriorates in an installation at the altitude of 1,500 meters or higher. **Method** 1. Enter the Service Setting menu. 2. Select [Altitude Adj.] using the cursor up/down keys. 3. Press the start key. 4. Select [Normal], [High 1] or [High 2)] using the cursor up/down keys. 5. Press the start key. The setting is set.
Main charger adjustment	**Setting main charger output** **Description** Sets the main charger output. This is excutable only when the altitude adjustment mode is set to [Normal]. **Purpose** Execute when the image density declines or an offset has occurred. **Method** 1. Enter the Service Setting menu. 2. Select [MC] using the cursor up/down keys. 3. Press the start key. 4. Select [1] to [5] using the cursor up/down keys. 5. Press the start key. The setting is set.

(3) Printing an event log

Service items	Description
Printing an event log	**Printing an event log (EVENT LOG)** **Description** Prints a history list of occurrences of paper jam, self-diagnostics, toner replacements, etc. **Purpose** To allow machine malfunction analysis based on the frequency of paper misfeeds, self diagnostic errors and replacements. **Method** 1. Connect the USB or network cable between machine and PC (network). 2. Remove the pawer source cover and connect the power cord.  **Figure 1-3-6** 3. Refit the power source cover. 4. Turn the main power switch on. Make sure the machine is ready. 5. Send the following PRESCRIBE command sequence from the PC to the machine. !R!KCFG"ELOG";EXIT; 6. A sheet of event log will be printed.

Service items	Description

Event log



Event Log

Printer

(2) 2013/05/31 15:15

(1) Firmware version 2PT_2000.000.000 2013.05.31

(3) [XXXXXXXX] (4) [XXXXXXXX] (5) [XXXXXXXX]

(7) Paper Jam Log

#	Count.	Event Descriprions	Data and Time
12	1876543	0501.01.08.01.01	2013/03/02 11:11
11	166554	4020.01.08.01.01	2013/03/02 10:57
10	4988	0501.01.08.01.01	2013/03/02 10:44
9	4988	4020.01.08.01.01	2013/03/02 10:00
8	1103	0501.01.08.01.01	2013/03/02 09:27
7	1103	4020.01.08.01.01	2013/03/01 17:30
6	1027	0501.01.08.01.01	2013/03/01 10:02
5	1027	4020.01.08.01.01	2013/03/01 08:57
4	1027	0501.01.08.01.01	2013/02/29 17:00
3	1027	4020.01.08.01.01	2013/02/29 15:38
2	406	0501.01.08.01.01	2013/02/28 09:00
1	36	4020.01.08.01.01	2013/02/28 08:12

0501.01.08.01.01
(a) (b) (c) (d) (e)

(11) Counter Log

(f) J0100: 0, J0105: 0, J0106: 0, J0110: 0, J0111: 0, J0512: 0, J0513: 0, J0518: 0, J0519: 0, J1020: 0, J4201: 0, J4202: 0, J4203: 0, J4208: 0, J4209: 0

(g) C0000: 0, C0001: 1, C0002: 2, C0003: 3, C0004: 4, C0005: 5, C0006: 6, C0007: 7, C0008: 8, C0009: 9, C0010: 10, C0011: 11

(h) T00: 10, T01: 20, T02: 30, T03: 40, T04: 50, T05: 999

(8) Service Call Log

#	Count.	Service Code	Data and Time
8	1881214	01.6000	2013/03/02 11:11
7	178944	01.2100	2013/03/02 10:57
6	5296	01.4000	2013/03/02 10:44
5	5295	01.6000	2013/03/02 10:00
4	2099	01.2100	2013/03/02 09:27
3	1054	01.4000	2013/03/01 17:30
2	809	01.6000	2013/03/01 10:02
1	30	01.2100	2013/03/01 08:57

(9) Maintenance Log

#	Count.	Item	Data and Time
3	104511	01.00	2013/03/02 11:11
2	3454	01.01	2013/03/02 10:57
1	34	01.01	2013/03/02 10:44

(10) Unknown toner Log

#	Count.	Item	Data and Time
4	3454	01.00	2013/03/02 11:11
3	3454	01.00	2013/03/02 10:57
2	406	01.00	2013/03/02 10:44
1	32	01.00	2013/03/02 10:00

(6) [XXXXXXXXXXXXXXXX]

Figure 1-3-7

Detail of event log

No.	Description
(1)	System version
(2)	System date
(3)	Engine soft version
(4)	Engine boot version

Service items	Description

No.	Items	Description		
	Operation panel mask version			
	Machine serial number			
(7)	Paper Jam Log	#	Count.	Event
		Remembers 1 to 16 of occurrence. If the occurrence of the previous paper jam is less than 16, all of the paper jams are logged. When the occurrence excesseds 16, the oldest occurrence is removed.	The total page count at the time of the paper jam.	Log code (hexadecimal, 5 categories) (a) Cause of a paper jam (b) Paper source (c) Paper size (d) Paper type (e) Paper eject
		(a) Cause of paper jam (Hexadecimal)		
		Refer to P.1-4-2 for paper jem location 0100: Controller sequence error 0105: Registration sensor not detected 0106: Controller sequence error 0110: Top tray open 0111: Rear cover open 0112: Front cover open 0120: Controller sequence error 0121: Controller sequence error 0211: Rear cover open (paper feeder 1) 0212: Rear cover open (paper feeder 2) 0213: Rear cover open (paper feeder 3) 0501: No paper feed from cassette 1 0502: No paper feed from cassette 2 0503: No paper feed from cassette 3 0504: No paper feed from cassette 4 0508: No paper feed from duplex section 0509: No paper feed from MP tray 0511: Multiple sheets in cassette 1 0512: Multiple sheets in cassette 2 0513: Multiple sheets in cassette 3 0514: Multiple sheets in cassette 4 0518: Multiple sheets in duplex section 0519: Multiple sheets in MP tray 1020: MP feed sensor is turned ON 1403: PF feed sensor 1 does not turn ON (Paper feeder 2) 1404: PF feed sensor 1 does not turn ON (Paper feeder 3) 1413: PF feed sensor 1 does not turn OFF (Paper feeder 2) 1414: PF feed sensor 1 does not turn OFF (Paper feeder 3) 1420: PF feed sensor 1 is turned ON 1604: PF feed sensor 2 does not turn ON (Paper feeder 3) 1614: PF feed sensor 2 does not turn OFF (Paper feeder 3)		

Service items	Description

No.	Items	Description
(7) cont.	Paper Jam Log	1620: PF feed sensor 2 is turned ON 1820: PF feed sensor 3 is turned ON 4002: Registration sensor does not turn ON (Paper feeder 1) 4003: Registration sensor does not turn ON (Paper feeder 2) 4004: Registration sensor does not turn ON (Paper feeder 3) 4009: Registration sensor does not turn ON (MP tray) 4012: Registration sensor does not turn OFF (Paper feeder 1) 4013: Registration sensor does not turn OFF (Paper feeder 2) 4014: Registration sensor does not turn OFF (Paper feeder 3) 4019: Registration sensor does not turn OFF (MP tray) 4020: Registration sensor is turned ON 4201: Eject sensor does not turn ON (Cassette) 4202: Eject sensor does not turn ON (Paper feeder 1) 4203: Eject sensor does not turn ON (Paper feeder 2) 4204: Eject sensor does not turn ON (Paper feeder 3) 4208: Eject sensor does not turn ON (Duplex) 4209: Eject sensor does not turn ON (MP tray) 4211: Eject sensor does not turn OFF (Cassette) 4212: Eject sensor does not turn OFF (Paper feeder 1) 4213: Eject sensor does not turn OFF (Paper feeder 2) 4214: Eject sensor does not turn OFF (Paper feeder 3) 4218: Eject sensor does not turn OFF (Duplex) 4219: Eject sensor does not turn OFF (MP tray) 4220: Eject sensor is turned ON
		(b) Detail of paper source (Hexadecimal)
		00: MP tray 01: Cassette 1 02: Cassette 2 (paper feeder 1) 03: Cassette 3 (paper feeder 2) 04: Cassette 4 (paper feeder 3) 05 to 09: Reserved
		(c) Detail of paper size (Hexadecimal)

00: (Not specified) 01: Monarch 02: Business 03: International DL 04: International C5 05: Executive 06: Letter-R 86: Letter-E 07: Legal 08: A4R 88: A4E 09: B5R 89: B5E 0A: A3	0B: B4 0C: Ledger 0D: A5R 0E: A6 0F: B6 10: Commercial #9 11: Commercial #6 12: ISO B5 13: Custom size 1E: C4 1F: Postcard 20: Reply-paid post-card 21: Oficio II	22: Special 1 23: Special 2 24: A3 wide 25: Ledger wide 26: Full bleed paper (12 x 8) 27: 8K 28: 16K-R A8: 16K-E 32: Statement-R B2: Statement-E 33: Folio 34: Western type 2 35: Western type 4

<table>
<tr><th>Service items</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>No.</th><th>Items</th><th colspan="3">Description</th></tr>
<tr><td rowspan="4">(7) cont.</td><td rowspan="4">Paper Jam Log</td><td colspan="3">(d) Detail of paper type (Hexadecimal)</td></tr>
<tr><td>01: Plain
02: Transparency
03: Preprinted
04: Labels
05: Bond
06: Recycled
07: Vellum
08: Rough
09: Letterhead</td><td>0A: Color
0B: Prepunched
0C: Envelope
0D: Cardstock
0E: Coated
0F: 2nd side
10: Media 16
11: High quality</td><td>15: Custom 1
16: Custom 2
17: Custom 3
18: Custom 4
19: Custom 5
1A: Custom 6
1B: Custom 7
1C: Custom 8</td></tr>
<tr><td colspan="3">(e) Detail of paper eject location (Hexadecimal)</td></tr>
<tr><td colspan="3">01: Face down (FD)</td></tr>
<tr><td rowspan="2">(8)</td><td rowspan="2">Service Call Log</td><td>#</td><td>Count.</td><td>Service Code</td></tr>
<tr><td>Remembers 1 to 8 of occurrence of self diagnostics error. If the occurrence of the previous diagnostics error is less than 8, all of the diagnostics errors are logged.</td><td>The total page count at the time of the self diagnostics error.</td><td>Self diagnostic error code
(See page 1-4-7)

Example:
01.6000

01: Self diagnostic error
6000: Self diagnostic error code number</td></tr>
<tr><td rowspan="2">(9)</td><td rowspan="2">Maintenance Log</td><td>#</td><td>Count.</td><td>Item</td></tr>
<tr><td>Remembers 1 to 8 of occurrence of replacement. If the occurrence of the previous replacement of toner container is less than 8, all of the occurrences of replacement are logged.</td><td>The total page count at the time of the replacement of the toner container.

* :The toner replacement log is triggered by toner empty.
This record may contain such a reference as the toner container is inserted twice or a used toner container is inserted.</td><td>Code of maintenance replacing item
(1 byte, 2 categories)

First byte (Replacing item)
01: Toner container
Second byte
(Type of replacing item)
00: Black
01: Cyan
02: Magenta
03: Yellow

First byte (Replacing item)
02: Maintenance kit
Second byte
(Type of replacing item)
01: MK-590/592/594
(26/28 ppm model only)</td></tr>
</table>
</td></tr>
</table>

Service items	Description

<table>
<tr><th>No.</th><th>Items</th><th colspan="3">Description</th></tr>
<tr><td rowspan="2">(10)</td><td rowspan="2">Unknown Toner Log</td><td>#</td><td>Count.</td><td>Item</td></tr>
<tr><td>Remembers 1 to 5 of occurrence of unknown toner detection. If the occurrence of the previous unknown toner detection is less than 5, all of the unknown toner detection are logged.</td><td>The total page count at the time of the toner empty error with using an unknown toner container.</td><td>Unknown toner log code
(1 byte, 2 categories)

First byte
01: Toner container (Fixed)
Second byte
00: Black
01: Cyan
02: Magenta
03: Yellow</td></tr>
<tr><td rowspan="2">(11)</td><td rowspan="2">Counter Log

Comprised of three log counters including paper jams, self diagnostics errors, and replacement of the toner container.</td><td>(f) Paper jam</td><td>(g) Self diagnostic error</td><td>(h) Maintenance item replacing</td></tr>
<tr><td>Indicates the log counter of paper jams depending on location.

Refer to Paper Jam Log.

All instances including those are not occurred are displayed.</td><td>Indicates the log counter of self diagnostics errors depending on cause.
(See page 1-4-7)

Example:
C6000: 4

Self diagnostics error 6000 has happened four times.</td><td>Indicates the log counter depending on the maintenance item for maintenance.

T: Toner container
00: Black
01: Cyan
02: Magenta
03: Yellow
M: Maintenance kit
01: MK-590/592/594 (26/28 ppm model only)

Example:
T00: 1
The toner container has been replaced once.

* :The toner replacement log is triggered by toner empty.
This record may contain such a reference as the toner container is inserted twice or a used toner container is inserted.</td></tr>
</table>

1-4-1 Paper misfeed detection

(1) Paper misfeed indication

When a paper misfeed occurs, the machine immediately stops printing and displays the paper misfeed message on the operation panel. To remove paper misfed in the machine, pull out the cassette, open the rear cover or paper conveying unit.

Figure 1-4-1 Paper misfeed indication

(2) Paper misfeed detection condition

Sensors	
1	Registration sensor
2	MP feed sensor
3	Eject sensor
4	PF feed sensor 1
5	PF feed sensor 2
6	PF feed sensor 3

Paper jam location	
A	Cassette 1
B	MP tray
C	Machine inside
D	Fuser/Eject sections
E	Duplex section
F	Cassette 2
G	Cassette 3
H	Cassette 4

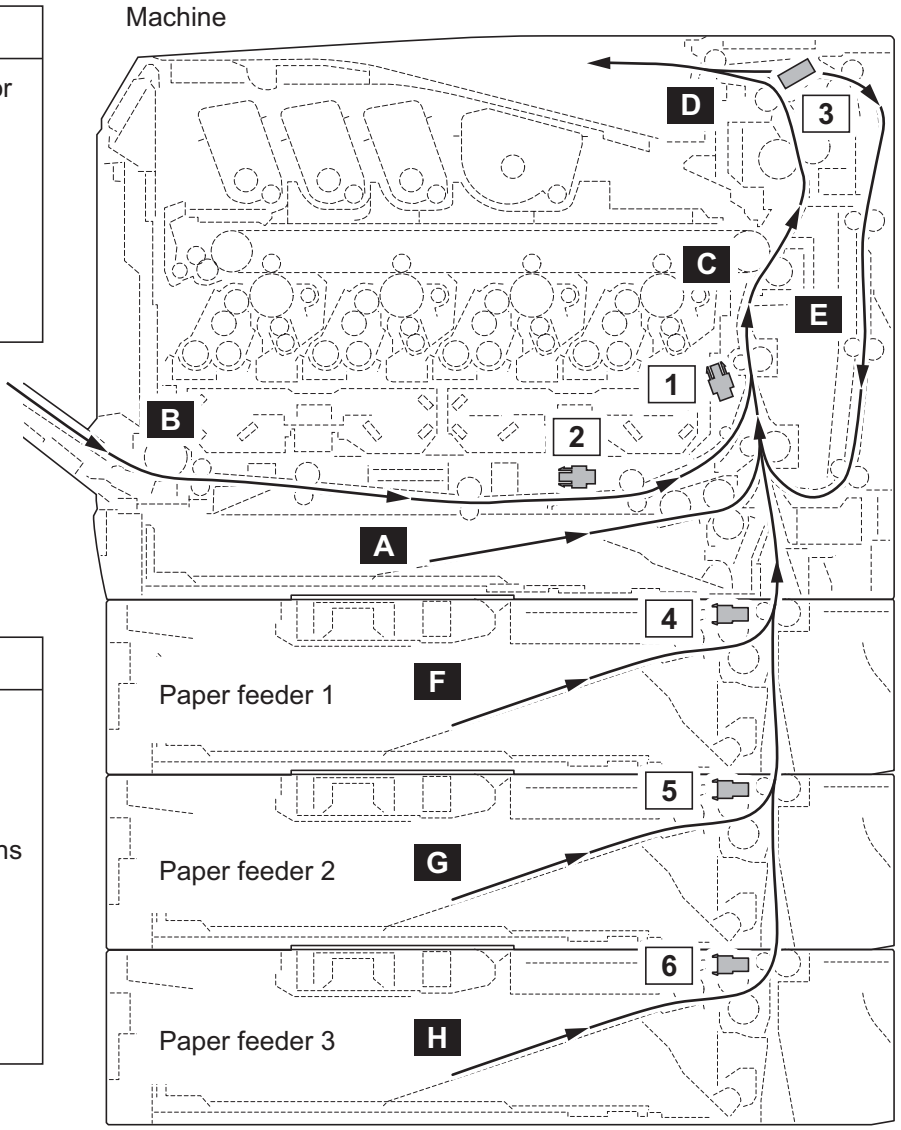


Figure 1-4-2 Paper jam location

Code	Contents	Conditions	Jam location*
0100	Controller sequence error	Secondary paper feed request given by the controller is unreachable.	C
0105	Registration sensor not detected	Activation of the registration sensor (on/off) is undetected for 90 s during printing.	-
0106	Controller sequence error	Paper feeding request for duplex printing given by the controller is unreachable.	E
0110	Top tray open	The top tray is opened during printing.	-
0111	Rear cover open	The rear cover is opened during printing.	-
0112	Front cover open	The waste toner cover is opened during printing.	-
0113	MP tray open	The MP tray is opened during printing.	-
0120	Controller sequence error	Paper feed request was received from the duplex section despite the absence of paper in the duplex section.	E
0121	Controller sequence error	The controller issued the duplex section a request for more pages than the duplex print cycle contains.	E
0211	Rear cover open (paper feeder 1)	The rear cover of paper feeder 1 is opened during printing.	-
0212	Rear cover open (paper feeder 2)	The rear cover of paper feeder 2 is opened during printing.	-
0213	Rear cover open (paper feeder 3)	The rear cover of paper feeder 3 is opened during printing.	-
0501	No paper feed from cassette 1	The registration sensor (RS) does not turn on during paper feed from cassette.	A
0502	No paper feed from cassette 2	PF feed sensor 1 (PFFS1) does not turn on during paper feed from paper feeder 1.	F
0503	No paper feed from cassette 3	PF feed sensor 2 (PFFS2) does not turn on during paper feed from paper feeder 2.	G
0504	No paper feed from cassette 4	PF feed sensor 3 (PFFS3) does not turn on during paper feed from paper feeder 3.	H
0508	No paper feed from duplex section	The registration sensor (RS) does not turn on during paper feed from duplex section.	E
0509	No paper feed from MP tray	MP feed sensor (MPFS) does not turn on during paper feed from MP tray.	B
0511	Multiple sheets in cassette 1	The registration sensor (RS) does not turn off during paper feed from cassette.	A
0512	Multiple sheets in cassette 2	PF feed sensor 1 (PFFS1) does not turn off during paper feed from paper feeder 1.	F
0513	Multiple sheets in cassette 3	PF feed sensor 2 (PFFS2) does not turn off during paper feed from paper feeder 2.	G

*: Refer to figure 1-4-2 for paper jam location (see page 1-4-2).

Code	Contents	Conditions	Jam location*
0514	Multiple sheets in cassette 4	PF feed sensor 3 (PFFS3) does not turn off during paper feed from paper feeder 3.	H
0518	Multiple sheets in duplex section	The registration sensor (RS) does not turn off during paper feed from duplex section.	E
0519	Multiple sheets in MP tray	MP feed sensor (MPFS) does not turn off during paper feed from MP tray.	B
1020	MP feed sensor remaining jam	MP feed sensor (MPFS) is turned on when the power is turned on.	B
1403	PF feed sensor 1 non arrival jam	PF feed sensor 1 (PFFS1) does not turn on during paper feed from paper feeder 2.	F
1404		PF feed sensor 1 (PFFS1) does not turn on during paper feed from paper feeder 3.	F
1413	PF feed sensor 1 stay jam	PF feed sensor 1 (PFFS1) does not turn off during paper feed from paper feeder 2.	F
1414		PF feed sensor 1 (PFFS1) does not turn off during paper feed from paper feeder 3.	F
1420	PF feed sensor 1 remaining jam	PF feed sensor 1 (PFFS1) is turned on when the power is turned on.	F
1604	PF feed sensor 2 non arrival jam	PF feed sensor 2 (PFFS2) does not turn on during paper feed from paper feeder 3.	G
1614	PF feed sensor 2 stay jam	PF feed sensor 2 (PFFS2) does not turn off during paper feed from paper feeder 3.	G
1620	PF feed sensor 2 remaining jam	PF feed sensor 2 (PFFS2) is turned on when the power is turned on.	G
1820	PF feed sensor 3 remaining jam	PF feed sensor 3 (PFFS3) is turned on when the power is turned on.	H
4002	Registration sensor non arrival jam	The registration sensor (RS) does not turn on during paper feed from paper feeder 1.	A
4003		The registration sensor (RS) does not turn on during paper feed from paper feeder 2.	A
4009		The registration sensor (RS) does not turn on during paper feed from MP tray.	A
4012	Registration sensor stay jam	The registration sensor (RS) does not turn off during paper feed from paper feeder 1.	C
4013		The registration sensor (RS) does not turn off during paper feed from paper feeder 2.	C
4014		The registration sensor (RS) does not turn off during paper feed from paper feeder 3.	C
4019		The registration sensor (RS) does not turn off during paper feed from MP tray.	C

*: Refer to figure 1-4-2 for paper jam location (see page 1-4-2).

Code	Contents	Conditions	Jam location*
4020	Registration sensor remaining jam	The registration sensor (RS) is turned on when the power is turned on.	C
4201	Eject sensor non arrival jam	The eject sensor (ES) does not turn on during paper feed from cassette.	C
4202		The eject sensor (ES) does not turn on during paper feed from paper feeder 1.	C
4203		The eject sensor (ES) does not turn on during paper feed from paper feeder 2.	C
4204		The eject sensor (ES) does not turn on during paper feed from paper feeder 3.	C
4208		The eject sensor (ES) does not turn on during paper feed from duplex section.	C
4209		The eject sensor (ES) does not turn on during paper feed from MP tray.	C
4211	Eject sensor stay jam	The eject sensor (ES) does not turn off during paper feed from cassette.	D
4212		The eject sensor (ES) does not turn off during paper feed from paper feeder 1.	D
4213		The eject sensor (ES) does not turn off during paper feed from paper feeder 2.	D
4214		The eject sensor (ES) does not turn off during paper feed from paper feeder 3.	D
4218		The eject sensor (ES) does not turn off during paper feed from duplex section.	D
4219		The eject sensor (ES) does not turn off during paper feed from MP tray.	D
4220	Eject sensor remaining jam	The eject sensor (ES) is turned on when the power is turned on.	D

*: Refer to figure 1-4-2 for paper jam location (see page 1-4-2).

1-4-2 Self-diagnostic function

(1) Self-diagnostic function

This machine is equipped with self-diagnostic function. When a problem is detected, the machine stops printing and display an error message on the operation panel. An error message consists of a message prompting a contact to service personnel and a four-digit error code indicating the type of the error.

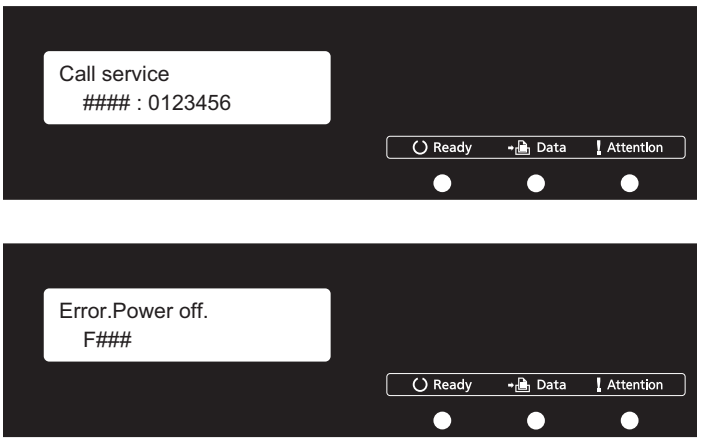


Figure 1-4-3

(2) Self diagnostic codes

If the part causing the problem was not supplied, use the unit including the part for replacement.

Code	Contents	Causes	Check procedures/ corrective measures
0100	**Backup memory device error**	Defective flash memory.	Replace the main PWB and check for correct operation (see page 1-5-29).
		Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-29).
0120	**MAC address data error** For data in which the MAC address is invalid.	Defective flash memory.	Replace the main PWB and check for correct operation (see page 1-5-29).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
0130	**Backup memory read/write error (main PWB)**	Defective flash memory.	Replace the main PWB and check for correct operation (see page 1-5-29).
		Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-29).
0140	**Backup memory data error (main PWB)**	Defective flash memory.	Replace the main PWB and check for correct operation (see page 1-5-29).
		Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-29).
0150	**Engine PWB EEPROM error** Detecting engine PWB EEPROM communication error.	Improper installation engine PWB EEPROM.	Check the installation of the EEPROM and remedy if necessary.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
		Device damage of EEPROM.	Contact the Service Administrative Division.
0170	**Billing counting error** A checksum error is detected in the main and engine backup memories for the billing counters.	Data damage of EEPROM.	Contact the Service Administrative Division.
		Defective PWB.	Replace the main PWB or the engine PWB and check for correct operation (see page 1-5-29, 1-5-26).
0600	**Expanded memory (DIMM) installing error** The expansion memory modules (DIMM) are not correctly mounted.	Improper installation expanded memory (DIMM).	Check the installation of the expanded memory (DIMM).
0610	**Expanded memory (DIMM) error** The expansion memory modules (DIMM) mounted on the main PWB does not operate correctly.	Defective expanded memory (DIMM).	Replace the expanded memory (DIMM) and check for correct operation (see page 1-2-10).
		Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-29).

Code	Contents	Causes	Check procedures/ corrective measures
0640	**SSD error** The SSD cannot be accessed.	Defective SSD.	Replace the SSD and check for correct operation.
		Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-29).
0840	**Faults of RTC** The time is judged to go back based on the comparison of the RTC time and the current time or five years or more have passed.	The battery is disconnected from the main PWB.	Check visually and remedy if necessary
		Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-29).
0930	**EEPROM bus error**	Defective drum PWB (EEPROM).	Replace the drum unit (see page 1-5-20).
		Defective engine PWB (EEPROM).	Replace the engine PWB and check for correct operation (see page 1-5-26).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
		Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-29).
1010	**Lift motor error** When the lift motor is driven, the motor over-current detection signal is detected continuously for 50 times (5 s) at 100 ms intervals. After the lift motor is driven, the ON status of lift sensor cannot be detected for 8 s. The cassette installed confirmation message is displayed on the operation panel, and even if the cassette is opened and closed, the cassette installed confirmation message is displayed 5 times successively.	Defective bottom plate elevation mechanism in the cassette.	Check to see if the bottom plate can move smoothly and repair it if any problem is found.
		Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Lift motor and engine PWB (YC27)
		Defective drive transmission system of the lift motor.	Check if the gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective lift motor.	Replace the lift motor
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).

Code	Contents	Causes	Check procedures/ corrective measures
1020	**PF lift motor error (paper feeder 1)** When the lift motor is driven, the motor over-current detection signal is detected continuously for 50 times (5 s) at 100 ms intervals. After the lift motor is driven, the ON status of lift sensor cannot be detected for 8 s. The cassette installed confirmation message is displayed on the operation panel, and even if the cassette is opened and closed, the cassette installed confirmation message is displayed 5 times successively.	Defective bottom plate elevation mechanism in the cassette.	Check to see if the bottom plate can move smoothly and repair it if any problem is found.
		Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF lift motor and PF main PWB (YC7)
		Defective drive transmission system of the PF lift motor.	Check if the gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective PF lift motor.	Replace the PF lift motor
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).
1030	**PF lift motor error (paper feeder 2)** When the lift motor is driven, the motor over-current detection signal is detected continuously for 50 times (5 s) at 100 ms intervals. After the lift motor is driven, the ON status of lift sensor cannot be detected for 8 s. The cassette installed confirmation message is displayed on the operation panel, and even if the cassette is opened and closed, the cassette installed confirmation message is displayed 5 times successively.	Defective bottom plate elevation mechanism in the cassette.	Check to see if the bottom plate can move smoothly and repair it if any problem is found.
		Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF lift motor and PF main PWB (YC7)
		Defective drive transmission system of the PF lift motor.	Check if the gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective PF lift motor.	Replace the PF lift motor
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).

Code	Contents	Causes	Check procedures/ corrective measures
1040	**PF lift motor error (paper feeder 3)** When the lift motor is driven, the motor over-current detection signal is detected continuously for 50 times (5 s) at 100 ms intervals. After the lift motor is driven, the ON status of lift sensor cannot be detected for 8 s. The cassette installed confirmation message is displayed on the operation panel, and even if the cassette is opened and closed, the cassette installed confirmation message is displayed 5 times successively.	Defective bottom plate elevation mechanism in the cassette.	Check to see if the bottom plate can move smoothly and repair it if any problem is found.
		Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF lift motor and PF main PWB (YC7)
		Defective drive transmission system of the PF lift motor.	Check if the gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective PF lift motor.	Replace the PF lift motor
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).
1500	**PF heater 1 high temperature error (paper feeder 1)** A temperature higher than 75°C/167°F is detected.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF fan motor 1 and PF main PWB (YC111)
		Shorted PF thermistor 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Defective PF fan motor 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).
1510	**PF heater 2 high temperature error (paper feeder 1)** A temperature higher than 75°C/167°F is detected.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF fan motor 2 and PF main PWB (YC111)
		Shorted PF thermistor 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Defective PF fan motor 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).

Code	Contents	Causes	Check procedures/ corrective measures
1520	**PF heater 1 high temperature error (paper feeder 2)** A temperature higher than 75°C/167°F is detected.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF fan motor 1 and PF main PWB (YC111)
		Shorted PF thermistor 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Defective PF fan motor 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).
1530	**PF heater 2 high temperature error (paper feeder 2)** A temperature higher than 75°C/167°F is detected.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF fan motor 2 and PF main PWB (YC111)
		Shorted PF thermistor 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Defective PF fan motor 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).
1540	**PF heater 1 high temperature error (paper feeder 3)** A temperature higher than 75°C/167°F is detected.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF fan motor 1 and PF main PWB (YC111)
		Shorted PF thermistor 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Defective PF fan motor 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).
1550	**PF heater 2 high temperature error (paper feeder 3)** A temperature higher than 75°C/167°F is detected.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF fan motor 2 and PF main PWB (YC111)
		Shorted PF thermistor 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Defective PF fan motor 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).

Code	Contents	Causes	Check procedures/ corrective measures
1600	**PF heater 1 low temperature error (paper feeder 1)** An external temperature higher than + 5°C/+ 9°F is not detected when one minute elapses after PF heater 1 is turned on.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF heater 1 and PF heater PWB (YC1) PF heater PWB (YC3) and PF main PWB (YC113) PF thermistor 1 and PF main PWB (YC114)
		PF thermistor 1 installed incorrectly.	Check the installation of the PF thermistor 1.
		Defective PF thermistor 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Broken PF heater 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Defective PF heater PWB or PF main PWB.	Replace the PF heater PWB or PF main PWB (Refer to the service manual for the paper feeder).
1610	**PF heater 2 low temperature error (paper feeder 1)** An external temperature higher than + 5°C/+ 9°F is not detected when one minute elapses after PF heater 2 is turned on.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF heater 2 and PF heater PWB (YC2) PF heater PWB (YC3) and PF main PWB (YC113) PF thermistor 2 and PF main PWB (YC115)
		PF thermistor 2 installed incorrectly.	Check the installation of the PF thermistor 2.
		Defective PF thermistor 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Broken PF heater 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Defective PF heater PWB or PF main PWB.	Replace the PF heater PWB or PF main PWB (Refer to the service manual for the paper feeder).

Code	Contents	Causes	Check procedures/ corrective measures
1620	**PF heater 1 low temperature error (paper feeder 2)** An external temperature higher than + 5°C/+ 9°F is not detected when one minute elapses after PF heater 1 is turned on.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF heater 1 and PF heater PWB (YC1) PF heater PWB (YC3) and PF main PWB (YC113) PF thermistor 1 and PF main PWB (YC114)
		PF thermistor 1 installed incorrectly.	Check the installation of the PF thermistor 1.
		Defective PF thermistor 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Broken PF heater 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Defective PF heater PWB or PF main PWB.	Replace the PF heater PWB or PF main PWB (Refer to the service manual for the paper feeder).
1630	**PF heater 2 low temperature error (paper feeder 2)** An external temperature higher than + 5°C/+ 9°F is not detected when one minute elapses after PF heater 2 is turned on.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF heater 2 and PF heater PWB (YC2) PF heater PWB (YC3) and PF main PWB (YC113) PF thermistor 2 and PF main PWB (YC115)
		PF thermistor 2 installed incorrectly.	Check the installation of the PF thermistor 2.
		Defective PF thermistor 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Broken PF heater 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Defective PF heater PWB or PF main PWB.	Replace the PF heater PWB or PF main PWB (Refer to the service manual for the paper feeder).

Code	Contents	Causes	Check procedures/ corrective measures
1640	**PF heater 1 low temperature error (paper feeder 3)** An external temperature higher than + 5°C/+ 9°F is not detected when one minute elapses after PF heater 1 is turned on.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF heater 1 and PF heater PWB (YC1) PF heater PWB (YC3) and PF main PWB (YC113) PF thermistor 1 and PF main PWB (YC114)
		PF thermistor 1 installed incorrectly.	Check the installation of the PF thermistor 1.
		Defective PF thermistor 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Broken PF heater 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Defective PF heater PWB or PF main PWB.	Replace the PF heater PWB or PF main PWB (Refer to the service manual for the paper feeder).
1650	**PF heater 2 low temperature error (paper feeder 3)** An external temperature higher than + 5°C/+ 9°F is not detected when one minute elapses after PF heater 2 is turned on.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF heater 2 and PF heater PWB (YC2) PF heater PWB (YC3) and PF main PWB (YC113) PF thermistor 2 and PF main PWB (YC115)
		PF thermistor 2 installed incorrectly.	Check the installation of the PF thermistor 2.
		Defective PF thermistor 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Broken PF heater 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Defective PF heater PWB or PF main PWB.	Replace the PF heater PWB or PF main PWB (Refer to the service manual for the paper feeder).
1800	**Paper feeder communication error** Communication error between engine PWB and optional paper feeder.	Improper installation paper feeder.	Follow installation instruction carefully again.
		Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF main PWB (YC3) and engine PWB (YC33)
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).

Code	Contents	Causes	Check procedures/ corrective measures
2100	**Developing motor error** The developing motor ready input is not given for 5 s during the main motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Developing motor and engine PWB (YC14)
		Defective drive transmission system of the developing motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective developing motor.	Replace the developing motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
2200	**Drum motor error** The drum motor ready input is not given for 5 s during the drum motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum motor and engine PWB (YC13)
		Defective drive transmission system of the drum motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective drum motor.	Replace the drum motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
2330	**Fuser pressure release motor error** When the fuser pressure release motor is driven, the motor over-current detection signal is detected continuously for 8 times (800 ms) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Fuser pressure release motor and engine PWB (YC38)
		Defective drive transmission system of the fuser pressure release motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective fuser pressure release motor.	Replace the fuser pressure release motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).

Code	Contents	Causes	Check procedures/ corrective measures
2340	**Fuser pressure release motor time-out error** When the fuser pressure release motor is driven, the envelope switch (EVSW) is not detectable for 6 s.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Fuser pressure release motor and engine PWB (YC38)
		Defective drive transmission system of the fuser pressure release motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective fuser pressure release motor.	Replace the fuser pressure release motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
2500	**Paper feed motor error** The drum motor ready input is not given for 5 s during the paper feed motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Paper feed motor and engine PWB (YC3)
		Defective drive transmission system of the paper feed motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective paper feed motor.	Replace the paper feed motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
2600	**PF paper feed motor error (paper feeder 1)** The drum motor ready input is not given for 2 s during the PF paper feed motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF paper feed motor and PF main PWB (YC6)
		Defective drive transmission system of the PF paper feed motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective PF paper feed motor.	Replace the PF paper feed motor.
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).

Code	Contents	Causes	Check procedures/ corrective measures
2610	**PF paper feed motor error (paper feeder 2)** The drum motor ready input is not given for 2 s during the PF paper feed motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF paper feed motor and PF main PWB (YC6)
		Defective drive transmission system of the PF paper feed motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective PF paper feed motor.	Replace the PF paper feed motor.
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).
2620	**PF paper feed motor error (paper feeder 3)** The drum motor ready input is not given for 2 s during the PF paper feed motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF paper feed motor and PF main PWB (YC6)
		Defective drive transmission system of the PF paper feed motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective PF paper feed motor.	Replace the PF paper feed motor.
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).
2730	**Developing release motor error** When the developing release motor is driven, the motor over-current detection signal is detected continuously for 8 times (800 ms) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Developing release motor and engine PWB (YC35)
		Defective drive transmission system of the developing release motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective developing release motor.	Replace the developing release motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).

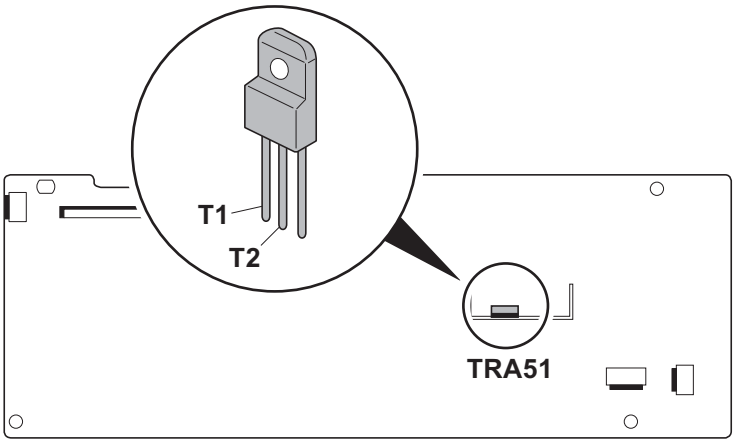
Code	Contents	Causes	Check procedures/ corrective measures
2740	**Developing release motor time-out error** When the developing release motor is driven, the developing release switch (DEVRSW) is not detectable for 1 s.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Developing release motor and engine PWB (YC35)
		Defective drive transmission system of the developing release motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective developing release motor.	Replace the developing release motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
2820	**Fuser motor error** The fuser motor ready input is not given for 5 s during the fuser motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Fuser motor and engine PWB (YC15)
		Defective drive transmission system of the fuser motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective fuser motor.	Replace the fuser motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
4001	**Polygon motor KM error** The polygon motor KM ready input is not given for 10 s during the polygon motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Laser scanner unit KM and engine PWB (YC31)
		Defective polygon motor KM.	Replace the laser scanner unit KM (see page 1-5-43).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
4002	**Polygon motor CY error** The polygon motor CY ready input is not given for 10 s during the polygon motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Laser scanner unit CY and engine PWB (YC31)
		Defective polygon motor CY.	Replace the laser scanner unit CY (see page 1-5-43).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).

Code	Contents	Causes	Check procedures/ corrective measures
4201	**Laser output error (black)** The pin photo signal is not output from PD PWB K for one second while laser is emitted.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. APC PWB K and engine PWB (YC31)
		Defective APC PWB K.	Replace the laser scanner unit KM (see page 1-5-43).
		Defective PD PWB K.	Replace the laser scanner unit KM (see page 1-5-43).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
4202	**Laser output error (cyan)** The pin photo signal is not output from PD PWB C for one second while laser is emitted.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. APC PWB C and engine PWB (YC32)
		Defective APC PWB C.	Replace the laser scanner unit CY (see page 1-5-43).
		Defective PD PWB C.	Replace the laser scanner unit CY (see page 1-5-43).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-26).
4203	**Laser output error (magenta)** The pin photo signal is not output from PD PWB M for one second while laser is emitted.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. APC PWB M and engine PWB (YC31)
		Defective APC PWB M.	Replace the laser scanner unit KM (see page 1-5-43).
		Defective PD PWB M.	Replace the laser scanner unit KM (see page 1-5-43).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-26).
4204	**Laser output error (yellow)** The pin photo signal is not output from PD PWB Y for one second while laser is emitted.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. APC PWB Y and engine PWB (YC32)
		Defective APC PWB Y.	Replace the laser scanner unit CY (see page 1-5-43).
		Defective PD PWB Y.	Replace the laser scanner unit CY (see page 1-5-43).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-26).

Code	Contents	Causes	Check procedures/ corrective measures
4600	**LSU cleaning motor error** When the LSU cleaning motor is driven, the motor over-current detection signal is detected continuously for 50 times (5 s) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. LSU cleaning motor and engine PWB (YC36)
		Defective drive transmission system of the LSU cleaning motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective LSU cleaning motor.	Replace the LSU cleaning motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
4700	**VIDEO ASIC device error**	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Main PWB (YC39) and relay PWB (YC3) Relay PWB (YC2, 4) and engine PWB (YC8, 9)
		Defective main PWB or engine PWB.	Replace the main PWB or the engine PWB and check for correct operation (see page 1-5-29, 1-5-26).
5301	**Broken cleaning lamp K wire** When the cleaning lamp K is driven, the lamp over-current detection signal is detected continuously for 10 times (1 s) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum unit K and Drum relay PWB (YC2) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective cleaning lamp K.	Replace the drum unit K. (see page 1-5-20).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
5302	**Broken cleaning lamp C wire** When the cleaning lamp C is driven, the lamp over-current detection signal is detected continuously for 10 times (1 s) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum unit C and Drum relay PWB (YC4) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective cleaning lamp C.	Replace the drum unit C. (see page 1-5-20).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).

Code	Contents	Causes	Check procedures/ corrective measures
5303	**Broken cleaning lamp M wire** When the cleaning lamp M is driven, the lamp over-current detection signal is detected continuously for 10 times (1 s) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum unit M and Drum relay PWB (YC3) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective cleaning lamp M.	Replace the drum unit M. (see page 1-5-20).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
5304	**Broken cleaning lamp Y wire** When the cleaning lamp Y is driven, the lamp over-current detection signal is detected continuously for 10 times (1 s) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum unit Y and Drum relay PWB (YC5) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective cleaning lamp Y.	Replace the drum unit Y. (see page 1-5-20).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
6000	**Broken fuser heater wire** The detected temperature of fuser thermistor does not rise 1°C/1.8°F after the fuser heater has been turned on continuously for 10 s in warming up. The fuser temperature does not reach 100°C/212°F after the fuser heater has been turned on continuously for 30 s in warming up. The detected temperature of fuser thermistor does not reach the specified temperature (ready indication temperature) after the fuser heater has been turned on continuously for 60 s in warming up. The detected temperature of fuser thermistor does not rise 1°C/1.8°F after the fuser heater has been turned on continuously for 10 s during printing.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Fuser heater and power source PWB (YC102) Fuser unit and eject PWB (YC3) Eject PWB (YC1) and engine PWB (YC19)
		Deformed connector pin.	See page 1-4-23.
		Defective triac.	See page 1-4-23.
		Fuser thermostat triggered.	Reinsert the fuser unit (see page 1-5-25).
		Broken fuser heater wire.	Replace the fuser unit (see page 1-5-25).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).

Code	Contents	Causes	Check procedures/ corrective measures
6020	**Abnormally high fuser thermistor temperature** The fuser thermistor detects a temperature higher than 240°C/464°F. By the activation of the high temperature error detection circuit (230°C/446°F or more) of fuser thermistor, the illumination of fuser heater was forcibly turned off and 10 s has elapsed.	Deformed connector pin.	See page 1-4-23.
		Defective triac.	See page 1-4-23.
		Shorted fuser thermistor.	Replace the fuser unit (see page 1-5-25).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
6030	**Broken fuser thermistor wire** Input from fuser thermistor is 3 or less (A/D value) continuously for 1 s.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Fuser unit and eject PWB (YC3) Eject PWB (YC1) and engine PWB (YC19)
		Deformed connector pin.	See page 1-4-23.
		Defective triac.	See page 1-4-23.
		Broken fuser thermistor wire.	Replace the fuser unit (see page 1-5-25).
		Fuser thermostat triggered.	Reinsert the fuser unit (see page 1-5-25).
		Broken fuser heater wire.	Replace the fuser unit (see page 1-5-25).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).

Code	Contents	Causes	Check procedures/ corrective measures
6000/ 6020/ 6030 Combined	**Broken fuser heater wire Abnormally high fuser thermistor temperature Broken fuser thermistor wire**	Deformed connector pin.	If the I/F connector pins of the fuser unit and the main unit are deformed owing to foreign matters, such as paper dusts, replace the connectors or the units including the connectors.
		Defective triac.	Remove the power cord and check that the resistance between terminals T1 and T2 of the triac TRA51 is of several Mega-Ohms and not shorted (see figure 1-4-4). If failed, replace the power source PWB (see page 1-5-28).
		 Power source PWB **Figure 1-4-4**	
6400	**Zero-cross signal error** The zero-cross signal does not reach the engine PWB for more than 1 s.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Power source PWB (YC103) and relay PWB (YC1) Relay PWB (YC4) and engine PWB (YC9)
		Defective power source PWB or engine PWB.	Replace the power source PWB or the engine PWB and check for correct operation (see page 1-5-28, 1-5-26).

Code	Contents	Causes	Check procedures/ corrective measures
7001	**Toner motor K error** When the toner motor K is driven, the motor over-current detection signal is detected continuously for 50 times (5 s) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Toner motor K and engine PWB (YC23)
		Defective drive transmission system of the toner motor K.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective toner motor K.	Replace the toner motor K.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
7002	**Toner motor C error** When the toner motor C is driven, the motor over-current detection signal is detected continuously for 50 times (5 s) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Toner motor C and engine PWB (YC25)
		Defective drive transmission system of the toner motor C.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective toner motor C.	Replace the toner motor C.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
7003	**Toner motor M error** When the toner motor M is driven, the motor over-current detection signal is detected continuously for 50 times (5 s) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Toner motor M and engine PWB (YC24)
		Defective drive transmission system of the toner motor M.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective toner motor M.	Replace the toner motor M.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).

Code	Contents	Causes	Check procedures/ corrective measures
7004	**Toner motor Y error** When the toner motor Y is driven, the motor over-current detection signal is detected continuously for 50 times (5 s) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Toner motor Y and engine PWB (YC26)
		Defective drive transmission system of the toner motor Y.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective toner motor Y.	Replace the toner motor Y.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
7401	**Developing unit K non-installing error** No density detection signal is output from toner sensor K in developing unit K.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Developing unit K and Drum relay PWB (YC6) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective toner sensor K.	Replace the developing unit K (see page 1-5-18).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
7402	**Developing unit C non-installing error** No density detection signal is output from toner sensor C in developing unit C.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Developing unit C and Drum relay PWB (YC10) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective toner sensor C.	Replace the developing unit C (see page 1-5-18).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
7403	**Developing unit M non-installing error** No density detection signal is output from toner sensor M in developing unit M.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Developing unit M and Drum relay PWB (YC7) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective toner sensor M.	Replace the developing unit M (see page 1-5-18).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).

Code	Contents	Causes	Check procedures/ corrective measures
7404	**Developing unit Y non-installing error** No density detection signal is output from toner sensor Y in developing unit Y.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Developing unit Y and Drum relay PWB (YC13) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective toner sensor Y.	Replace the developing unit Y (see page 1-5-18).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
7411	**Drum unit K non- installing error** The EEPROM of drum PWB K does not communicate normally.	Installation of incompatible drum unit K.	Install drum unit K compatible with the specifications to the machine.
		Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum unit K and Drum relay PWB (YC2) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective drum PWB K.	Replace the drum unit K (see page 1-5-20).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
7412	**Drum unit C non- installing error** The EEPROM of drum PWB C does not communicate normally.	Installation of incompatible drum unit C.	Install drum unit C compatible with the specifications to the machine.
		Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum unit C and Drum relay PWB (YC4) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective drum PWB C.	Replace the drum unit C (see page 1-5-20).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).

