



ECOSYS P6130cdn

ECOSYS P6035cdn

ECOSYS P7040cdn

SERVICE MANUAL

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Rev.1

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 REMPLACÉE PAR UN MODÈLE DE TYPE INCORRECT. METTRE AU REBUT LES BATTERIES UTILISÉES SELON LES INSTRUCTIONS DONNÉES.

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.

Notation of products in the manual

For the purpose of this service manual, products are identified to the following type.

ECOSYS P6130cdn (30 ppm model)

ECOSYS P6035cdn (35 ppm model)

ECOSYS P7040cdn (40 ppm model)

Revision history

Revision	Date	Pages	Revised contents
1	8 July 2015	Contents	Added: 9. Appendixes (3) System Error (Fxxxx) Outline
		1-1	Correction: Warm-up Time Power on 29 26 seconds or less (30 ppm model)
		1-3 to 1-5	Correction: (2)Printer Functions Interface: Optional Interface Added HD-6/HD-7
		2-9	Correction: Cassette 1: 60 - 160g/m2 60 - 163g/m2
		2-16, 2-17	Correction: Description of setting Standard Normal
		2-21	Correction: "Processing" "Data" in IMPORTANT
		3-11	Added: 40 ppm models
		3-12, 3-13, 3-15	Added: Drum heater PWB
		3-14	Correction: 14 DV-5150(C) DV-5140(C) 15 DV-5150(K) DV-5150(Y) DV-5160(K) DV-5160(Y)
		3-16	Correction: Changed the position of No.26
		3-18	Correction: 10: DV-5150(C) DV-5140(C) 11: DV-5150(K) DV-5150(Y) 11: DV-5160(K) DV-5160(Y) 26: 302NR9415 302M29413
		3-19 to 3-21	Added: Duplex fan motor
		3-34	Added: DR-5160
		4-3 to 4-5	Added: Quantity
		4-19	Added: IMPORTANT
		4-92, 4-96	Correction: Correction of IMPORTANT and design
		4-103	Added: Caution
		4-152	Added: 4.(40ppm model only)
		4-208	Added: Duplex fan motor
		4-210	Added: IMPORTANT
		4-223	Correction: 9. Release the hook (b) (a)
		4-226	Added: Number 18 to 20
		5-3	Added: Error cord No.N001,N002
		6-9	Correction: (41) Life counter (cassette 1) (The first line) Life counter (cassette 2) (The second line)
		6-30, 6-31	Correction: (9) Maintenance Log Maintenance kit item (11) Counter Log Maintenance kit item
		7-20	Correction: C0120 Contents Deleted: C0120 No.3
		7-35 to 7-37	Correction: Contents C4101, C4102, C4103, C4202, C4203, C4204

Revision	Date	Pages	Revised contents
1		7-86, 7-87	Correction: No.1 of "Check description" and "Corrective Action"
		7-108	Correction: (8) Deleted the engine relay PWB. Main/engine PWB (YC4) (YC21)
		8-13	Added: YC28
		8-21	Correction: YC104-1 DC24V power output input
		9-2, 9-4, 9-6	Correction: B8, D4, R2, X0
		9-9 to 9-12	Added: Error codes(Fxxxx)
		9-17	Added: Duplex fan motor
		9-20	Correction: Paper Feeder (Option) YC3, YC4, YC5





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.
- Advise 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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Installation Guide

PF-5100 (Paper Feeder)

1 Specifications

1-1 Specifications

(1) Common functions

Item		Specifications
Product Name		ECOSYS P6130cdn (30 ppm) ECOSYS P6035cdn (35 ppm) ECOSYS P7040cdn (40 ppm)
Type		Desktop
Printing Method		Electrophotography by semiconductor laser
Paper Weight	Cassette	60 to 163 g/m2
	Multi Purpose Tray	60 to 220 g/m2, 230 g/m2 (Cardstock)
Paper Type	Cassette	Plain, Rough, Recycled, Vellum, Preprinted, Bond, Color (Colour),Prepunched, Letterhead, Thick, High Quality, Custom 1 to 8(Duplex: Same as Simplex)
	Multi Purpose Tray	Plain, Transparency (OHP film), Rough, Vellum, Labels, Recycled,Preprinted, Bond, Cardstock, Coated, Color (Colour), Prepunched,Letterhead, Envelope, Thick, High Quality, Custom 1 to 8
Paper Size	Cassette	A4, A5, A6, B5, B6, Letter, Legal, Statement, Executive,Oficio II,Folio, 216 × 340 mm, 16K, B5 (ISO),Custom (105 × 148 mm to 216 × 356 mm)
	Multi Purpose Tray	A4, A5, A6, B5, B6, Folio, 216 × 340 mm, Letter, Legal, Statement,Executive, Oficio II, 16K, B5 (ISO), Envelope #10, Envelope #9,Envelope #6 3/4, Envelope Monarch, Envelope DL, Envelope C5,Hagaki (Cardstock), Oufuku Hagaki (Return postcard), Youkei 4,Youkei 2, Custom (70 × 148 mm to 216 × 356 mm)
Warm-up Time (22°C/71.6°F, 60%)	Power on	26 seconds or less (30 ppm models) 25 seconds or less (35 ppm models) 24 seconds or less (40 ppm models)
	Sleep	17 seconds or less (30 ppm models) 19 seconds or less (35 ppm models) 21 seconds or less (40 ppm models)
Paper Capacity	Cassette	500 sheets (80 g/m2)
	Multi Purpose Tray	100 sheets (80 g/m2)
Output Tray Capacity	Top tray	250 sheets (80 g/m2) (30 ppm models) 500 sheets (80 g/m2) (35/40 ppm models)
Image Write System		Semiconductor laser and electrophotography
Photoconductor		OPC (drum diameter 30 mm) (30/35 ppm models) a-Si (drum diameter 30 mm) (40 ppm models)

Item		Specifications
Charging system		Charger roller
Developing system		Touch down developing system Developer: 2-component Toner replenishing: Automatic from a toner container
Transfer system		Primary: Transfer belt Secondary: Transfer roller
Separation system		Small diameter separation, discharger needle (GND)
Cleaning system		Drum: Counter blade Transfer belt: Fur brush
Charge erasing system		Exposure by cleaning lamp (LED)
Fixing system		Heat and pressure fusing with the heat roller and the press roller Heat source: halogen heater Abnormally high temperature protection devices: thermostat
Memory		512 MB
Interface	Standard	USB Interface Connector: 1 (Hi-Speed USB) Network interface: 1 (10 BASE-T/100 BASE-TX/1000 BASE-T) USB Port: 2 (Hi-Speed USB)
	Option	eKUIO: 1
Operating Environment	Temperature	10 to 32.5°C/50 to 90.5°F
	Humidity	10 to 80 %
	Altitude	3,500 m/11,482 ft maximum
	Brightness	1,500 lux maximum
Dimension (W × D × H)		(30 ppm models) 15 23/64 × 20 61/64 × 16 1/8 390 × 532 × 409.5 mm (35/40 ppm models) 15 23/64 × 20 61/64 × 18 31/64 390 × 532 × 469.5 mm
Weight		(30 ppm models)(without toner container) Approx. 61.7 lb/Approx. 28.0 kg (35 ppm models)(without toner container) Approx. 63.9 lb/Approx. 29.0 kg (40 ppm models)(without toner container) Approx. 67.2 lb/Approx. 30.5 kg

Item	Specifications
Space Required (W × D)(Using multi purpose tray)	15 23/64 × 28 37/64 390 × 725.8 mm
Power Source	(30 ppm models) 120 V Specification Model: 120 V 60 Hz 9.0 A 230 V Specification Model: 220 to 240 V 50/60 Hz 5.0 A (35 ppm models) 120 V Specification Model: 120 V 60 Hz 10.0 A 230 V Specification Model: 220 to 240 V 50/60 Hz 5.6 A (40 ppm models) 120 V Specification Model: 120 V 60 Hz 11.3 A 230 V Specification Model: 220 to 240 V 50/60 Hz 5.8 A

(2) Printer Functions

30 ppm models

Item		Description	
Printing Speed	Black and White Printing	A4-R	30 sheets/min
		Letter-R	32 sheets/min
		Legal	26 sheets/min
		B5	27 sheets/min
		A5	27 sheets/min
		A6	27 sheets/min
	Full Color Printing	A4-R	30 sheets/min
		Letter-R	32 sheets/min
		Legal	26 sheets/min
		B5	27 sheets/min
		A5	27 sheets/min
		A6	27 sheets/min
First Print Time (A4, feed from Cassette)	Black and White	7.0 seconds or less	
	Color	8.0 seconds or less	
Resolution		600 × 600 dpi, 9600 dpi equivalent × 600 dpi	
Operating System		Windows XP, Windows Server 2003, Windows Vista, Windows 7, Windows 8, Windows 8.1, Windows Server 2008/R2, Windows Server 2012/R2, Mac OS 10.5 or later	
Interface		USB Interface Connector: 1 (Hi-Speed USB) Network interface: 1 (10 BASE-T/100 BASE-TX/1000 BASE-T) Optional Interface (Option): 1 (For IB-50/IB-51/HD-6/HD-7 mounting)	
Page Description Language		PRESCRIBE	
Emulations		PCL6 (PCL-XL, PCL5c), KPDL3, XPS	

35 ppm models

Item		Description	
Printing Speed	Black and White Printing	A4-R	35 sheets/min
		Letter-R	37 sheets/min
		Legal	30 sheets/min
		B5	35 sheets/min
		A5	35 sheets/min
		A6	35 sheets/min
	Full Color Printing	A4-R	35 sheets/min
		Letter-R	37 sheets/min
		Legal	30 sheets/min
		B5	35 sheets/min
		A5	35 sheets/min
		A6	35 sheets/min
First Print Time (A4, feed from Cassette)	Black and White	6.5 seconds or less	
	Color	7.5 seconds or less	
Resolution		600 × 600 dpi, 9600 dpi equivalent × 600 dpi	
Operating System		Windows XP, Windows Server 2003, Windows Vista, Windows 7, Windows 8, Windows 8.1, Windows Server 2008/R2, Windows Server 2012/R2, Mac OS 10.5 or later	
Interface		USB Interface Connector: 1 (Hi-Speed USB) Network interface: 1 (10 BASE-T/100 BASE-TX/1000 BASE-T) Optional Interface (Option): 1 (For IB-50/IB-51/HD-6/HD-7 mounting)	
Page Description Language		PRESCRIBE	
Emulations		PCL6 (PCL-XL, PCL5c), KPDL3, XPS	

40 ppm models

Item		Description	
Printing Speed	Black and White Printing	A4-R	40 sheets/min
		Letter-R	42 sheets/min
		Legal	34 sheets/min
		B5	40 sheets/min
		A5	40 sheets/min
		A6	40 sheets/min
	Full Color Printing	A4-R	40 sheets/min
		Letter-R	42 sheets/min
		Legal	34 sheets/min
		B5	40 sheets/min
		A5	40 sheets/min
		A6	40 sheets/min

Item		Description
First Print Time (A4, feed from Cassette)	Black and White	6.0 seconds or less
	Color	7.0 seconds or less
Resolution		600 × 600 dpi, 9600 dpi equivalent × 600 dpi
Operating System		Windows XP, Windows Server 2003, Windows Vista, Windows 7, Windows 8, Windows 8.1, Windows Server 2008/R2, Windows Server 2012/R2, Mac OS 10.5 or later
Interface		USB Interface Connector: 1 (Hi-Speed USB) Network interface: 1 (10 BASE-T/100 BASE-TX/1000 BASE-T) Optional Interface (Option): 1 (For IB-50/IB-51/HD-6/HD-7 mounting)
Page Description Language		PRESCRIBE
Emulations		PCL6 (PCL-XL, PCL5c), KPDL3, XPS

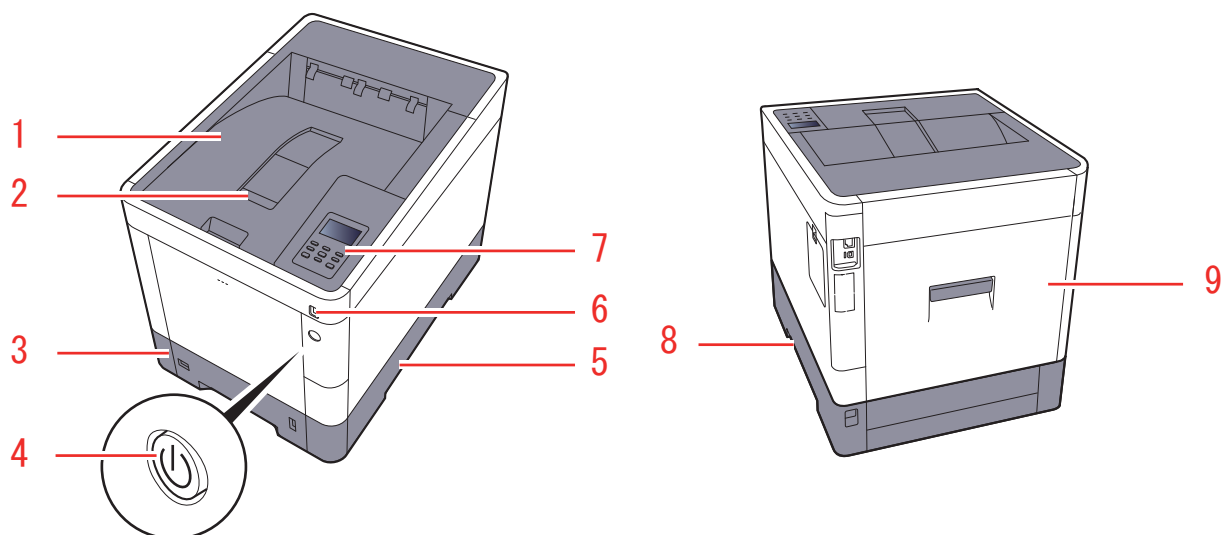
(3) Paper Feeder (500-sheet) (Option)

Item	Description
Paper feed system	Friction roller feeder (No. Sheets: 500, 80 g/m ²)
Paper Size	A4, A5, B5, B6, Folio, 216 × 340 mm, Letter, Legal, Statement, Executive, Oficio II, 16K, B5 (ISO), Envelope #10, Envelope #9, Envelope #6 3/4, Envelope Monarch, Envelope DL, Envelope C5, Youkei 4, Youkei 2, Custom (92 × 162 to 216 × 356 mm)
Supported Paper	Paper weight: 60 to 220 g/m ² Media types: Plain, Rough, Recycled, Preprinted, Labels, Bond, Vellum, Color (Colour), Prepunched, Letterhead, Envelope, Coated, Thick, High Quality, Custom 1 to 8
Dimensions (W) × (D) × (H)	15 23/64 × 20 61/64 × 4 37/64 390 × 532 × 116 mm
Weight	9.0 lbs. or less/ 4.1 kg or less

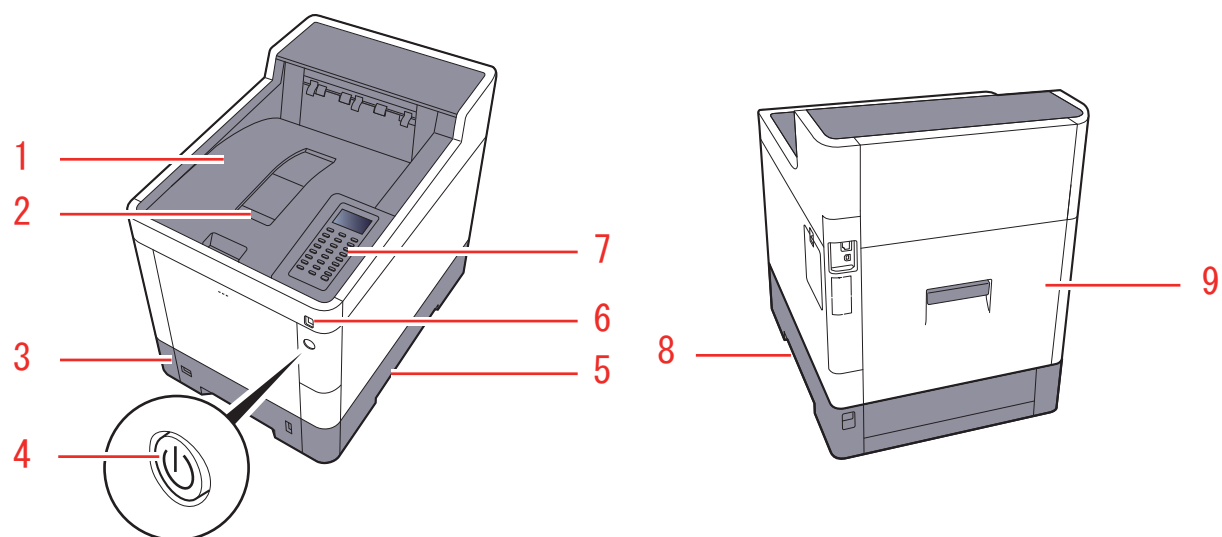
1-2 Parts names

(1) Machine Exterior

30 ppm models



35/40 ppm models

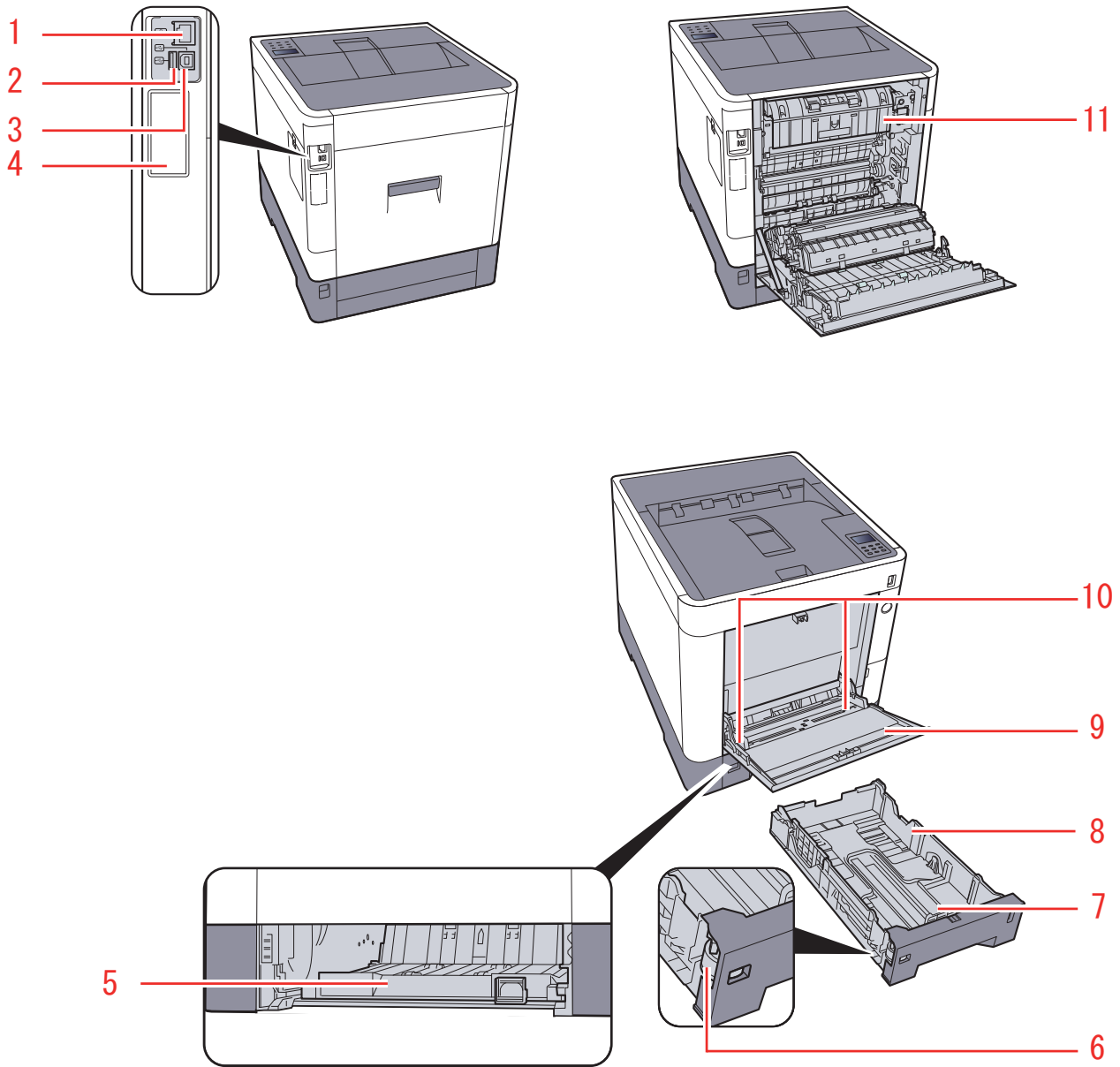


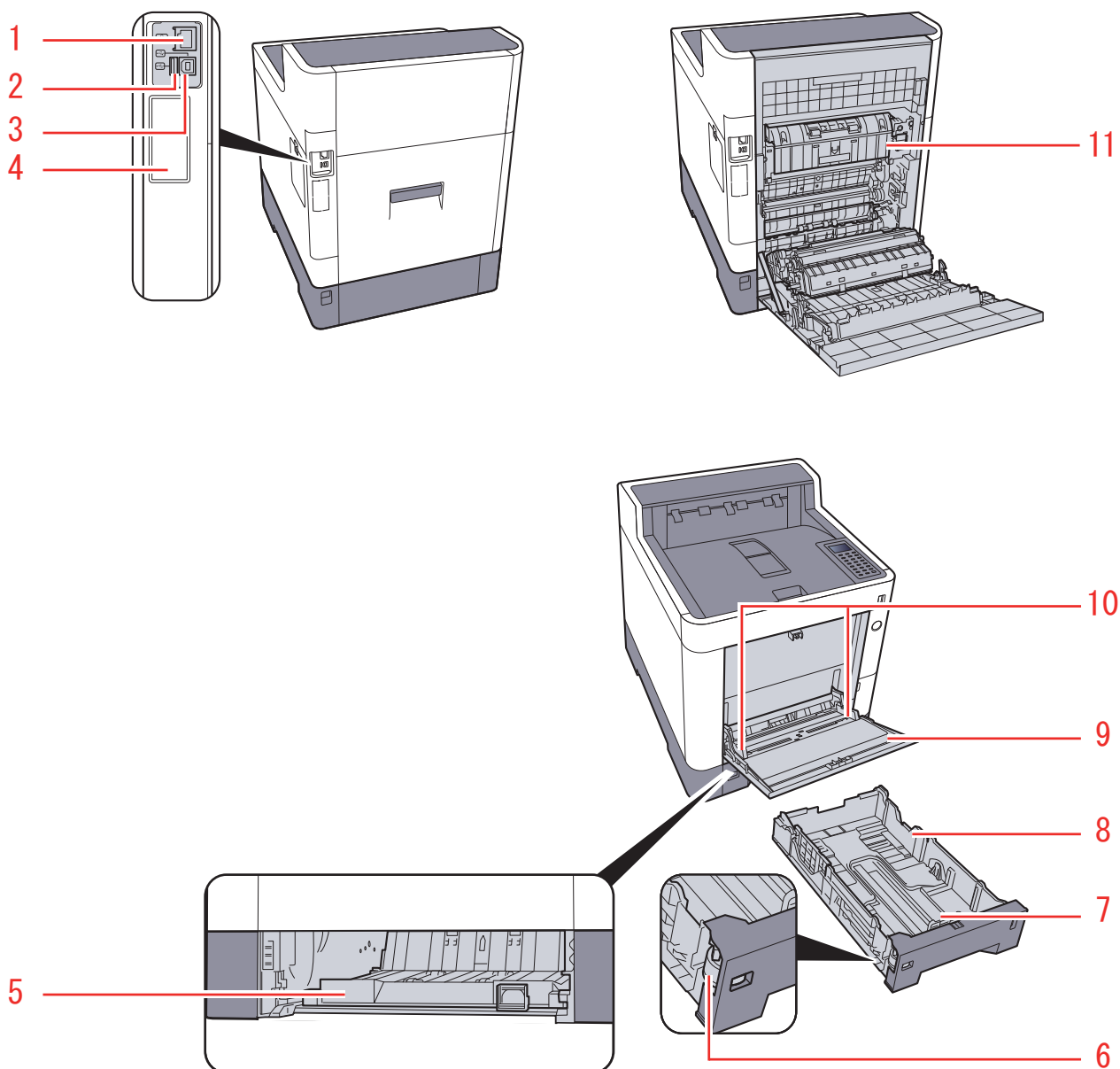
- 1. Top Tray
- 2. Paper Stopper
- 3. Cassette 1
- 4. Power Switch
- 5. Handles

- 6. USB Memory Slot
- 7. Operation Panel
- 8. Handles
- 9. Rear Cover 1

(2) Connectors/Interior

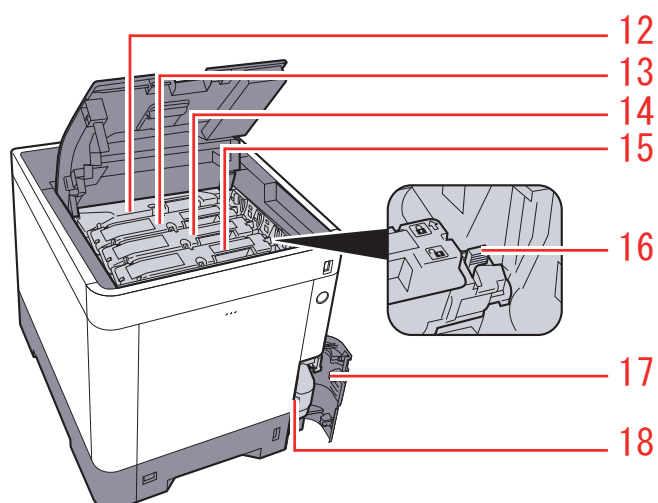
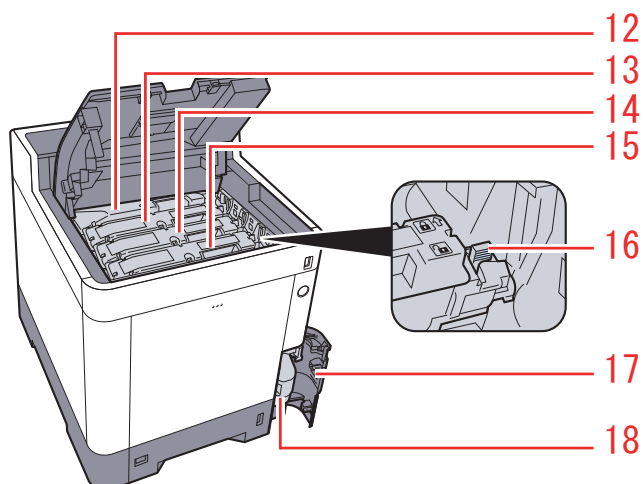
30 ppm models



35/40 ppm models

1. Network Interface Connector
2. USB Port
3. USB Interface Connector
4. Option Interface
5. Feed Cover
6. Size Dial
7. Paper Length Guide

8. Paper Width Guides
9. Multi Purpose Tray
10. Paper Width Guides
11. Fuser Cover

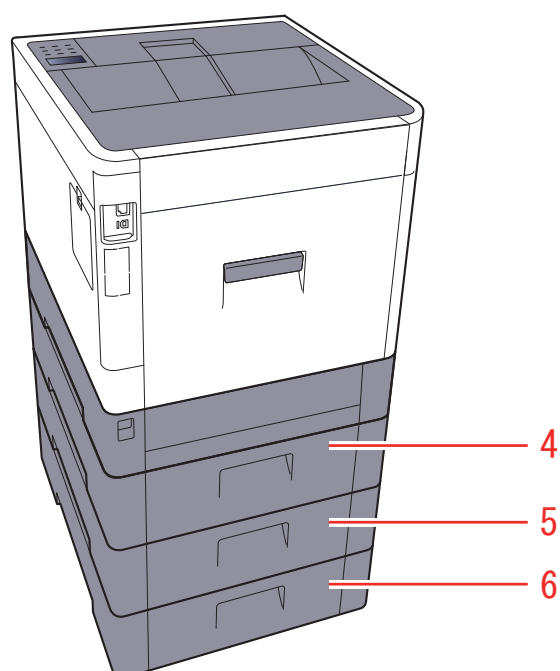
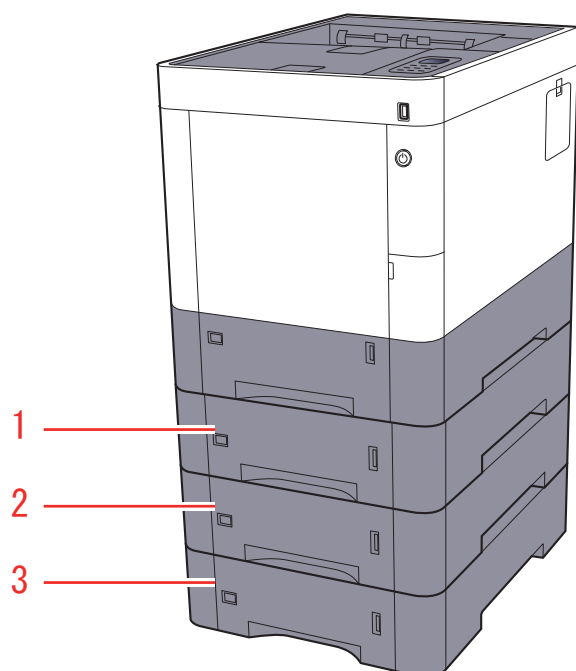
30 ppm models**35/40 ppm models**

- 12. Toner Container (Black)
- 13. Toner Container (Magenta)
- 14. Toner Container (Cyan)
- 15. Toner Container (Yellow)

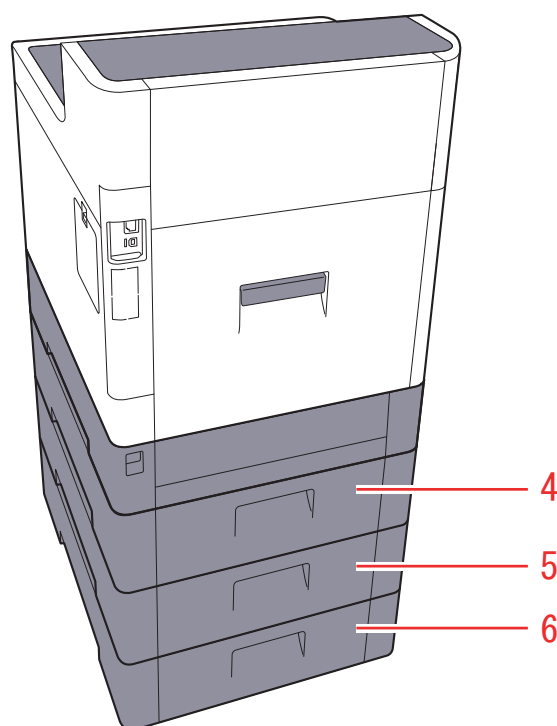
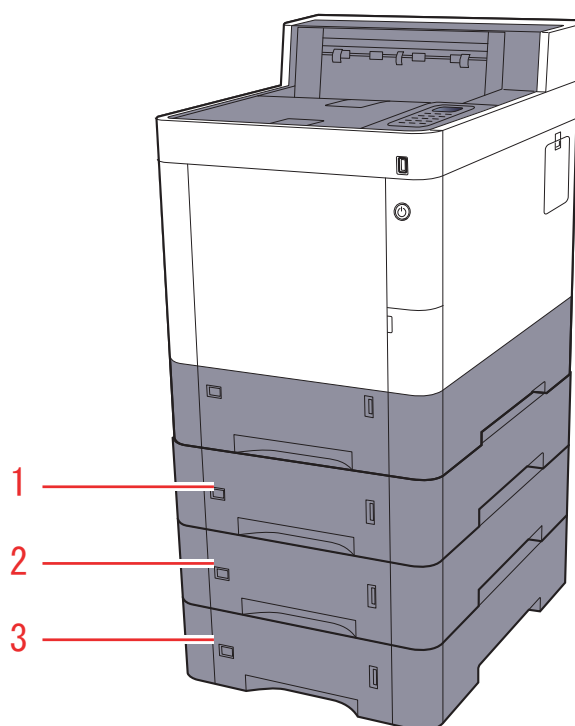
- 16. Toner Container Lock Lever
- 17. Waste Toner Cover
- 18. Waste Toner Box

(3) With Optional Equipments Attached

30 ppm models

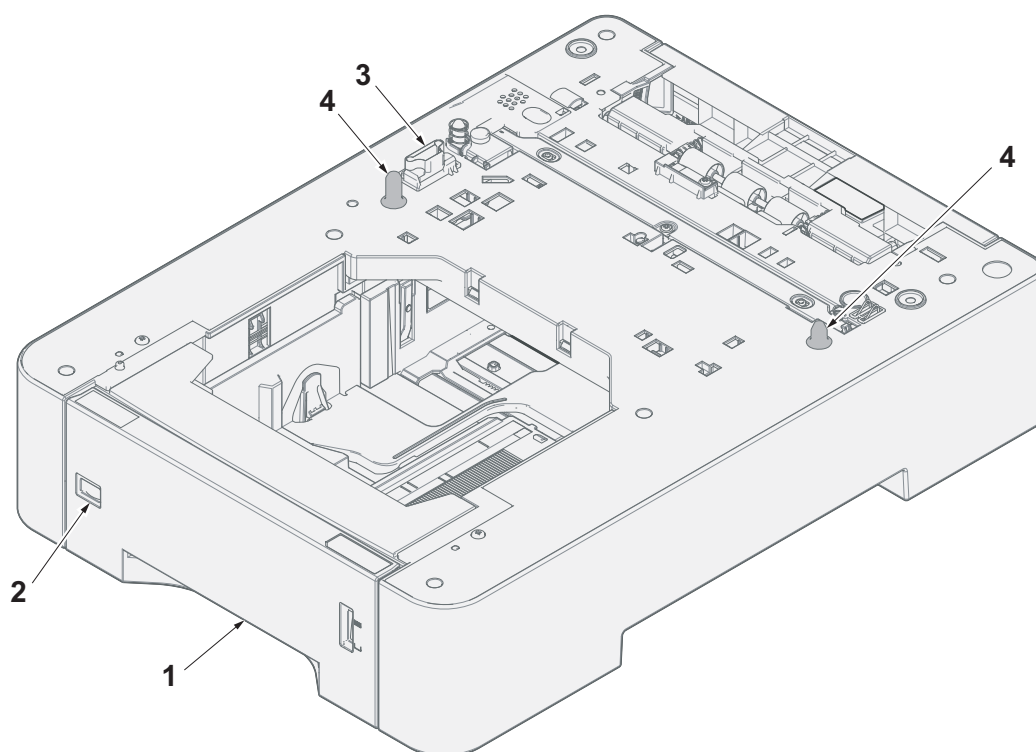


35/40 ppm models



- 1. Cassette 2
- 2. Cassette 3
- 3. Cassette 4


- 4. Rear Cover 2
- 5. Rear Cover 3
- 6. Rear Cover 4


Part Names of Paper Feeder

- 1. Cassette
- 2. Paper size window
- 3. Interface Connector
- 4. Positioning pin


(4) Operation Panel Keys

(4-1) 30 ppm models


**Menu**



Displays the Menu screen.




- Increments or decrements numbers, or selects menu in the message display.
- When a specific error occurs, select the [?] key to show the Help screen.



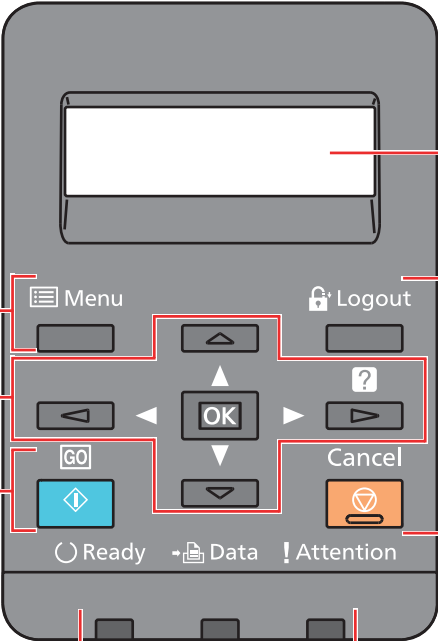
OK

Finalizes a function or menu, and numbers that have been entered.



GO

Clears a specific error, and wakes the machine from the sleep state.




Message display :
Displays the setting menu and error messages.


Menu **Logout**

GO **OK** **?** **Cancel**




Ready **Data** **Attention**

**Logout**





Exits the operation for the current user (i.e. log out).

**Cancel**

Cancel a printing job.

 Ready	Flashing. Indicates an error that you can resolve. On. Indicates that the printer is ready and on-line. Off. Indicates that the printer is off-line because printing is manually stopped or automatically stopped due to an error condition.
 Data	Flashing. Indicates that a data is being received. On. Indicates that data received is being processed.
 Attention	Flashing, On. The printer cannot print due to an error.


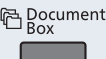


(4-2) 35/40 ppm models

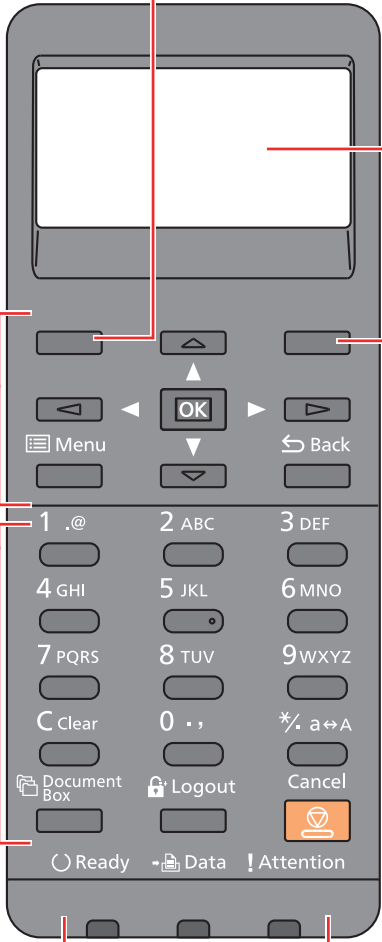
 Menu	Displays the Menu screen.
	Increments or decrements numbers, or selects menu in the message display. In addition, moves the cursor when entering the characters.
 OK	Finalizes a function or menu, and numbers that have been entered.
 Back	Returns to the previous display.




Select Key :
Selects the menu displayed at the bottom of the message display.

Message display :
Displays the setting menu and error messages.

Select Key :
Selects the menu displayed at the bottom of the message display.

	Numeric keys. Enter numbers and symbols.
 Document Box	Displays the Document Box screen.
 Logout	Exits the operation for the current user (i.e. log out).
 Cancel	Cancels or pauses the job in progress.

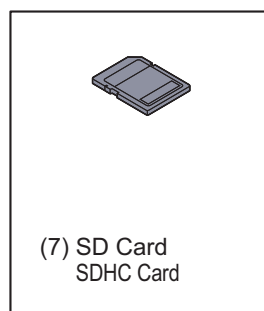
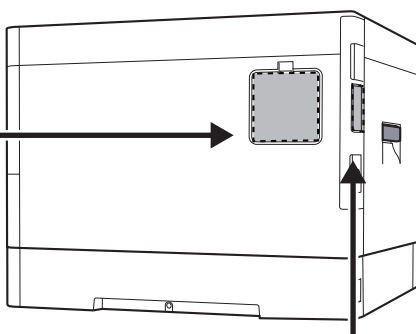
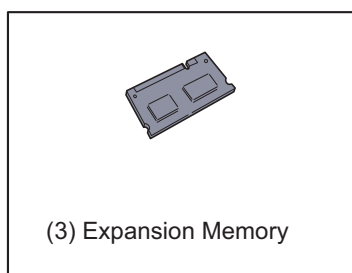
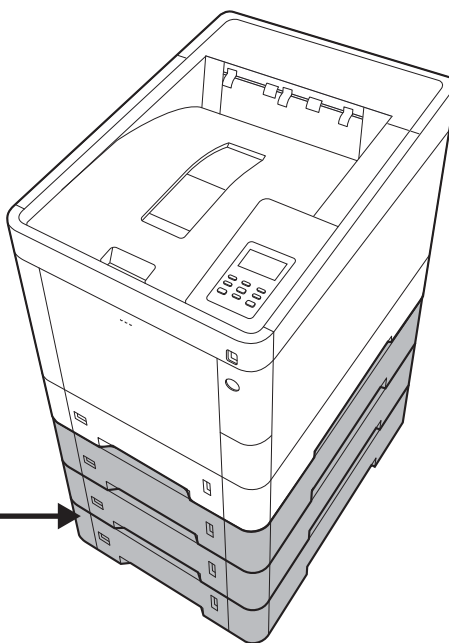
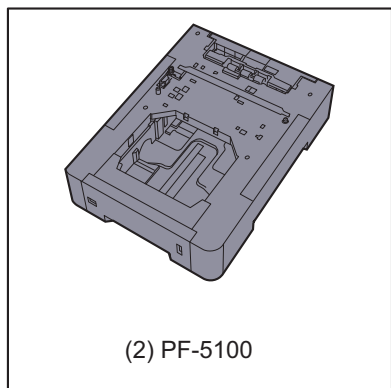
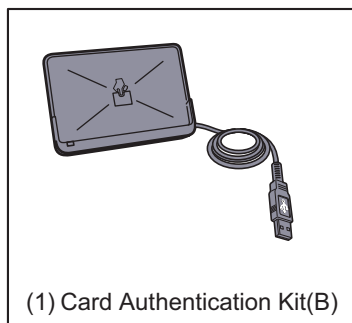


 Ready	Flashing. Indicates an error that you can resolve. On. Indicates that the printer is ready and on-line. Off. Indicates that the printer is off-line because printing is manually stopped or automatically stopped due to an error condition.
 Data	Flashing. Indicates that a data is being received. On. Indicates that data received is being processed.
 Attention	Flashing, On. The printer cannot print due to an error.

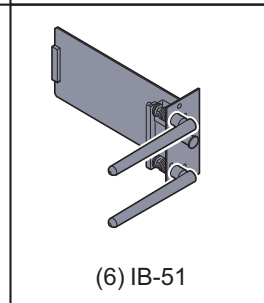
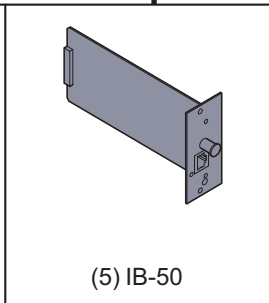
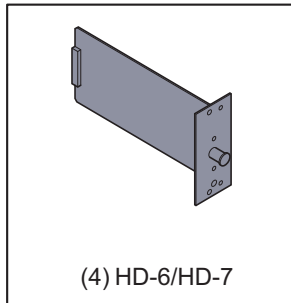
1-3 Options

The following optional equipment is available for the machine.

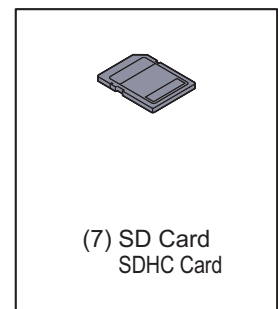
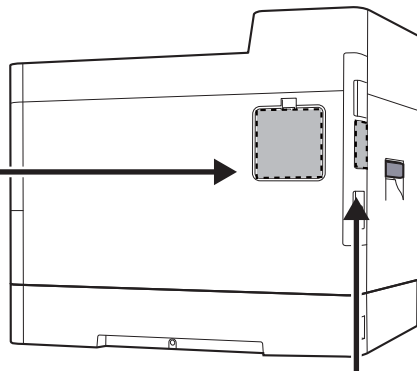
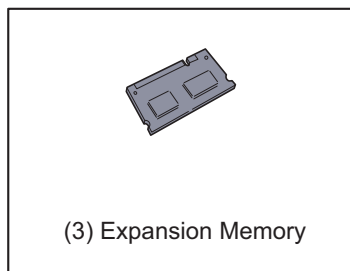
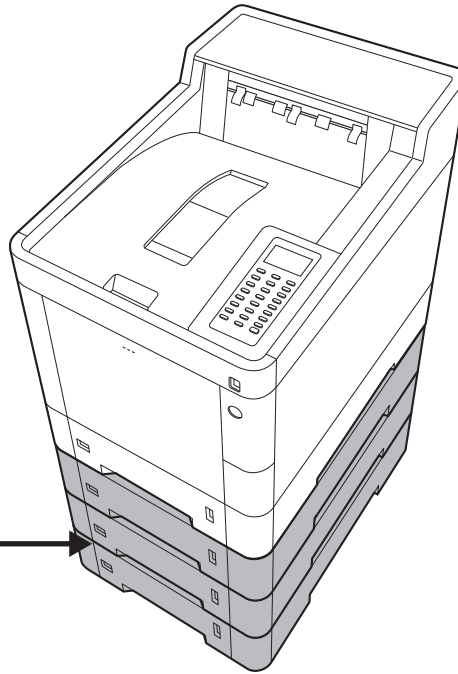
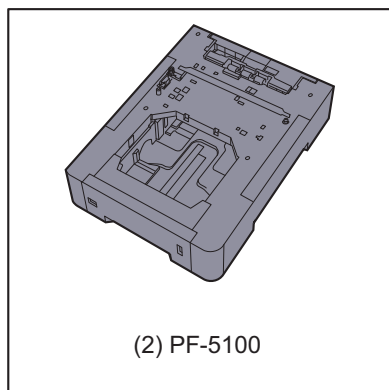
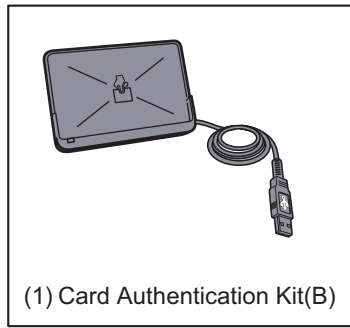
30 ppm models



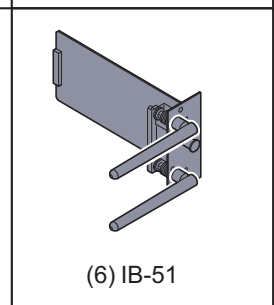
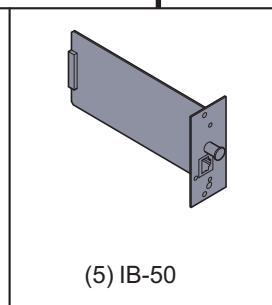
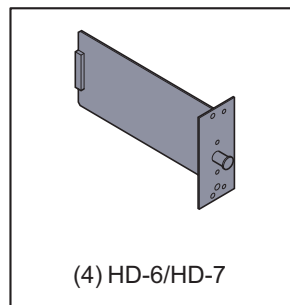
Software option
(8) Data Security kit(E)
(9) UG-33



35/40 ppm models



Software option
(8) Data Security kit(E)
(9) UG-33



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2 Installation

2-1 Environment

The operative environmental conditions are as follows:

Temperature:	50 to 90.5°F (10 to 32.5°C) (But humidity should be 70% or less when the temperature is 90.5°F (32.5°C).)
Humidity:	10 to 80% (But the temperature should be 86°F (30°C) or less when humidity is 80%.)

Adverse environmental conditions may affect the image quality. It is recommended to use the machine as follows:

Temperature:	60.8 to 80.6 °F or less (16 to 27 °C)
Humidity:	36 to 65%

Avoid the following locations when selecting a site for the machine.

Avoid locations near a window or with exposure to direct sunlight.

Avoid locations with vibrations.

Avoid locations with rapid temperature fluctuations.

Avoid locations with direct exposure to hot or cold air.

Avoid poorly ventilated locations.

If the floor is delicate against casters, when this machine is moved after installation, the floor material may be damaged.

During operation, some ozone is released, but the amount does not cause any ill effect to one's health.

If, however, the machine is used over a long period of time in a poorly ventilated room or when making an extremely large number of printings, the smell may become unpleasant. To maintain the appropriate environment for copy work, it is suggested that the room be properly ventilated.

Installation space

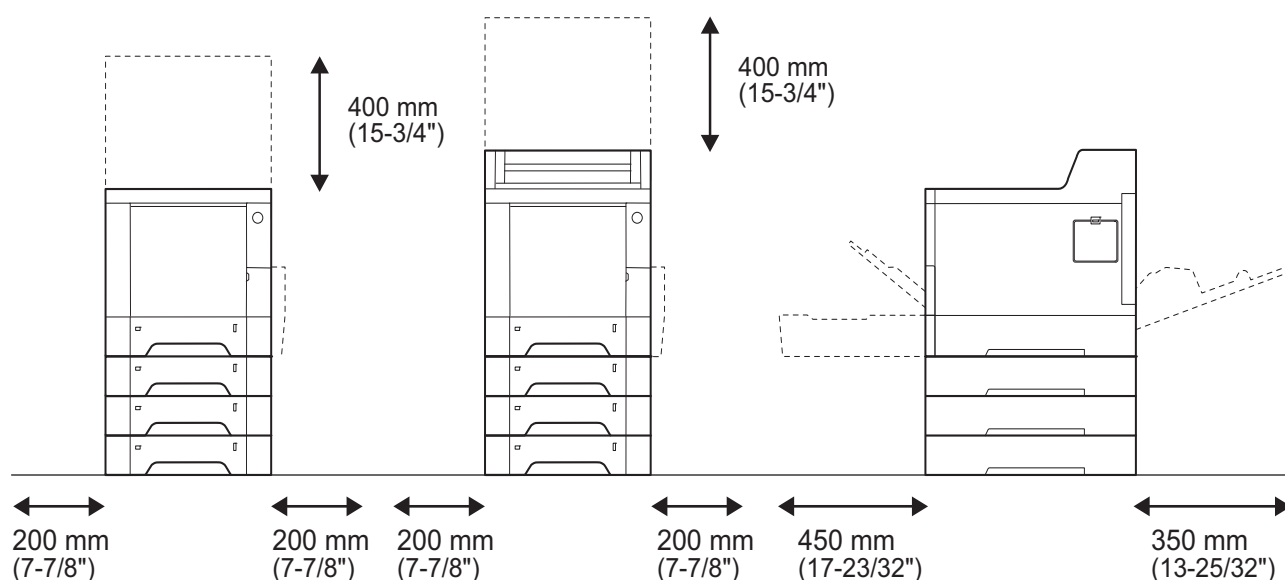
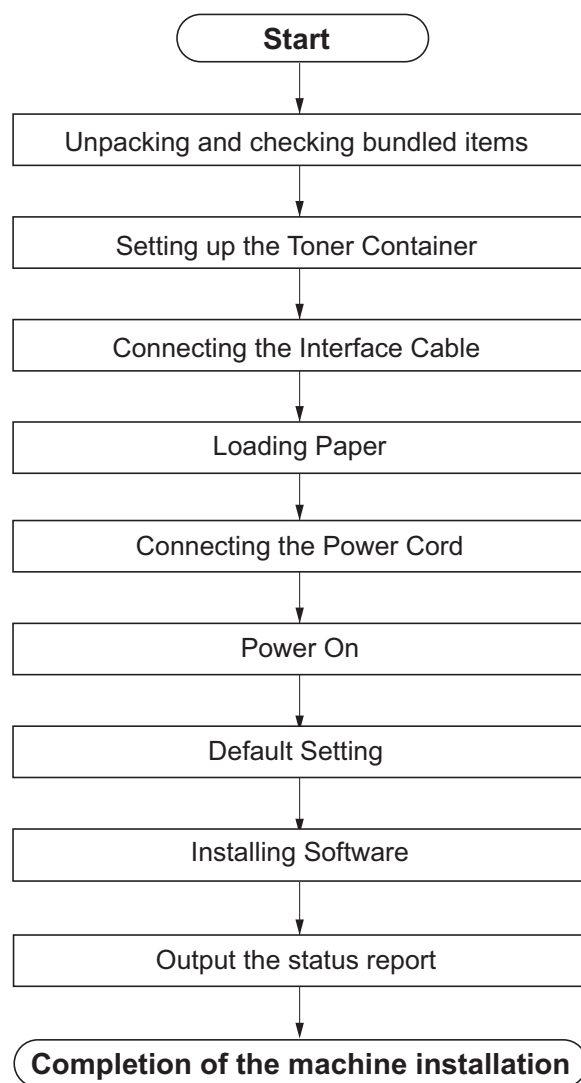


Figure 2-1

2-2 Installing the machine

Installation procedures



(1) Unpacking and checking bundled items

Take out the main unit and accessories from the packing case.

Remove the tape and cushioning materials for packing from the main unit.

30 ppm models

USA model

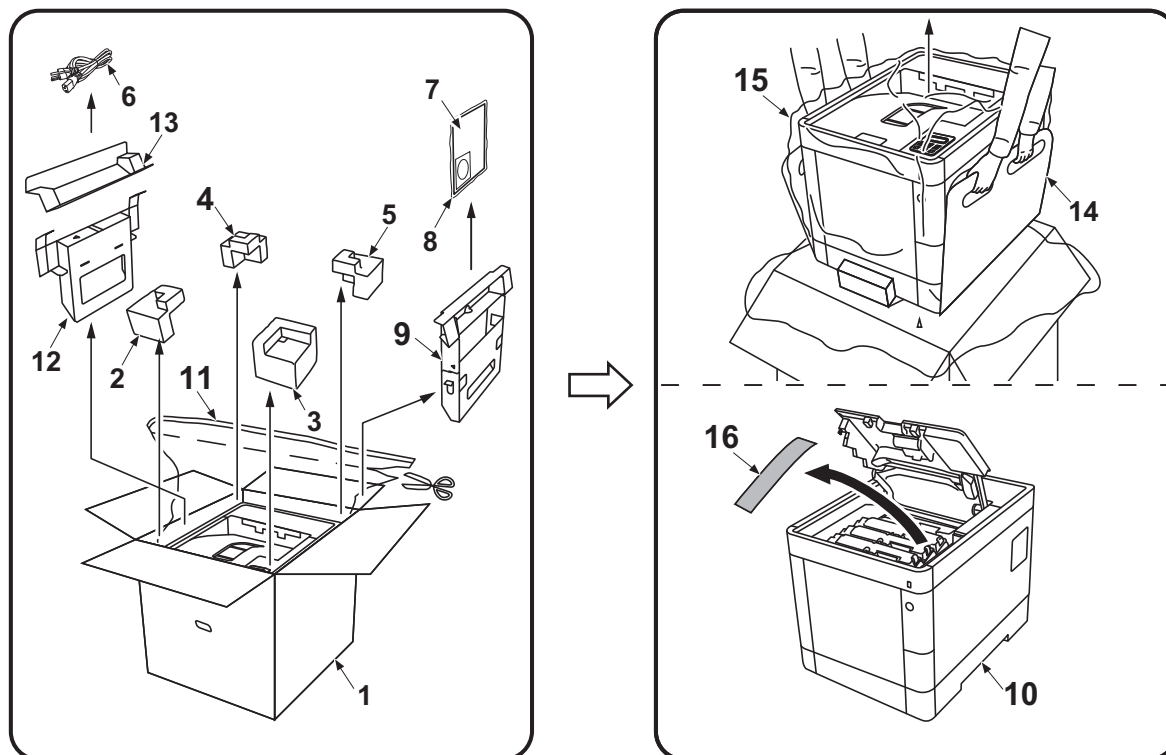


Figure 2-2

- | | | |
|--------------------------|--------------------------------------|---------------------|
| 1. Outer case | 7. Operation guide, etc. | 12. Left bottom pad |
| 2. Front left upper pad | 8. Plastic bag | 13. Left upper pad |
| 3. Front right upper pad | 9. Document tray | 14. Bottom pad |
| 4. Rear left upper pad | 10. Main unit | 15. Machine cover |
| 5. Rear right upper pad | 11. Vacuum plastic bag for main unit | 16. Sheet |
| 6. Power cord | | |

Note: Make sure to install the main unit on a level surface.

Except for USA model

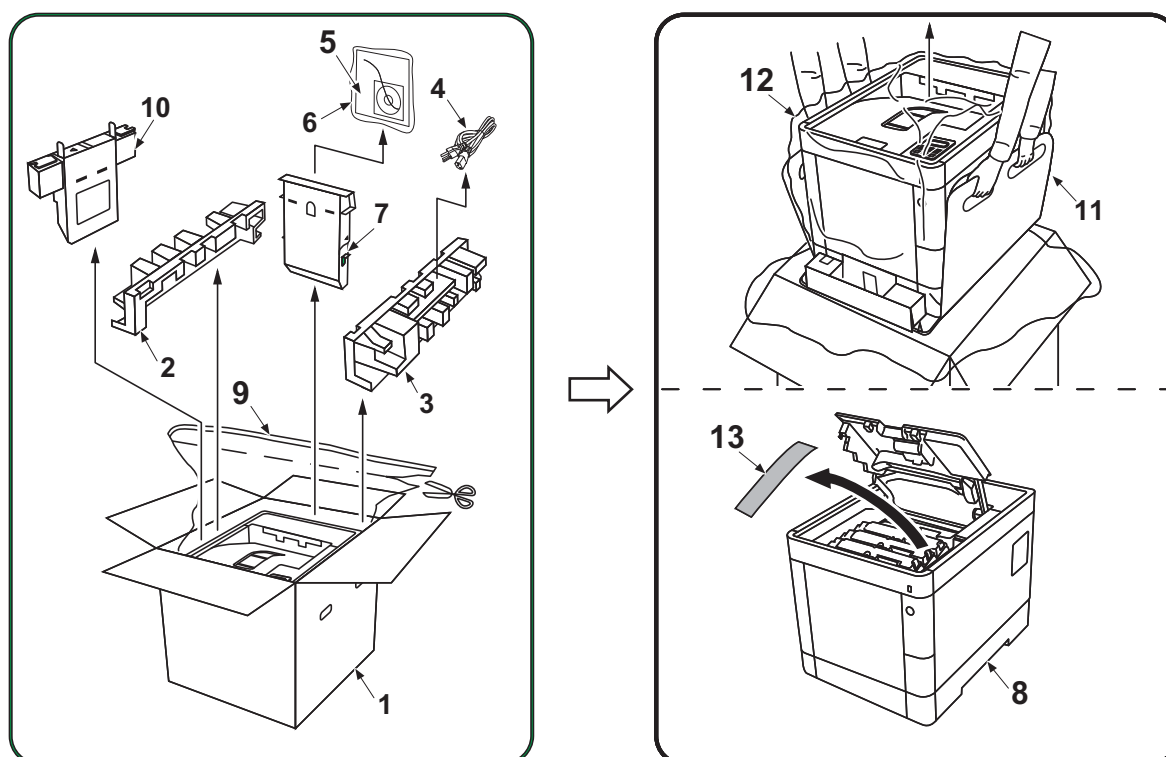


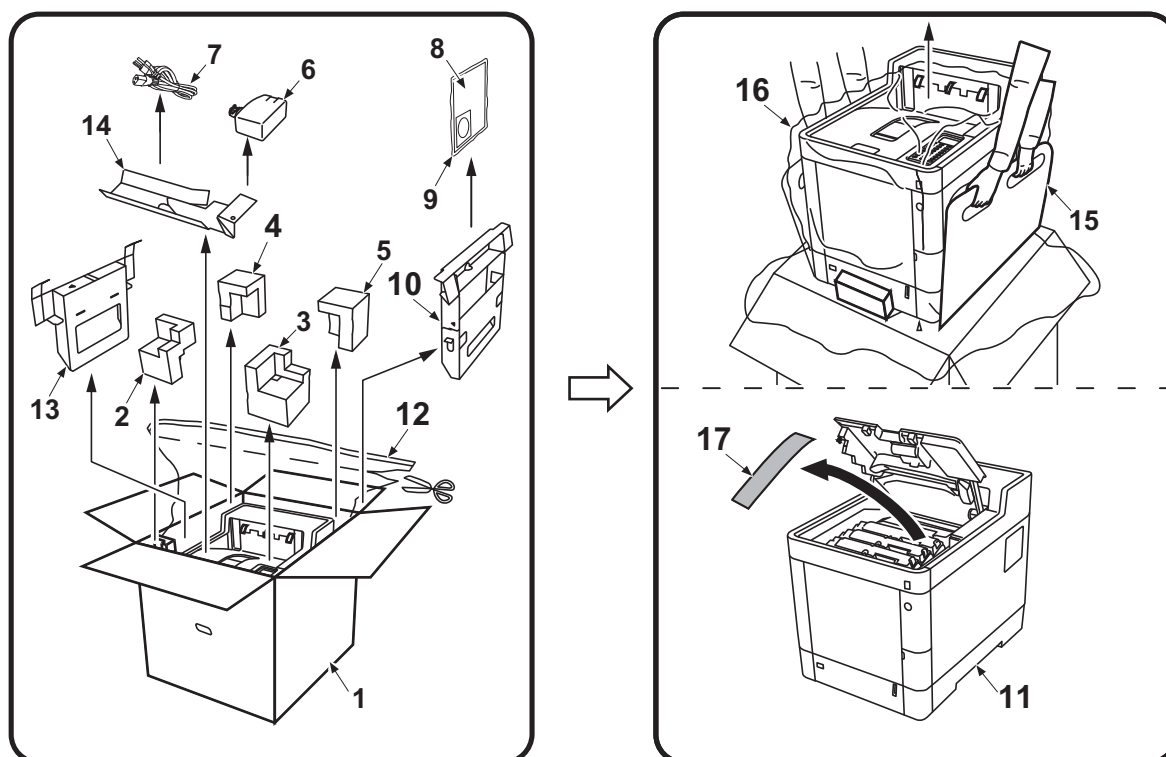
Figure 2-3

- | | | |
|--------------------------|-------------------------------------|---------------------|
| 1. Outer case | 6. Plastic bag | 10. Left bottom pad |
| 2. Left upper pad | 7. Document tray | 11. Bottom pad |
| 3. Right upper pad | 8. Main unit | 12. Machine cover |
| 4. Power cord | 9. Vacuum plastic bag for main unit | 13. Sheet |
| 5. Operation guide, etc. | | |

Note: Make sure to install the main unit on a level surface.

35/40 ppm models

USA model

**Figure 2-4**

- | | | |
|--------------------------|--------------------------------------|--------------------|
| 1. Outer case | 8. Operation guide, etc. | 14. Left upper pad |
| 2. Front left upper pad | 9. Plastic bag | 15. Bottom pad |
| 3. Front right upper pad | 10. Document tray | 16. Machine cover |
| 4. Rear left upper pad | 11. Main unit | 17. Sheet |
| 5. Rear right upper pad | 12. Vacuum plastic bag for main unit | |
| 6. Waste toner box | 13. Left bottom pad | |
| 7. Power cord | | |

Note: Make sure to install the main unit on a level surface.

Except for USA model

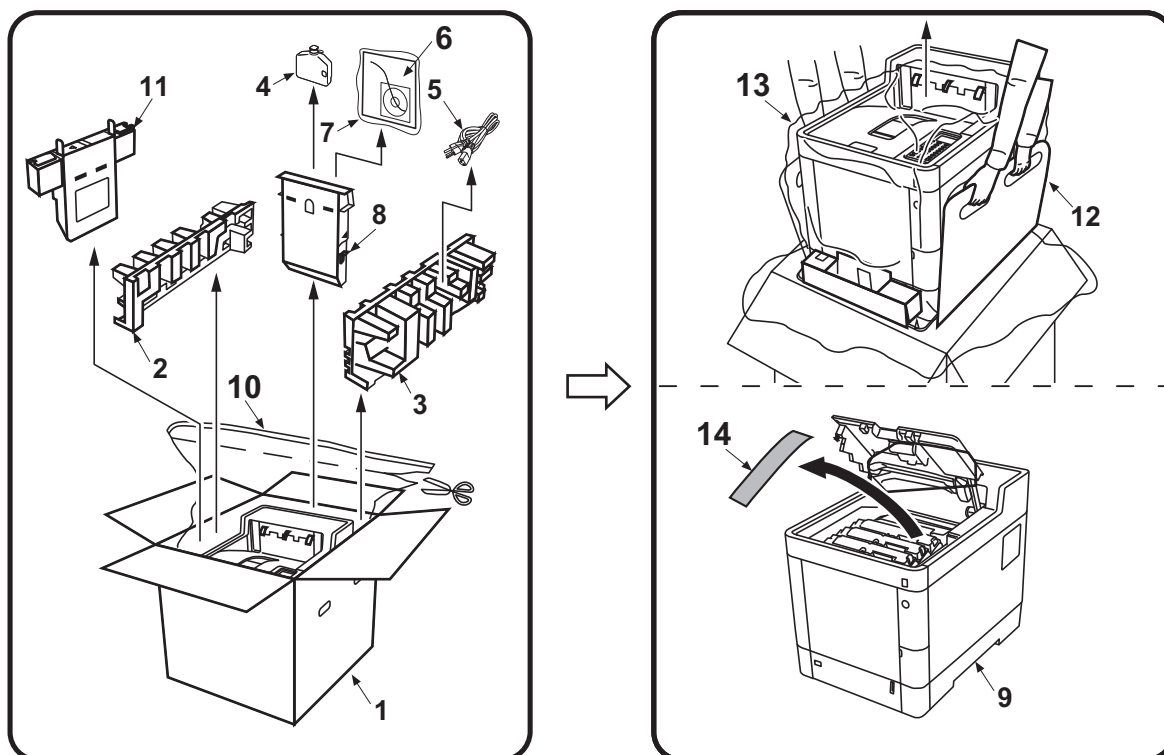


Figure 2-5

- | | | |
|--------------------------|--------------------------------------|-------------------|
| 1. Outer case | 7. Plastic bag | 12. Bottom pad |
| 2. Left upper pad | 8. Document tray | 13. Machine cover |
| 3. Right upper pad | 9. Main unit | 14. Sheet |
| 4. Waste toner box | 10. Vacuum plastic bag for main unit | |
| 5. Power cord | 11. Left bottom pad | |
| 6. Operation guide, etc. | | |

Note: Make sure to install the main unit on a level surface.

* : Notes on main unit transportation

When transporting the main unit, lift the left and right of the main unit base with two people as shown in the figure.

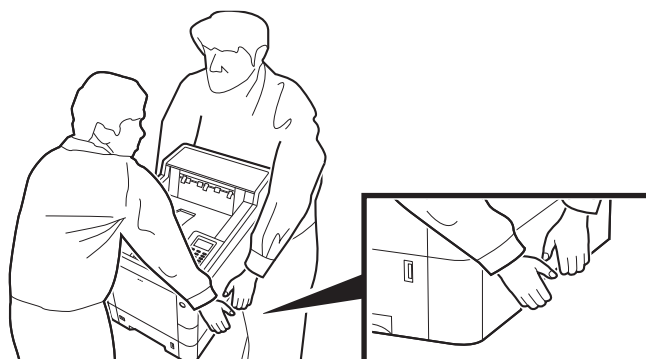


Figure 2-6

(2) Setting up the Toner Container

Set up the toner container of C, M, Y, and K. The procedures are same for all colors.

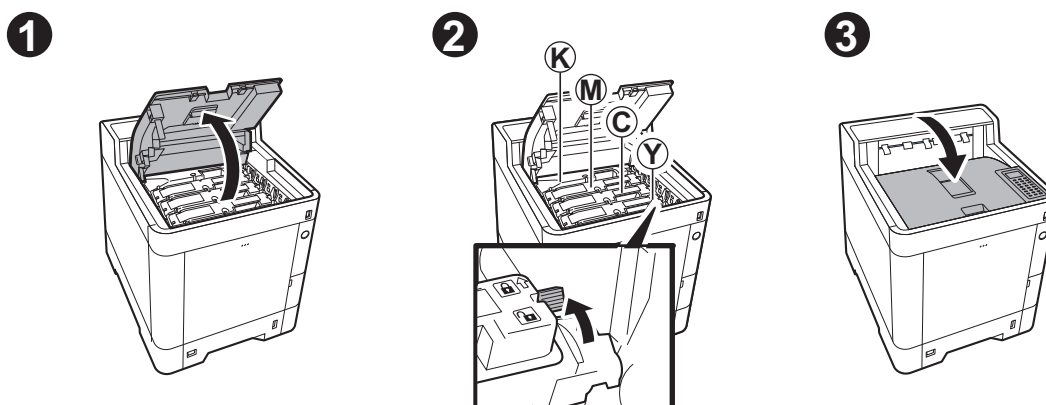


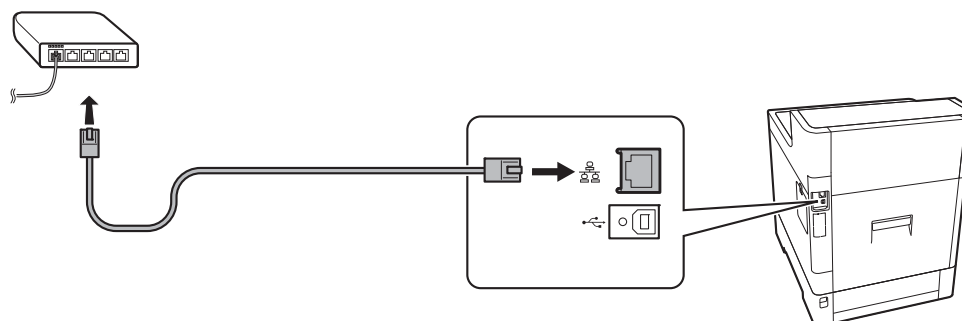
Figure 2-7

(3) Connecting the Interface Cable

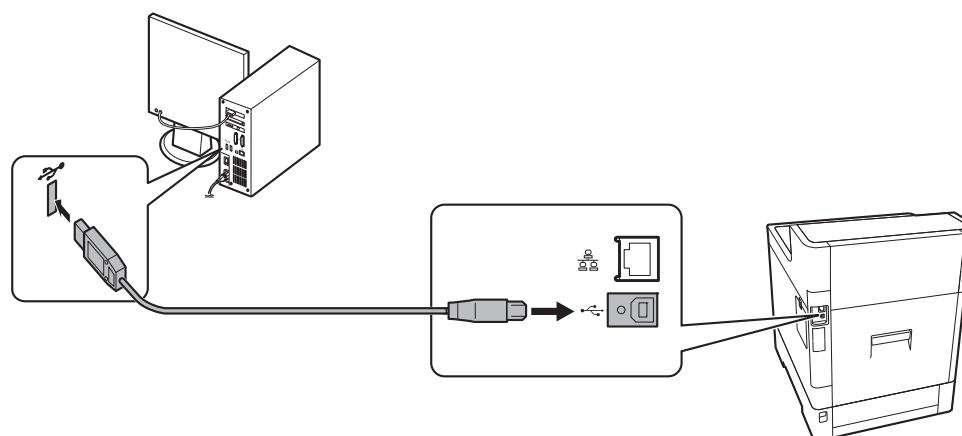
Connection environment	Necessary Cable
Connect a LAN cable to the main unit.	LAN cable (10Base-T, 100Base-TX or 1000Base-T)
Connect a USB cable to the main unit.	USB2.0 compatible cable (Hi-Speed USB compliant, Max. 5.0m long)

In the case of the LAN connection

1. Connect the LAN cable to the network interface connector.
2. Connect the other end of the cable to the hub.

**Figure 2-8****In the case of the USB connection**

1. Connect the USB cable to the USB interface connector located on the left side of the main unit.
2. Connect the other end of the cable to the PC.

**Figure 2-9**

(4) Loading Paper

The cassettes can hold plain paper, recycled paper or color paper.

The number of sheets that can be loaded in each cassette is as shown below.

Cassette	No. of sheets
Cassette 1 to 4	500 sheets (Plain paper: 80g/m ²)

* : A6 size paper can not be loaded in Cassette 2 to 4.

IMPORTANT

Cassette 1 can hold paper with the weight between 60 - 163g/m².

Cassettes 2 to 4 can hold paper with the weight between 60 - 220g/m².

1. Pull the cassette completely out of the main unit.

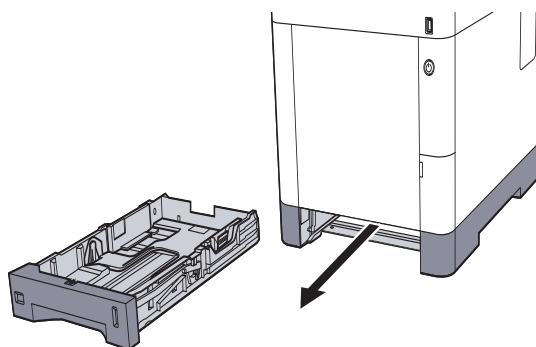


Figure 2-10

NOTE

When pulling the cassette out of the main unit, make sure it is supported and does not fall out.

2. Adjust the paper size of the cassette.

1. Adjust the position of the paper width guides located on the left and right sides of the cassette. Press the tab and slide the guides to the paper size to use. Paper sizes are marked on the cassette.

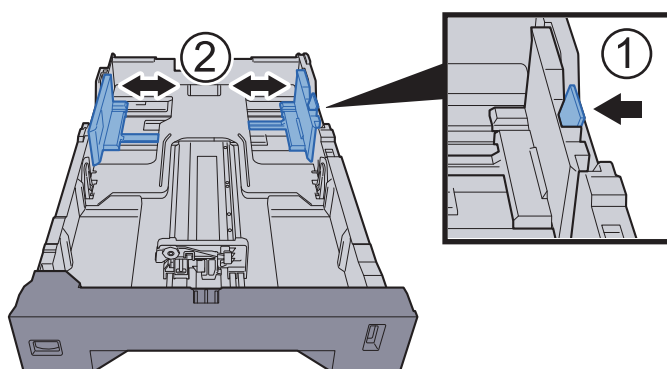


Figure 2-11

2. Adjust the position of the paper length guide. Press the tab and slide the guides to the paper size to use.

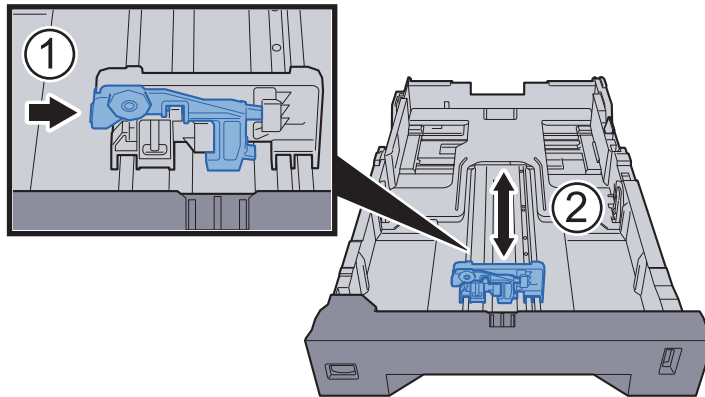


Figure 2-12

3. Turn the size dial so that the paper size to use appears in the paper size window.

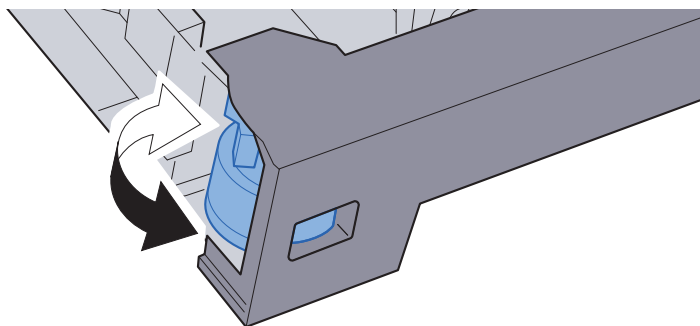


Figure 2-13

3. Load paper.

1. Fan the paper, then tap it on a level surface to align the edges.
2. Load paper in the cassette by placing the print side face-up.

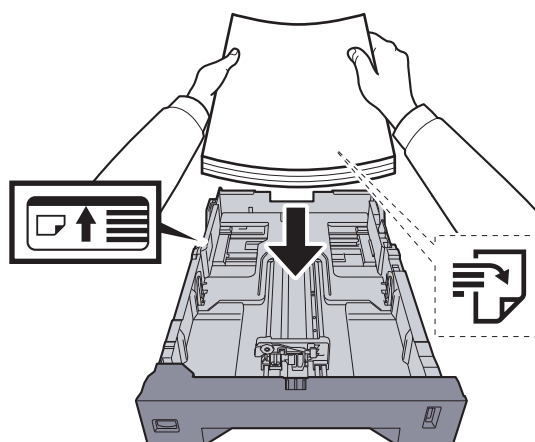


Figure 2-14

Note

Before loading paper in the cassette, fan the paper taken from a new package to separate it. (see page 2-13)

Before loading the paper, be sure that it is not curled or folded. Such paper may cause paper jams.

Make sure that the loaded paper does not exceed the level indicator (see the illustration above).

If paper is loaded without adjusting the paper length guide and paper width guides to the paper size to use, the paper may skew or become jammed.

4. Gently insert the cassette all the way into the main unit.

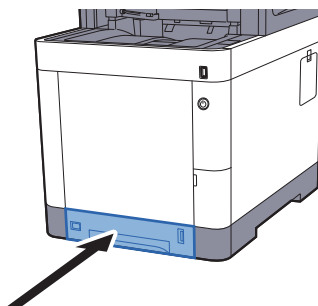


Figure 2-15

Precaution for Loading Paper

Before loading paper in the cassette or MP tray, treat the paper taken from a new package to separate it in the following steps.

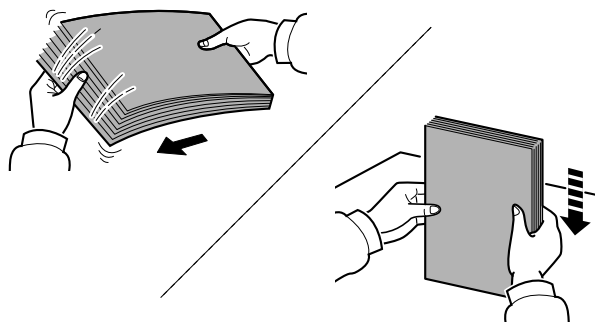


Figure 2-16

Fan the paper, then tap it on a level surface to align the edges.

In addition, note the following points.

If the paper is curled or folded, straighten it before loading. Such paper may cause a jam.

Avoid exposing paper taken from a package to high temperatures and high humidity as dampness can be a cause of problems. Seal any remaining paper after loading in the MP tray or cassettes back in the paper storage bag.

If the machine will not be used for a prolonged period, protect all paper from humidity by removing it from the cassettes and sealing it in the paper storage bag.

Note

If you print onto paper already used for printing, do not use it with a staple or clip. This may cause poor image quality or malfunctions.

(5) Connecting the Power Cord

1. Connect one end of the supplied power cord to the main unit and the other end to a power outlet.

* : Only use the power cord that comes with the main unit.

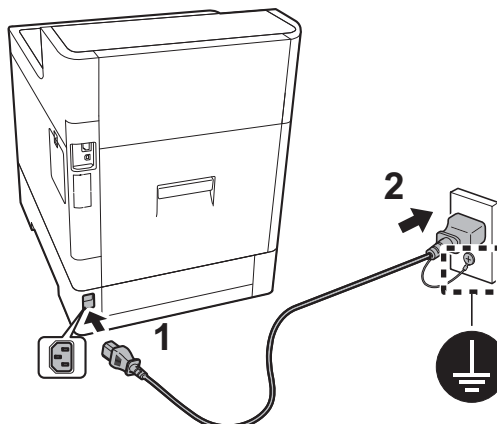


Figure 2-17

(6) Turn the power on.

1. Turn the power switch on.

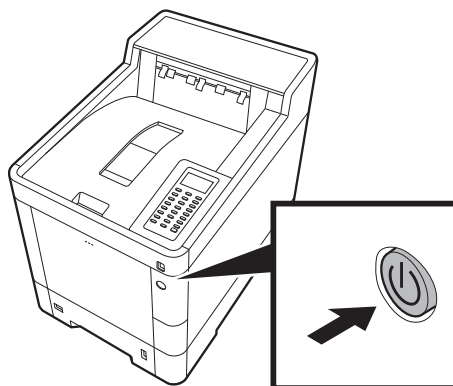


Figure 2-18

Note

After turning off the power switch, do not turn on the power switch again immediately. Wait 5 seconds or more, and then turn on the power switch.

(7) Default Setting (for 30 ppm model)

(7-1) Setting Date and Time

Follow the steps below to set the local date and time at the place of installation.

1. Display the screen.

1.[Menu] key > [] [] key > [Device Common] > [OK] key > [] key > [] [] key > [Date Setting] > [] key

2.Enter the administrator ID and select the [OK] key.

* :Enter an ID consisting of between 1 and 16 numbers.

Select the [] or [] key to enter a number.

Select the [] or [] key to move the cursor left or right.

3.Enter the administrator password and select [OK] key.

* : Enter a password consisting of between 0 (no settings) and 16 numbers.

Select the [] or [] key to enter a number.

Select the [] or [] key to move the cursor left or right.

2. Configure the settings.

[] [] key > [Time Zone] > [OK] key > Select the time zone > [OK] key > [] [] key > [Date/Time] > Set the date/time > [OK] key > [] [] key
[Date (Year/Mon/Day)] > [OK] key > Set the date > [OK] key > [] [] key >
[Time (Hour:Min:Sec)] > [OK] key > Set the time > [OK] key > [] [] key > [Date Format] >
[OK] key > Select the Date Format > [OK] key

* : Select the [] or [] key to enter a number.

Select the [] or [] key to move the position being entered, which is shown highlighted.

(7-2) Network Setup (LAN Cable Connection)

TCP/IP Settings

IPv4 setting

Set up TCP/IP (IPv4) to connect to the Windows network.

1. Display the screen.

[Menu] key > [] [] key > [Network] > [] key > [] [] key > [TCP/IP] > [OK] key

2. Configure the settings.

When setting the static IP address

1.[] [] key > [On] > [OK] key

2.Select [] key while "TCP/IP On" is displayed.

3.[] [] key > [DHCP] > [OK] key > [] [] key > [Off] > [OK] key > [] [] key > [DHCP] > [OK] key > [] [] key > [Off] > [OK] key

4.[] [] key > [IP Address] > [OK] key

5. Set the IP address.

* :You can set any value between 000 and 255.

Select the [] or [] key to enter a number.

Select the [] or [] key to move the cursor left or right.

6.Select the [OK] key.

7.[] [] key > [Subnet Mask] > [OK] key

8.Set the subnet mask.

* :You can set any value between 000 and 255.

9. Select the [OK] key.
10. [] [] key > [Default Gateway] > [OK] key
11. Set the default gateway.
* : You can set any value between 000 and 255.
12. Select the [OK] key.

IMPORTANT

After changing the setting, restart the network from the System Menu, or turn the power off and then on.

(7-3) Altitude Adjustment Setting

Execute [Altitude Adjustment] from the System Menu when setting up at a high altitude place.

When the printing quality declines in the environment of an altitude higher than 1000m sea level, the setting of [Altitude Adjustment] mode can recover the printing quality.

1. Press the [Menu] key.
2. Select [Adjustment/Maintenance] using the [] [] key, then press the [OK] key.
3. Select [Service Setting] using the [] [] key, then press the [OK] key.
4. Select [Altitude Adjustment] using the [] [] key, then press the [OK] key.
5. Select [Normal], [1001 - 2000m], [2001 - 3000m] or [3001 - 3500m] using the [] [] key, then press the [OK] key.

* : Description of setting

Normal: Altitude from 0 to 1000m

(8) Default Setting (for 35/40 ppm model)

(8-1) Setting Date and Time

Follow the steps below to set the local date and time at the place of installation.

1. Display the screen.
[Menu] key > [] [] key > [Device Common] > [OK] key > [] [] key > [Date Setting] > [OK] key
2. Configure the settings.
[] [] key > [Time Zone] > [OK] key > Select the time zone > [OK] key > [] [] key > [Date] > [OK] key > Set the date > [OK] key > [] [] key > [Time] > [OK] key > Set the time > [OK] key > [] [] key > [Date Format] > [OK] key > Select the Date Format > [OK] key > [OK] key > Set the date > [OK] key > [] [] key > [Time] > [OK] key > Set the time > [OK] key > [] [] key > [Date Format] > [OK] key > Select the Date Format > [OK] key

* : Select the [] or [] key to enter a number.

Select the [] or [] key to move the position being entered, which is shown highlighted.

(8-2) Network Setup (LAN Cable Connection)

TCP/IP Settings

IPv4 setting

Set up TCP/IP (IPv4) to connect to the Windows network.

The default settings are "TCP/IP: [On], DHCP: [On], Auto-IP: [On]".

1. Display the screen.

[Menu] key > [] [] key > [Network] > [OK] key > [] [] key > [TCP/IP Settings] > [OK] key > [] [] key > [IPv4 Setting] > [OK] key

2. Configure the settings.

When setting the static IP address

1. [] [] key > [DHCP] > [OK] key > [] [] key > [Off] > [OK] key

2. [] [] key > [IP Address] > [OK] key

3. Set the IP address.

* : You can set any value between 000 and 255.

Use the numeric keys or select the [] or [] key to enter a number.

Select the [] or [] key to move the position being entered, which is shown highlighted.

4. Select the [OK] key.

5. [] [] key > [Subnet Mask] > [OK] key

6. Set the subnet mask.

* : You can set any value between 000 and 255.

7. Select the [OK] key.

8. [] [] key > [Default Gateway] > [OK] key

9. Set the default gateway.

* : You can set any value between 000 and 255.

10. Select the [OK] key.

IMPORTANT

After changing the setting, restart the network from the System Menu, or turn the power off and then on.

(8-3) Altitude Adjustment Setting

Execute [Altitude Adjustment] from the System Menu when setting up at a high altitude place.

When the printing quality declines in the environment of an altitude higher than 1000m sea level, the setting of [Altitude Adjustment] mode can recover the printing quality.

1. Press the [Menu] key.

2. Select [Adjustment/Maintenance] using the [] [] key, then press the [OK] key.

3. Select [Service Setting] using the [] [] key, then press the [OK] key.

4. Select [Altitude Adjustment] using the [] [] key, then press the [OK] key.

5. Select [Normal], [1001 - 2000m], [2001 - 3000m] or [3001 - 3500m] using the [] [] key, then press the [OK] key.

* : Description of setting

Normal: Altitude from 0 to 1000m

(9) Installing Software

1. Install appropriate software in your PC from the bundled DVD (Product Library), when you use the printer function. See the Operation Guide supplied with the main unit.

(10) Output of Status Page

30 ppm model

1. Press the [Menu] key.

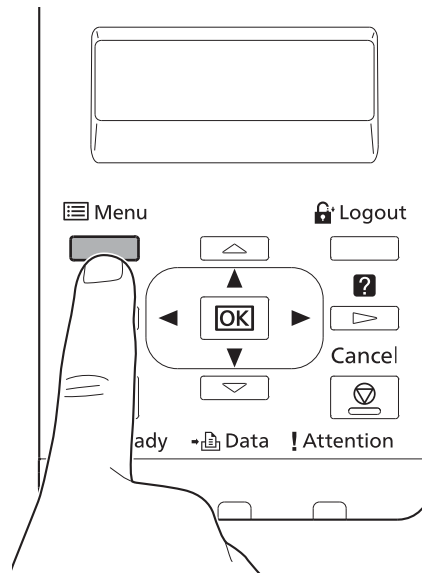


Figure 2-19

2. Select [Report Print], then press the [] key.
3. Select [Print Status Page], then press the [OK] key.

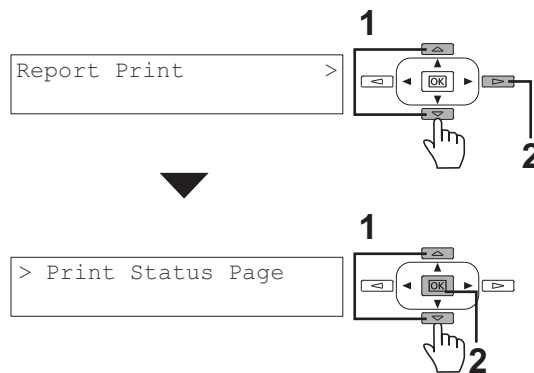


Figure 2-20

4. After the [?] is added, press the [OK] key.

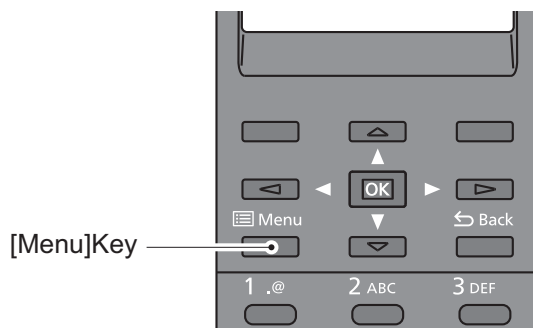


Figure 2-21

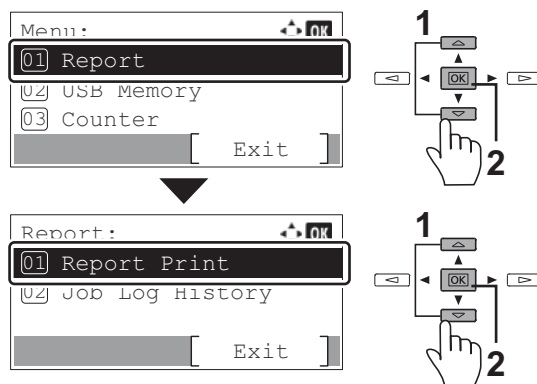
Status page will be printed.

35/40 ppm models

1. Press the [Menu] key.

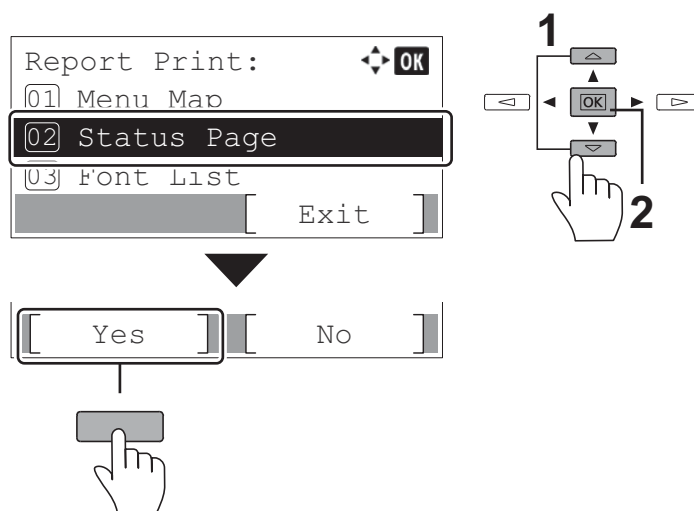
**Figure 2-22**

2. Select [Report], then press the [OK] key.
3. Select [Report Print], then press the [OK] key.

**Figure 2-23**

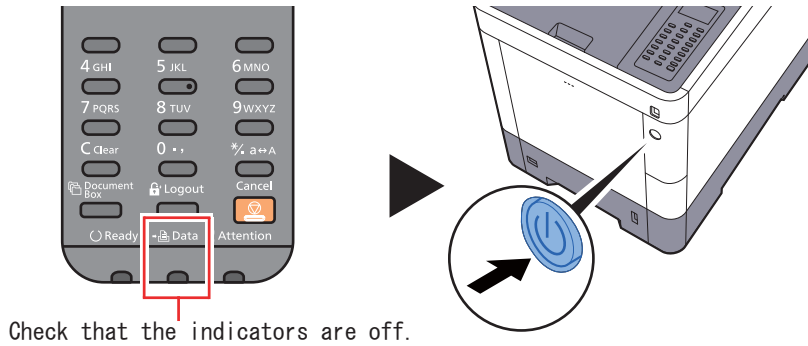
4. Select [Print Status Page], then press the [OK] key.
5. After the message "This will be printed. Are you sure?" appears, press [OK].

Status page will be printed.

**Figure 2-24**

(11) Completion of installing the main unit (Turning the power off)

1. Make sure that each indicator is not flashing, and then turn the power switch off.

**Figure 2-25****IMPORTANT**

When the "Data" indicator is lit up, the main unit is operating. Turning the power switch off while the main unit is operating may cause malfunctions.

2-3 Installing the optional equipment

(1) Card Authentication Kit(B)

User login administration is available using ID cards. To do so, it is necessary to register ID card information on the previously registered local user list. Refer to the Card Authentication Kit Operation Guide for more information about registration.

Activating Card Authentication Kit

Note:

To install the optional function, you need the License Key. Please access the designated website of your dealer or service representative, and register the "Machine No." indicated on your machine and the "Product ID" indicated on the License Certificate supplied with the product to issue the License Key.

- * : When the machine enters Energy Saver sleep mode, the ID card cannot be recognized. If you want to use the card reader during the sleep mode, set [Off] in "Sleep Rules" of [Sleep Level] by referring to the operation guide.
- * : When the optional network interface kit is equipped, the setting is unnecessary.

(2) Paper Feeder (500-sheet x1)

Three cassettes the same as the one for the main unit can be installed. Installation is the same as the standard cassette.

Installing the Paper Feeder

1. Take out the paper feeder (a) from the packing case, and place it at the installation location.
2. Lift the main unit straight up, and then fit it on the paper feeder while inserting the positioning pins (b) into the positioning holes at the main unit bottom.

Maximum number to install: three

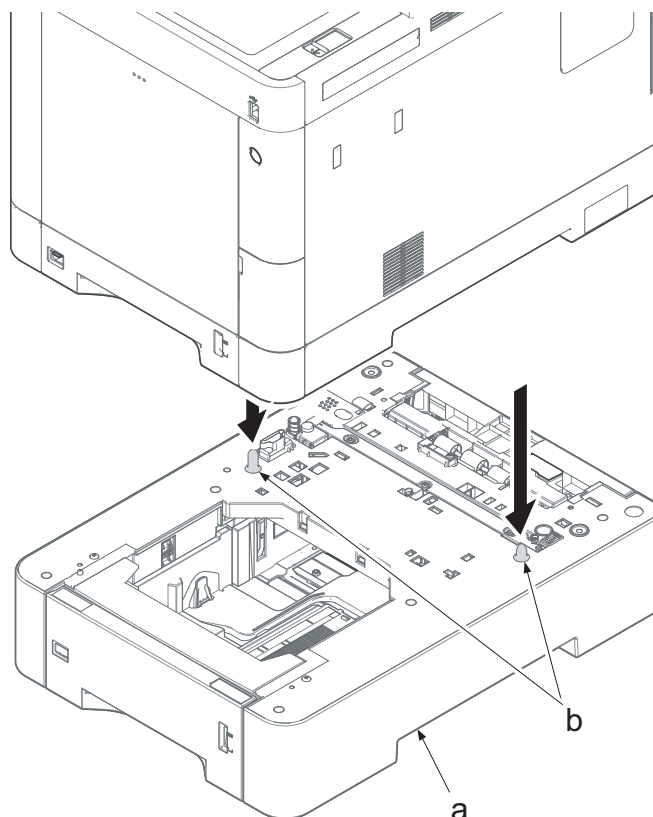


Figure 2-26

3. Pull out the cassette (b) from the paper feeder (a).

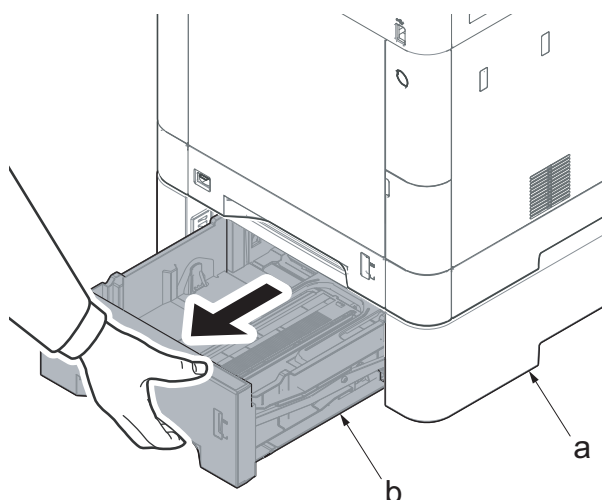


Figure 2-27

4. Adjust the position of the paper guides. Press the tab and slide the guides to the paper size to use.
* : Paper sizes are marked on the cassette.

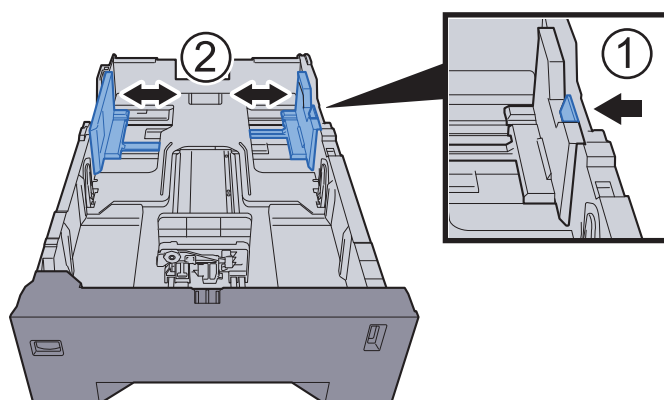


Figure 2-28

5. Adjust the paper length guide to the paper size required. Press the tab and slide the guides to the paper size to use.

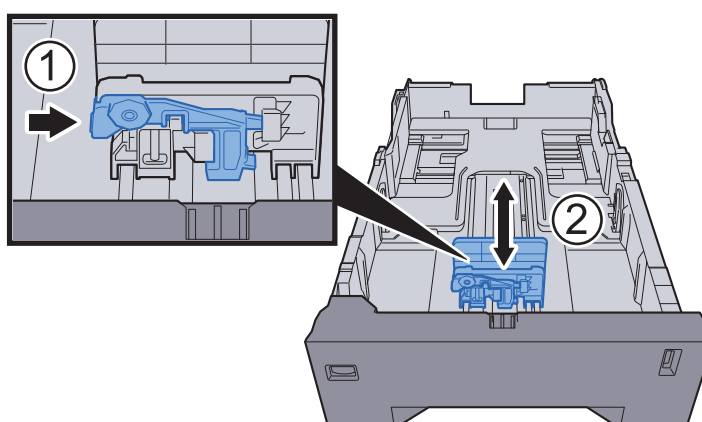


Figure 2-29

6. Turn the size dial so that the paper size to use appears in the paper size window.

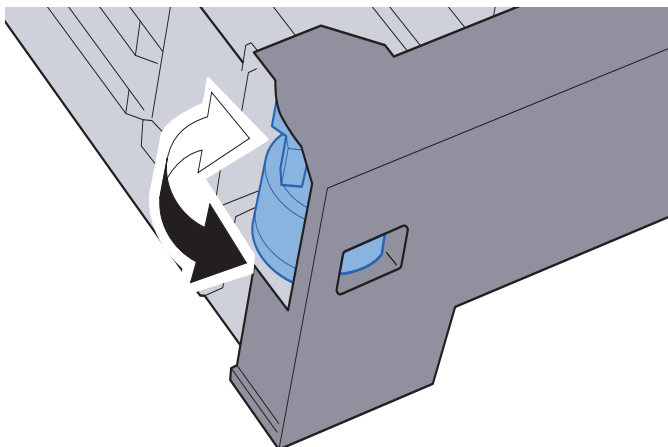


Figure 2-30

7. Fan the paper taken from a package to separate it, and then tap it on a level surface to align the edges.

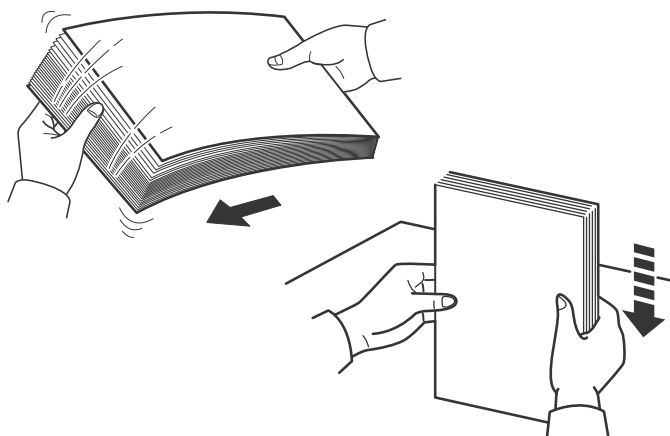


Figure 2-31

8. Load paper in the cassette by placing the print side face-up.

* : Make sure that the loaded paper does not exceed the level indicator (see the illustration above).

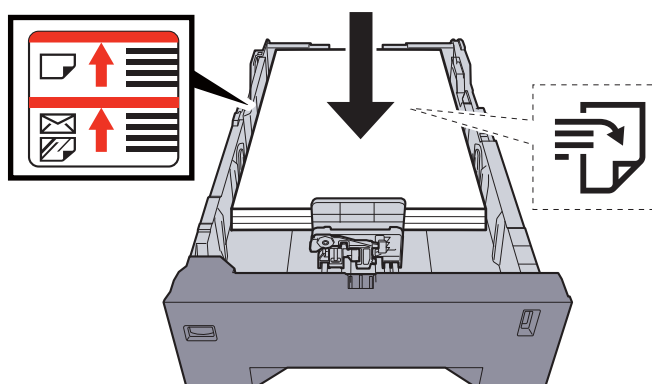


Figure 2-32

9. Push the cassette (b) back in the paper feeder (a).

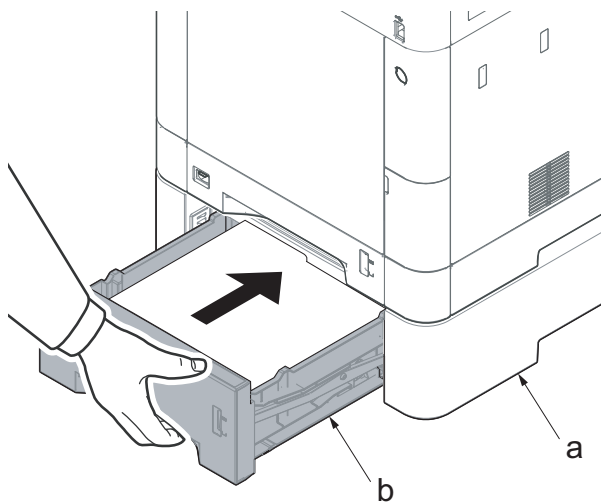


Figure 2-33

(3) Memory Module

The machine can perform more multiple jobs simultaneously by adding more memory. You can increase the machine's memory up to 2,048 MB by plugging in the optional memory modules (2,048 MB).

Precautions for Handling the Memory Modules

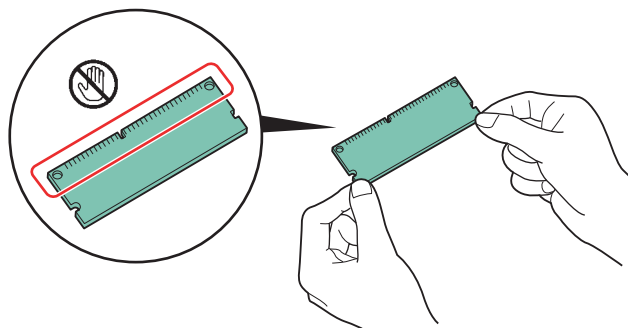


Figure 2-34

To protect electronic parts, discharge static electricity from your body by touching a water pipe (faucet) or other large metal object before handling the memory modules. Or, wear an antistatic wrist strap, if possible, when you install the memory modules.

Installing a Memory Module

1. Turn off the main unit and disconnect the power cord and all interface cables.
* : Remove the optional IB-50/51, HD-6/7, if installed.
2. Remove the cover.

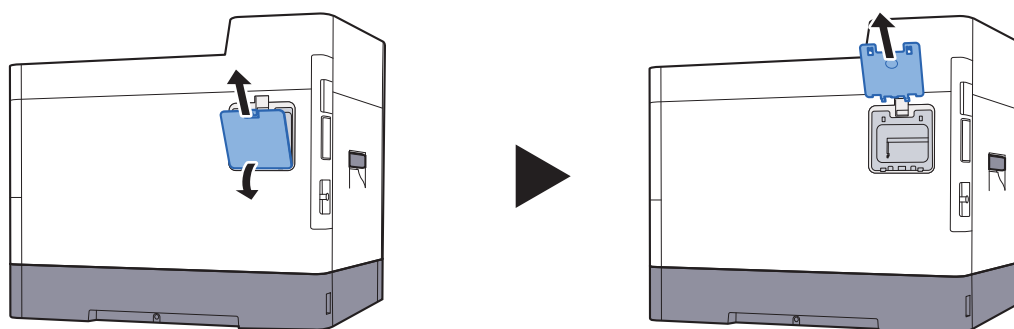
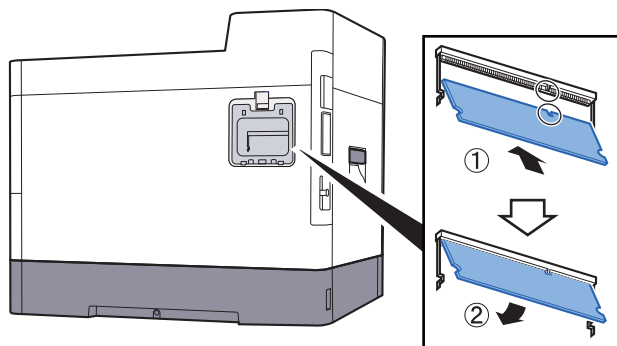


Figure 2-35

3. Remove the memory module from its package.
4. With the memory connection terminal pointing toward the socket, align the cut-out part with the socket terminal and insert it straight in on an angle.
* : Before inserting the memory module, make sure that the power switch is turned off.

**Figure 2-36**

5. Carefully press the inserted memory module toward the main unit.
6. Reattach the cover.

Removing the Memory Module

To remove the memory module, remove the right cover and the memory slot cover from the main unit. Then, carefully push the two stoppers so that the memory module pops up from the socket.

Verifying the Memory Module

To verify that the memory module is working properly, print out a status page and check its content.

(4) HD-6/HD-7 (SSD)

With an SSD installed in the main unit, received print data can be rasterized and stored in the SSD. This enables high-speed printing of multiple copies using the electronic sort function. Also, you can use the Document Box functions. See "Document Box" in the Operation Guide supplied with the main unit for details.

(5) IB-50 (Network Interface Kit)

The Network Interface Kit provides a high-speed connection for the Gigabit-per-second interface. Network printing is available with the network protocols such as TCP/IP and NetBUEI for a variety of OS of Windows, Macintosh and UNIX. See the Operation Guide supplied with the IB-50 for details.

The installation procedures are same as for an SSD.

(6) IB-51 (Wireless Network Interface Kit)

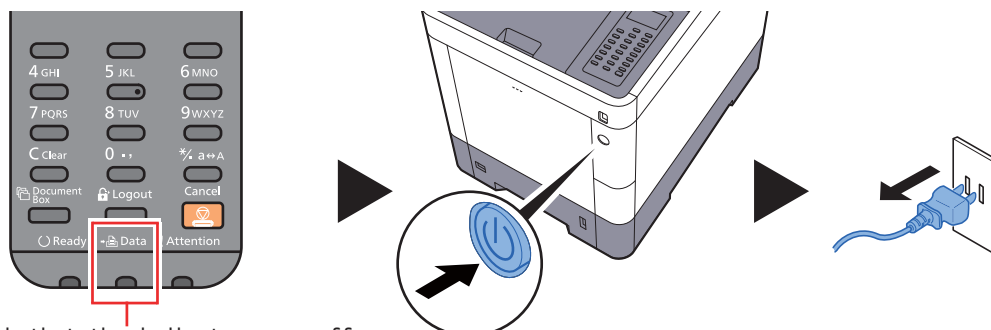
This is a wireless LAN interface card which supports the wireless LAN specifications IEEE802.11n (Max 300Mbps) and 11g/b.

With the utilities supplied, settings are possible for a variety of OS and network protocols. See the Operation Guide supplied with the IB-51 for details.

The installation procedures are same as for an SSD.

Installing the SSD/IB-50/IB-51

1. Turn the power switch off and unplug the power cord from the outlet.



Check that the indicators are off.

Figure 2-37

2. Remove the interface cover.

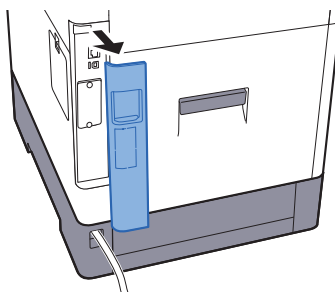


Figure 2-38

3. Remove two screws (M3x8) and remove the cover.

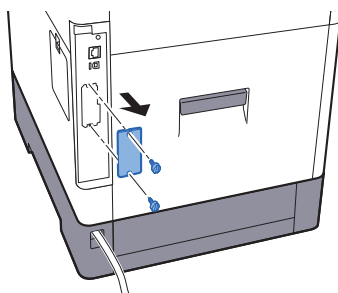


Figure 2-39

4. Insert it straight into the optional interface slot.

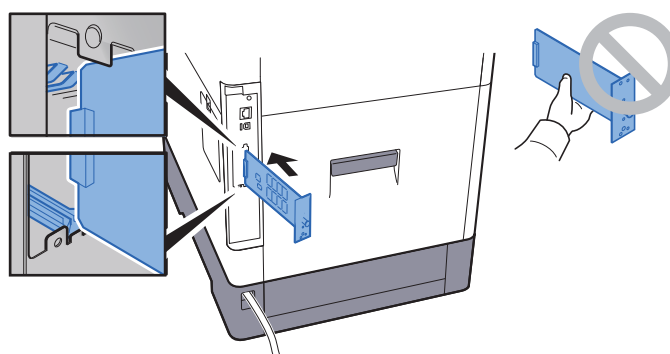


Figure 2-40

5. Remove the breakaway cover from the interface cover. Reattach the interface cover to its original position.

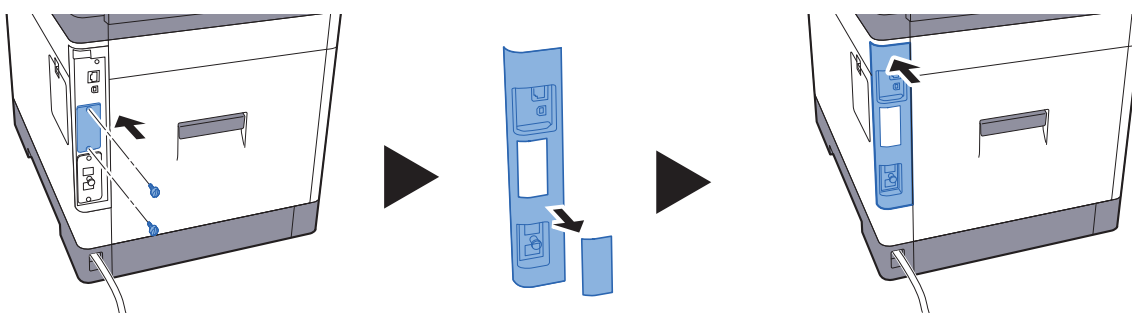


Figure 2-41

6. Insert the power cord into the outlet and turn the power switch on.

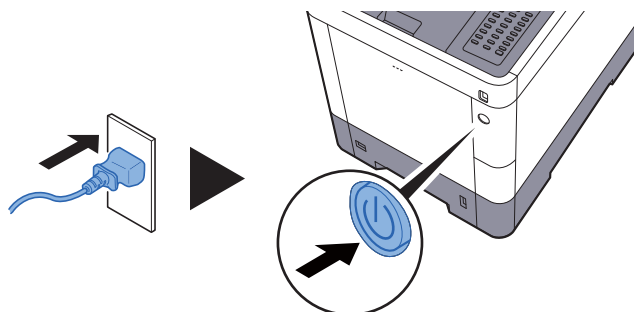


Figure 2-42

Formatting an SSD

30 ppm models

1. [Menu] key > [] [] key > [Device Common] > [] key > [] [] key > [SSD] > [] key
2. Format an optional SSD.

35/40 ppm models

1. [Menu] key > [] [] key > [Device Common] > [OK] key > [] [] key > [Format SSD] > [OK] key
2. Format an optional SSD.

* : When an optional SSD is inserted into the main unit for the first time, it must be formatted before use.

IMPORTANT

Formatting will delete all existing data on an SSD.