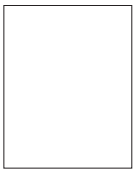
Code	Contents	Causes	Check procedures/ corrective measures
7413	**Drum unit M non- installing error** The EEPROM of drum PWB M does not communicate normally.	Installation of incompatible drum unit M.	Install drum unit M compatible with the specifications to the machine.
		Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum unit M and Drum relay PWB (YC3) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective drum PWB M.	Replace the drum unit M (see page 1-5-20).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
7414	**Drum unit Y non- installing error** The EEPROM of drum PWB Y does not communicate normally.	Installation of incompatible drum unit Y.	Install drum unit Y compatible with the specifications to the machine.
		Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum unit Y and Drum relay PWB (YC5) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective drum PWB Y.	Replace the drum unit Y (see page 1-5-20).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
9530	**Backup data error** The serial number of the machine written on the EEPROM of the engine PWB differs with that is written on both the flash memory of the engine PWB and the EEPROM of the drum PWB as a backup.	Replacing both the engine PWB and the drum unit at the same time.	Check that the machine operates properly by reverting the engine controller and the drum unit to the old ones. To replace the engine PWB and the drum unit at the same time, turn on the machine after replacing either one. Check that the machine operates properly and then turn off the machine. Replace the other and turn on the machine to check that the machine operates properly. Be sure to replace one by one.
F000	**Main PWB - operation panel PWB communication error**	Defective main PWB.	Turn the main power switch off/on to restart the machine. If the error is not resolved, replace main PWB (see page 1-5-29).
		Defective operation panel PWB.	Replace the operation panel PWB and check for correct operation.
F010	**Main PWB checksum error**	Defective main PWB.	Turn the main power switch off/on to restart the machine. If the error is not resolved, replace main PWB (see page 1-5-29).

Code	Contents	Causes	Check procedures/ corrective measures
F020	**Main PWB RAM checksum error**	Defective main memory (RAM) on the main PWB.	Turn the main power switch off/on to restart the machine. If the error is not resolved, replace main PWB (see page 1-5-29).
		Defective expanded memory (DIMM).	Replace the expanded memory (DIMM) (see page 1-2-10).
F040	**Main PWB - print engine communication error**	Defective main PWB.	Turn the main power switch off/on to restart the machine. If the error is not resolved, replace main PWB (see page 1-5-29).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
F050	**Print engine ROM checksum error**	Defective engine PWB.	Turn the main power switch off/on to restart the machine. If the error is not resolved, replace engine PWB (see page 1-5-26).
F278	**Power supply in drive system error**	Main power switch was turned off without using the power key, or a power failure has occurred.	Turn on power. (To switch off power, first press the power key, then turn the main power switch off.)

1-4-3 Image formation problems

If the part causing the problem was not supplied, use the unit including the part for replacement.

(1) No image appears (entirely white).



See page 1-4-30

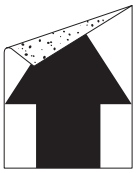
(2) No image appears (entirely black).

See page 1-4-30

(3) A specific color is printed solid.

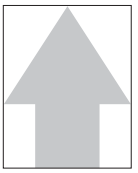
See page 1-4-31

(4) The back side gets dirty.



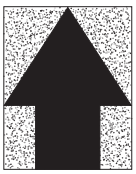
See page 1-4-31

(5) Image is too light.



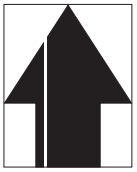
See page 1-4-31

(6) The background is colored.



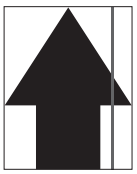
See page 1-4-32

(7) White streaks are printed vertically.



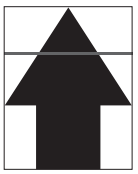
See page 1-4-32

(8) Black streaks are printed vertically.



See page 1-4-32

(9) Streaks are printed horizontally.



See page 1-4-33

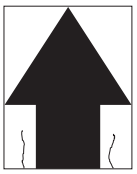
(10) Spots are printed.

See page 1-4-33

(11) The leading edge of image begins to print too early or too late.

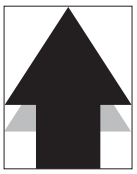
See page 1-4-33

(12) Paper is wrinkled.



See page 1-4-33

(13) Offset occurs.

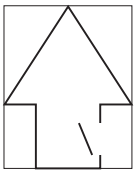


See page 1-4-34

(14) Part of image is missing.

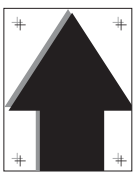
See page 1-4-34

(15) Fusing is loose.



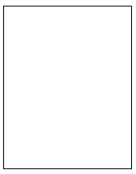
See page 1-4-34

(16) Colors are printed offset to each other.



See page 1-4-35

(1) No image appears (entirely white).

Print example	Causes		Check procedures/corrective measures
	Defective transfer bias output.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. High voltage PWB and engine PWB (YC11)
		Defective high voltage PWB.	Replace the high voltage PWB (see page 1-5-34).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-26).
	Defective developing bias output.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. High voltage PWB and engine PWB (YC11)
		Defective high voltage PWB.	Replace the high voltage PWB (see page 1-5-34).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-26).
	No LSU laser is output.	Defective laser scanner unit.	Replace the laser scanner unit KM/CY (see page 1-5-43).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-26).

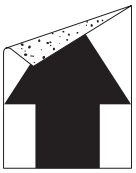
(2) No image appears (entirely black).

Print example	Causes		Check procedures/corrective measures
	No main charging.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. High voltage PWB and engine PWB (YC11)
		Defective charger roller unit.	Replace the drum unit (see page 1-5-20).
		Defective high voltage PWB.	Replace the high voltage PWB (see page 1-5-34).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-26).
	The laser is activated simultaneously for all colors.	Defective laser scanner unit.	Replace the laser scanner unit KM/CY (see page 1-5-43).

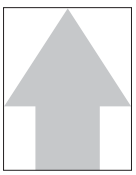
(3) A specific color is printed solid.

Print example	Causes	Check procedures/corrective measures
	Defective charger roller unit which corresponds to the color causing the problem.	Replace the drum unit for the color that causes an error (see page 1-5-20).
	Laser of laser scanner unit for solid color printing is ON. Defective laser scanner unit.	Replace the laser scanner unit KM/CY (see page 1-5-43).

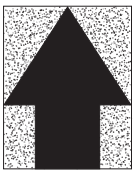
(4) The back side gets dirty.

Print example	Causes	Check procedures/corrective measures
	Dirty secondary transfer roller.	Clean the secondary transfer roller.
	Dirty paper conveying path.	Clean the paper conveying path.
	Dirty heat roller and press roller.	Clean the heat roller and press roller.

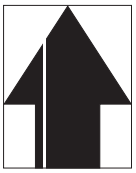
(5) Image is too light.

Print example	Causes		Check procedures/corrective measures
	Defective developing bias output.	Defective developing unit.	Replace the developing unit for the color that causes an error (see page 1-5-18).
		Defective high voltage PWB.	Replace the high voltage PWB (see page 1-5-34).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-26).
	Defective drum unit.		Decrease the surface potential by performing the main charger adjustment (see page 1-3-14). When the problem is not cleared, replace the drum unit (see page 1-5-20).
	Defective transfer bias output.	Defective high voltage PWB.	Replace the high voltage PWB (see page 1-5-34).
		Defective engine PWB.	Replace the engine (see page 1-5-26).
	Defective color calibration.		Perform the color calibration (Refer to operation guide).
	Insufficient toner.		If the display shows the message requesting toner replenishment, replace the container.
	Insufficient agitation of toner container.		Shake the toner container vertically approximately 10 times.
	Paper damp.		Check the paper storage conditions, replace the paper.

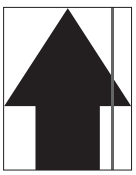
(6) The background is colored.

Print example	Causes		Check procedures/corrective measures
	Defective color calibration.		Perform the color calibration (Refer to operation guide).
	Defective developing bias output.	Defective developing unit.	Replace the developing unit for the color that causes an error (see page 1-5-18).
		Defective high voltage PWB.	Replace the high voltage PWB (see page 1-5-34).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-26).
	Defective drum surface charging.	Defective drum unit.	Replace the drum unit (see page 1-5-20).
		Defective high voltage PWB.	Replace the high voltage PWB (see page 1-5-34).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-26).

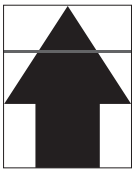
(7) White streaks are printed vertically.

Print example	Causes	Check procedures/corrective measures
	Foreign object in one of the developing units.	Replace the developing unit for the color that causes an error (see page 1-5-18).
	Adhesion of soiling to transfer belt.	Clean the transfer belt. Replace the intermediate transfer unit if it is extremely dirty (see page 1-5-21).
	Adhesion of soiling to transfer roller.	Clean the transfer roller. Replace the transfer roller if it is extremely dirty (see page 1-5-24).
	Dirty LSU dust shield glass.	Perform the LSU dust shield glass cleaning.

(8) Black streaks are printed vertically.

Print example	Causes	Check procedures/corrective measures
	Dirty or flawed drum.	Perform the drum surface refreshing (see page 1-3-13). Flawed drum. Replace the drum unit (see page 1-5-20).
	Deformed or worn cleaning blade in the drum unit.	Replace the drum unit (see page 1-5-20).
	Worn primary transfer belt.	Replace the intermediate transfer unit (see page 1-5-21).
	Defective transfer roller.	Replace the transfer roller (see page 1-5-24).

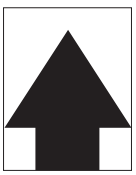
(9) Streaks are printed horizontally.

Print example	Causes	Check procedures/corrective measures
	Dirty or flawed drum.	Perform the drum surface refreshing (see page 1-3-13). Flawed drum. Replace the drum unit (see page 1-5-20).
	Dirty developing section.	Clean any part contaminated with toner in the developing section.
	Poor contact of grounding terminal of drum unit.	Check the installation of the drum unit. If it operates incorrectly, replace it (see page 1-5-20).

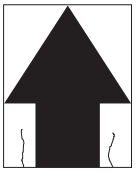
(10) Spots are printed.

Print example	Causes	Check procedures/corrective measures
	Dirty or flawed drum.	Perform the drum surface refreshing (see page 1-3-13). Flawed drum. Replace the drum unit (see page 1-5-20).
	Deformed or worn cleaning blade in the drum unit.	Replace the drum unit (see page 1-5-20).
	Flawed developing roller.	Replace the developing unit (see page 1-5-18).
	Dirty heat roller and press roller.	Clean the heat roller and press roller.

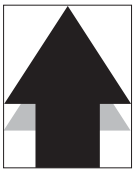
(11) The leading edge of image begins to print too early or too late.

Print example	Causes	Check procedures/corrective measures
	Paper feed clutch or registration clutch operating incorrectly.	Check the installation of the clutch. If it operates incorrectly, replace it.

(12) Paper is wrinkled.

Print example	Causes	Check procedures/corrective measures
	Paper curled.	Check the paper storage conditions.
	Paper damp.	Check the paper storage conditions.

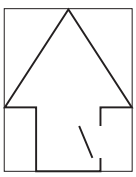
(13) Offset occurs.

Print example	Causes	Check procedures/corrective measures
	Defective drum surface charging.	Perform the drum surface refreshing (see page 1-3-13). When the problem is not cleared, increase the surface potential by performing the main charger adjustment (see page 1-3-14).
	Deformed or worn cleaning blade in the drum unit.	Replace the drum unit (see page 1-5-20).
	Defective transfer belt cleaning.	Replace the intermediate transfer unit (see page 1-5-21).
	Defective fuser unit.	Replace the fuser unit (see page 1-5-25).
	Wrong types of paper.	Check if the paper meets specifications. Replace paper.

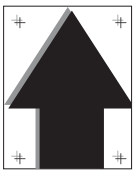
(14) Part of image is missing.

Print example	Causes	Check procedures/corrective measures
	Paper damp.	Check the paper storage conditions.
	Paper creased.	Replace the paper.
	Drum condensation.	Perform the drum surface refreshing (see page 1-3-13).
	Dirty or flawed drum.	Perform the drum surface refreshing (see page 1-3-13). Flawed drum. Replace the drum unit (see page 1-5-20).
	Dirty transfer belt.	Clean the transfer belt. Replace the intermediate transfer unit if it is extremely dirty (see page 1-5-21).
	Dirty transfer roller.	Clean the transfer roller. Replace the transfer roller if it is extremely dirty (see page 1-5-24).

(15) Fusing is loose.

Print example	Causes	Check procedures/corrective measures
	Wrong types of paper.	Check if the paper meets specifications, replace paper.
	Flawed heat roller or press roller.	Replace the fuser unit (see page 1-5-25).

(16) Colors are printed offset to each other.

Print example	Causes	Check procedures/corrective measures
	Defective color calibration.	Perform the color calibration (refer to operation guide).
	Slip the mirror position of laser scanner unit.	Perform the normal color registration. When the problem is not cleared, perform the detail color registration adjustment (refer to operation guide).

1-4-4 Electric problems

If the part causing the problem was not supplied, use the unit including the part for replacement.
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. No electricity at the power outlet.	Measure the input voltage.
	2. The power cord is not plugged in properly.	Check the contact between the power plug and the outlet.
	3. The top tray is not closed completely.	Check the top tray.
	4. Broken power cord.	Check for continuity. If none, replace the cord.
	5. Defective main power switch.	Check for continuity across the contacts. If none, replace the power source PWB (see page 1-5-28).
	6. Defective interlock switch.	Check for continuity across the contacts of interlock switch. If none, replace the power source PWB (see page 1-5-28).
	7. Defective power source PWB.	Replace the power source PWB (see page 1-5-28).
(2) Duplex motor does not operate.	1. Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Duplex motor and engine PWB (YC37)
	2. Defective drive transmission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
	3. Defective motor.	Replace the duplex motor.
	4. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
(3) Right fan motor does not operate.	1. Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Right fan motor and main PWB (YC12)
	2. Defective motor.	Replace the right fan motor.
	3. Defective PWB.	Replace the main PWB and check for correct operation (see page 1-5-29).
(4) Left fan motor does not operate.	1. Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Left fan motor and engine PWB (YC29)
	2. Defective motor.	Replace the left fan motor.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).

Problem	Causes	Check procedures/corrective measures
(5) Fuser fan motor does not operate.	1. Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Fuser fan motor and engine PWB (YC40)
	2. Defective motor.	Replace the fuser fan motor.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
(6) Container fan motor does not operate.	1. Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Container fan motor and engine PWB (YC28)
	2. Defective motor.	Replace the container fan motor.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
(7) Paper feed clutch does not operate.	1. Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Paper feed clutch and engine PWB (YC3)
	2. Defective clutch.	Replace the paper feed clutch.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
(8) MP feed clutch does not operate.	1. Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. MP feed clutch and engine PWB (YC3)
	2. Defective clutch.	Replace the MP feed clutch.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
(9) Registration clutch does not operate.	1. Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Registration clutch and engine PWB (YC3)
	2. Defective clutch.	Replace the registration clutch.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
(10) Middle clutch does not operate.	1. Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Middle clutch and engine PWB (YC3)
	2. Defective clutch.	Replace the middle clutch.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
(11) MP solenoid does not operate.	1. Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. MP solenoid and engine PWB (YC4)
	2. Defective solenoid.	Replace the MP solenoid.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).

Problem	Causes	Check procedures/corrective measures
(12) The message requesting paper to be loaded is shown when paper is present on the cassette.	1. Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Cassette PWB (YC1) and engine PWB (YC21)
	2. Deformed actuator of the paper sensor.	Check visually and replace if necessary.
	3. Defective paper sensor.	Replace the cassette PWB.
	4. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
(13) The message requesting paper to be loaded is shown when paper is present on the MP tray.	1. Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. MP paper sensor and engine PWB (YC16)
	2. Deformed actuator of the MP paper sensor.	Check visually and replace if necessary.
	3. Defective MP paper sensor.	Replace the MP paper sensor.
	4. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
(14) The size of paper on the cassette is not displayed correctly.	1. Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Cassette size switch and engine PWB (YC17)
	2. Defective cassette size switch.	Replace the cassette size switch.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-26).
(15) A paper jam in the paper feed, paper conveying or eject section is indicated when the main power switch is turned on.	1. A piece of paper torn from paper is caught around registration sensor, MP feed sensor or eject sensor.	Check visually and remove it, if any.
	2. Defective registration sensor.	Replace the registration sensor.
	3. Defective MP feed sensor.	Replace the MP feed sensor.
	4. Defective eject sensor.	Replace the eject PWB.
(16) A message indicating cover open is displayed when the top cover or rear cover is closed.	1. Deformed actuator of the interlock switch.	Check visually and replace if necessary.
	2. Defective interlock switch.	Replace the interlock switch.

1-4-5 Mechanical problems

If the part causing the problem was not supplied, use the unit including the part for replacement.

Problem	Causes/check procedures	Corrective measures
(1) No primary paper feed.	Check if the surfaces of the following rollers are dirty with paper powder. Pickup roller Paper feed roller MP paper feed roller	Clean with isopropyl alcohol.
	Check if the following rollers is deformed. Pickup roller Paper feed roller MP paper feed roller	Check visually and replace any deformed (see page 1-5-14, 1-5-16).
	Defective paper feed clutch installation.	Check visually and remedy if necessary.
(2) No secondary paper feed.	Check if the surfaces of the following rollers are dirty with paper powder. Front registration roller Rear registration roller	Clean with isopropyl alcohol.
	Defective registration clutch installation.	Check visually and remedy if necessary.
(3) Skewed paper feed.	Paper width guide in a cassette installed incorrectly.	Check the paper width guide visually and remedy or replace if necessary.
(4) Multiple sheets of paper are fed.	Check if the paper is excessively curled.	Change the paper.
	Paper is loaded incorrectly.	Load the paper correctly.
	Check if the retard roller is worn.	Replace the retard roller if it is worn (see page 1-5-12).
(5) Paper jams.	Check if the paper is excessively curled.	Change the paper.
	Check if the contact between the front and rear registration rollers is correct.	Check visually and remedy if necessary.
	Check if the heat roller or press roller is extremely dirty or deformed.	Check visually and replace the fuser unit (see page 1-5-25).
(6) Toner drops on the paper conveying path.	Check if the drum unit or developing unit is extremely dirty.	Clean the drum unit or developing unit.
(7) Abnormal noise is heard.	Check if the rollers, pulleys and gears operate smoothly.	Grease the bushes and gears.
	Check if the following clutches are installed correctly. Paper feed clutch MP feed clutch Registration clutch Middle clutch	Check visually and remedy if necessary.

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1-5-1 Precautions for assembly and disassembly

(1) Precautions

Be sure to turn the power switch off and disconnect the power plug before starting disassembly.
When handling PWBs (printed wiring boards), do not touch parts with bare hands.
The PWBs are susceptible to static charge.
Do not touch any PWB containing ICs with bare hands or any object prone to static charge.
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 85% RH. Avoid abrupt changes in temperature and humidity.
Avoid exposure to any substance which is harmful to or may affect the quality of the drum.
Do not touch the drum surface with any object. Should it be touched by hands or stained with oil, clean it.

(3) Toner

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

(4) How to tell a genuine Kyocera toner container

As a means of brand protection, the Kyocera 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 branded toner container, otherwise, it is a counterfeit.

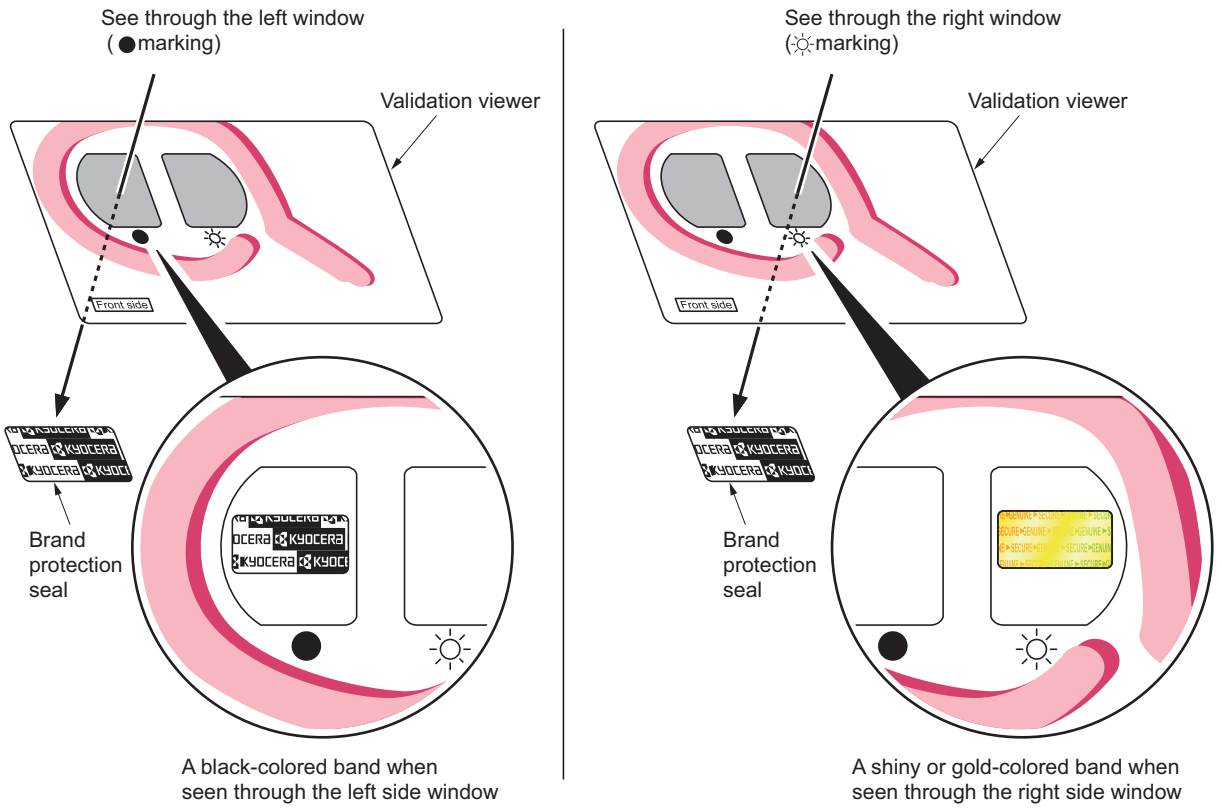

Figure 1-5-1

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

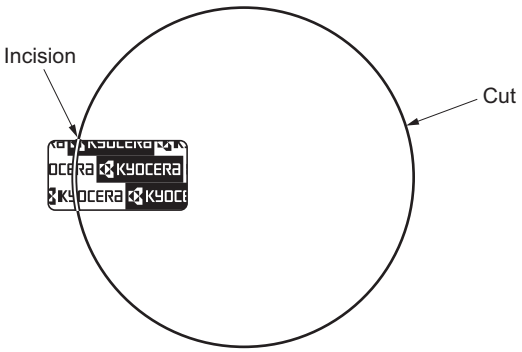

Figure 1-5-2

1-5-2 Outer covers

(1) Detaching and refitting the top cover

Procedure

1. Open the paper conveying unit.
2. Release the hook and then remove the IF cover.

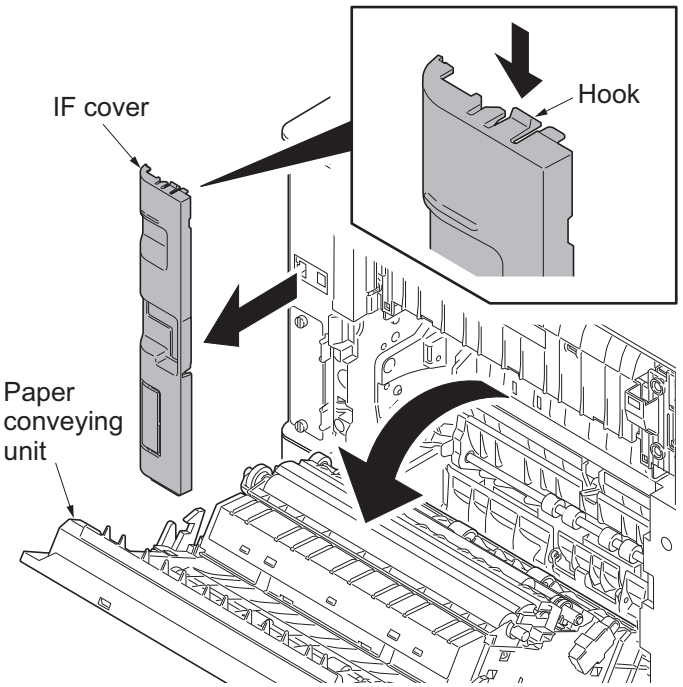

Figure 1-5-3

3. Remove two screws.

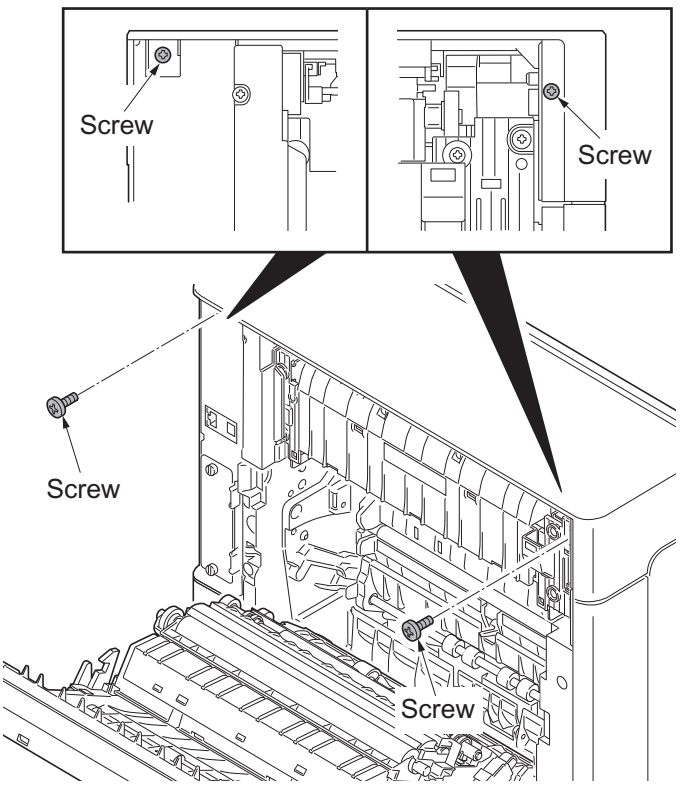

Figure 1-5-4

4. Open the top tray.
5. Remove two screws.
6. Release two hooks and then remove the top tray.

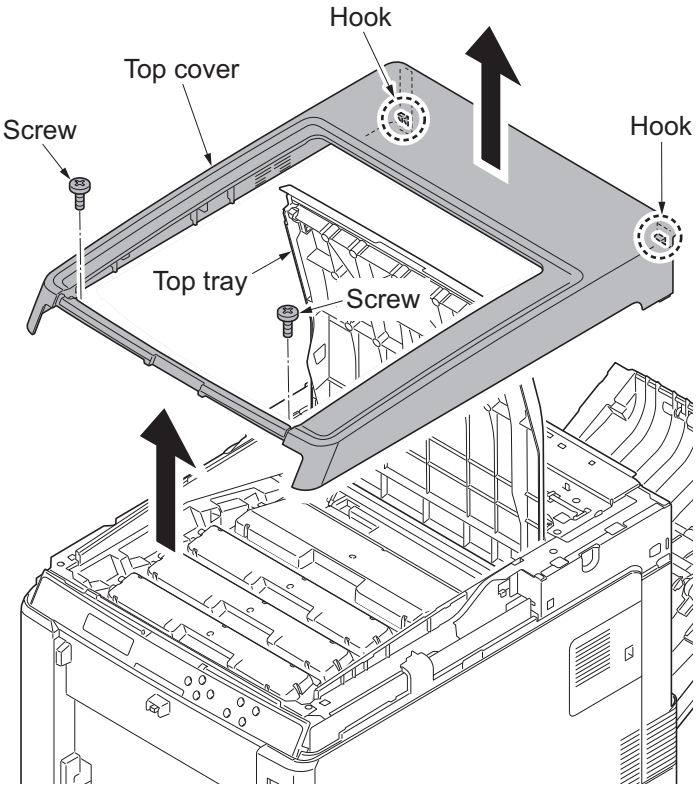

Figure 1-5-5

(2) Detaching and refitting the right rear cover, right cover and right lower cover

Procedure

1. Remove the top cover (see page 1-5-3).
2. Slide the power source cover backward and then remove it.

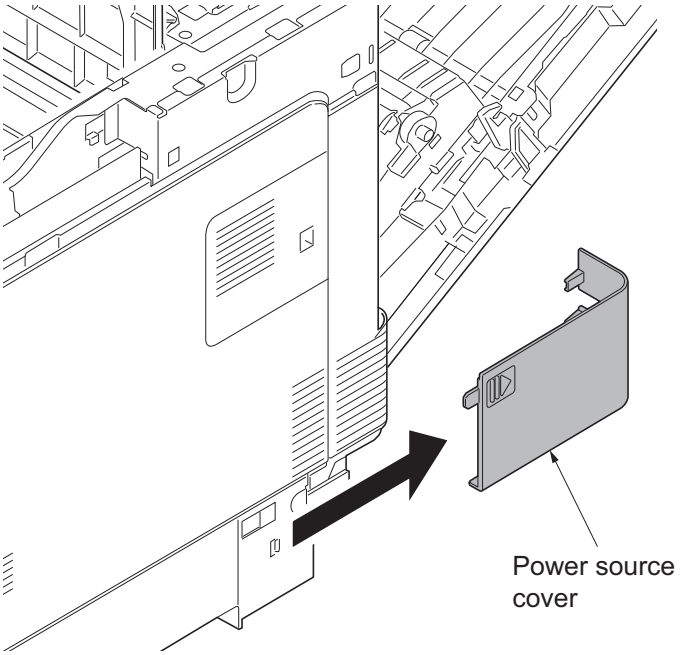

Figure 1-5-6

3. Remove the screw.
4. Release four hooks. Slide the right rear cover backward and then remove it.

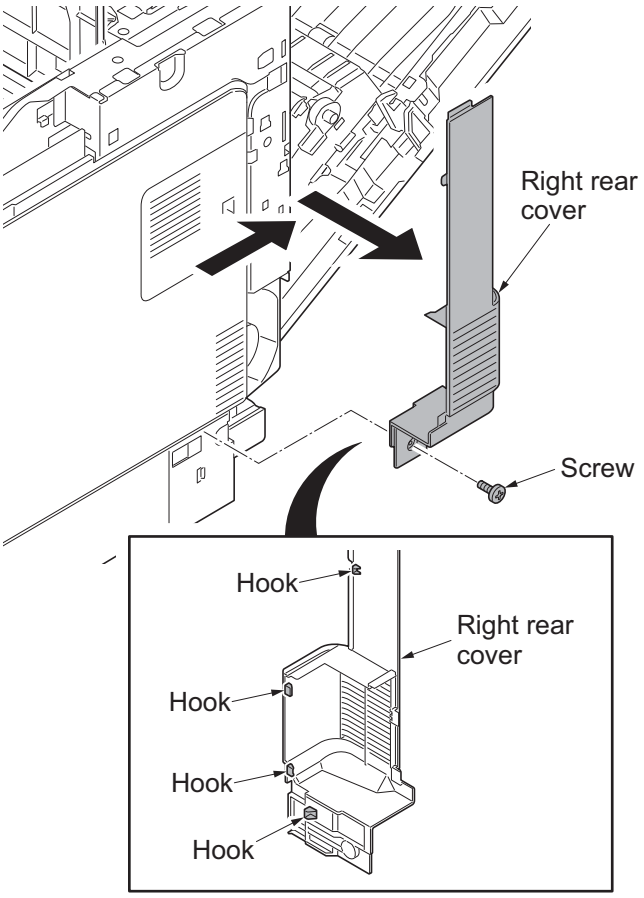

Figure 1-5-7

5. Open the memory cover and then remove it.

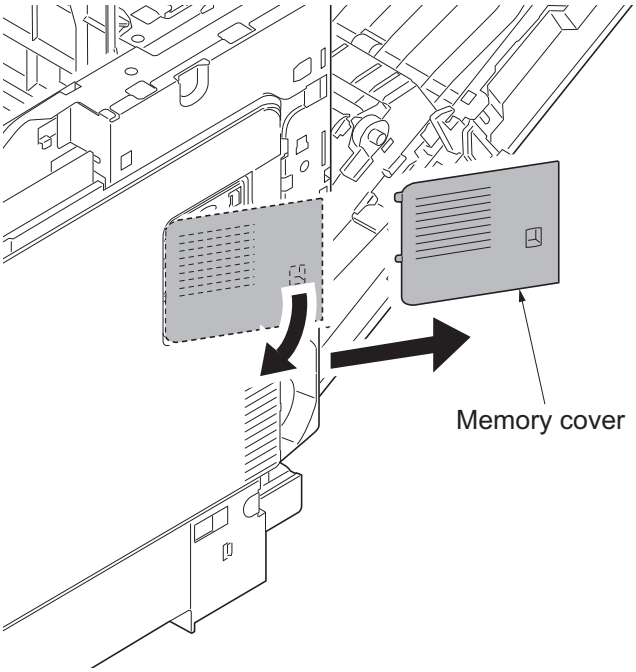

Figure 1-5-8

6. Open the waste toner cover.
7. Push the lock release button and then remove the waste toner box.

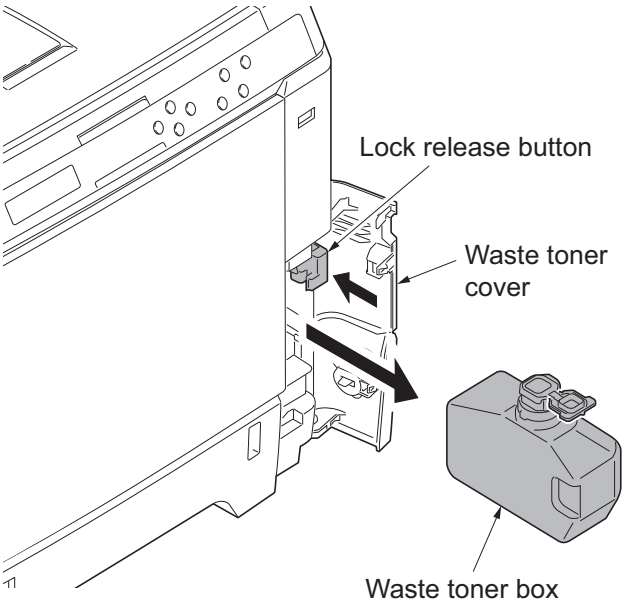

Figure 1-5-9

8. Release four hooks (hook A → B→ C). Slide the right cover forward and then remove it.
9. Remove the waste toner cover.

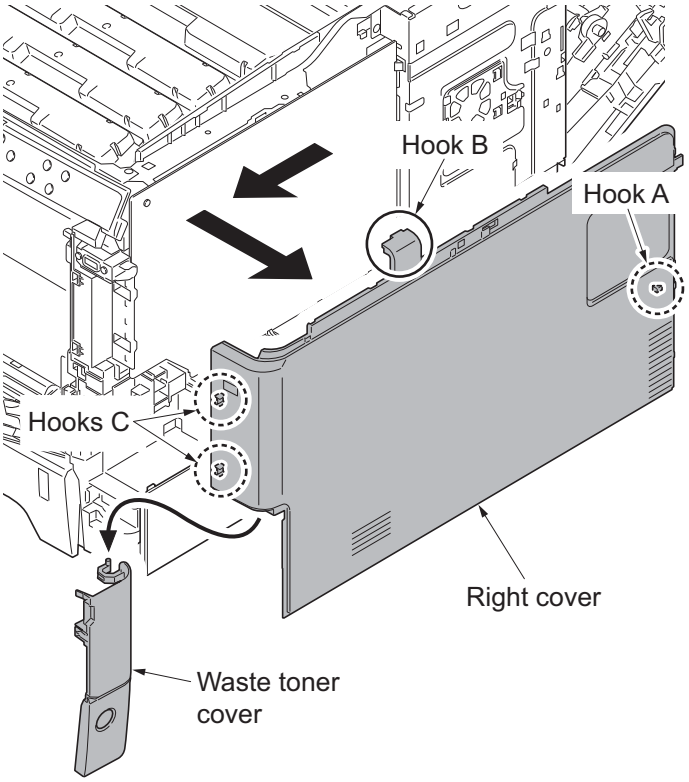

Figure 1-5-10

10. Release the hook. Slide the right lower cover forward and then remove it.

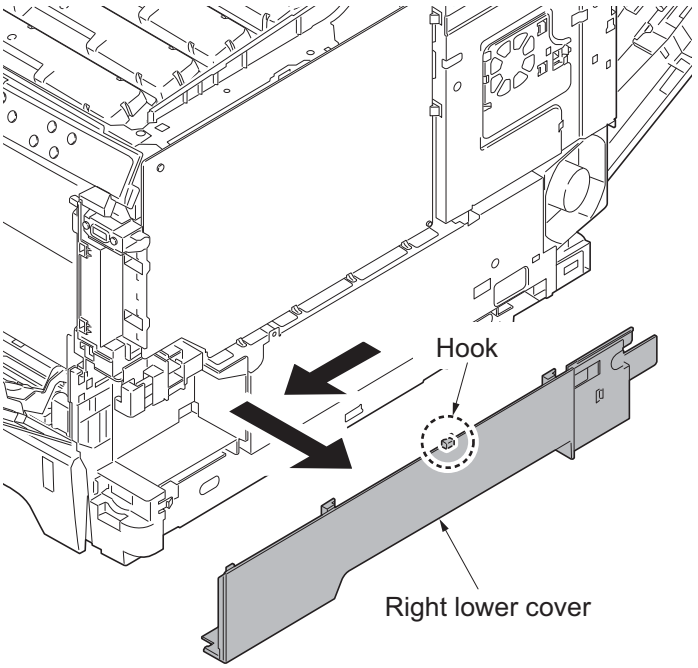

Figure 1-5-11

(3) Detaching and refitting the left rear cover, left cover and left lower cover

Procedure

1. Remove the top cover (see page 1-5-3).
2. Release the hook. Slide the left rear cover upward and then remove it.

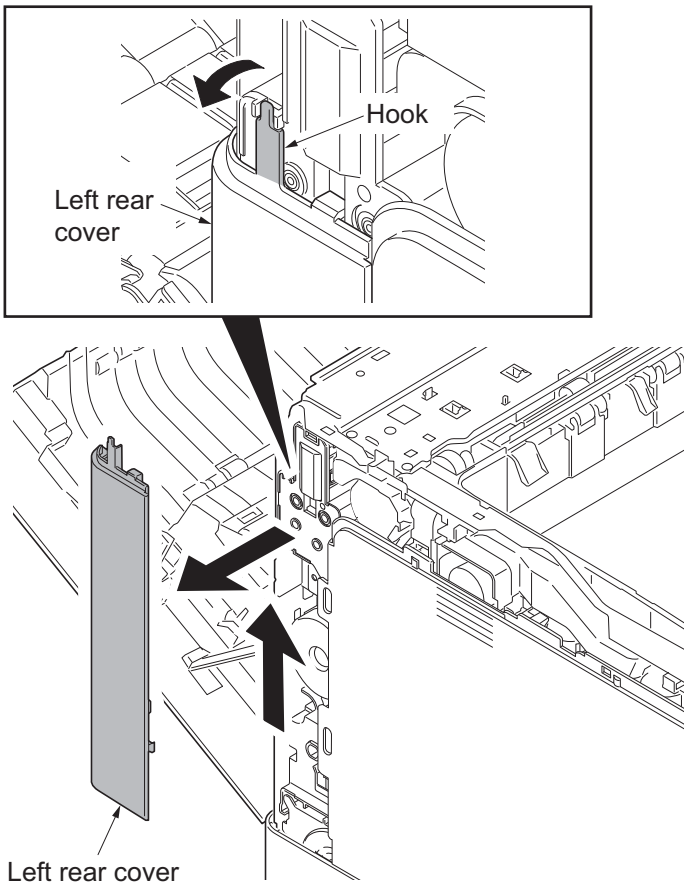

Figure 1-5-12

3. Release four hooks (hook A → B) and then remove the left cover.

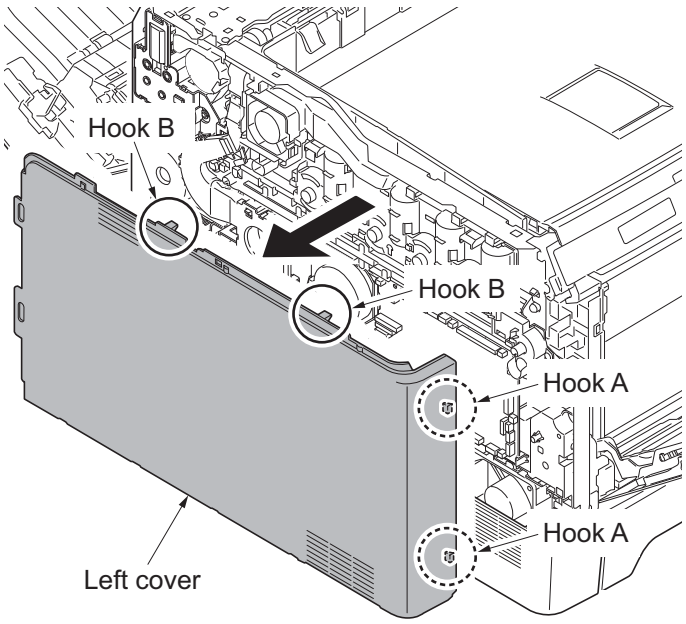

Figure 1-5-13

4. Remove the screw.
5. Release four hooks (hook A → B → C) and then remove the left lower cover.

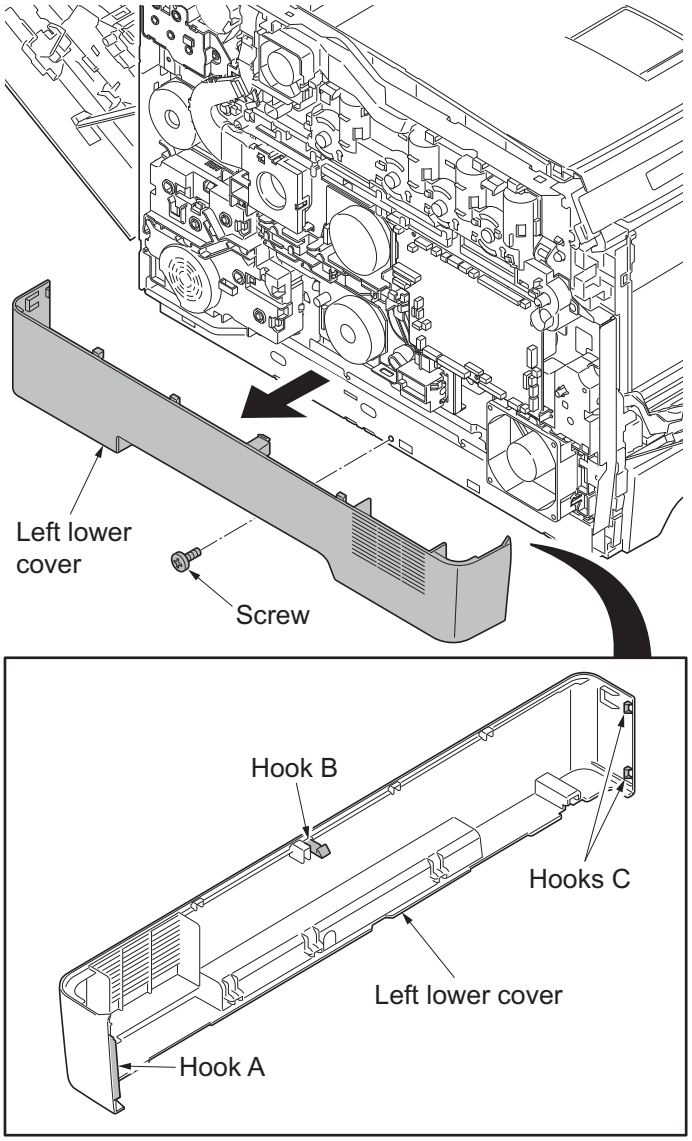

Figure 1-5-14

(4) Detaching and refitting the inner cover

Procedure

1. Remove the cassette.

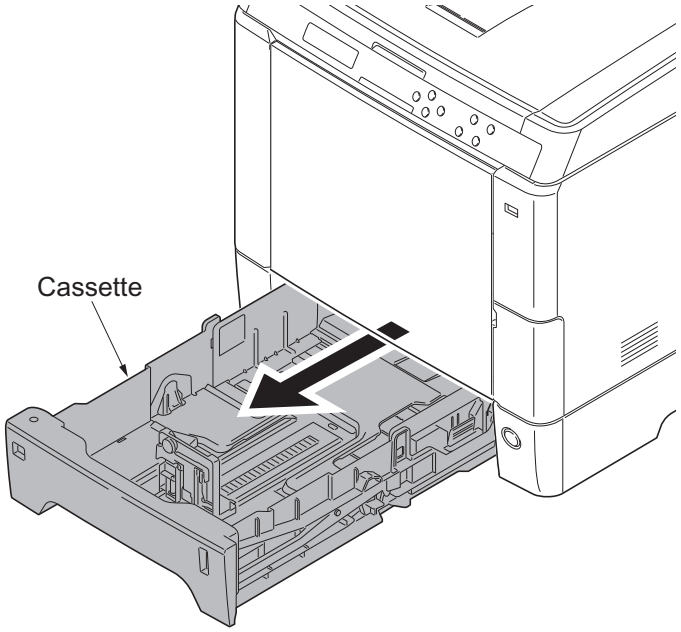

Figure 1-5-15

2. Remove the MP tray.

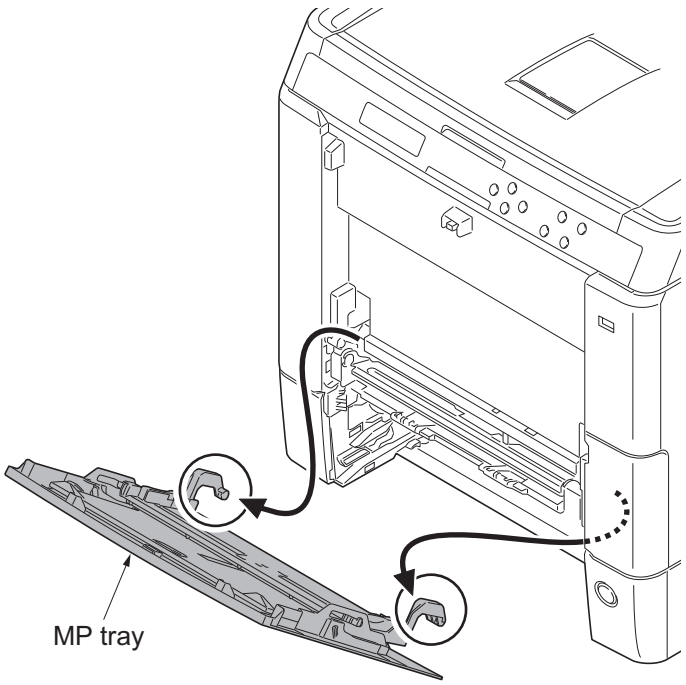

Figure 1-5-16

3. Remove the top cover (see page 1-5-3).
4. Remove the right rear cover, right cover and right lower cover (see page 1-5-5).
5. Remove the left rear cover, left cover and left lower cover (see page 1-5-8).
6. Release four hooks and then remove the inner cover.