(7) SD/SDHC Card

An SD/SDHC card is useful for storing fonts, macros, and overlays. The main unit is equipped with a slot for an SDHC card with a maximum size of 32GB, and an SD card with a maximum size of 2GB.

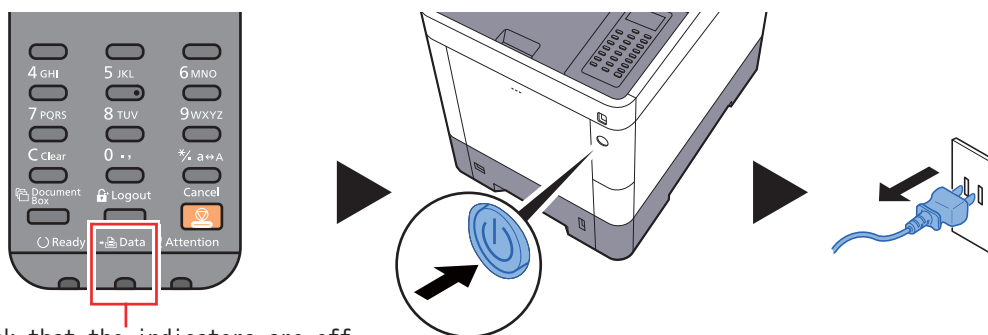
Reading the SD/SDHC Card

The contents of the SD/SDHC card are read into the main unit after turning the power on.

Formatting an SD/SDHC Card

To use an unused SD/SDHC card, you must first format it with the main unit.

1. Turn the power switch off and unplug the power cord from the outlet.



Check that the indicators are off.

Figure 2-43

2. Remove the interface cover.

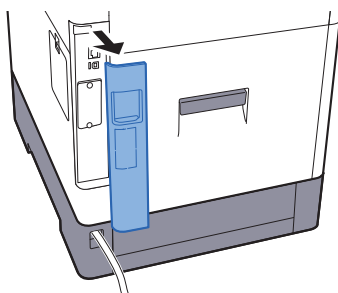


Figure 2-44

3. Remove two screws (M3x8) and remove the cover.

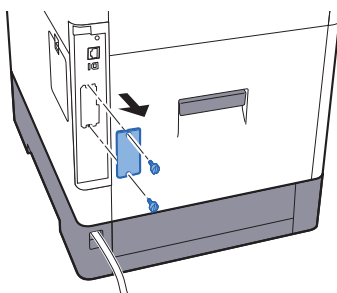


Figure 2-45

4. Insert the SD/SDHC card into the SD/SDHC card slot.

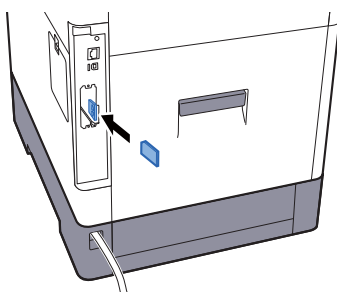


Figure 2-46

5. Remove the breakaway cover from the interface cover. Reattach the interface cover to its original position.

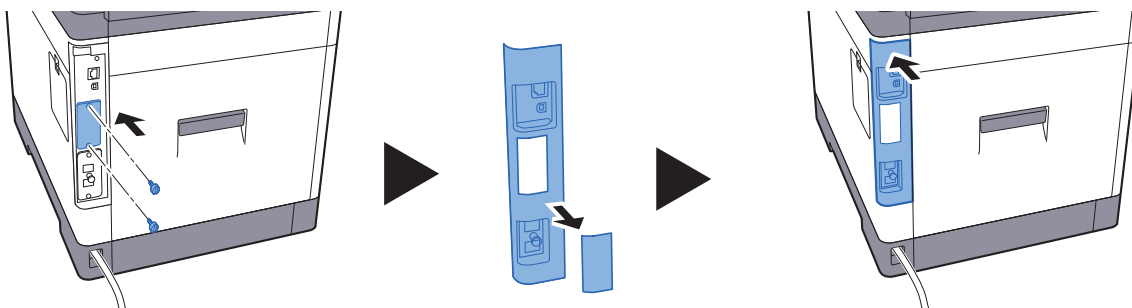


Figure 2-47

6. Insert the power cord into the outlet and turn the power switch on.

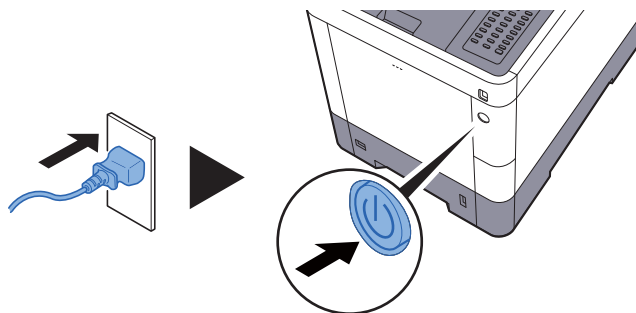


Figure 2-48

Formatting an SD Card

30 ppm models

1. [Menu] key > [] [] key > [Device Common] > [] key > [] [] key > [SD card] > [] key
2. Format an optional SD card.

35/40 ppm models

1. [Menu] key > [] [] key > [Device Common] > [OK] key > [] [] key > [Format SD Card] > [OK] key
2. Format an optional SD card.

* : A new SD card must be formatted with the main unit before use.

IMPORTANT

Formatting will delete all existing data on the SD card.

If you have installed an application, do not format the SD card to avoid the removal of the application in the SD card.

(8) Data Security Kit(E) (Data Security Kit)

The Data Security Kit overwrites all unnecessary data in the storage area so that it cannot be retrieved. The Data Security Kit encrypts data before storing it in the SSD. It guarantees higher security because no data can be decrypted by ordinary output or operations.

(9) UG-33 (ThinPrint Option)

This application enables print data to print directly without a printer driver.

2-4 Optional Applications

The applications listed below are installed in this machine.

Application
Data Security Kit
Card Authentication Kit
ThinPrint Option *1

*1: This can be used on a trial basis for a limited time.

* : Restrictions such as the number of times the application can be used during the trial period differ depending on the application.

* : If you change the date/time while using the trial version of an application, you will no longer be able to use the application.

Starting Use of an Application

Use the procedure below to start using an application.

1. [Menu] key > [] [] key > [Op Functions] > [OK] key

If the login user name entry screen appears during operations, enter a login user name and password, and select [Login]. For this, you need to login with administrator privileges.

The factory default login user name and login password are set as shown below.

Model name	Login User Name	Login Password
30 ppm models	3000	3000
35 ppm models	3500	3500
40 ppm models	4000	4000

2. Select the desired application and select [OK] key.

3. [] [] key > [License On] > [OK] key

4. [] [] key > [Official] > [OK] key

* : To use the application as a trial, select [Trial] without entering the license key.

5. Enter a license key > [OK] key

* : Some applications do not require you to enter a license key. If the license key entry screen does not appear, go to Step 6.

6. Select [Yes].

If you started the Security Kit or Thin Print option and entered the license key, turn the power OFF/ON.

Checking Details of an Application

Use the procedure below to check the details of an application.

1. [Menu] key > [] [] key > [Op Functions] > [OK] key

If the login user name entry screen appears during operations, enter a login user name and password, and select [Login]. For this, you need to login with administrator privileges.

The factory default login user name and login password are set as shown below.

Model name	Login User Name	Login Password
30 ppm models	3000	3000
35 ppm models	3500	3500
40 ppm models	4000	4000

2. Select the desired application and select [OK] key.

3. [] [] key > [Detail] > [OK] key

* : You can view detailed information on the selected application.

The table below lists the item you can view.

Item
Function Name
License On
Trial Counts
Date of Trial
Status

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3 Machine Design

3-1 Mechanical Configuration

(1) Cross-section view (Main unit)

30 ppm models

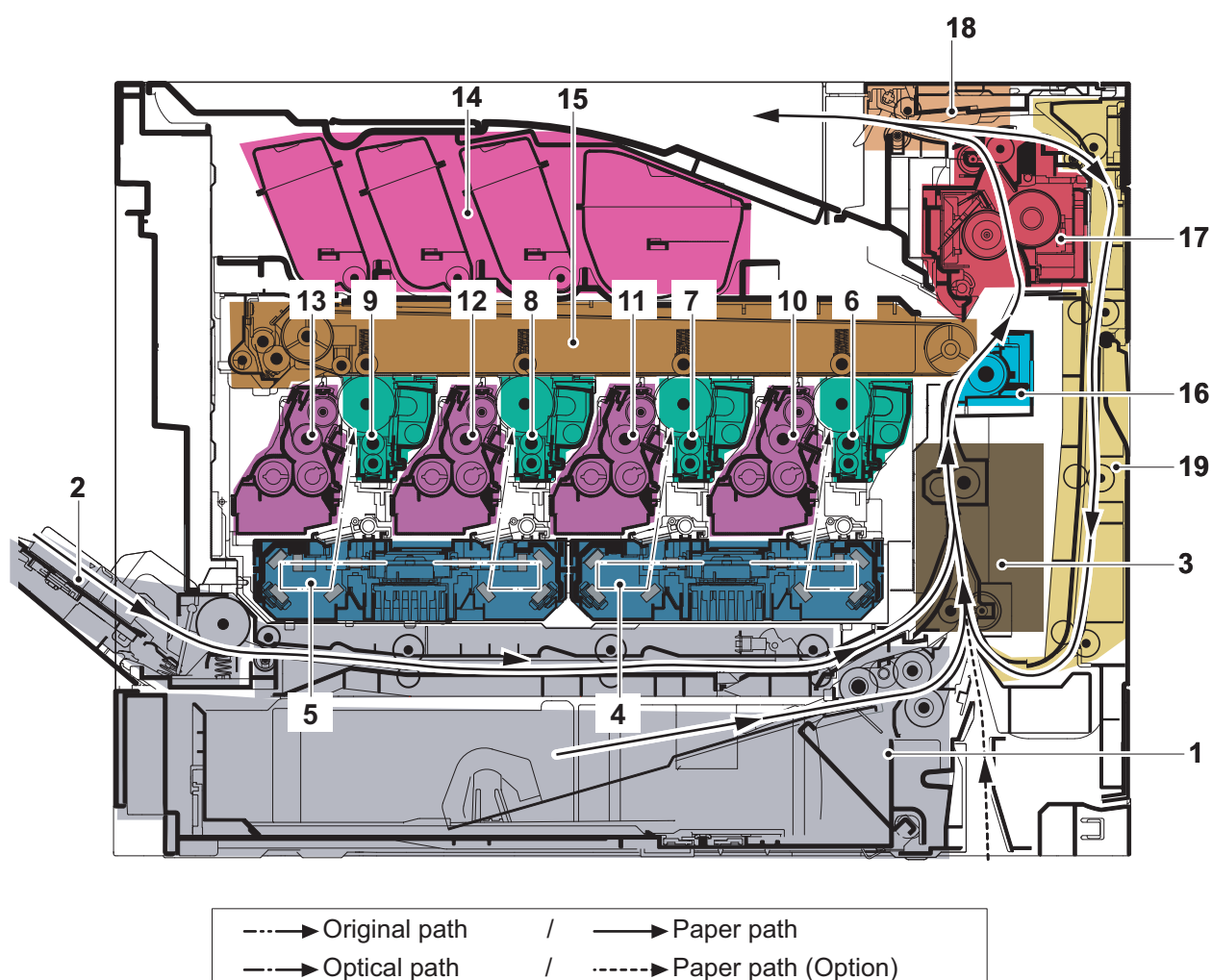
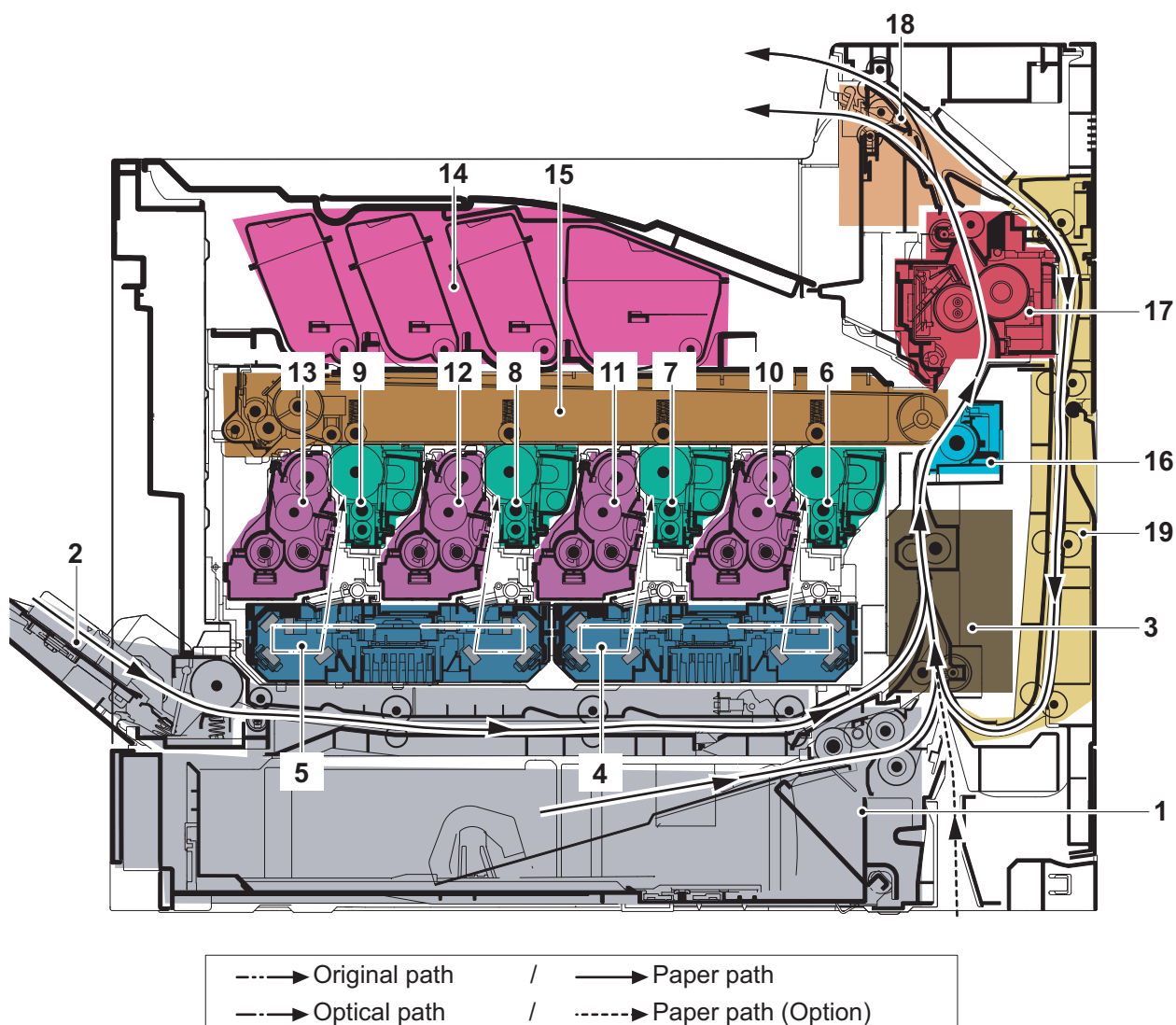


Figure 3-1

(2) Cross-section view (Main unit)

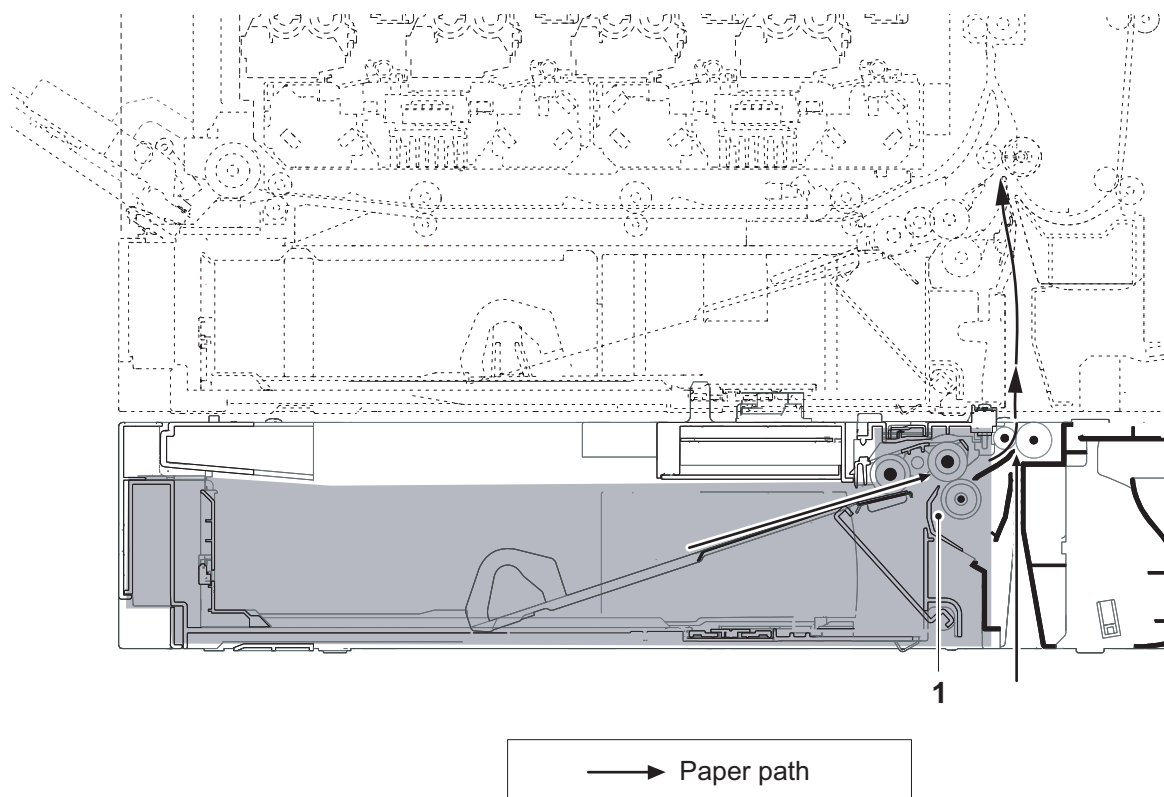
35/40 ppm models

**Figure 3-2**

1. Cassette paper feed section
2. MP 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. Developer unit K
11. Developer unit M
12. Developer unit C
13. Developer unit Y
14. Toner container section
15. Primary transfer section

16. Secondary transfer and separation section
17. Fuser section
18. Feedshift and eject section
19. Duplex conveying section

(3) Cross-section view (Optional paper feeder)**Figure 3-3**

1. Cassette paper feed section

(4) Paper conveying and Paper detection

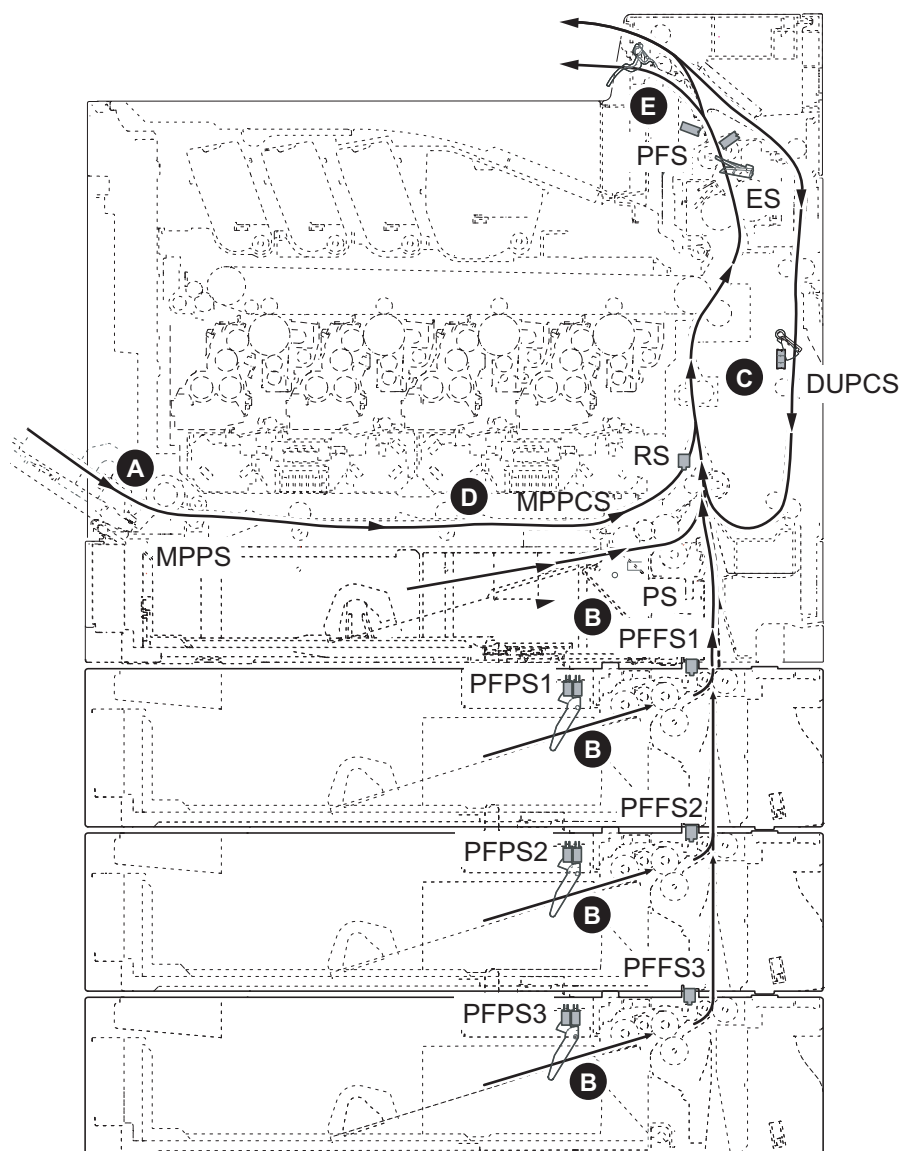


Figure 3-4

[Paper jam]

- A. Paper jam at the MP tray
- B. Paper jam at cassette 1-4
- C. Paper jam at rear cover 2-4
- D. Paper jam at rear cover 1
- E. Paper jam at the duplex section

[Sensor (Paper conveying)]

- PFPS1-3: PF conveying sens
- RS: Registration sensor
- ES: Eject sensor
- PFS: PFS: Paper full sensor
- MPPS: MP paper sensor
- MPPCS: MP conveying sensor
- DUPCS: Duplex sensor*1

*1: for 35/40 ppm models only

3-2 Electric parts

(1) Wire connection diagram (Machine right side)

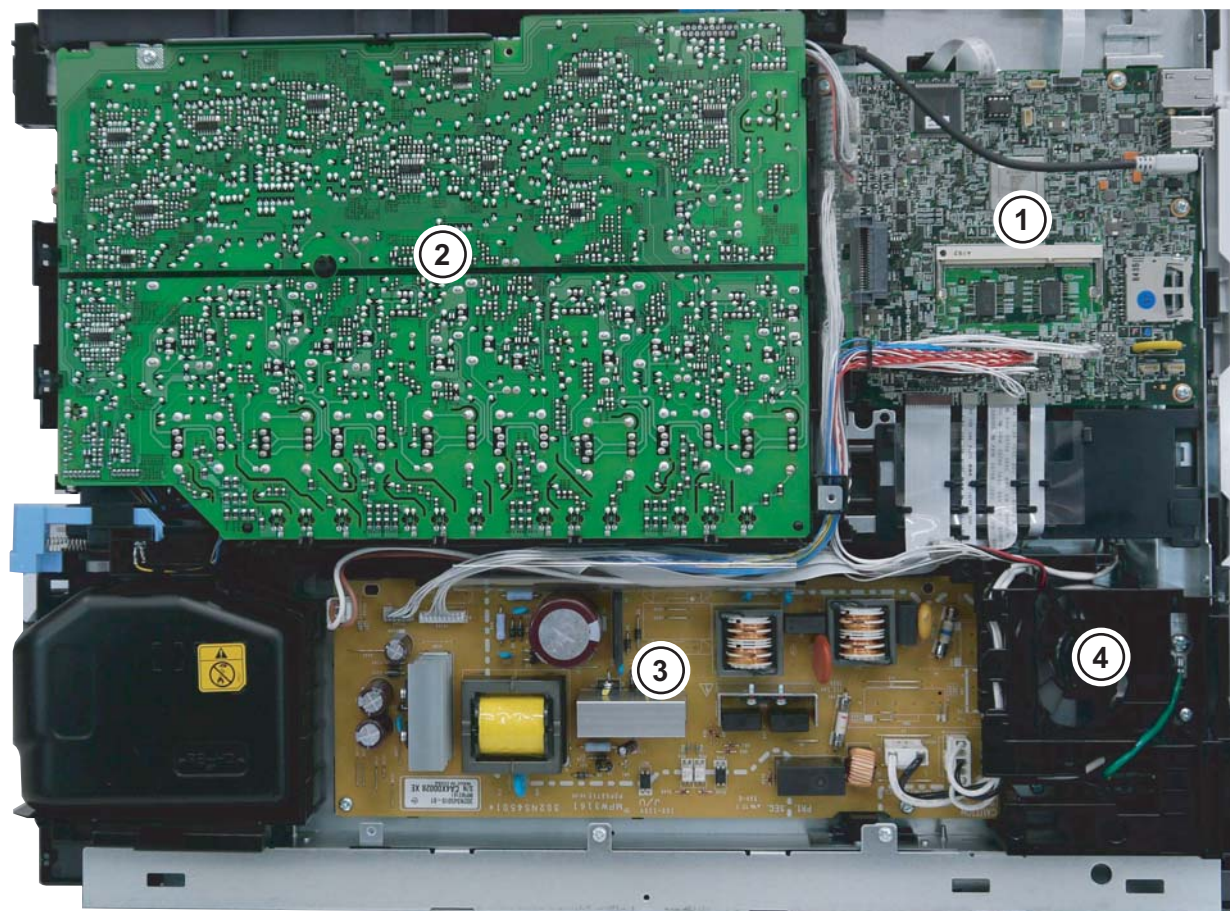
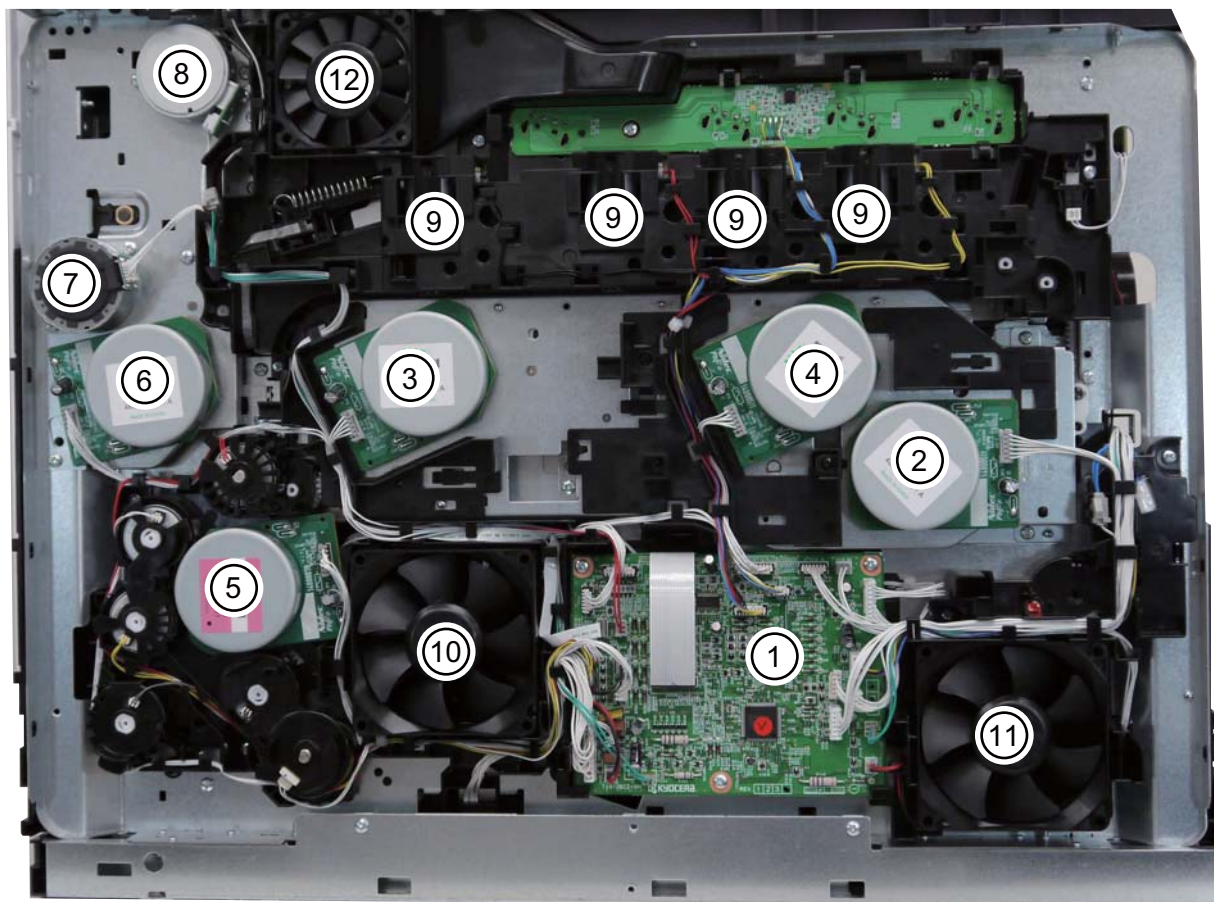


Figure 3-5

1. Main/Engine PWB
2. High-voltage PWB
3. Power source PWB
4. Power source fan motor

(2) Wire connection diagram (Machine left side)**Figure 3-6**

- | | |
|------------------------------|-------------------------|
| 1. Engine relay PWB | 8. Duplex eject motor |
| 2. Developer motor | 9. Toner motor |
| 3. Drum motor 1 | 10. LSU fan motor 1 |
| 4. Drum motor 2 | 11. LSU fan motor 2 |
| 5. Conveying developer motor | 12. Container fan motor |
| 6. Primary transfer motor | |
| 7. Fuser motor | |

(3) Descriptions about the major PWBs

(3-1) Main/Engine PWB

It controls the software for the interface and the image data processing, and the hardware for the generation of the high-voltage and the bias, and the paper conveying system.

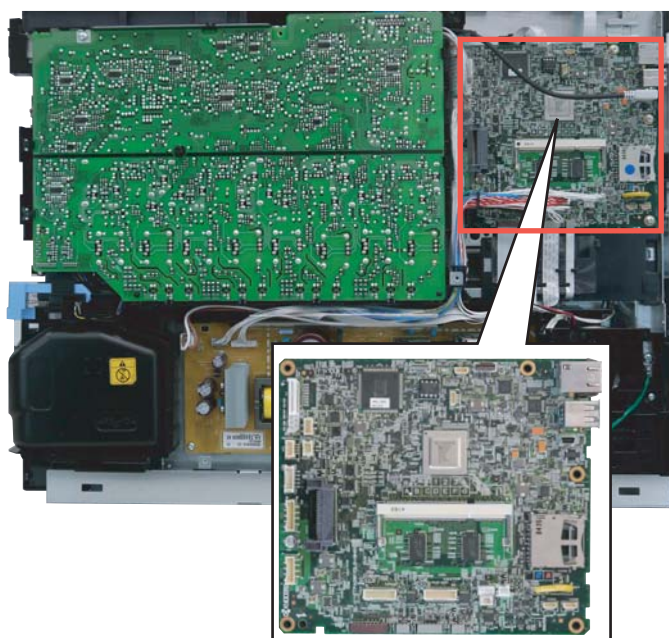


Figure 3-7

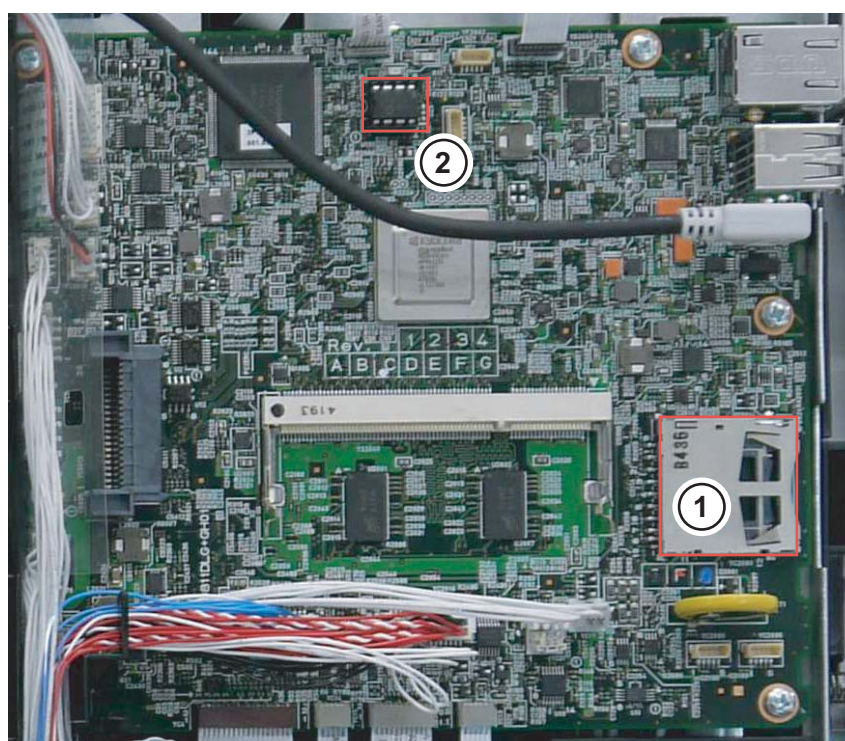


Figure 3-8

1. SD card socket
2. EEPROM

(3-2) Engine relay PWB

It consists of the control to drive each electric part and the wiring relay circuit to the main/engine PWB.

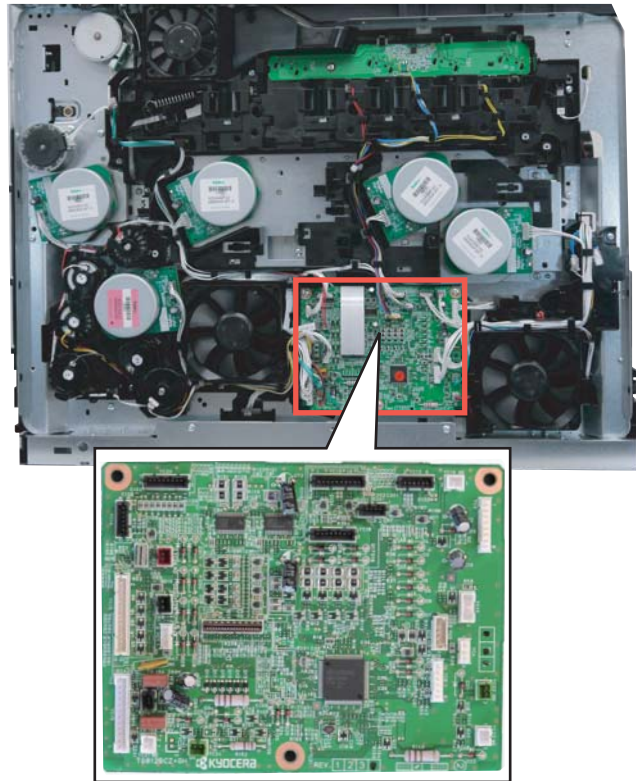


Figure 3-9

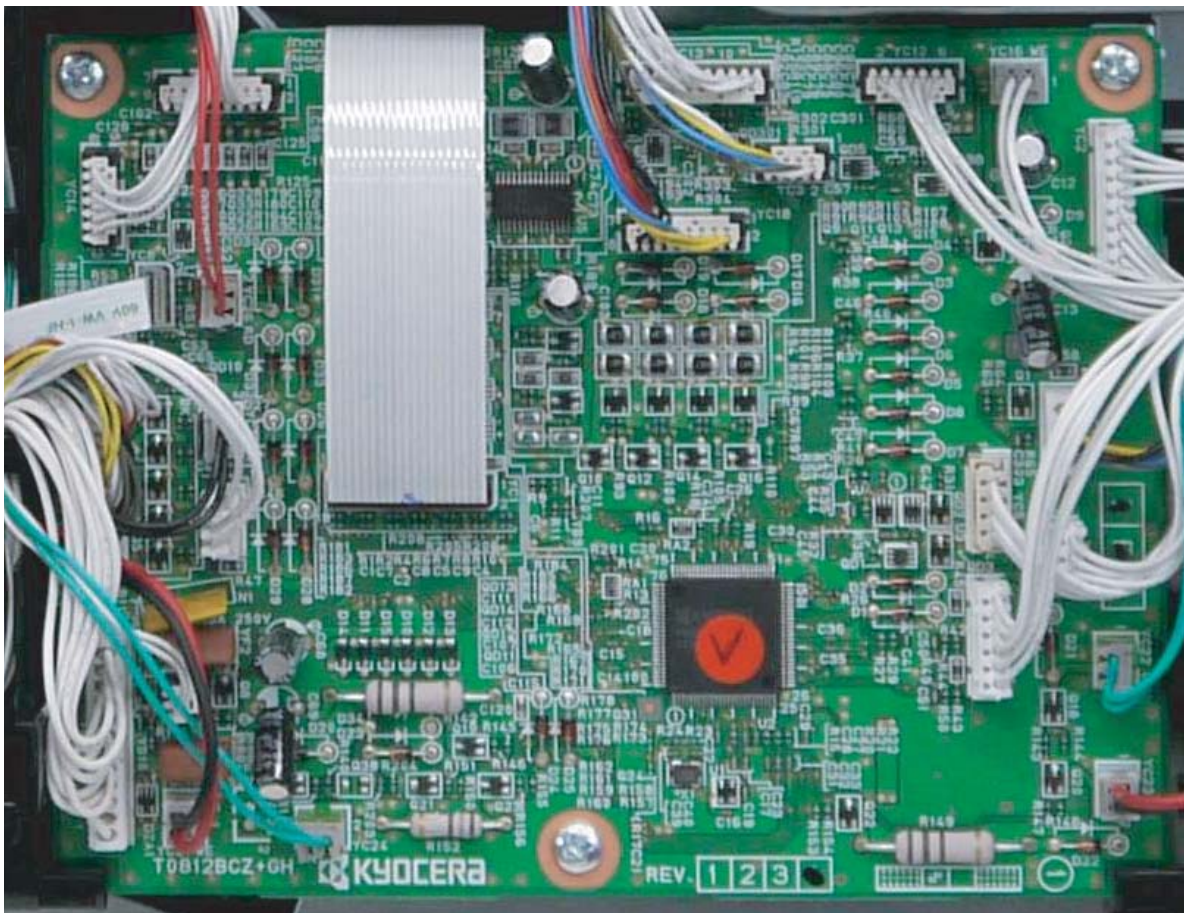


Figure 3-10

(3-3) High-voltage PWB

30/35 ppm models

Generating the main charger high-voltage, the developer bias, the transfer bias and the transfer cleaning bias.

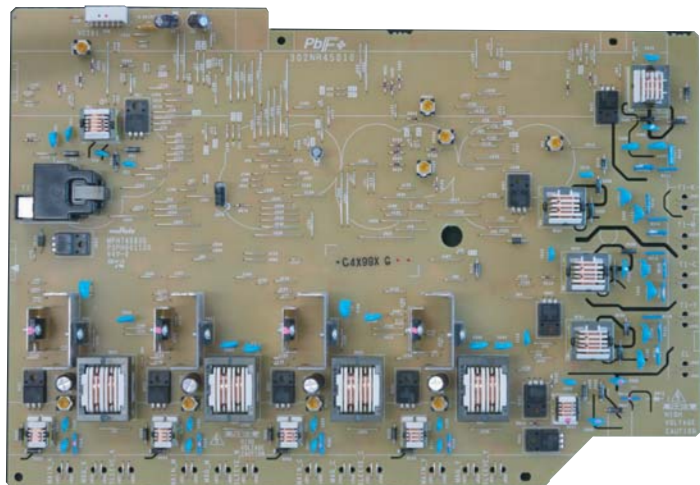


Figure 3-11

40 ppm models

Generating the main charger high-voltage, the developer bias, pre-bias and the secondary transfer bias.

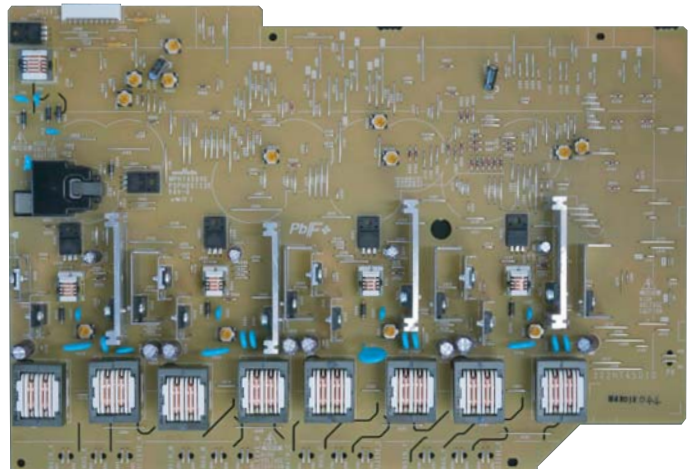


Figure 3-12

(3-4) High-voltage PWB (for 40 ppm models)

Generating the primary transfer bias and the the transfer cleaning bias.

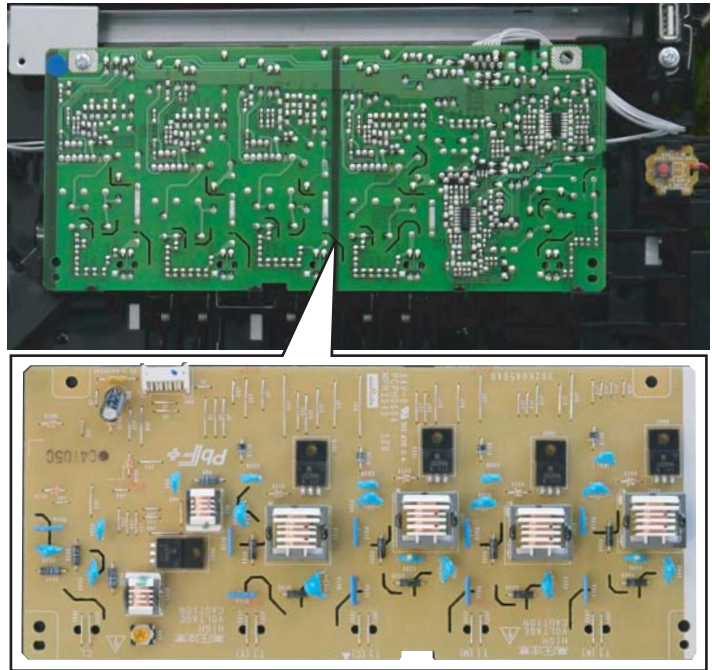


Figure 3-13

(3-5) Power source PWB

The input voltage (AC) from the AC power supply is changed to DC such as DC24V, and it controls the fuser heater.



Figure 3-14

(3-6) Operation panel PWB (for 30 ppm models)

It consists of the 2-line LCD, the LED indicator and the key switches.

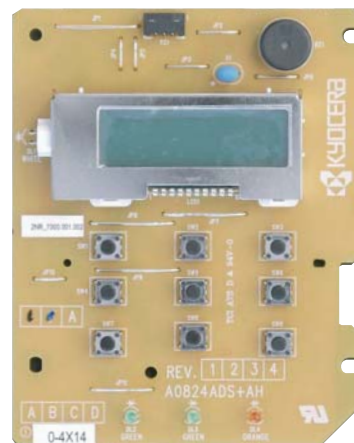


Figure 3-15

(3-7) Operation panel PWB (for 35/40 ppm models)

It consists of the 5-line LCD, the LED indicator and the key switches.

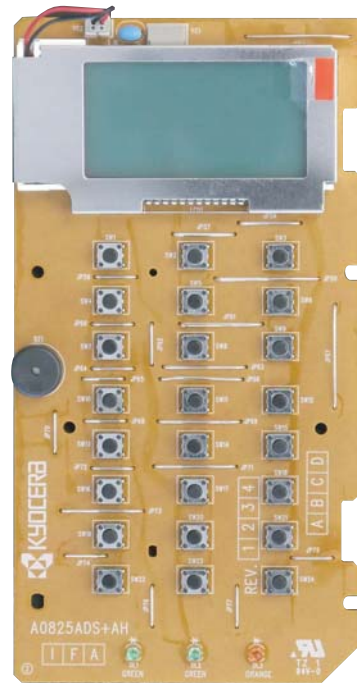


Figure 3-16

(3-8) PF main PWB (Optional paper feeder)

It controls the interface to the main unit and the entire paper feeder.

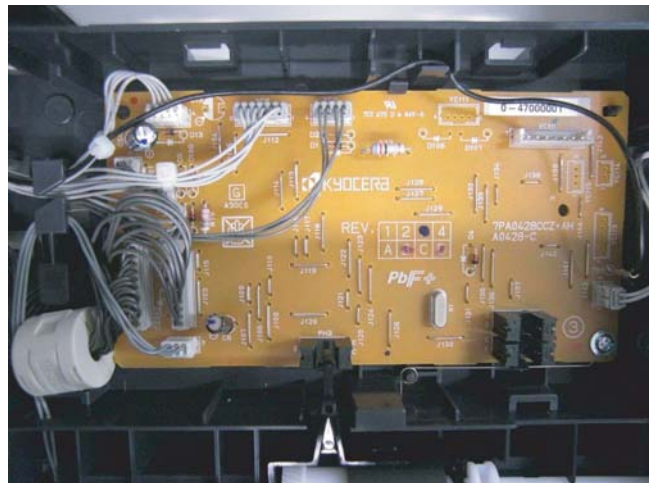


Figure 3-17

(4) Electric parts layout

(4-1) PWBs

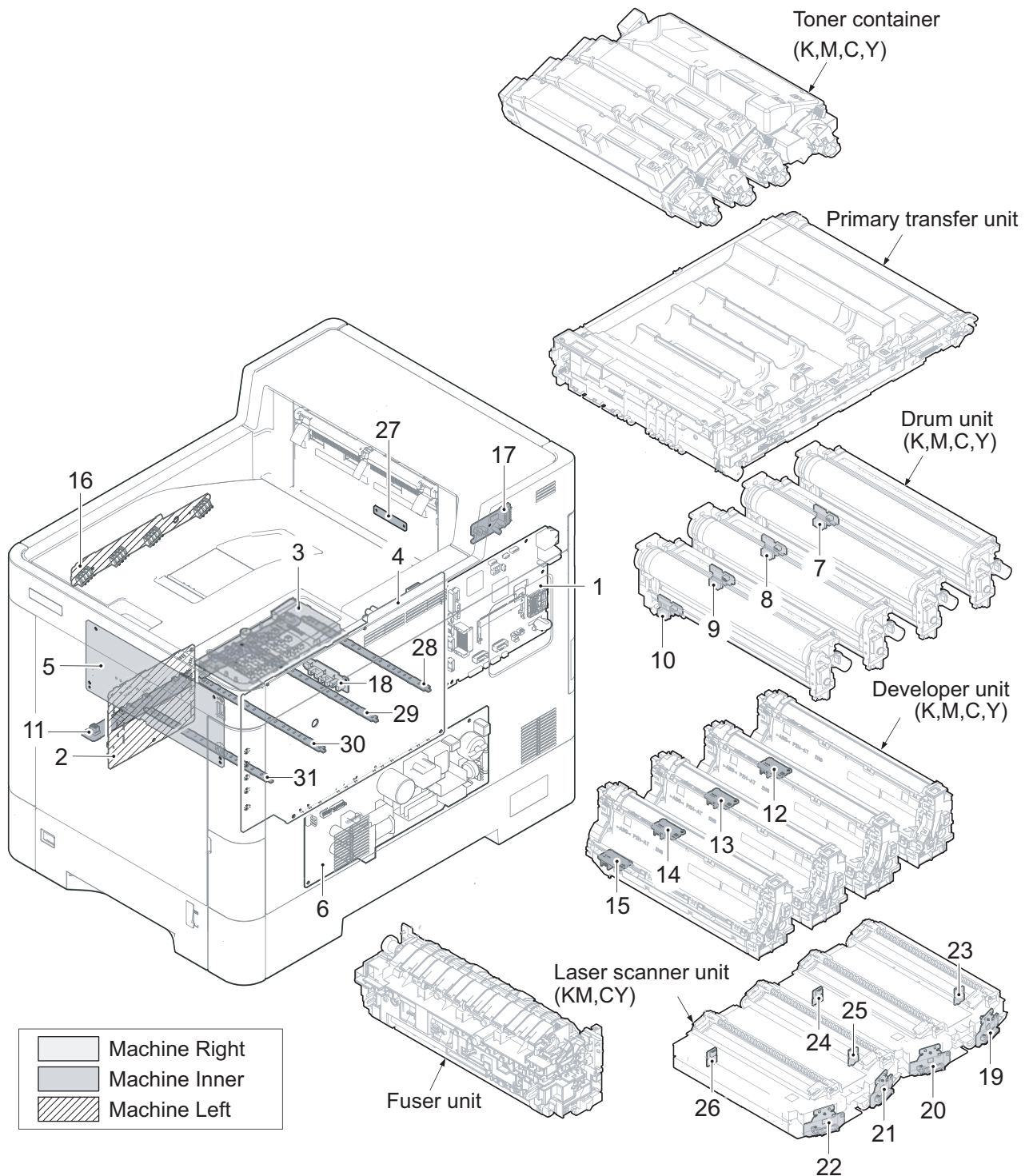


Figure 3-18

1. Main/Engine PWB (MEPWB) Controlling the entire software to control the interface to the PC and the network and the image data process, etc.. Controlling the entire hardware to control the high-voltage
2. Engine relay PWB (ECPWB) Consisting of the drive control circuit for each electric part and the wiring relay circuit to the main/engine PWB
3. Operation panel PWB (OPPWB) Consisting of the LCD, the LED indicator and the key switches

4. High-voltage PWB (HVPWB) Generating the main charger high-voltage, the developer bias, the primary transfer bias*1, pre-bias*2, the secondary transfer bias and the transfer cleaning bias*1
5. High-voltage PWB 2 (HVPWB2)*2..... Generating the primary transfer bias and the transfer cleaning bias
6. Power source PWB (PSPWB) Changing the input voltage (AC) from the AC power supply to DC such as DC24V and controlling the fuser heater
7. Drum PWB K (DRPWB-K) Wiring relay to the electric parts inside drum unit K and storing the individual drum information in the EEPROM
8. Drum PWB M (DRPWB-M) Wiring relay to the electric parts inside drum unit M and storing the individual drum information in the EEPROM
9. Drum PWB C (DRPWB-C) Wiring relay to the electric parts inside drum unit C and storing the individual drum information in the EEPROM
10. Drum PWB Y (DRPWB-Y) Wiring relay to the electric parts inside drum unit Y and storing the individual drum information in the EEPROM
11. Drum relay PWB (DRCPWB) Consisting of the wiring relay circuit to the main/engine PWB, the drum units and the developer units
12. Developer PWB K (DLPPWB-K) Wiring relay to the electric parts inside developer unit K
13. Developer PWB M (DLPPWB-M) Wiring relay to the electric parts inside developer unit M
14. Developer PWB C (DLPPWB-C) Wiring relay to the electric parts inside developer unit C
15. Developer PWB Y (DLPPWB-Y) Wiring relay to the electric parts inside developer unit Y
16. Toner container relay PWB (TCONCPWB) Consisting of the wiring relay circuit between the main/engine PWB and the toner containers
17. Eject PWB (EJPWB) Consisting of the wiring relay circuit to the main/engine PWB and each electric part in the eject section
18. Cassette PWB (CPWB) Consisting of the wiring relay circuit between the engine relay PWB and each electric part in the cassette
19. APC PWB K (APCPWB-K) Emitting and controlling the laser beam (Black)
20. APC PWB M (APCPWB-M) Emitting and controlling the laser beam (Magenta)
21. APC PWB C (APCPWB-C) Emitting and controlling the laser beam (Cyan)
22. APC PWB Y (APCPWB-Y) Emitting and controlling the laser beam (Yellow)
23. PD PWB K (PDPWB-K) Controlling the synchronous lateral laser beam (Black)
24. PD PWB M (PDPWB-M) Controlling the synchronous lateral laser beam (Magenta)
25. PD PWB C (PDPWB-C) Controlling the synchronous lateral laser beam (Cyan)
26. PD PWB Y (PDPWB-Y) Controlling the synchronous lateral laser beam (Yellow)
27. Zener PWB (FZEPWB) Controlling the fuser erasing voltage
28. Drum heater PWB K (DHTK)*3 Controlling the drum K heater voltage
29. Drum heater PWB M (DHTM)*3 Controlling the drum M heater voltage
30. Drum heater PWB C (DHTC)*3 Controlling the drum C heater voltage
31. Drum heater PWB Y (DHTY)*3 Controlling the drum Y heater voltage