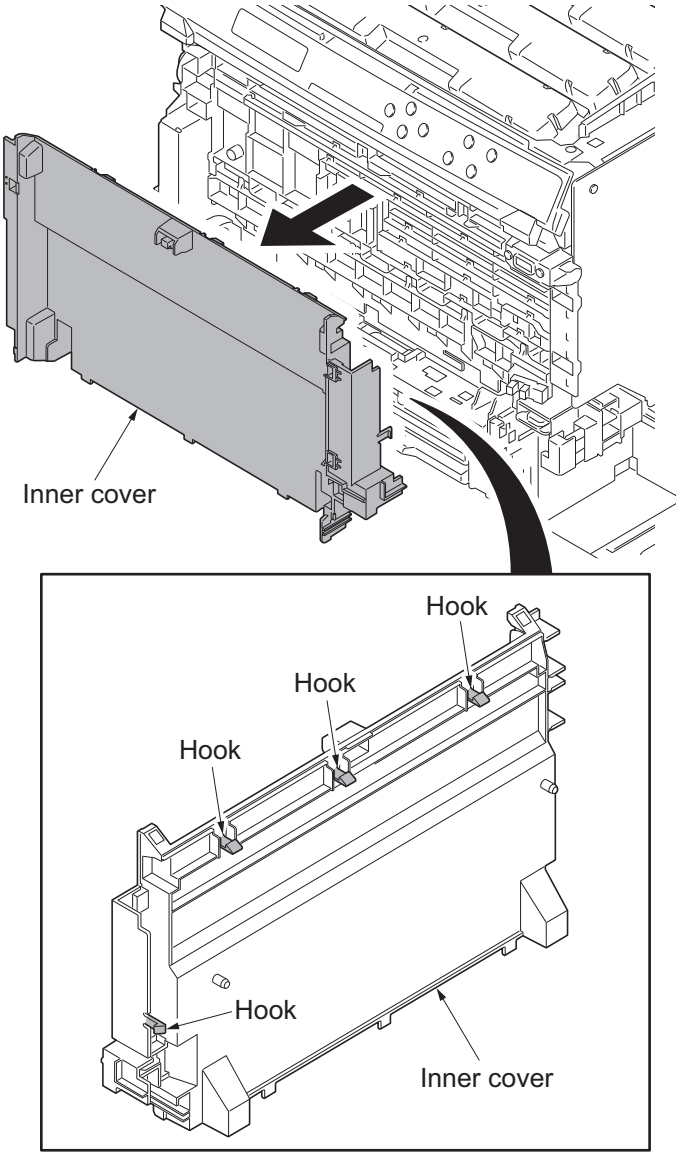

Figure 1-5-17

1-5-3 Paper feed section

(1) Detaching and refitting the retard roller unit

Procedure

1. Open the paper conveying unit.
2. Pull the middle roller unit forward to the hook.
3. While pressing the right and left hooks outwards, unlatch the shaft from the rail and remove the middle roller unit.

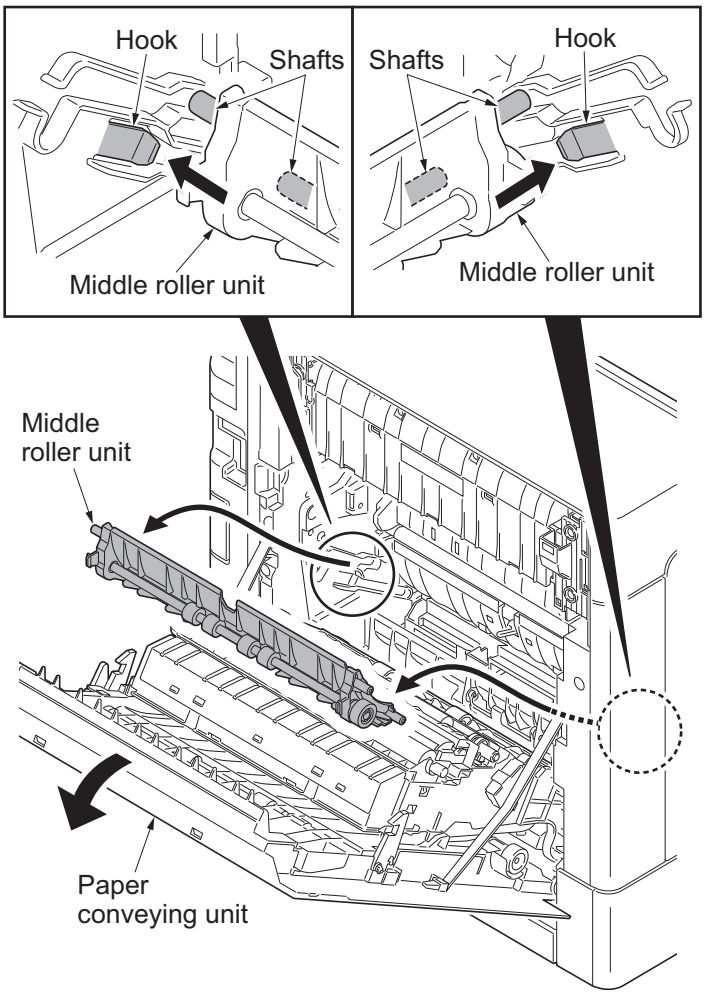

Figure 1-5-18

4. Pull the retard cover down and remove.
5. Release two hooks and then remove the retard roller unit.
6. Check or replace the retard roller unit and refit all the removed parts.

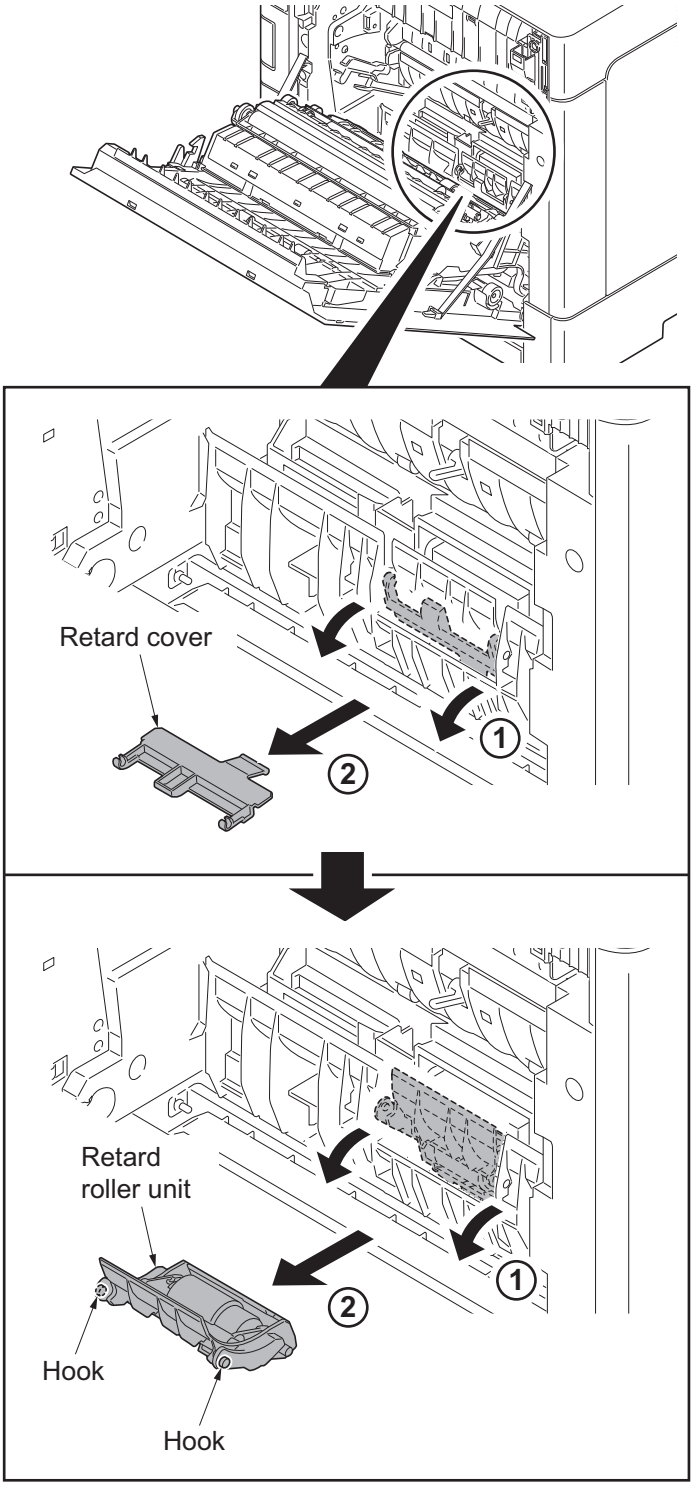

Figure 1-5-19

(2) Detaching and refitting the paper feed roller unit

Procedure

1. Remove the retard roller unit (see page 1-5-12).
2. Turn forward the lever of the feed pin to release the lock.
3. Slide the feed pin.

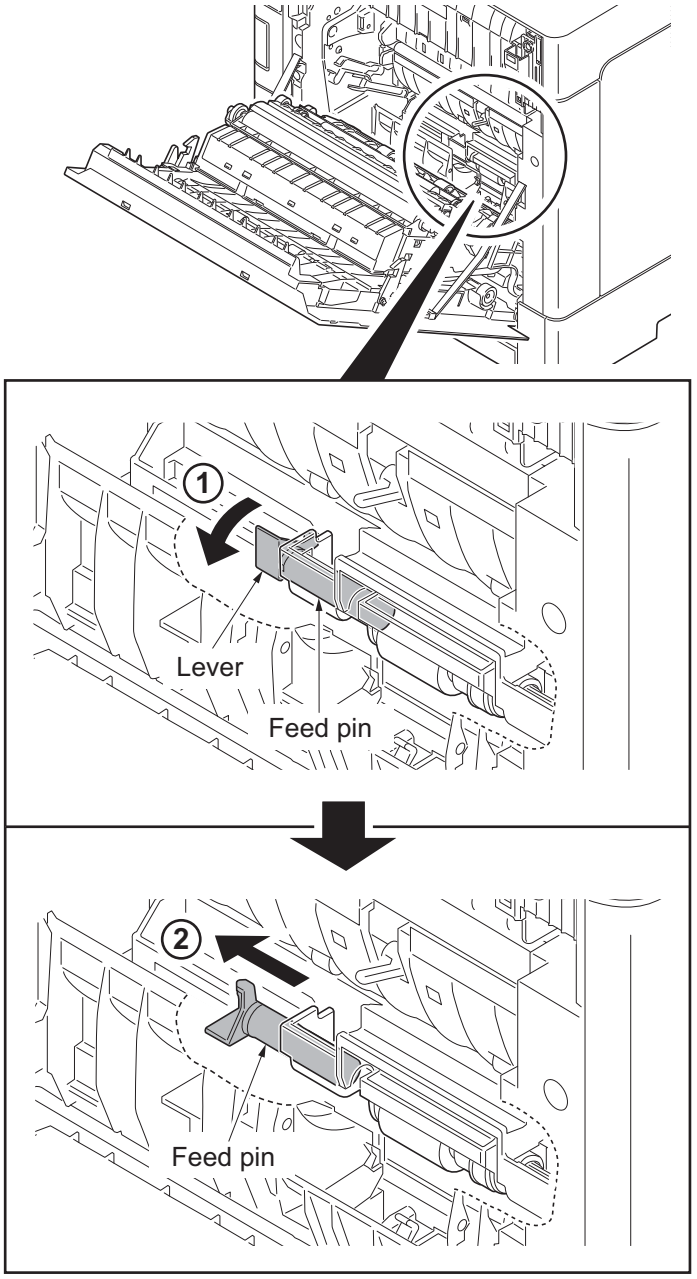

Figure 1-5-20

4. Remove the paper feed roller unit.
5. Check or replace the paper feed roller unit and refit all the removed parts.

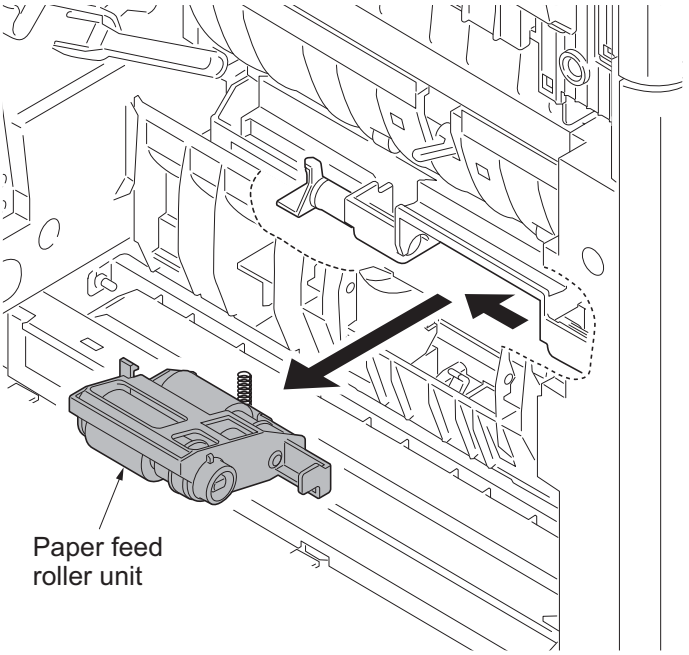

Figure 1-5-21

(3) Detaching and refitting the MP paper feed roller

Procedure

1. Remove the cassette.
2. Raise the MP tray cover upward. Release two hooks and then remove the MP tray cover.

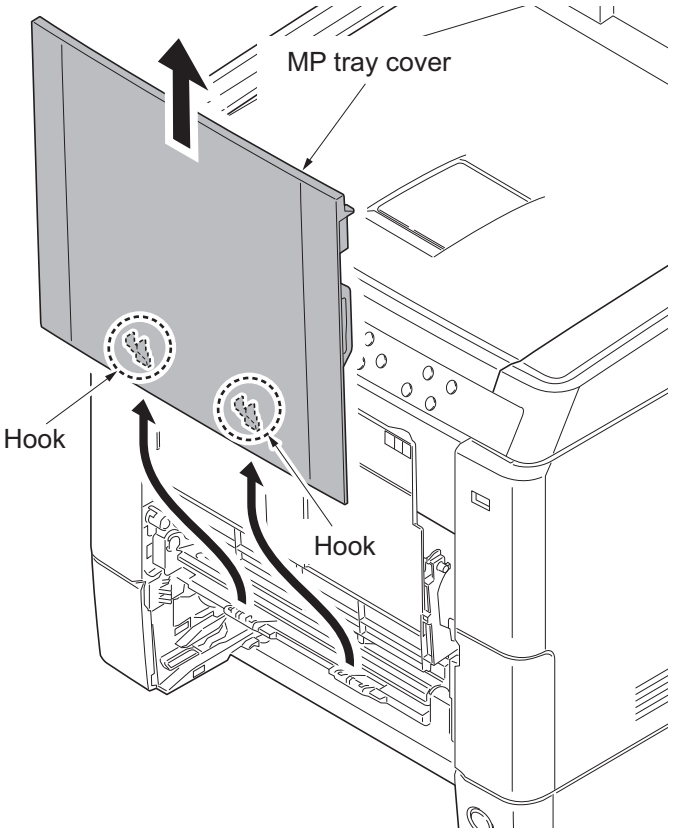

Figure 1-5-22

3. Open the conveying lower cover.

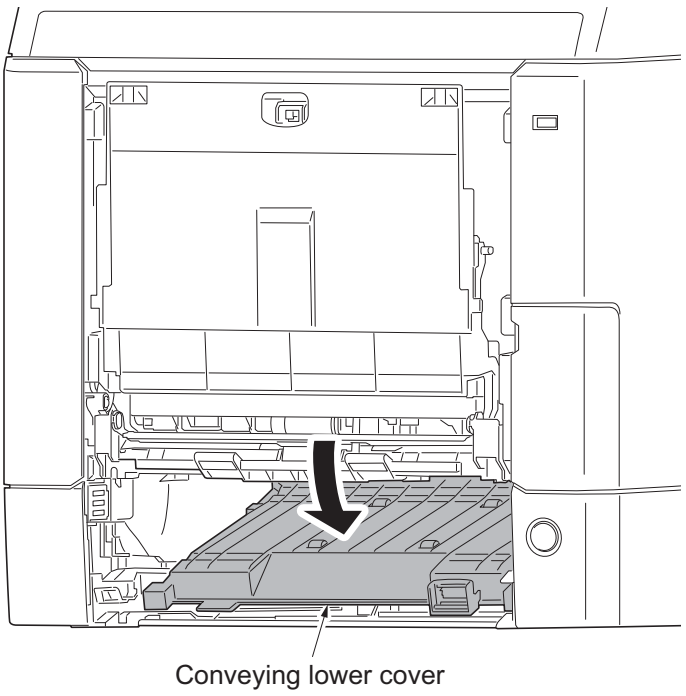

Figure 1-5-23

4. Remove two screws and then remove the MP paper feed lower unit.

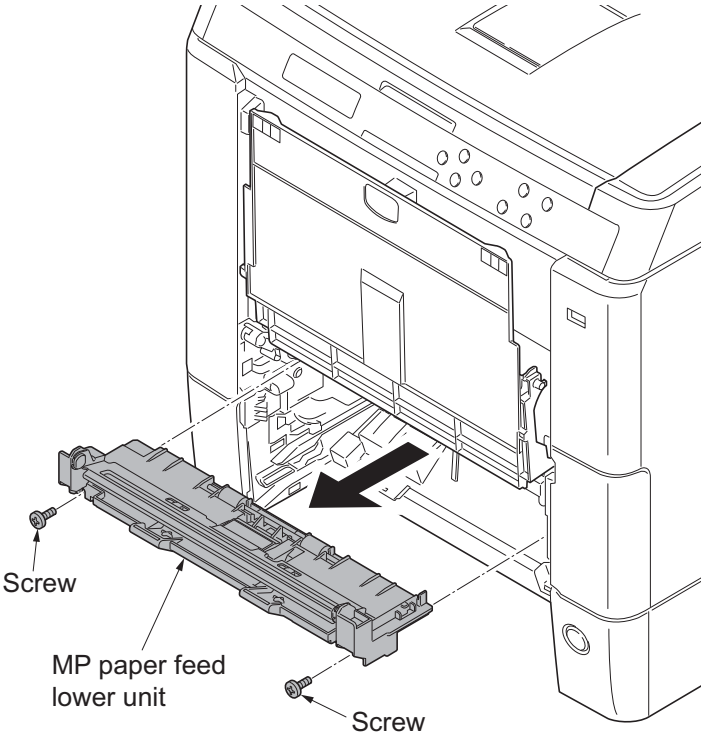

Figure 1-5-24

5. Pull the hook forward and then slide the MP feed shaft.
6. Remove the MP paper feed roller.
7. Check or replace the Mp paper feed roller and refit all the removed parts.

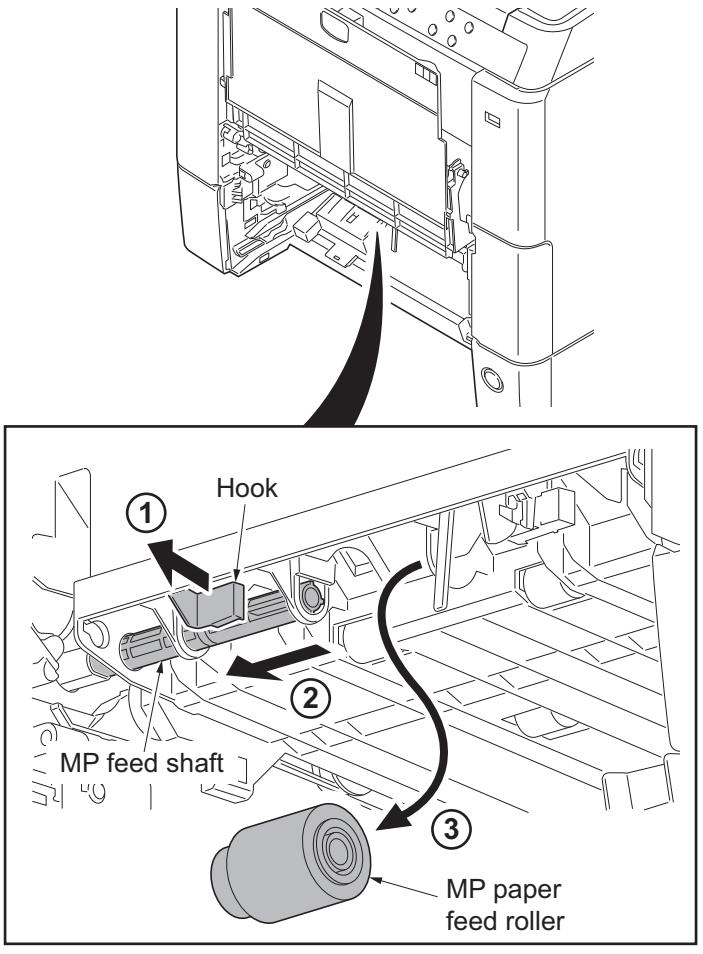

Figure 1-5-25

1-5-4 Developing section

(1) Detaching and refitting the developing unit

Procedure

1. Remove the intermediate transfer unit (see page 1-5-21).
2. Remove drum units (K, M, C, Y).
3. Pinch the lever of developing unit.
4. Remove developing units (K, M, C, Y).

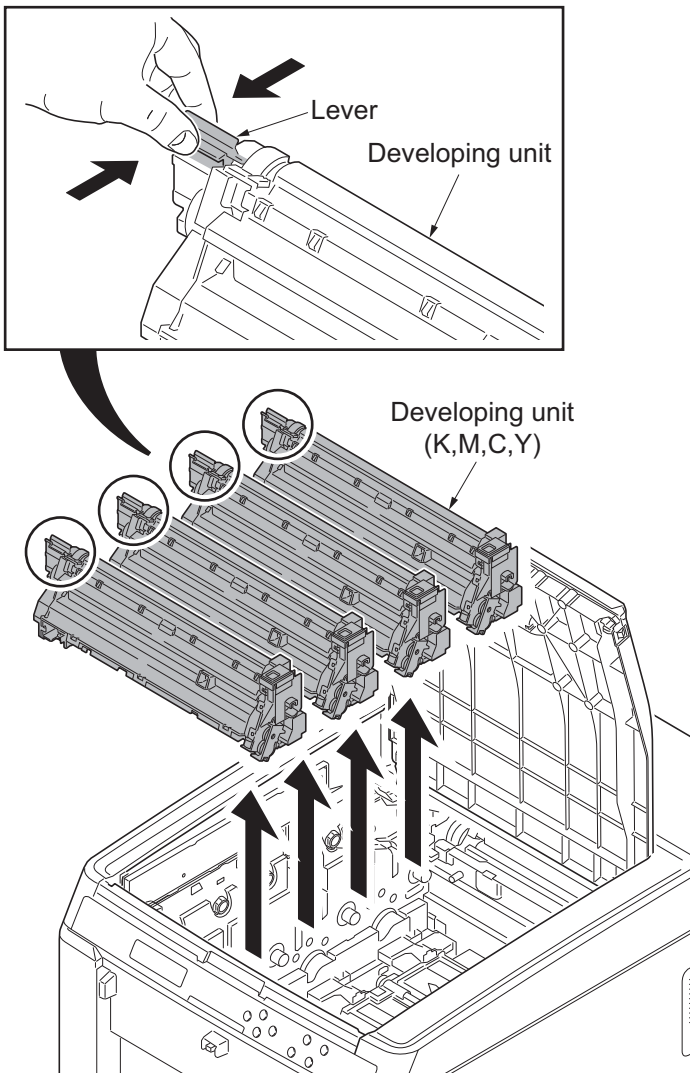

Figure 1-5-26

5. Check or replace the developing unit and refit all the removed parts.

NOTE:

*: Remove the cap before installing the new developing unit.

*: When reinstalling the developing unit, press it down until the lever of developing unit is engaged with the notch.

*: If it is difficult to engage the lever, press the unit down while rotating the gear to engage it.

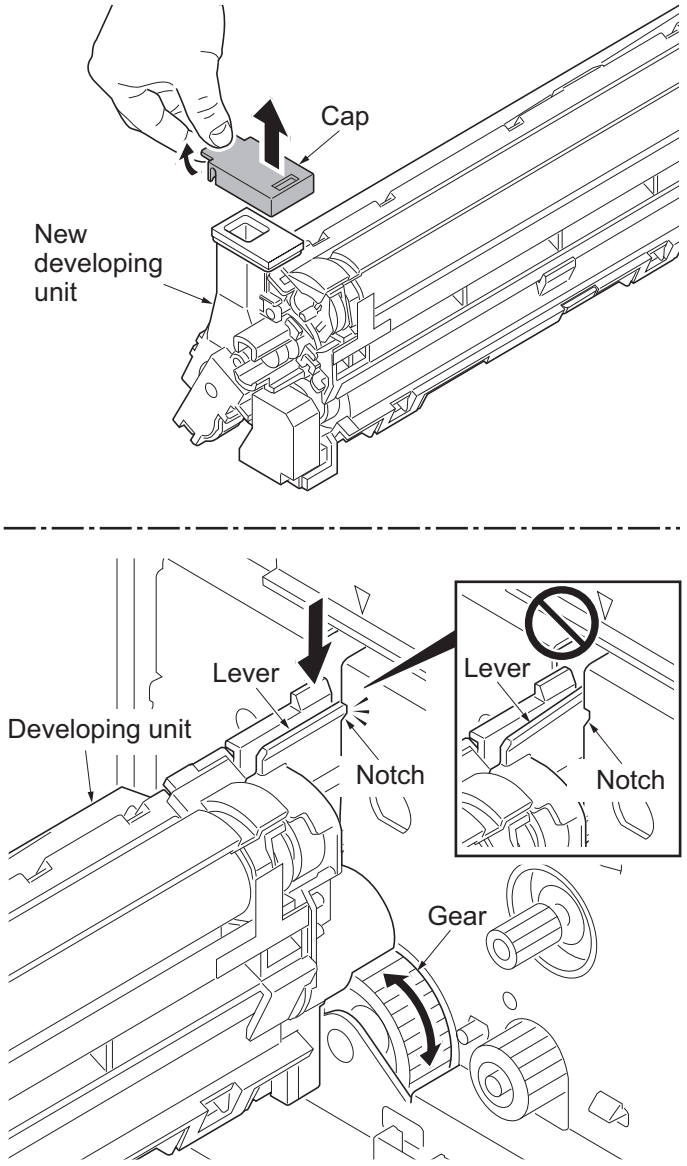

Figure 1-5-27

1-5-5 Drum section

(1) Detaching and refitting the drum unit

Procedure

1. Remove the intermediate transfer unit (see page 1-5-21).
2. Remove drum units (K, M, C, Y).
3. Check or replace the drum unit and refit all the removed parts.

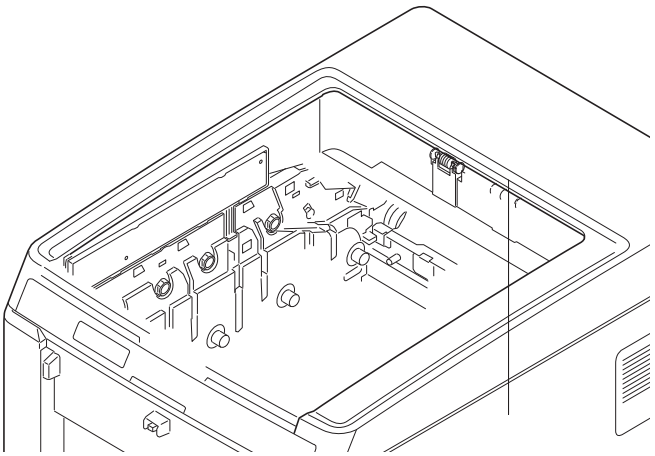

Figure 1-5-28

1-5-6 Transfer/Separation section

(1) Detaching and refitting the intermediate transfer unit

Procedure

1. Open the top tray and the paper conveying unit.
2. Remove toner containers (K, M, C, Y).

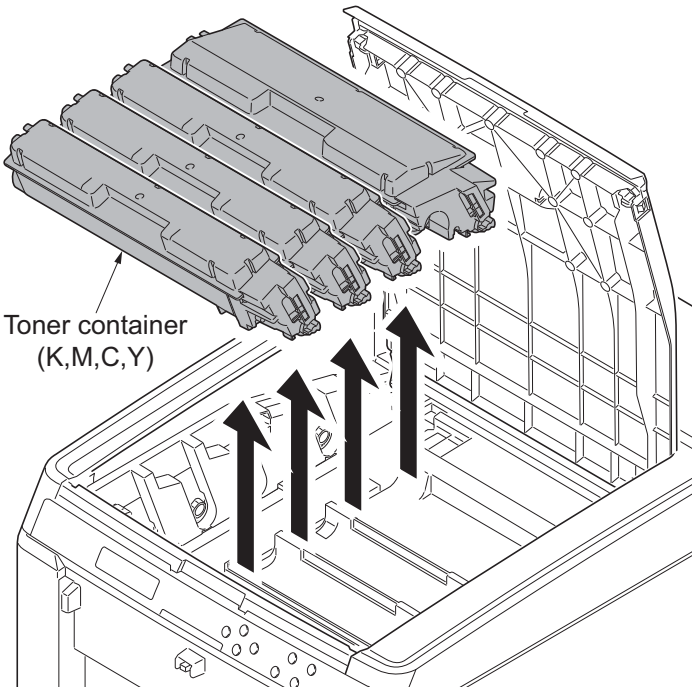

Figure 1-5-29

3. Slide the container guide forward and then remove it.

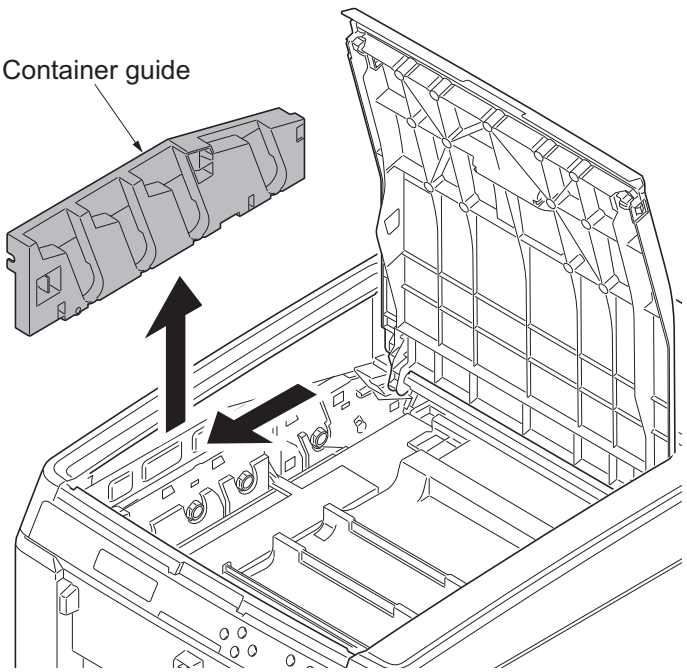

Figure 1-5-30

4. Open the RFID holder.

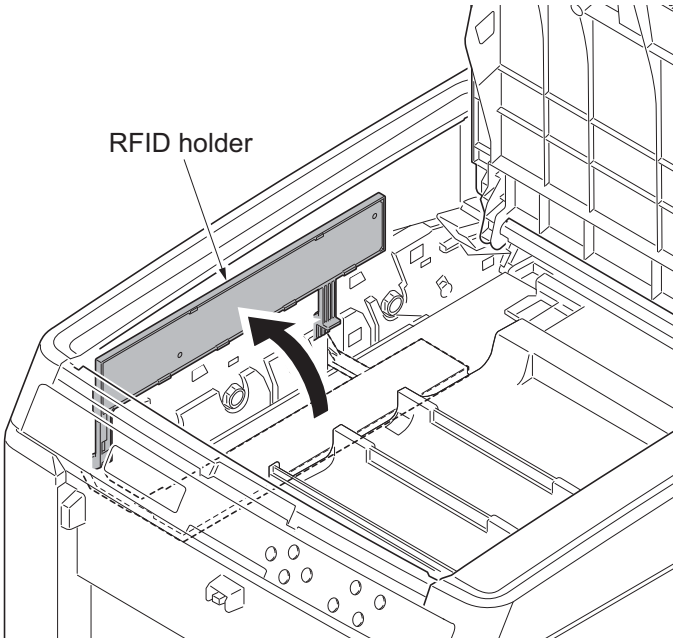

Figure 1-5-31

5. Slide the shutter forward and seal the toner inlet.
6. Remove the screw.

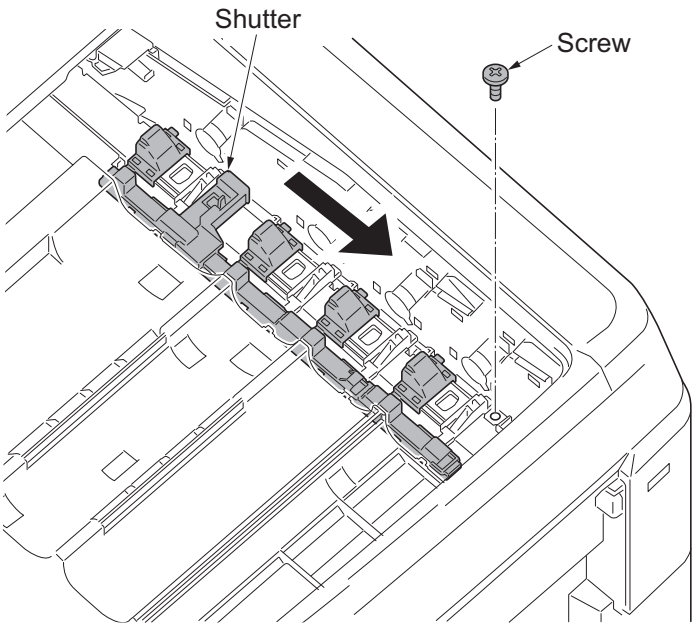

Figure 1-5-32

7. Remove the intermediate transfer unit.
8. Check or replace the intermediate transfer unit and refit all the removed parts.

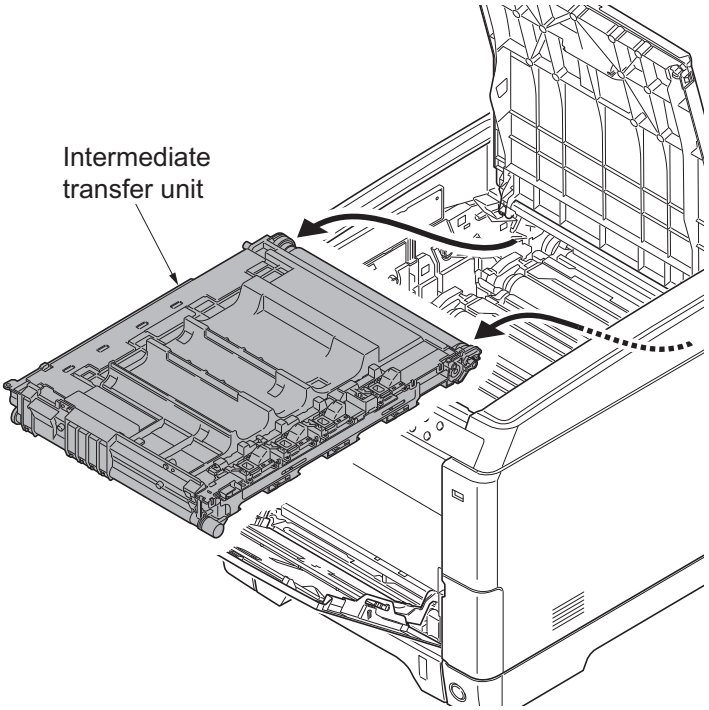

Figure 1-5-33

(2) Detaching and refitting the transfer roller unit

Procedure

1. Open the paper conveying unit.
2. Release two hooks and then remove the transfer roller unit.
3. Check or replace the transfer roller unit and refit all the removed parts.

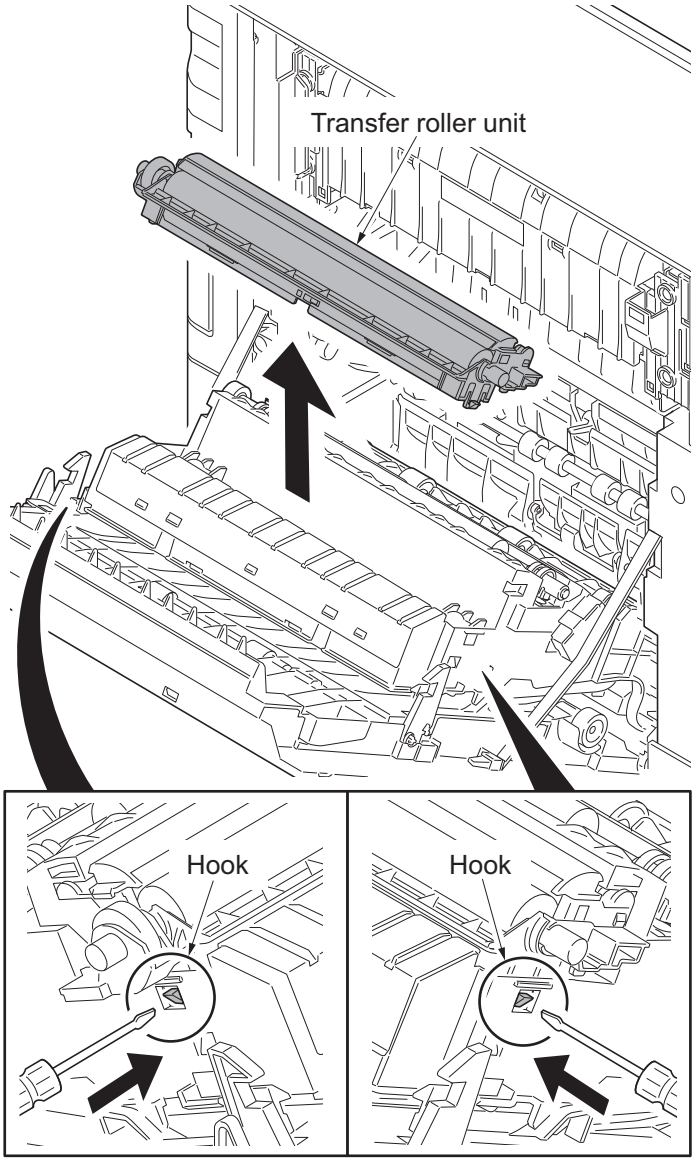

Figure 1-5-34

1-5-7 Fuser section

(1) Detaching and refitting the fuser unit

Procedure

1. Open the paper conveying unit.
2. Remove the IF cover (see page 1-5-3).
3. Remove the screw and then fuser wire cover.

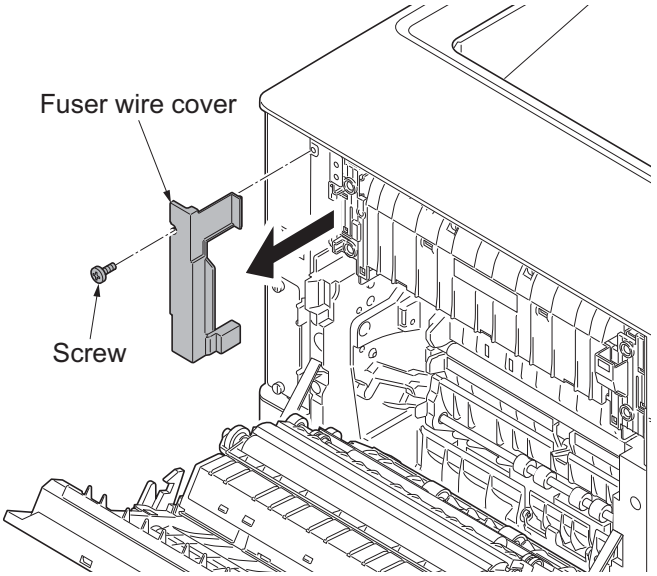

Figure 1-5-35

4. Remove three connectors.
5. Remove two screws and then remove the fuser unit.
6. Check or replace the fuser unit and refit all the removed parts.

*: Take care not to get the cables caught.

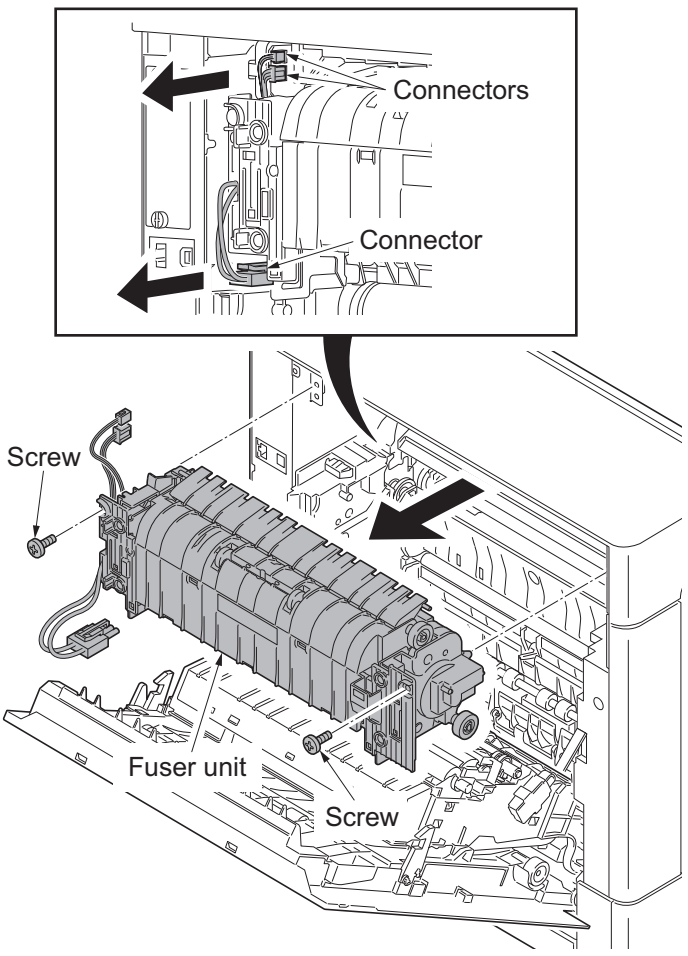

Figure 1-5-36

1-5-8 PWBs

(1) Detaching and refitting the engine PWB

Procedure

1. Remove the top cover (see page 1-5-3).
2. Remove the left rear cover and left cover (see page 1-5-8).
3. Remove all connectors from the engine PWB.

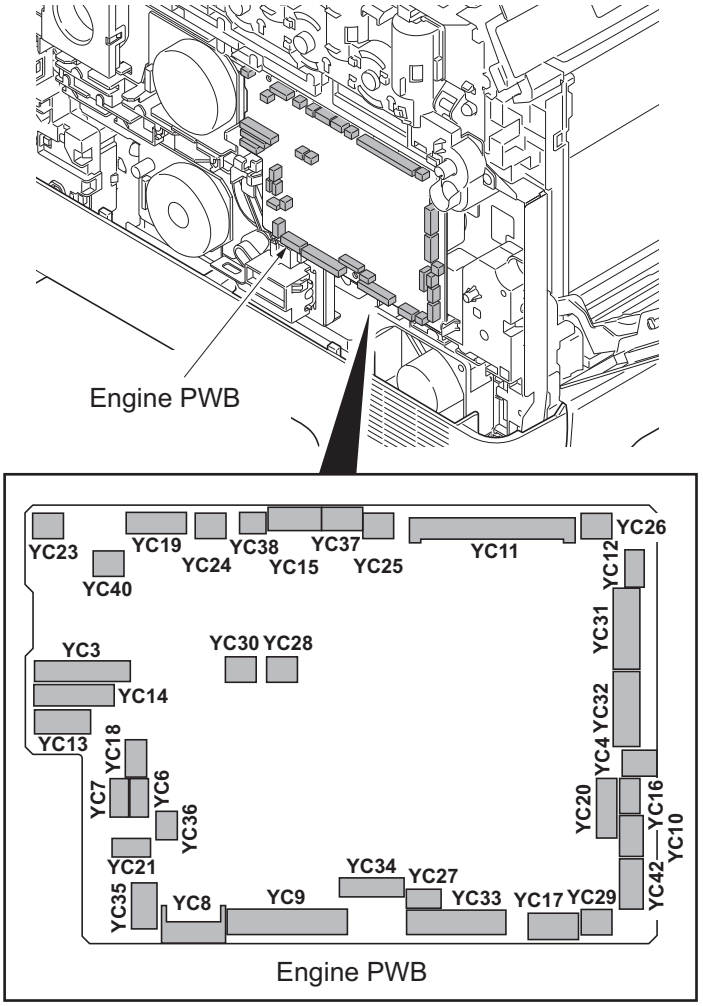

Figure 1-5-37

4. Remove three screws and then remove the engine PWB.
5. Check or replace the engine PWB and refit all the removed parts.

*: To replace the engine PWB, remove the EEPROM (U1) from the old engine PWB and mount it to the new engine PWB.

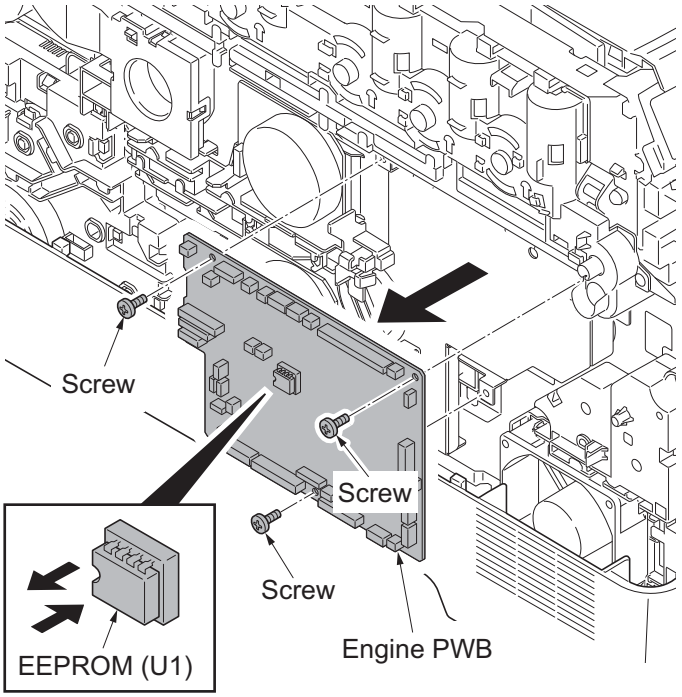

Figure 1-5-38

(2) Detaching and refitting the power source PWB

Procedure

1. Remove the top cover (see page 1-5-3).
2. Remove the right rear cover, right cover and right lower cover (see page 1-5-5).
3. Remove four screws and then remove the power source shield.
   Screws A and B are unidentical, therefore, do not mix up.

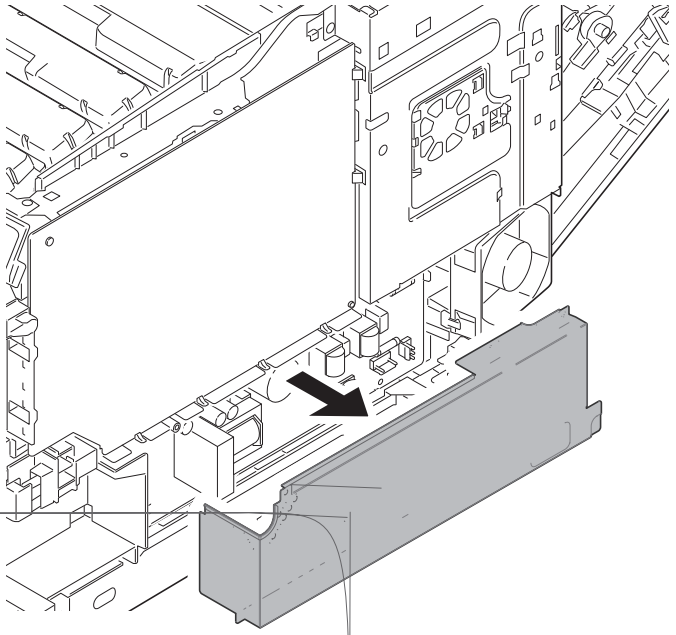

Figure 1-5-39

4. Remove all connectors from power source PWB.
5. Remove two screws.
6. Release three hooks and then remove the power source PWB.
7. Check or replace the power source PWB and refit all the removed parts.

Figure 1-5-40

(3) Detaching and refitting the main PWB

Procedure

1. Remove the SSD* or network interface card, if installed.
   *: 26/28 ppm model only
2. Remove the IF cover (see page 1-5-3).
3. Remove two pins and then remove the SSD or network interface card.

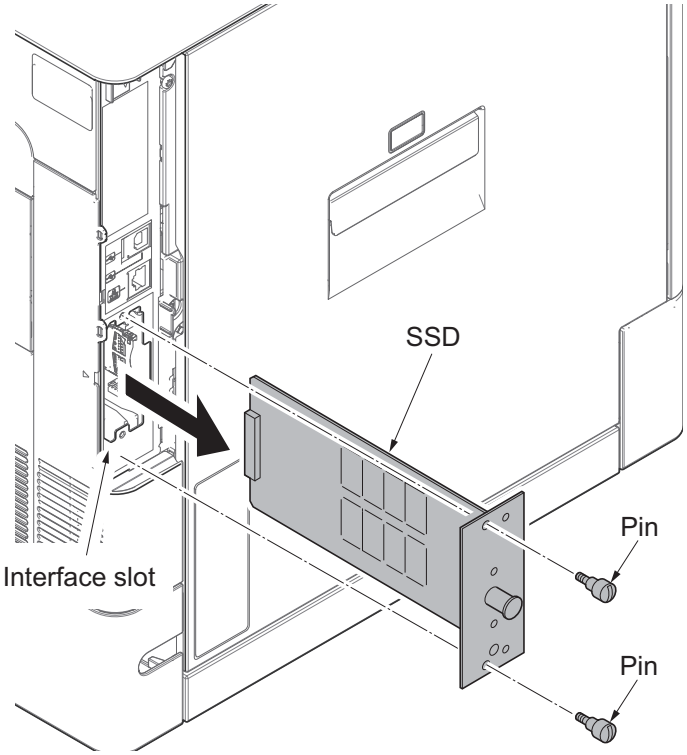

Figure 1-5-41

4. Remove the top cover (see page 1-5-3).
5. Remove the right rear cover, right cover and right lower cover (see page 1-5-5).
6. Remove four screws and then remove the power source shield.
   Screws A and B are unidentical, therefore, do not mix up.

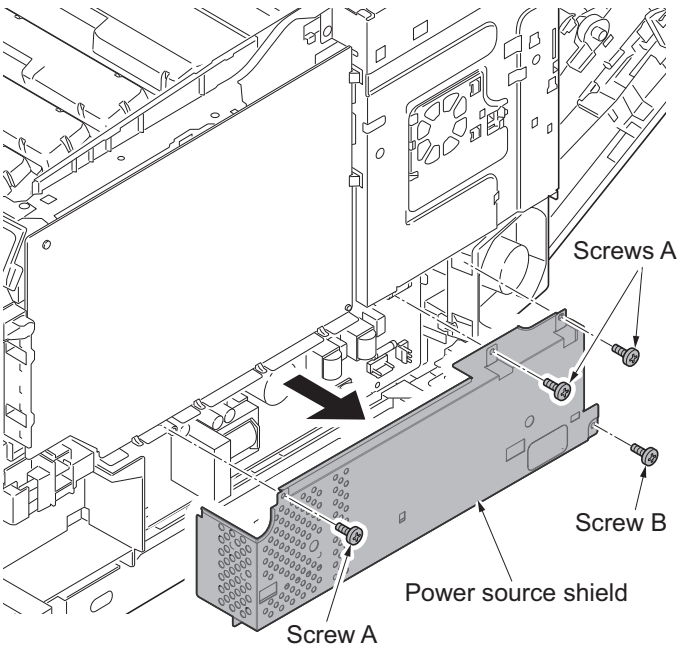

Figure 1-5-42

7. Open the bracket.
8. Slide the plate. Release four hooks and then remove the plate.

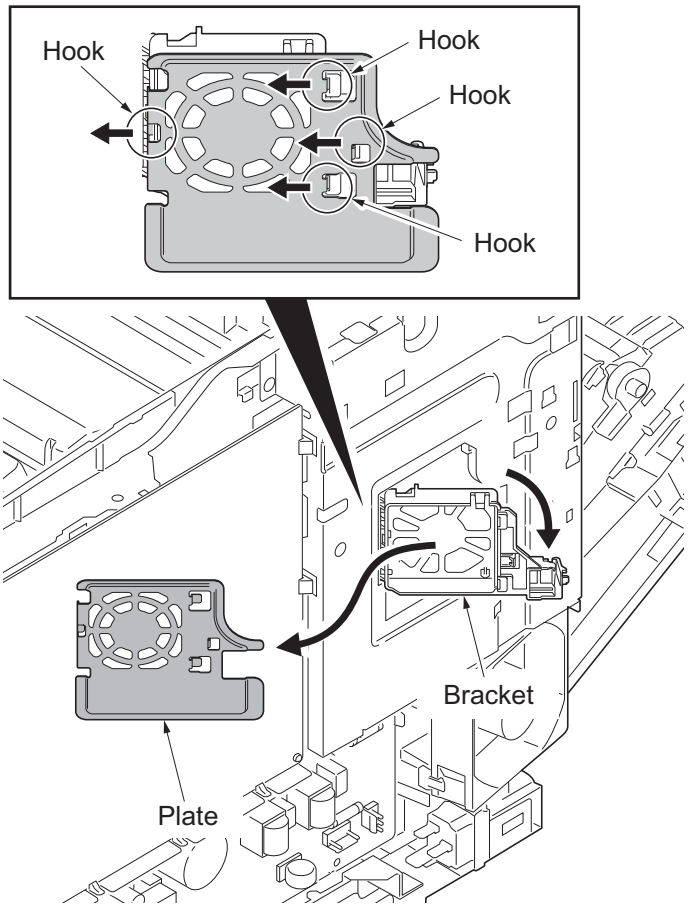

Figure 1-5-43

9. Remove the screw and then remove the fuser wire cover.

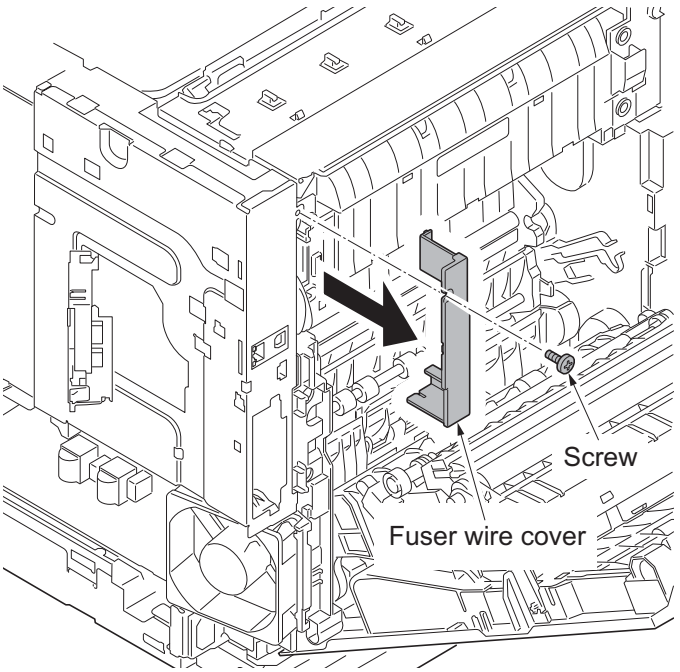

Figure 1-5-44

10. Remove four screws and then remove the controller shield.

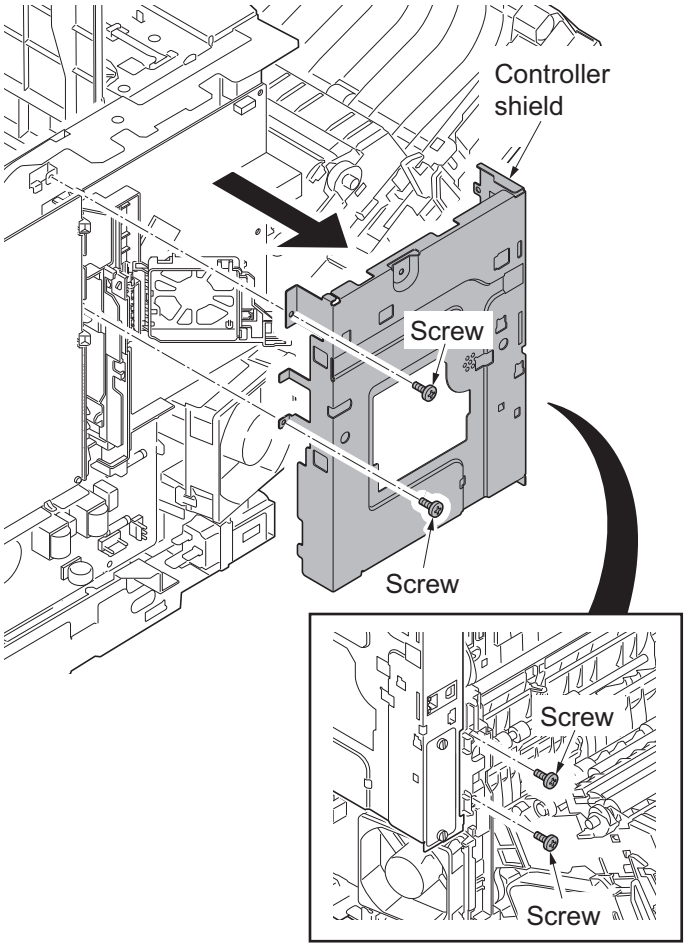

Figure 1-5-45

11. Open the bracket and then remove it.

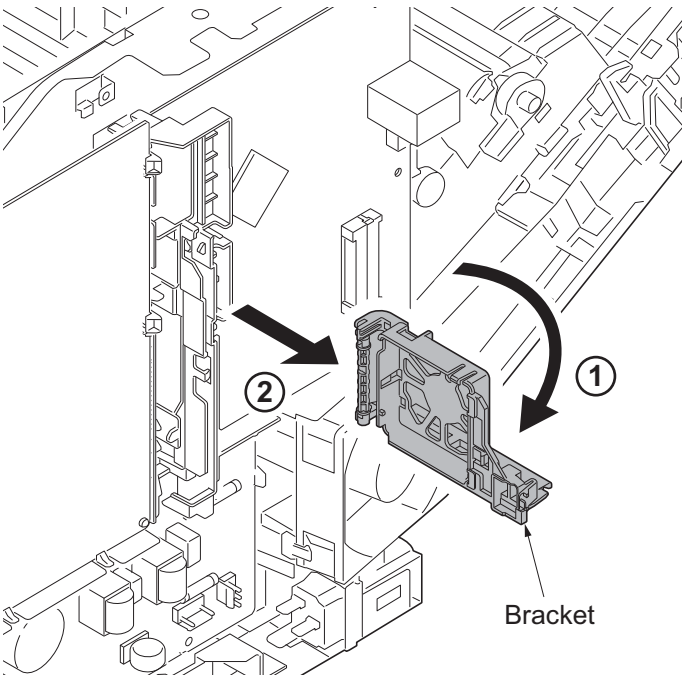

Figure 1-5-46

12. Remove all connectors from the main PWB.

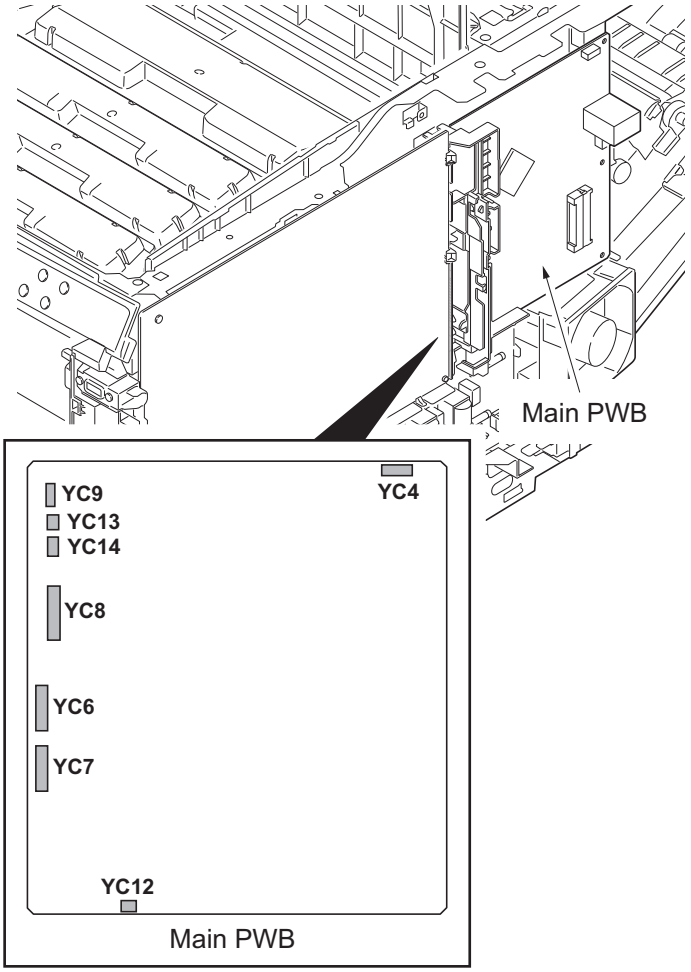

Figure 1-5-47

13. Remove two screws and then remove the wire holder.

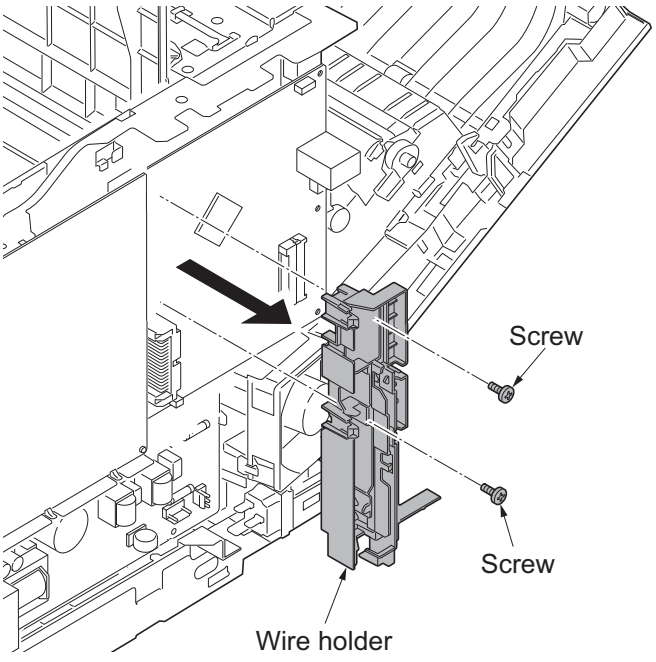

Figure 1-5-48

14. Remove three screws and then remove the main PWB.
15. Check or replace the main PWB and refit all the removed parts.

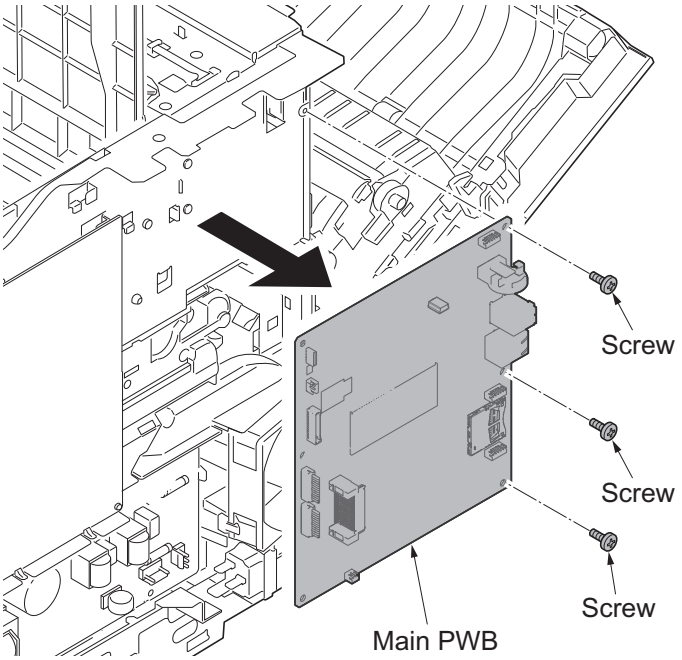

Figure 1-5-49

(4) Detaching and refitting the high voltage PWB

Procedure

1. Remove the top cover (see page 1-5-3).
1. Remove the right rear cover and right cover (see page 1-5-5).
2. Remove the FFC from the high voltage PWB.

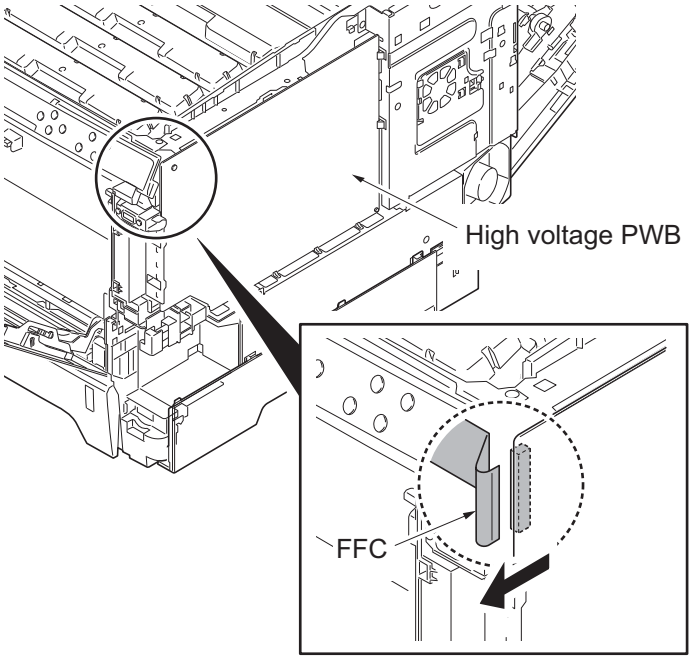

Figure 1-5-50

3. Remove the screw.
4. Release eight hooks and then remove the high voltage PWB.
5. Check or replace the high voltage PWB and refit all the removed parts.

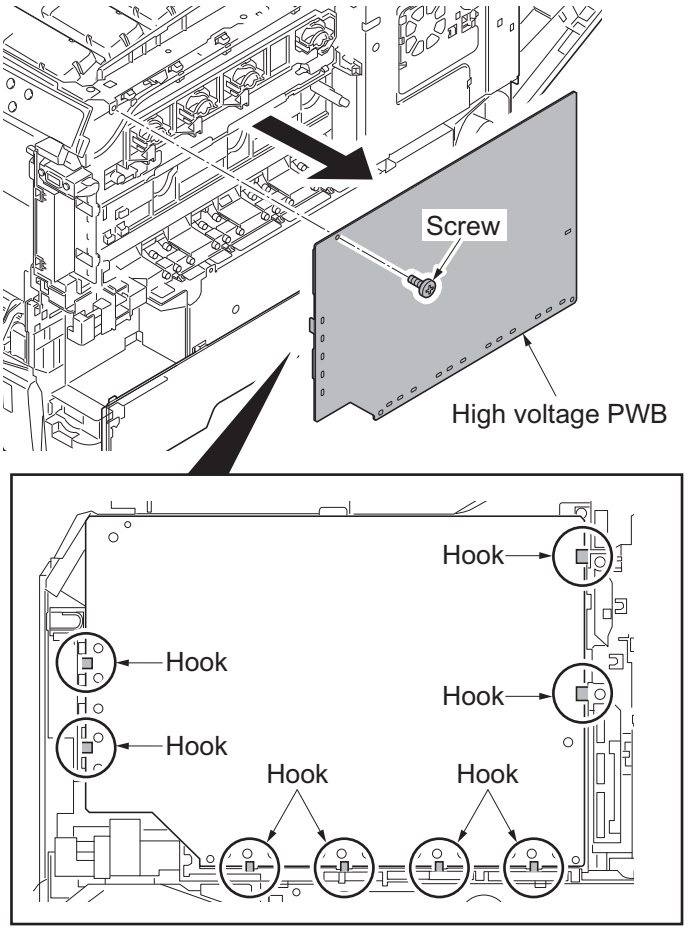

Figure 1-5-51

1-5-9 Drive section

(1) Detaching and refitting the MP feed drive unit

Procedure

1. Remove the top cover (see page 1-5-3).
2. Remove the right rear cover and right cover (see page 1-5-5).
3. Remove the left rear cover, left cover and left lower cover (see page 1-5-8).
4. Remove the inner cover (see page 1-5-10).
5. Remove the engine PWB (see page 1-5-26).
6. Release three hooks and then remove the left fan motor.

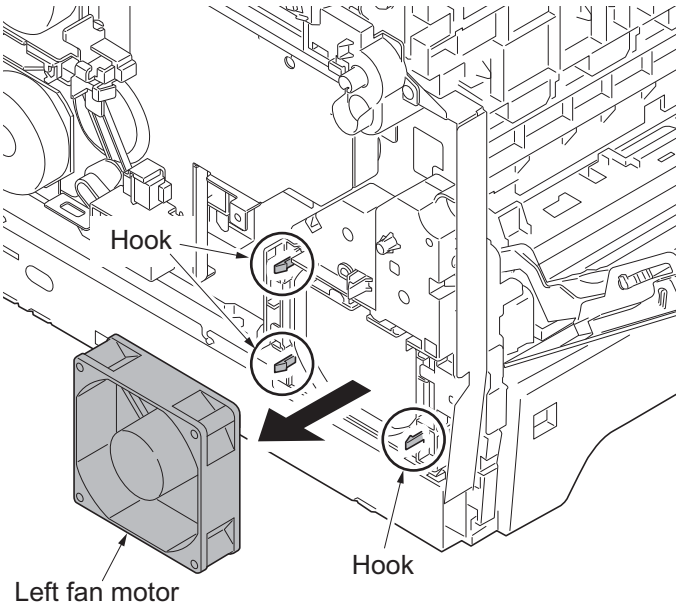

Figure 1-5-52

7. Turn the cam inside the device to the position indicated.
8. Remove three screws and then remove MP feed drive unit.
9. Check or replace the MP feed drive unit and refit all the removed parts.

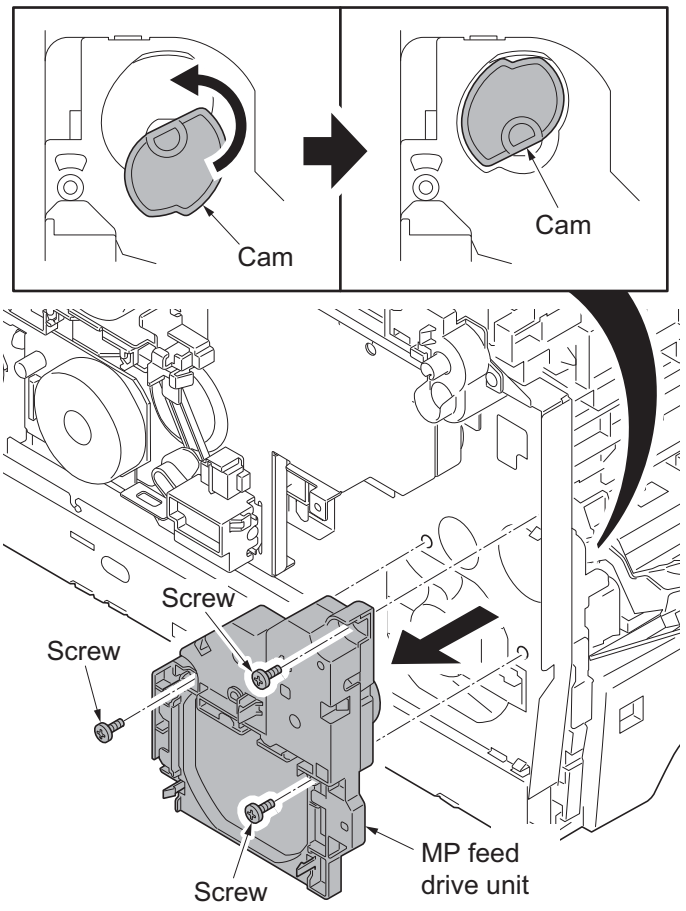

Figure 1-5-53

(2) Detaching and refitting the drum/developing drive unit

Procedure

1. Remove drum units (K, M, C, Y) and developing units (K, M, C, Y) (see page 1-5-20, 1-5-18).
2. Remove the top cover (see page 1-5-3).
3. Remove the left rear cover, left cover and left lower cover (see page 1-5-8).
4. Remove the engine PWB (see page 1-5-26).
5. Remove the screw and release the hook, and then remove the developing fan unit.

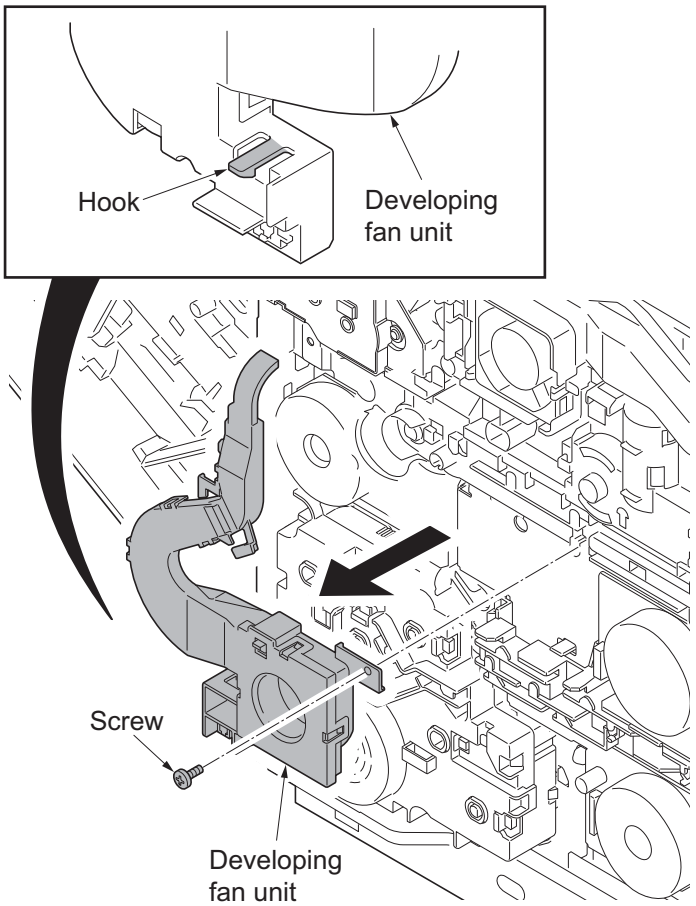

Figure 1-5-54

6. Remove the screw and then remove the ID guide.

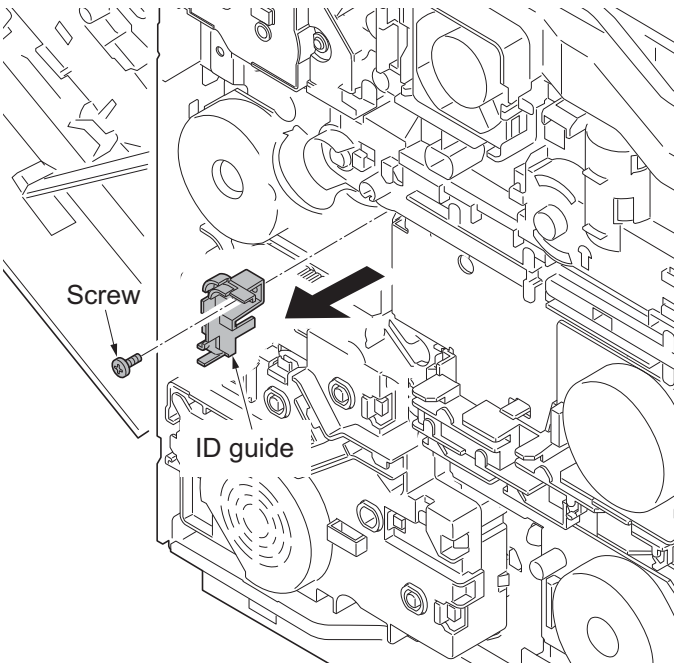

Figure 1-5-55

7. Remove five screws and then remove drum/developing drive unit.
8. Check or replace the drum/developing drive unit and refit all the removed parts.

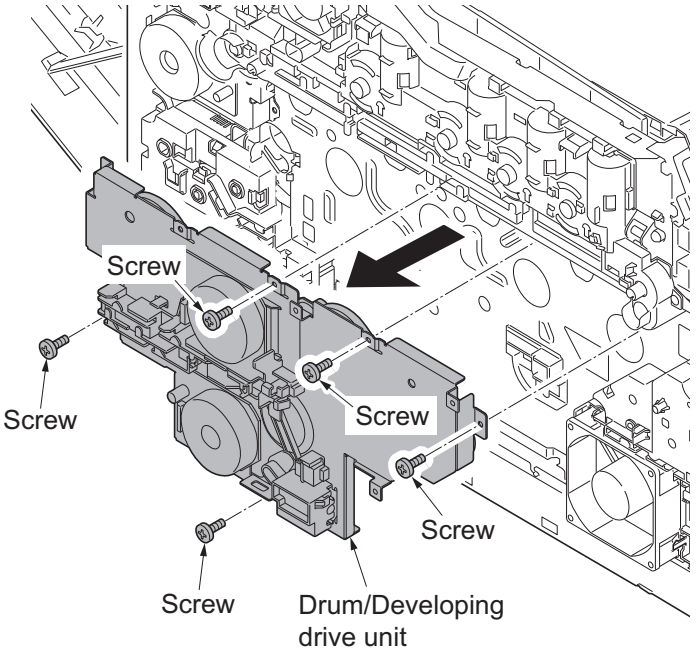

Figure 1-5-56

(3) Detaching and refitting the paper feed drive unit

Procedure

1. Remove the top cover (see page 1-5-3).
2. Remove the left rear cover, left cover and left lower cover (see page 1-5-8).
3. Remove connector (YC3) from engine PWB.

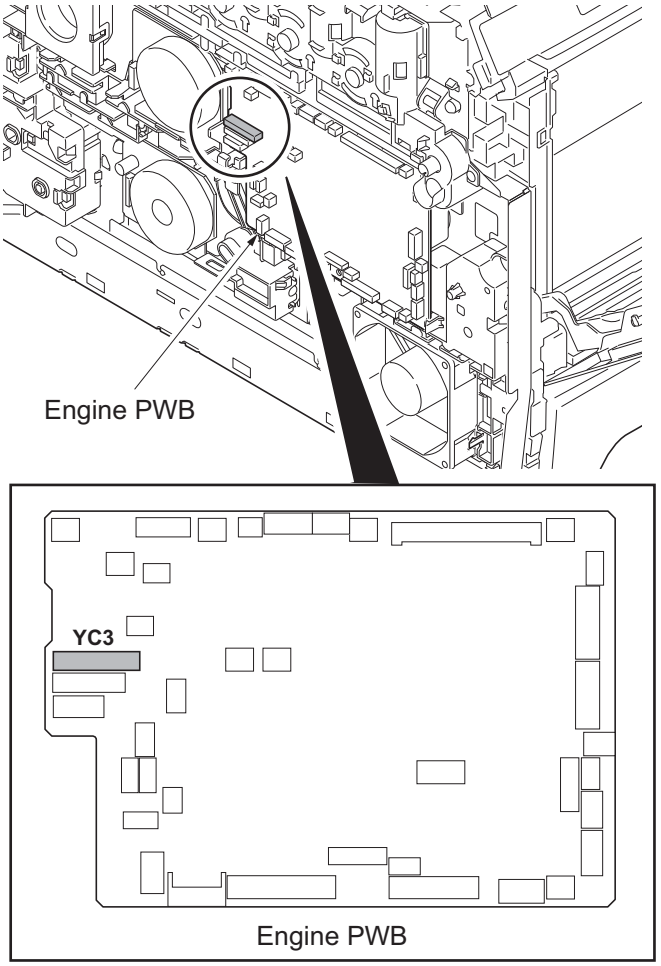

Figure 1-5-57

4. Remove four screws and then remove the paper feed drive unit.
5. Check or replace the paper feed drive unit and refit all the removed parts.

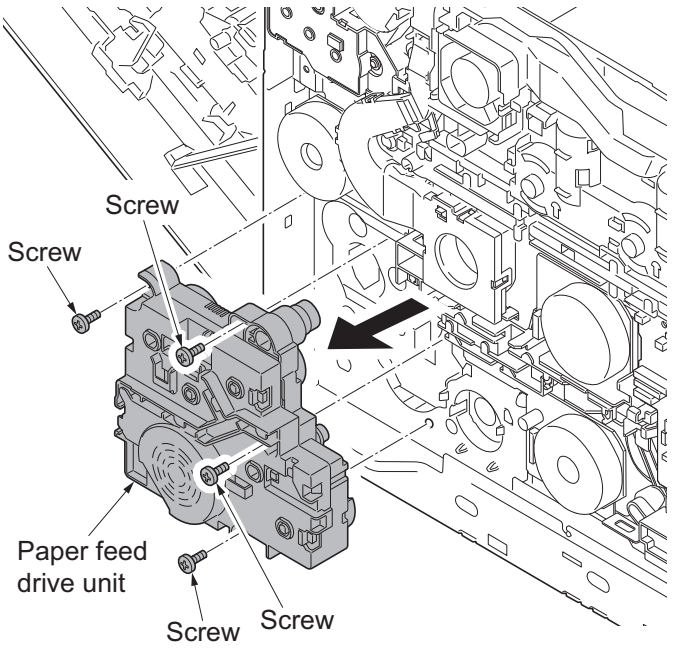

Figure 1-5-58

(4) Detaching and refitting the fuser pressure drive unit

Procedure

1. Remove the fuser unit (see page 1-5-25).
2. Remove the top cover (see page 1-5-3).
3. Remove the left rear cover and left cover (see page 1-5-8).
4. Remove connector (YC38) from engine PWB.

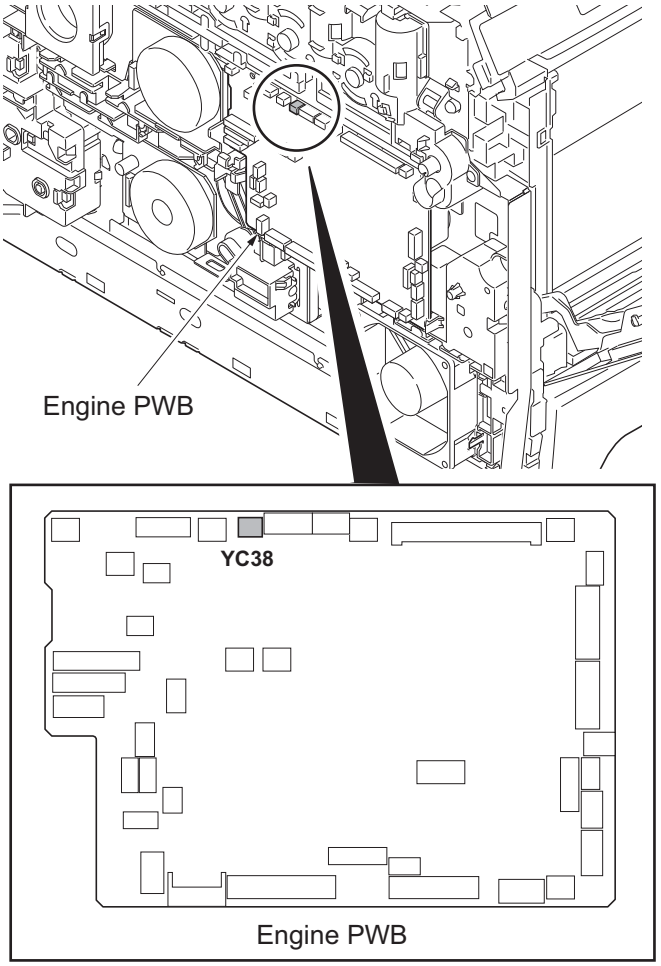

Figure 1-5-59

5. Remove the developing fan unit (see page 1-5-36).
6. Remove three screws.
7. Release two hooks remove the fuser pressure drive unit.
8. Check or replace the fuser pressure drive unit and refit all the removed parts.

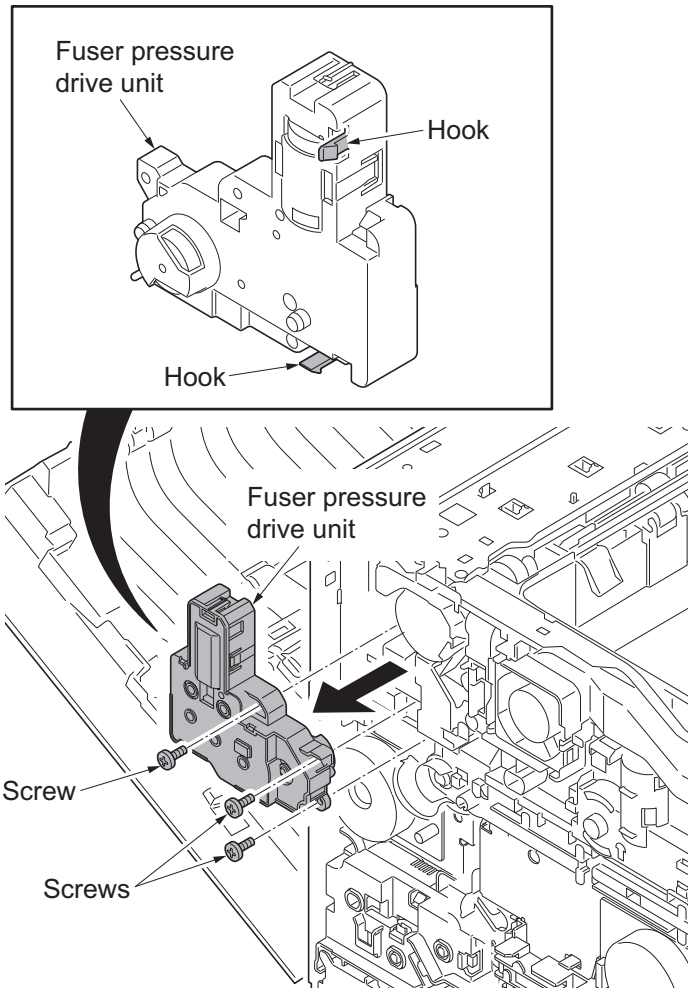

Figure 1-5-60

(5) Detaching and refitting the middle transfer drive unit

Procedure

1. Remove the intermediate transfer unit (see page 1-5-21).
2. Remove the top cover (see page 1-5-3).
3. Remove the left rear cover and left cover (see page 1-5-8).
4. Remove the fuser pressure drive unit (see page 1-5-39).
5. Remove connector (YC15) from engine PWB.

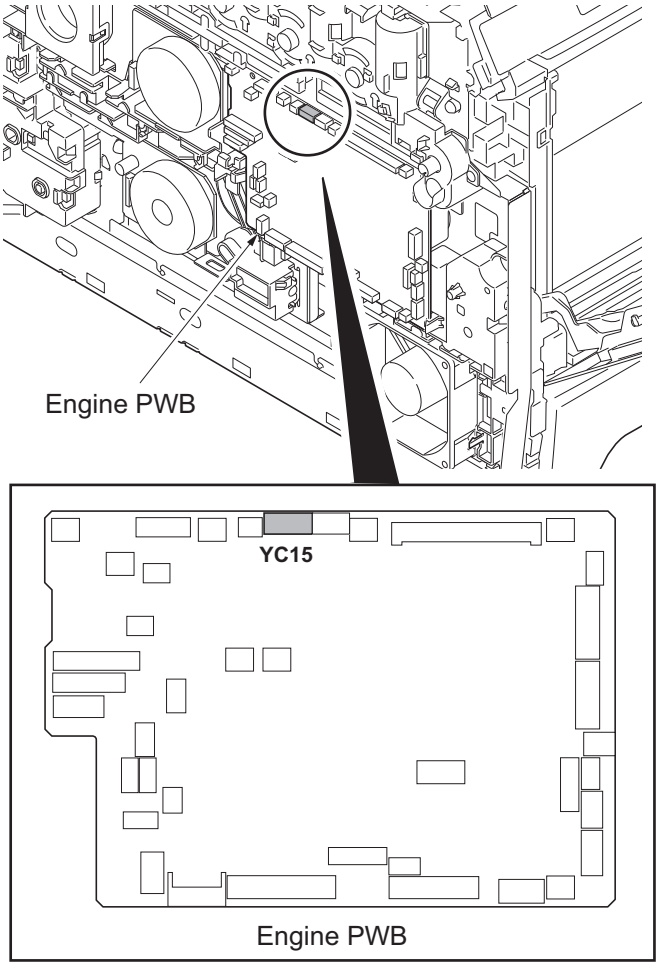

Figure 1-5-61

6. Remove the screw and then remove the ID guide.

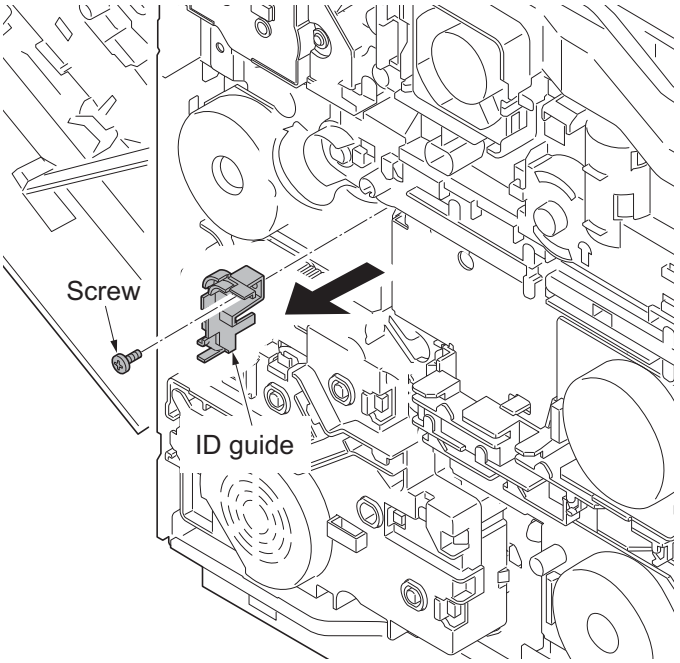

Figure 1-5-62

7. Remove three screws and then remove the middle transfer drive unit.
8. Check or replace the middle transfer drive unit and refit all the removed parts.

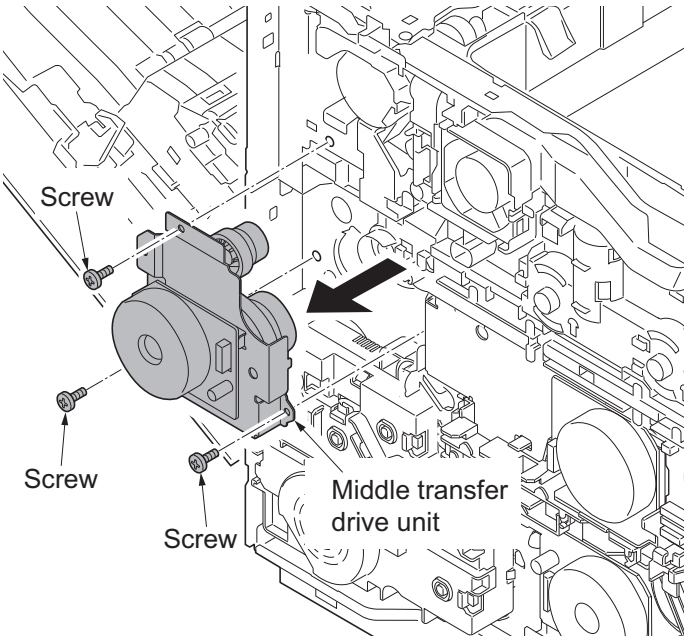

Figure 1-5-63

1-5-10 Optical section

(1) Detaching and refitting the laser scanner unit

Procedure

1. Remove the intermediate transfer unit (see page 1-5-21).
2. Remove drum units (K, M, C, Y) and developing units (K, M, C, Y) (see page 1-5-20, 1-5-18).
3. Remove the top cover (see page 1-5-3).
4. Remove the left rear cover and left cover (see page 1-5-8).
5. Remove two connectors (YC32, YC32) from engine PWB.

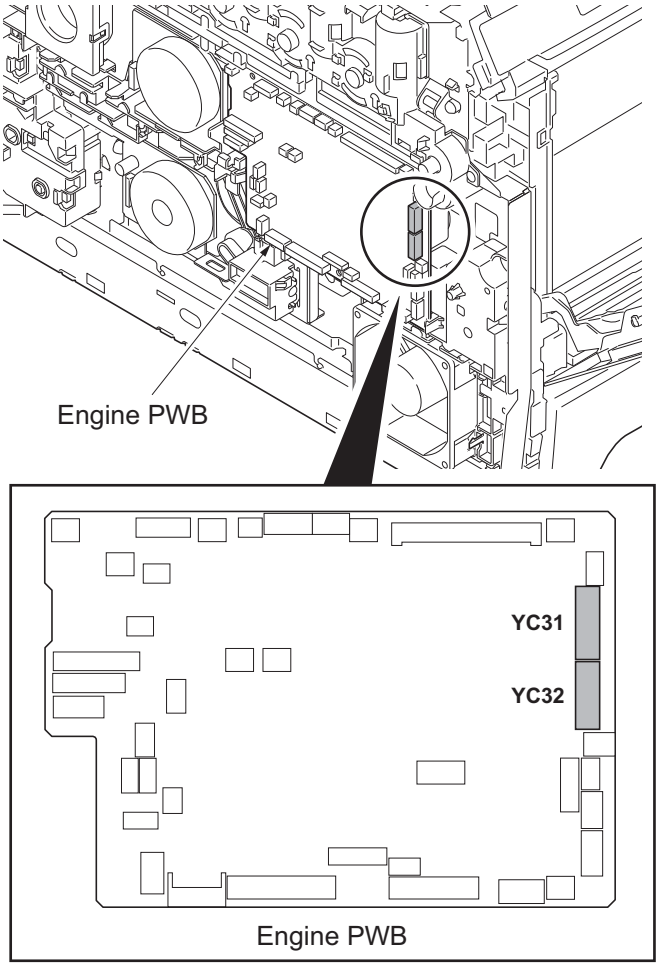

Figure 1-5-64

6. Draw two connectors (YC31, YC32) into the machine inside.

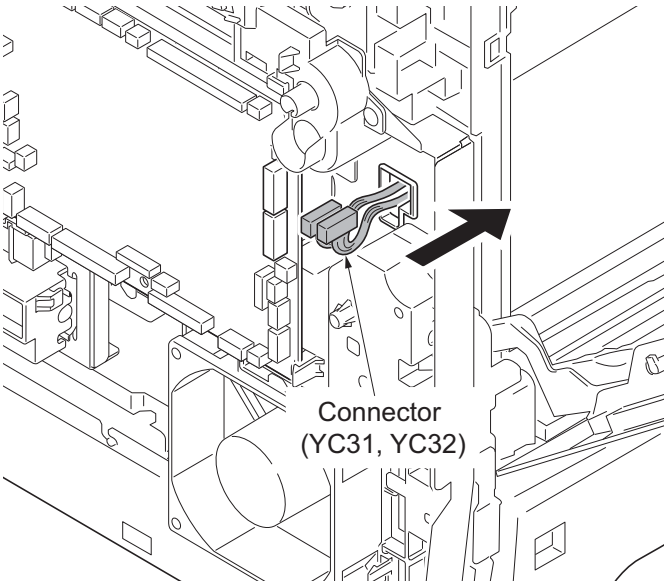

Figure 1-5-65

7. Remove the right rear cover, right cover and right lower cover (see page 1-5-5).
8. Remove the controller shield (see page 1-5-29).
9. Remove two connectors (YC2, YC3) from main PWB.