*1: for 30/35 ppm models only

*2: for 40 ppm models only

*3: for 40 ppm/240V models only

Part name table for the PWBs

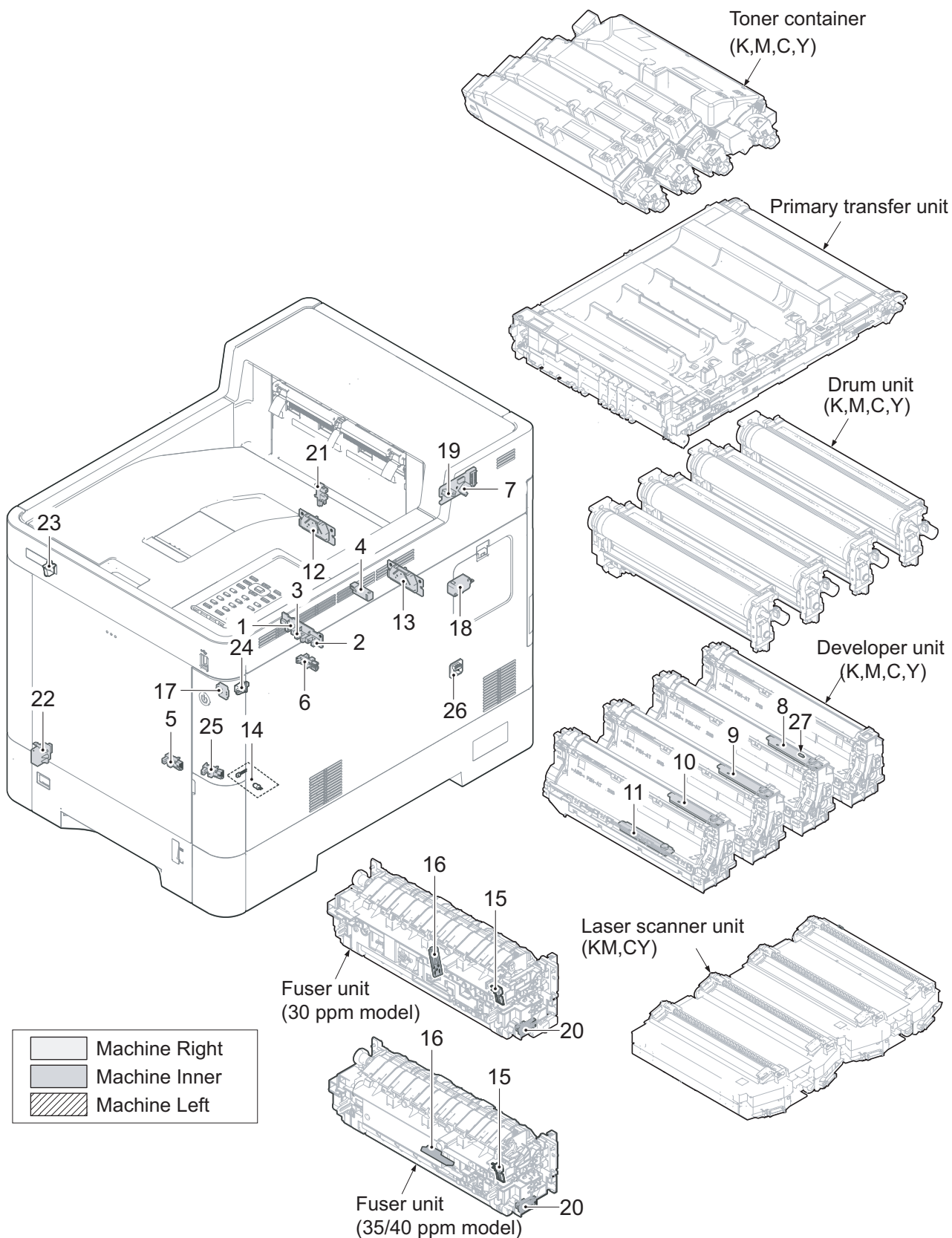
No.	Name used in service manual	Name used in parts list	Part.No.
1	Main/Engine PWB (MEPWB)	PARTS PWB ASSY MAIN EU SP (Except for EU)	302NR9417_(30 ppm models) 302NS9406_(35 ppm models) 302NT9404_(40 ppm models)
		PARTS PWB ASSY MAIN EU SP (EU)	302NR9418_(30 ppm models) 302NS9407_(35 ppm models) 302NT9405_(40 ppm models)
2	Engine relay PWB (ECPWB)	PARTS PWB ASSY ENGINE CONNECT SP	302NR9411_(30 ppm models) 302NS9404_(35 ppm models) 302NT9403_(40 ppm models)
3	Operation panel PWB (OPPWB)	PARTS OPERATION ASSY SP	302NR9424_(30 ppm models) 302NS9409_(35/40 ppm models)
4	High-voltage PWB (HVPWB)	PARTS HIGH VOLTAGE UNIT SP	302NR9403_(30/35 ppm models) 302NT9401_(40 ppm models)
5	High-voltage PWB2 (HVPWB2)*2	HVU2	302K04504_
6	Power source PWB (PSPWB)	PARTS SWITCHING REGULATOR 100V SP (100/120V)	302NR9404_(30 ppm models) 302NS9401_(35/40 ppm models)
		PARTS SWITCHING REGULATOR 230V SP(230V)	302NR9405_(30 ppm models) 302NS9402_(35/40 ppm models)
7	Drum PWB K (DRPWB-K)	DK-5140 (30/35 ppm models) DK-5160 (40 ppm models)	302NR9301_(30/35 ppm models) 302NT9301_(40 ppm models)
8	Drum PWB M (DRPWB-M)		
9	Drum PWB C (DRPWB-C)		
10	Drum PWB Y (DRPWB-Y)		
11	Drum relay PWB (DRCPWB)	PARTS PWB ASSY DRUM CONNECT SP	302NR9412_(30/35 ppm models) 302NT9402_(40 ppm models)
12	Developer PWB K(DLPPWB-K)	DV-5140(K) DV-5150(K) DV-5160(K)	302NR9302_(30 ppm models) 302NS9301_(35 ppm models) 302NT9302_(40 ppm models)
13	Developer PWB M(DLPPWB-M)	DV-5140(M) DV-5150(M) DV-5160(M)	302NR9304_(30 ppm models) 302NS9303_(35 ppm models) 302NT9304_(40 ppm models)
14	Developer PWB C(DLPPWB-C)	DV-5140(C) DV-5150(C) DV-5160(C)	302NR9305_(30 ppm models) 302NS9304_(35 ppm models) 302NT9305_(40 ppm models)
15	Developer PWB Y(DLPPWB-Y)	DV-5140(Y) DV-5150(Y) DV-5160(Y)	302NR9303_(30 ppm models) 302NS9302_(35 ppm models) 302NT9303_(40 ppm models)
16	Toner container relay PWB (TCONCPWB)	PARTS PWB ASSY CONTAINER CONN SP	302NR9410_

No.	Name used in service manual	Name used in parts list	Part.No.
17	Eject PWB (EJPWB)	PARTS PWB ASSY EXIT SP	302NR9413_(30 ppm models) 302NS9405_(35/40 ppm models)
18	Cassette PWB (CPWB)	PARTS PWB ASSY CASSETTE SP	302KV9434_
19	APC PWB K(APCPWB-K)	LK-5140A LK-5160A	302NR9307_(30/35 ppm models) 302NT9307_(40 ppm models)
20	APC PWB M(APCPWB-M)		
21	APC PWB C(APCPWB-C)	LK-5140B LK-5160B	302NR9308_(30/35 ppm models) 302NT9308_(40 ppm models)
22	APC PWB Y(APCPWB-Y)		
23	PD PWB K(PDPWB-K)	LK-5140A LK-5160A	302NR9307_(30/35 ppm models) 302NT9307_(40 ppm models)
24	PD PWB M(PDPWB-M)		
25	PD PWB C(PDPWB-C)	LK-5140B LK-5160B	302NR9308_(30/35 ppm models) 302NT9308_(40 ppm models)
26	PD PWB Y(PDPWB-Y)		
27	Zener PWB (FZEPWB)	P.W.BOARD ASSY FUSER ZENER	302HN0124_
28	Drum heater PWB K (DHTK)*3	PARTS PWB ASSY DRUM HEATER SP	302NT9409_
29	Drum heater PWB M (DHTM)*3		
30	Drum heater PWB C (DHTC)*3		
31	Drum heater PWB Y (DHTY)*3		

*1: for 30/35 ppm models only

*2: for 40 ppm model only

*3: for 40 ppm/240V models only

(4-2) Sensors and Switches**Figure 3-19**

1. Paper sensor 1 (PS1) Detecting the level of the remaining paper inside the cassette
 2. Paper sensor 2 (PS2) Detecting the level of the remaining paper inside the cassette

3. Lift sensor (LS)..... Detecting the upper limit when lifting the bottom plate inside the cassette
4. Registration sensor (RS)..... Controlling the timing to start the secondary paper feeding
5. MP paper sensor (MPPS) Detecting the presense of the paper on the MP tray
6. MP conveying sensor (MPPCS) Detecting the paper jam at the MP conveying section
7. Eject sensor (ES)..... Detecting the paper jam at the fuser section
8. Toner sensor K (TS-K) Detecting the toner amount inside developer unit K
9. Toner sensor M (TS-M) Detecting the toner amount inside developer unit M
10. Toner sensor C (TS-C)..... Detecting the toner amount inside developer unit C
11. Toner sensor Y (TS-Y) Detecting the toner amount inside developer unit Y
12. ID sensor 1 (IDS1) Measuring the toner density at the color adjustment (calibration)
13. ID sensor 2 (IDS2) Measuring the toner density at the color adjustment (calibration)
14. Waste toner sensor (WTS)..... Detecting the waste toner amount inside the waste toner box
15. Fuser thermistor 1 (FTH1) Detecting the temperature at the heat roller (edge)
16. Fuser thermistor 2 (FTH2) Detecting the temperature at the heat roller (center)
17. Power switch (PSSW)..... Turning on and off the main/engine PWB, the engine relay PWB and the operation panel PWB, etc.
18. Interlock switch (ILSW) Shutting off the 24V power supply line and resetting when the inner tray or the rear cover is opened
19. Paper full sensor (PFS)..... Detecting the paper-full on the upper tray
20. Press-release sensor (PRS) Detecting the mode of the fuser pressure
21. Duplex sensor (DUPCS)*1..... Detecting the paper jam at the duplex section
22. Cassette size switch (CSSW) Detecting the paper size setting by the size dial and detecting the presence of cassette
23. Tray switch (ITSW)..... Detecting the opening and closing of the upper tray
24. Toner container switch (TCSW) Detecting the presence of the toner container
25. Waste toner cover sensor (WTCS) Detecting the opening and closing of the waste toner cover
26. Outer temperature sensor (OTEMS)..... Detecting the temperature and humidity outside the main unit
27. Internal temperature sensor (ITEMS) ... Detecting the internal temperature

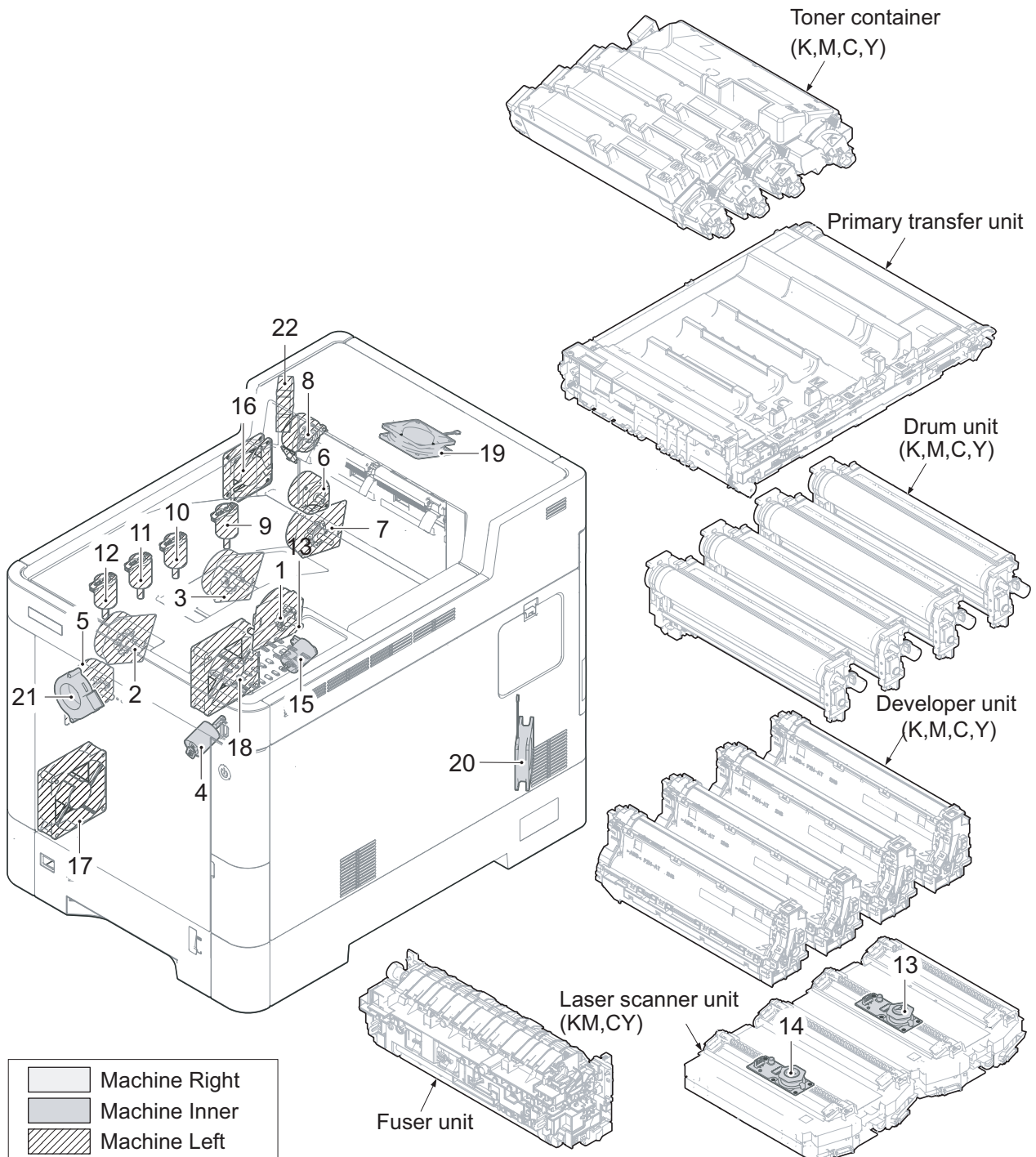
*1: for 35/40 ppm models only

Part name table for the switches and the sensors

No.	Name used in service manual	Name used in parts list	Part.No.
1	Paper sensor 1 (PS1)	PWB ASSY CASSETTE SP	302KV9434_
2	Paper sensor 2 (PS2)		
3	Lift sensor (LS)		
4	Registration sensor (RS)	PARTS SENSOR OPT. SP	303NW9404_
5	MP paper sensor (MPPS)	PARTS SENSOR OPT. SP	302P79401_
6	MP conveying sensor (MPPCS)	PARTS SENSOR OPT. SP	302P79401_
7	Eject sensor (ES)	PARTS PWB ASSY EXIT SP	302NR9413_(30 ppm models) 302NS9405_(35/40 ppm models)
8	Toner sensor K(TS-K)	DV-5140(K) DV-5150(K) DV-5160(K)	302NR9302_(30 ppm models) 302NS9301_(35 ppm models) 302NT9302_(40 ppm models)
9	Toner sensor M(TS-M)	DV-5140(M) DV-5150(M) DV-5160(M)	302NR9304_(30 ppm models) 302NS9303_(35 ppm models) 302NT9304_(40 ppm models)

No.	Name used in service manual	Name used in parts list	Part.No.
10	Toner sensor C(TS-C)	DV-5140(C) DV-5150(C) DV-5160(C)	302NR9305_(30 ppm models) 302NS9304_(35 ppm models) 302NT9305_(40 ppm models)
11	Toner sensor Y(TS-Y)	DV-5140(Y) DV-5150(Y) DV-5160(Y)	302NR9303_(30 ppm models) 302NS9302_(35 ppm models) 302NT9303_(40 ppm models)
12	ID sensor 1 (IDS1)	PARTS ID SENSOR SP	302NR9402_
13	ID sensor 2 (IDS2)	PARTS ID SENSOR SP	302NR9402_
14	Waste toner sensor (WTS)	PARTS TONER FULL DETECT ASSY SP	302NR9407_
15	Fuser thermistor 1 (FTH1)	100V: FK-5141 100V: FK-5161 120V: FK-5142 120V: FK-5162 230V: FK-5140 230V: FK-5160	302NR9310_(30 ppm models) 302NT9310_(35/40 ppm models)
16	Fuser thermistor 2 (FTH2)		302NR9311_(30 ppm models) 302NT9311_(35/40 ppm models) 302NR9309_(30 ppm models) 302NT9309_(35/40 ppm models)
17	Power switch (PSSW)	PARTS PWB ASSY EXIT SP	302NR9416_
18	Interlock switch (ILSW)	SW.MICRO	7SM010104+++H01
19	Paper full sensor (PFS)	PARTS PWB ASSY EXIT SP	302NR9413_(30 ppm models) 302NS9405_(35/40 ppm models)
20	Press-release sensor (PRS)	100V: FK-5141 100V: FK-5161 120V: FK-5142 120V: FK-5162 230V: FK-5140 230V: FK-5160	302NR9310_(30 ppm models) 302NT9310_(35/40 ppm models) 302NR9311_(30 ppm models) 302NT9311_(35/40 ppm models) 302NR9309_(30 ppm models) 302NT9309_(35/40 ppm models)
21	Duplex sensor (DUPCS)*1	SENSOR OPT.	7NXSG2A241++H01
22	Cassette size switch (CSSW)	SWITCH SIZE	302HN4418_
23	Tray switch (ITSW)	SW.PUSH	7SP01000004+H01
24	Toner container switch (TCSW)	SW.PUSH	7SP01000004+H01
25	Waste toner cover sensor (WTCS)	PARTS SENSOR OPT. SP	302P79401_
26	Outer temperature sensor (OTEMS)	PARTS PWB ASSY THERMIS- TOR SP	302M29413_
27	Internal temperature sensor (ITEMS)	LK-5140A LK-5160A	302NR9307_(30/35 ppm models) 302NT9307_(40 ppm models)

*1: for 35/40 ppm models only

(4-3) Motors**Figure 3-20**

- | | |
|---|--|
| 1. Paper conveying and developer motor (PCDVM)..... | Driving the paper feeding and conveying systems and developer unit K |
| 2. Drum motor 1 (DRM1) | Driving drum unit K and M |
| 3. Drum motor 2 (DRM2) | Driving drum unit C and Y |
| 4. Lift motor (LM)..... | Operating the bottom plate inside the cassette |
| 5. Developer motor (DEVM)..... | Driving developer unit Y, M and C |
| 6. Fuser motor (FUM) | Driving the transfer and fuser sections |
| 7. Primary transfer motor (TRM) | Driving the primary transfer unit |
| 8. Duplex eject motor (DUEM) | Driving the duplex conveying and eject section |

9. Toner motor K (TM-K) Supplying the toner to developer unit K
 10. Toner motor M (TM-M) Supplying the toner to developer unit M
 11. Toner motor C (TM-C) Supplying the toner to developer unit C
 12. Toner motor Y (TM-K) Supplying the toner to developer unit Y
 13. Polygon motor KM (PM-KM) Driving polygon mirror KM
 14. Polygon motor CY (PM-CY) Driving polygon mirror CY
 15. LSU cleaning motor (LSUCM) Driving the LSU glass cleaning system
 16. Container fan motor (CFM) Cooling the developer unit
 17. LSU fan motor 1 (LSUFM1) Cooling LSU-KM
 18. LSU fan motor 2 (LSUFM2) Cooling LSU-CY
 19. Eject fan motor (EJFM) Diffusing the steam
 20. Power source fan motor (PSFM) Cooling the power source unit
 21. Transfer fan motor (TRFM) Cooling the primary transfer unit
 22. Duplex fan motor (DUFM)*1 Cooling the duplex paper when ejecting

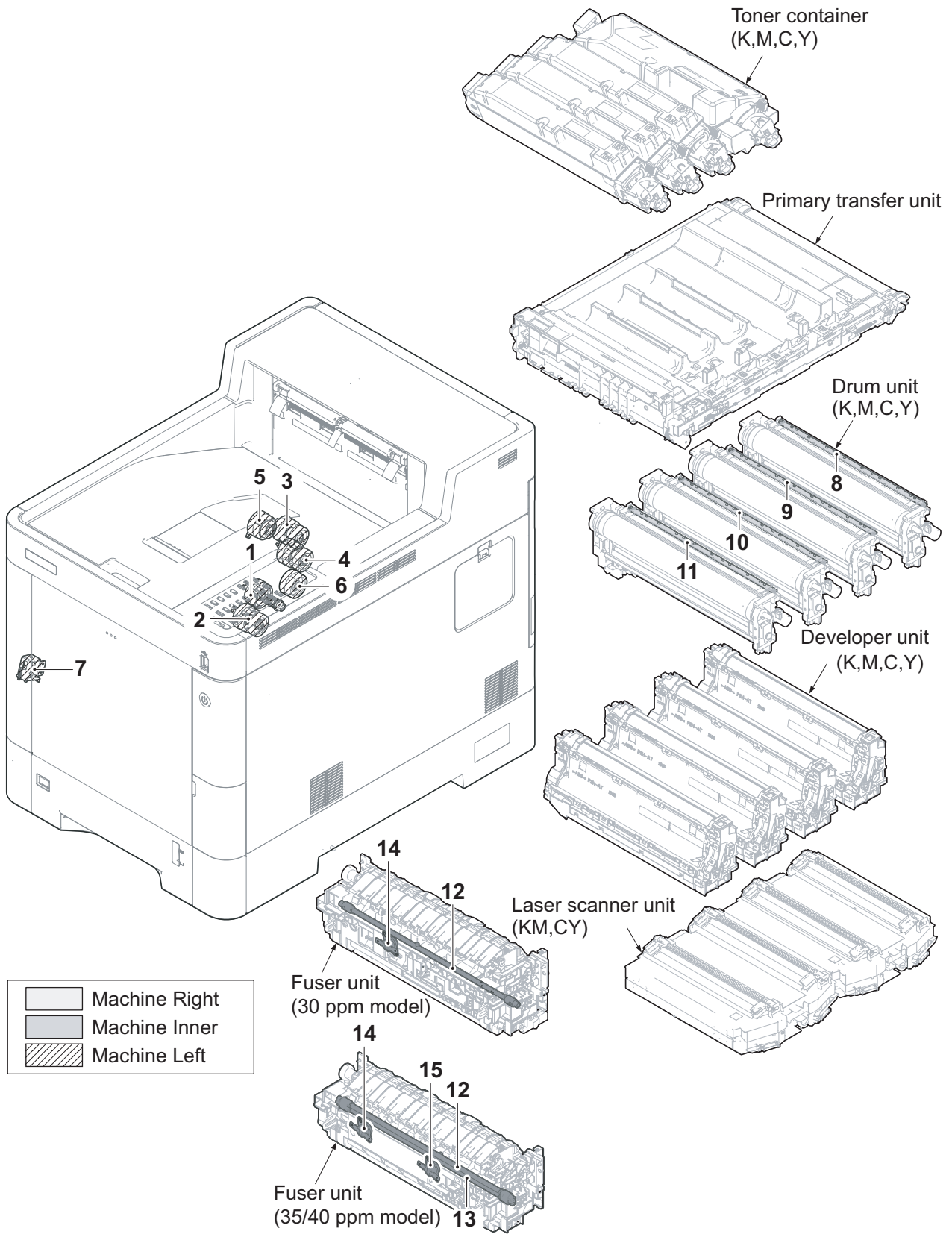
*1: for 40 ppm models only

Part name table for the motors

No.	Name used in service manual	Name used in parts list	Part.No.
1	Paper conveying and developer motor (PCDVM)	PARTS MOTOR-BL W10 SP	302LC9429_
2	Drum motor 1 (DRM1)	DR-5140: 30 ppm models DR-5150: 35/40 ppm models	302NR9313_(30 ppm models) 302NT9312_(35/40 ppm models)
3	Drum motor 2 (DRM2)		
4	Lift motor (LM)	PARTS DC MOTOR ASSY SP	302NR9409_
5	Developer motor (DEVM)	DR-5140: 30 ppm models DR-5150: 35/40 ppm models	302NR9313_(30 ppm models) 302NT9312_(35/40 ppm models)
6	Fuser motor (FUM)	PARTS MOTOR-PM MOVING SP	303NB9404_
7	Primary transfer motor (TRM)	PARTS MOTOR-BL W20 SP	302K99432_
8	Duplex eject motor (DUEM)	PARTS MOTOR EJECT SP	302P79406_
9	Toner motor K (TM-K)	PARTS DC MOTOR ASSY SP	302NR9408_
10	Toner motor M (TM-M)	PARTS DC MOTOR ASSY SP	302NR9408_
11	Toner motor C (TM-C)	PARTS DC MOTOR ASSY SP	302NR9408_
12	Toner motor Y (TM-Y)	PARTS DC MOTOR ASSY SP	302NR9408_
13	Polygon motor KM (PM-KM)	LK-5140A	302NR9307_(30/35 ppm models)
		LK-5160A	302NT9307_(40 ppm models)
14	Polygon motor CY (PM-CY)	LK-5140B	302NR9308_(30/35 ppm models)
		LK-5160B	302NT9308_(40 ppm models)
15	LSU cleaning motor (LSUCM)	PARTS DC MOTOR ASSY SP	302NG9405_
16	Container fan motor (CFM)	PARTS,FAN COOLING CONVEYING SP	302FZ9442_
17	LSU fan motor 1 (LSUFM1)	PARTS FAN MOTOR SP	302NG9422_

No.	Name used in service manual	Name used in parts list	Part.No.
18	LSU fan motor 2 (LSUFM2)	PARTS FAN MOTOR SP	302NG9422_
19	Eject fan motor (EJFM)	PARTS,FAN COOLING CON-VEYING SP	302FZ9442_
20	Power source fan motor (PSFM)	PARTS,FAN COOLING CON-VEYING SP	302FZ9442_
21	Transfer fan motor (TRFM)	FAN MOTOR	302HN4421_
22	Duplex fan motor (DUFM)*1	FAN MOTOR	302HN4421_

*1: for 40 ppm models only

(4-4) Clutches and Solenoids and other parts**Figure 3-21**

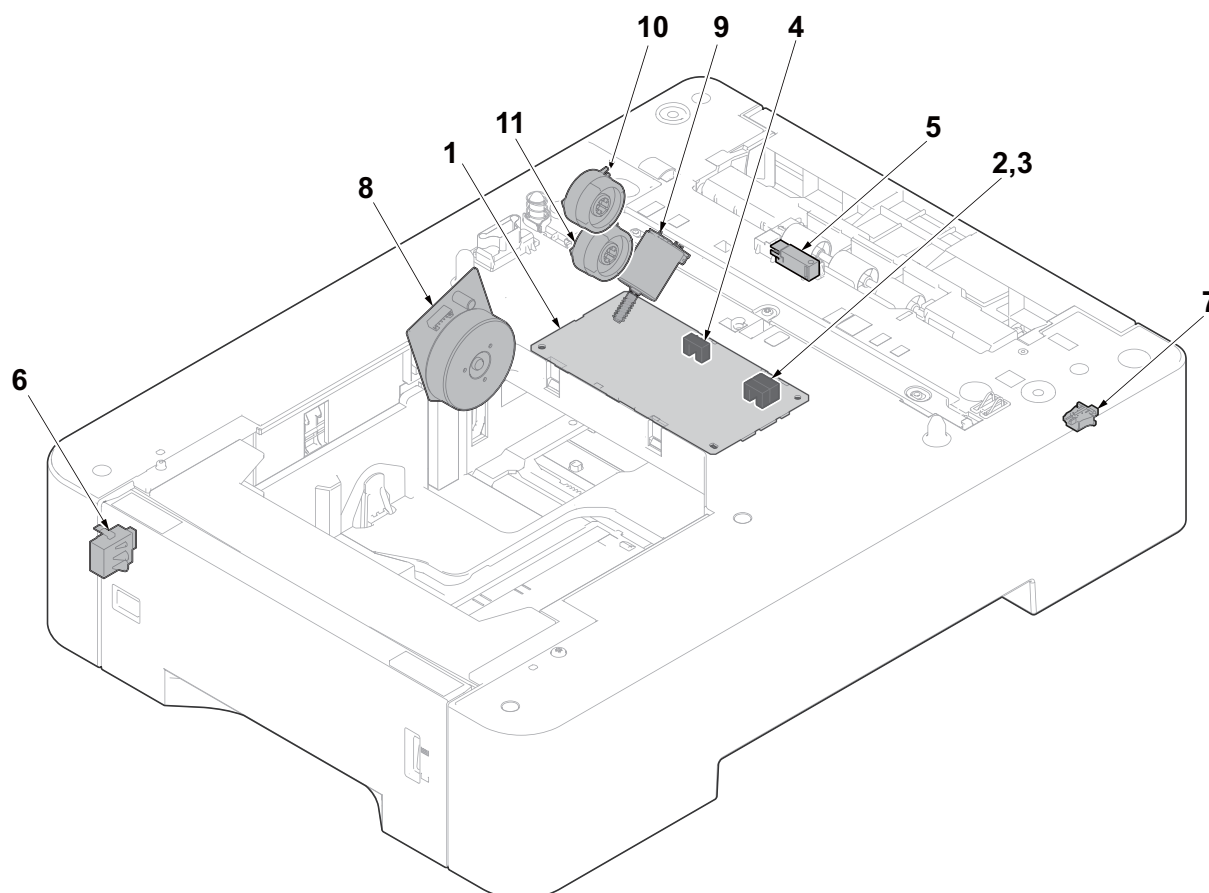
1. Paper feed clutch (PFCL) Controlling the primary paper feeding from the cassette
2. MP conveying clutch (MPFCL) Controlling the drive for the MP conveying section
3. Registration clutch (RCL) Controlling the drive for the secondary paper feeding
4. Middle clutch (MIDCL) Controlling the drive for the paper conveying section
5. Developer clutch (DEVCL) Controlling the drive to developer unit K
6. Duplex clutch (DUCL)*1 Controlling the drive to duplex section
7. MP solenoid (MPSOL) Controlling the MP bottom plate
8. Cleaning lamp K (CL-K) Removing the remaining electric charge on the drum (Black)
9. Cleaning lamp M (CL-M) Removing the remaining electric charge on the drum (Magenta)
10. Cleaning lamp C (CL-C) Removing the remaining electric charge on the drum (Cyan)
11. Cleaning lamp Y (CL-Y) Removing the remaining electric charge on the drum (Yellow)
12. Fuser heater 1 (FUH1) Heating the heat roller
13. Fuser heater 2 (FUH2)*1 Heating the heat roller
14. Fuser thermostat 1 (FUTS1) Shutting off the power supply to the fuser heater when the abnormal high temperature on the heat roller is detected
15. Fuser thermostat 2 (FUTS2)*1 Shutting off the power supply to the fuser heater when the abnormal high temperature on the heat roller is detected

Part name table for the clutches, the solenoids and the others

No.	Name used in service manual	Name used in parts list	Part.No.
1	Paper feed clutch (PFCL)	PARTS CLUTCH 35 Z35R SP	302NR9401_
2	MP conveying clutch (MPFCL)	CLUTCH 50 Z35R	302KV4404_
3	Registration clutch (RCL)	PARTS CLUTCH 35 Z35R SP	302NR9401_
4	Middle clutch (MIDCL)	PARTS CLUTCH 35 Z35R SP	302NR9401_
5	Developer clutch (DEVCL)	PARTS CLUTCH 35 Z35R SP	302NR9401_
6	Duplex clutch (DUCL)*1	PARTS CLUTCH 35 Z35R SP	302NR9401_
7	MP solenoid (MPSOL)	SOLENOID TONER	302GR4415_
8	Cleaning lamp K (CL-K)	DK-5140 (30/35 ppm models) DK-5160 (40 ppm models)	302NR9301_(30/35 ppm models) 302NT9301_(40 ppm models)
9	Cleaning lamp M (CL-M)		
10	Cleaning lamp C (CL-C)		
11	Cleaning lamp Y (CL-Y)		
12	Fuser heater 1 (FH1)	100V: FK-5141 100V: FK-5161 120V: FK-5142 120V: FK-5162 230V: FK-5140 230V: FK-5160	302NR9310_(30 ppm models) 302NT9310_(35/40 ppm models) 302NR9311_(30 ppm models) 302NT9311_(35/40 ppm models) 302NR9309_(30 ppm models) 302NT9309_(35/40 ppm models)
13	Fuser heater 2 (FH2) *1	100V: FK-5161 120V: FK-5162 230V: FK-5160	302NT9310_(35/40 ppm models) 302NT9311_(35/40 ppm models) 302NT9309_(35/40 ppm models)

No.	Name used in service manual	Name used in parts list	Part.No.
14	Fuser thermostat 1 (FUTS1)	100V: FK-5141 100V: FK-5161 120V: FK-5142 120V: FK-5162 230V: FK-5140 230V: FK-5160	302NR9310_(30 ppm models) 302NT9310_(35/40 ppm models) 302NR9311_(30 ppm models) 302NT9311_(35/40 ppm models) 302NR9309_(30 ppm models) 302NT9309_(35/40 ppm models)
15	Fuser thermostat 2 (FUTS2) *1	100V: FK-5161 120V: FK-5162 230V: FK-5160	302NT9310_(35/40 ppm models) 302NT9311_(35/40 ppm models) 302NT9309_(35/40 ppm models)

*1: for 35/40 ppm models only

(4-5) Paper feeder (Optinal unit)**Figure 3-22**

- | | |
|--|---|
| 1. PF main PWB (PFMPWB) | Interfacing to the main unit and controlling the entire paper feeder |
| 2. PF paper sensor 1(PFPS1)..... | Detecting the level of the remaining paper inside the cassette |
| 3. PF paper sensor 2(PFPS2)..... | Detecting the level of the remaining paper inside the cassette |
| 4. PF lift sensor (PFLS)..... | Detecting the upper limit when lifting the bottom plate inside the cassette |
| 5. PF paper feed sensor (PFFS) | Detecting the paper jam at the paper feeder |
| 6. PF cassette size switch (PFCSSW)..... | Detecting the paper size setting by the size dial |
| 7. PF rear cover switch (PFRCSW) | Consisting of the safety circuit when opening and closing the PF rear cover |
| 8. PF paper feed motor (PFPFM) | Driving the paper feeding system |
| 9. PF lift motor (PFLM)..... | Operating the bottom plate inside the cassette |
| 10. PF paper feed clutch(PFPFCL)..... | Controlling the timing for the paper feeding |
| 11. PF conveying clutch(PFPCCL) | Controlling the paper conveying |

Part name table

No.	Name used in service manual	Name used in parts list	Part.No.
1	PF main PWB (PFMPWB)	PARTS PWB ASSY PF MAIN SP	303PK9401_
2	PF paper sensor 1 (PFPS1)		
3	PF paper sensor 2 (PFPS2)		
4	PF lift sensor (PFLS)		
5	PF paper feed sensor (PFFS)	PARTS SENSOR OPT. SP	303NW9406_
6	PF cassette size switch (PFC-SSW)	SWITCH SIZE	302HN4418_
7	PF rear cover switch (PFRCSW)	SW.PUSH	7SP01000004+H01
8	PF paper feed motor (PFPFM)	PARTS DRIVE UNIT SP	303PK9402_
9	PF lift motor (PFLM)		
10	PF paper feed clutch(PFPFCL)		
11	PF conveying clutch (PFPCCL)		

(5) Drive unit

(5-1) Wire connection

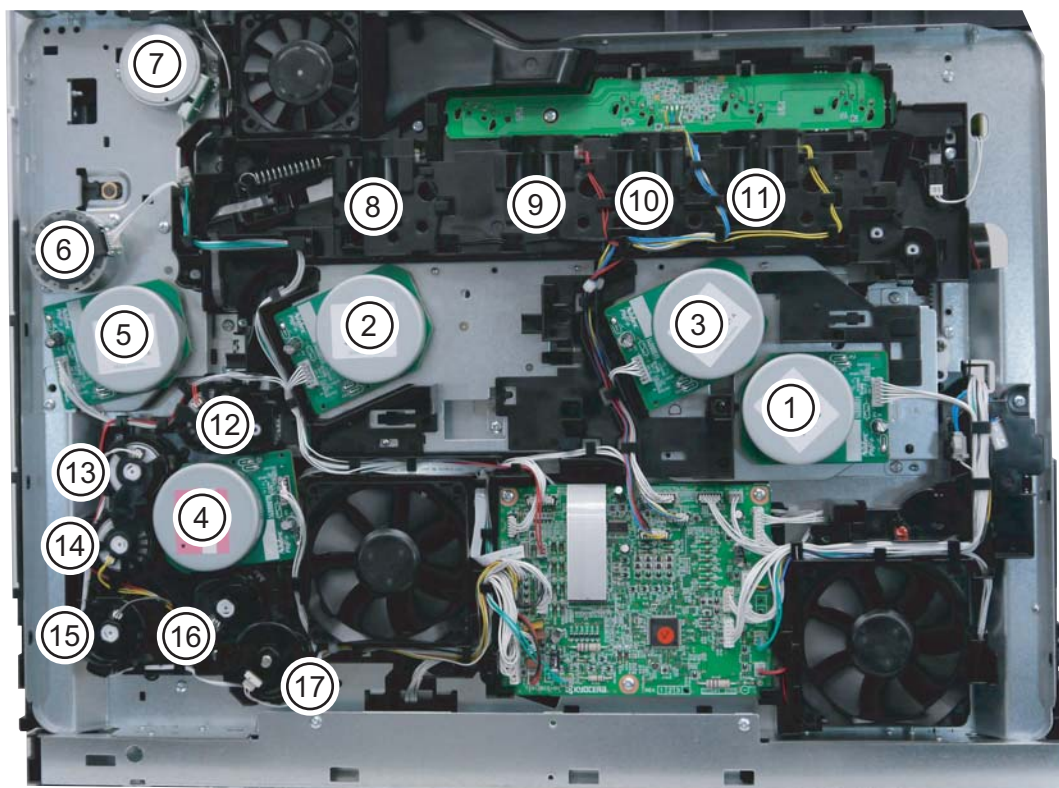


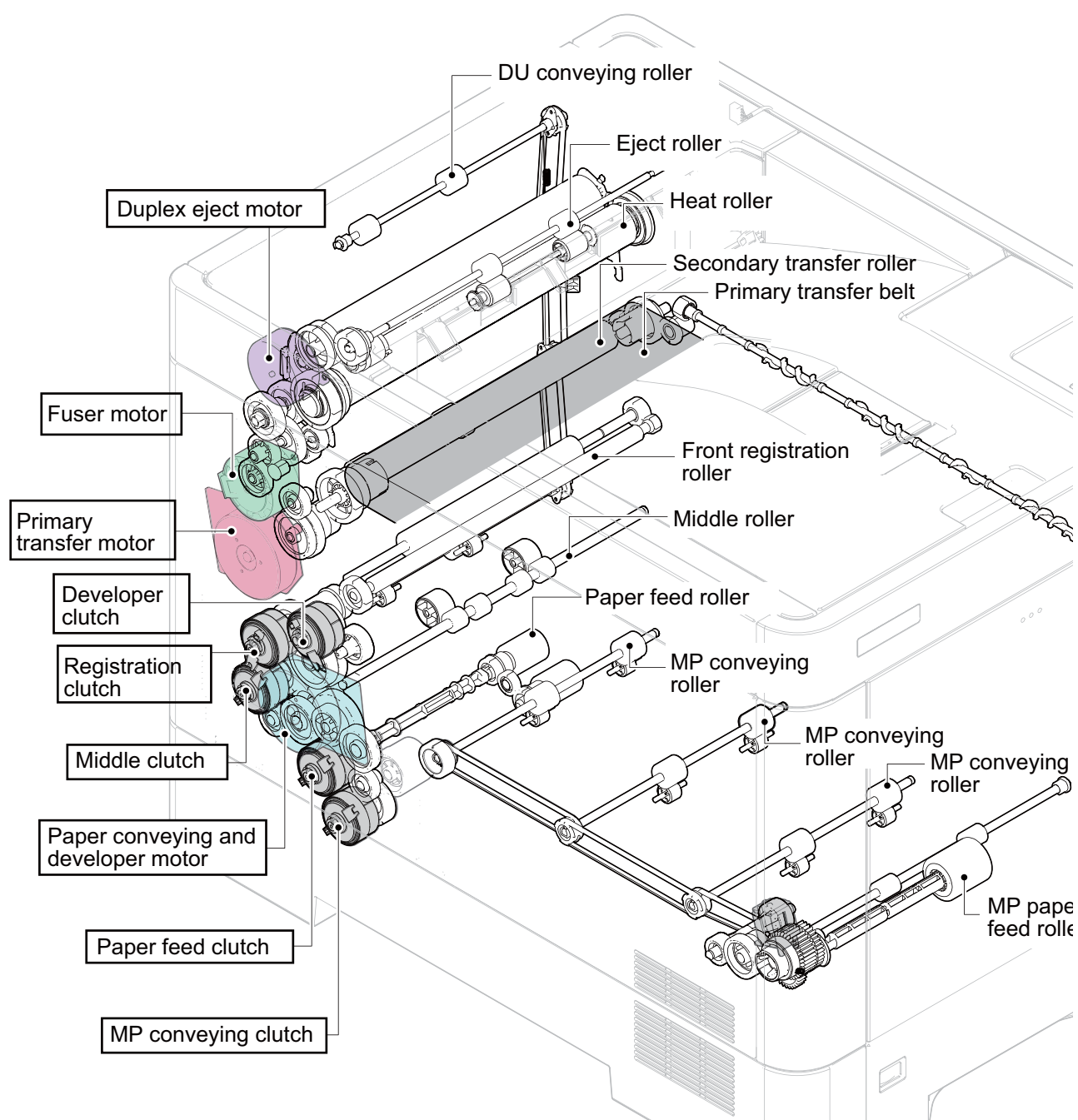
Figure 3-23

- | | |
|------------------------------|-------------------------|
| 1. Developer motor | 10. Toner motor (C) |
| 2. Drum motor 1 | 11. Toner motor (Y) |
| 3. Drum motor 2 | 12. Developer clutch |
| 4. Conveying developer motor | 13. Registration clutch |
| 5. Primary transfer motor | 14. Middle clutch |
| 6. Fuser motor | 15. Duplex clutch*1 |
| 7. Duplex eject motor | 16. Paper feed clutch |
| 8. Toner motor (K) | 17. MP conveying clutch |
| 9. Toner motor (M) | |

*1: for 35/40 ppm models only

(5-2) Drive system for the paper conveying

30 ppm models

**Figure 3-24**

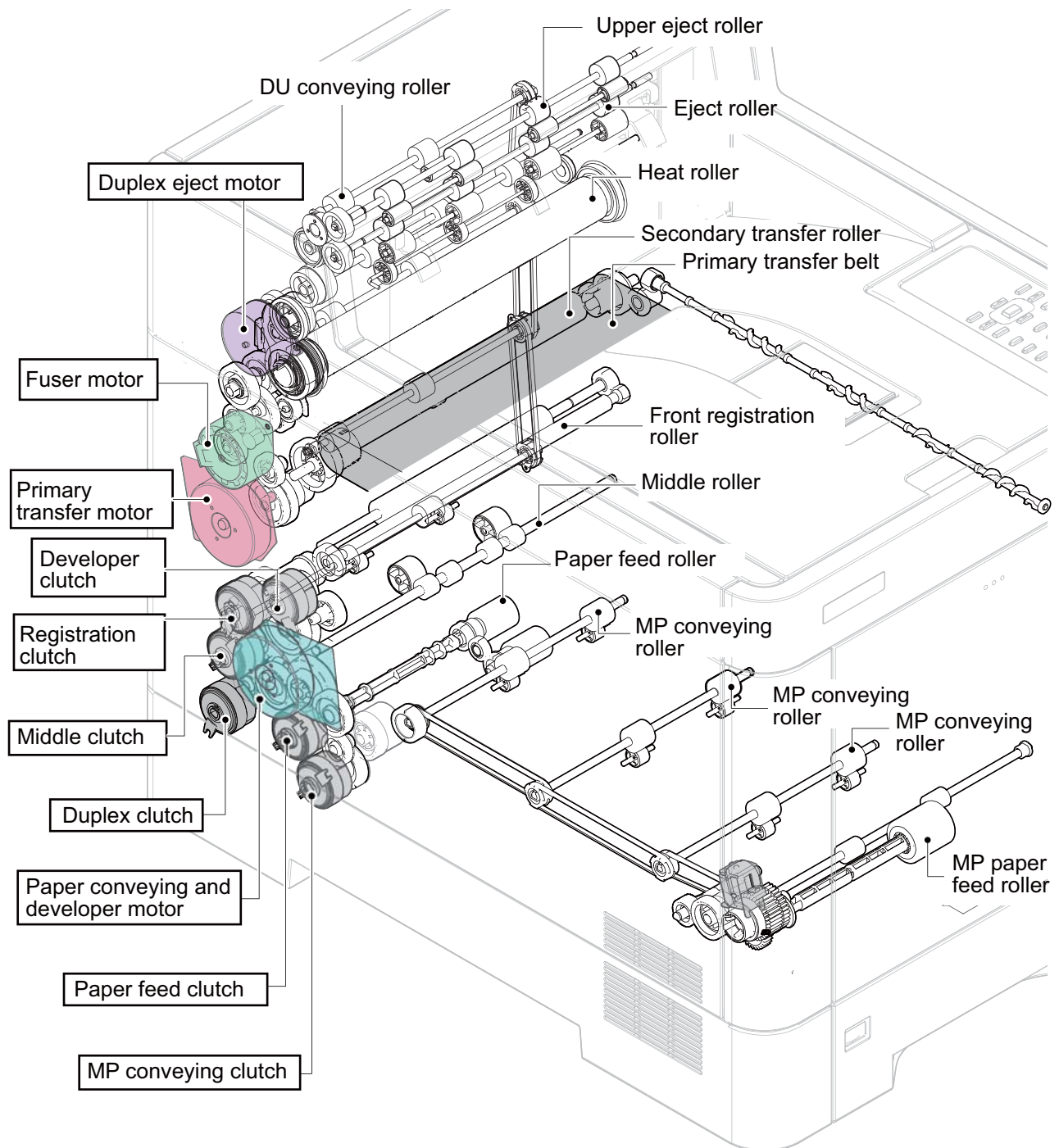


Figure 3-25

(5-3) Unit Design

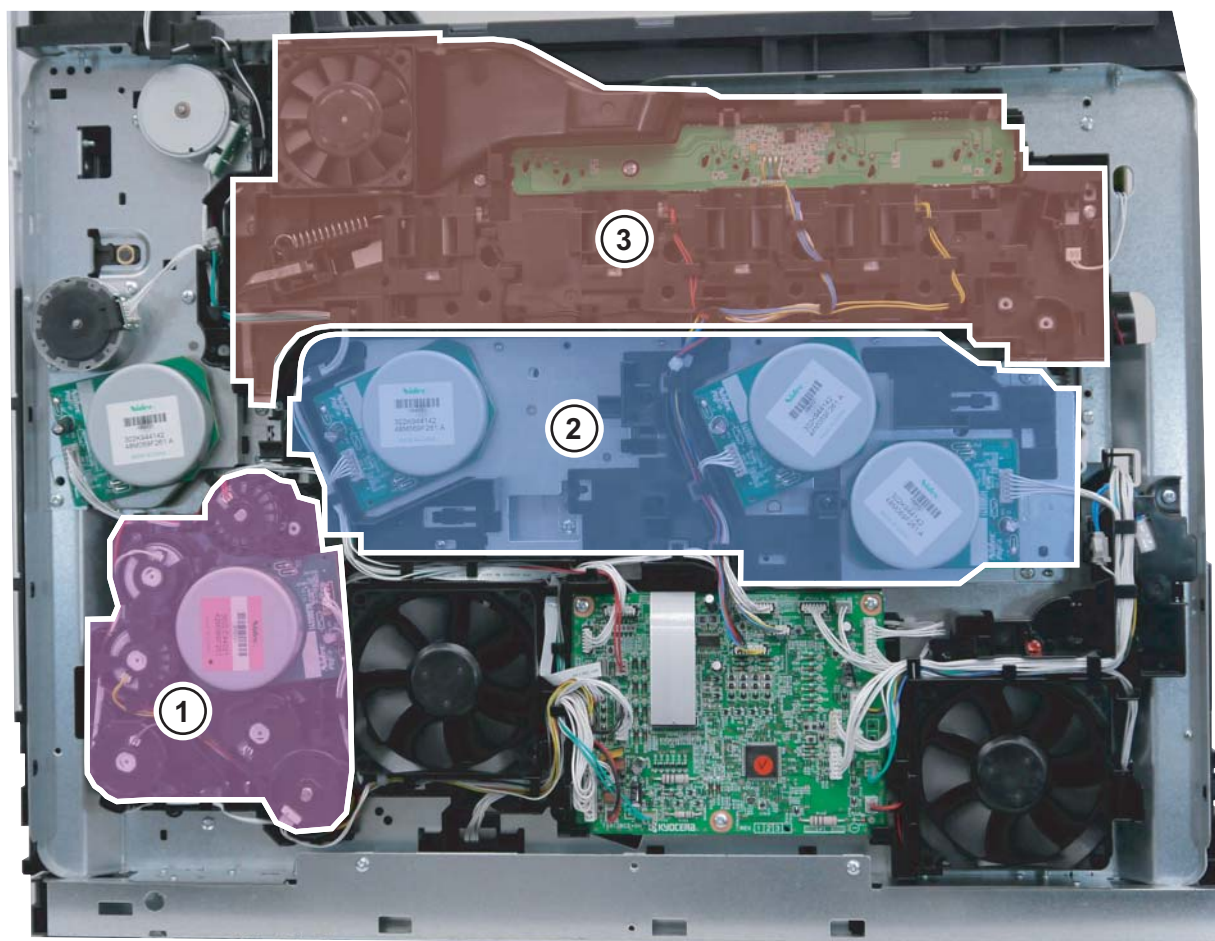


Figure 3-26

1. Paper conveying and Developer K drive section

2. Main drive motor section
3. Toner motor section

1. Paper conveying and Developer K drive section

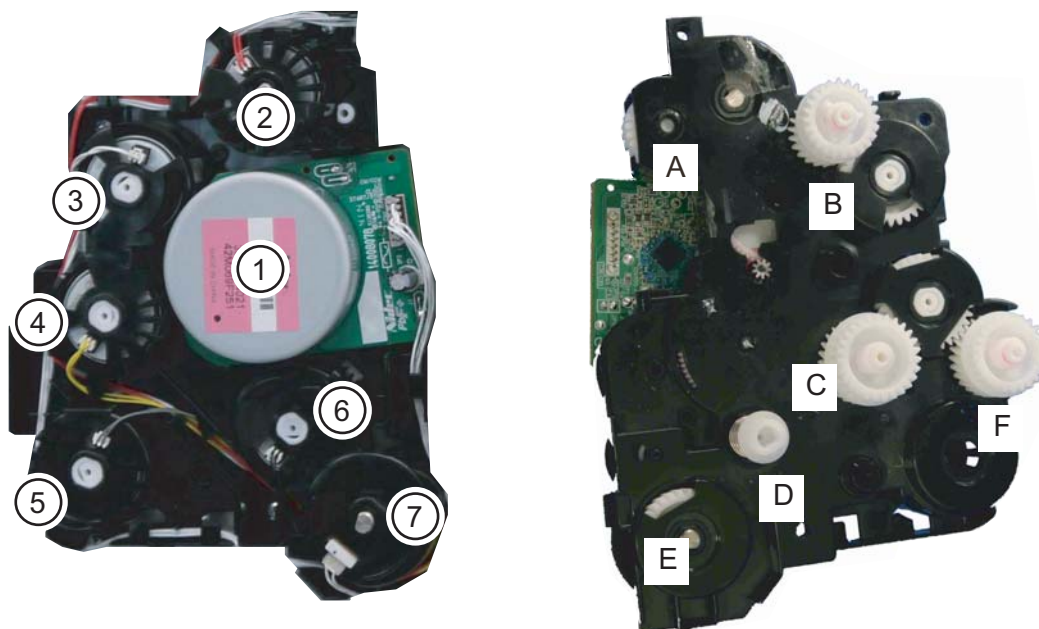


Figure 3-27

- 1. Paper conveying and developer motor
- 2. Developer clutch
- 3. Registration clutch
- 4. Middle clutch

- 5. Duplex clutch*1
- 6. Paper feed clutch
- 7. MP conveying clutch

*1: for 35/40 ppm models only

- A. Joint gear (Developer unit K: Clutch 2)
- B. Joint gear (Registration roller: Clutch 3)
- C. Joint gear (Middle roller: Clutch 4)
- D. Joint coupling (Paper feed roller: Clutch 5)
- E. Joint gear (MP conveying roller: Clutch 6)
- F. Joint gear (DU conveying roller: Clutch 4) for 30 ppm models
Joint gear (DU conveying roller: Clutch 5) for 35/40 ppm models

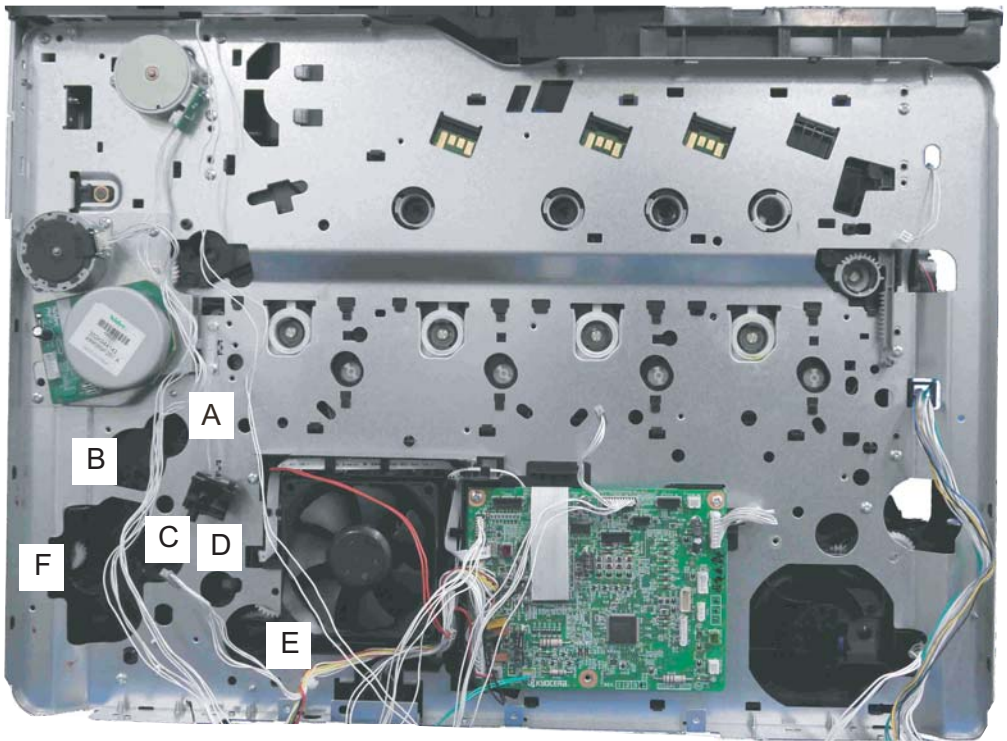


Figure 3-28

Name used in service manual	Name used in parts list	Part.No.
Paper conveying drive unit	PARTS FEED DRIVE ASSY SP	302NR9426_(30 ppm models)
		302NT9408_(35/40 ppm models)

2. Main drive motor section

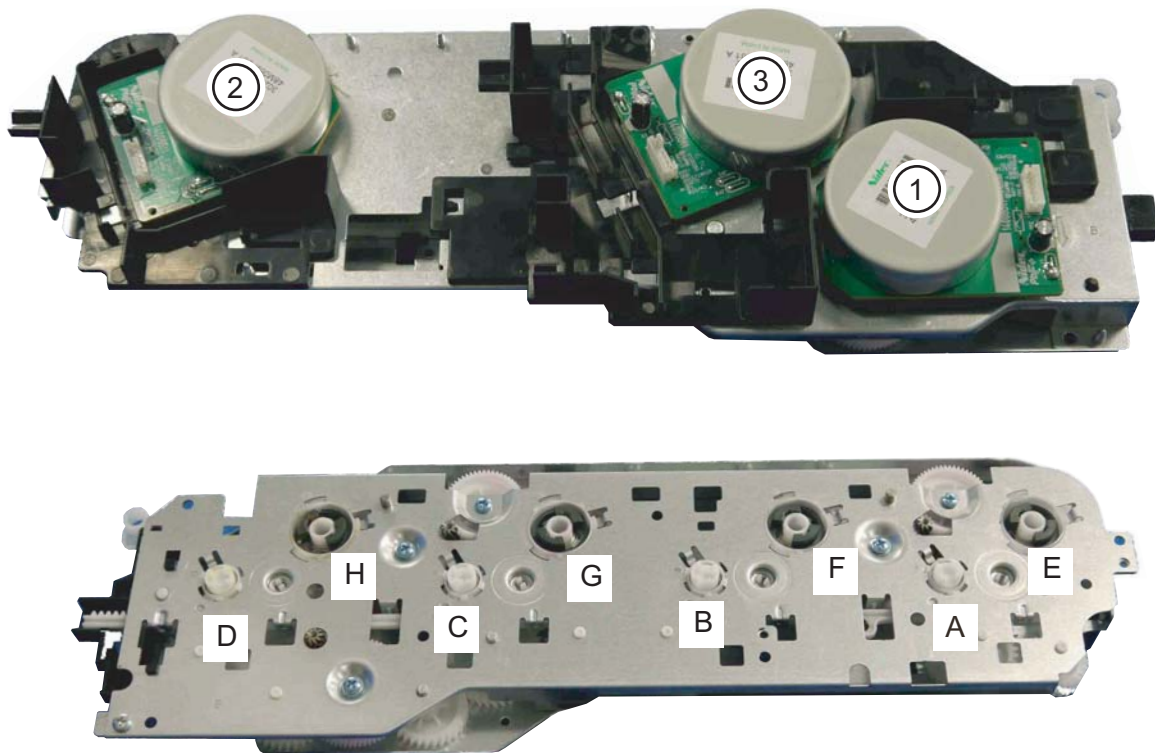


Figure 3-29 Main drive motor unit

1. Developer motor (Driving developer unit C, M and Y)
2. Drum motor 1 (Driving drum unit K and M)
3. Drum motor 2 (Driving drum unit C and Y)

- A. Developer drive coupling K (Driving developer unit K)
- B. Developer drive coupling M (Driving developer unit M)
- C. Developer drive coupling C (Driving developer unit C)
- D. Developer drive coupling Y (Driving developer unit Y)
- E. Drum drive coupling K (Driving drum unit K)
- F. Drum drive coupling M (Driving drum unit M)
- G. Drum drive coupling C (Driving drum unit C)
- H. Drum drive coupling Y (Driving drum unit Y)

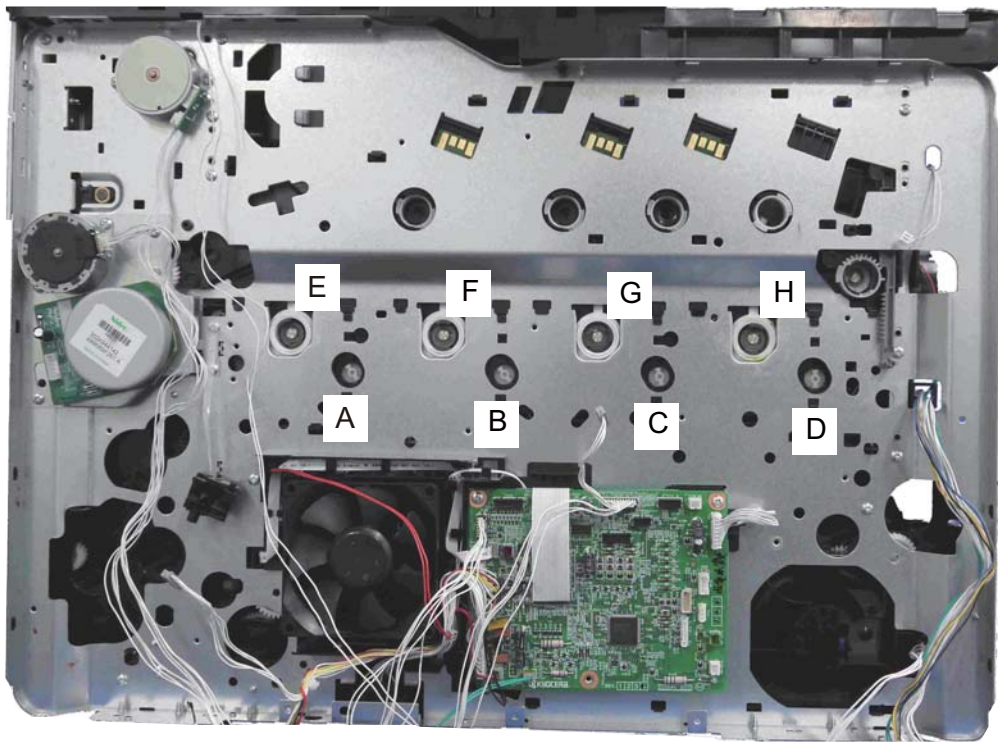


Figure 3-30

Name used in service manual	Name used in parts list	Part.No.
Main drive motor unit	DR-5140	302NR9313_(30 ppm models)
	DR-5150	302NT9312_(35 ppm models)
	DR-5160	302NT9321_(40 ppm models)

3. Toner motor section

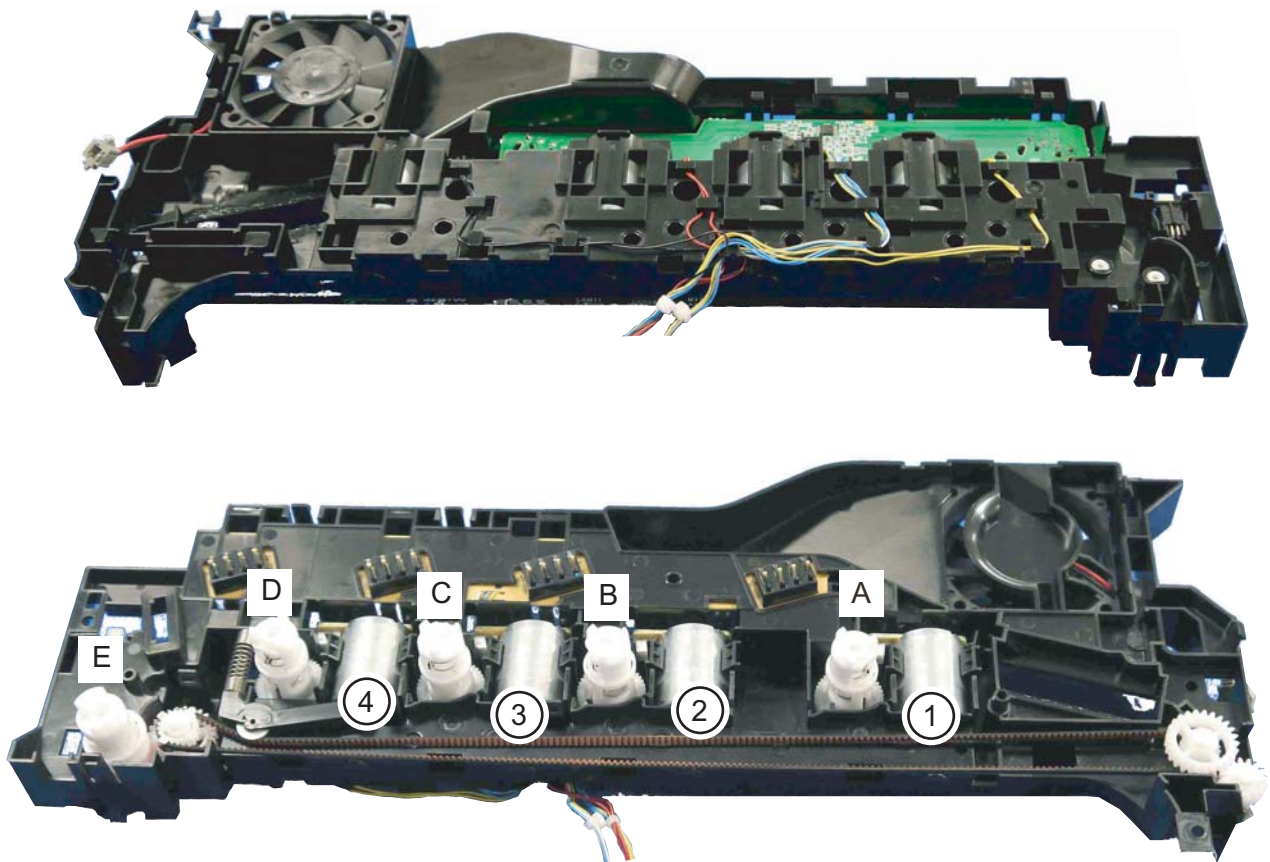


Figure 3-31

1. Toner motor K (Driving toner container K)
2. Toner motor M (Driving toner container M)
3. Toner motor C (Driving toner container C)
4. Toner motor Y (Driving toner container Y)

- A. Container drive coupling K (Driving toner container K)
- B. Container drive coupling M (Driving toner container M)
- C. Container drive coupling C (Driving toner container C)
- D. Container drive coupling Y (Driving toner container Y)
- E. Transfer cleaning drive coupling (Primary transfer cleaning drive)

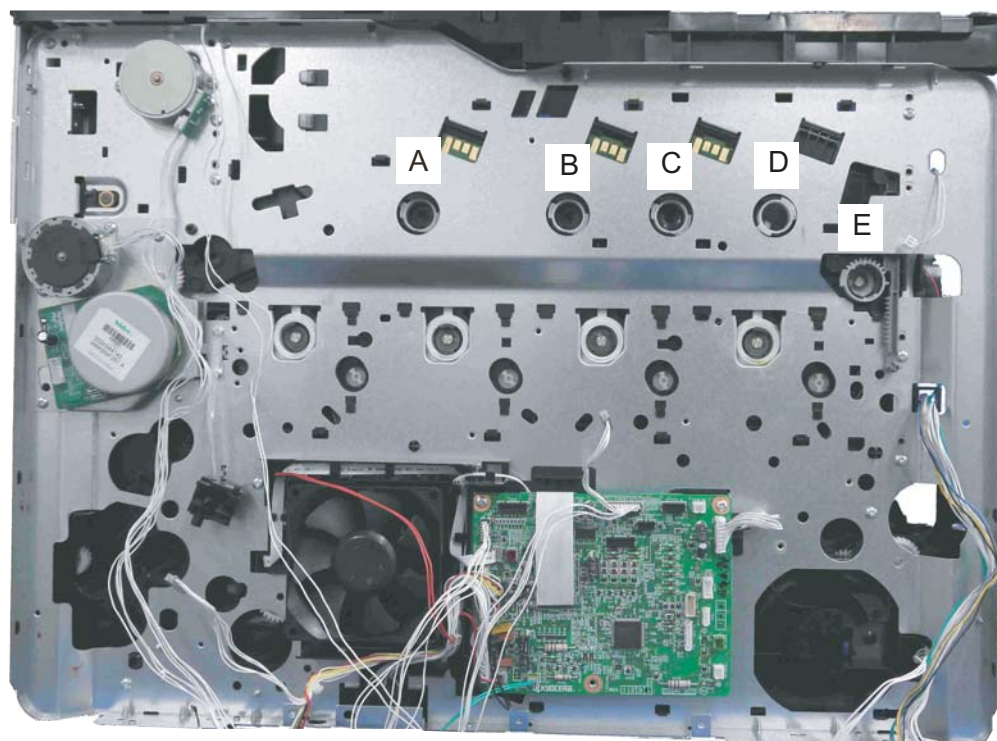


Figure 3-32

3-3 Paper feed and conveying section

The paper feed and conveying section consists of the cassette paper feed section and the MP tray paper feed section, and the paper conveying section conveying the fed paper to the transfer and separat

(1) Cassette paper feed section

The cassette can load 500 sheets of plain paper (80g/m²), and forwards the paper by rotating the pickup roller and conveys the paper to the paper conveying section by rotating the paper feed roller.

[Components parts]

1. Paper feed roller
2. Pickup roller
3. Paper feed holder
4. Retard roller
5. Retard holder
6. Separation pad
7. Bottom plate
8. Paper width guides
9. Paper length guide
10. Cassette base
11. Actuator
(Paper sensor 1, 2)

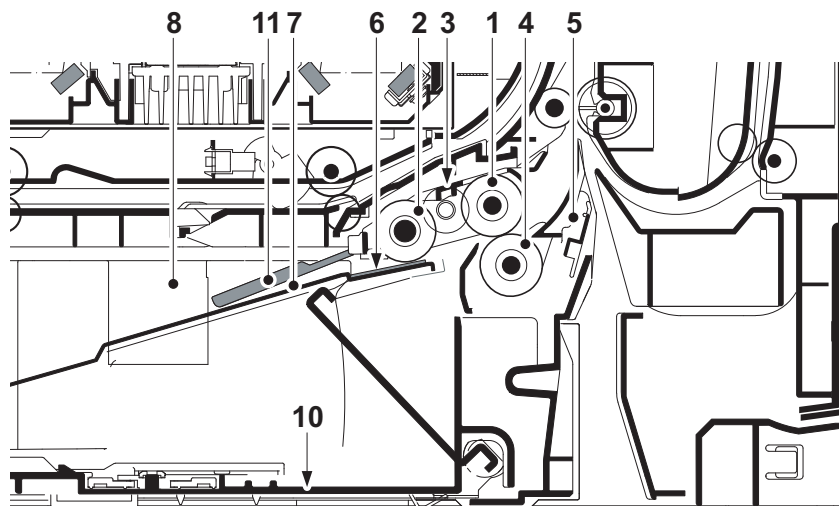


Figure 3-33

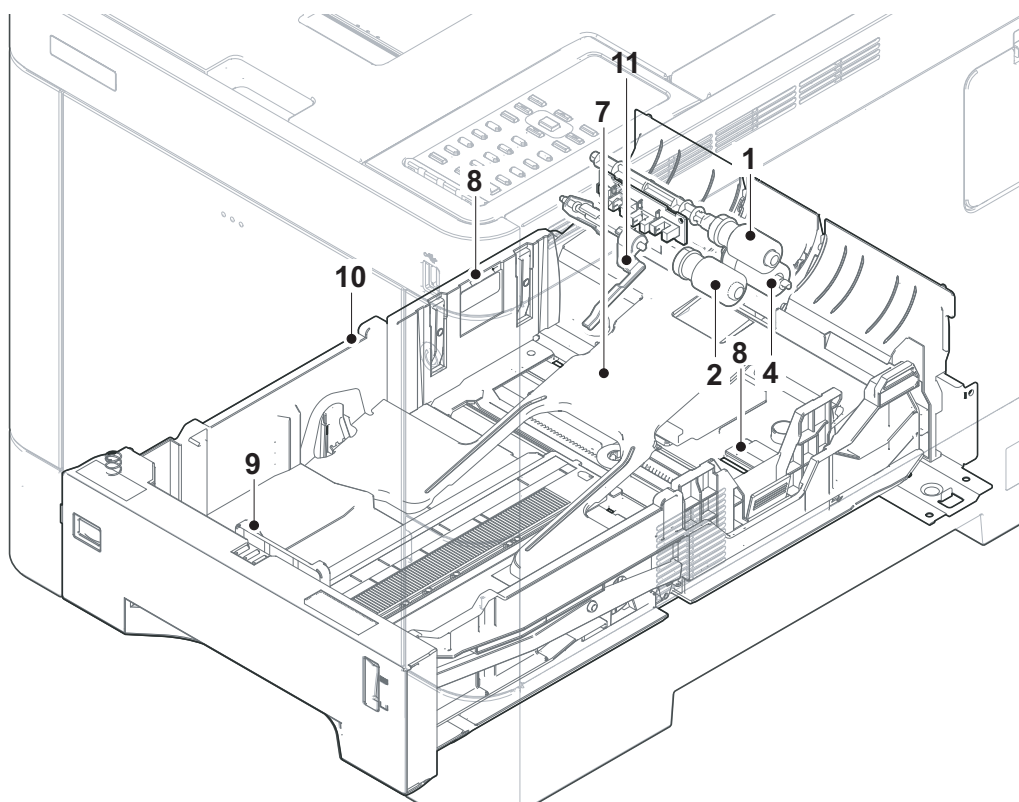


Figure 3-34

[Control block diagram]

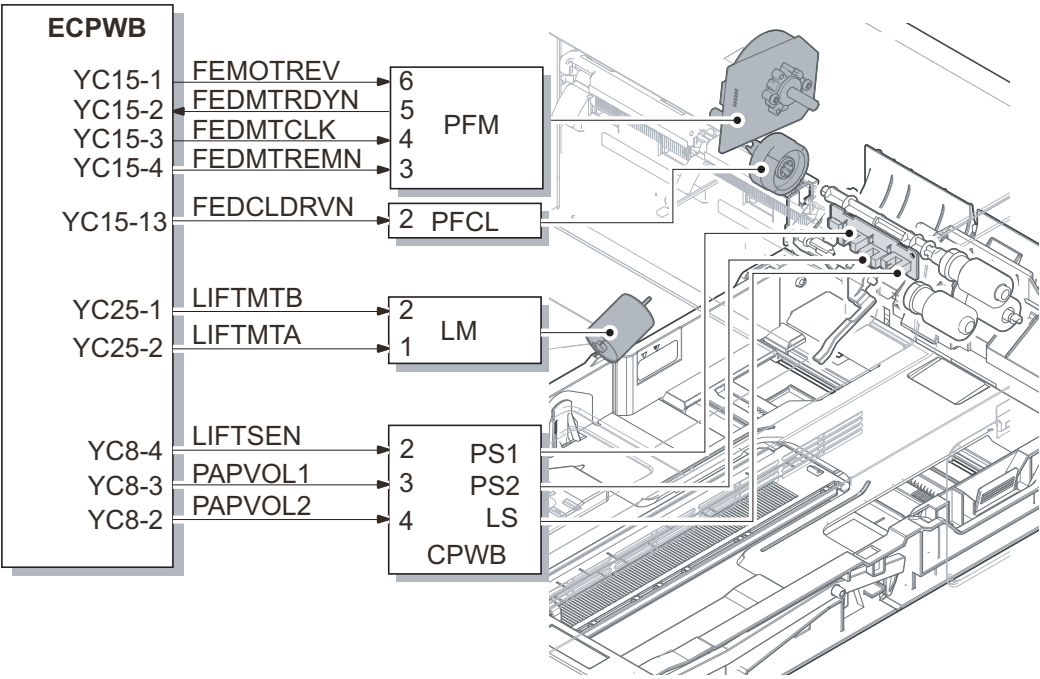


Figure 3-35

(2) MP tray paper feed section

The MP tray can load 100 sheets of plain paper (80g/m²). The paper on the MP tray is fed by rotating the MP paper feed roller and operating the MP bottom plate according to the MP solenoid. Multi-feeding is prevented by the effect of the MP separation pad.

[Components parts]

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

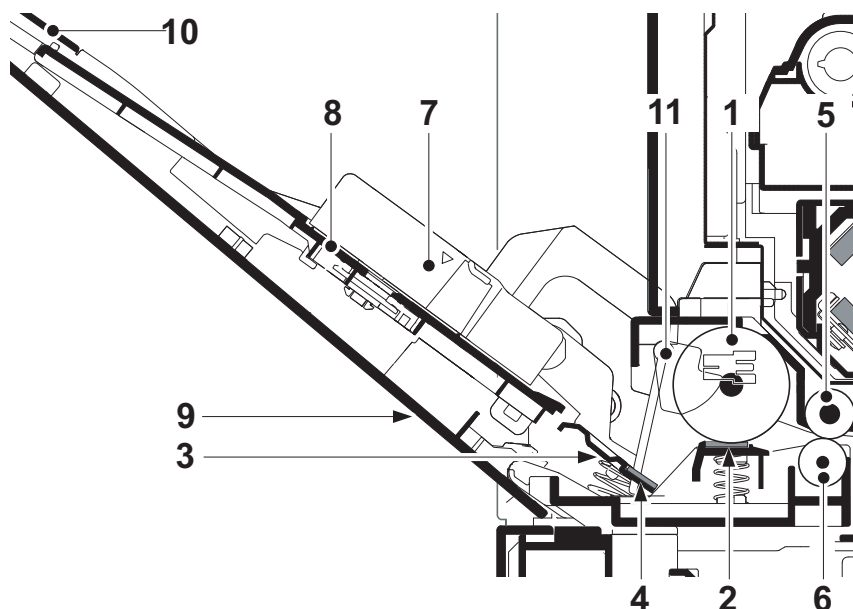


Figure 3-36

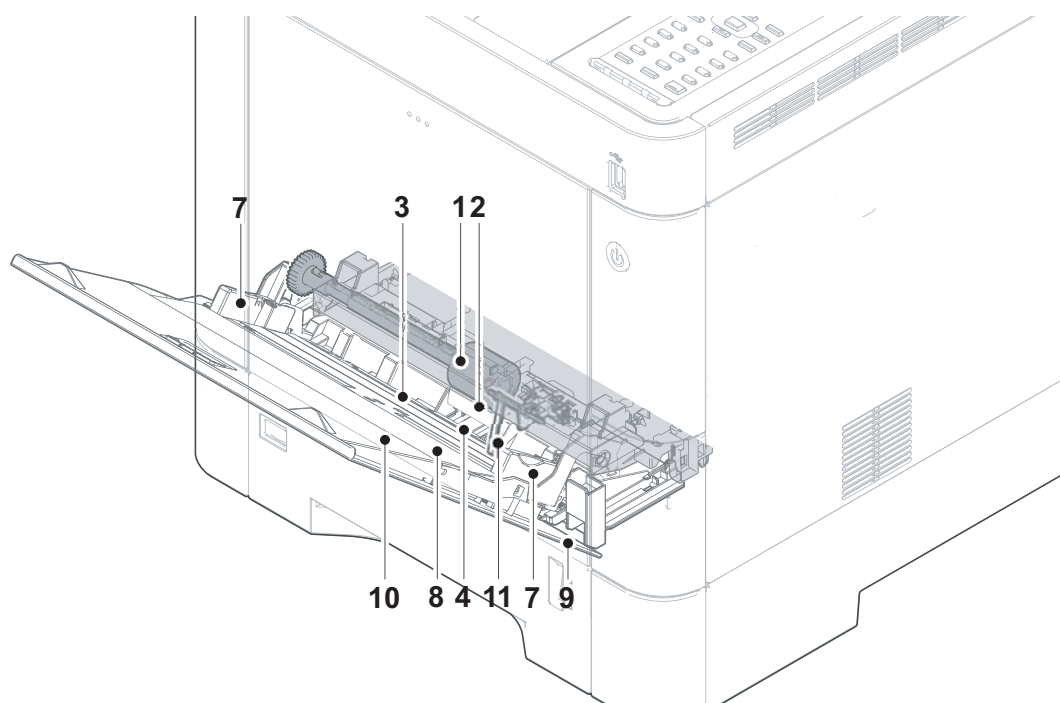


Figure 3-37

[Control block diagram]

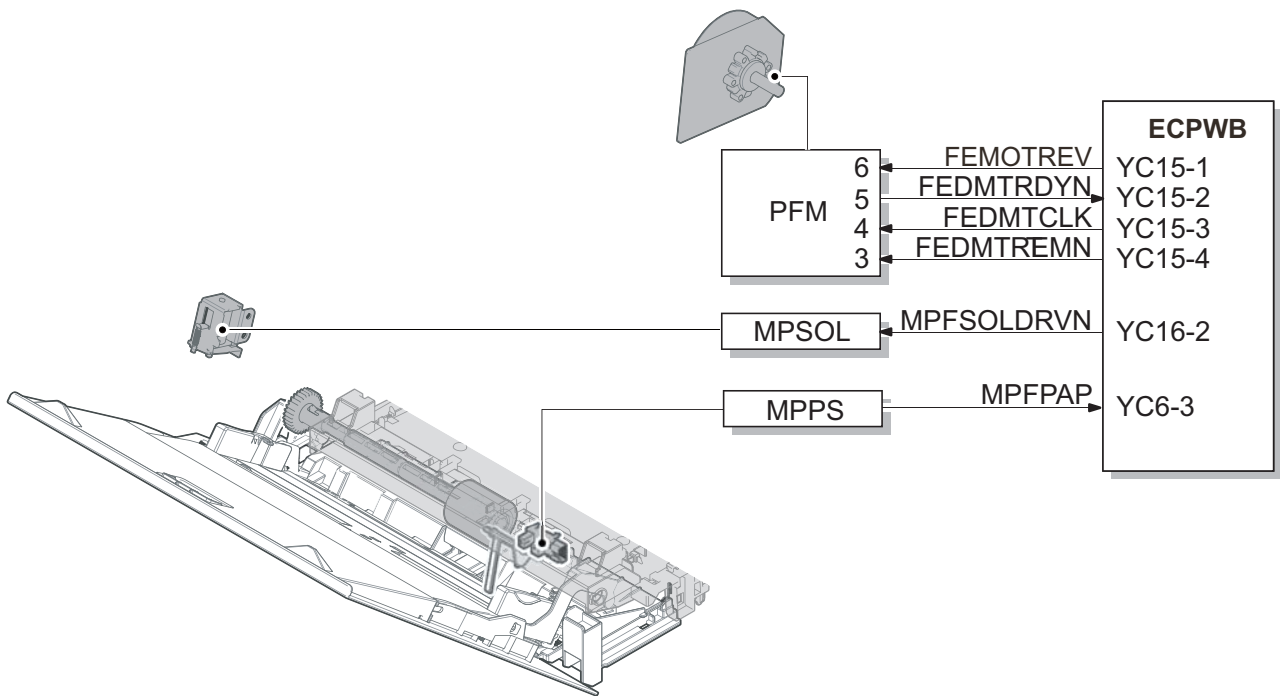


Figure 3-38

(3) Paper conveying section

The paper conveying section conveys paper to the transfer and separation section when the paper is fed from the cassette or the MP tray, or re-fed in the duplex print. The fed paper is conveyed to where it turns the registration sensor on by the middle roller or the MP conveying roller, and then, conveyed to the transfer and separation section by the registration front and rear rollers.

[Components parts]

1. MP conveying roller
2. MP conveying pulley
3. Upper MP conveying guide
4. Lower MP conveying guide
5. Middle roller
6. Middle pulley
7. Front registration roller
8. Rear registration roller
9. MP conveying sensor
10. Actuator
(MP conveying sensor)
11. Registration sensor

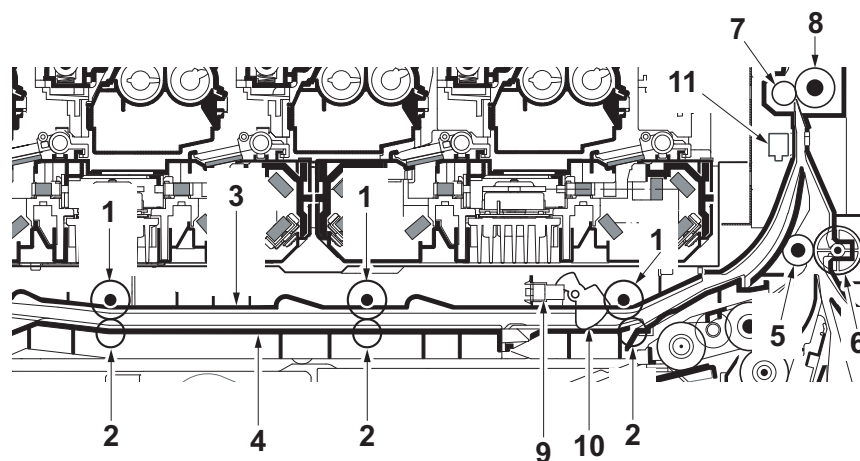


Figure 3-39

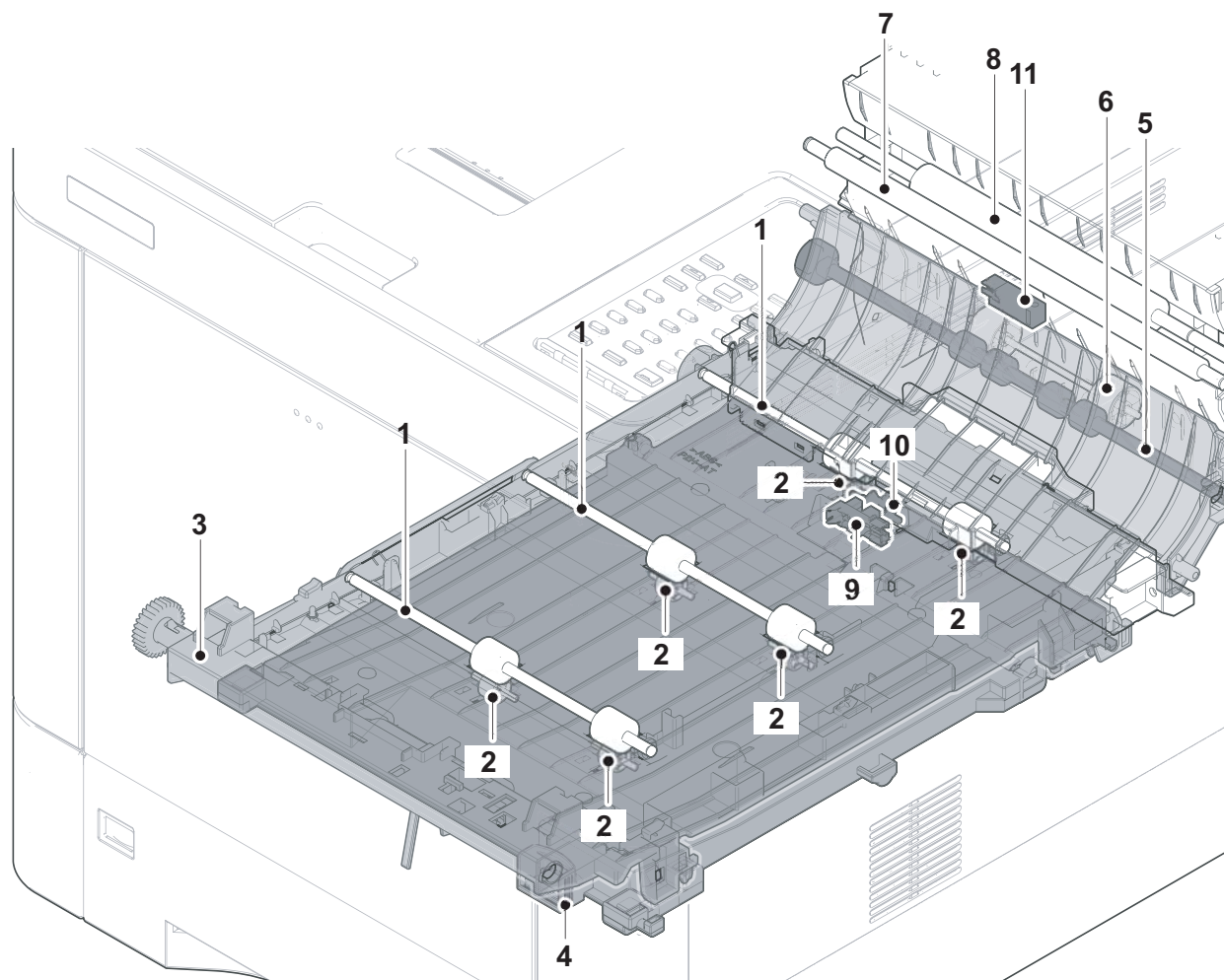


Figure 3-40

[Control block diagram]

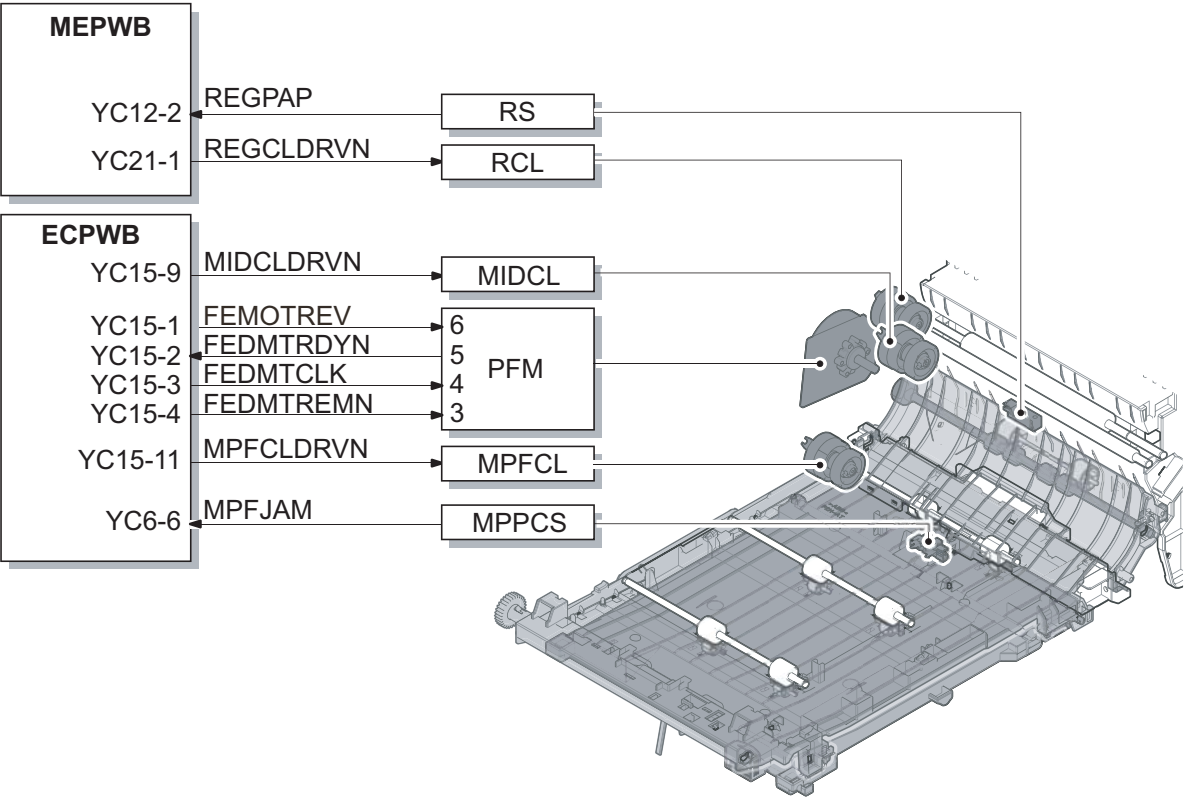


Figure 3-41

3-4 Optical section

The optical section consists of the laser scanner section to write the image.

(1) Laser scanner unit

The charged drum surface is scanned by the laser emitted from the laser scanner units. The laser reflects to the polygon mirrors by rotating the polygon motor so that the laser scans horizontally to the image. The laser scanner unit has some lenses and mirrors, that adjust the diameter of the laser to focus the laser to the drum surface. Also, the LSU cleaning motor operates to automatically clean the LSU glass.

[Components parts]

1. Polygon motor
2. Polygon mirror
3. f lens A
4. f lens B
5. Mirror A
6. Mirror B
7. Mirror C
8. LSU glass
9. Spiral

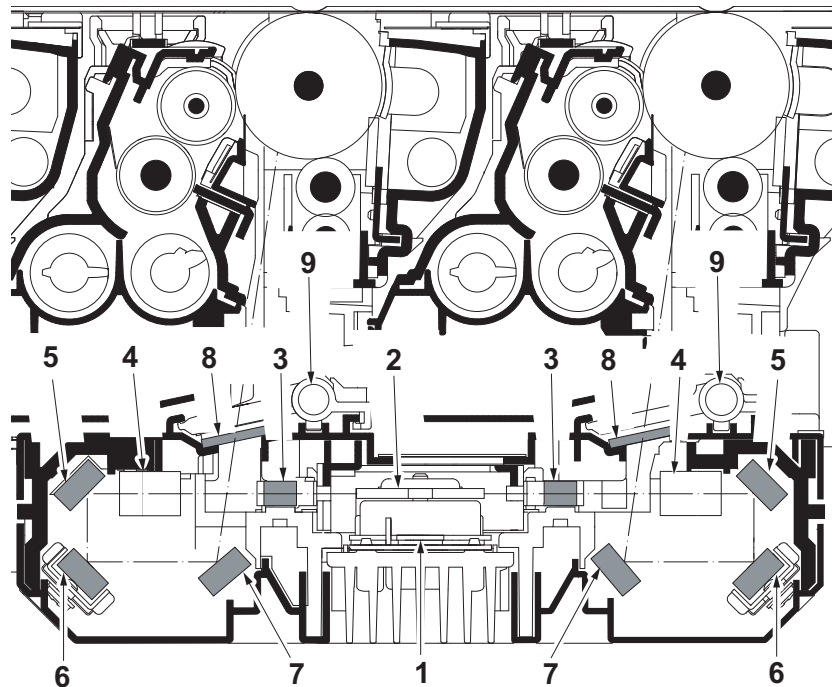


Figure 3-42

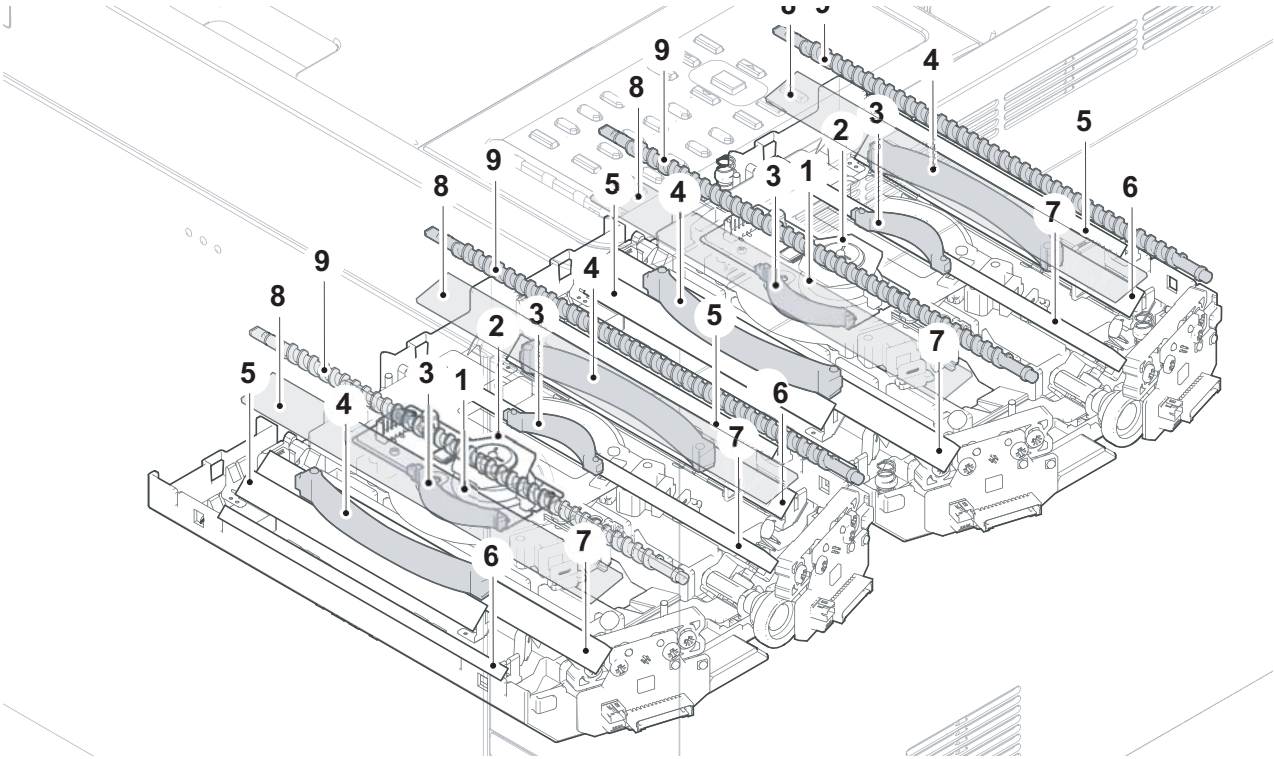


Figure 3-43

3-5 Developer section

(1) Developer unit

The developer section consists of the magnet roller forming the magnetic brush, the sleeve roller forming the thin layer by replacing the toner, the developer blade, and the developer screw mixing up the toner. The toner density is adjusted by impressing the bias to the magnet roller and the sleeve roller. The toner amount inside the developer unit is detected by the toner sensor.

[Components parts]

1. Sleeve roller
2. Magnet roller
3. Developer screw A
4. Developer screw B
5. Developer blade
6. Developer case
7. Developer top cover
8. Developer base
9. Toner sensor

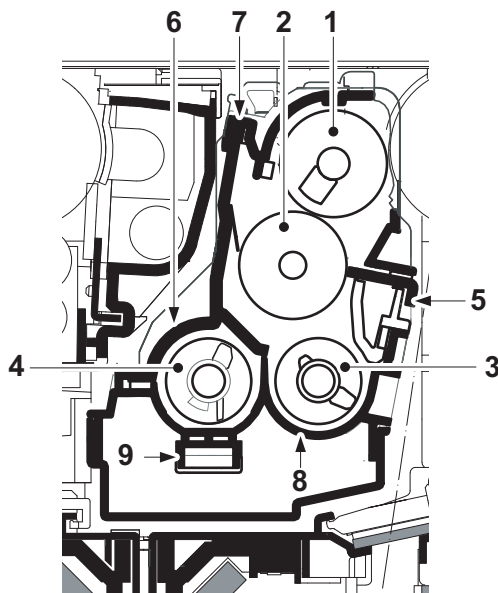


Figure 3-45

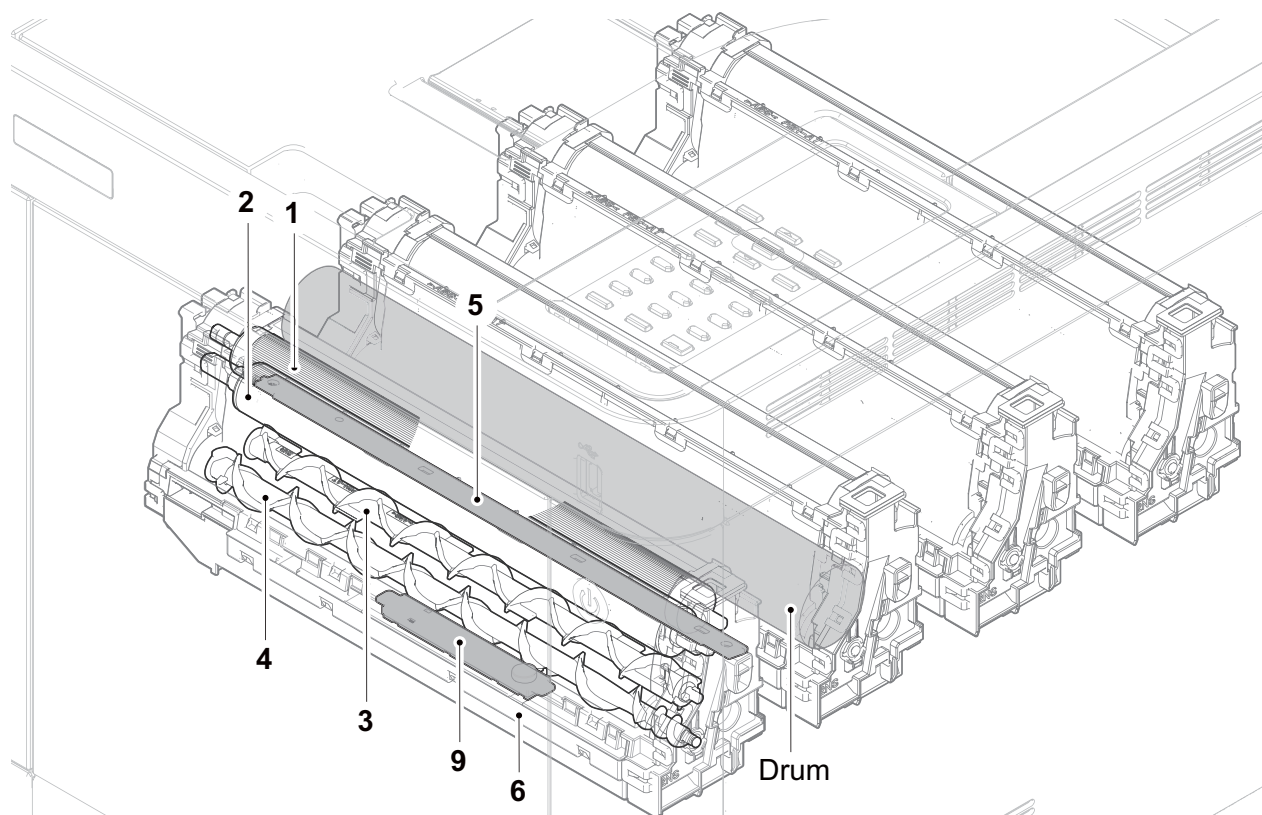


Figure 3-46

[Control block diagram]

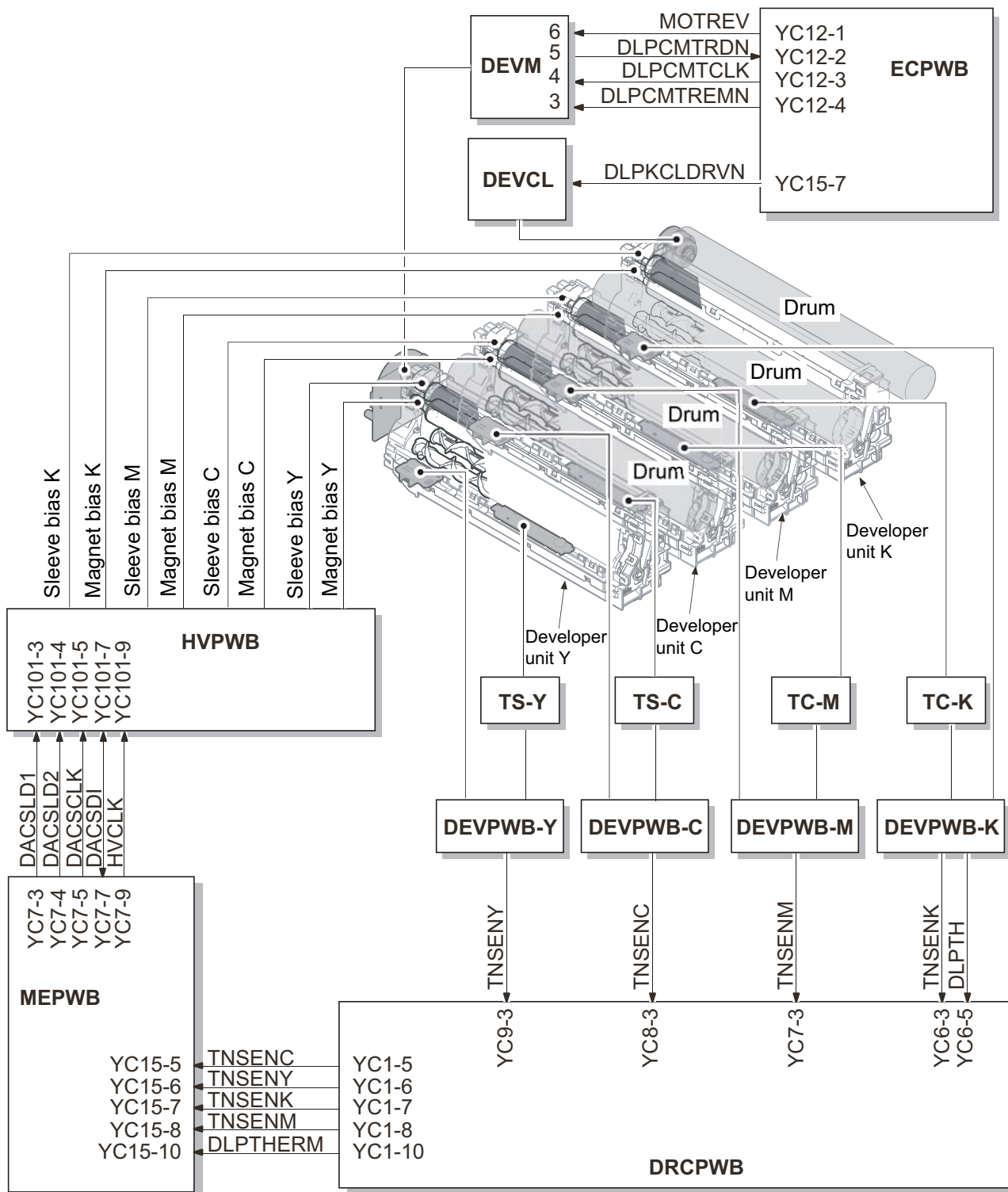


Figure 3-47

3-6 Drum section

The drum section consists of the drum, the charger roller unit, and the cleaning unit. The drum surface is evenly charged to prepare forming the electrical latent image by emitting the laser.

(1) Charger roller unit

The charged roller with the electric charge contacts the drum surface and rotates to charge the drum evenly.

[Components parts]

1. Drum
2. Charger roller
3. Charger cleaning roller
4. Charger case

(2) Cleaning unit

The remaining toner on the drum surface after transferring is removed by the cleaning blade, and collected to the waste toner box by the drum screw. The cleaning lamp consists of the LED lamp, and it removes the remaining electric charge on the drum before the main charge.

[Components parts]

5. Drum frame
6. Cleaning blade
7. Drum screw
8. Cleaning lamp

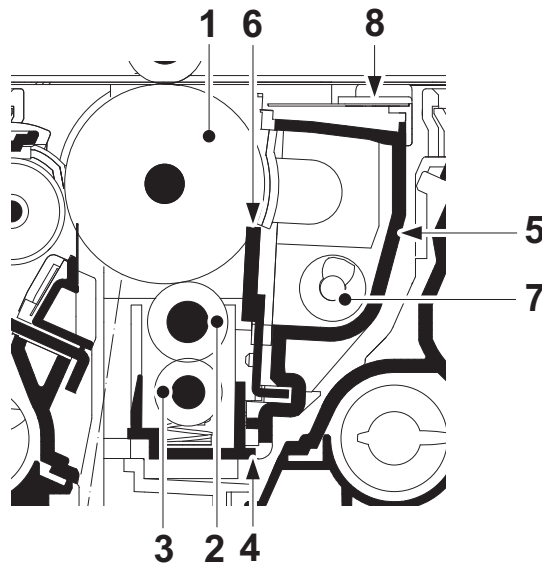


Figure 3-48

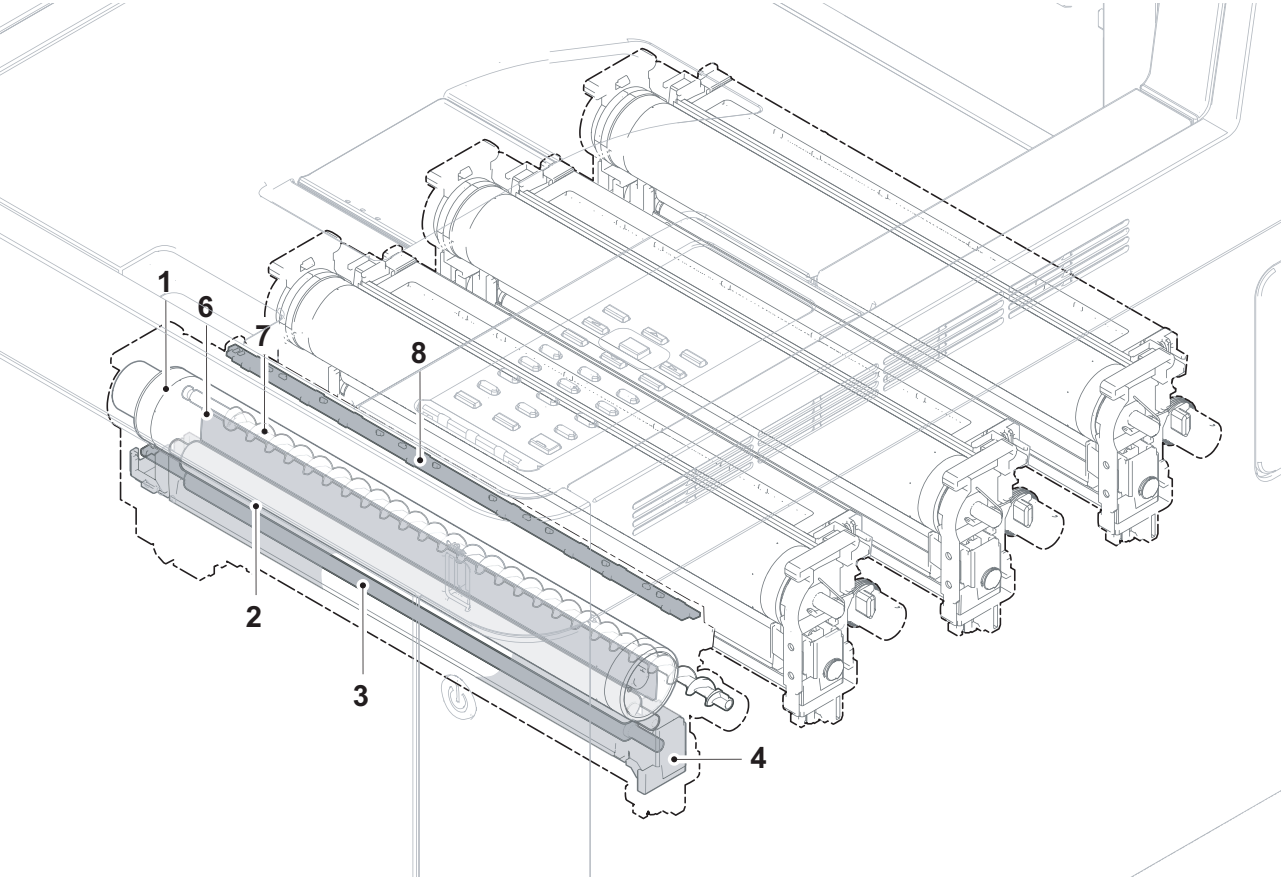


Figure 3-49

[Control block diagram]

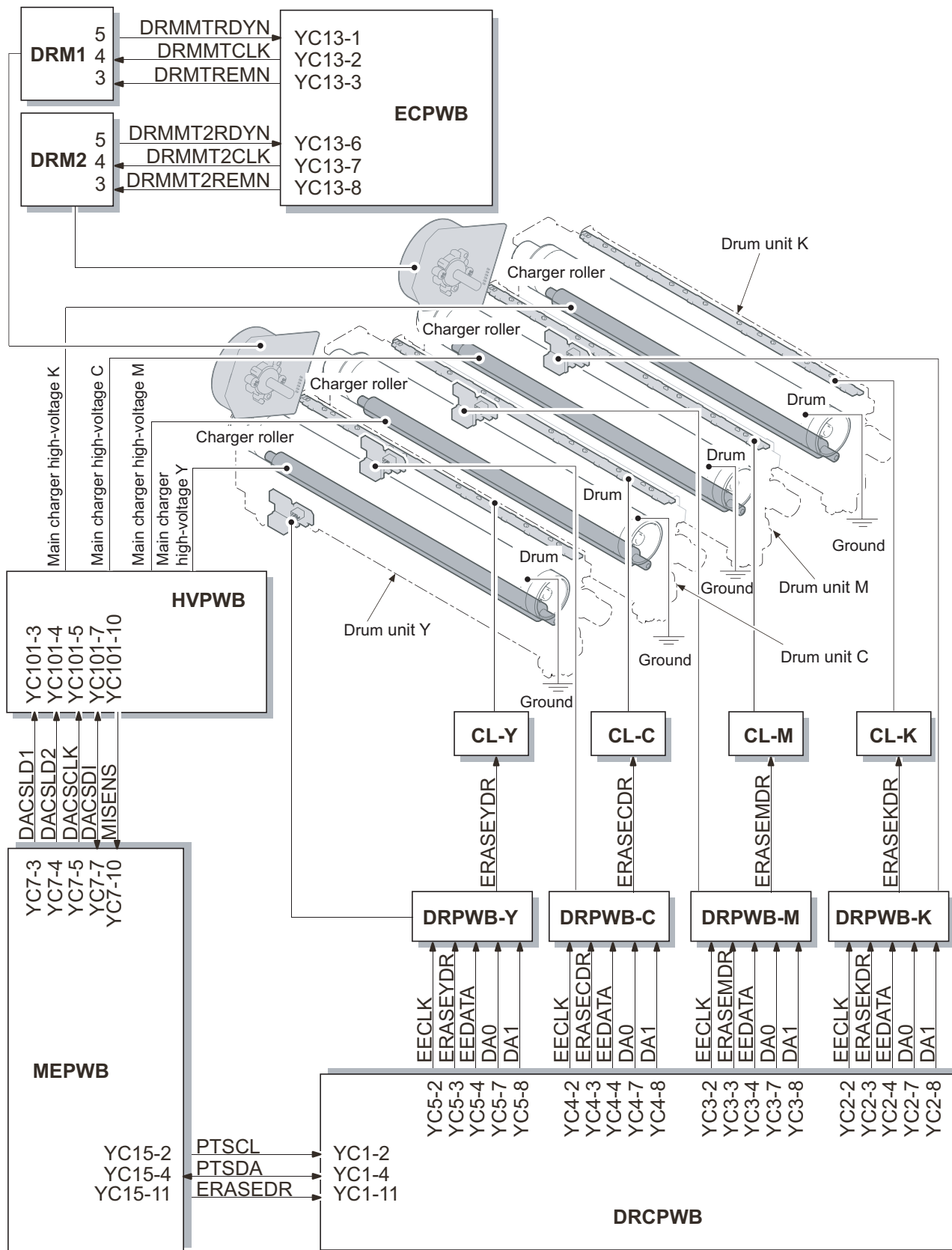


Figure 3-50

3-7 Transfer and separation section

(1) Primary transfer section

The primary transfer section consists of the transfer cleaning unit, the transfer belt and four primary transfer rollers facing each drum. When printing the color image, the toner image with a single color formed on each drum is repeatedly transferred on the transfer belt by impressing the bias to the primary transfer rollers facing each drum, and then the full color toner image is formed. Also, the ID sensor attached to the main unit measures the toner density on the transfer belt.

The transfer cleaning unit collects the remaining toner on the transfer belt after the secondary transferring, and forwards it to the waste toner box as waste toner.