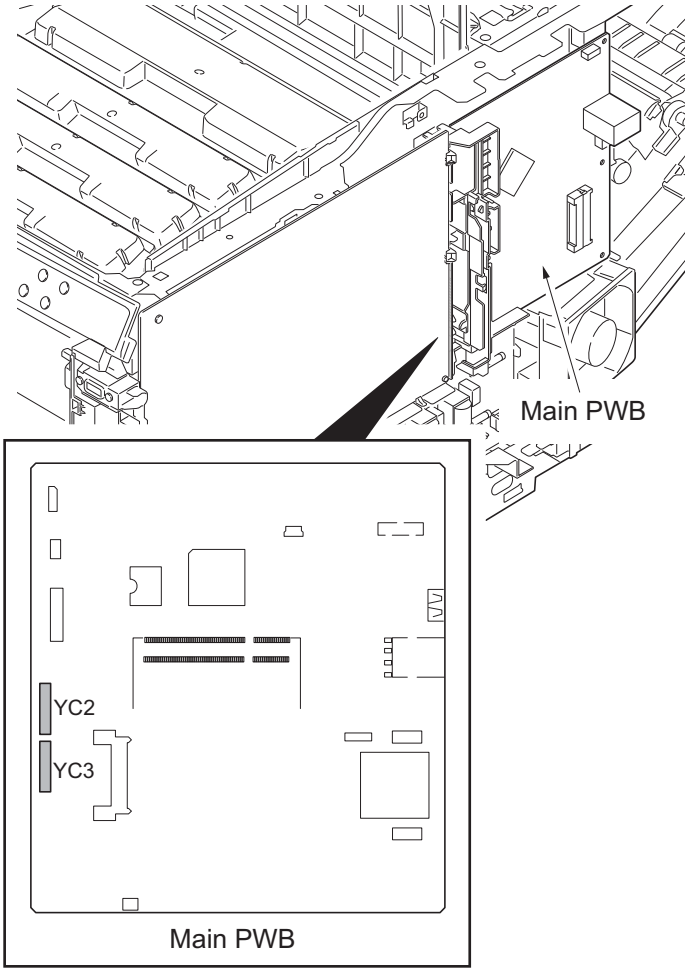

Figure 1-5-66

10. Draw two connectors (YC2, YC3) into the machine inside.

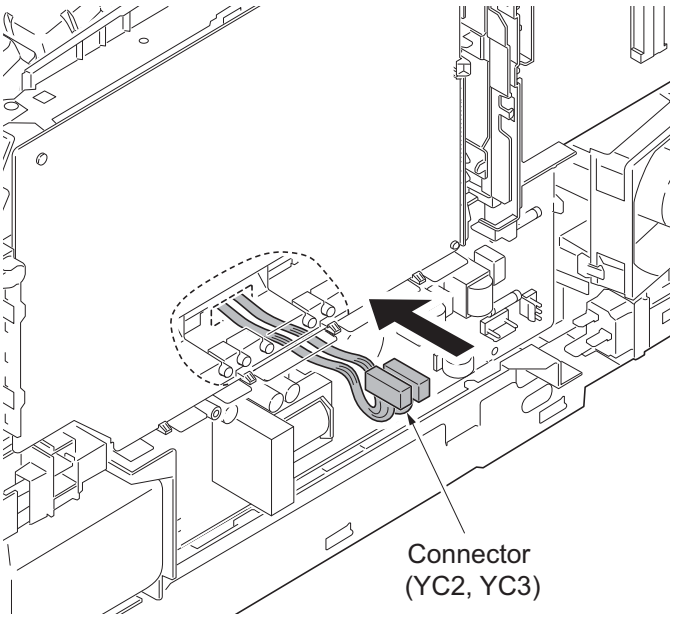

Figure 1-5-67

11. Remove each three screws and then remove laser scanner unit (KM, CY).
12. Check or replace the laser scanner unit and refit all the removed parts.

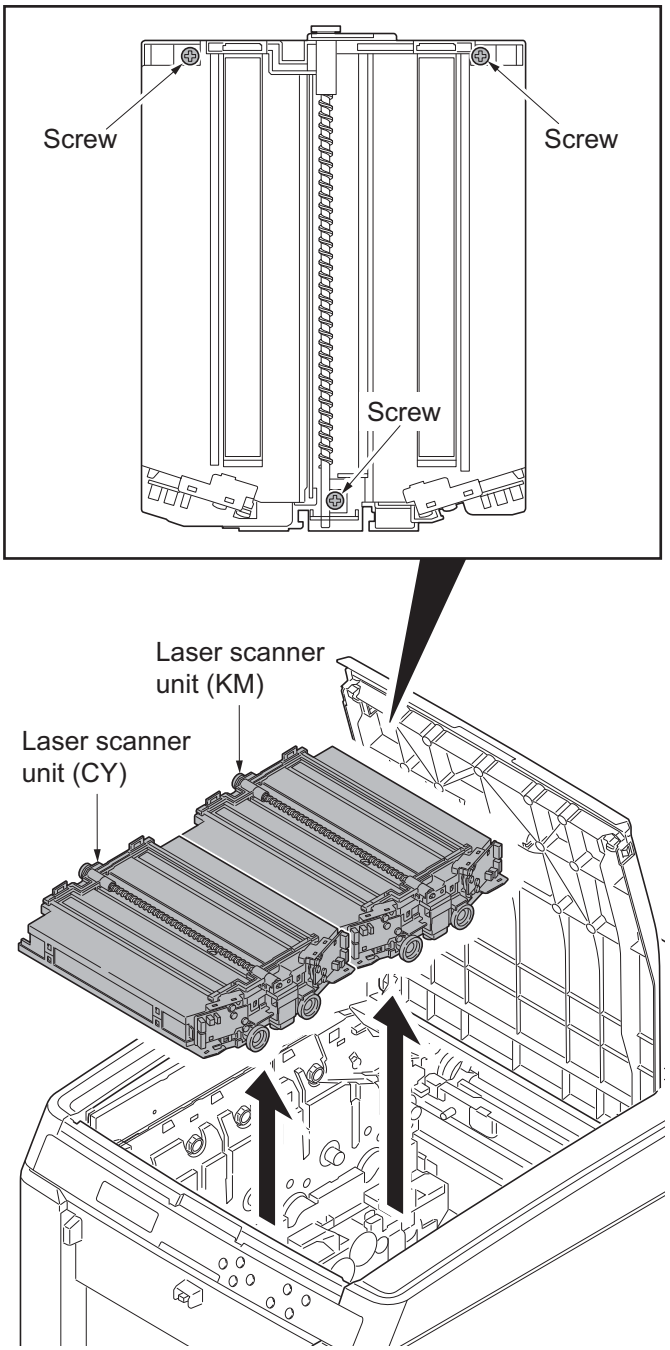

Figure 1-5-68

1-5-11 Others

(1) Detaching and refitting the paper conveying unit

Procedure

1. Open the rear cover.
2. Remove left and right straps.

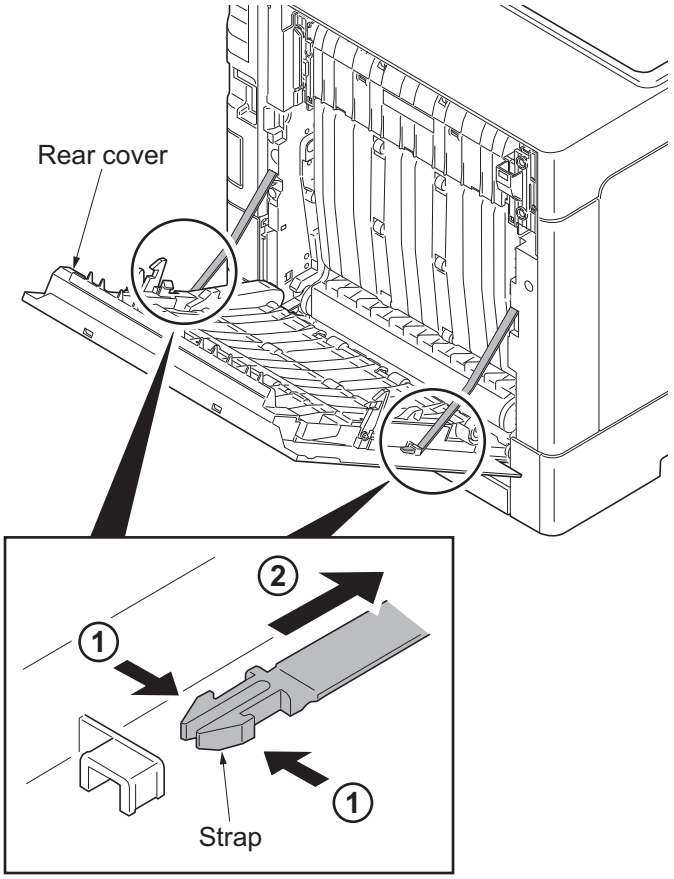

Figure 1-5-69

3. Remove the rear cover unit.

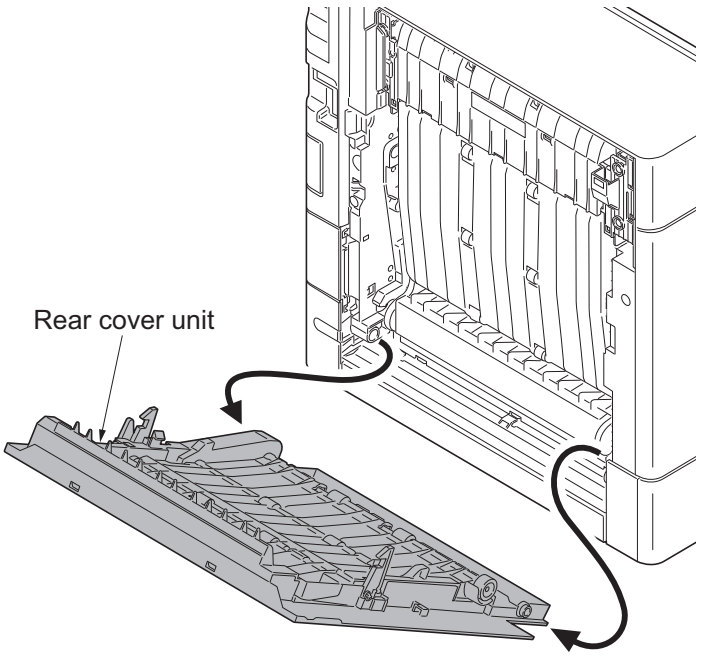

Figure 1-5-70

4. Remove the paper conveying unit.

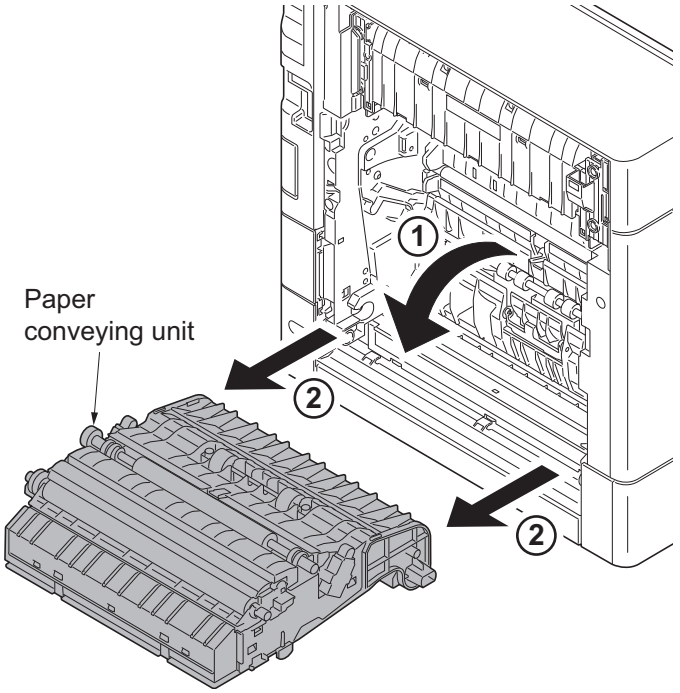

Figure 1-5-71

(2) Detaching and refitting the operation panel

Procedure

1. Release two hooks and then remove the operation panel.
2. Remove the FFC from connector.
3. Check or replace the operation panel and refit all the removed parts.

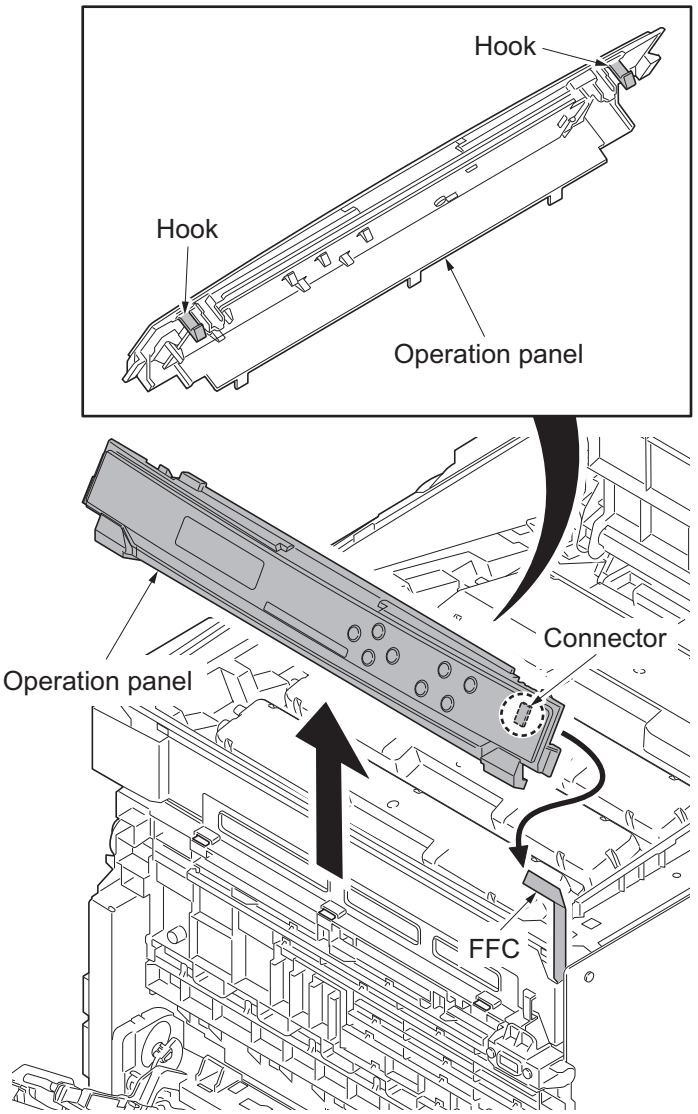

Figure 1-5-72

(3) Detaching and refitting the power source inlet

Procedure

1. Remove the power source PWB (see page 1-5-28).
2. Remove the connector and release the hook and then remove the right fan motor.

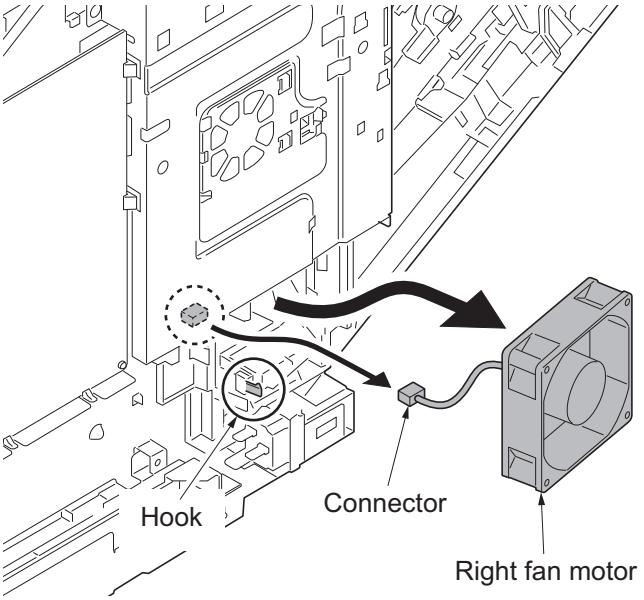

Figure 1-5-73

3. Remove the screw of the grounding wire.

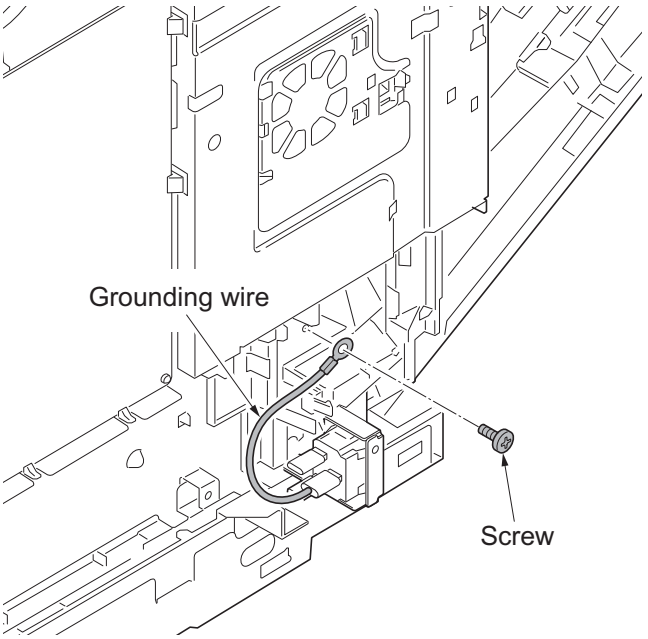

Figure 1-5-74

4. Remove the screw and two terminals and then remove the power source inlet.

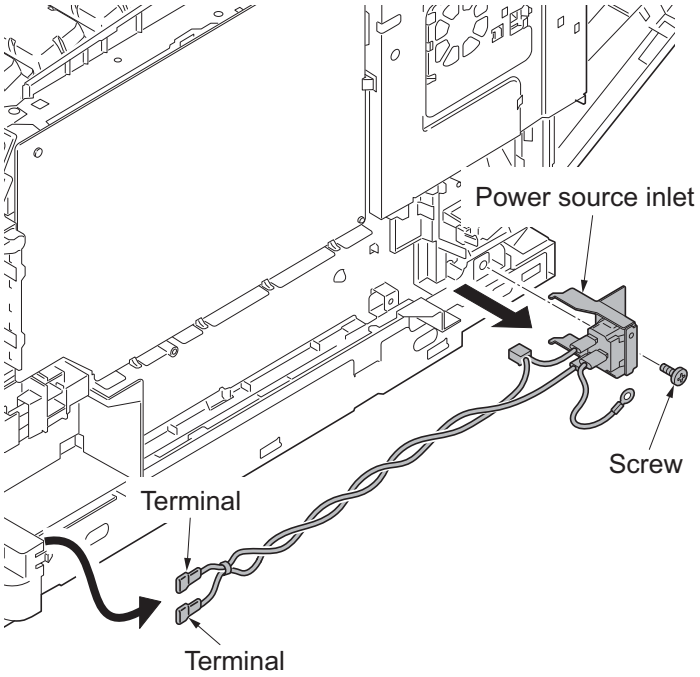

Figure 1-5-75

5. Check or replace the power source inlet and refit all the removed parts.
*: Before mounting the AC inlet on the main unit, twist the wires 5 to 7 turns.

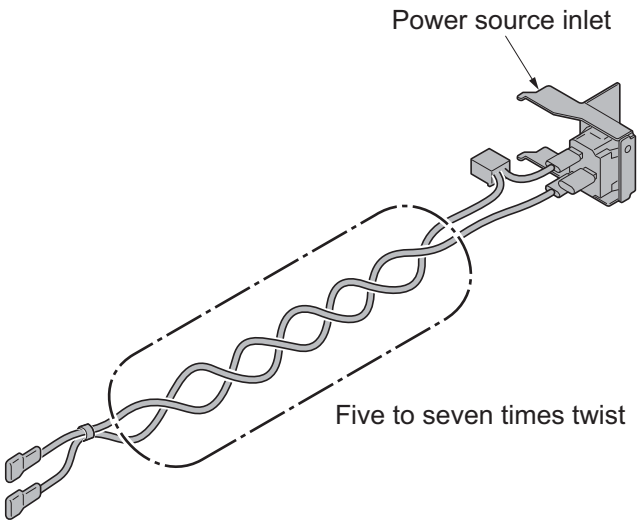

Figure 1-5-76

(4) Direction of installing the principal fan motors

When detaching or refitting the fan motors, be careful of the airflow direction (intake or exhaust).

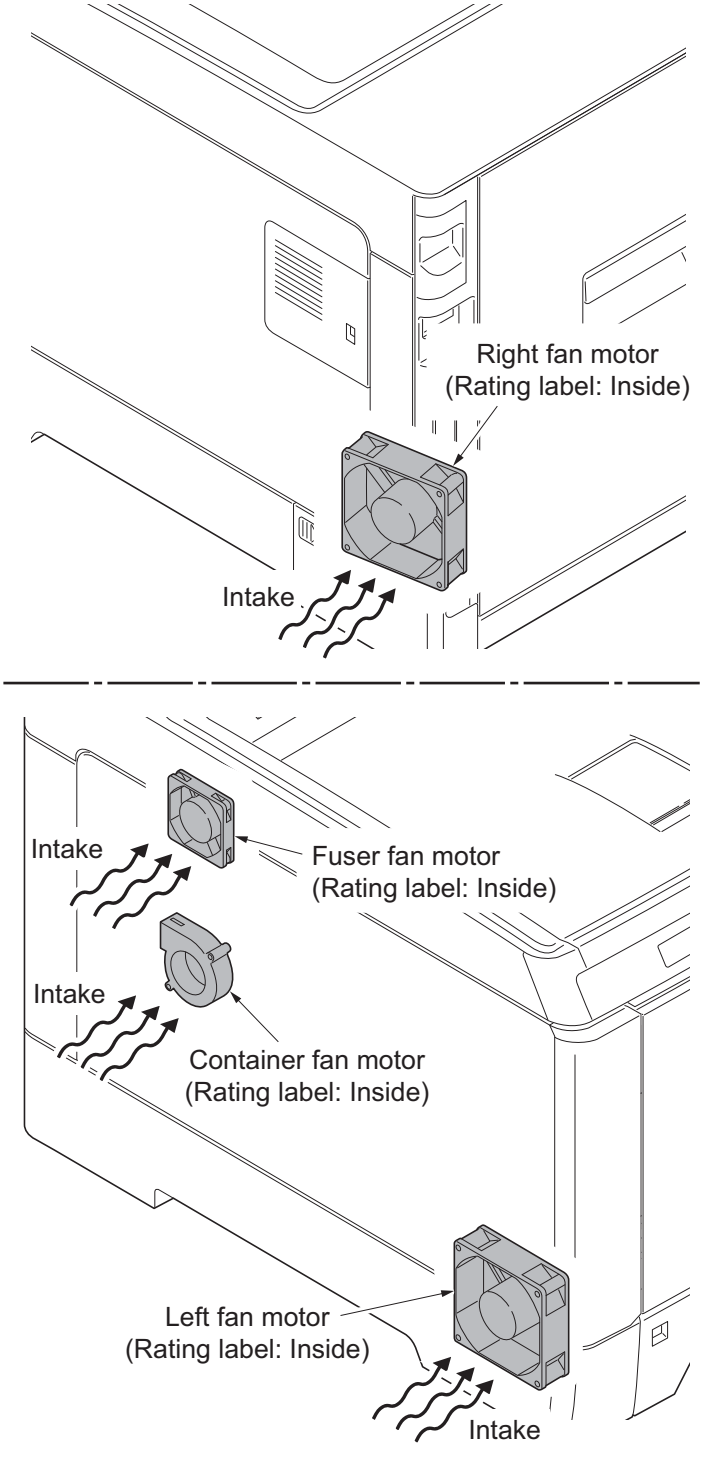

Figure 1-5-77

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1-6-1 Upgrading the firmware

Follow the procedure below to upgrade the firmware of main PWB, engine PWB, optional language, optional paper feeder and color table.

Preparation
Extract the file that has the download firmware and put them in the USB Memory.

Procedure

1. Turn ON the main power switch and confirm if the screen shows “Ready” then, turn OFF the main power switch.
2. Insert USB memory that has the firmware in the USB memory slot.
3. Turn ON the main power switch.
4. About 40 seconds later, “FW-Update” will be displayed and blinking the data indicator (this shows to start the download).
5. Display the software that now upgrading.

   “FW-Update [CTRL]”
   “FW-Update [ENGN]”
   “FW-Update [PF1]”
   “FW-Update [PF2]”
   “FW-Update [PF3]”
   “FW-Update [OPT]”
   “FW-Update [CLT]”

6. Display the completion of the upgrade (Data indicator is ON condition).
7. ROM version is confirmed by the content of the display.
8. Turn OFF the main power switch and remove the USB memory.

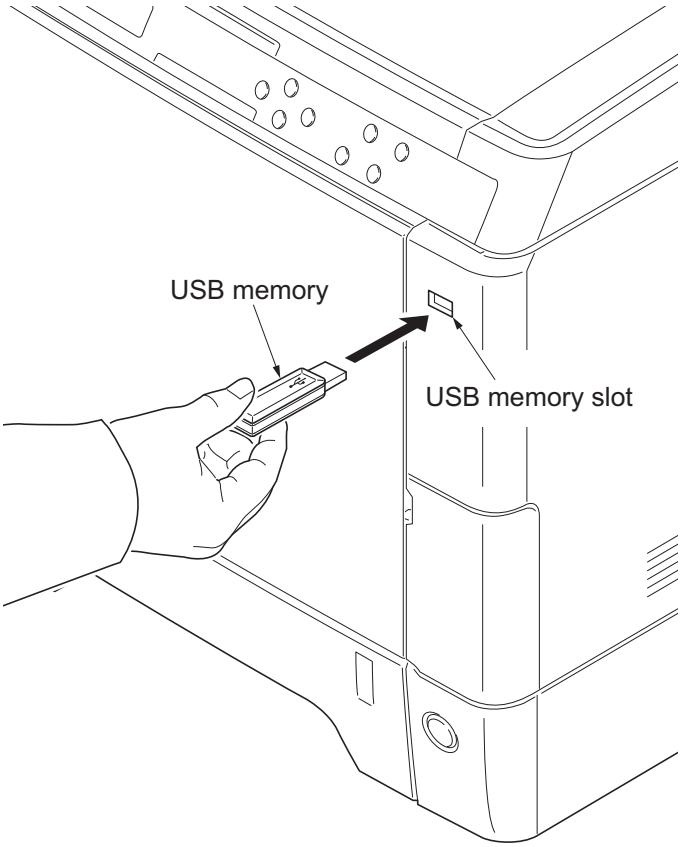

Figure 1-6-1

Safe-UPDATE
If the device is accidentally switched off or the USB memory is disconnected and upgrading was incomplete, upgrading is retried when turning the main power switch on next time. Insert USB memory and turn the main power switch on to perform steps 3 to 8 as the above.

Emergency-UPDATE

If Safe-UPDATE is not successful in upgrading, the message below appears.
In that case, retry upgrading after recovering the software by following the procedure below.

FW-Update
Error FFFF

Preparation

The USB memory must be formatted in FAT or FAT32 in advance.
Extract the main firmware to download from the file.
Rename the file which was extracted from the archive. [DL_CTRL.2PT] to [KM_EMRG.2PT]
Copy the all extracted files to the root of the USB memory.

Procedure

1. Turn the main power switch off.
2. Insert the USB memory which contains the firmware into the USB memory slot.
3. Turn the main power switch on.
4. Rewriting of the PWB software will start for restoration.
   “Emergency Update” is displayed on the LCD of the operation panel.
5. "Completed" will be displayed when rewriting is successful.
   * : "Failed" will be displayed when rewriting is failed.
6. Turn the main power switch off.
7. Wait for several seconds and then remove the USB memory from the USB memory slot.
8. Extract the firmware to download from the archive and copy to the root of the formatted USB memory.

   NOTE: Deletes the "ES_SKIP.on" file When it is contained directly under the USB memory.

9. Insert the USB memory in which the firmware was copied in the USB memory slot.
10. Perform steps 3 to 8 on the previous page.

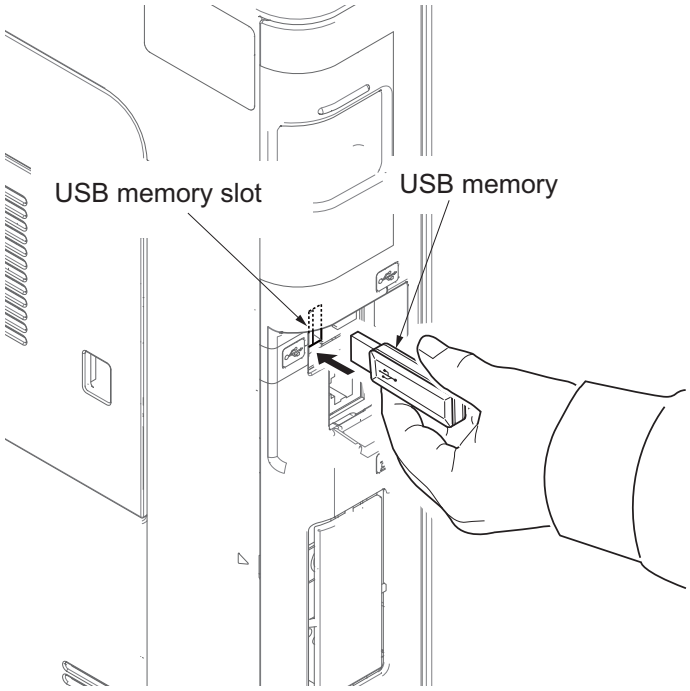

Figure 1-6-2

1-6-2 Remarks on engine PWB replacement

When replacing the engine PWB, remove the EEPROM (U1) from the engine PWB that has been removed and then reattach it to the new engine PWB.

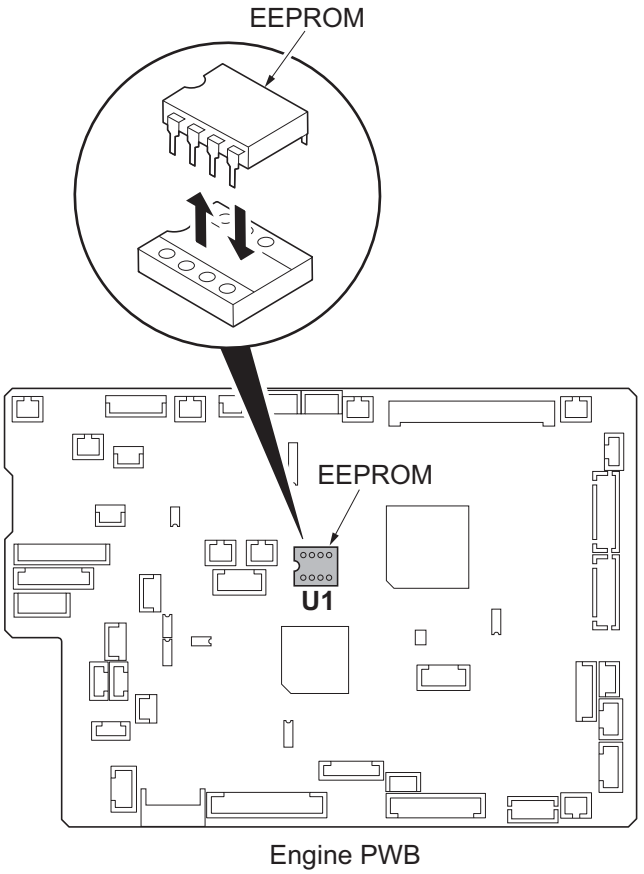

Figure 1-6-3

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2-1-1 Paper feed/conveying section

Paper feed/conveying section consists of the paper feed unit that feeds paper from the cassette and the MP tray paper feed unit that feeds paper from the MP tray, and the paper conveying section that conveys the fed paper to the transfer/separation section.

(1) Cassette paper feed section (21/23 ppm model)

The cassette can contain 250 sheets. The sheet from the cassette is pulled out by rotation of the pickup roller and sent to the paper conveying section by rotation of the paper feed roller. Also the retard roller prevents multiple feeding of paper.

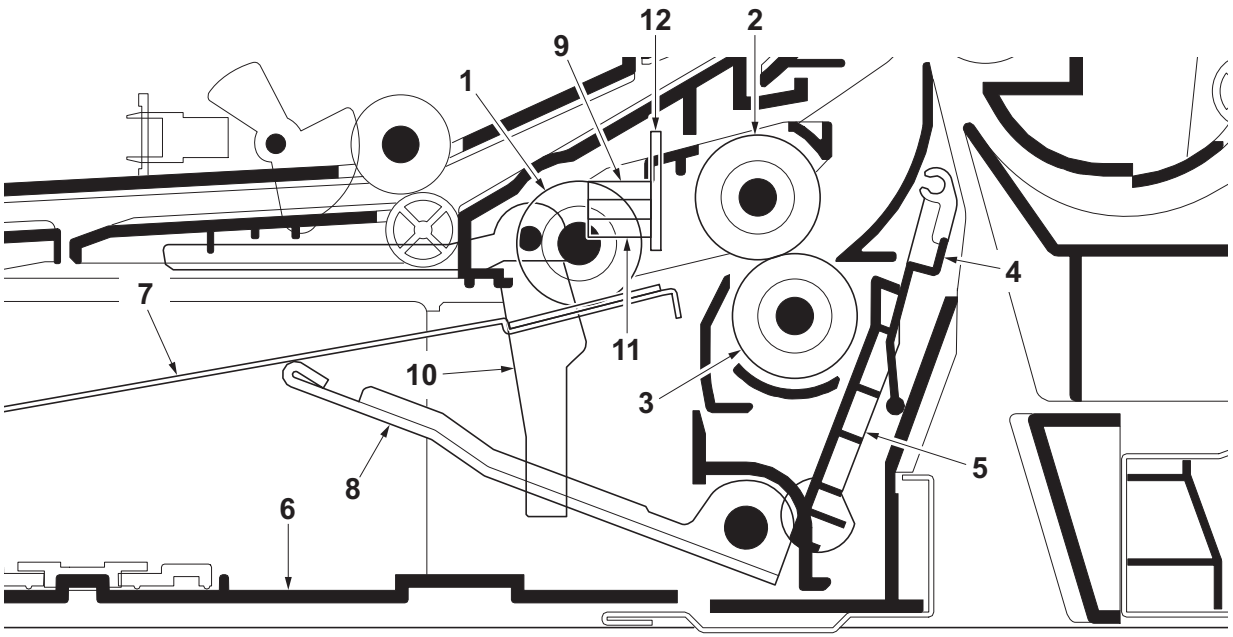

Figure 2-1-1 Cassette paper feed section (21/23 ppm model)

1. Pickup roller
2. Paper feed roller
3. Retard roller
4. Retard cover
5. Paper hook
6. Cassette base
7. Bottom plate
8. Lift work plate
9. Paper sensor (PS)
10. Actuator (paper sensor)
11. Lift sensor (LS)
12. Cassette PWB (CPWB)

(2) Cassette paper feed section (26/28 ppm model)

The cassette can contain 500 sheets. The sheet from the cassette is pulled out by rotation of the pickup roller and sent to the paper conveying section by rotation of the paper feed roller. Also the retard roller prevents multiple feeding of paper.

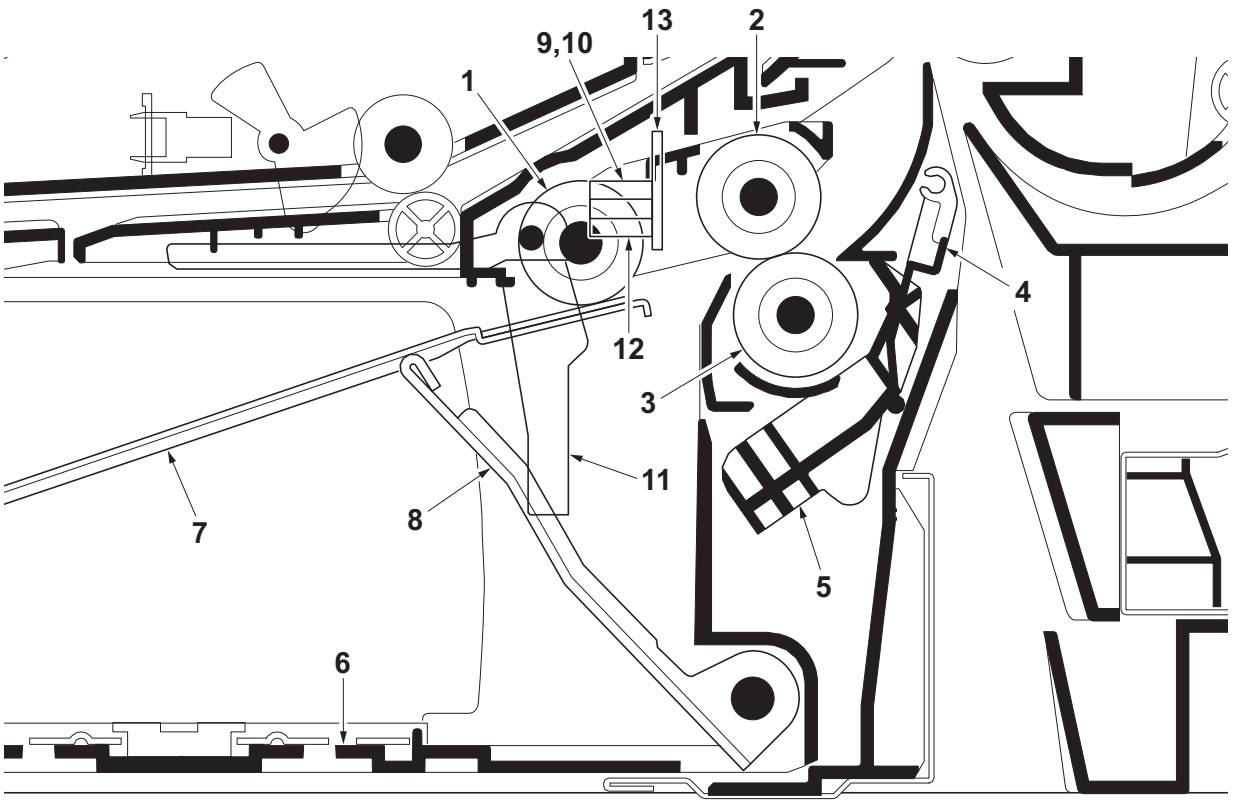

Figure 2-1-2 Cassette paper feed section (26/28 ppm model)

1. Pickup roller
2. Paper feed roller
3. Retard roller
4. Retard cover
5. Paper hook
6. Cassette base
7. Bottom plate
8. Lift work plate
9. Paper sensor 1 (PS1)
10. Paper sensor 2 (PS2)
11. Actuator (paper sensor)
12. Lift sensor (LS)
13. Cassette PWB (CPWB)

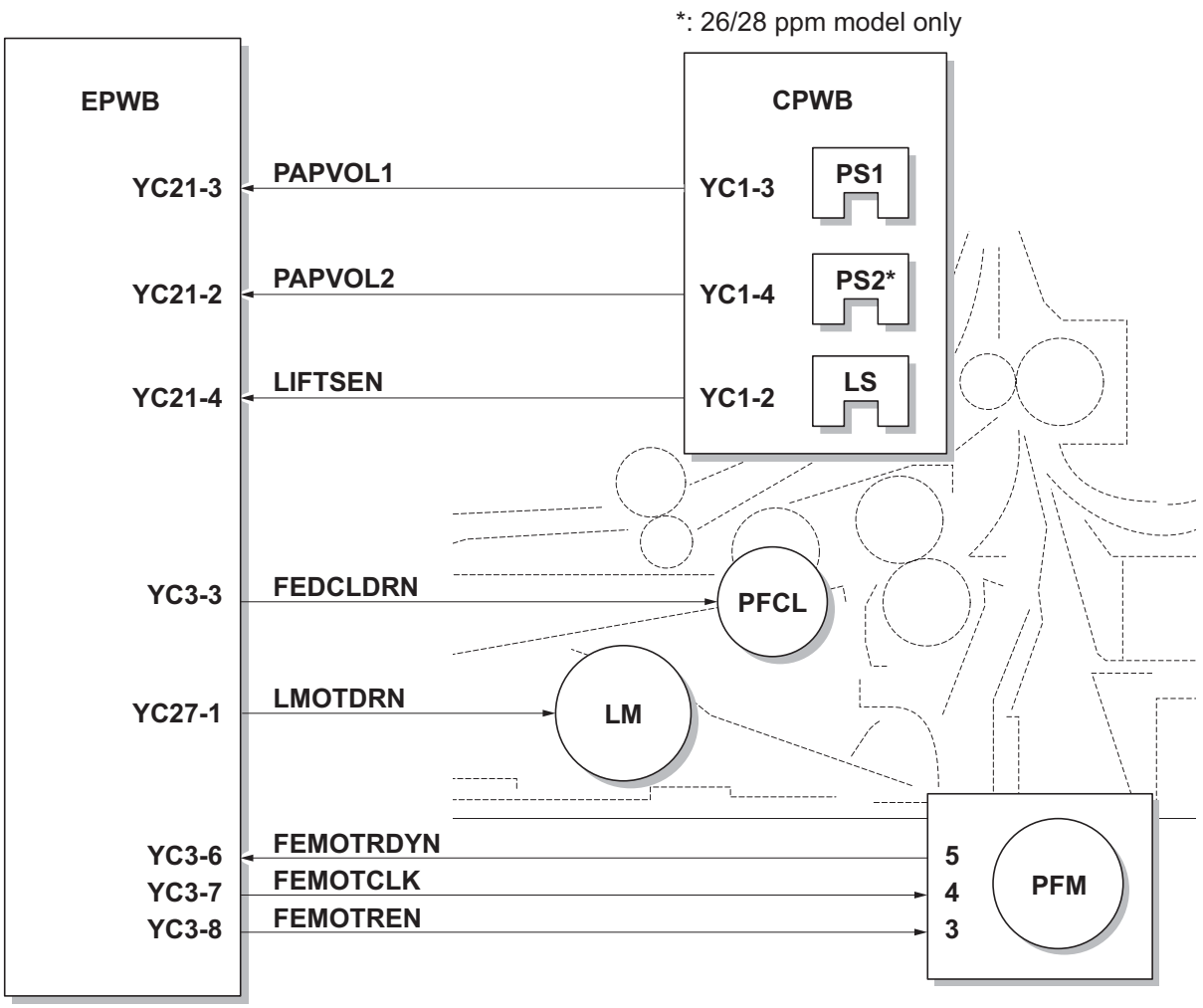

Figure 2-1-3 Cassette paper feed section block diagram

(3) MP tray paper feed section

The MP tray can contain 50 sheets. Feeding from the MP tray is performed by the rotation of the MP paper feed roller. Also, function of the MPF separation pad prevents paper from multiple feeding.

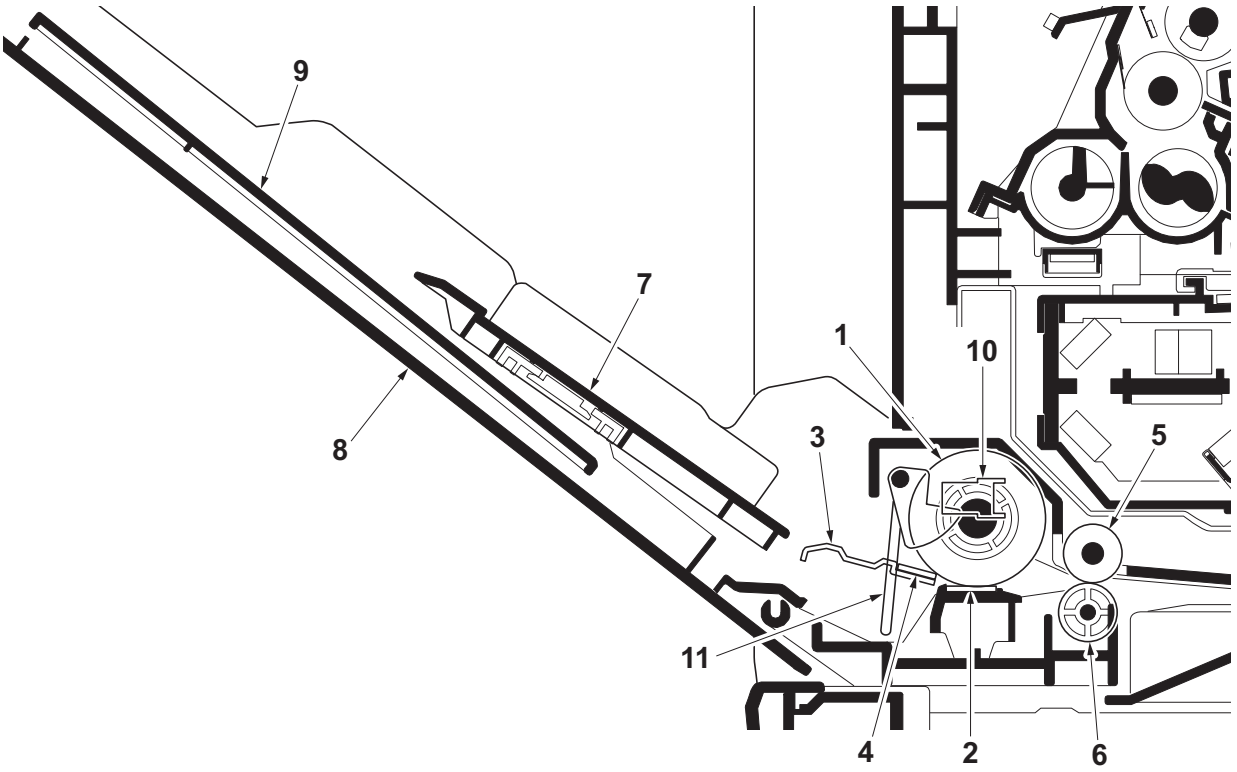

Figure 2-1-4 MP tray paper feed section

1. MP paper feed roller
2. MPF separation pad
3. MPF bottom plate
4. Friction pad
5. MPF feed roller
6. Feed pulley
7. MPF base
8. MPF cover
9. MPF tray
10. MP paper sensor (MPPS)
11. Actuator (MP paper sensor)

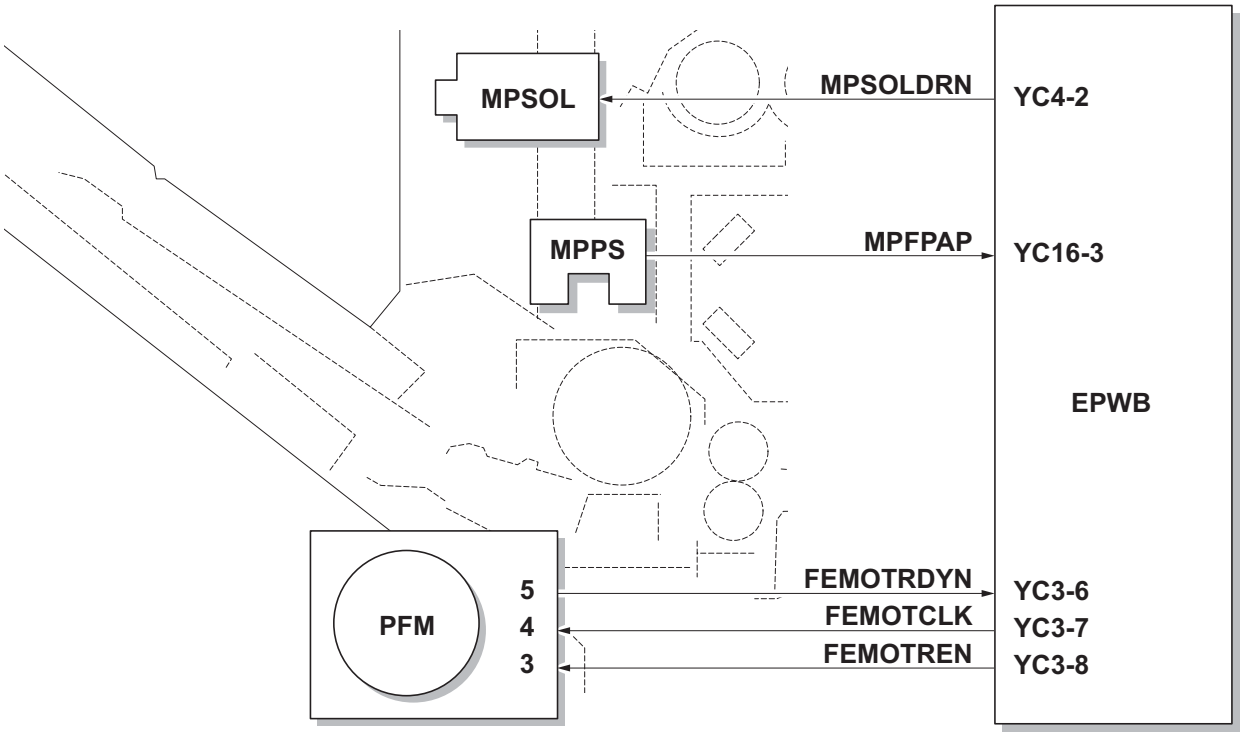

Figure 2-1-5 MP tray paper feed section block diagram

(4) Paper conveying section

The paper conveying section conveys paper to the transfer/separation section as paper feeding from the cassette or MP tray, or as paper refeeding for duplex printing. Paper by feeding is conveyed by the middle roller to the position where the registration sensor (RS) is turned on, and then sent to the transfer/separation section by the front registration roller and rear registration roller.