[Components parts]

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 sensor 1
13. ID sensor 2

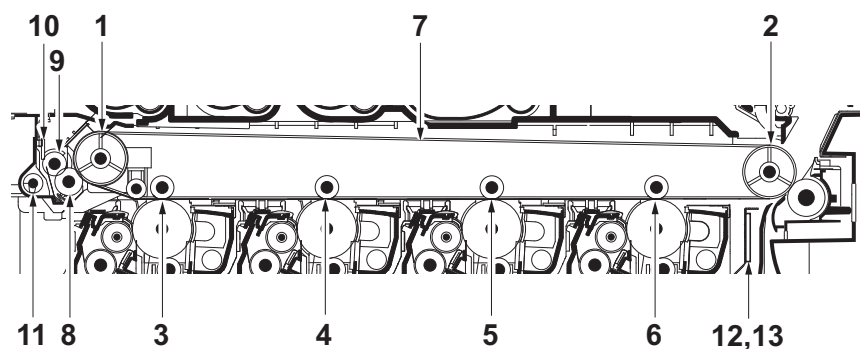


Figure 3-51

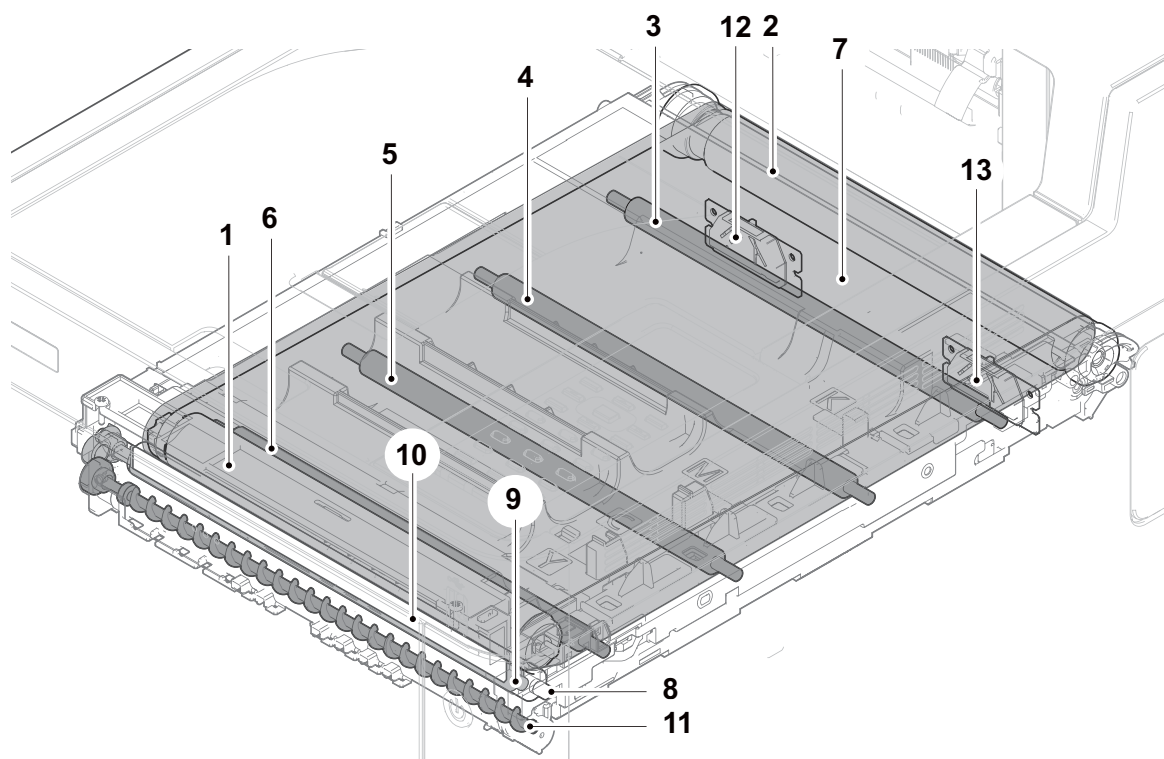


Figure 3-52

[Control block diagram]
30/35 ppm models

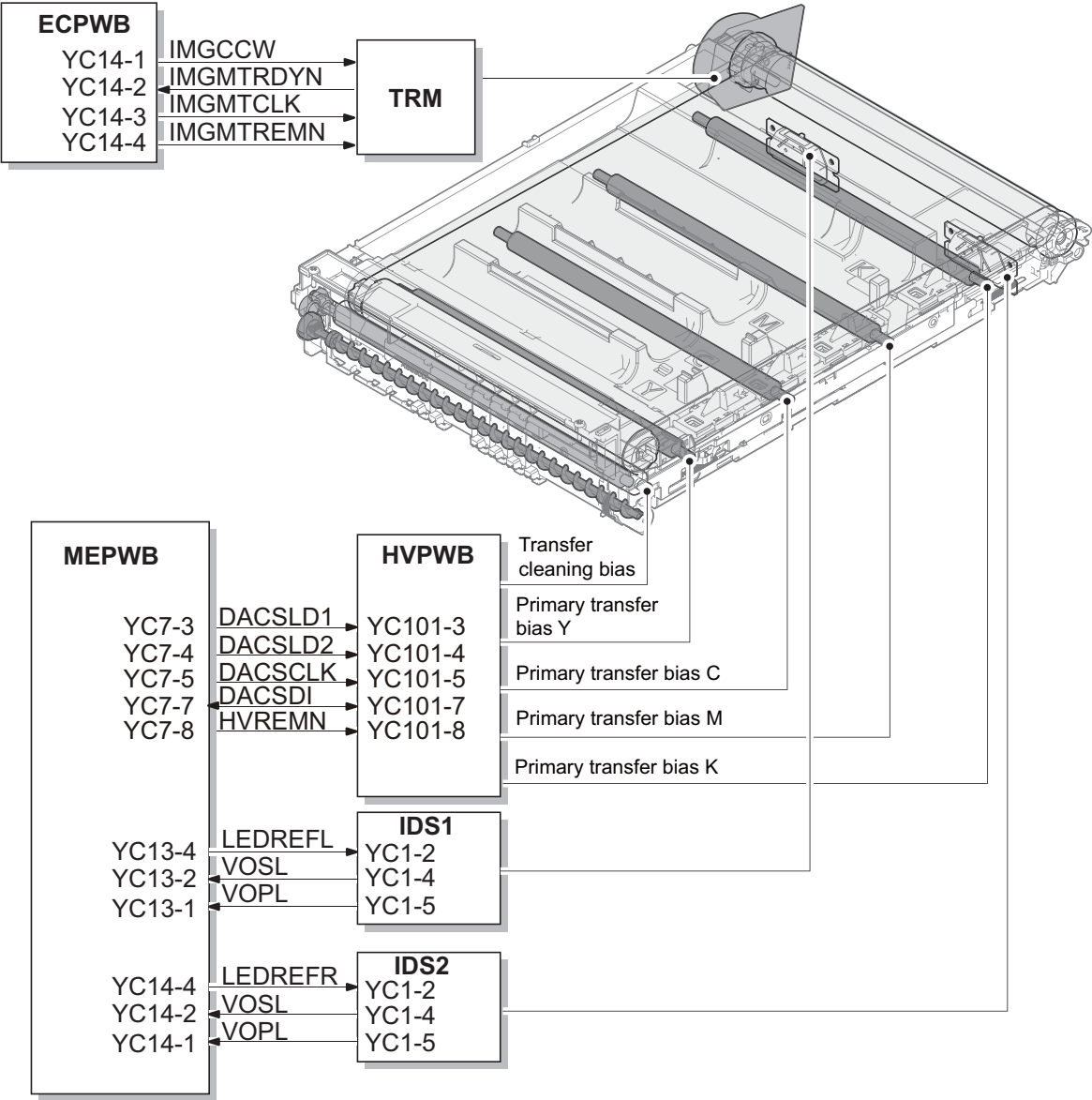


Figure 3-53

40 ppm models

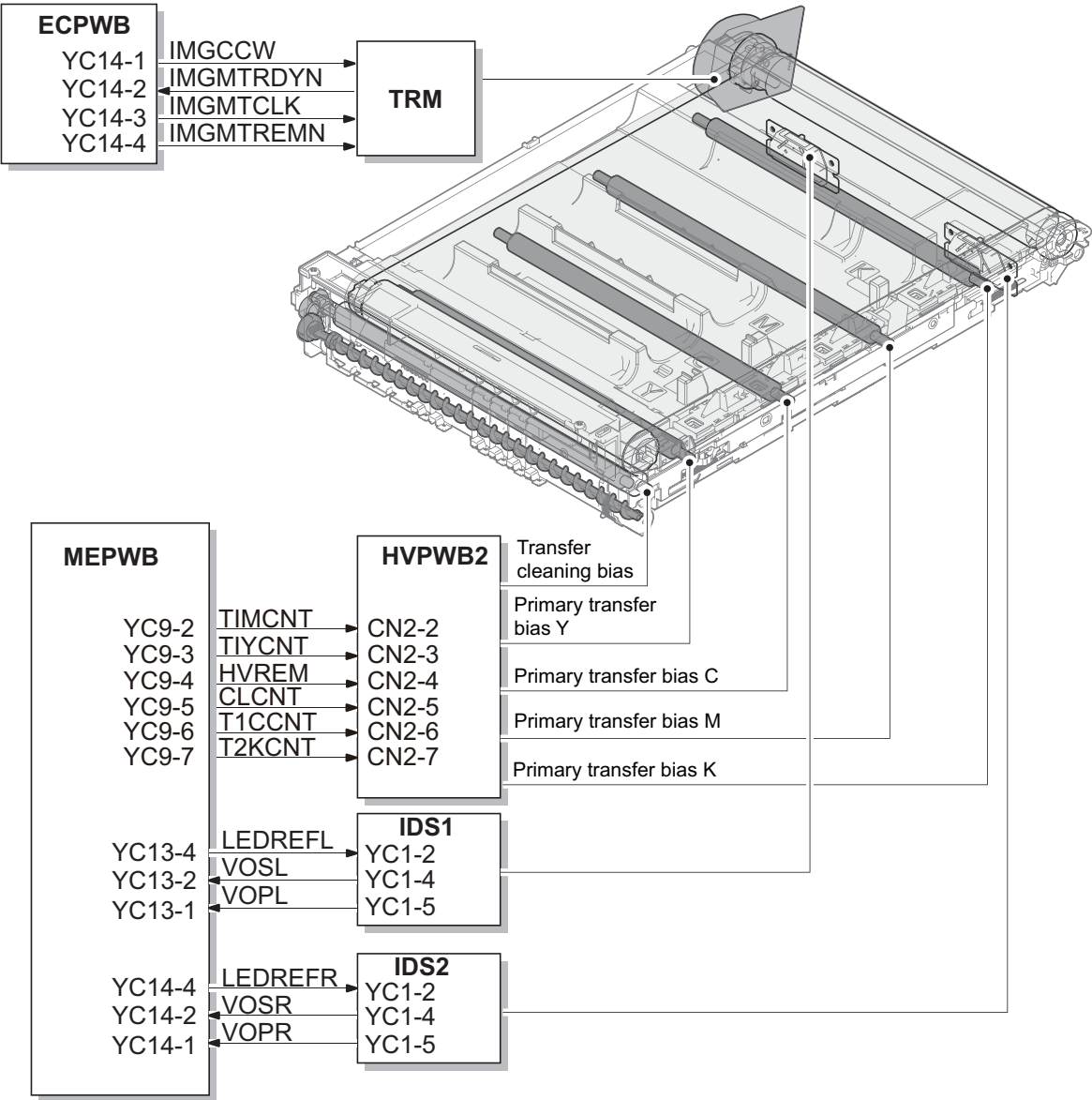


Figure 3-54

(2) Secondary transfer roller section

The secondary transfer roller section consists of the secondary transfer roller attached to the paper conveying unit, and the separation brush. The DC bias from the high-voltage PWB is impressed to the secondary transfer roller, and the toner image formed on the transfer belt is transferred to the paper by the potential gap. After transferring, the paper is separated by self stripping and the electric charge on the paper is removed by the separation brush contacting the ground.

[Components parts]

1. Secondary transfer roller
2. Primary transfer belt
3. Transfer front guide
4. Separation brush

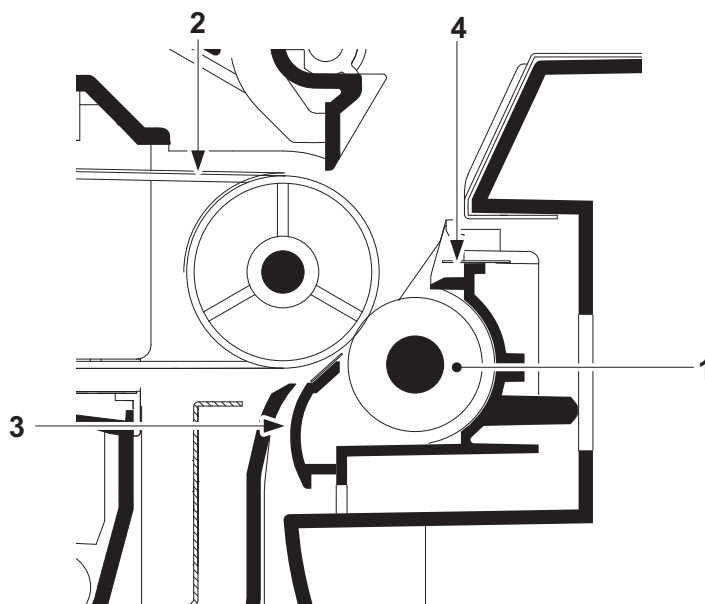


Figure 3-55

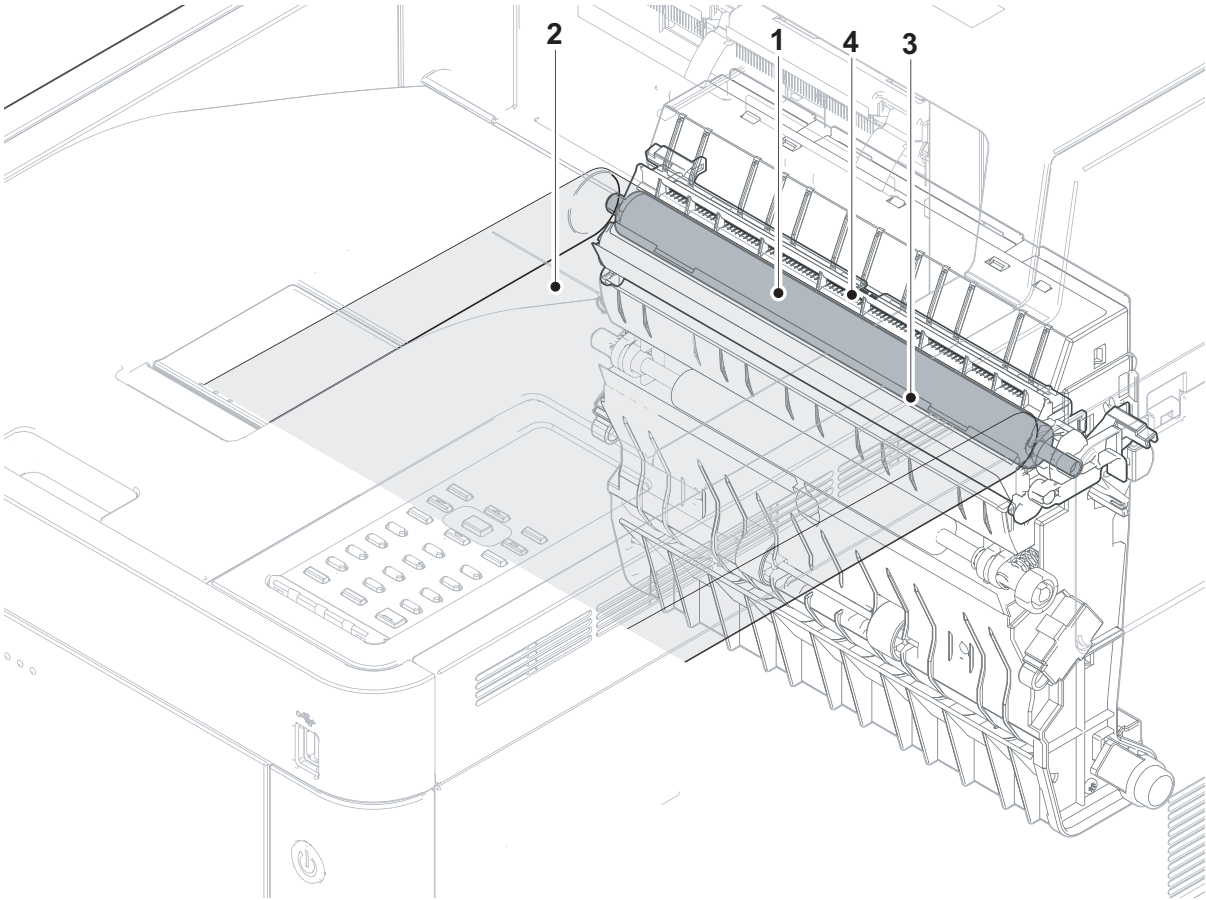


Figure 3-56

[Control block diagram]

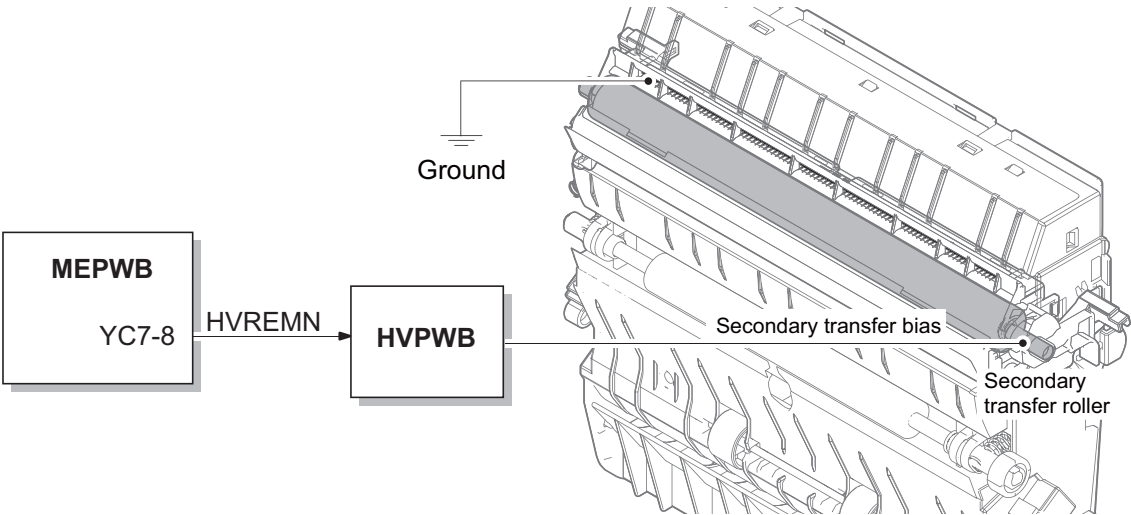


Figure 3-57

3-8 Fuser section

The paper from the transfer and separation section is pinched between the heat roller and the press roller. The heat roller is heated by the fuser heater, and the paper is pressed by the press roller with the pressure added by the pressure spring toward the heat roller, so toner is fused on the paper by that heat and pressure.

The surface temperature of the heat roller is detected by the fuser thermistor and controlled by the main/engine PWB. If the fuser section has abnormal temperature, the power supply line is shut off by switching the fuser thermostat and the fuser heater is turned off forcibly.

(1) Fuser unit

[Components parts]

1. Heat roller
2. Fuser heater 1
3. Fuser heater 2 *2
4. Fuser thermostat 1
5. Fuser thermostat 2
6. user thermistor 1
7. Fuser thermistor 2 *1
8. Fuser thermistor 2 *2
9. Separation plate
10. Press roller
11. Actuator
(Eject sensor)
12. Fuser eject roller
13. Fuser eject pulley
14. Fuser front guide

*1: 30 ppm models

*2: 35/40 ppm models

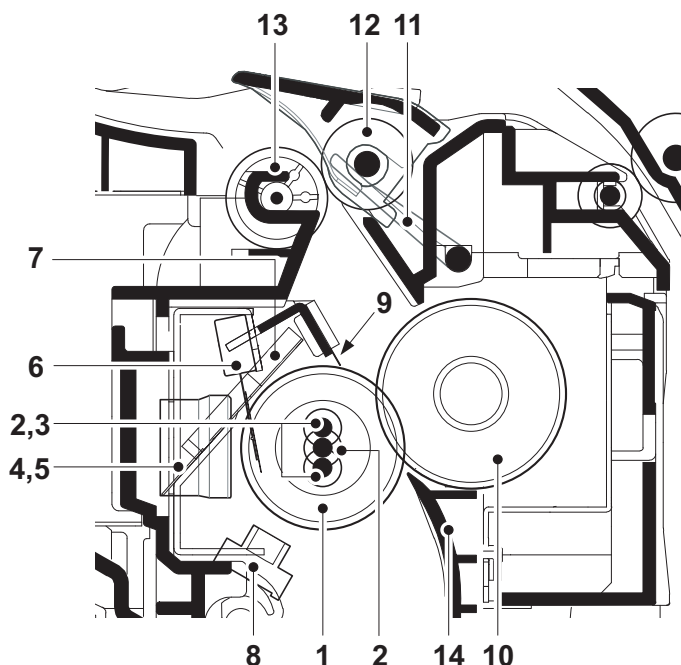
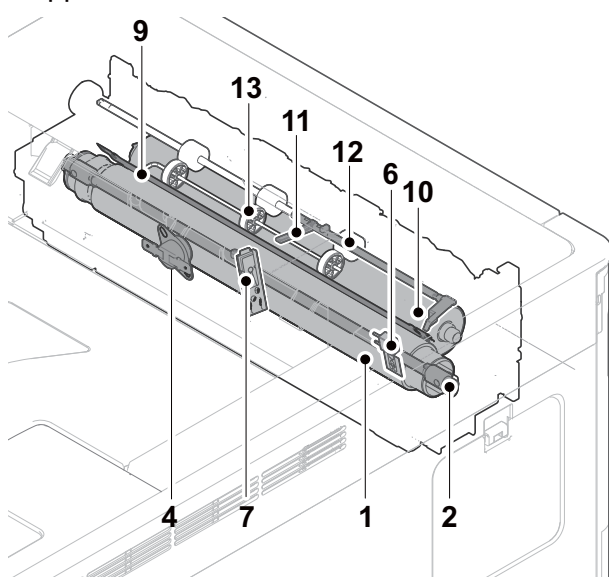


Figure 3-58

30 ppm model



35/40 ppm model

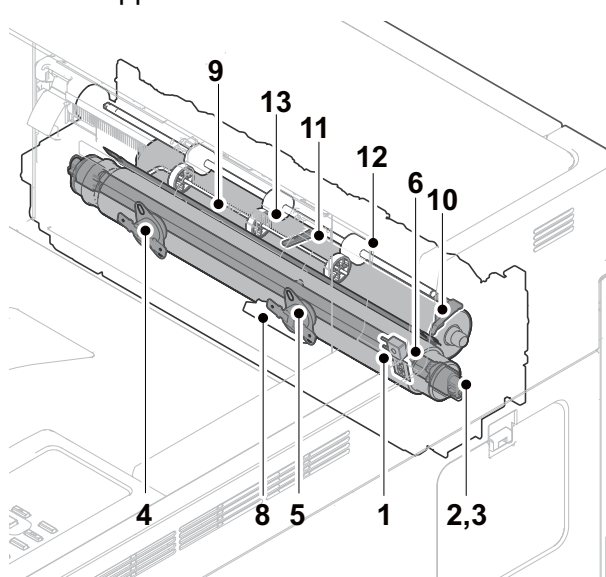


Figure 3-59

[Control block diagram]
30 ppm models

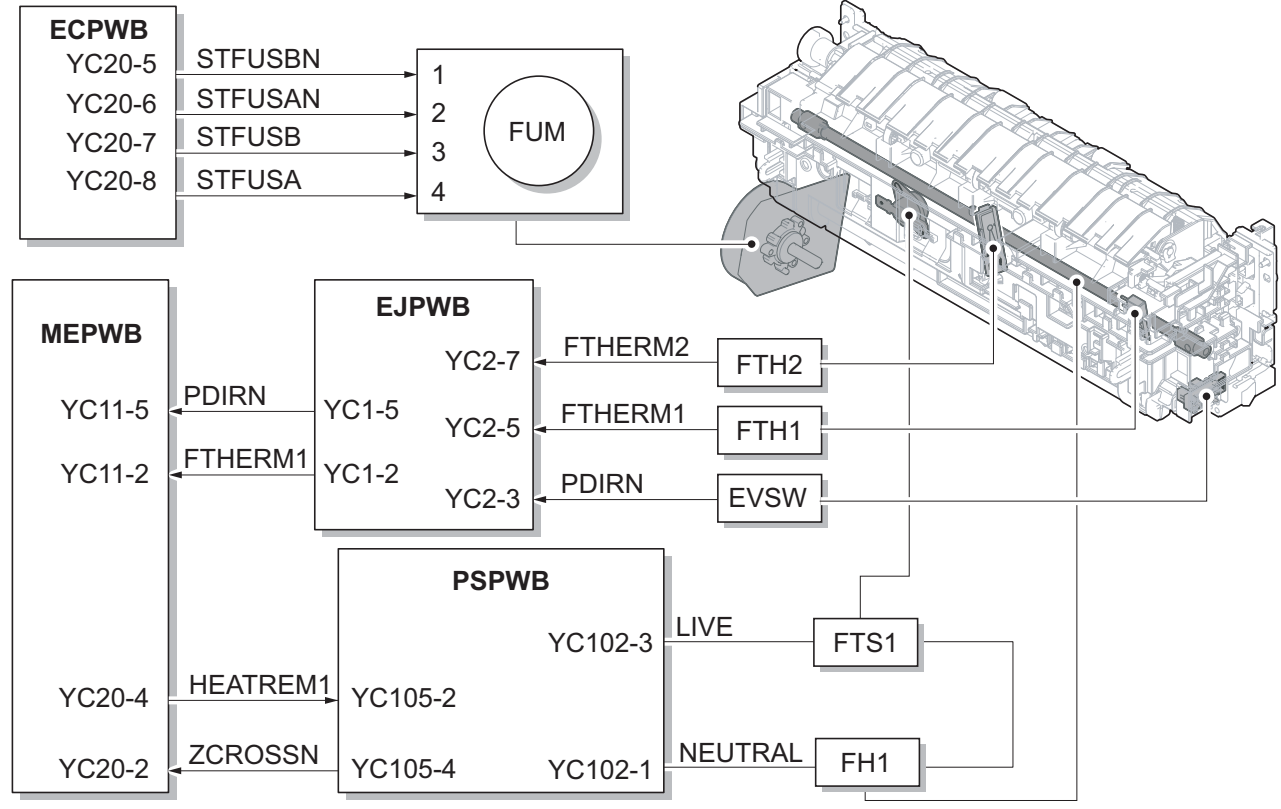


Figure 3-60

35/40 ppm models

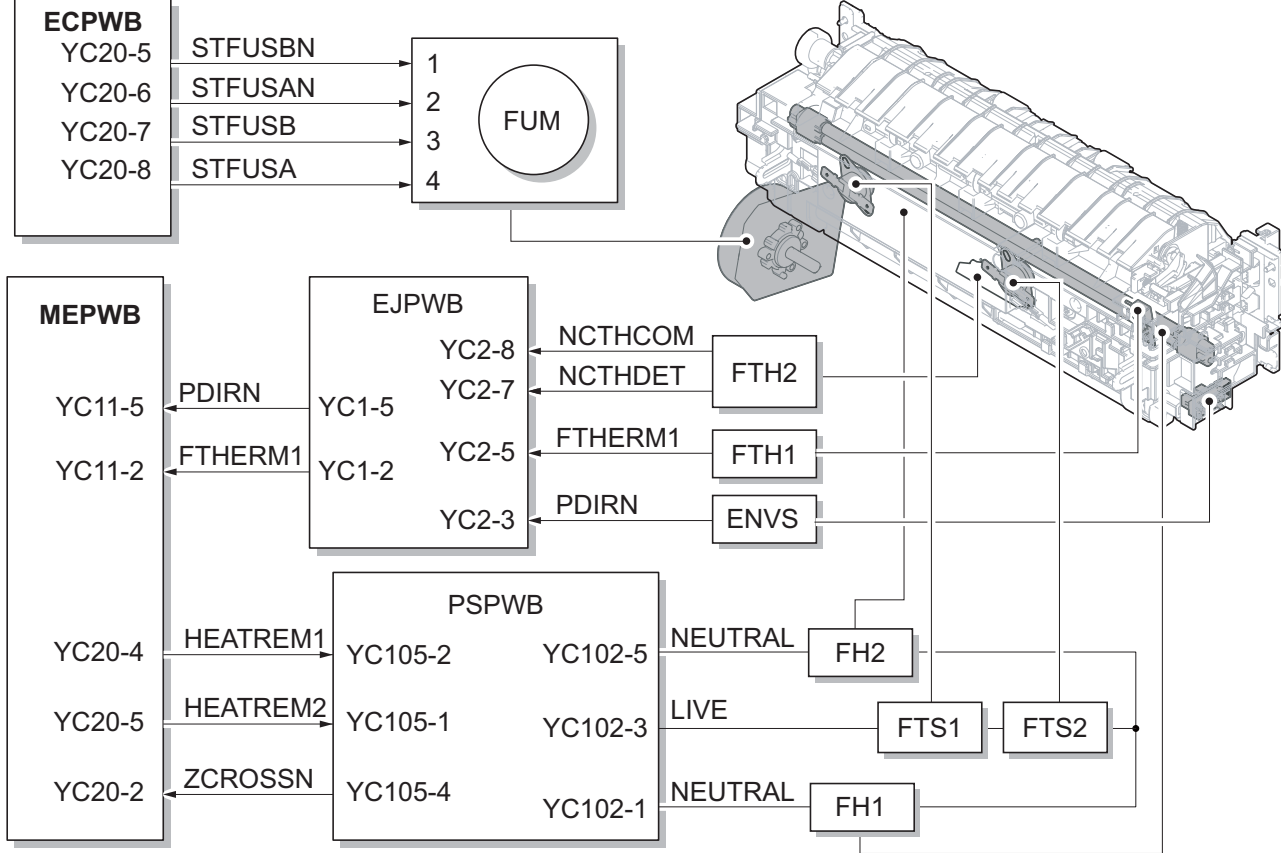


Figure 3-61

3-9 Eject and feedshift section

The eject and feedshift section consists of the paper path from the fuser section to the inner tray or the duplex conveying section.

(1) Eject unit

30 ppm models

[Components parts]

1. Eject roller
2. Eject pulley
3. Lower eject roller
4. Lower eject pulley
5. Feedshift guide
6. Actuator
(Eject sensor)
7. Actuator
(Eject full sensor)

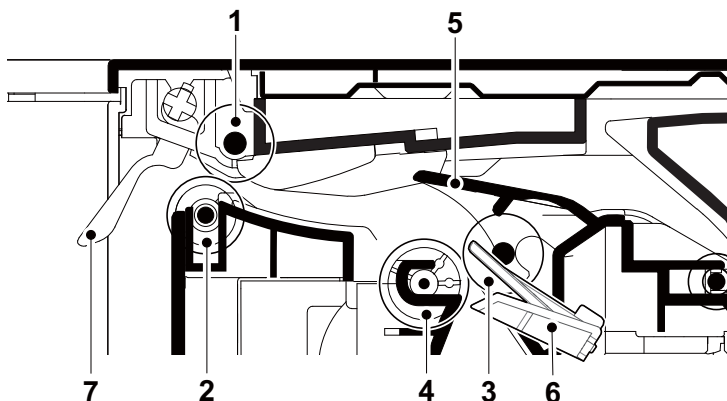


Figure 3-62

35/40 ppm models

[Components parts]

1. Eject roller
2. Eject pulley
3. Upper eject roller
4. Upper eject pulley
5. Lower eject roller
6. Lower eject pulley
7. Feedshift guide
8. Actuator
(Eject sensor)
9. Actuator
(Eject full sensor)

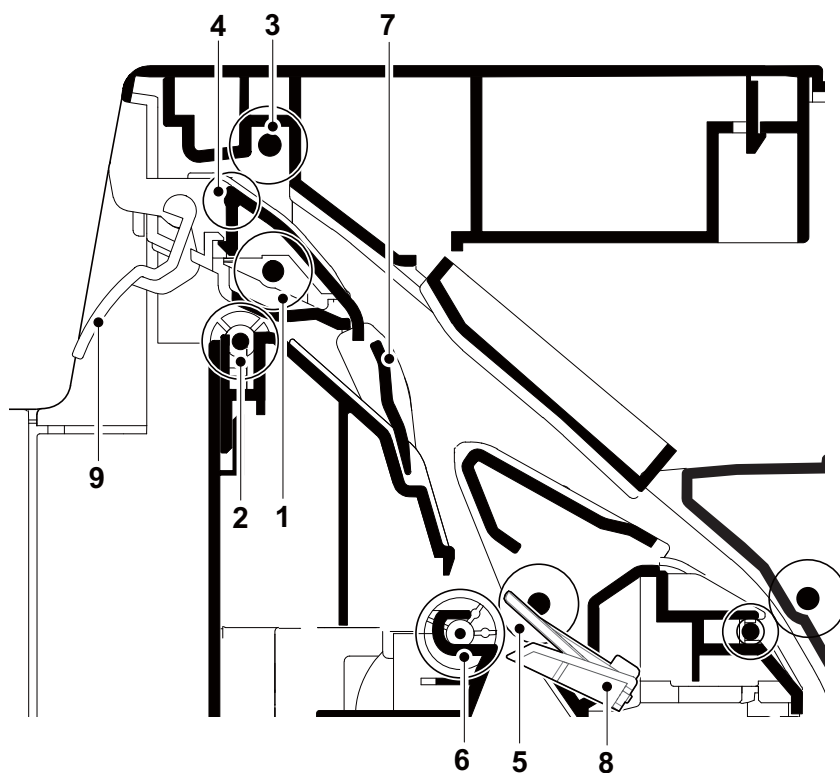


Figure 3-63

30 ppm models

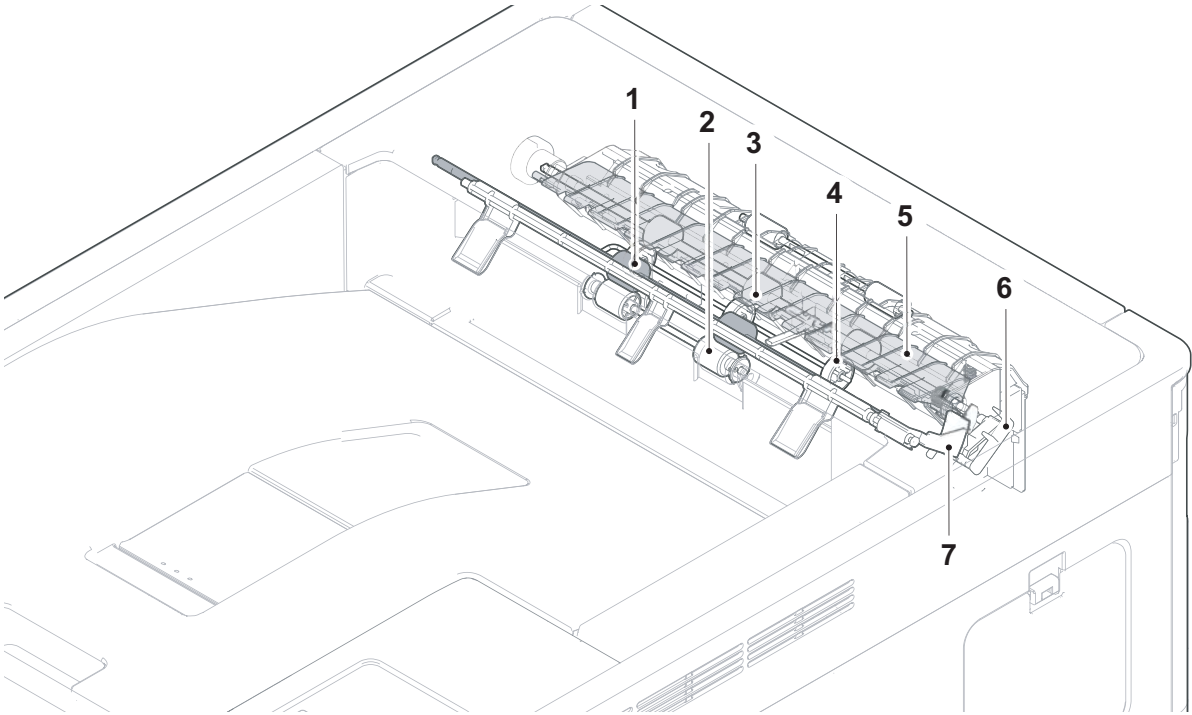


Figure 3-64

35/40 ppm models

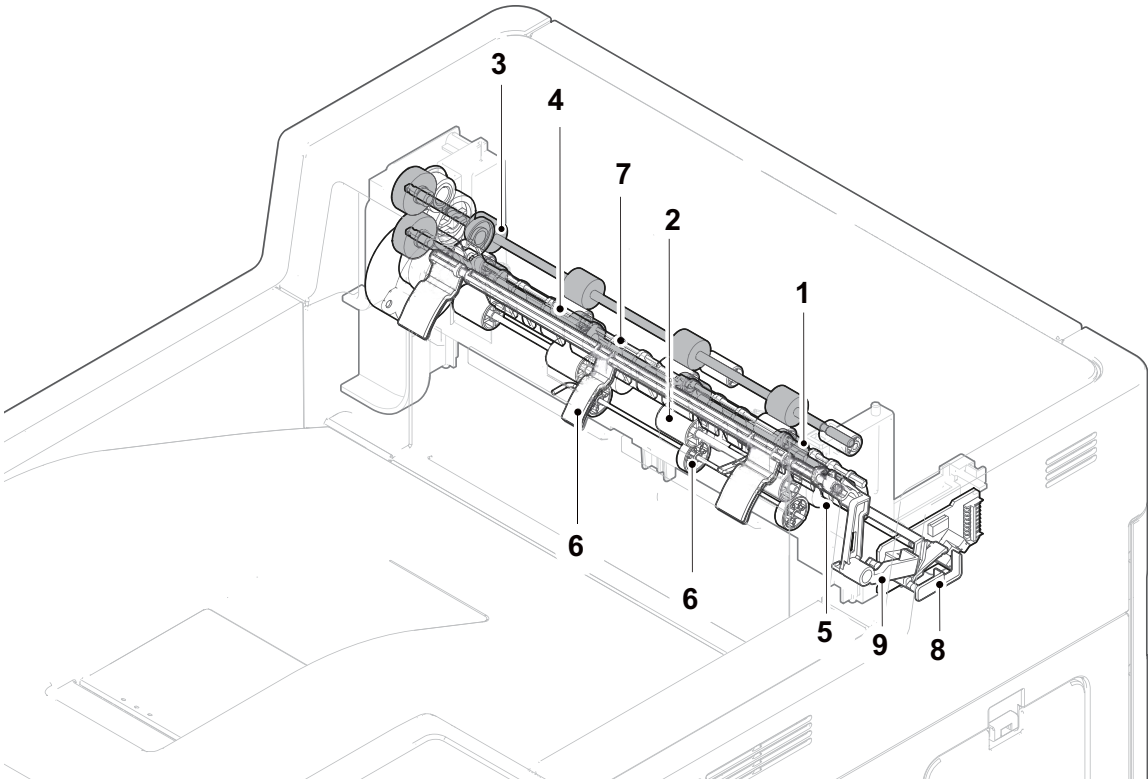


Figure 3-65

[Control block diagram]
30 ppm models

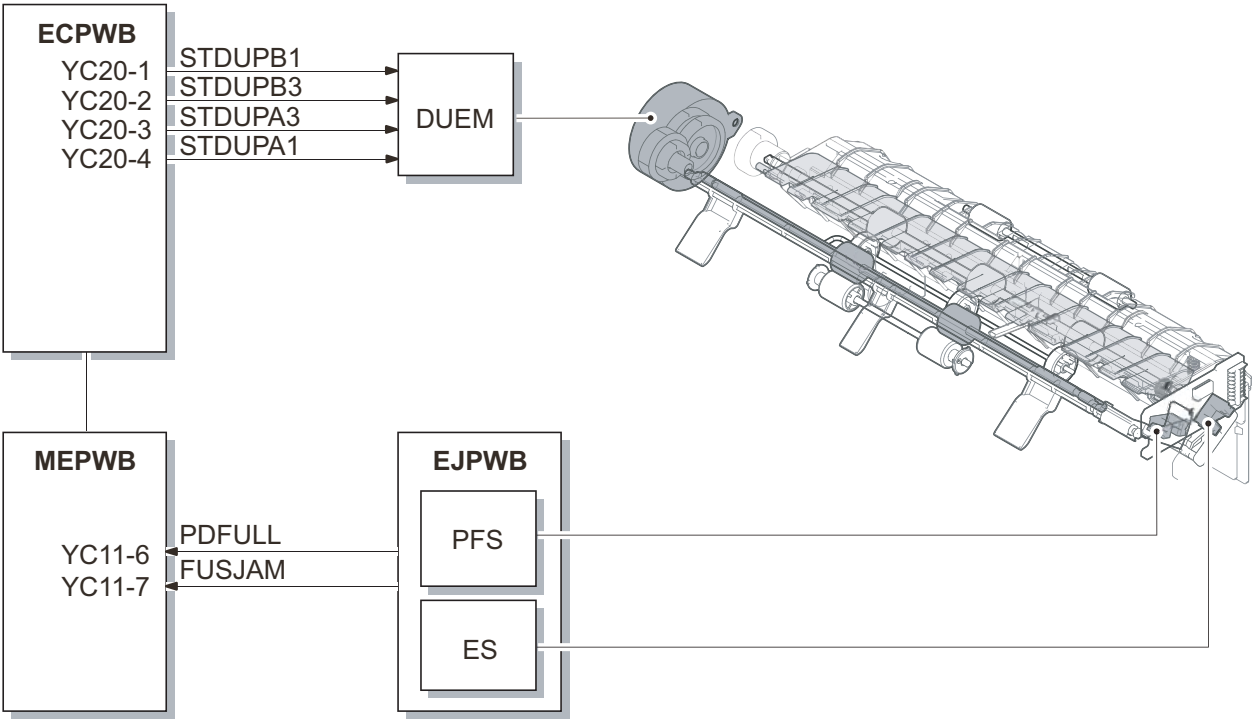


Figure 3-66

35/40 ppm models

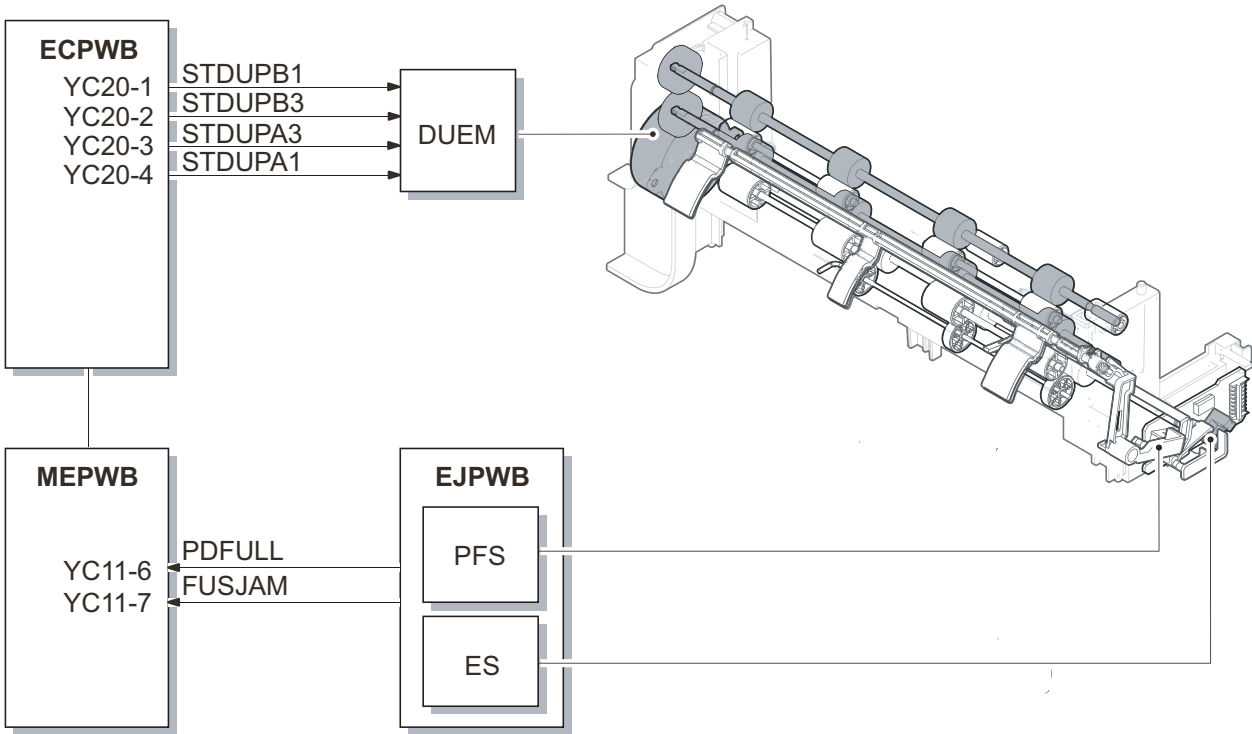


Figure 3-67

3-10 Duplex conveying section

(1) Duplex conveying unit

The duplex conveying section consists of the paper conveying path to forward the paper from the eject and feedshift section in the duplex print to the paper conveying section.

[Components parts]

1. DU conveying roller L
2. DU conveying pulley L
3. DU conveying roller S
4. DU conveying pulley S
5. DU base
6. DU conveying guide
7. Actuator
(Duplex sensor)*1

*1: for 35/40 ppm models only

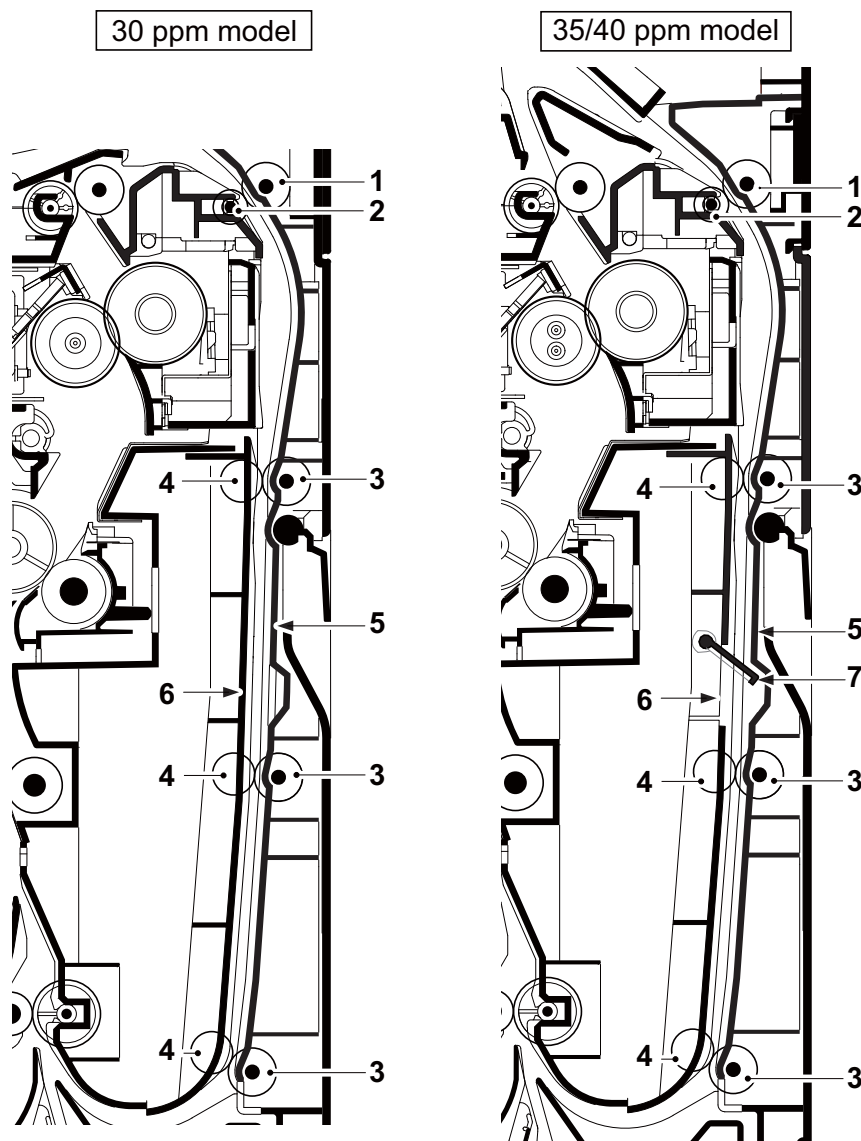


Figure 3-68

30 ppm models

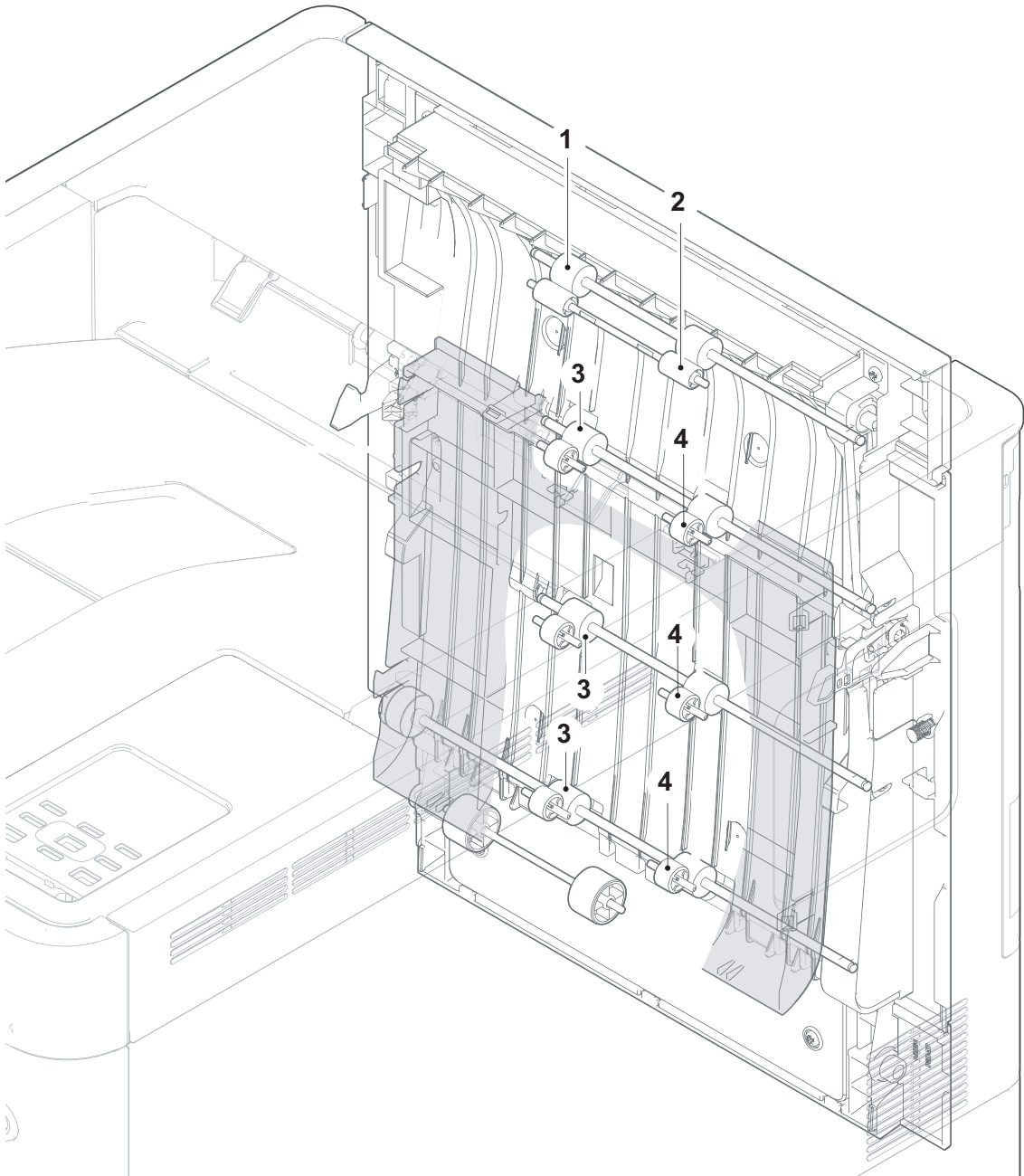


Figure 3-69

35/40 ppm models

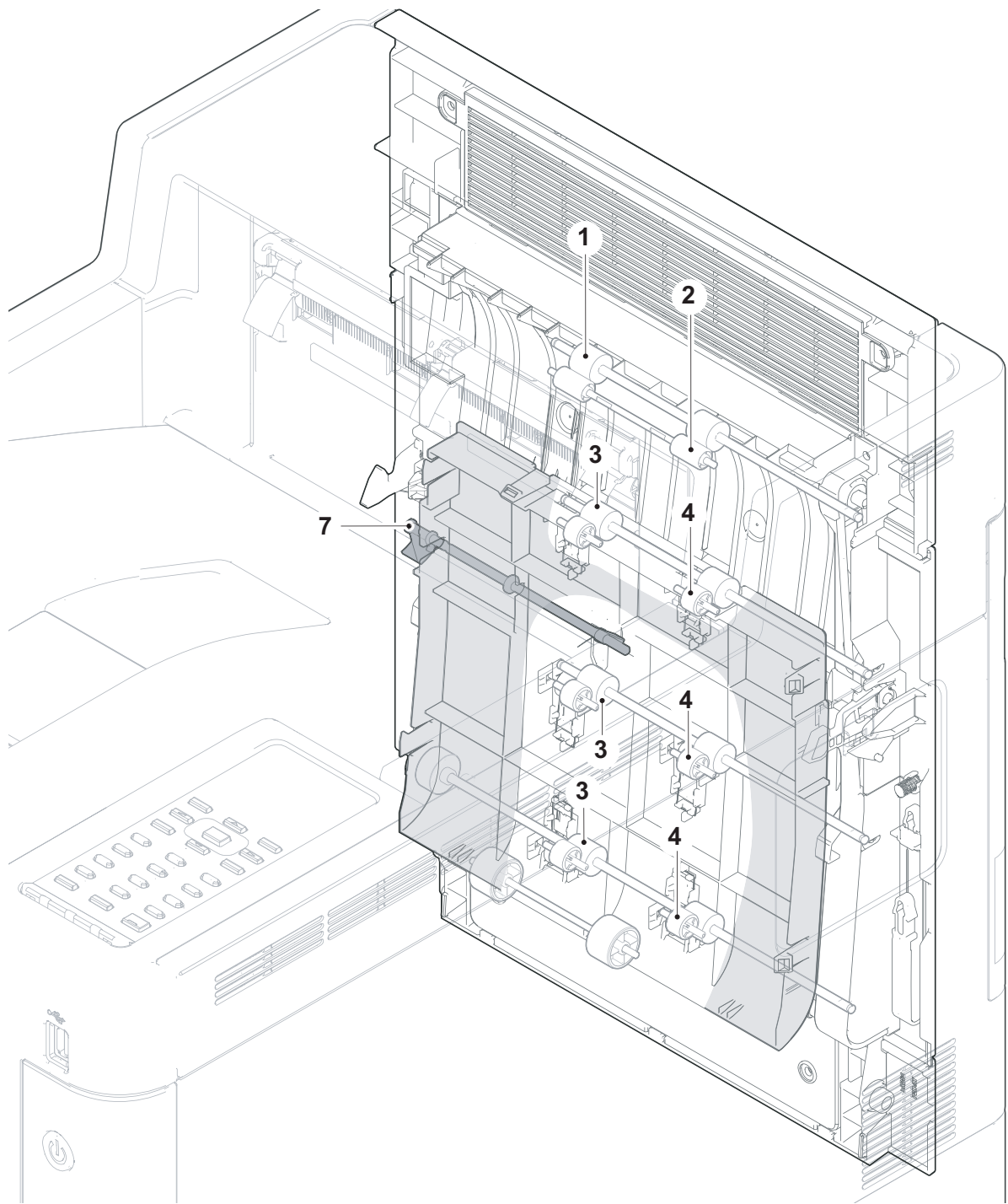


Figure 3-70

[Control block diagram]
30 ppm models

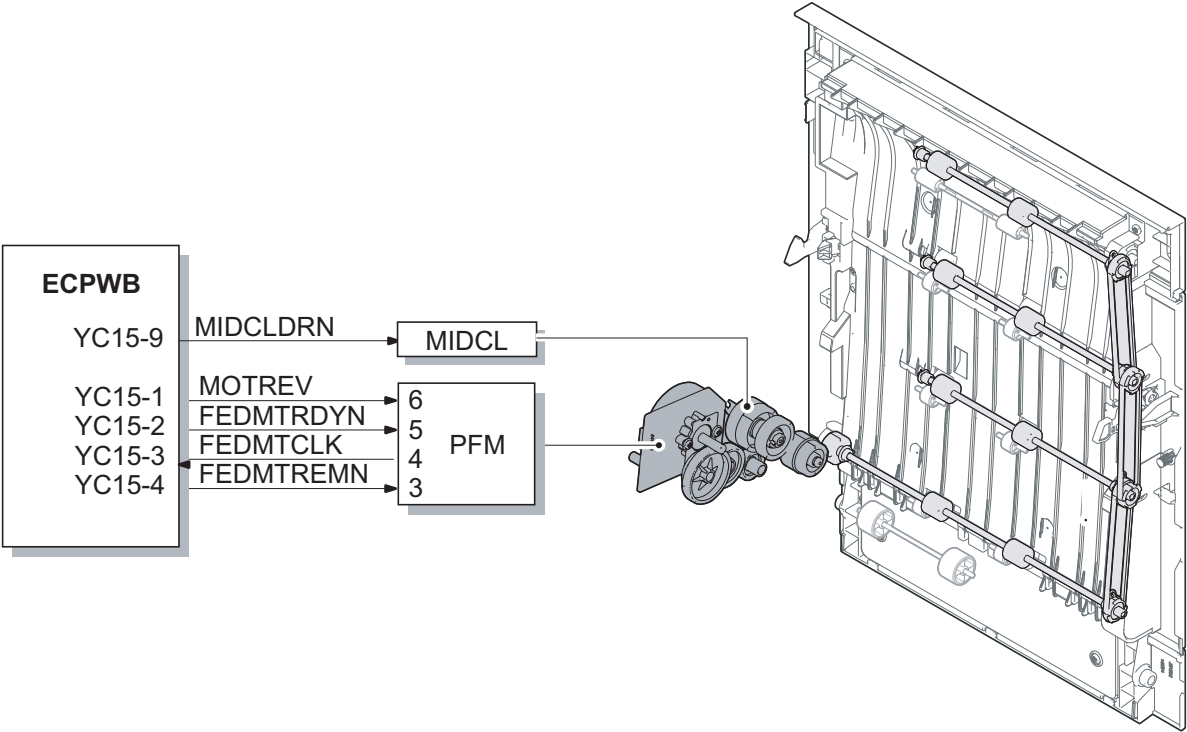


Figure 3-71

35/40 ppm models

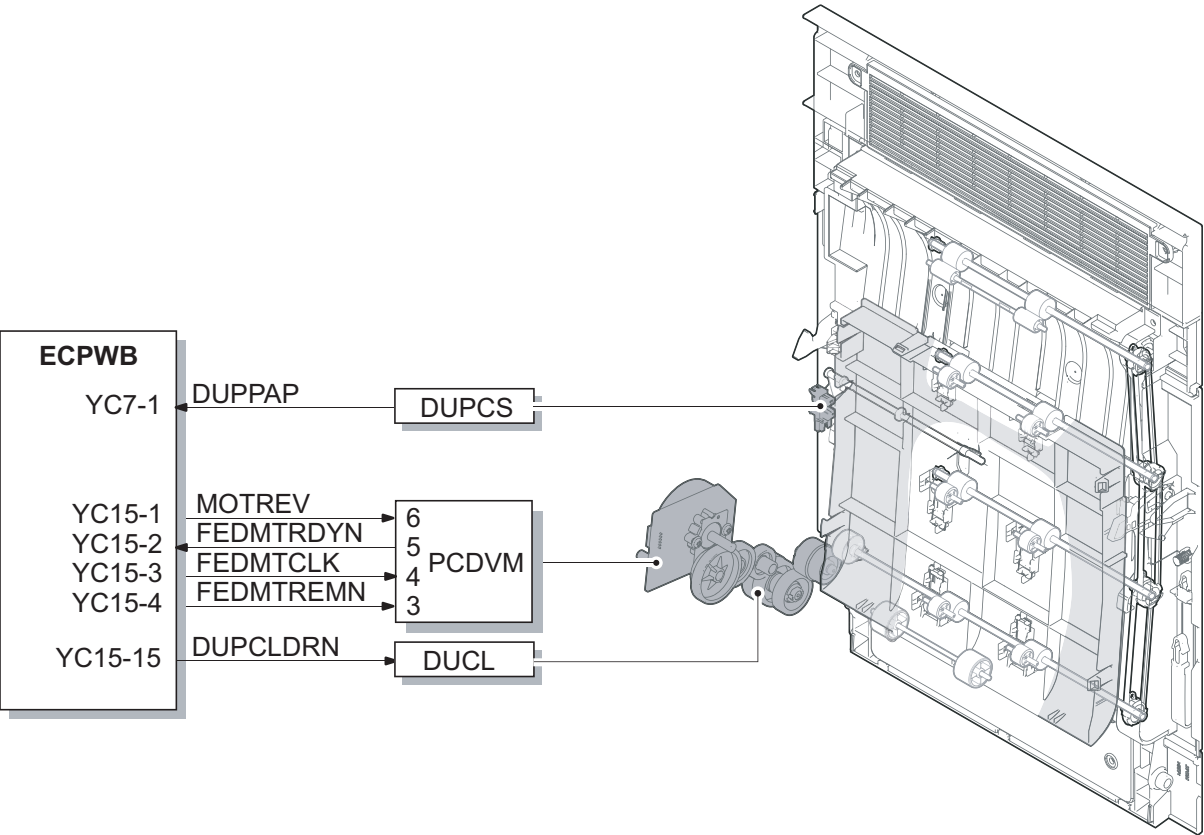


Figure 3-72

3-11 Optional paper feeder

(1) Paper feed section

The paper feeder is a mechanism that feeds paper from its cassette to the main unit. The cassette can load 500 sheets of plain paper (80g/m²), and the paper is fed by the rotation of the pickup roller and paper feed roller. The retard roller prevents the paper from multi-feeding by the effect of the torque limiter.

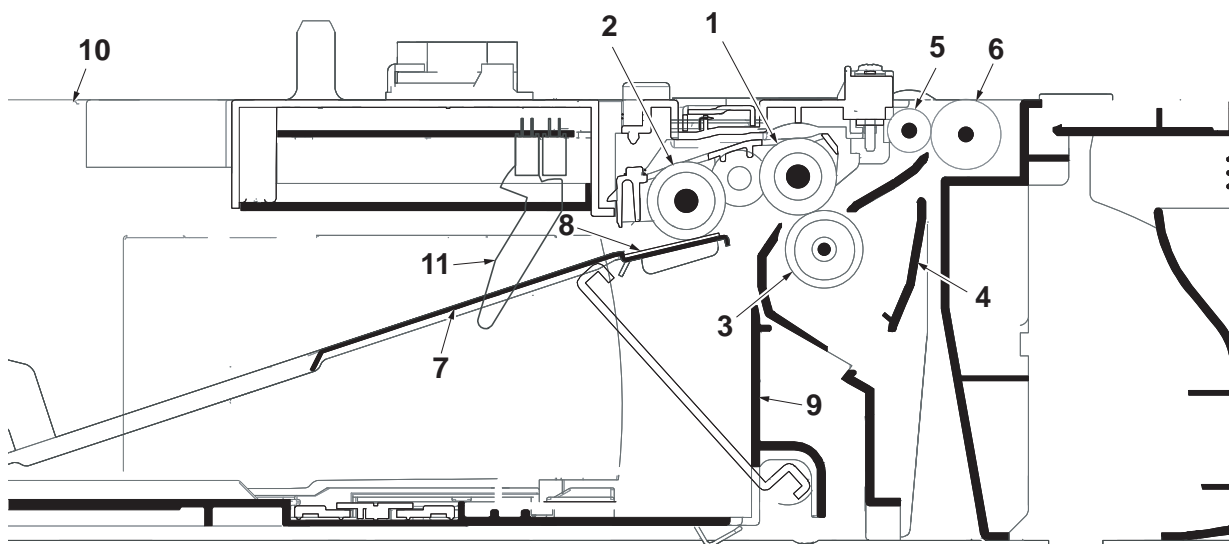


Figure 3-73

- | | |
|----------------------|------------------------|
| 1. Paper feed roller | 7. Bottom plate |
| 2. Pickup roller | 8. Bottom pad |
| 3. Retard roller | 9. Cassette base |
| 4. Retard guide | 10. Upper cover |
| 5. Conveying roller | 11. Actuator |
| 6. Conveying pulley | (PF paper sensor 1, 2) |

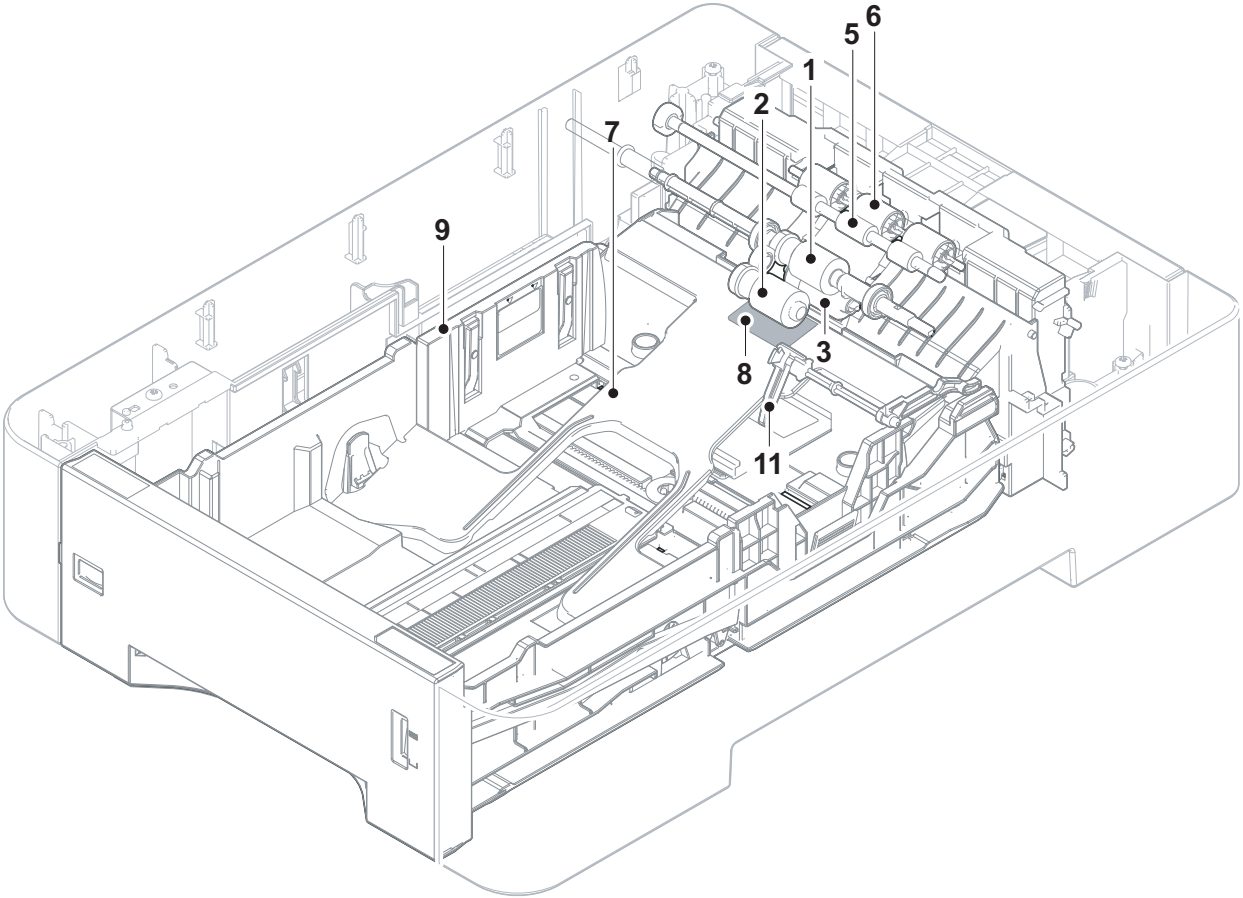


Figure 3-74

[Control block diagram]

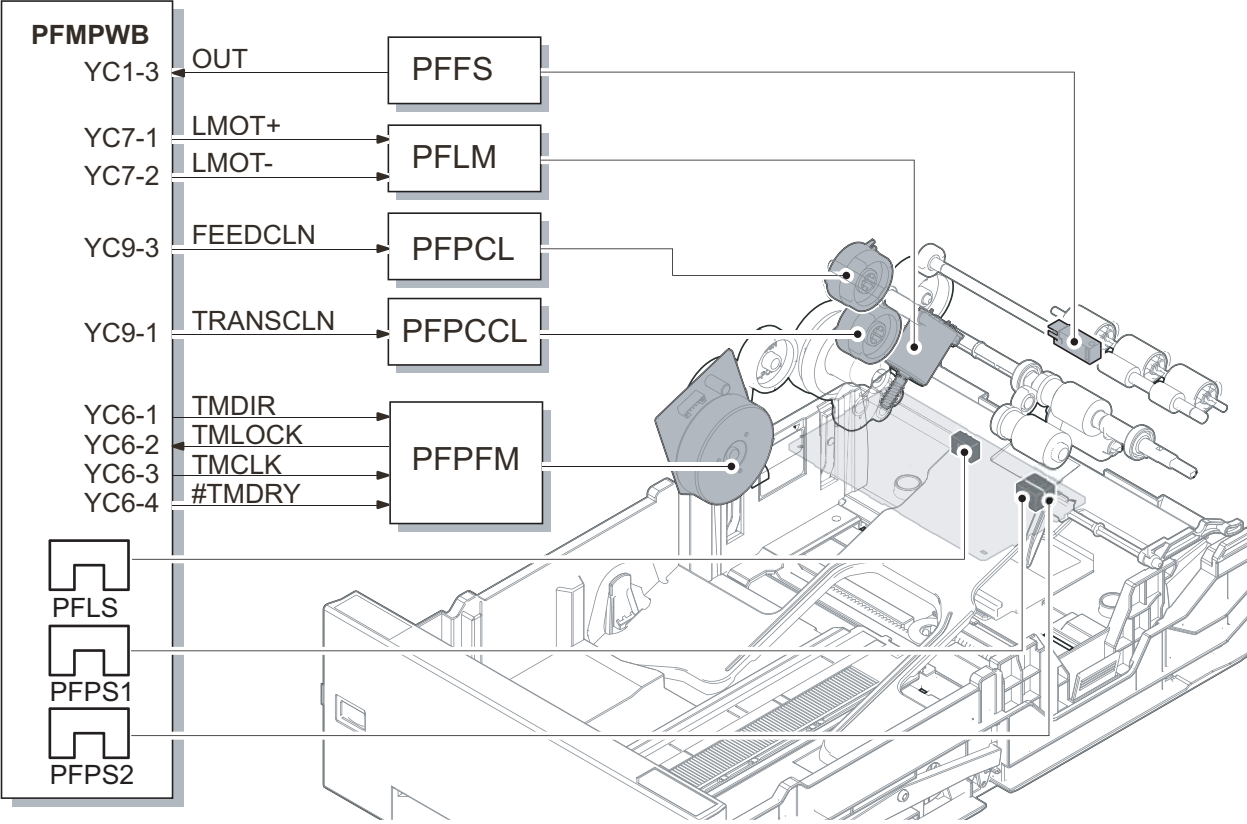


Figure 3-75

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4 Maintenance

4-1 Precautions for maintenance

(1) Precautions

Before disassembling the main unit, press the power switch to turn the power off. Before work, unplug the power plug after confirming the operation panel is turned off.

Do not touch the PWB with finger directly. Take care not damage the PWB.

If ICs are mounted on the PWB, do not touch them by hand or something charged with electrostatic.

Make sure to release the hook before disconnecting the connector with the hook.

Take care not to pinch wires at work.

Use the original screws when reassembling the parts once disassembled.

Refer to the parts list if the kind and size of the screw is uncertain.

(2) Drum unit

Take care of the following when handling and storing the drum.

When taking out the drum unit from the main unit, take care the drum surface is not exposed to bright lighting like direct sunlight.

Store in the range of ambient temperature of -20 to 40 degree C and ambient humidity of 85% RH or less.

Avoid storing the drum unit where temperature and humidity rapidly change though within the specified range.

Avoid the place where materials deteriorate the drum is floating.

Do not hit the drum surface with something else.

Do not touch the drum surface by finger or via gloves.

Clean the drum surface if touched by hand or oil adheres.

(3) Storage of the toner containers

Store the toner container in a cool dark place.

Avoid the direct sunlight and high humidity place.

(4) Screening of the toner container

Look at the screening film on the brand protection seal affixed to the toner container through the windows of the validation viewer.

Look at the screening film through two windows to check the genuineness.

A black-colored band when seen through the anti-counterfeit film portion left side window (● mark).

A shiny or gold-colored band when seen through the anti-counterfeit film portion right side window

(☼ mark).

When seen as the above, it is genuine. Otherwise (e.g. both seen in gold), it is a counterfeit.

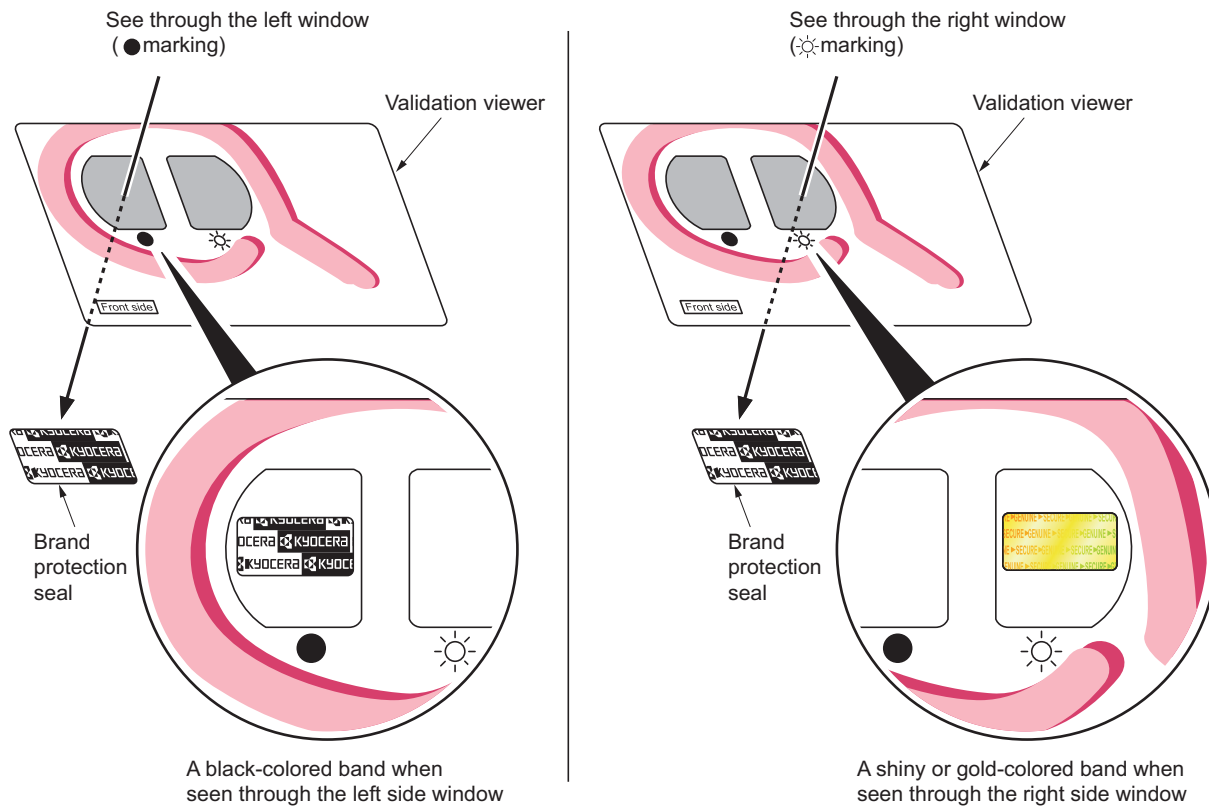


Figure 4-1

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

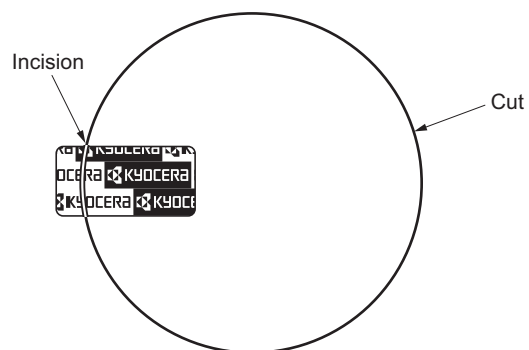


Figure 4-2

4-2 Maintenance Parts

(1) Maintenance kits

30 ppm model
120V

Maintenance part name		Quantity	Part No.	Alternate part number
Name used in service manual	Name used in parts list			
MK-5142 (200.000 images)	MK-5142/MAINTENANCE KIT	1	1702NR7US0	072NR7US
Drum unit	DK-5140	4		
Developer unit (K)	DV-5140(K)	1		
Developer unit (Y)	DV-5140(Y)	1		
Developer unit (M)	DV-5140(M)	1		
Developer unit (C)	DV-5140(C)	1		
Primary transfer unit	TR-5140	1		
Secondary transfer roller unit	PARTS ROLLER TRANSFER SP	1		
Fuser unit	FK-5142	1		
Paper feed roller unit	PARTS HOLDER FEED ASSY SP	1		
Retard roller	PARTS RETARD ASSY SP	1		

230V/ 240V/

Maintenance part name		Quantity	Part No.	Alternate part number
Name used in service manual	Name used in parts list			
MK-5140	MK-5140/MAINTENANCE KIT	1	1702NR8NL0	072NR8NL
MK-5144	MK-5144/MAINTENANCE KIT		1702NR8AS0	072NR8AS
(200.000 images)				
Drum unit	DK-5140	4		
Developer unit (K)	DV-5140(K)	1		
Developer unit (Y)	DV-5140(Y)	1		
Developer unit (M)	DV-5140(M)	1		
Developer unit (C)	DV-5140(C)	1		
Primary transfer unit	TR-5140	1		
Secondary transfer roller unit	PARTS ROLLER TRANSFER SP	1		
Fuser unit	FK-5140	1		
Paper feed roller unit	PARTS HOLDER FEED ASSY SP	1		
Retard roller	PARTS RETARD ASSY SP	1		

**35 ppm model
120V**

Maintenance part name		Quantity	Part No.	Alternate part number
Name used in service manual	Name used in parts list			
MK-5152 (200.000 images)	MK-5152/MAINTENANCE KIT	1	1702NS7US0	072NS7US
Drum unit	DK-5140	4		
Developer unit (K)	DV-5150(K)	1		
Developer unit (Y)	DV-5150(Y)	1		
Developer unit (M)	DV-5150(M)	1		
Developer unit (C)	DV-5150(C)	1		
Primary transfer unit	TR-5140	1		
Secondary transfer roller unit	PARTS ROLLER TRANSFER SP	1		
Fuser unit	FK-5162	1		
Paper feed roller unit	PARTS HOLDER FEED ASSY SP	1		
Retard roller	PARTS RETARD ASSY SP	1		

230V/ 240V

Maintenance part name		Quantity	Part No.	Alternate part number
Name used in service manual	Name used in parts list			
MK-5150	MK-5150/MAINTENANCE KIT	1	1702NS8NL0	072NS8NL
MK-5154 (200.000 images)	MK-5154/MAINTENANCE KIT		1702NS8AS0	072NS8AS
Drum unit	DK-5140	4		
Developer unit (K)	DV-5150(K)	1		
Developer unit (Y)	DV-5150(Y)	1		
Developer unit (M)	DV-5150(M)	1		
Developer unit (C)	DV-5150(C)	1		
Primary transfer unit	TR-5140	1		
Secondary transfer roller unit	PARTS ROLLER TRANSFER SP	1		
Fuser unit	FK-5160	1		
Paper feed roller unit	PARTS HOLDER FEED ASSY SP	1		
Retard roller	PARTS RETARD ASSY SP	1		

**40 ppm model
120V**

Maintenance part name		Quantity	Part No.	Alternate part number
Name used in service manual	Name used in parts list			
MK-5162 (300.000 images)	MK-5162/MAINTENANCE KIT	1	1702NT7US0	072NT7US
Drum unit	DK-5160	4		
Developer unit (K)	DV-5160(K)	1		
Developer unit (Y)	DV-5160(Y)	1		
Developer unit (M)	DV-5160(M)	1		
Developer unit (C)	DV-5160(C)	1		
Primary transfer unit	TR-5160	1		
Secondary transfer roller unit	PARTS ROLLER TRANSFER SP	1		
Fuser unit	FK-5162	1		
Paper feed roller unit	PARTS HOLDER FEED ASSY SP	1		
Retard roller	PARTS RETARD ASSY SP	1		

230V/ 240V

Maintenance part name		Quantity	Part No.	Alternate part number
Name used in service manual	Name used in parts list			
MK-5160	MK-5160/MAINTENANCE KIT	1	1702NT8NL0	072NT8NL
MK-5164 (300.000 images)	MK-5164/MAINTENANCE KIT		1702NT8AS0	072NT8AS
Drum unit	DK-5160	1		
Developer unit (K)	DV-5160(K)	1		
Developer unit (Y)	DV-5160(Y)	1		
Developer unit (M)	DV-5160(M)	1		
Developer unit (C)	DV-5160(C)	1		
Primary transfer unit	TR-5160	1		
Secondary transfer roller unit	PARTS ROLLER TRANSFER SP	4		
Fuser unit	FK-5160	1		
Paper feed roller unit	PARTS HOLDER FEED ASSY SP	1		
Retard roller	PARTS RETARD ASSY SP	1		

(2) Clearing the maintenance kit message

Replace the maintenance kit at every 200,000 images (for 30/35 ppm model) and at 300,000 images (for 40 ppm model).

The message [Replace MK.] appears at the replacement timing.

30/35 ppm models: [Menu] key > [Adjust/Maintenance] > [Service] > [Maintenance]

(See page 6-14)

40 ppm models: [Menu] key > [Adjust/Maintenance] > [Service Setting] > [Maintenance]

(See page 6-14)

4-3 Periodic maintenance procedures

(1) Detaching and reattaching the primary transfer unit

Procedures

1. Pull the lever (a).
2. Open the top cover (b).

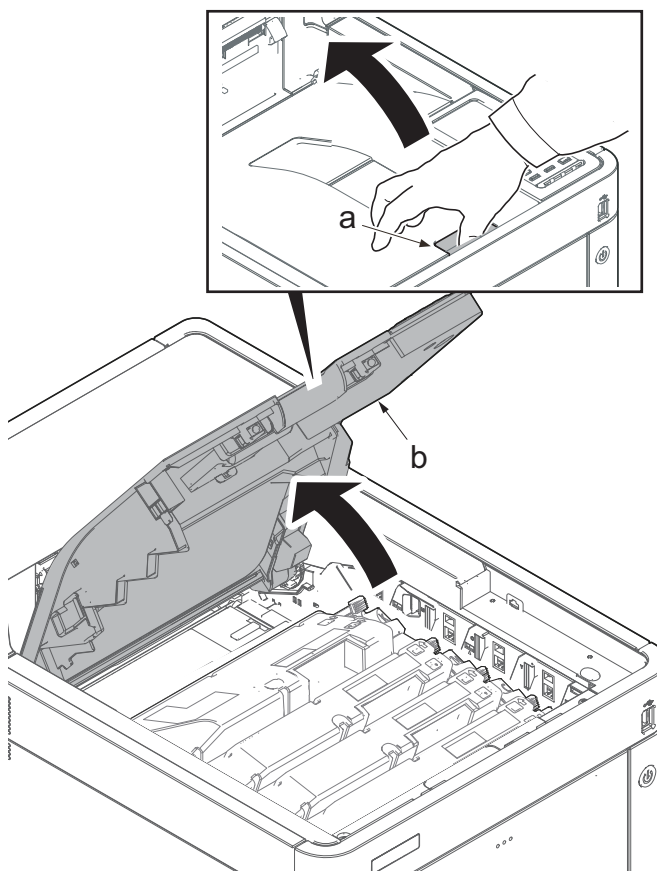


Figure 4-3

3. Rotate the lock lever (a).

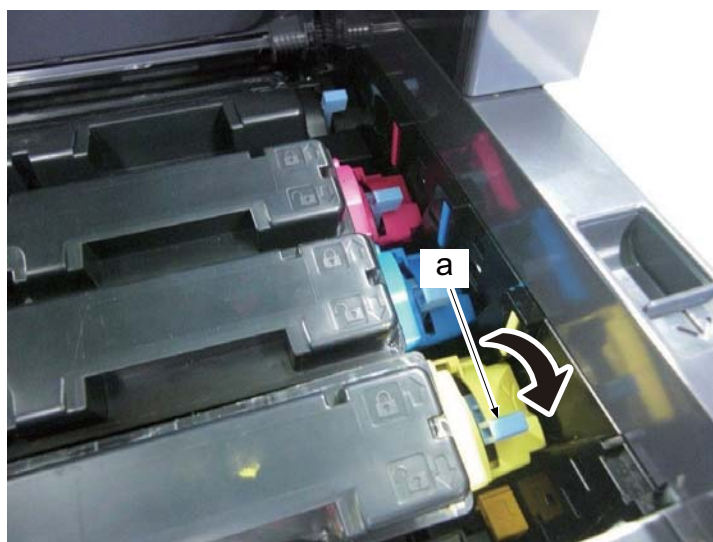


Figure 4-4

4. Detach the toner containers (K, M, C and Y)(a).

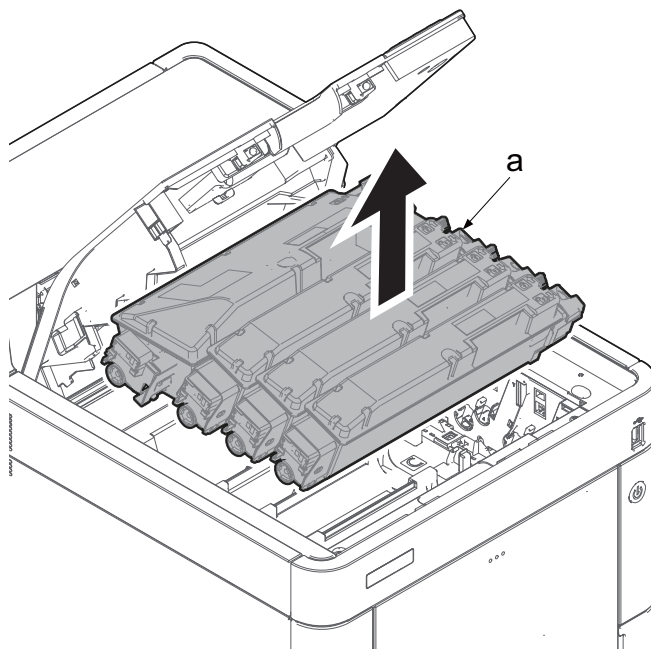


Figure 4-5

*: When detaching the toner container (a), first lift its handle (b) and then pull it out upward.

IMPORTANT

Without releasing the lock lever, do not lift up the toner container forcefully.

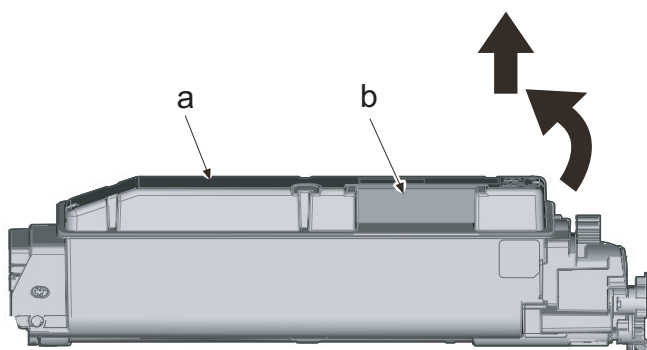


Figure 4-6

5. Pull the right shutter lever (a) in the direction of the arrow.

*: Close the toner feed inlet by pulling this lever.

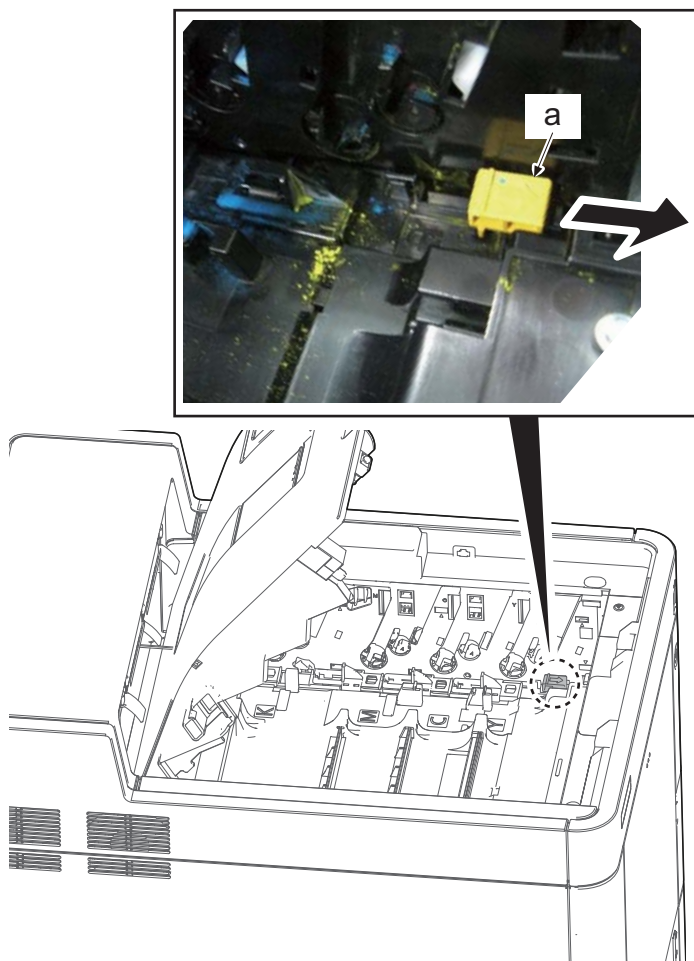


Figure 4-7

6. Remove the screw (a)(M3x12)

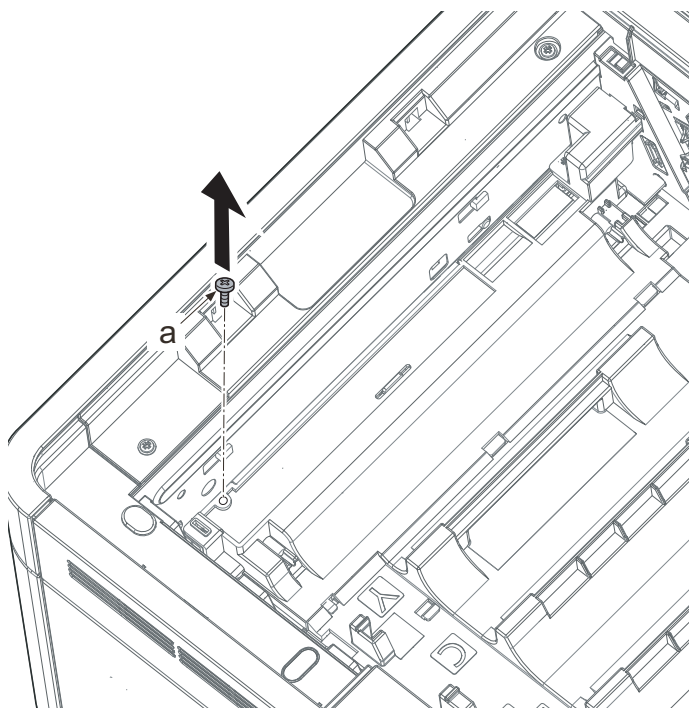


Figure 4-8

7. Remove the screw (a)(M3x12)
8. Remove the lever cover (b).
9. Lift up the drive release lever (c).

*: When raising the lever, the joint of the drive coupling is released.

IMPORTANT

If omitting to attach the lever cover, [Cover open] message is displayed while the tray switch is not turned on.

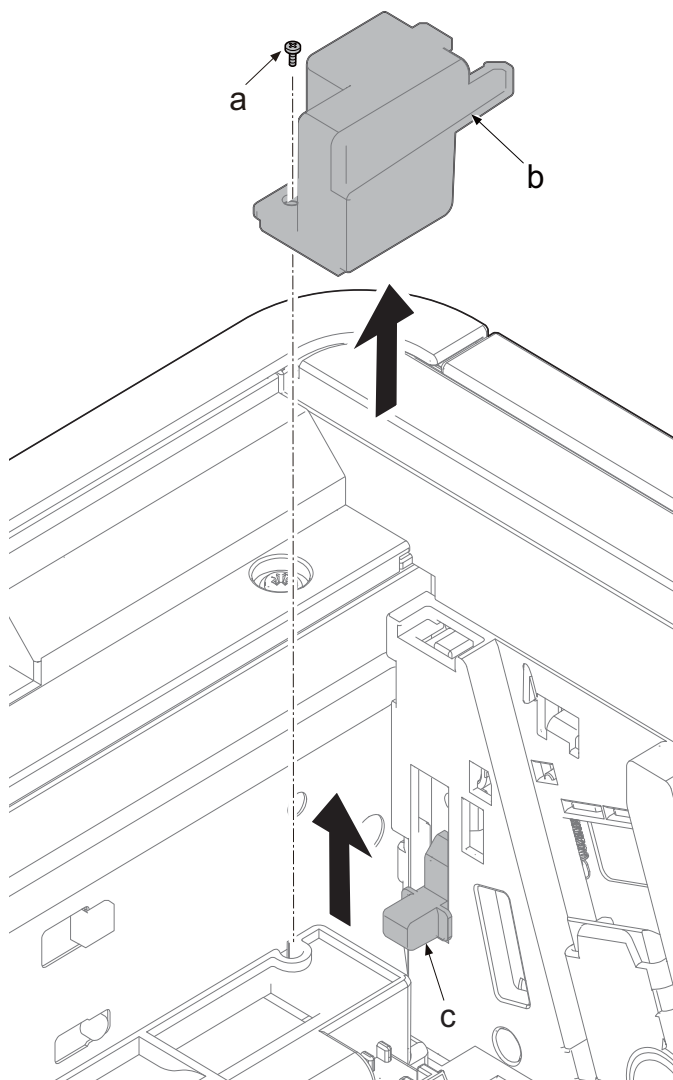


Figure 4-9

10. Hold the handle (a) and detach the primary transfer unit (b).

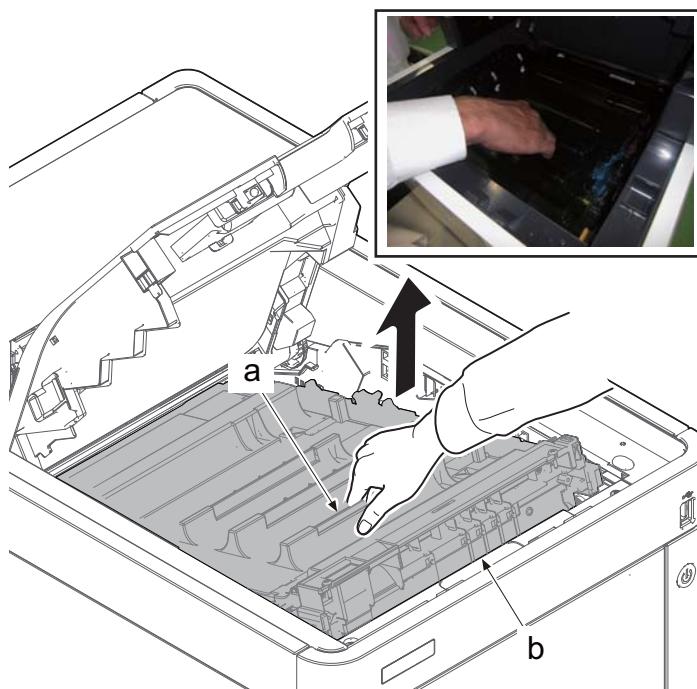


Figure 4-10

- *: Hold the handle (b) at the machine front side and lift up the primary transfer unit (a). Then, further lift it up and pull it toward the machine front side to detach.

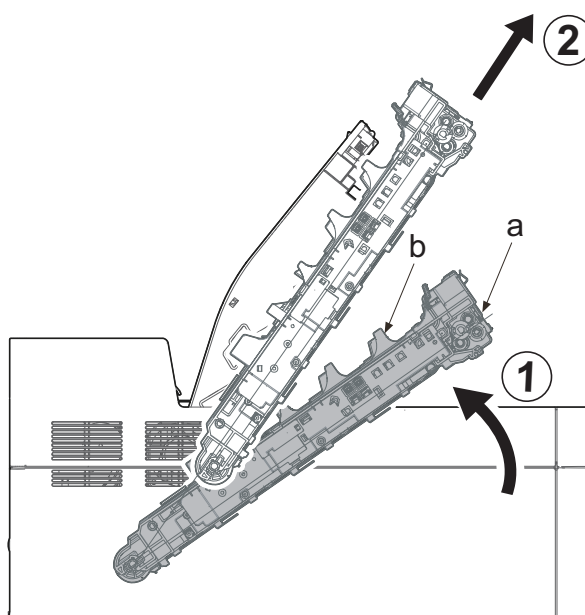


Figure 4-11

*: When removing the primary transfer unit (a) or it is unstable to install it, hold the handle (b) at the machine rear side by the other hand

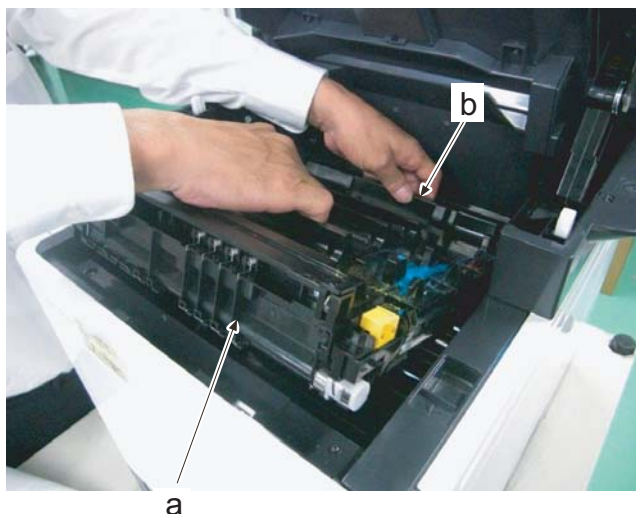


Figure 4-12

IMPORTANT

Do not touch the release lever (b) after detaching the primary transfer unit (a).

This lever (b) is connected with the shutter lever (c) and so they are released together by installing the toner container into the main unit. The operation mistakenly open the toner feed inlet (d).

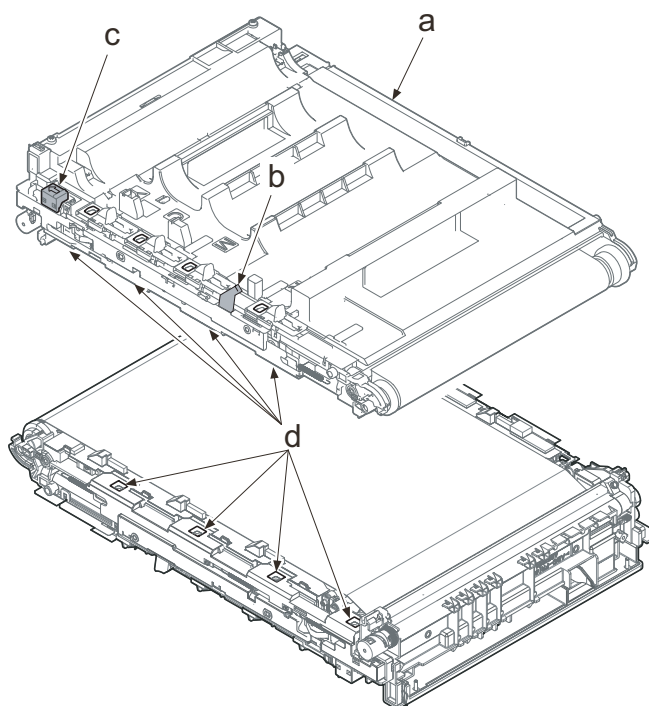


Figure 4-13

(2) Drum section

(2-1) Detaching and reattaching the drum unit

Procedures

1. Detach the drum unit (a)(M,C and Y) by pulling it up.
Lift up the drum unit (K)(b) and pull it toward the machine front side to detach it.

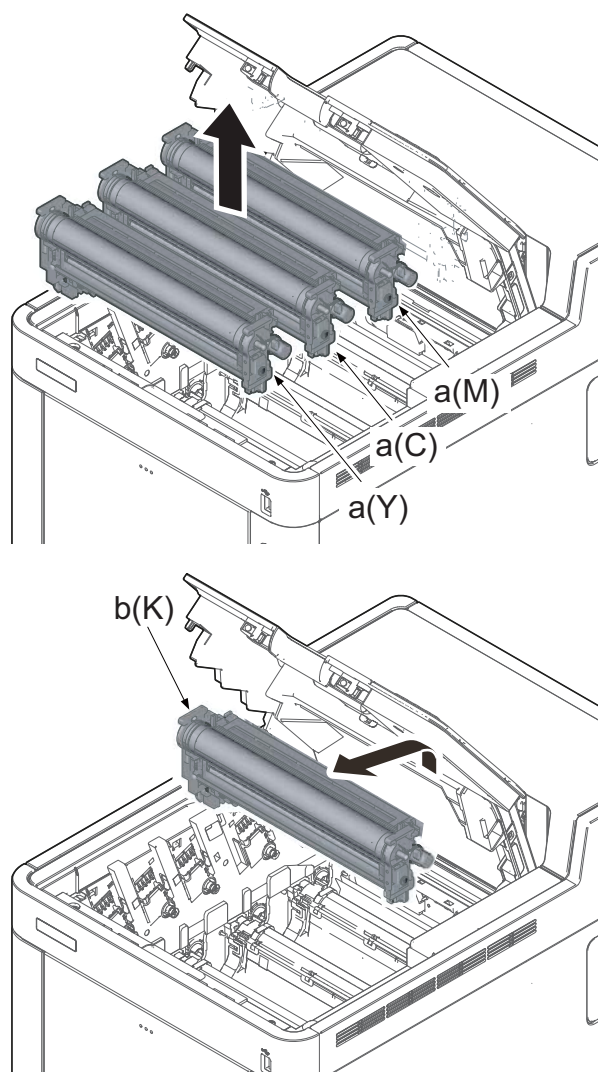


Figure 4-14

*: Hold the handles (b) on both sides when detaching the drum unit (a).

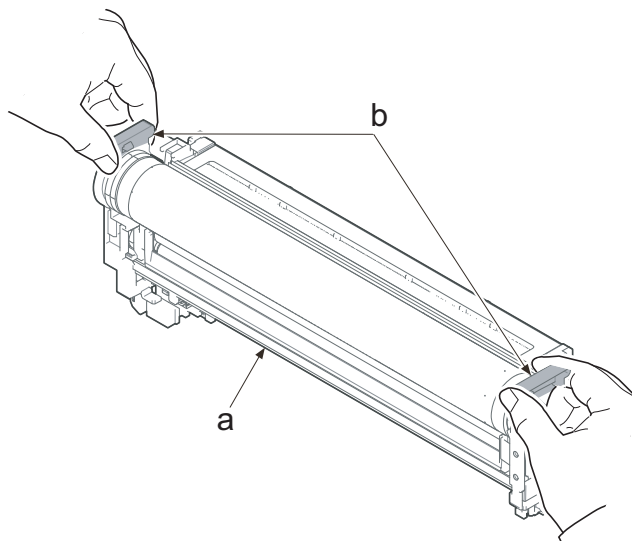


Figure 4-15

*: When attaching the drum unit (K)(a), tilt it toward you to insert the drum shafts (b) along the rails (c) all the way. Then, make it vertical and push into the main unit.

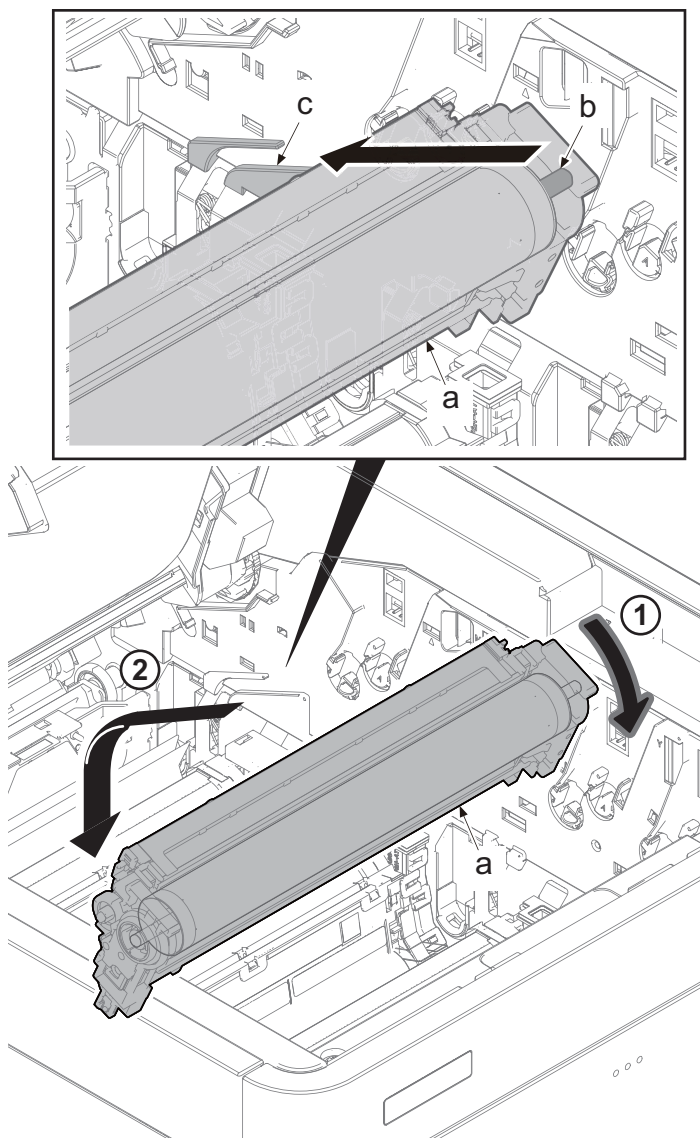


Figure 4-16

(3) Developer section

(3-1) Detaching and reattaching the developer unit

Procedures

1. Detach the developer unit (K, M, C and Y)(a).

*: connection portion (b)

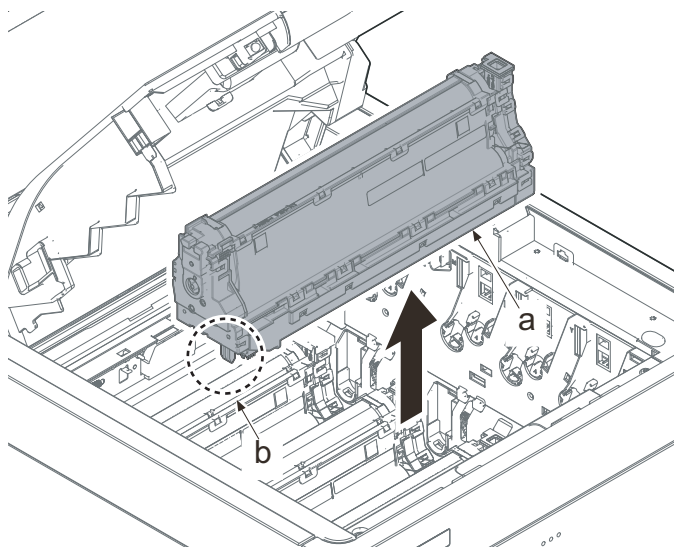


Figure 4-17

*: When detaching the developer unit (a), hold both the left and right handles (b).

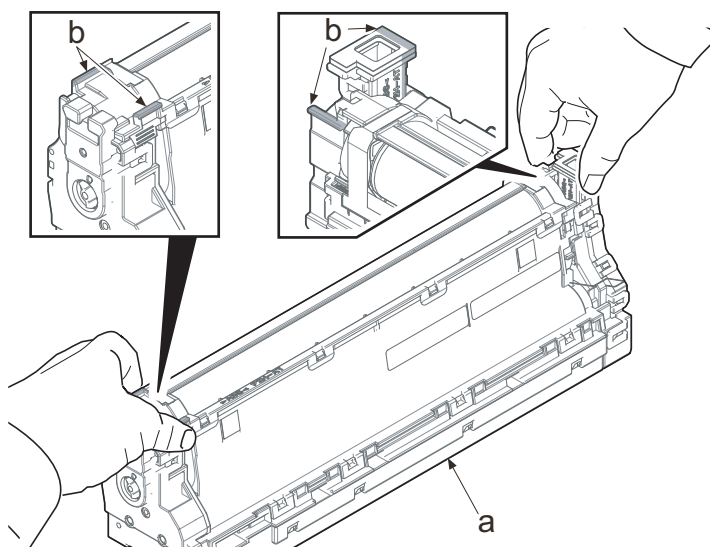


Figure 4-18

*: Make sure not to touch the gears (a) in the drive section where there is grease.

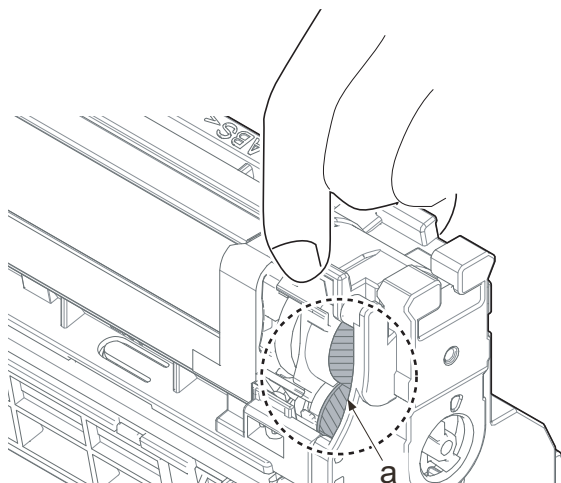


Figure 4-19

2. Detach the developer unit (a)(K, M, C and Y).
3. Reattach the parts in the original position.

IMPORTANT

When attaching the developer unit (a), match the colors between the back side (b) of the developer unit and the right side (c) of the main unit.

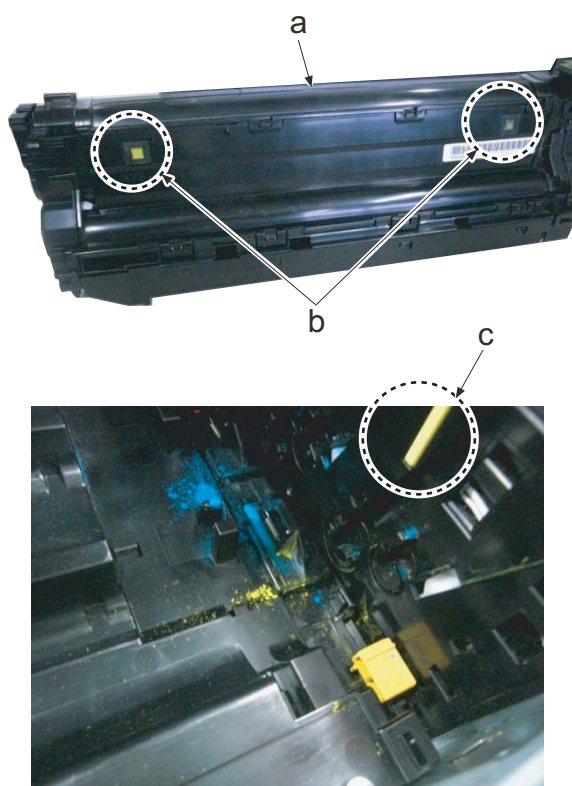


Figure 4-20

*: Remove the cap (b) when attaching the new developer unit (a).