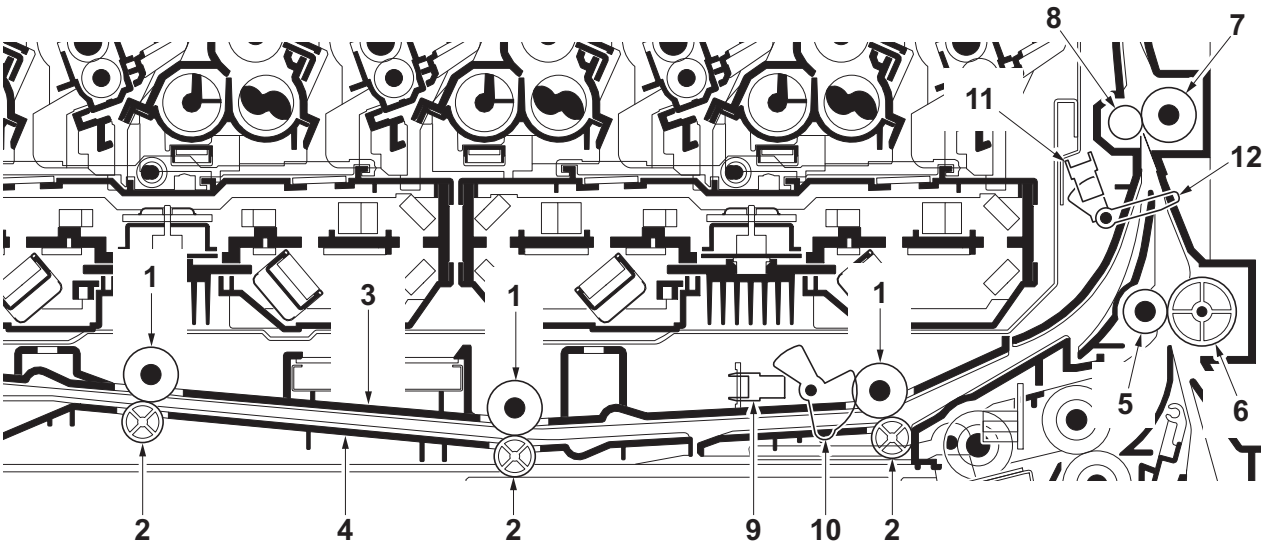

Figure 2-1-6 Paper conveying section

1. MPF feed rollers
2. Feed pulleys
3. MPF feed upper guide
4. MPF feed lower guide
5. Middle roller
6. Middle pulley
7. Front registration roller
8. Rear registration roller
9. MP feed sensor (MPFS)
10. Actuator (MP feed sensor)
11. Registration sensor (RS)
12. Actuator (registration sensor)

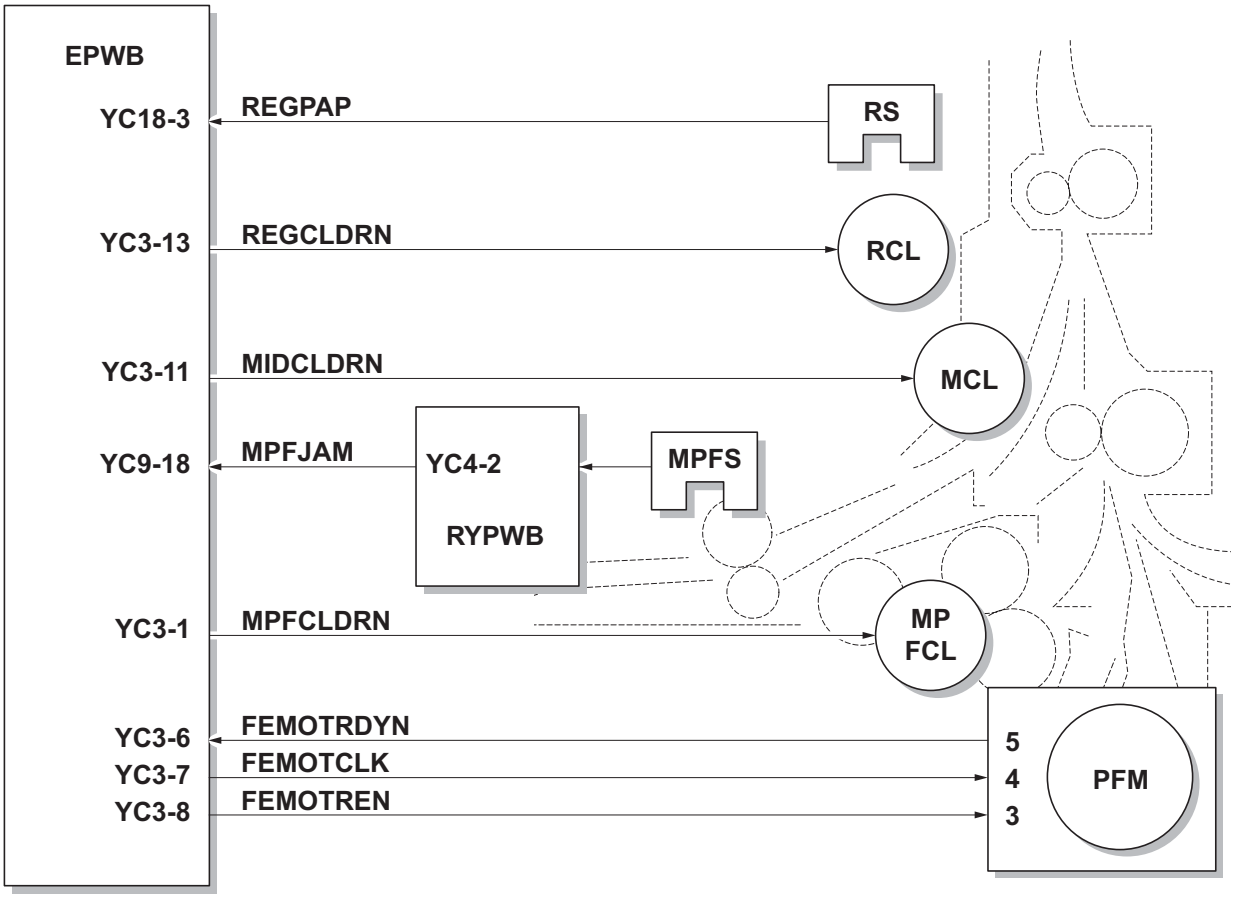

Figure 2-1-7 Paper conveying section block diagram

2-1-2 Drum section

The drum section consists of the drum, the charger roller unit, and the cleaning unit, and the drum surface is uniformly charged in preparation for formation of residual image by laser beam.
After transfer is complete, toner remaining on the drum surface is chipped off with the cleaning blade and is collected to the waste toner box with the drum screw. The cleaning lamp (CL) consists of LEDs and removes residual charge on the drum before main charging.
.

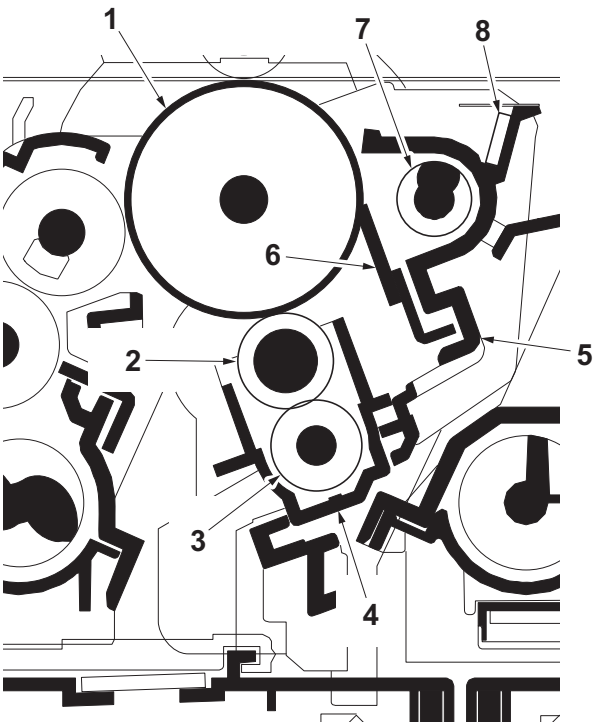

Figure 2-1-8 Drum section

1. Drum
2. Charger roller
3. Charger cleaning roller*
4. Charger case
5. Drum frame
6. Cleaning blade
7. Drum screw
8. Cleaning lamp (CL)

*: 26/28 ppm model only

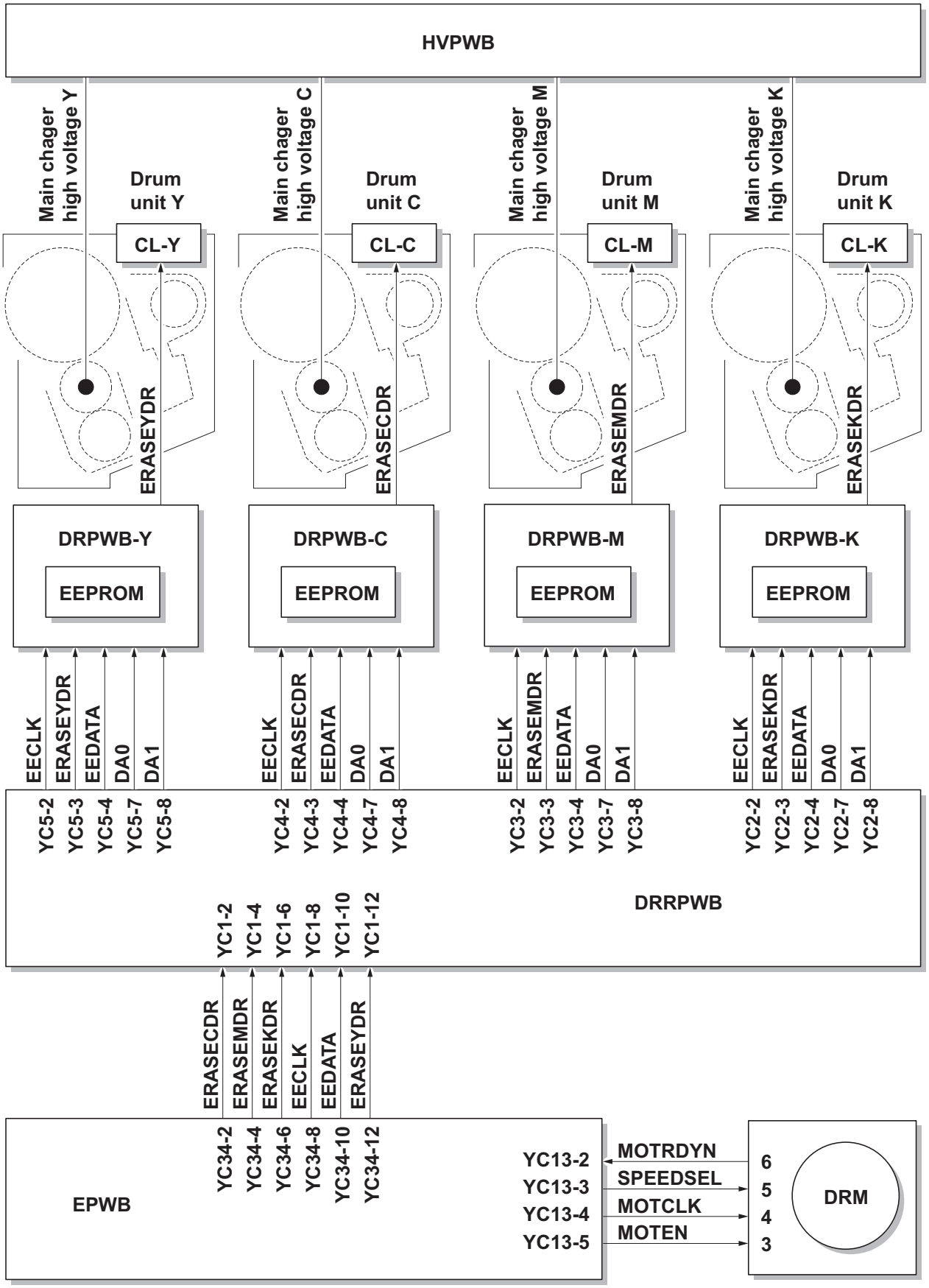

Figure 2-1-9 Drum section block diagram

2-1-3 Developing section

The developing unit consists of the sleeve roller that forms the magnetic brush, the magnet roller, the developing blade and the developing screws that agitate the toner. Also, the toner sensor (TS) checks whether or not toner remains in the developing unit.

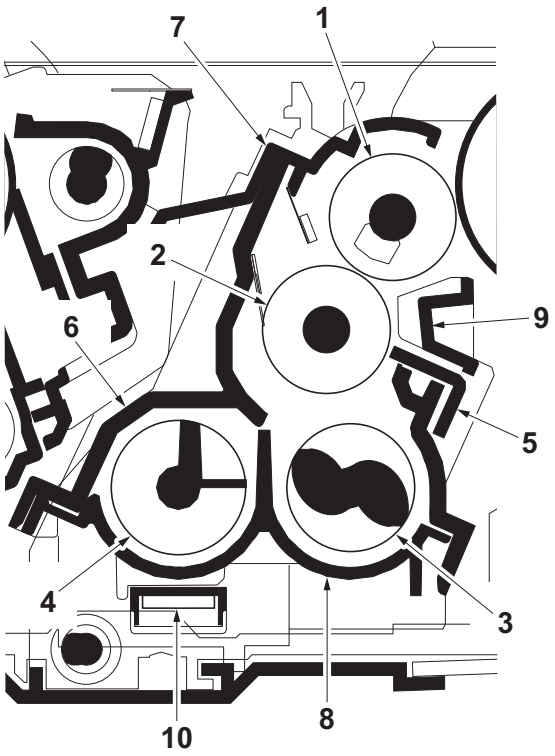

Figure 2-1-10 Developing section

1. Sleeve roller
2. Magnet roller
3. Developing screw A
4. Developing screw B
5. Developing blade
6. Developer case
7. Upper developer cover
8. Developer base
9. Sleeve cover
10. Toner sensor (TS)

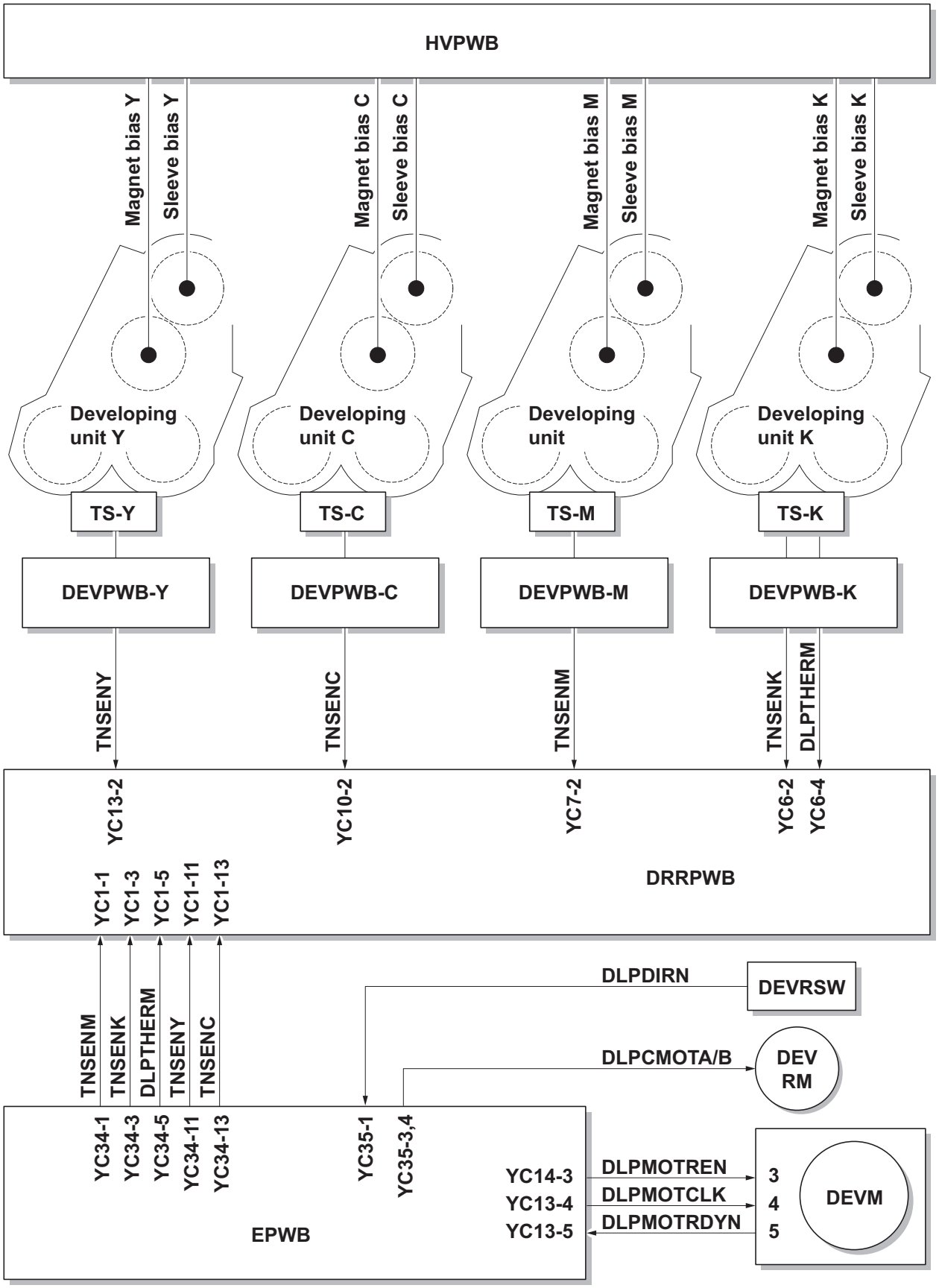

Figure 2-1-11 Developing section block diagram

2-1-4 Laser scanner section

The charged surface of the drum is then scanned by the laser beam from the laser scanner unit. The laser beam is dispersed as the polygon motor (PM) revolves to reflect the laser beam over the drum. Various lenses and mirror are housed in the laser scanner unit, adjust the diameter of the laser beam, and focalize it at the drum surface. Also the LSU cleaning motor (LSUCM) is activated to conduct automatically cleaning of the LSU dust shield glass.

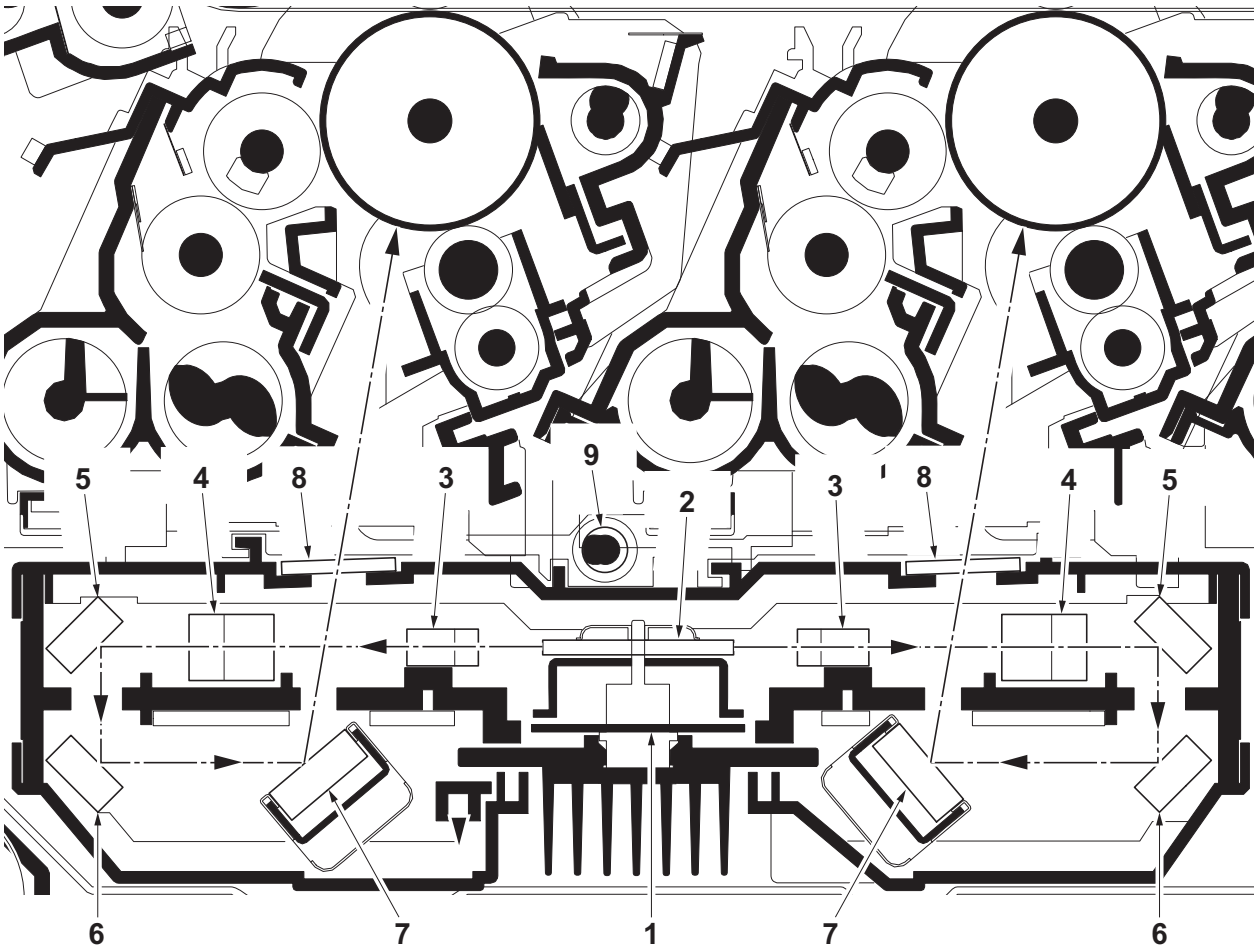

Figure 2-1-12 Laser scanner unit (LSU)

1. Polygon motor (PM)
2. Polygon mirror
3. f-θ lens A
4. f-θ lens B
5. Mirror A
6. Mirror B
7. Mirror C
8. LSU dust shield glass
9. LSU spiral

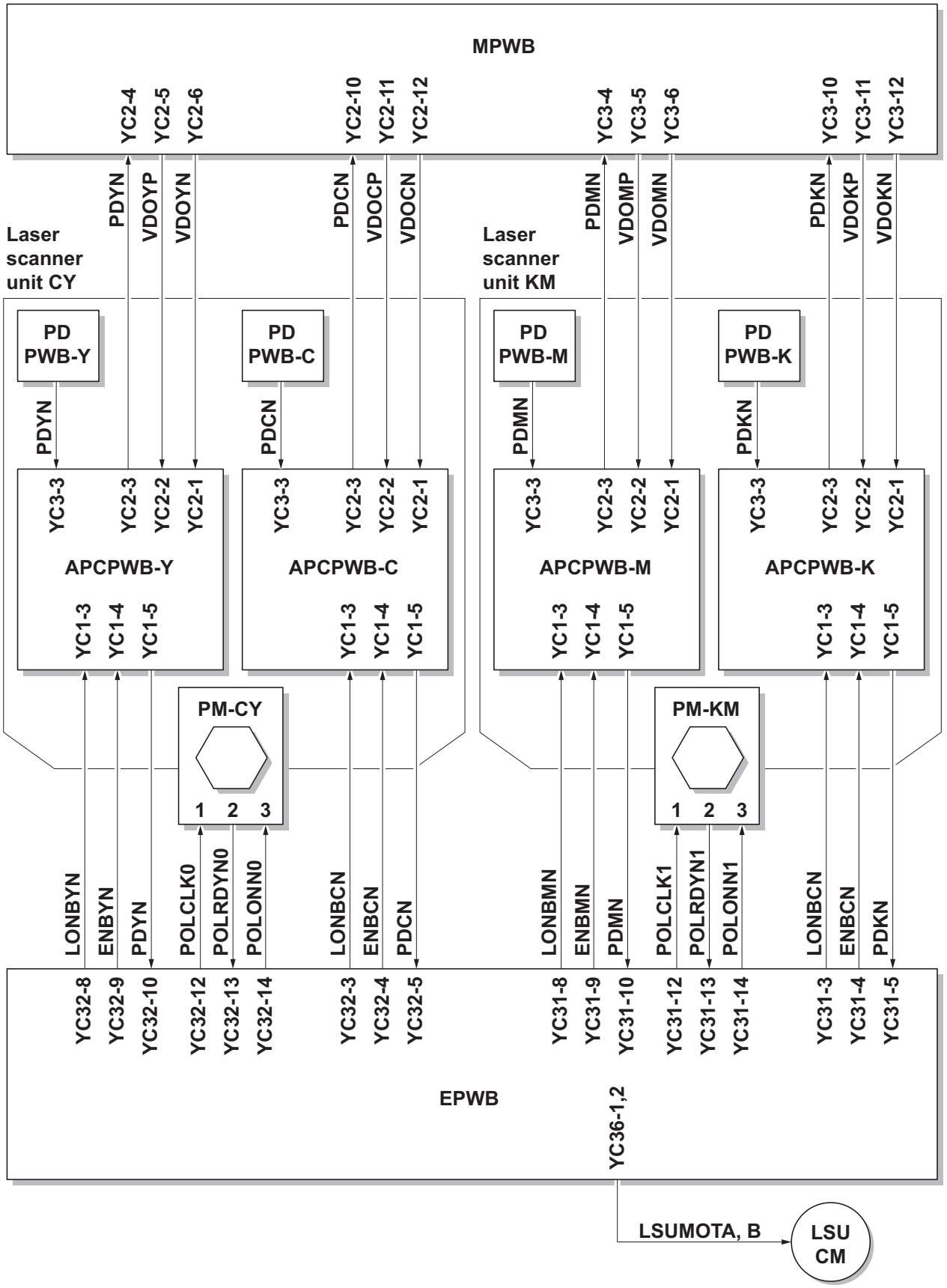

Figure 2-1-13 Laser scanner unit block diagram

2-1-5 Transfer/Separation section

The transfer/separation section consists of the intermediate transfer unit section and the secondary transfer roller section.

(1) Intermediate transfer unit section

The intermediate transfer unit section consists of the transfer cleaning unit, the transfer belt, and the four primary transfer rollers for respective color drums, and forms a full-color toner image by superimposing and transferring single-color toner images formed on each drum onto the transfer belt. Also with the ID sensors (IDS) mounted on the machine frame, the toner density on the transfer belt is measured.
The transfer cleaning unit collects toner remaining on the transfer belt after secondary transfer and forwards it as waste toner to the waste toner box.

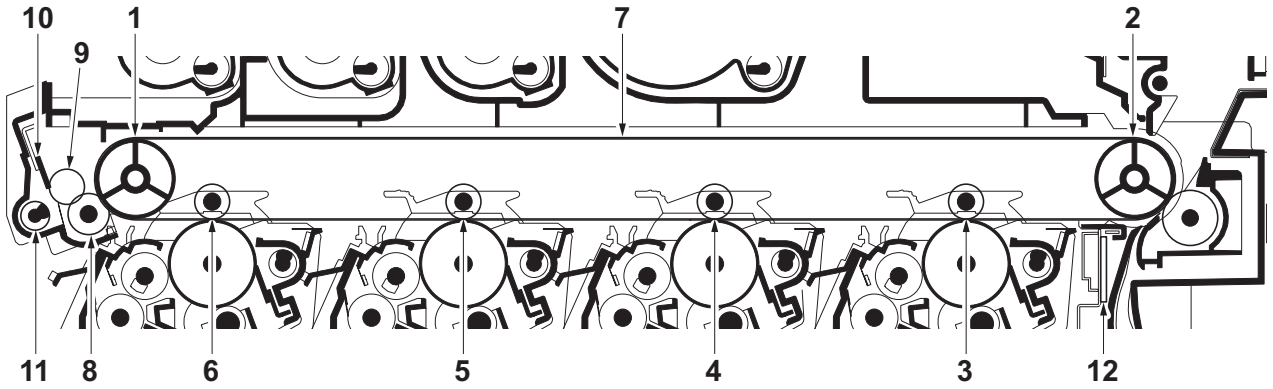

Figure 2-1-14 Intermediate transfer unit section

1. Tension roller
2. Drive roller
3. Primary transfer roller K
4. Primary transfer roller M
5. Primary transfer roller C
6. Primary transfer roller Y
7. Transfer belt
8. Cleaning fur brush
9. Cleaning roller
10. Cleaning blade
11. Cleaning screw
12. ID sensors (IDS)

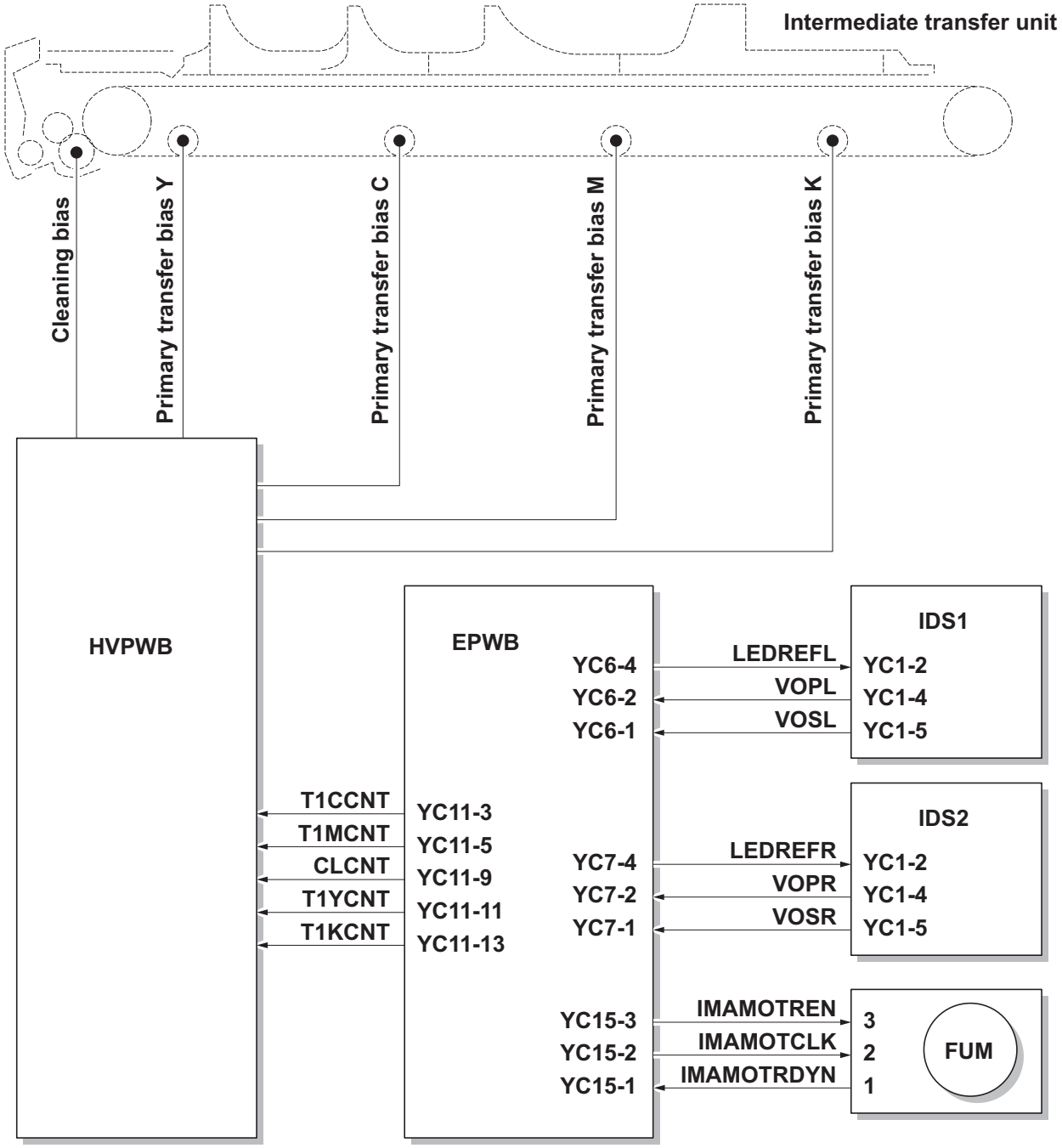

Figure 2-1-15 Intermediate transfer unit section block diagram

(2) Secondary transfer roller section

The secondary transfer roller section consists of the secondary transfer roller mounted to the paper conveying unit and the separation brush. To the secondary transfer roller, DC bias is applied from the high voltage PWB (HVPWB). The toner image formed on the transfer belt is transferred to the paper by the potential difference and the paper is separated by curvature separation.

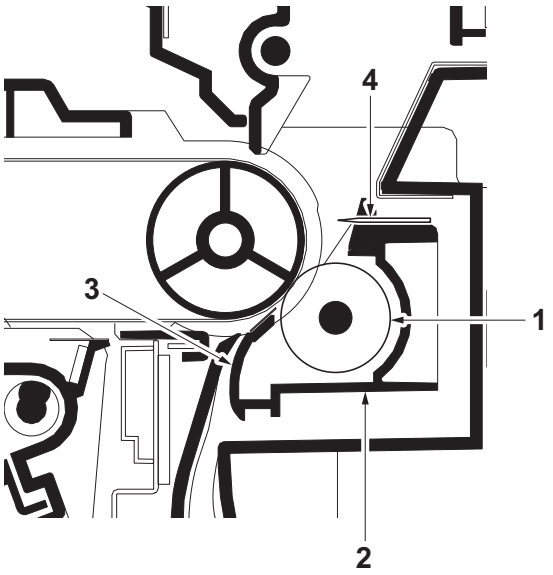

Figure 2-1-16 Secondary transfer roller section

1. Secondary transfer roller
2. Brush holder
3. Paper chute guide
4. Separation brush

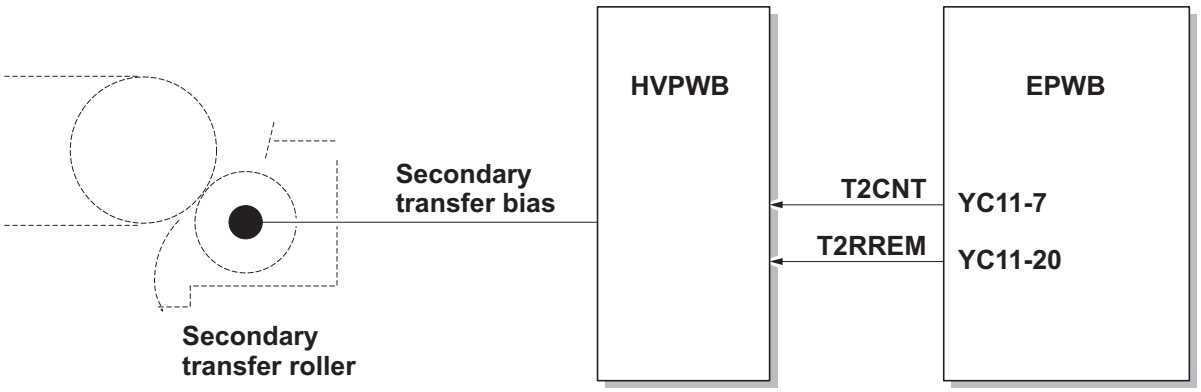

Figure 2-1-17 Secondary transfer roller section block diagram

2-1-6 Fuser section

The paper sent from the transfer/separation section is interleaved between the heat roller and the press roller. The heat roller is heated by the fuser heater (FH), and the toner is fused by heat and pressure and fixed onto the paper because the press roller is pressed by the fuser press spring. The surface temperature of heat roller is detected by the fuser thermistor (FTH) and controlled by the engine PWB (EPWB). If the fuser section shows extremely high temperature, the power line will be shut off and the fuser heater (FH) is forced to turn off.

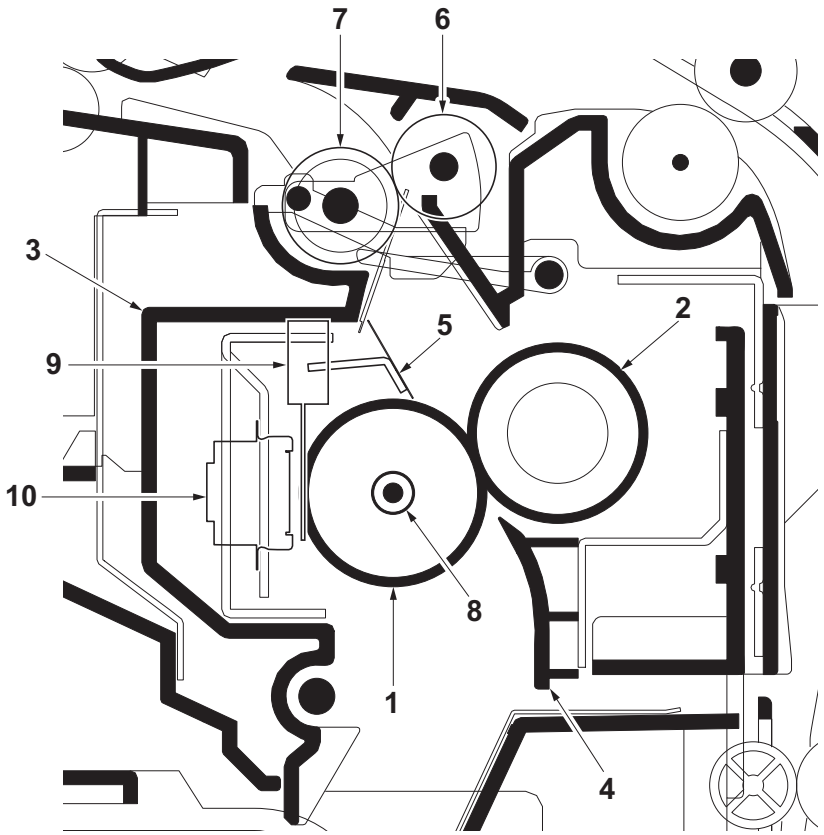

Figure 2-1-18 Fuser section

1. Heat roller
2. Press roller
3. Upper fuser frame
4. Fuser paper guide
5. Separators
6. Eject roller
7. Eject pulley
8. Fuser heater (FH)
9. Fuser thermistor (FTH)
10. Fuser thermostat (FTS)

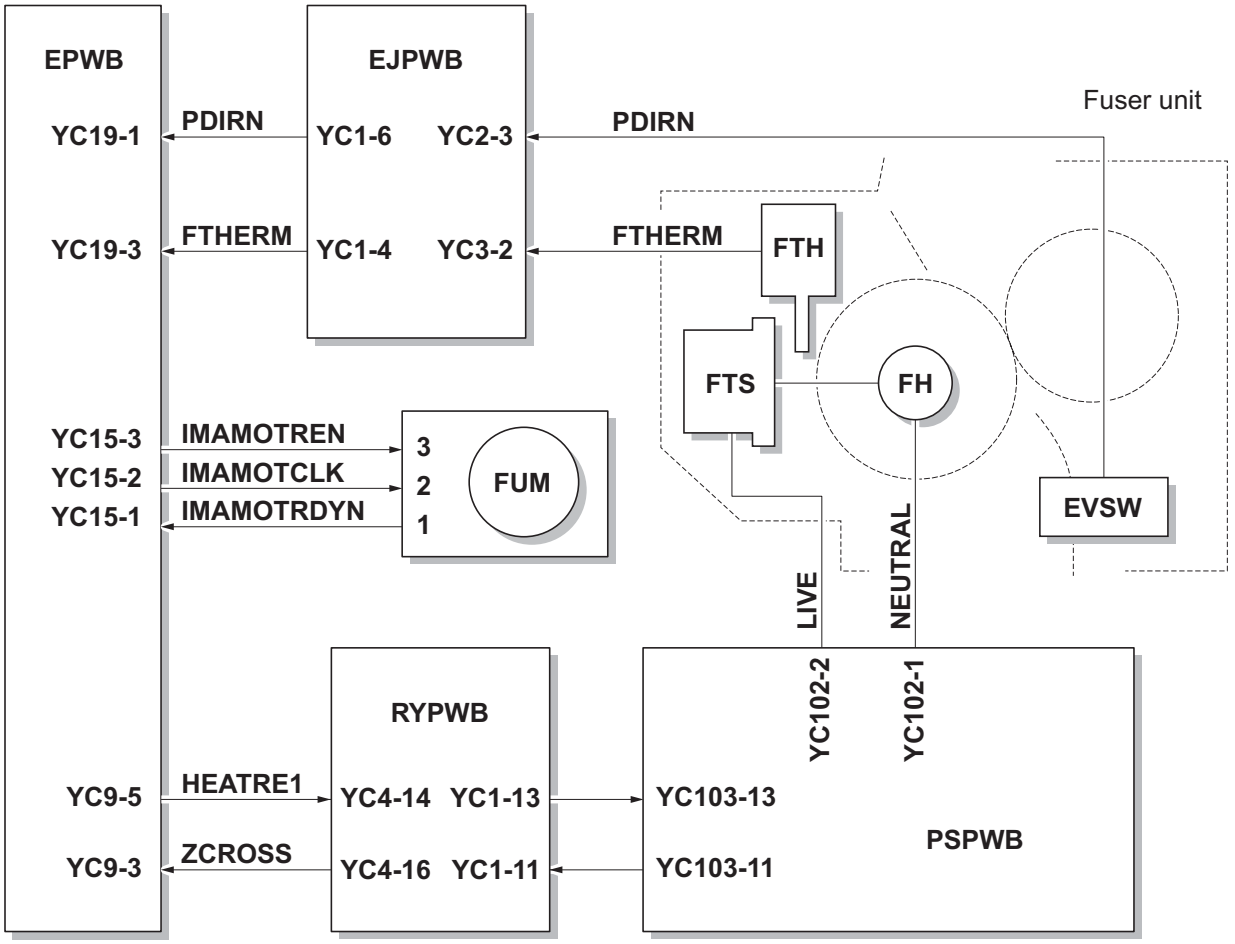

Figure 2-1-19 Fuser section block diagram

2-1-7 Eject/Feedshift section

The paper eject/feedshift section consists of the conveying path which sends the paper that has passed the fuser section to the top tray or the duplex conveying section.

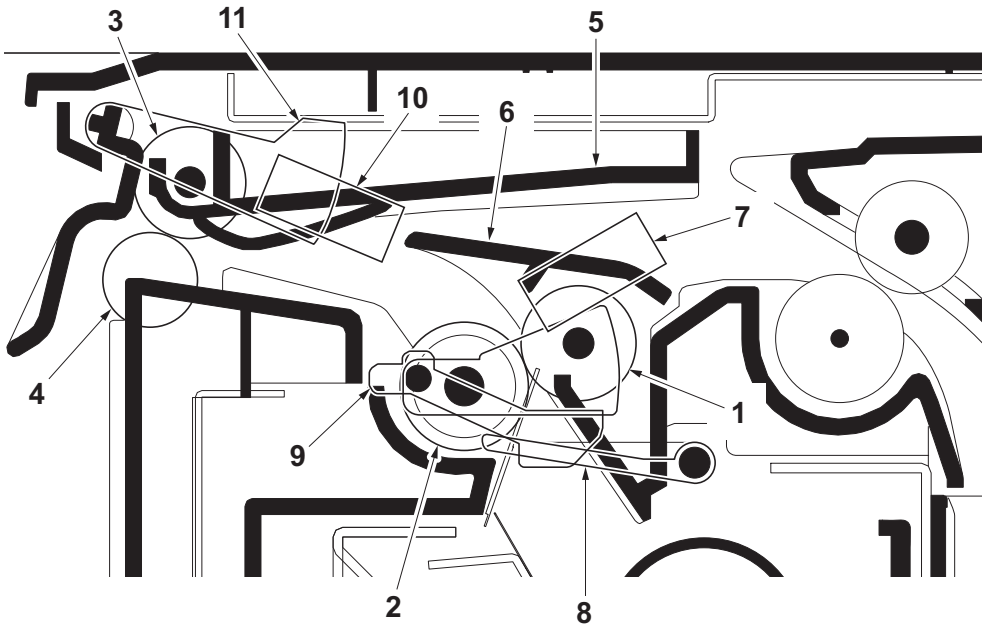

Figure 2-1-20 Eject/Feed shift section

1. Eject roller
2. Eject pulley
3. Eject roller
4. Eject pulley
5. Upper eject guide
6. Change guide
7. Eject sensor (ES)
8. Actuator (eject sensor)
9. Actuator (eject sensor)
10. Paper full sensor*
11. Actuator (paper full sensor)*

*: 26/28 ppm model only

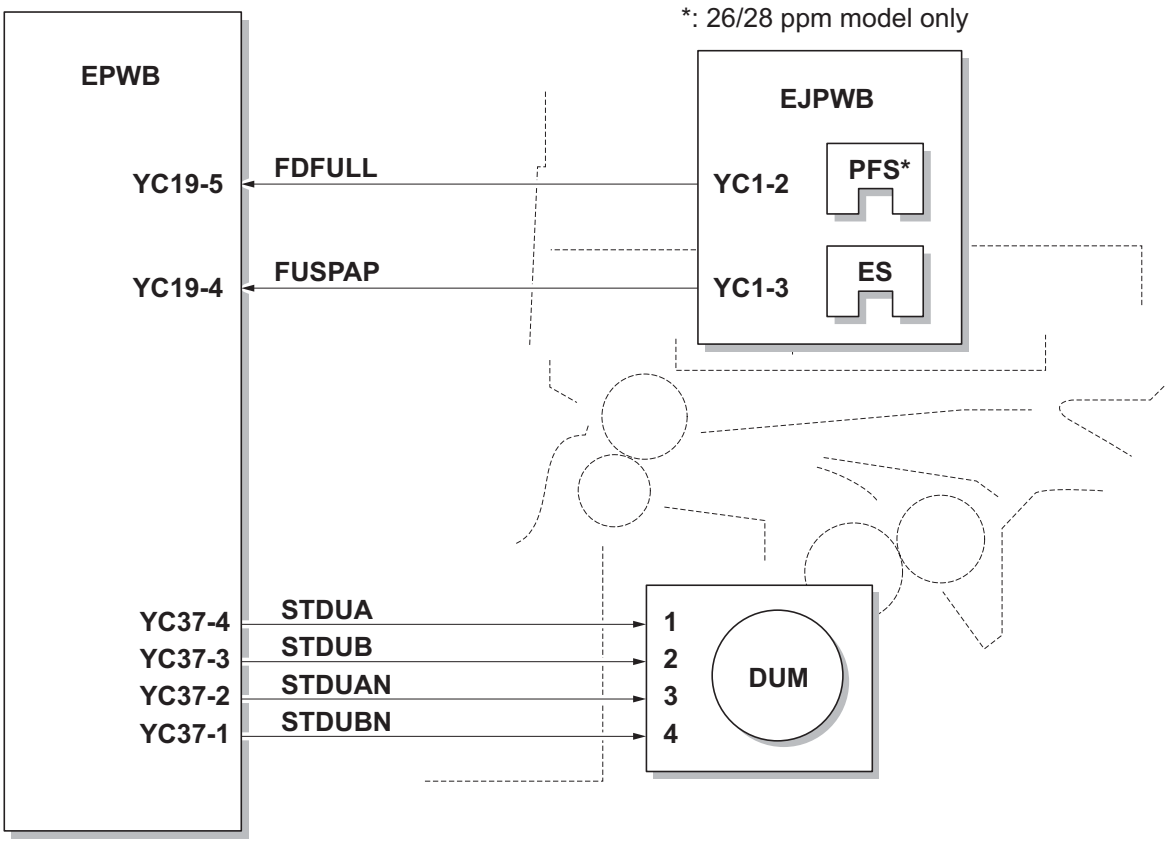

Figure 2-1-21 Eject/Feed shift section block diagram

2-1-8 Duplex conveying section

The duplex conveying section consists of conveying path which sends the paper sent from the eject/feedshift section to the paper feed/conveying section when duplex printing.

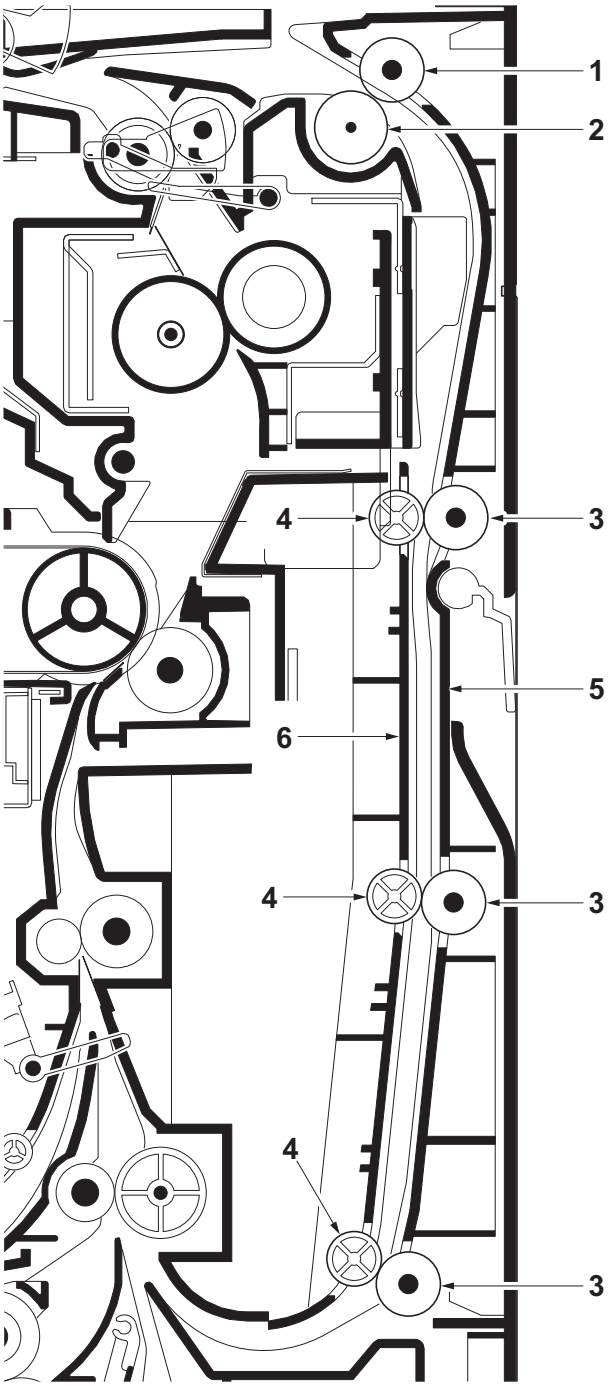

Figure 2-1-22 Duplex conveying section

1. Duplex roller L
2. Eject pulley
3. Duplex rollers S
4. Duplex pulleys
5. Duplex frame
6. Duplex feed guide

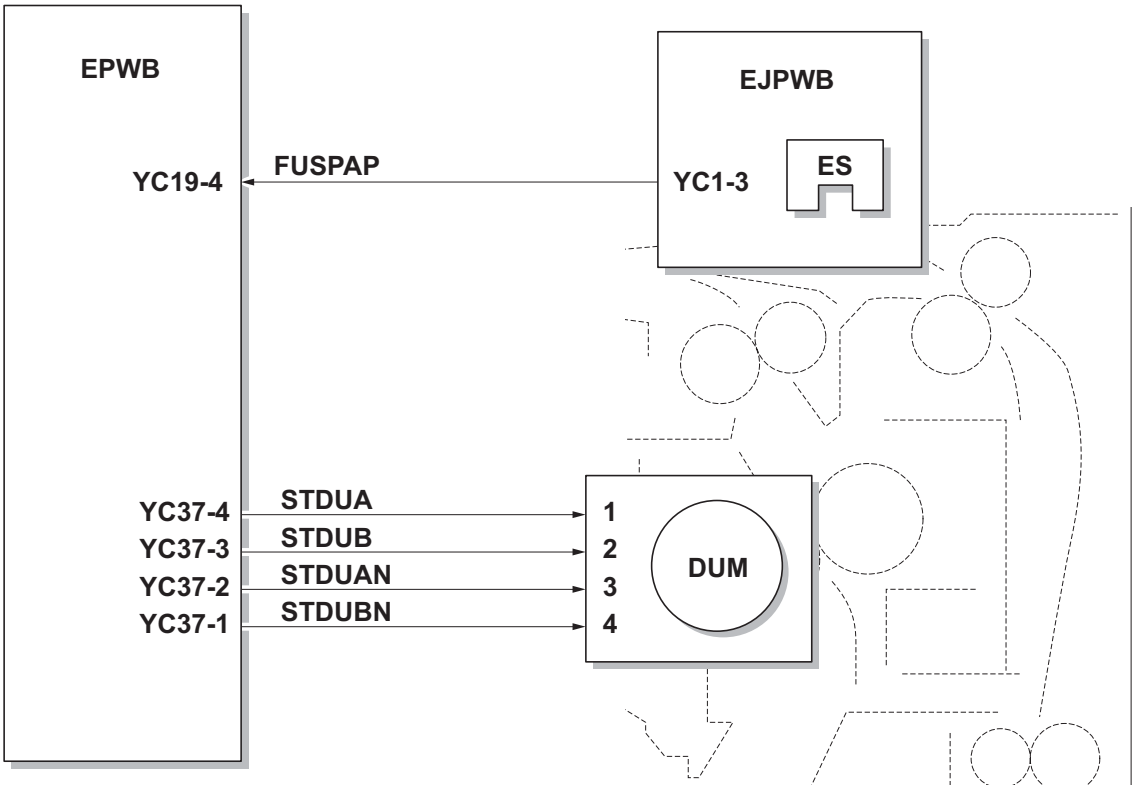

Figure 2-1-23 Duplex conveying section block diagram

2-2-1 Electrical parts layout

(1) PWBs

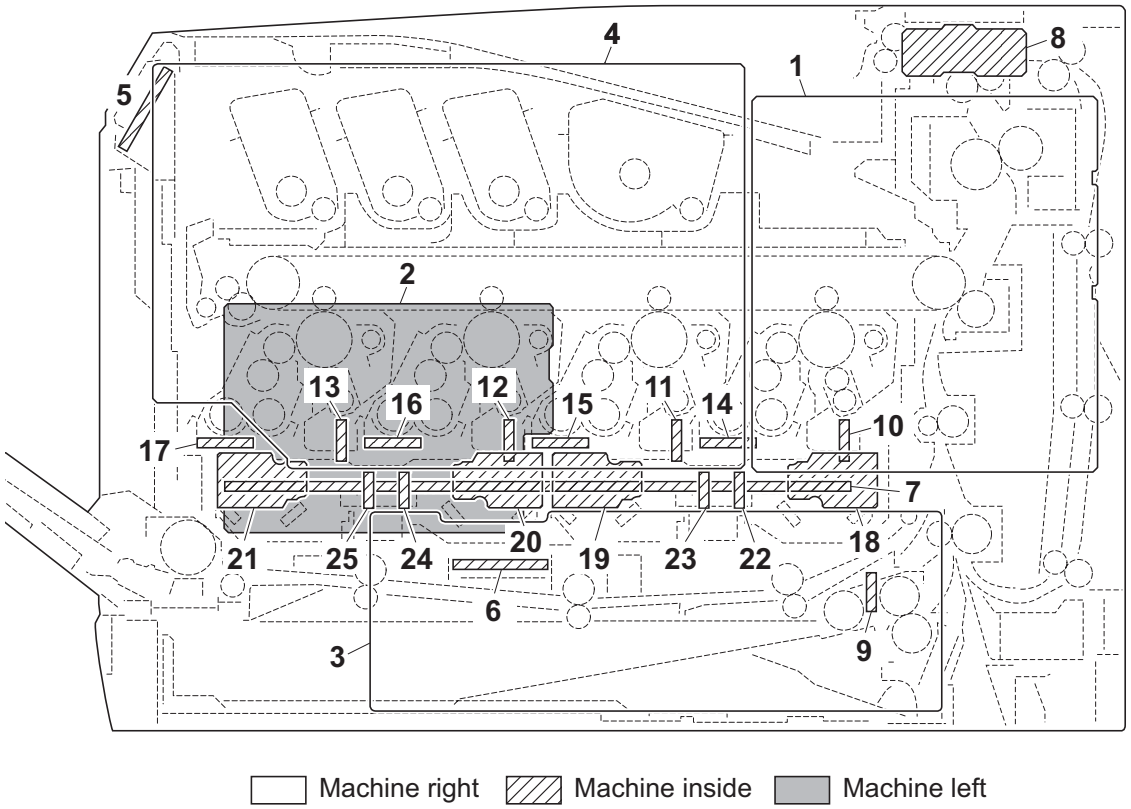

Figure 2-2-1 PWBs

1. Main PWB (MPWB) ..... Controls the software such as the print data processing and provides the interface with computers.
2. Engine PWB (EPWB)..... Controls printer hardware such as high voltage/bias output control, paper conveying system control, and fuser temperature control, etc.
3. Power source PWB (PSPWB) ..... After full-wave rectification of AC power source input, switching for converting to 24 V DC and 5 VDC for output. Controls the fuser heater.
4. High voltage PWB (HVPWB) ..... Generates main charging, developing bias, transfer bias and cleaning bias.
5. Operation panel PWB (OPPWB) ..... Controls the LCD display. Consists the LCD, LED indicators and key switches.
6. Relay PWB (RPWB) ..... Consists of wiring relay circuit between main PWB and engine PWB and power source PWB.
7. Drum relay PWB (DRRPWB)..... Consists of wiring relay circuit between engine PWB and the drum units and developing units.
8. Eject PWB (EJPWB)..... Consists of wiring relay circuit between engine PWB and each electrical component (eject section).
9. Cassette PWB (CPWB) ..... Interconnects the engine PWB and each electrical component (cassette section).
10. Drum PWB K (DRPWB-K) ..... Relays wirings from electrical components on the drum unit K. Drum individual information in EEPROM storage.

11. Drum PWB M (DRPWB-M) ..... Relays wirings from electrical components on the drum unit M. Drum individual information in EEPROM storage.
12. Drum PWB C (DRPWB-C) ..... Relays wirings from electrical components on the drum unit C. Drum individual information in EEPROM storage.
13. Drum PWB Y (DRPWB-Y) ..... Relays wirings from electrical components on the drum unit Y. Drum individual information in EEPROM storage.
14. Developing PWB K (DEVPWB-K) ..... Relays wirings from electrical components on the developing unit K.
15. Developing PWB M (DEVPWB-M) ..... Relays wirings from electrical components on the developing unit M.
16. Developing PWB C (DEVPWB-C) ..... Relays wirings from electrical components on the developing unit C.
17. Developing PWB Y (DEVPWB-Y) ..... Relays wirings from electrical components on the developing unit Y.
18. APC PWB K (APCPWB-K) ..... Generates and controls the laser beam (black).
19. APC PWB M (APCPWB-M) ..... Generates and controls the laser beam (magenta).
20. APC PWB C (APCPWB-C) ..... Generates and controls the laser beam (cyan).
21. APC PWB Y (APCPWB-Y) ..... Generates and controls the laser beam (yellow).
22. PD PWB K (PDPWB-K) ..... Controls horizontal synchronizing timing of laser beam (black).
23. PD PWB M (PDPWB-M) ..... Controls horizontal synchronizing timing of laser beam (magenta).
24. PD PWB C (PDPWB-C) ..... Controls horizontal synchronizing timing of laser beam (cyan).
25. PD PWB Y (PDPWB-Y) ..... Controls horizontal synchronizing timing of laser beam (yellow).

List of correspondences of PWB names

No.	Name used in service manual	Name used in parts list
1	Main PWB (MPWB)	PARTS PWB MAIN ASSY SP
2	Engine PWB (EPWB)	PARTS PWB ENGINE ASSY SP
3	Power source PWB (PSPWB)	PARTS SWITCHING REGULATOR SP
4	High voltage PWB (HVPWB)	PARTS HIGH VOLTAGE UNIT SP
5	Operation panel PWB (OPPWB)	-
6	Relay PWB (RPWB)	-
7	Drum relay PWB (DRRPWB)	-
8	Eject PWB (EJPWB)	PARTS PWB ASSY EXIT SP
9	Cassette PWB (CPWB)	PARTS PWB ASSY CASSETTE SP
10	Drum PWB K (DRPWB-K)	-
11	Drum PWB M (DRPWB-M)	-
12	Drum PWB C (DRPWB-C)	-
13	Drum PWB Y (DRPWB-Y)	-
14	Developing PWB K (DEVPWB-K)	-
15	Developing PWB M (DEVPWB-M)	-
16	Developing PWB C (DEVPWB-C)	-
17	Developing PWB Y (DEVPWB-Y)	-
18	APC PWB K (APCPWB-K)	-
19	APC PWB M (APCPWB-M)	-
20	APC PWB C (APCPWB-C)	-
21	APC PWB Y (APCPWB-Y)	-
22	PD PWB K (PDPWB-K)	-
23	PD PWB M (PDPWB-M)	-
24	PD PWB C (PDPWB-C)	-
25	PD PWB Y (PDPWB-Y)	-

(2) Switches and sensors

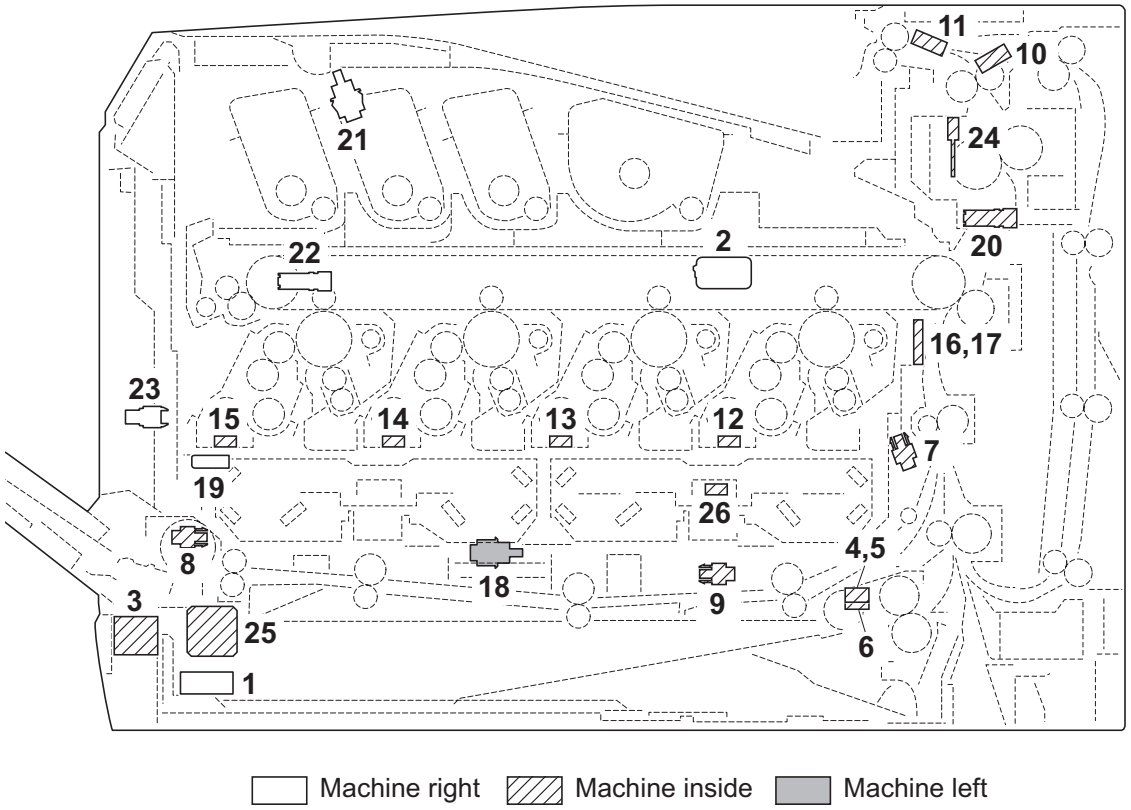

Figure 2-2-2 Switches and sensors

1. Main power switch (MSW) ..... Turns ON/OFF the AC power source.
2. Interlock switch (ILSW) ..... Shuts off 24 V DC power line when the top tray and rear cover are opened.
3. Cassette size switch (CSSW) ..... Detects the paper size dial setting of the paper setting dial.
4. Paper sensor 1 (PS1) ..... Detects the paper remaining amount level.
5. Paper sensor 2 (PS2)* ..... Detects the paper remaining amount level.
6. Lift sensor (LS)..... Detects activation of upper limit of the bottom plate.
7. Registration sensor (RS)..... Controls the secondary paper feed start timing.
8. MP paper sensor (MPPS) ..... Detects the presence of paper on the MP tray.
9. MP feed sensor (MPFS) ..... Detects a paper misfeed in the MP conveying section.
10. Eject sensor (ES) ..... Detects a paper misfeed in the fuser or eject section.
11. Paper full sensor (PFS)* ..... Detects the paper full in the top tray.
12. Toner sensor K (TS-K) ..... Detects the toner density in the developing unit K.
13. Toner sensor K (TS-M)..... Detects the toner density in the developing unit M.
14. Toner sensor K (TS-C) ..... Detects the toner density in the developing unit C.
15. Toner sensor K (TS-Y) ..... Detects the toner density in the developing unit Y.
16. ID sensor 1 (IDS1) ..... Measures image density for color calibration.
17. ID sensor 2 (IDS2) ..... Measures image density for color calibration.
18. Developing release switch (DEVRSW)..... Detects separation of developing units M, C and Y.
19. Waste toner sensor (WTS)..... Detects when the waste toner box is full.
20. Envelope switch (EVSW) ..... Detects the envelope mode setting.
21. Top tray switch (TTSW)..... Detects the opening and closing of the top tray.

22. Toner container sensor (TCS)..... Detects the presence of the toner container.
23. Waste toner cover sensor (WTCS) ..... Detects the opening and closing of the waste toner cover.
24. Fuser thermistor (FTH) ..... Detects the heat roller temperature.
25. Outer temperature sensor (OTEMS)..... Detects the outside temperature and humidity.
26. Inner temperature sensor (ITEMS) ..... Detects the inside temperature.

*: 26/28 ppm model only

(3) Motors

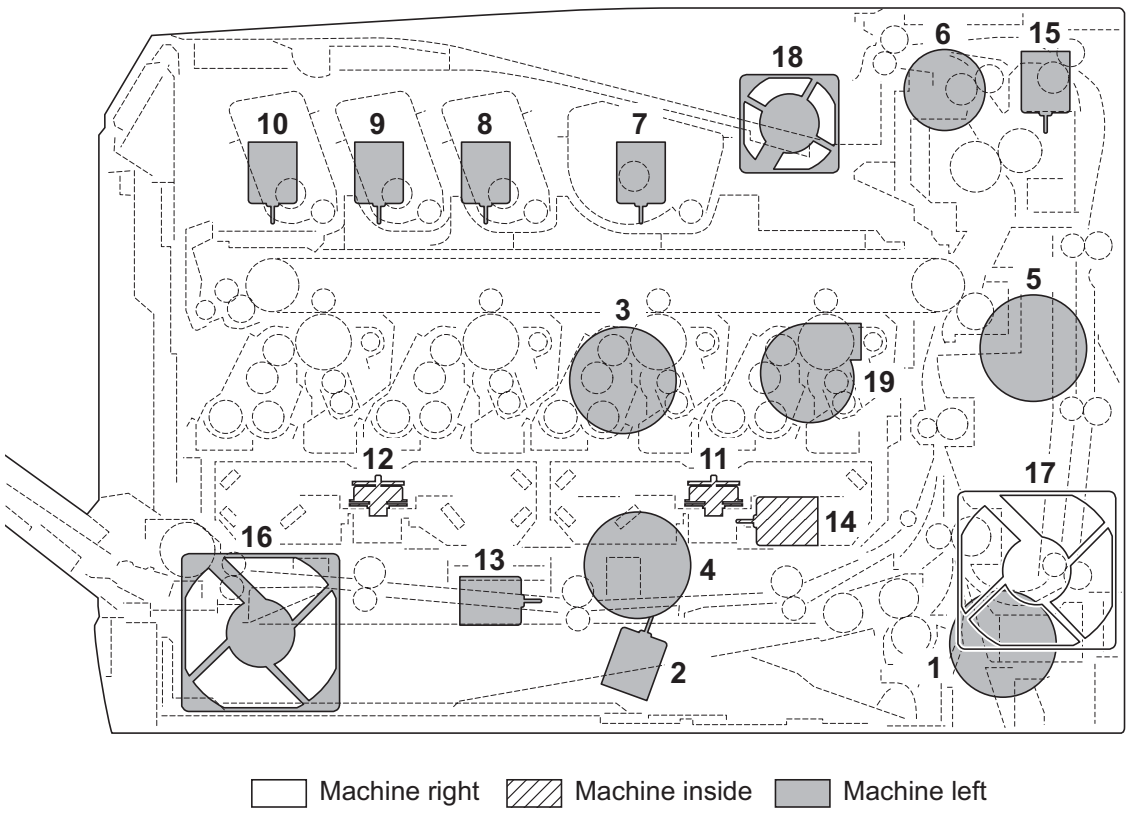

Figure 2-2-3 Motors

1. Paper feed motor (PFM) ..... Drives the paper feed section.
2. Lift motor (LM)..... Operates the bottom plate.
3. Drum motor (DRM) ..... Drives the drum unit.
4. Developing motor (DEVM)..... Drives the developing unit.
5. Fuser motor (FUM) ..... Drives the transfer section and the fuser section.
6. Duplex motor (DUM)..... Drives the duplex section.
7. Toner motor K (TM-K) ..... Replenishes toner to the developing unit K
8. Toner motor M (TM-M)..... Replenishes toner to the developing unit M
9. Toner motor C (TM-C)..... Replenishes toner to the developing unit C
10. Toner motor Y (TM-Y) ..... Replenishes toner to the developing unit Y
11. Polygon motor KM (PM-KM)..... Drives the polygon mirror KM.
12. Polygon motor CY (PM-CY)..... Drives the polygon mirror CY.
13. Developing release motor (DEVRM)..... Drives separation of developing units M, C and Y.
14. LSU cleaning motor (LSUCM) ..... Drives LSU dust shield glass cleaning system.
15. Fuser pressure release motor (FPRM) ..... Drives fuser pressure release.
16. Left fan motor (LFM) ..... Cools the interior of machine.
17. Right fan motor (RFM) ..... Cools the interior of machine.
18. Fuser fan motor (FUFM) ..... Cools the toner container section.
19. Container fan motor (CFM)..... Cools the toner container section.

(4) Others

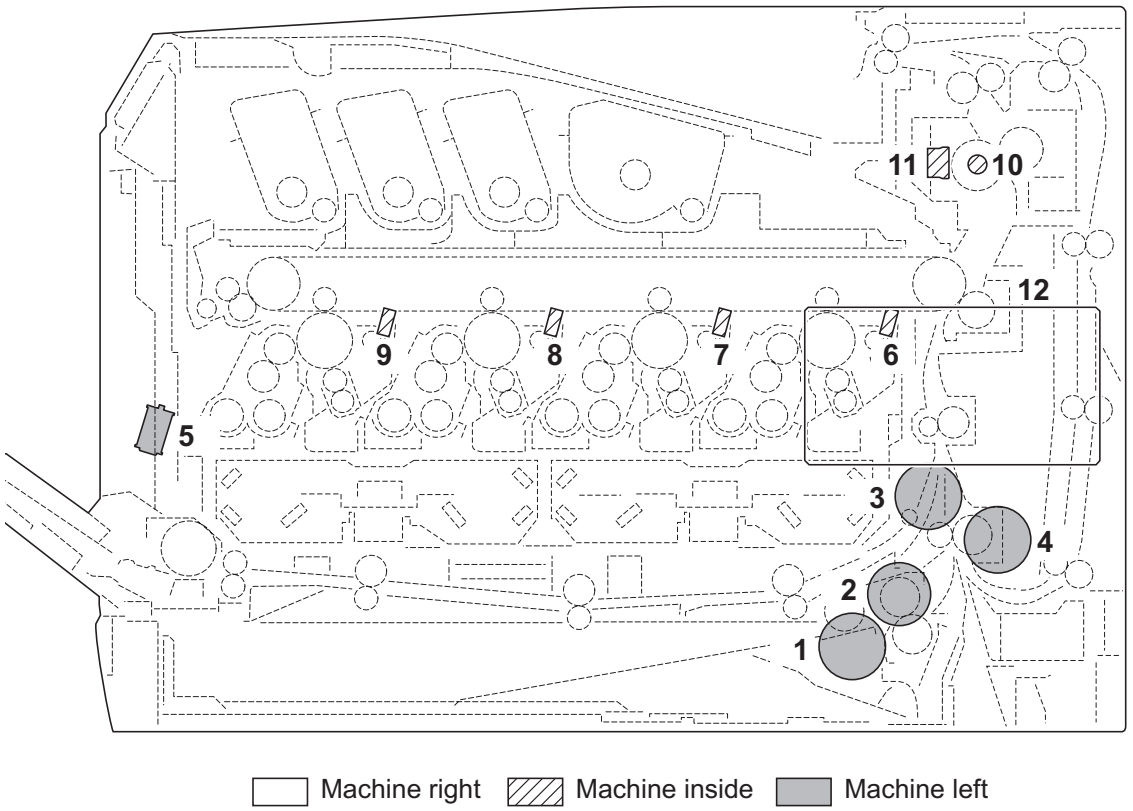

Figure 2-2-4 Others

1. Paper feed clutch (PFCL) ..... Primary paper feed from cassette.
2. MP feed clutch (MPFCL)..... Controls the drive of MP conveying section.
3. Registration clutch (RCL)..... Controls the secondary paper feed.
4. Middle clutch (MCL)..... Controls the drive of conveying section.
5. MP solenoid (MPSOL) ..... Controls the MP bottom plate.
6. Cleaning lamp K (CL-K)..... Eliminates the residual electrostatic charge on the drum (black).
7. Cleaning lamp M (CL-M)..... Eliminates the residual electrostatic charge on the drum (magenta).
8. Cleaning lamp C (CL-C)..... Eliminates the residual electrostatic charge on the drum (cyan).
9. Cleaning lamp Y (CL-Y)..... Eliminates the residual electrostatic charge on the drum (yellow).
10. Fuser heater (FH) ..... Heats the heat roller.
11. Fuser thermal cutout ..... Prevents overheating of the heat roller.
12. SSD * ..... Storages the image data and information of job accounting mode.

*: Option for 26/28 ppm model

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2-3-1 Power source PWB

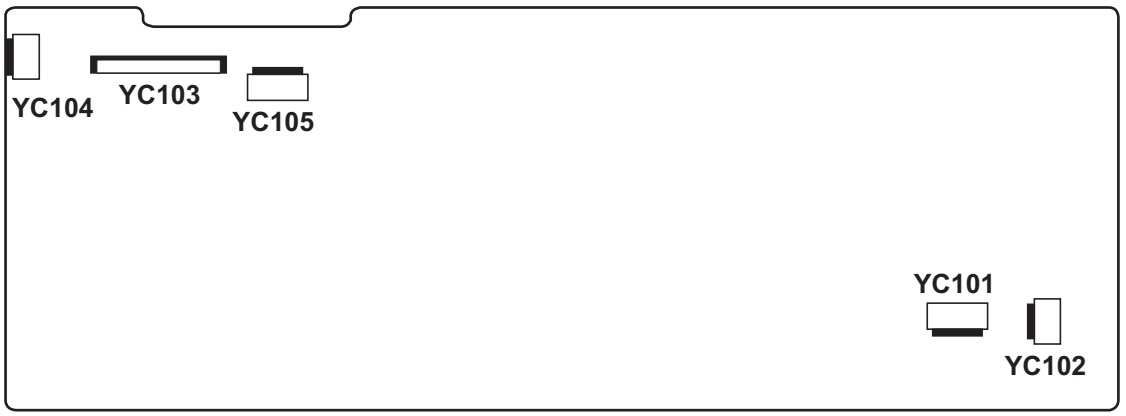


Figure 2-3-1 Power source PWB silk-screen diagram

Connector	Pin	Signal	I/O	Voltage	Description
YC101	1	LIVE	I	120 V AC 220-240 V AC	AC power input
Connected to AC inlet and main power switch	2	NEUTRAL	I	120 V AC 220-240 V AC	AC power input
YC102	1	NEUTRAL	O	120 V AC/0 V 220-240 V AC/0 V	FH: On/Off
Connected to fuser heater	2	LIVE	O	120 V AC 220-240 V AC	AC power to FH
YC103	1	+24V1	O	24 V DC	24 V DC power to RYPWB
Connected to relay PWB	2	GND	-	-	Ground
	3	GND	-	-	Ground
	4	GND	-	-	Ground
	5	GND	-	-	Ground
	6	+24V2	O	24 V DC	24 V DC power to RYPWB (via ILSW)
	7	+24V2	O	24 V DC	24 V DC power to RYPWB (via ILSW)
	8	+24V2	O	24 V DC	24 V DC power to RYPWB (via ILSW)
	9	+24V2	O	24 V DC	24 V DC power to RYPWB (via ILSW)
	10	PSSLEEPN	I	0/3.3 V DC	Sleep mode signal: On/Off
	11	ZCROSS	O	0/3.3 V DC (pulse)	Zero-cross signal
	12	RELAY	I	0/3.3 V DC	Power relay signal: On/Off
	13	HEATRE1	I	0/3.3 V DC	FH: On/Off
YC104	1	+24V1	O	24 V DC	24 V DC power to ILSW
Connected to interlock switch	2	N.C	-	-	Not used
	3	+24V2	I	24 V DC	24 V DC power from ILSW
YC105	1	+24V1	O	24 V DC	24 V DC power to MPWB
Connected to main PWB	2	GND	-	-	Ground

2-3-2 Engine PWB

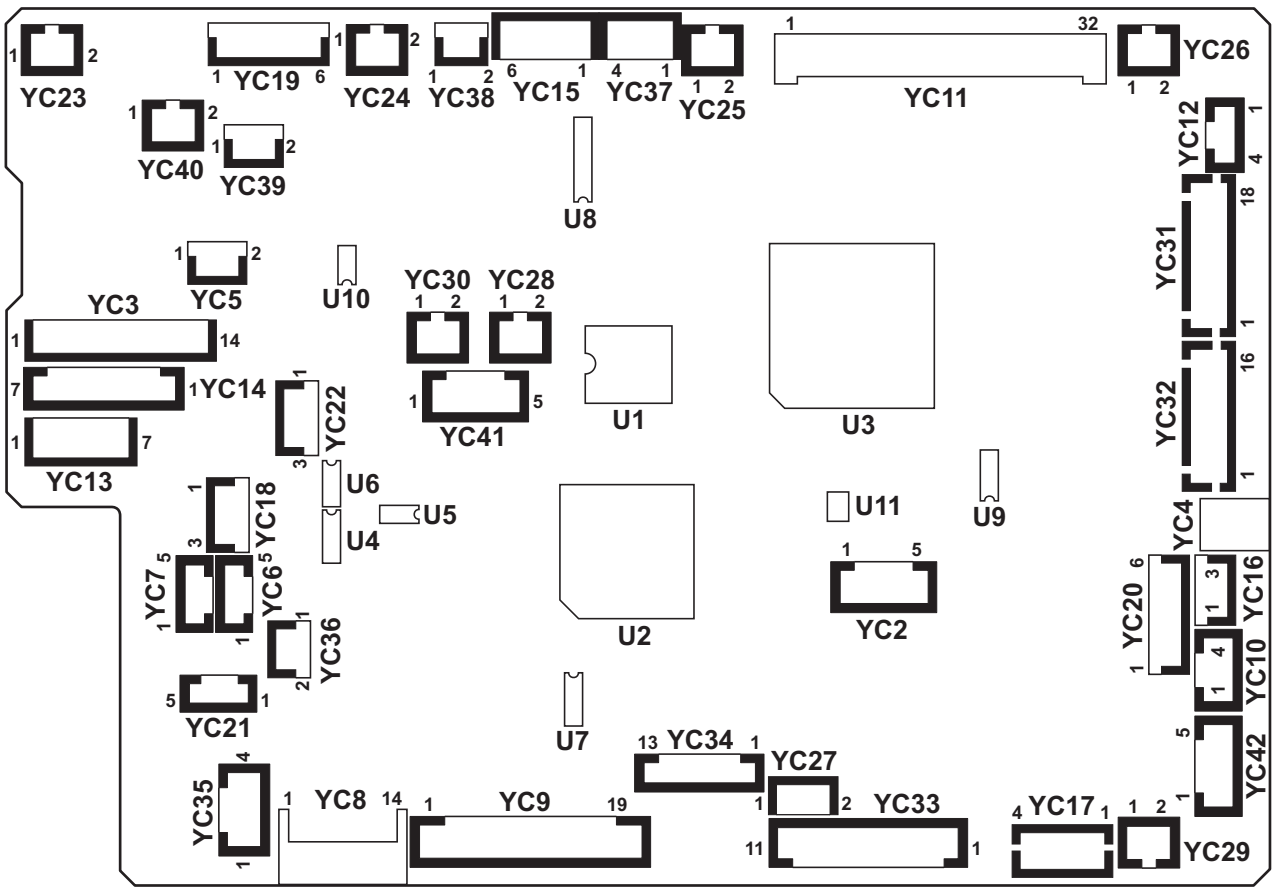


Figure 2-3-2 Engine PWB silk-screen diagram

Connector	Pin	Signal	I/O	Voltage	Description
YC3	1	MPFCLDRN	O	0/24 V DC	MPFCL: On/Off
Connected to MP feed clutch, paper feed clutch, paper feed motor, middle clutch and registration clutch	2	+24V3	O	24 V DC	24 V DC power to MPFCL
	3	FEDCLDRN	O	0/24 V DC	PFCL: On/Off
	4	+24V3	O	24 V DC	24 V DC power to PFCL
	5	N.C.	-	-	Not used
	6	FEMOTRDYN	I	0/3.3 V DC	PFM ready signal
	7	FEMOTCLK	O	0/3.3 V DC (pulse)	PFM clock signal
	8	FEMOTREN	O	0/3.3 V DC	PFM: On/Off
	9	GND	-	-	Ground
	10	+24V3	O	24 V DC	24 V DC power to PFM
	11	MIDCLDRN	O	0/24 V DC	MCL: On/Off
	12	+24V3	O	24 V DC	24 V DC power to MCL
	13	REGCLDRN	O	0/24 V DC	RCL: On/Off
	14	+24V3	O	24 V DC	24 V DC power to RCL
YC4	1	+24V3	O	24 V DC	24 V DC power to MPSOL
Connected to MP solenoid	2	MPSOLDRN	I	0/24 V DC	MPSOL: On/Off
YC6	1	VOSL	I	Analog	IDS1 detection signal
Connected to ID sensor 1	2	VOPL	I	Analog	IDS1 detection signal
	3	GND	-	-	Ground
	4	LEDREFL	O	Analog	IDS1 control signal
	5	+3.3V2	O	3.3 V DC	3.3 V DC power to IDS1
YC7	1	VOSR	I	Analog	IDS2 detection signal
Connected to ID sensor 2	2	VOPR	I	Analog	IDS2 detection signal
	3	GND	-	-	Ground
	4	LEDREFR	O	Analog	IDS2 control signal
	5	+3.3V2	O	3.3 V DC	3.3 V DC power to IDS2

Connector	Pin	Signal	I/O	Voltage	Description
YC8	1	+24V1	I	24 V DC	24 V DC power from RYPWB
Connected to relay PWB	2	GND	-	-	Ground
	3	GND	-	-	Ground
	4	GND	-	-	Ground
	5	GND	-	-	Ground
	6	+24V3	O	24 V DC	24 V DC power from RYPWB
	7	+24V3	O	24 V DC	24 V DC power from RYPWB
	8	+24V3	O	24 V DC	24 V DC power from RYPWB
	9	+24V3	O	24 V DC	24 V DC power from RYPWB
	10	GND	-	-	Ground
	11	SLEEPN	O	0/3.3 V DC	Sleep mode signal: On/Off
	12	PSSLEEPN	O	0/3.3 V DC	Sleep mode signal: On/Off
	13	N.C.	-	-	Not used
	14	+3.3V2	I	3.3 V DC	3.3 V DC power from RYPWB
YC9	1	TCOVOPN	O	0/3.3 V DC	TTSW: On/Off
Connected to relay PWB	2	ST_WUP	I	0/3.3 V DC	Warmup signal
	3	ZCROSS	I	0/3.3 V DC (pulse)	Zero-cross signal
	4	RELAY	O	0/3.3 V DC	Power relay signal
	5	HEATRE1	O	0/3.3 V DC	FH: On/Off
	6	(HEATRE2)	-	-	Not used
	7	VSYNC	O	0/3.3 V DC	Vertical synchronizing signal
	8	EGIRN	O	0/3.3 V DC	Engine interruption signal
	9	SBSY	O	0/3.3 V DC	Serial busy signal
	10	SDIR	O	0/3.3 V DC	Serial communication direction change signal
	11	SI	I	0/3.3 V DC (pulse)	Serial communication data signal input
	12	SO	O	0/3.3 V DC (pulse)	Serial communication data signal output
	13	SCKN	I	0/3.3 V DC (pulse)	Serial communication clock signal
	14	NC	-	-	Not used
	15	I2CSCL	I	0/3.3 V DC (pulse)	EEPROM clock signal
	16	GND	-	-	Ground
	17	I2CSDA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	18	MPFJAM	I	0/3.3 V DC	MPFS: On/Off
	19	+3.3V2	O	3.3 V DC	3.3 V DC power to RYPWB

Connector	Pin	Signal	I/O	Voltage	Description
YC10	1	LEDA	O	3.3 V DC	3.3 V DC power to WTS
Connected to waste toner sensor	2	LEDK	O	0/3.3 V DC (pulse)	WTS LED emitter signal
	3	PTRE	I	Analog	WTS detection signal
	4	PTRC	O	3.3 V DC	3.3 V DC power to WTS
YC11	1	+24V3	O	24 V DC	24 V DC power to HVPWB
Connected to high voltage PWB	2	+24V3	O	24 V DC	24 V DC power to HVPWB
	3	T1CCNT	O	PWM	Primary transfer bias control voltage (Cyan)
	4	HVCLKY	O	0/3.3 V DC (pulse)	Developing bias clock signal (Yellow)
	5	T1MCNT	O	PWM	Primary transfer bias control voltage (Magenta)
	6	HVCLKC	O	0/3.3 V DC (pulse)	Developing bias clock signal (Cyan)
	7	T2CNT	O	PWM	Secondary transfer bias control voltage
	8	BCMCNT	O	PWM	Developing magnet roller bias control voltage (Cyan)
	9	CLCNT	O	PWM	Cleaning bias control voltage
	10	BKMCNT	O	PWM	Developing magnet roller bias control voltage (Black)
	11	T1YCNT	O	PWM	Primary transfer bias control voltage (Yellow)
	12	BKSCNT	O	PWM	Developing sleeve roller bias control voltage (Black)
	13	T1KCNT	O	PWM	Primary transfer bias control voltage (Black)
	14	BYSCNT	O	PWM	Developing sleeve roller bias control voltage (Yellow)
	15	MYCNT	O	PWM	Charger roller control voltage (Yellow)
	16	BMMCNT	O	PWM	Developing magnet roller bias control voltage (Magenta)
	17	MKCNT	O	PWM	Charger roller control voltage (Black)
	18	BYMCNT	O	PWM	Developing magnet roller bias control voltage (Yellow)
	19	MCCNT	O	PWM	Charger roller control voltage (Cyan)
	20	T2RREM	O	0/3.3 V DC (pulse)	Secondary transfer bias reverse signal
	21	MMCNT	O	PWM	Charger roller control voltage (Magenta)
	22	BMSCNT	O	PWM	Developing sleeve roller bias control voltage (Magenta)
	23	MISENS	I	Analog	Charger roller AC current signal
	24	BKACNT	O	PWM	Developing AC bias control voltage (Black)

Connector	Pin	Signal	I/O	Voltage	Description
YC11	25	BCACNT	O	PWM	Developing AC bias control voltage (Cyan)
Connected to high voltage PWB	26	BMACNT	O	PWM	Developing AC bias control voltage (Magenta)
	27	BYACNT	O	PWM	Developing AC bias control voltage (Yellow)
	28	HVCLKK	O	0/3.3 V DC (pulse)	Developing bias clock signal (Black)
	29	BCSCNT	O	PWM	Developing sleeve roller bias control voltage (Cyan)
	30	HVCLKM	O	0/3.3 V DC (pulse)	Developing bias clock signal (Magenta)
	31	GND	-	-	Ground
	32	GND	-	-	Ground
YC13	1	MOTREV (GND)	-	-	Ground
Connected to drum motor	2	MOTRDYN	I	0/3.3 V DC	DRM ready signal
	3	SPEEDSEL	O	0/3.3 V DC	DRM speed selection signal
	4	MOTCLK	O	0/3.3 V DC (pulse)	DRM clock signal
	5	MOTEN	O	0/3.3 V DC	DRM: On/Off
	6	GND	-	-	Ground
	7	+24V3	O	24 V DC	24 V DC power to DRM
YC14	1	+24V3	O	24 V DC	24 V DC power to DEVM
Connected to developing motor	2	GND	-	-	Ground
	3	DLPMOTREN	O	0/3.3 V DC	DEVM: On/Off
	4	DLPMOTCLK	O	0/3.3 V DC (pulse)	DEVM clock signal
	5	DLPMOT RDYN	I	0/3.3 V DC	DEVM ready signal
	6	MOTREV	O	0/3.3 V DC	DEVM drive switch signal
YC15	1	IMAMOT RDYN	I	0/3.3 V DC	FUM ready signal
Connected to fuser motor	2	IMAMOTCLK	O	0/3.3 V DC (pulse)	FUM clock signal
	3	IMAMOTREN	O	0/3.3 V DC	FUM: On/Off
	4	GND	-	-	Ground
	5	+24V3	O	24 V DC	24 V DC power to FUM
YC16	1	+3.3V2_LED1	O	3.3 V DC	3.3 V DC power to MPPS
Connected to MP paper sensor	2	GND	-	-	Ground
	3	MPFPAP	I	0/3.3 V DC	MPPS: On/Off

Connector	Pin	Signal	I/O	Voltage	Description
YC17	1	CAS2	I	0/3.3 V DC	CSSW (SW2): On/Off
Connected to cassette size switch	2	CAS1	I	0/3.3 V DC	CSSW (SW1): On/Off
	3	COM	-	-	Ground
	4	CAS0	I	0/3.3 V DC	CSSW (SW0): On/Off
YC18	1	+3.3V2_LED2	O	3.3 V DC	3.3 V DC power to RS
Connected to registration sensor	2	GND	-	-	Ground
	3	REGPAP	I	0/3.3 V DC	RS: On/Off
YC19	1	PDIRN	I	0/3.3 V DC	EVSW: On/Off
Connected to eject PWB	2	+3.3V2	O	3.3 V DC	3.3 V DC power to EJPWB
	3	FTHERM	I	Analog	FTH detection voltage
	4	FUSPAP	I	0/3.3 V DC	ES: On/Off
	5	FDFULL	I	0/3.3 V DC	PFS: On/Off
	6	GND	-	-	Ground
YC20	1	+3.3V2_LED3	O	3.3 V DC	3.3 V DC power to TCS
Connected to toner container sensor and waste toner cover sensor	2	GND	-	-	Ground
	3	TCONTN	I	0/3.3 V DC	TCS: On/Off
	4	+3.3V2_LED7	O	3.3 V DC	3.3 V DC power to WTCS
	5	GND	-	-	Ground
	6	WSTOPN	I	0/3.3 V DC	WTCS: On/Off
YC21	1	GND	-	-	Ground
Connected to cassette PWB	2	PAPVOL2	I	0/3.3 V DC	PS2: On/Off
	3	PAPVOL1	I	0/3.3 V DC	PS1: On/Off
	4	LIFTSEN	I	0/3.3 V DC	LS: On/Off
	5	+3.3V2	O	3.3 V DC	3.3 V DC power to CPWB
YC23	1	+24V3	O	24 V DC	24 V DC power to TM-K
Connected to toner motor K	2	TNMKDRN	O	0/24 V DC	TM-K: On/Off
YC24	1	+24V3	O	24 V DC	24 V DC power to TM-M
Connected to toner motor M	2	TNMMDRN	O	0/24 V DC	TM-M: On/Off
YC25	1	+24V3	O	24 V DC	24 V DC power to TM-C
Connected to toner motor C	2	TNMCDRN	O	0/24 V DC	TM-C: On/Off
YC26	1	+24V3	O	24 V DC	24 V DC power to TM-Y
Connected to toner motor Y	2	TNMYDRN	O	0/24 V DC	TM-Y: On/Off

Connector	Pin	Signal	I/O	Voltage	Description
YC27	1	LMOTDRN	O	0/24 V DC	LM: On/Off
Connected to lift motor	2	GND	-	-	Ground
YC28	1	+24V1	O	24 V DC	24 V DC power to CFM
Connected to container fan motor	2	TCONTFAN DRN	O	0/12/24 V DC	CFM: Full speed/Half speed/Off
YC29	1	+24V1	O	24 V DC	24 V DC power to LFM
Connected to left fan motor	2	LFANDRN	O	0/12/24 V DC	LFM: Full speed/Half speed/Off
YC30	1	TOPOPN	O	0/3.3 V DC	TTSW: On/Off
Connected to top tray switch	2	GND	-	-	Ground
YC31	1	GND	-	-	Ground
Connected to laser scanner unit KM	2	NC	-	-	-
	3	LONBKN	O	0/3.3 V DC	APCPWB-K sample/hold signal
	4	ENBKN	O	0/3.3 V DC	APCPWB-K laser enable signal
	5	PDKN	I	0/3.3 V DC (pulse)	Horizontal synchronizing signal
	6	GND	-	-	Ground
	7	NC	-	-	-
	8	LONBMN	O	0/3.3 V DC	APCPWB-M sample/hold signal
	9	ENBMN	O	0/3.3 V DC	APCPWB-M laser enable signal
	10	PDMN	I	0/3.3 V DC (pulse)	Horizontal synchronizing signal
	11	LSUTHERMM	I	Analog	ITEMS detection voltage
	12	POLCLK1	O	0/3.3 V DC (pulse)	PM-KM clock signal
	13	POLRDYN1	I	0/3.3 V DC	PM-KM ready signal
	14	POLONN1	O	0/3.3 V DC	PM-KM: On/Off
	15	GND	-	-	Ground
	16	+24V3	O	24 V DC	24 V DC power to PM-KM
	17	N.C.	-	-	Not used
	18	N.C.	-	-	Not used

Connector	Pin	Signal	I/O	Voltage	Description
YC32	1	GND	-	-	Ground
Connected to laser scanner unit CY	2	NC	-	-	-
	3	LONBCN	O	0/3.3 V DC	APCPWB-C sample/hold signal
	4	ENBCN	O	0/3.3 V DC	APCPWB-C laser enable signal
	5	PDCN	I	0/3.3 V DC (pulse)	Horizontal synchronizing signal
	6	GND	-	-	Ground
	7	NC	-	-	-
	8	LONBYN	O	0/3.3 V DC	APCPWB-Y sample/hold signal
	9	ENBYN	O	0/3.3 V DC	APCPWB-Y laser enable signal
	10	PDYN	I	0/3.3 V DC (pulse)	Horizontal synchronizing signal
	11	LSUTHERMY	-	-	Not used
	12	POLCLK0	O	0/3.3 V DC (pulse)	PM-CY clock signal
	13	POLRDYN0	I	0/3.3 V DC	PM-CY ready signal
	14	POLONN0	O	0/3.3 V DC	PM-CY: On/Off
	15	GND	-	-	Ground
	16	+24V3	O	24 V DC	24 V DC power to PM-CY
YC33	1	GND	-	-	Ground
Connected to paper feeder	2	OPSCLK	O	0/3.3 V DC (pulse)	Paper feeder clock signal
	3	OPRDYN	I	0/3.3 V DC	Paper feeder ready signal
	4	OPSDI	I	0/3.3 V DC (pulse)	Paper feeder serial communication data signal input
	5	OPSDO	O	0/3.3 V DC (pulse)	Paper feeder serial communication data signal output
	6	+3.3V1	O	3.3 V DC	3.3 V DC power to paper feeder
	7	GND	-	-	Ground
	8	OPSEL0	O	0/3.3 V DC	Paper feeder selection signal
	9	OPSEL1	O	0/3.3 V DC	Paper feeder selection signal
	10	OPSEL2	O	0/3.3 V DC	Paper feeder selection signal
	11	+24V3	O	24 V DC	24 V DC power to paper feeder

Connector	Pin	Signal	I/O	Voltage	Description
YC34	1	TNSENM	I	Analog	TS-M detection voltage
Connected to drum relay PWB	2	ERASECDR	O	0/24 V DC	CL-C: On/Off
	3	TNSENK	I	Analog	TS-K detection voltage
	4	ERASEMDR	O	0/24 V DC	CL-M: On/Off
	5	DLPTHERM	I	Analog	DEVTH detection voltage
	6	ERASEKDR	O	0/24 V DC	CL-K: On/Off
	7	+3.3V2	O	3.3 V DC	3.3 V DC power to DRRPWB
	8	EECLK	O	0/3.3 V DC (pulse)	EEPROM clock signal
	9	GND	-	-	Ground
	10	EEDATA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	11	TNSENY	I	Analog	TS-Y detection voltage
	12	ERASEYDR	O	0/24 V DC	CL-Y: On/Off
	13	TNSENC	I	Analog	TS-C detection voltage
YC35	1	DLPDIRN	I	0/3.3 V DC	DEVRSW: On/Off
Connected to developing release switch and developing release motor	2	GND	-	-	Ground
	3	DLPCMOTA	O	24/0 V DC	DEVRM: Forward/Stop (Reverse)
	4	DLPCMOTB	O	24/0 V DC	DEVRM: Reverse/Stop (Forward)
YC36	1	LSUMOTA	O	24/0 V DC	LSUCM: Forward/Stop (Reverse)
Connected to LSU cleaning motor	2	LSUMOTB	O	24/0 V DC	LSUCM: Reverse/Stop (Forward)
YC37	1	STDUBN	O	0/24 V DC (pulse)	DUM drive control signal
Connected to duplex motor	2	STDUAN	O	0/24 V DC (pulse)	DUM drive control signal
	3	STDUB	O	0/24 V DC (pulse)	DUM drive control signal
	4	STDUA	O	0/24 V DC (pulse)	DUM drive control signal
YC38	1	PREMOTDRN	O	0/24 V DC	FPRM: On/Off
Connected to fuser pressure release motor	2	GND	-	-	Ground
YC40	1	+24V1	O	24 V DC	24 V DC power to FUFM
Connected to fuser fan motor	2	FUFANDRN	O	0/12/24 V DC	FUFM: Full speed/Half speed/Off

Connector	Pin	Signal	I/O	Voltage	Description
YC42	1	GND	-	-	Ground
Connected to outer temper-ature sensor	2	AIRTEMP	I	Analog	OTEMS detection voltage (temperature)
	3	WETCLK0	O	0/3.3 V DC (pulse)	OTEMS clock signal
	4	WETCLK1	O	0/3.3 V DC (pulse)	OTEMS clock signal
	5	AIRWETOUT	I	Analog	OTEMS detection voltage (humidity)

2-3-3 Main PWB

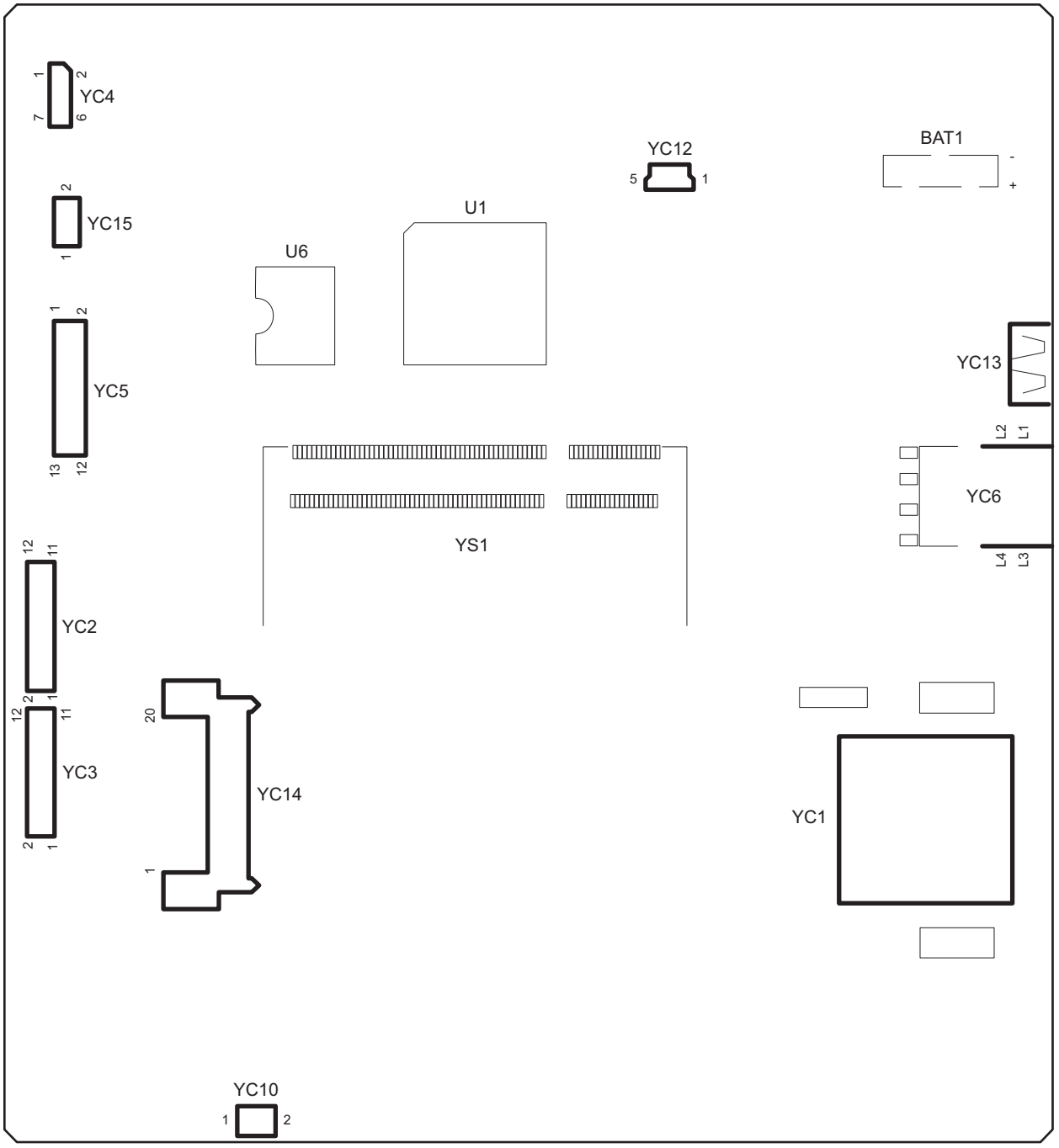


Figure 2-3-3 Main PWB silk-screen diagram

Connector	Pin	Signal	I/O	Voltage	Description
YC1	1	CD/DAT3	I/O	0/3.3 V DC	Control signal
Connected to SD card	2	CMD	I/O	0/3.3 V DC	Control signal
	3	VSS	-	-	Ground
	4	VDD	-	0/3.3 V DC	Control signal
	5	CLK	-	0/3.3 V DC	Control signal
	6	VSS	-	-	Ground
	7	DAT0	I/O	0/3.3 V DC(pulse)	Data bus signal
	8	DAT1	I/O	0/3.3 V DC(pulse)	Data bus signal
	9	DAT2	I/O	0/3.3 V DC(pulse)	Data bus signal
	10	CD	I	0/3.3 V DC	Control signal
	11	COMMON	-	0/3.3 V DC	Control signal
	12	WP	I	0/3.3 V DC	Control signal
YC2	1	GND	-	-	Ground
Connected to laser scanner unit CY	2	VREFY	O	Analog	APCPWB-Y Laser power reference voltage
	3	+3.3V3	O	3.3 V DC	3.3 V DC power to APCPWB-Y
	4	PDYN	I	0/3.3 V DC (pulse)	Horizontal synchronizing signal
	5	VDOYP	O	LVDS	APCPWB-Y video data signal (+)
	6	VDOYN	O	LVDS	APCPWB-Y video data signal (-)
	7	GND	-	-	Ground
	8	VREFC	O	Analog	APCPWB-C Laser power reference voltage
	9	+3.3V3	O	3.3 V DC	3.3 V DC power to APCPWB-C
	10	PDCN	I	0/3.3 V DC (pulse)	Horizontal synchronizing signal
	11	VDOCP	O	LVDS	APCPWB-C video data signal (+)
	12	VDOCN	O	LVDS	APCPWB-C video data signal (-)
YC3	1	GND	-	-	Ground
Connected to laser scanner unit KM	2	VREFM	O	Analog	APCPWB-M Laser power reference voltage
	3	+3.3V3	O	3.3 V DC	3.3 V DC power to APCPWB-M
	4	PDMN	I	0/3.3 V DC (pulse)	Horizontal synchronizing signal
	5	VDOMP	O	LVDS	APCPWB-M video data signal (+)
	6	VDOMN	O	LVDS	APCPWB-M video data signal (-)
	7	GND	-	-	Ground
	8	VREFK	O	Analog	APCPWB-K Laser power reference voltage
	9	+3.3V3	O	3.3 V DC	3.3 V DC power to APCPWB-K
	10	PDKN	I	0/3.3 V DC (pulse)	Horizontal synchronizing signal

Connector	Pin	Signal	I/O	Voltage	Description
YC3	11	VDOKP	O	LVDS	APCPWB-K video data signal (+)
Connected to laser scanner unit KM	12	VDOKN	O	LVDS	APCPWB-K video data signal (-)
YC4	1	+5V1	-	5 V DC	5 V DC power to OPPWB
Connected to operation panel PWB	2	FPRSTN	O	0/3.3 V DC	OPPWB reset signal
	3	+3.3V1	O	3.3 V DC	3.3 V DC power to OPPWB
	4	FPTXD	O	0/3.3 V DC (pulse)	OPPWB transmission data
	5	FPRXD	I	0/3.3 V DC (pulse)	OPPWB received data
	6	GND	-	-	Ground
	7	WAKEUP_PNLKEY	I	0/3.3 V DC	Return signal
YC5	1	I2CSDA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
Connected to relay PWB	2	GND	-	-	Ground
	3	I2CSCL	O	0/3.3 V DC (pulse)	EEPROM clock signal
	4	ST_WUP	O	0/3.3 V DC	Warmup signal
	5	SCKN	O	0/3.3 V DC (pulse)	Serial communication clock signal
	6	SO	I	0/3.3 V DC (pulse)	Serial communication data signal input
	7	SI	O	0/3.3 V DC (pulse)	Serial communication data signal output
	8	SDIR	I	0/3.3 V DC	Serial communication direction change signal
	9	SBSY	I	0/3.3 V DC	Serial busy signal
	10	EGIRN	I	0/3.3 V DC	Engine interruption signal
	11	VSYNC	I	0/3.3 V DC (pulse)	Vertical synchronizing signal
	12	+3.3V1	O	3.3 V DC	3.3 V DC power to RYPWB
	13	GND	-	-	Ground
YC6	1	TD1+	I/O	0/3.3 V DC (pulse)	Transmission data
Connected to ethernet	2	TD1-	I/O	0/3.3 V DC (pulse)	Transmission data
	3	TD2+	I/O	0/3.3 V DC (pulse)	Transmission data
	4	TD2-	I/O	0/3.3 V DC (pulse)	Transmission data
	5	CT1	O	3.3 V DC	3.3 V DC power output
	6	CT2	O	3.3 V DC	3.3 V DC power output
	7	TD3+	I/O	0/3.3 V DC (pulse)	Transmission data
	8	TD3-	I/O	0/3.3 V DC (pulse)	Transmission data
	9	TD4+	I/O	0/3.3 V DC (pulse)	Transmission data
	10	TD5-	I/O	0/3.3 V DC (pulse)	Transmission data

Connector	Pin	Signal	I/O	Voltage	Description
YC10	1	+24V0	O	24 V DC	24 V DC power to RFM
Connected to right fan motor	2	RFANDRN	O	0/12/24 V DC	RFM: Full speed/Half speed/Off
YC12	1	VBUS	O	5 V DC	5 V DC power output
Connected to USB	2	DATA-	I/O	-	USB data signal
	3	DATA+	I/O	-	USB data signal
	4	NC	-	-	Not used
	5	GND	-	-	Ground
YC13	A1	VBUS_A	O	5 V DC	5 V DC power output
Connected to USB	A2	D-_A	I/O	-	USB data signal
	A3	D+_A	I/O	-	USB data signal
	A4	GND_A	-	-	Ground
	B1	VBUS_B	I	5 V DC	5 V DC power output
	B2	D-_B	I/O	-	USB data signal
	B3	D+_B	I/O	-	USB data signal
	B4	GND_B	-	-	Ground
YC14	1	+5V1	I	5 V DC	5 V DC power output
Connected to e-KUIO slot	2	GND	-	-	Ground
	3	RST_KUIO0	O	0/3.3 V DC	FAX reset signal
	4	+5V2_EKUIO	I	5 V DC	5 V DC power output
	5	GND	-	-	Ground
	6	WAKE_UP_KUIO0	I	0/3.3 V DC	FAX job interrupt signal
	7	AUDIO	I	ANALOG	Audio signal
	8	NC	-	-	Not used
	9	NC	-	-	Not used
	10	NC	-	-	Not used
	11	GND	-	-	Ground
	12	NC	-	-	Not used
	13	NC	-	-	Not used
	14	GND	-	-	Ground
	15	NC	-	-	Not used
	16	NC	-	-	Not used
	17	GND	-	-	Ground
	18	USBH_DP	I/O	0/3.3 V DC (pulse)	USB Data +
	19	USBH_DN	I/O	0/3.3 V DC (pulse)	USB Data -
	20	VBUS_USBH	O	0/3.3 V DC	VBUS signal

Connector	Pin	Signal	I/O	Voltage	Description
YC15	1	+24V0	I	24 V DC	24 V DC power from PSPWB
Connected to power source PWB	2	GND	-	-	Ground

2-3-4 Drum relay PWB

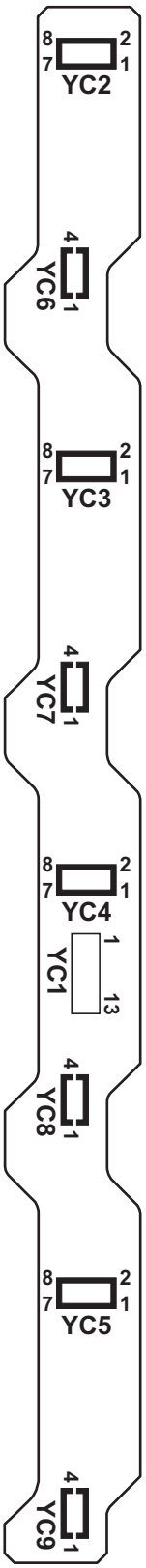


Figure 2-3-4 Drum relay PWB silk-screen diagram

Connector	Pin	Signal	I/O	Voltage	Description
YC1	1	TNSENM	O	Analog	TS-M detection voltage
Connected to engine PWB	2	ERASECDR	I	0/24 V DC	CL-C: On/Off
	3	TNSENK	O	Analog	TS-K detection voltage
	4	ERASEMDR	I	0/24 V DC	CL-M: On/Off
	5	DLPTHERM	O	Analog	DEVTH detection voltage
	6	ERASEKDR	I	0/24 V DC	CL-K: On/Off
	7	+3.3V2	I	3.3 V DC	3.3 V DC power from EPWB
	8	EECLK	I	0/3.3 V DC (pulse)	EEPROM clock signal
	9	GND	-	-	Ground
	10	EEDATA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	11	TNSENY	O	Analog	TS-Y detection voltage
	12	ERASEYDR	I	0/24 V DC	CL-Y: On/Off
	13	TNSENC	O	Analog	TS-C detection voltage
YC2	1	GND	-	-	Ground
Connected to drum PWB K	2	EECLK	O	0/3.3 V DC (pulse)	EEPROM clock signal
	3	ERASEKDR	O	0/24 V DC	CL-K: On/Off
	4	EEDATA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	5	N.C.	-	-	Not used
	6	+3.3V2	O	3.3 V DC	3.3 V DC power to DRPWB-K
	7	DA0	-	-	Not used
	8	DA1	-	-	Not used
YC3	1	GND	-	-	Ground
Connected to drum PWB M	2	EECLK	O	0/3.3 V DC (pulse)	EEPROM clock signal
	3	ERASEMDR	O	0/24 V DC	CL-M: On/Off
	4	EEDATA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	5	N.C.	-	-	Not used
	6	+3.3V2	O	3.3 V DC	3.3 V DC power to DRPWB-M
	7	DA0	-	-	Ground
	8	DA1	-	-	Not used
YC4	1	GND	-	-	Ground
Connected to drum PWB C	2	EECLK	O	0/3.3 V DC (pulse)	EEPROM clock signal
	3	ERASECDR	O	0/24 V DC	CL-C: On/Off
	4	EEDATA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	5	N.C.	-	-	Not used
	6	+3.3V2	O	3.3 V DC	3.3 V DC power to DRPWB-C
	7	DA0	-	-	Not used
	8	DA1	-	-	Ground

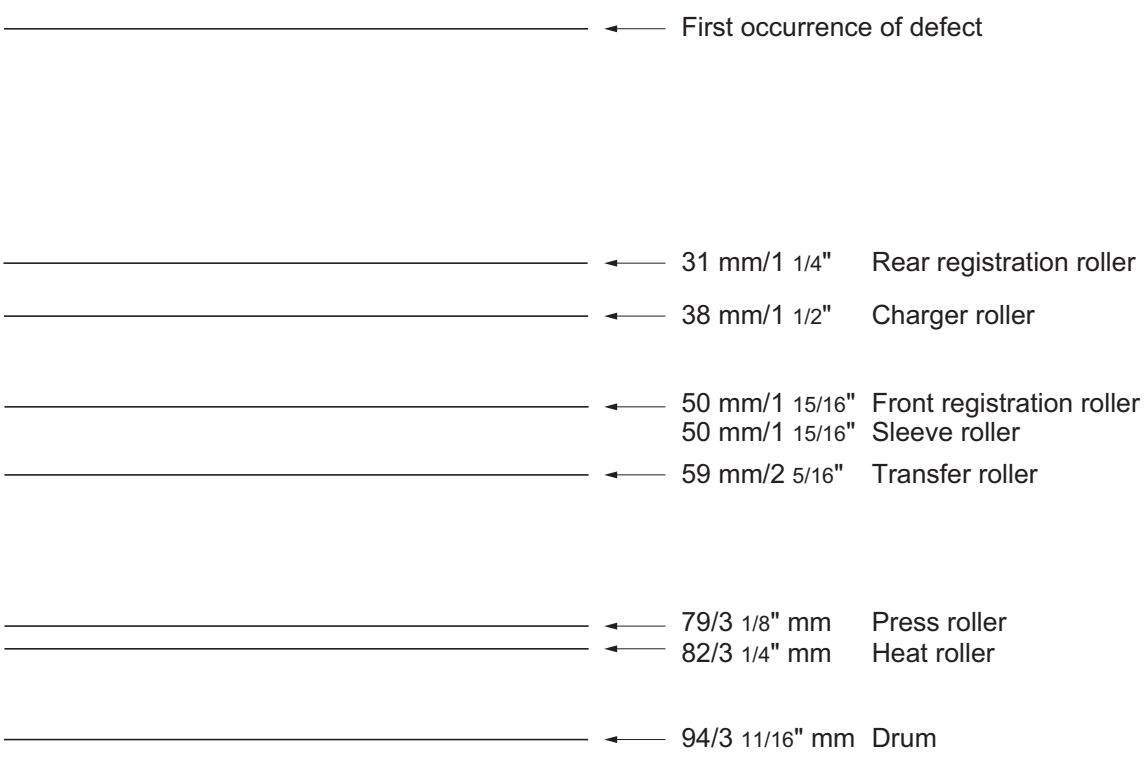
Connector	Pin	Signal	I/O	Voltage	Description
YC5	1	GND	-	-	Ground
Connected to drum PWB Y	2	EECLK	O	0/3.3 V DC (pulse)	EEPROM clock signal
	3	ERASEYDR	O	0/24 V DC	CL-Y: On/Off
	4	EEDATA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	5	N.C.	-	-	Not used
	6	+3.3V2	O	3.3 V DC	3.3 V DC power to DRPWB-Y
	7	DA0	-	-	Ground
	8	DA1	-	-	Ground
YC6	1	GND	-	-	Ground
Connected to developing PWB K	2	TNSENK	I	Analog	TS-K detection voltage
	3	+3.3V2	O	3.3 V DC	3.3 V DC power to DEVPWB-K
	4	DLPTHERM	I	Analog	DEVTH detection voltage
YC7	1	GND	-	-	Ground
Connected to developing PWB M	2	TNSENM	I	Analog	TS-M detection voltage
	3	+3.3V2	O	3.3 V DC	3.3 V DC power to DEVPWB-M
	4	N.C.	-	-	Not used
YC8	1	GND	-	-	Ground
Connected to developing PWB C	2	TNSENC	I	Analog	TS-C detection voltage
	3	+3.3V2	O	3.3 V DC	3.3 V DC power to DEVPWB-C
	4	N.C.	-	-	Not used
YC9	1	GND	-	-	Ground
Connected to developing PWB Y	2	TNSENY	I	Analog	TS-Y detection voltage
	3	+3.3V2	O	3.3 V DC	3.3 V DC power to DEVPWB-Y
	4	N.C.	-	-	Not used

2-4-1 Appendixes

(1) Maintenance kits (26/28 ppm model only)

Maintenance part name		Parts No.	Alternative part No.
Name used in service	**Name used in parts list**		
MK-592/Maintenance kit (200,000 pages)	MK-592/MAINTENANCE KIT	1702KV7US0	072KV7US
Developing unit K	DV-560 US (K)	-	-
Developing unit M	DV-560 US (M)	-	-
Developing unit C	DV-560 US (C)	-	-
Developing unit Y	DV-560 US (Y)	-	-
Drum unit	DK-590	-	-
Intermediate transfere unit	TR-590	-	-
Fuser unit	FK-590(U)	-	-
Retard roller unit	PARTS HOLDER RETARD ASSY SP	-	-
Paper feed roller unit	PARTS HOLDER FEED ASSY SP	-	-
MP paper feed roller	ROLLER M/P ASSY	-	-
MK-590/Maintenance kit (200,000 pages)	MK-590/MAINTENANCE KIT	1702KV8NL0	072KV8NL
Developing unit K	DV-560(K)	-	-
Developing unit M	DV-560(M)	-	-
Developing unit C	DV-560(C)	-	-
Developing unit Y	DV-560(Y)	-	-
Drum unit	DK-590	-	-
Intermediate transfer unit	TR-590	-	-
Fuser unit	FK-590(E)	-	-
Retard roller unit	PARTS HOLDER RETARD ASSY SP	-	-
Paper feed roller unit	PARTS HOLDER FEED ASSY SP	-	-
MP paper feed roller	ROLLER M/P ASSY	-	-

(2) Repetitive defects gauge



* : The repetitive marks interval may vary depending on operating conditions.

(3) Firmware environment commands

The printer maintains a number of printing parameters in its memory. There parameters may be changed permanently with the FRPO (Firmware RePrOgram) commands.
This section provides information on how to use the FRPO command and its parameters using examples.

Using FRPO commands for reprogramming firmware

The current settings of the FRPO parameters are listed as optional values on the service status page.

Note: Before changing any FRPO parameter, print out a service status page, so you will know the parameter values before the changes are made. To return FRPO parameters to their factory default values, send the FRPO INIT (FRPO-INITialize) command.(!R! FRPO INIT; EXIT;)

The FRPO command is sent to the printer in the following sequence:
!R! FRPO parameter, value; EXIT;
Example: Changing emulation mode to PCL6
!R! FRPO P1, 6; EXIT;

FRPO parameters

Item	FRPO	Setting values	Factory setting
Default pattern resolution	B8	0: 300 dpi 1: 600 dpi	0
Page orientation	C1	0: Portrait 1: Landscape	0
Default font No. *	C2 C3 C5	Middle two digits of power-up font Last two digits of power-up font First two digits of power-up font	0 0 0
PCL font switch	C8	0: HP compatibility mode 32: Conventional compatibility mode	0
Total host buffer size	H8	0 to 99 in units of the size defined by FRPO S5	5
Form feed time-out value	H9	Value in units of 5 seconds (1 to 99)	6
Top margin	L1 L2	Top margin (integer value) Top margin (decimal value)	0 50
Left margin	L3 L4	Left margin (integer value) Left margin (decimal value)	0 50
Page length	L5 L6	Page length (integer value) Page length (decimal value)	10 61
Page width	L7 L8	Page width (integer value) Page width (decimal value)	8 11
Duplex mode	N4	0: Off 1: Long edge binding 2: Short edge binding	0
Sleep timer time-out time	N5	Value in units of 1 minute (1 to 240)	15
Ecoprint level	N6	0: Off 2: On	0

Item	FRPO	Setting values	Factory setting
Default emulation mode	P1	6: PCL 6 9: KPDL	120V: 9 220-240V: 6
Carriage-return action	P2	0: Ignores 1: Carriage-return 2: Carriage-return + linefeed	1
Linefeed action	P3	0: Ignores 1: Linefeed 2: Linefeed + carriage-return	1
Automatic emulation switching	P4	0: AES disabled 1: AES enabled	120V: 1 220-240V: 0
Automatic emulation switching trigger	P7	0: Page eject commands 1: None 2: Page eject and prescribe EXIT commands 3: Prescribe EXIT commands 4: Formfeed (^L) commands 6: Pescribe EXIT and formfeed commands 10: Page eject commands; if AES fails, resolves to KPDL	120V: 11 220-240V: 10
Command recognition character	P9	ASCII code of 33 to 126	82 (R)
Default paper size	R2	0: Size of the default paper cassette (See R4.) 1: Envelope Monarch 2: Envelope #10 3: Envelope DL 4: Envelope C5 5: Executive 6: Letter 7: Legal 8: ISO A4 9: JIS B5 13: ISO A5 14: ISO A6 15: JIS B6 16: Envelope #9 17: Envelope #6-3/4 18: ISO B5 19: Custom 31: Postcard 32: Reply-paid postcard 33: Oficio II 40: 16K 42: 216 × 340 mm 50: Statement 51: Folio 52: Youkei 2 53: Youkei 4	0

Item	FRPO	Setting values	Factory setting
Default cassette	R4	0: MP tray 1: Cassette 1 2: Cassette 2 3: Cassette 3 4: Cassette 4	1
MP tray paper size	R7	0: Maximum paper size Same as the R2 values except: 0	120V: 6 220-240V: 8
A4/letter equation	S4	0: Off 1: On	1
Host buffer size	S5	0: 10 KB 1: 100 KB 2: 1024 KB	1
RAM disk capacity	S6	0 to 1024 MB	400
RAM disk	S7	0: Disabled 1: Enabled	0
Wide A4	T6	0: Off 1: On	0
Line spacing *	U0 U1	Lines per inch (integer value) Lines per inch (decimal value)	6 0
Character spacing *	U2 U3	Characters per inch (integer value) Characters per inch (decimal value)	10 0
Country code	U6	0: US-ASCII 1: France 2: Germany 3: UK 4: Denmark 5: Sweden 6: Italy 7: Spain 8: Japan 9: US Legal 10: IBM PC-850 (Multilingual) 11: IBM PC-860 (Portuguese) 12: IBM PC-863 (Canadian French) 13: IBM PC-865 (Norwegian) 14: Norway 15: Denmark 2 16: Spain 2 17: Latin America 50 - 99: HP PCL symbol set coding	41
Code set at power up in daisywheel emulation	U7	0: Same as the default emulation mode (P1) 1: IBM 6: IBM PC-8 7 - 99: HP PCL symbol set coding	53
Font pitch for fixedpitch scalable font *	U8 U9	Default font pitch (integer value) Default font pitch (decimal value)	10 0

Item	FRPO	Setting values	Factory setting
Font height for the default scalable font *	V0	Integer value in 100 points: 0 to 9	0
	V1	Integer value in points: 0 to 99	12
	V2	decimal value in 1/100 points: 0, 25, 50, 75	0
Default scalable font *	V3	Name of typeface of up to 32 characters, enclosed with single or double quotation marks	Courier
Default weight (courier and letter Gothic)	V9	0: Courier = darkness Letter Gothic = darkness 1: Courier = regular Letter Gothic = darkness 4: Courier = darkness Letter Gothic = regular 5: Courier = regular Letter Gothic = regular	5
Color mode	W1	0: Black & white 1: Color	1
Gloss mode	W6	0: Low (normal) 1: High	0
Paper type for the MP tray	X0	1: Plain 2: Transparency 3: Preprinted 4: Label 5: Bond 6: Recycle 7: Vellum 9: Letterhead 10: Color 11: Prepunched 12: Envelope 13: Cardstock 14: Coated 16: Thick 17: High quality 21 to 28: Custom1 to 8	1
Paper type for cassettes 1	X1	1: Plain 3: Preprinted 5: Bond 6: Recycled 7: Vellum 9: Letterhead 10: Color 11: Prepunched 16: Thick 17: High quality 21 to 28: Custom1 to 8	1

Item	FRPO	Setting values	Factory setting
Paper type for cassettes 2 to 4	X2 X3 X4	Paper feeder (Normal) 1: Plain 3: Preprinted 5: Bond 6: Recycled 9: Letterhead 10: Color 11: Prepunched 17: High quality 21 to 28: Custom1 to 8 Multi purpose feeder 1: Plain 3: Preprinted 4: Label 5: Bond 6: Recycle 7: Vellum 9: Letterhead 10: Color 11: Prepunched 12: Envelope 13: Cardstock 14: Coated 16: Thick 17: High quality 21 to 28: Custom1 to 8	1
PCL paper source	X9	0: Paper selection depending on an escape sequence compatible with HP-LJ5Si. 2: Paper selection depending on an escape sequence compatible with HP-LJ8000.	0
Automatic continue for ‘Press GO’	Y0	0: Off 1: On	0
Automatic continue timer	Y1	Value in units of 5 seconds (1 to 99)	6 (30 s)
Error message for device error	Y3	0: Not detect 33: Detect	0
Duplex operation for specified paper type (Prepunched, Preprintedand Letterhead)	Y4	0: Off 1: On	0

Item	FRPO	Setting values	Factory setting
Default operation for PDF direct printing	Y5	0: Enlarges or reduces the image to fit in the current paper size. Loads paper from the current paper cassette. 1: Through the image. Loads paper which is the same size as the image. 2: Enlarges or reduces the image to fit in the current paper size. Loads Letter, A4 size paper depending on the image size. 3: Through the image. Loads Letter, A4 size paper depending on the image size. 8: Through the image. Loads paper from the current paper cassette. 9: Through the image. Loads Letter, A4 size paper depending on the image size. 10: Enlarges or reduces the image to fit in the current paper size. Loads Letter, A4 size paper depending on the imagesize.	0
e-MPS error	Y6	0: Does not print the error report and display the error message. 1: Prints the error report. 2: Displays the error message. 3: Prints the error report and displays the error message.	3

*: Ignored in some emulation modes.

(4) Maintenance Commands

This section provides information on how to use the maintenance command and its parameters using examples.

Coverage setting

Description

Make settings on the color print coverage counter displays, as well as the coverage threshold.

Purpose

Make settings on the color print coverage counter displays.

Format	!R! KCFG “TCCM”,#;EXIT;
Parameter	The counter of full color printing is divided into three steps by the average coverage of the toner of "Y. M.C." 0 = (Only One Step) Full Color Counter : Initial Value 1 = Color Coverage Counter

Example 1: Set the coverage counter.

!R! KCFG “TCCM”,1;EXIT;

Purpose

Setting the coverage thresholds to segment the color count depending on the density level of 1, 2, and 3, for the counters of color printing.

Format	!R! KCFG “STCT”,#,#; EXIT;	
Parameter	Level 1 (Low Coverage)	!R! KCFG “STCT”,1,#; EXIT; (The Level 1 value # can be set from 1 to 999, in 0.1% increments) All prints with Level 1 set percentage of coverage or less will be counted as Low Coverage.
	Level 2 (Middle Coverage)	!R! KCFG “STCT”,2,#; EXIT; (The Level 2 value # can be set from 2 to 999, in 0.1% increments) All prints above the Level1 percentage and Level 2 set percentage or less will be counted as Middle Coverage.

Example 1: Set the low coverage to 2%.

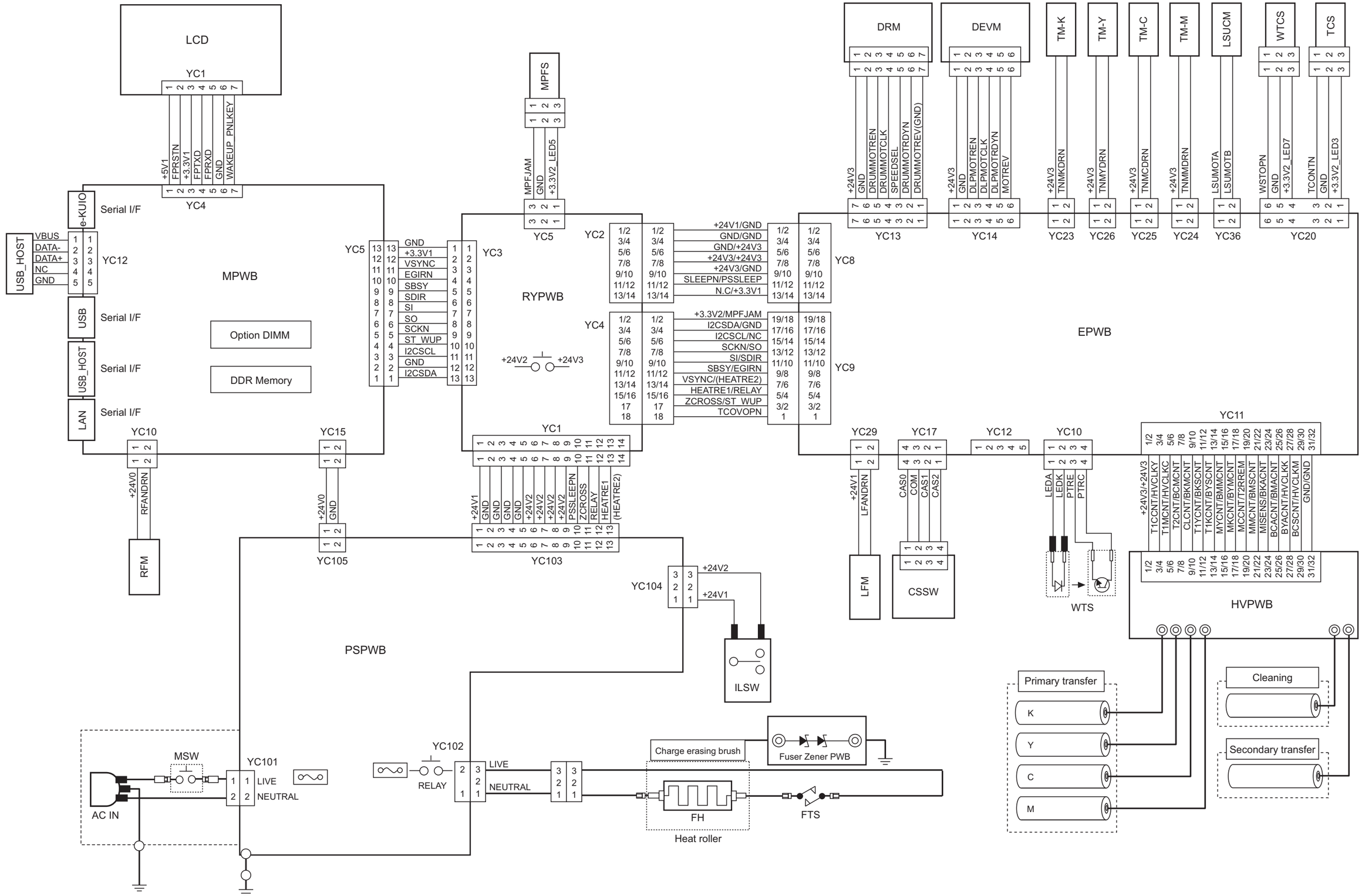
!R! KCFG “STCT”,1,20; EXIT;

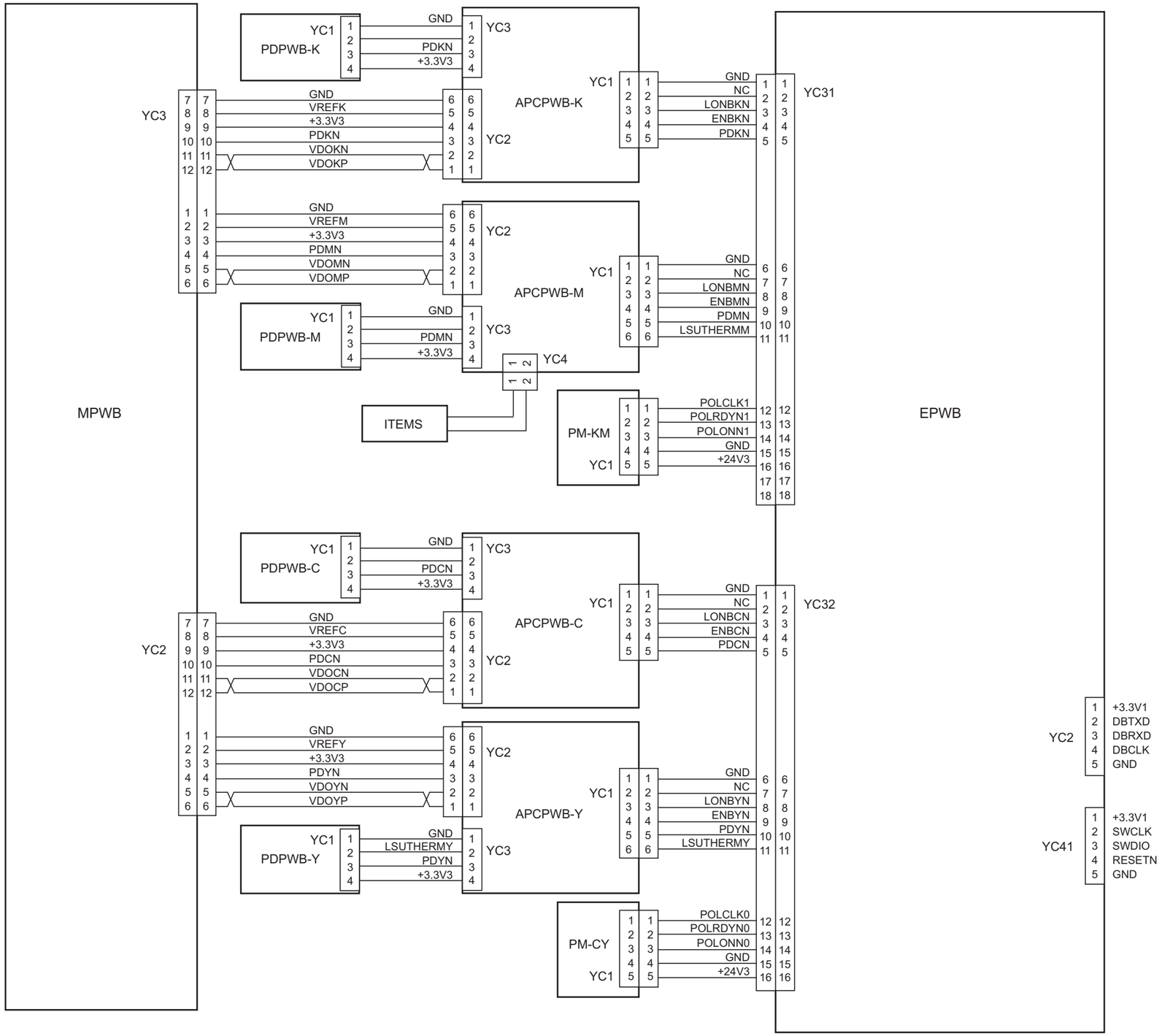
Example 2: Set the middle coverage to 5%.

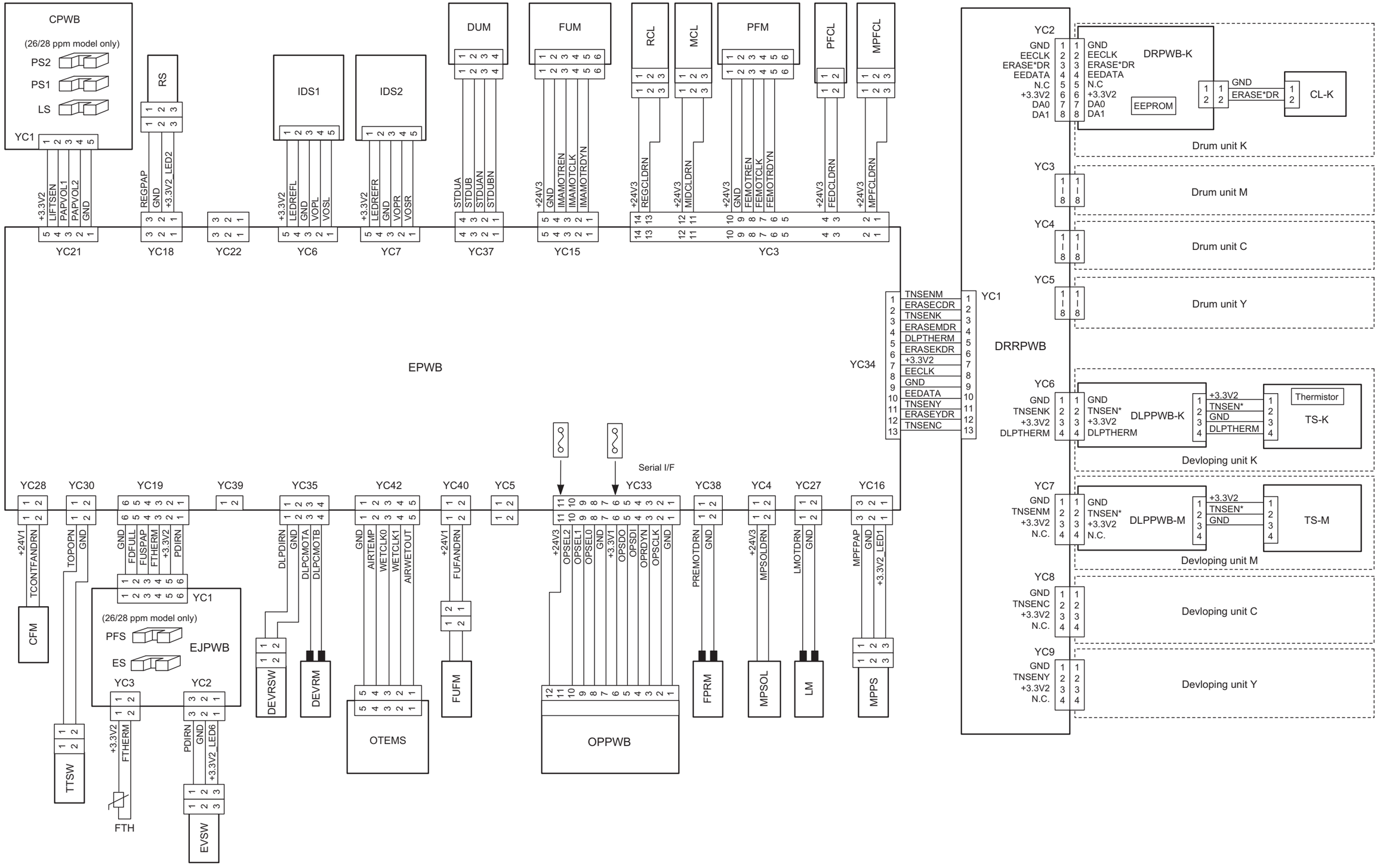
!R! KCFG “STCT”,2,50; EXIT;

* : All prints at or above the Level 2 set percentage will be counted as Level 3, High Coverage.

(5) Wiring diagram




MPWB
EPWB
PDPWB-K
YC1
GND
PDKN
+3.3V3
YC3
APCPWB-K
YC2
GND
VREFK
+3.3V3
PDKN
VDOKN
VDOKP
YC31
NC
LONBKN
ENBKN
PDKN
PDPWB-M
PDMN
APCPWB-M
VREFM
VDOMN
VDOMP
LONBMN
ENBMN
LSUTHERMM
YC4
ITEMS
PM-KM
POLCLK1
POLRDYN1
POLONN1
+24V3
PDPWB-C
PDCN
APCPWB-C
VREFC
VDOCN
VDOCP
YC32
LONBCN
ENBCN
PDPWB-Y
LSUTHERMY
PDYN
APCPWB-Y
VREFY
VDOYN
VDOYP
LONBYN
ENBYN
PM-CY
POLCLK0
POLRDYN0
POLONN0
YC41
+3.3V1
SWCLK
SWDIO
RESETN
DBTXD
DBRXD
DBCLK


CPWB
(26/28 ppm model only)
PS2
PS1
LS
YC1
+3.3V2
LIFTSEN
PAPVOL1
PAPVOL2
GND
YC21
RS
REGPAP
GND
+3.3V2_LED2
YC18
YC22
IDS1
+3.3V2
LEDREFL
GND
VOPL
VOSL
YC6
IDS2
+3.3V2
LEDREFR
GND
VOPR
VOSR
YC7
DUM
STDUA
STDUB
STDUAN
STDUBN
YC37
FUM
+24V3
GND
IMAMOTREN
IMAMOTCLK
IMAMOTRDYN
YC15
RCL
+24V3
REGCLDRN
MCL
+24V3
MIDCLDRN
PFM
+24V3
GND
FEMOTREN
FEMOTCLK
FEMOTRDYN
PFCL
+24V3
FEDCLDRN
MPFCL
+24V3
MPFCLDRN
YC3
EPWB
YC34
TNSENM
ERASECDR
TNSENK
ERASEMDR
DLPTHERM
ERASEKDR
+3.3V2
EECLK
GND
EEDATA
TNSENY
ERASEYDR
TNSENC
YC1
DRRPWB
YC2
GND
EECLK
ERASE*DR
EEDATA
N.C
+3.3V2
DA0
DA1
DRPWB-K
EEPROM
GND
ERASE*DR
CL-K
Drum unit K
YC3
Drum unit M
YC4
Drum unit C
YC5
Drum unit Y
YC6
GND
TNSENK
+3.3V2
DLPTHERM
GND
TNSEN*
+3.3V2
DLPTHERM
DLPPWB-K
+3.3V2
TNSEN*
GND
DLPTHERM
Thermistor
TS-K
Devloping unit K
YC7
GND
TNSENM
+3.3V2
N.C.
GND
TNSEN*
+3.3V2
N.C.
DLPPWB-M
+3.3V2
TNSEN*
GND
TS-M
Devloping unit M
YC8
GND
TNSENC
+3.3V2
N.C.
Devloping unit C
YC9
GND
TNSENY
+3.3V2
N.C.
Devloping unit Y
Serial I/F
YC28
+24V1
TCONTFANDRN
CFM
YC30
TOPOPN
GND
TTSW
YC19
GND
FDFULL
FUSPAP
FTHERM
+3.3V2
PDIRN
YC1
(26/28 ppm model only)
PFS
ES
EJPWB
YC3
+3.3V2
FTHERM
FTH
YC2
PDIRN
GND
+3.3V2_LED6
EVSW
YC39
YC35
DLPDIRN
GND
DLPCMOTA
DLPCMOTB
DEVRSW
DEVRM
YC42
GND
AIRTEMP
WETCLK0
WETCLK1
AIRWETOUT
OTEMS
YC40
+24V1
FUFANDRN
FUFM
YC5
YC33
+24V3
OPSEL2
OPSEL1
OPSEL0
GND
+3.3V1
OPSDO
OPSDI
OPRDYN
OPSCLK
GND
OPPWB
YC38
PREMOTDRN
GND
FPRM
YC4
+24V3
MPSOLDRN
MPSOL
YC27
LMOTDRN
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