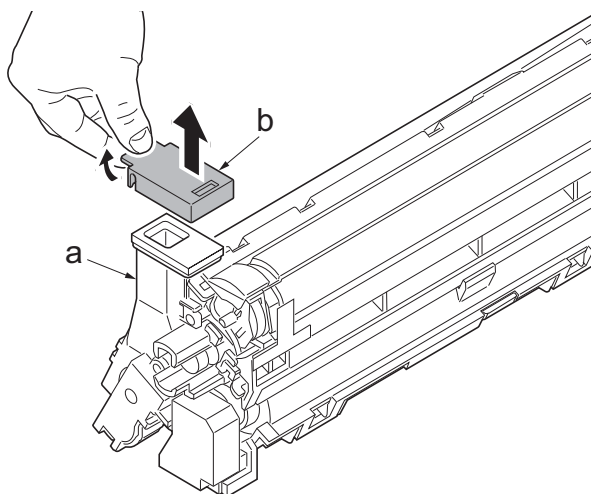


Figure 4-21

4. Attach the new drum unit (K,M,C,Y).
5. Reattach the parts in the original position.
6. Attach the new primary transfer unit.
7. Reattach the parts in the original position.
8. Detach the toner containers (K, M, C and Y).
9. Close the upper tray.

(4) Fuser section

(4-1) Detaching and reattaching the fuser unit

Procedures

1. Open the rear cover (a).

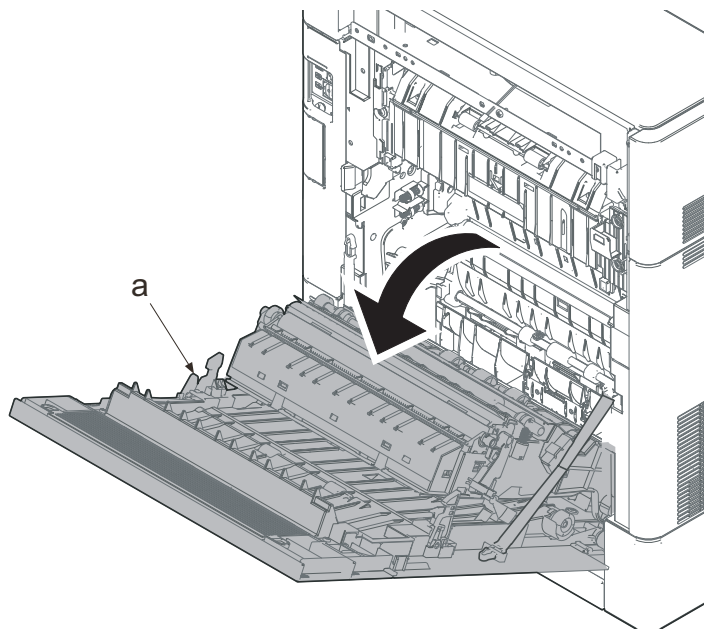


Figure 4-22

2. Pull the lower part of the opening toward the machine rear side and release the hook (a).
3. Remove the interface cover (b).

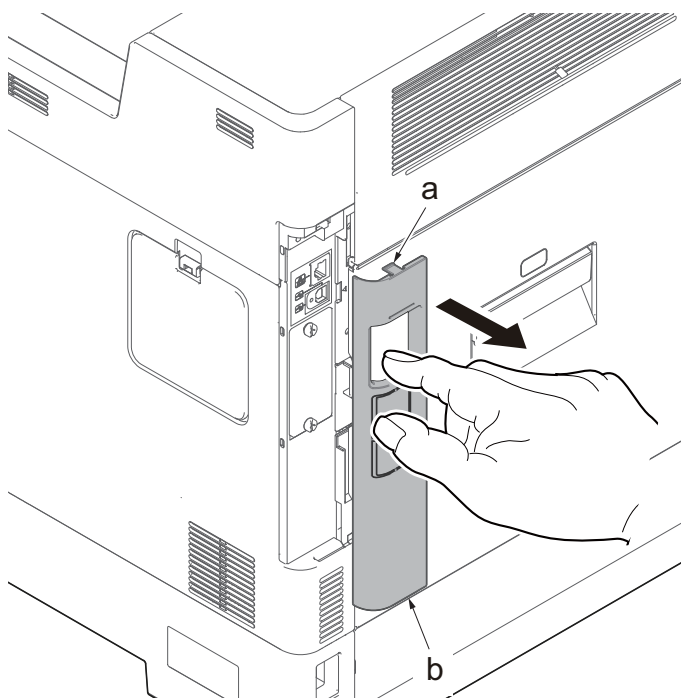


Figure 4-23

4. Remove the screw (a)(M3x8).
5. Remove the fuser wire cover (b).

*: First insert the hook (c) into the opening (d) and secure the screw.

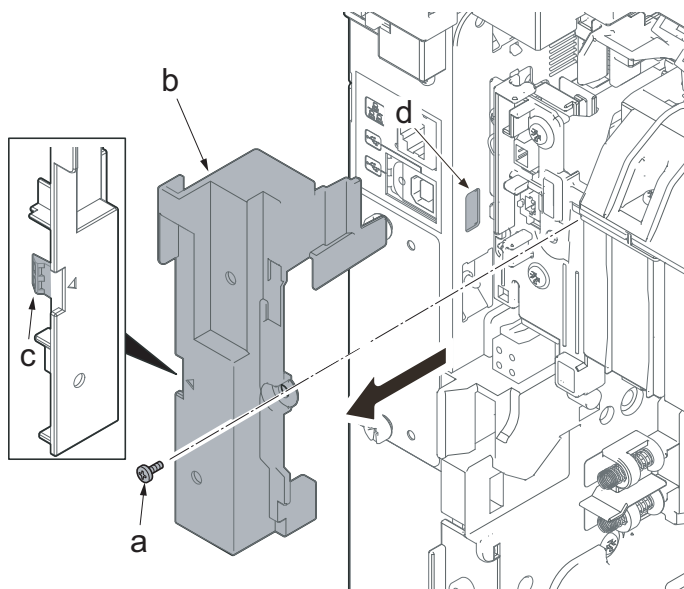


Figure 4-24

6. Disconnect two connectors.
- *: Disconnect each connector of the eject PWB (a) and the fuser heater (b). Do not disconnect two connectors (c) of the fuser unit.

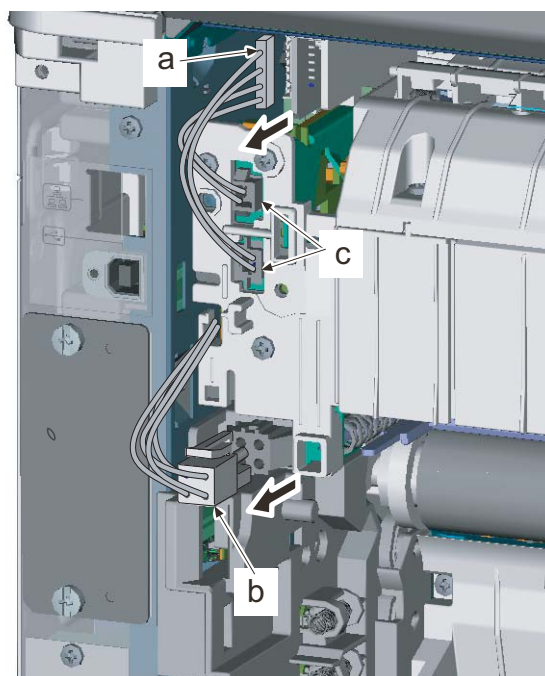


Figure 4-25

7. Remove two screws (a) (M3x8: silver) screws that are secured at the position with the triangle engraving.
8. Detach the fuser unit (b).
9. Attach the new fuser unit.
10. Reattach the parts in the original position.

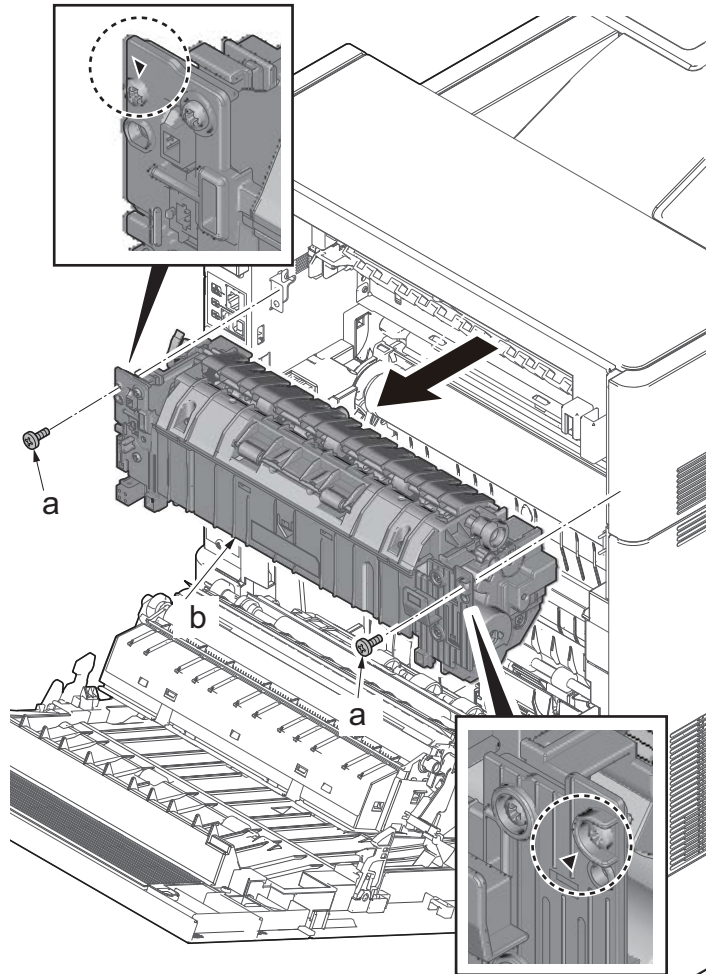


Figure 4-26

IMPORTANT

Take care not to touch the connector of the pressure release sensor (b) when fitting the fuser unit (a).
A service call error may appear if the sensor is disconnected.

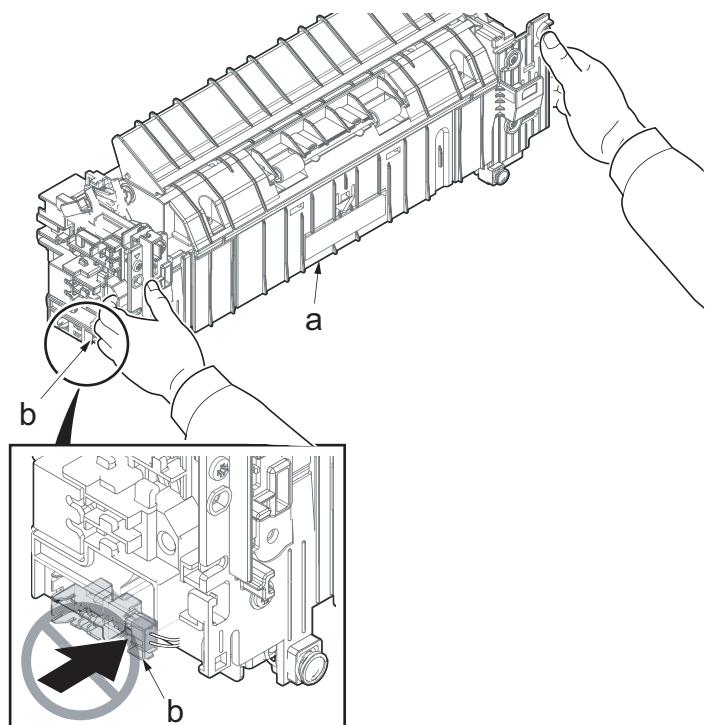


Figure 4-27

When attaching the fuser unit, first secure the screws and connect the connectors. (For prevention of damage by electro-static)

Before reattaching the fuser wire cover, put the wire (a) in between the ribs (b) so that it is not caught by the fuser wire cover.

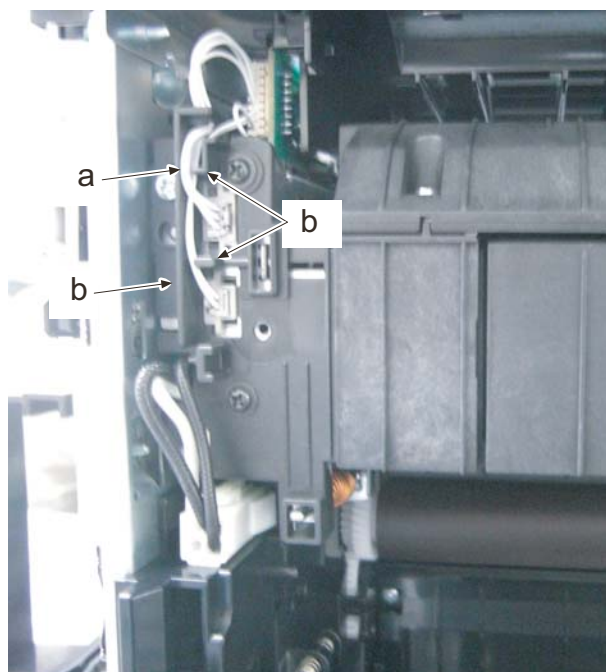


Figure 4-28

(5) Detaching and reattaching the retard roller

Procedures

1. Pull out the cassette (a).

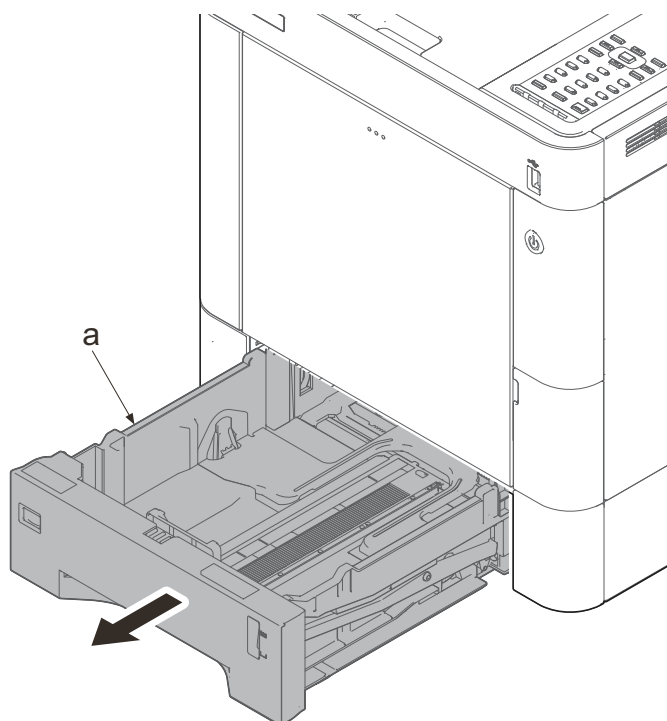


Figure 4-29

2. Pull the conveying stopper (a) toward the machine right side and rotate it by using a flat-blade screwdriver (b).
3. Release the hook (c) of the conveying stopper (a) from the rib (d) and pull the conveying stopper (a) out.

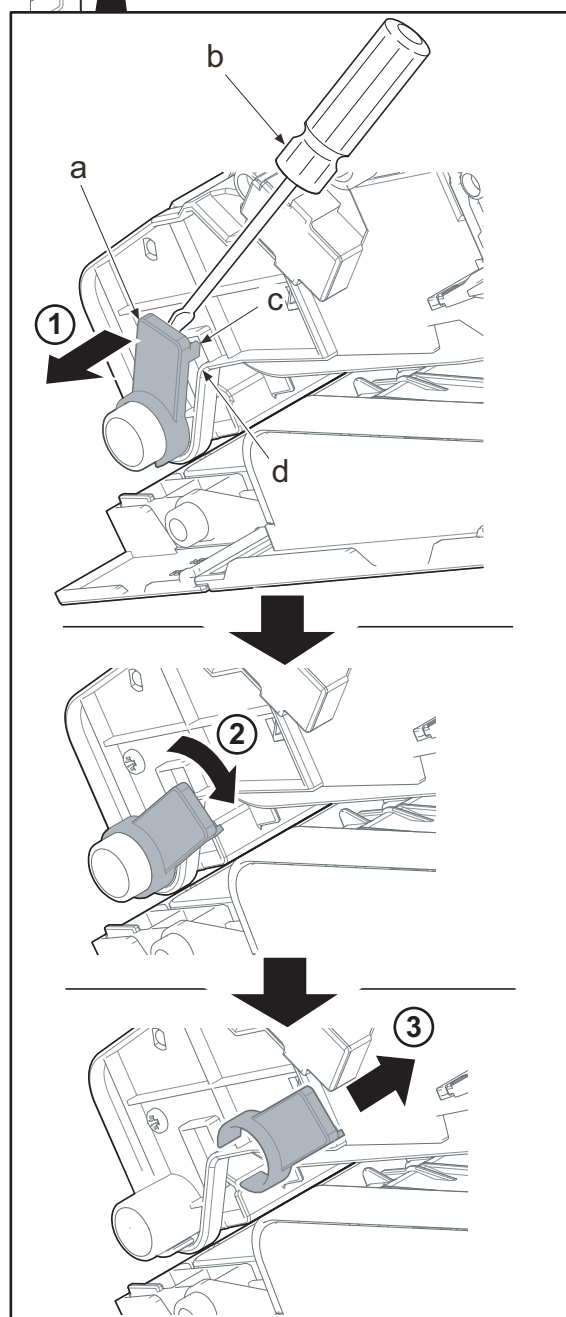
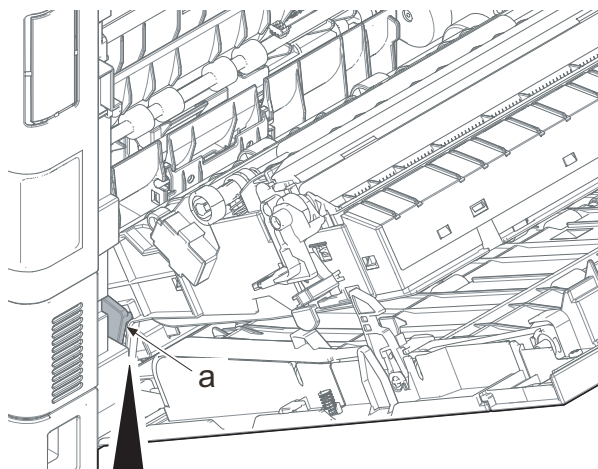


Figure 4-30

4. Slide the duplex paper conveying unit (a) toward the machine right side.
5. Release the fulcrum part of the duplex paper conveying unit (a) at the machine left side, and pull the unit out toward the machine rear side.

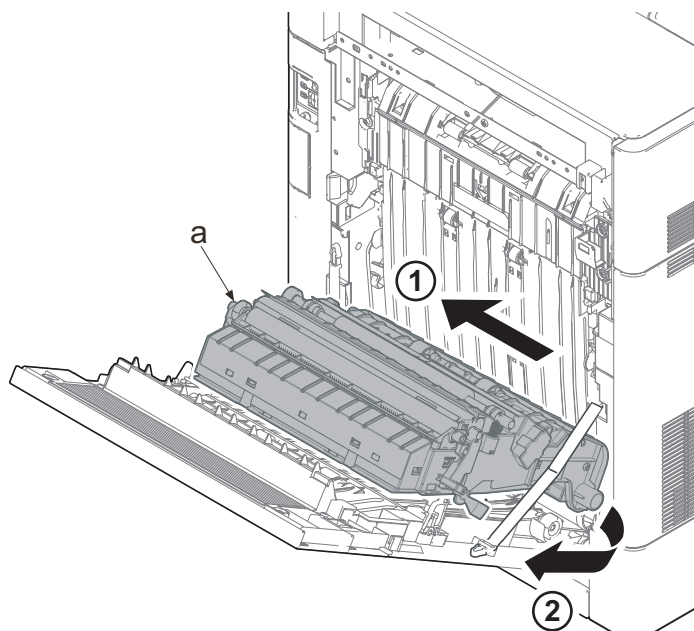
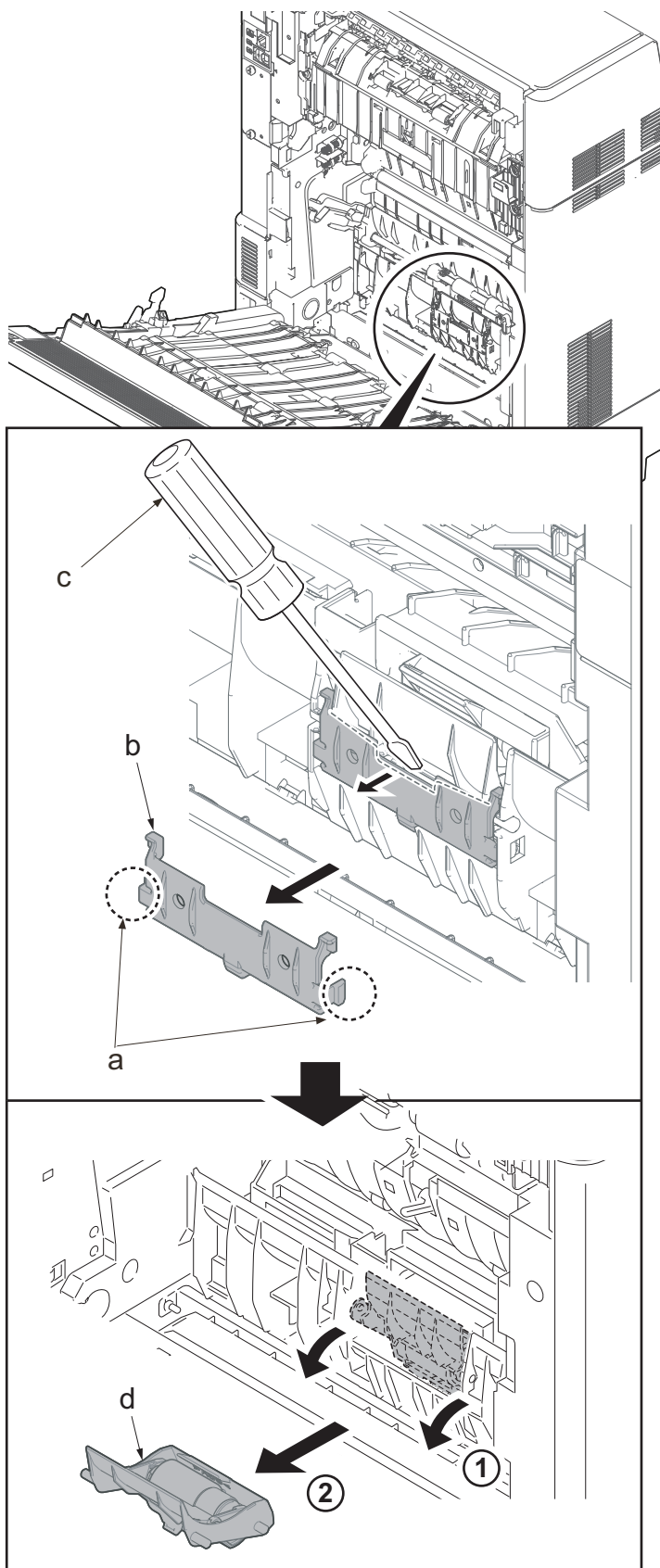


Figure 4-31

6. Release two hooks (a).
7. Remove the retard cover (b) toward you.
- *: Place the flat-blade screwdriver (c) into the center and remove it by bending it towards the machine rear side.
8. Remove the retard roller unit (d).



IMPORTANT

Install the cassette first when attaching the retard roller unit. The retard pressure release lever must be located at the machine front side from the retard roller unit to apply appropriate pressure.

Figure 4-32

When reattaching the retard cover (a), fasten two upper hooks (b) and then push the retard cover to fasten two lower hooks (c). Check if four hooks (b and c) are surely fastened after reattaching it.

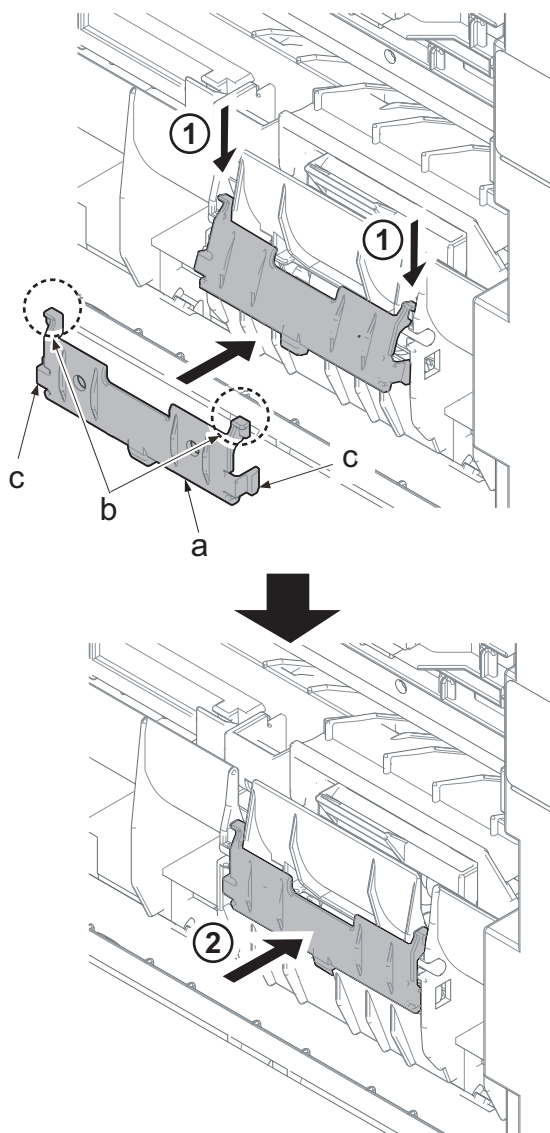


Figure 4-33

(6) Detaching and reattaching the paper feed roller unit

Procedures

1. Push the machine right side hook (a) outward using a flat-blade screwdriver (b).

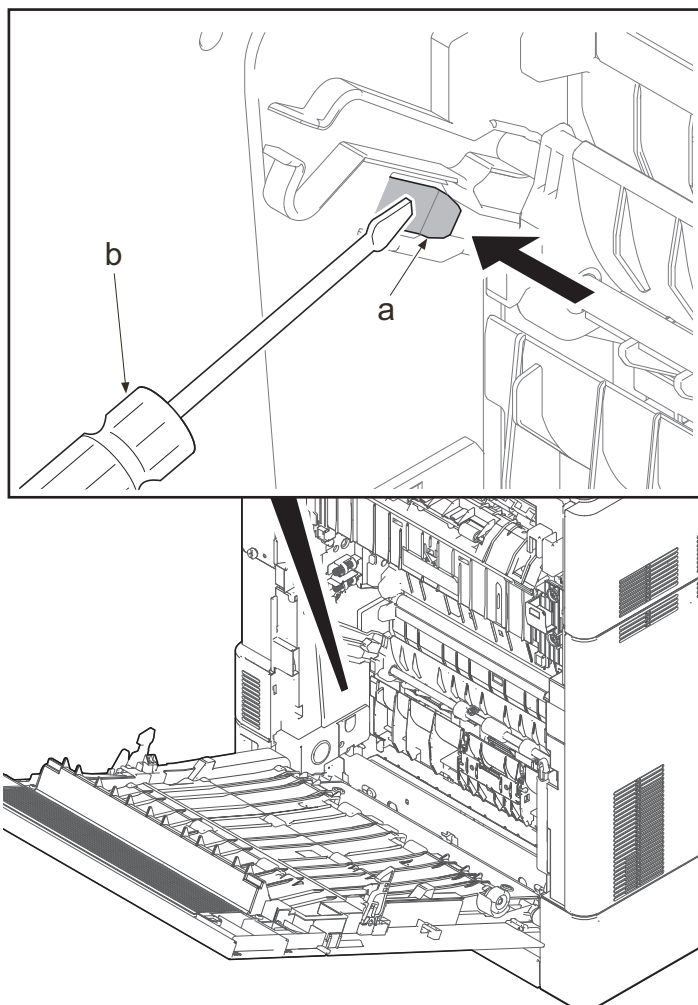
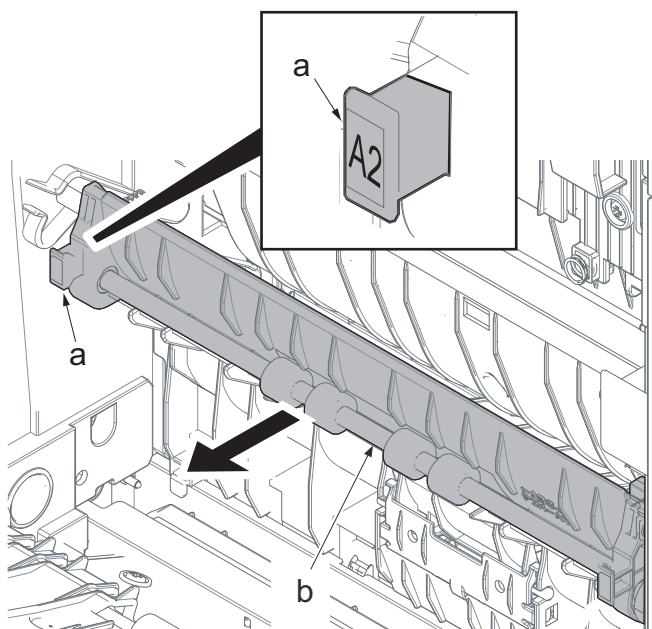
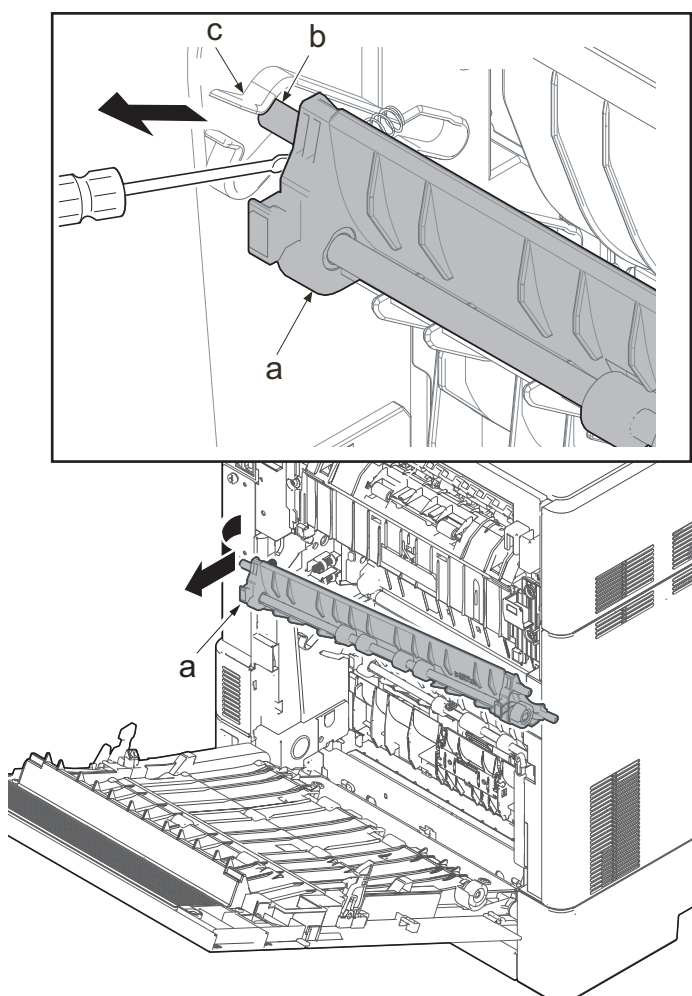


Figure 4-34

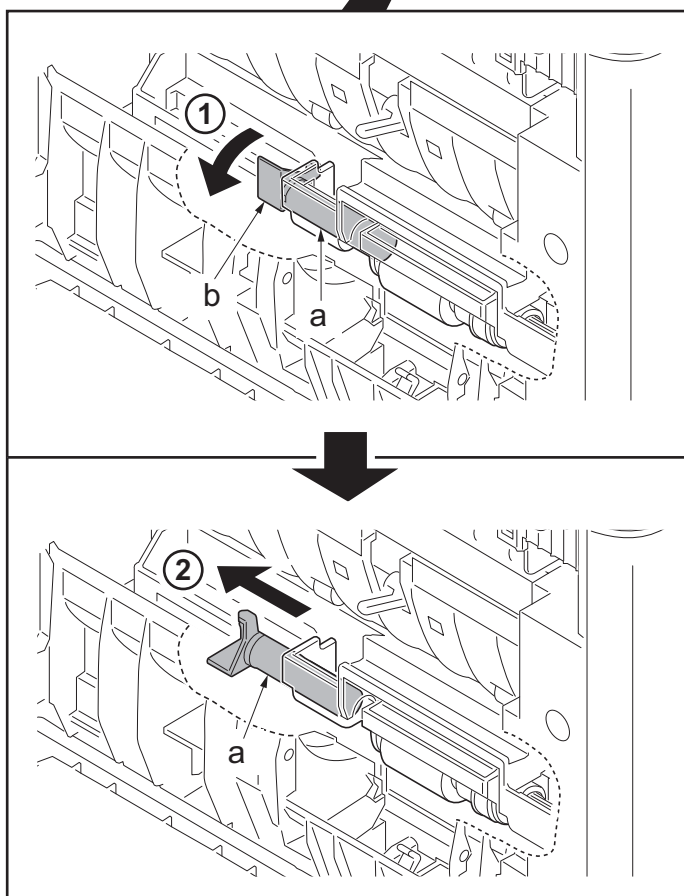
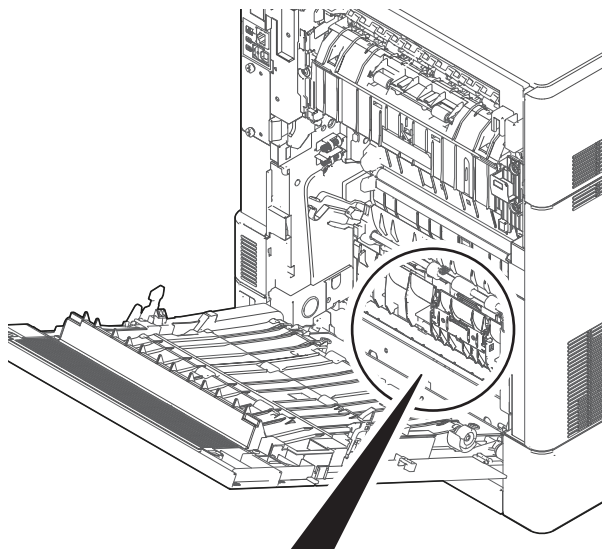
2. Pull the middle roller unit (b) out by holding handle A2 (a).

**Figure 4-35**

3. Remove the machine right side shaft (b) of the middle roller unit (a) from the rail (c).
4. Detach the middle roller unit (a).

**Figure 4-36**

5. Rotate the lever (b) of the paper feed roller pin (a) toward the machine rear side.
6. Slide the paper feed roller pin (a) toward the machine front side.

**Figure 4-37**

7. Detach the paper feed roller unit (a).
8. Attach the new feed roller unit.
9. Reattach the parts in the original position.
10. Attach the new retard roller unit.
11. Reattach the parts in the original position.

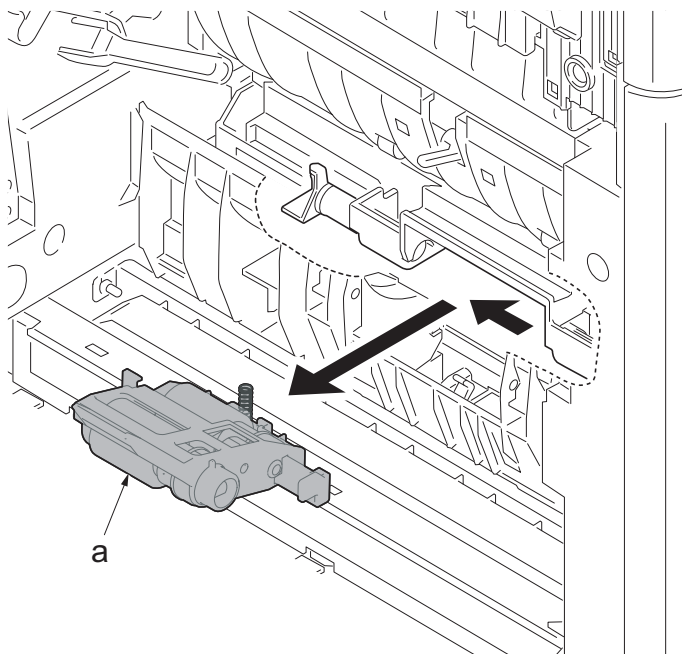


Figure 4-38

(7) Detaching and reattaching the secondary transfer roller unit

Procedures

1. Release two hooks (b) of the duplex paper conveying unit (a).
2. Detach the secondary transfer roller unit (c).
3. Attach the new secondary transfer roller unit (c).
4. Reattach the parts in the original position.
5. Reattach the duplex paper conveying unit in the reverse order of removal.
6. Close the rear cover.

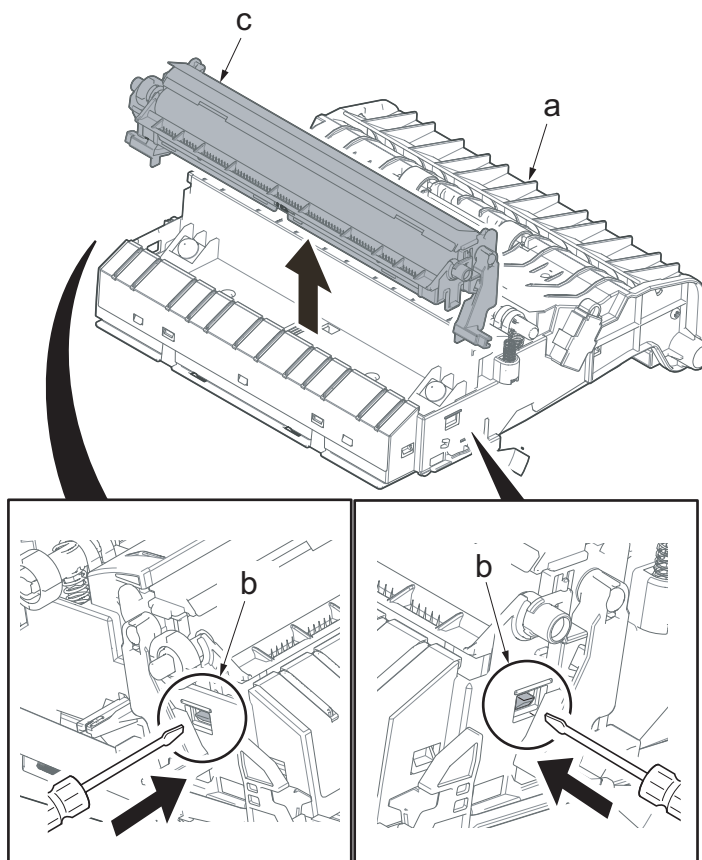


Figure 4-39

IMPORTANT

When reattaching the secondary transfer roller unit (a), first fit the upper part and then insert the hook (b) into the square hole. Then, insert each hook (c) of both transfer release levers into the inside ribs (d).

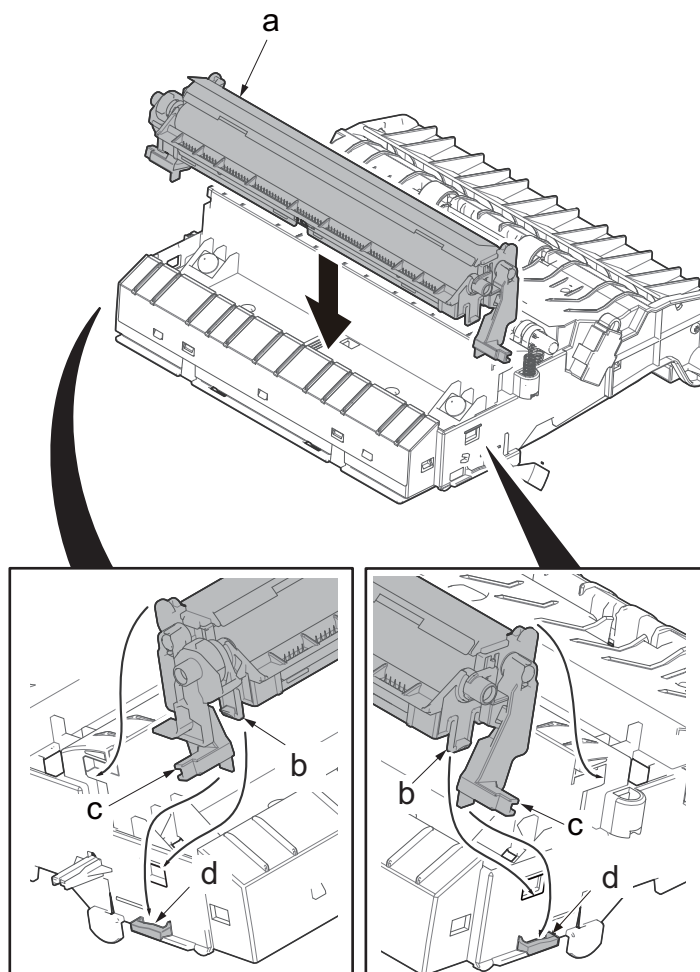
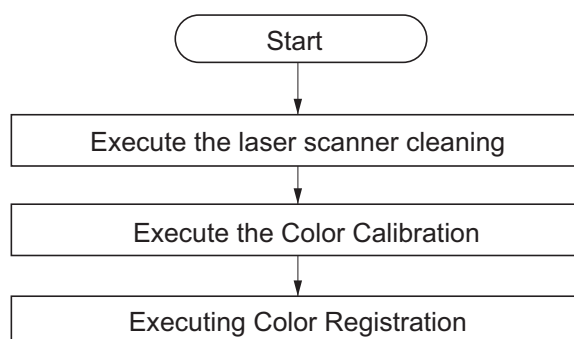


Figure 4-40

(8) Adjustment procedures after replacing the maintenance kit

Execute the following after replacing the maintenance kit.



Procedures

Execute the laser scanner cleaning

30 ppm models

1. Display the screen.
[Menu] key > [] key > [Adjustment/Maintenance] > [] key > [] key > [Service Setting] > [] key
2. Adjust.
[] key > [LSU] > [OK] key > [OK] key
After executing the laser scanner cleaning, [Service Settings] is displayed.

35/40 ppm models

1. Display the screen.
[Menu] key > [] key > [Adjustment/Maintenance] > [OK] key > [] key > [Service Setting] > [OK] key > [] key > [LSU] > [OK] key
2. Adjust.
Select [Execute]. The laser scanner cleaning is started.

Execute the Color Calibration

30 ppm models

1. Display the screen.
[Menu] key > [] key > [Adjustment/Maintenance] > [] key
2. Adjust.
[] key > [Color Calibration] > [OK] key > [OK] key
[Color Calibration] is executed and [Adjustment/Maintenance] is displayed when completing it.

35/40 ppm models

1. Display the screen.
[Menu] key > [] key > [Adjustment/Maintenance] > [OK] key > [] key > [Color Calibration] > [OK] key
2. Adjust.
Select [Yes] to execute the [Color Calibration].
[Color Calibration] is executed and [Adjustment/Maintenance] is displayed when completing it.

Executing Color Registration

Normal correction

30 ppm models

1. Display the screen.
[Menu] key > [] key > [Adjustment/Maintenance] > [] key > [] key > [Color Registration (Normal)] > [] key
2. Print chart.
[] key > [Print chart] > [OK] key > [OK] key
The charts are printed. The chart indicating H-L (left), V (center) and H-R (right) per each color M (Magenta), C (Cyan) and Y (Yellow) is printed.

35/40 ppm models

1. Display the screen.
[Menu] key > [] key > [Adjustment/Maintenance] > [OK] key > [] key > [Color Registration] > [OK] key > [] key > [Normal] > [OK] key
2. Print chart.
[] key > [Print chart] > [OK] key > [Yes]
The charts are printed. The chart indicating H-L (left), V (center) and H-R (right) per each color M

(Magenta), C (Cyan) and Y (Yellow) is printed.

After printing, the color registration correction (Normal) is displayed.

Chart sample (Normal)

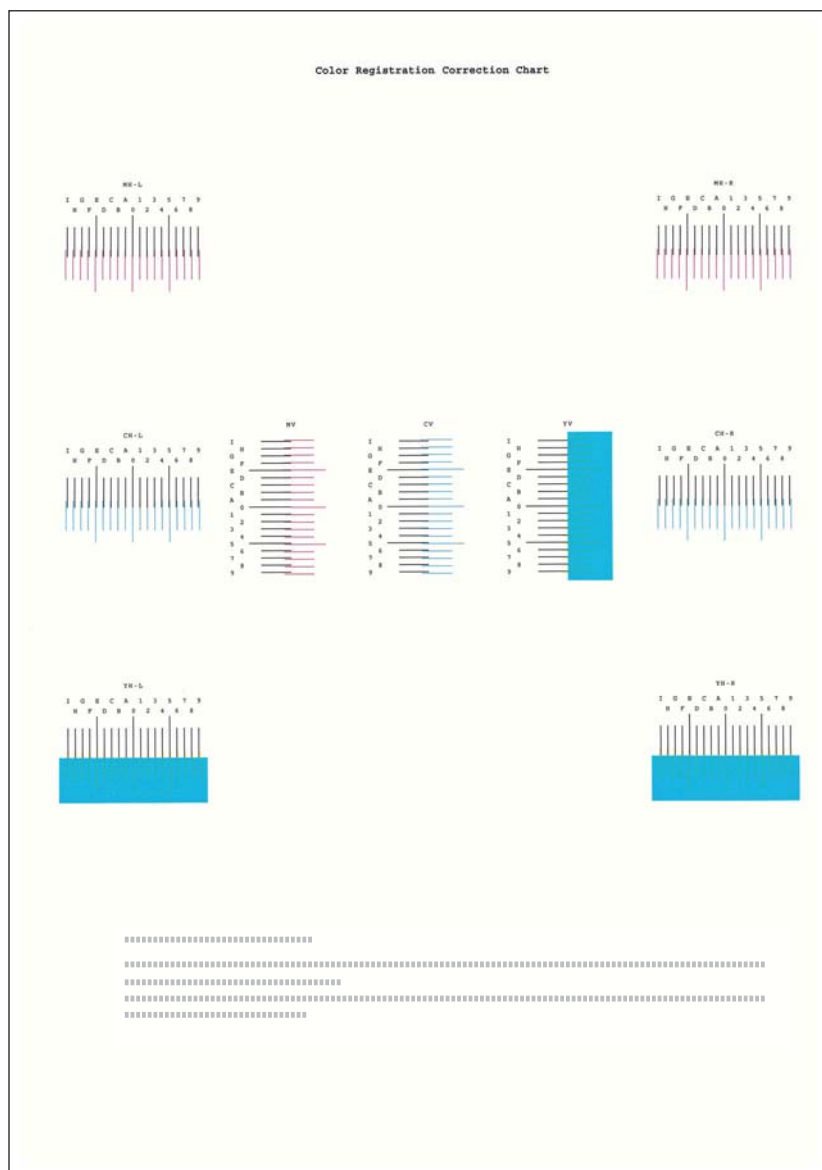


Figure 4-41

30 ppm models

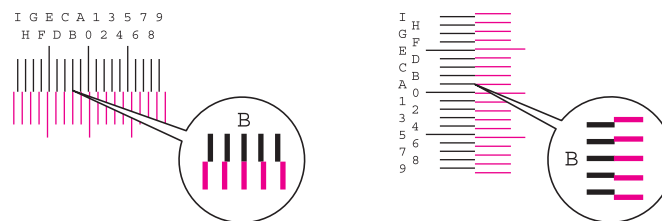
3. Indicate the correction menu.

[Menu] key > [] key > [Adjustment/Maintenance] > [] key > [] key > [Color Registration (Normal)] > [] key > [] key > [Magenta] > [OK] key

The correction menu for Magenta is displayed.

4. Input values.

1. Find the point where two lines are most aligned from each chart. If it is at "0", the correction is unnecessary. In case of the illustration below, "B" is the value that should be set.

**Figure 4-42**

2. Select [] or [] key and change L, V and R. Select [] or [] key and input the values read from the chart. Press [OK] key.
 Select [] key to shift the value 0 to 9. Select [] key when proceeding in the reverse direction.
 Select [] key to shift the value from 0 to alphabets of A to I. Select [] key when proceeding in the reverse direction.
 Select [] key to shift the value from 0 to alphabets of A to I. Select [] key when proceeding in the reverse direction.
 Select the [OK] key.
 The Magenta correction is complete.
3. Repeat step 3 and 4 to adjust Cyan and Yellow.

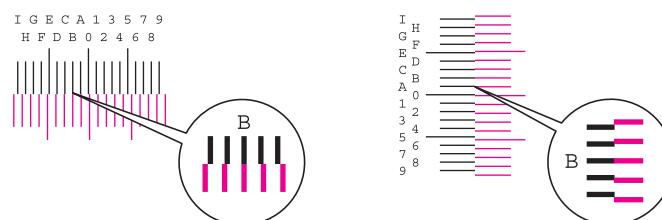
35/40 ppm models

3. Indicate the correction menu.

[] [] key > [Magenta] > [OK] key
 The correction menu for Magenta is displayed.

4. Input values.

1. Find the point where two lines are most aligned from each chart. If it is at "0", the correction is unnecessary. In case of the illustration below, "B" is the value that should be set.

**Figure 4-43**

2. Select [] or [] key and change L, V and R. Select [] or [] key and input the values read from the chart. Press [OK] key.
 Select [] key to shift the value 0 to 9. Select [] key when proceeding in the reverse direction.
 Select [] key to shift the value from 0 to alphabets of A to I. Select [] key when proceeding in the reverse direction.
 Numeric keys input is not available.
3. Repeat step 3 and 4 to adjust Cyan and Yellow.

Detailed Setting

30 ppm models

1. Display the screen.

[Menu] key > [] [] key > [Adjustment/Maintenance] > [] key > [] [] key > [Color Registration (Detail)] > [] key

2. Print chart.

[] [] key > [Print chart] > [OK] key > [OK] key

The charts are printed. The chart indicating H1 to H5 (upper) and V1 to V5 (lower) per each color M (Magenta), C (Cyan) and Y (Yellow) is printed.

35/40 ppm models

1. Display the screen.

[Menu] key > [] [] key > [Adjustment/Maintenance] > [OK] key > [] [] key > [Color Registration] > [OK] key > [] [] key > [Detail] > [OK] key

2. Print chart.

[] [] key > [Print chart] > [OK] key > [Yes]

The charts are printed. The chart indicating H1 to H5 (upper) and V1 to V5 (lower) per each color M (Magenta), C (Cyan) and Y (Yellow) is printed.

After printing, the [Color Registration (Detail)] is displayed.

Chart sample (Detail)

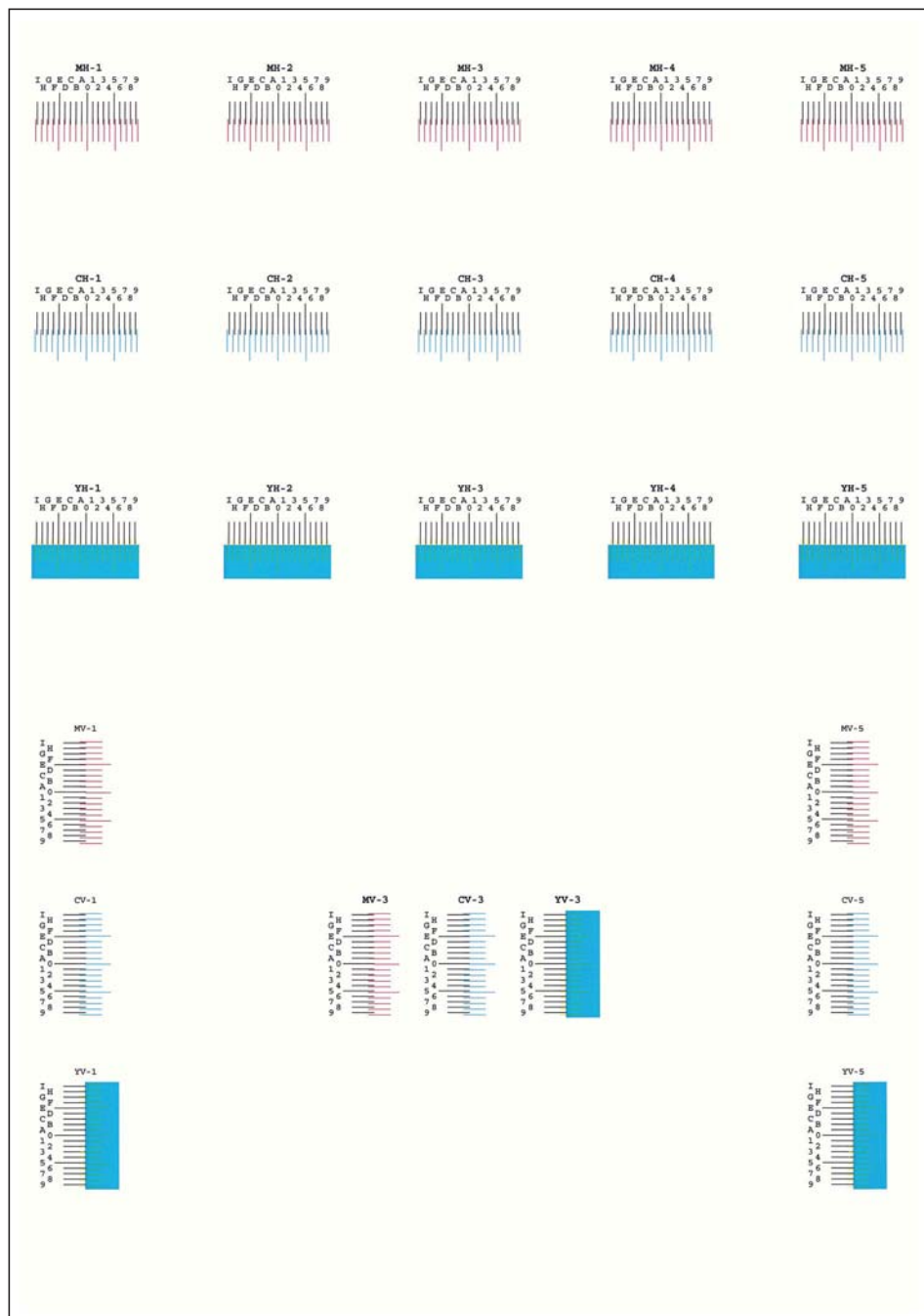


Figure 4-44

30 ppm models

3. Indicate the correction menu.

[Menu] key > [] key > [Adjustment/Maintenance] > [] key > [] key > [Color Registration (Detail)] > [] key > [] key > [Magenta] > [OK] key
The correction menu for Magenta is displayed.

4. Input values.

1. Find the point where two lines are most aligned from each chart. If it is at "0", the correction is unnecessary. In case of the illustration below, "B" is the value that should be set.

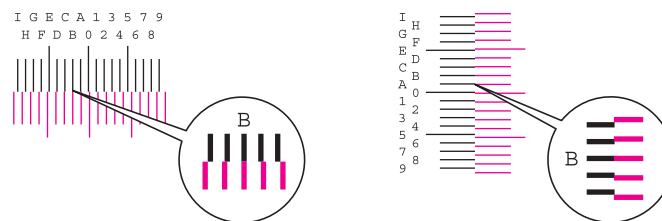


Figure 4-45

1. Read the values from H1 to H5 in the chart.

Read the value of V-3 (center) only of V1 to V5 in the chart.

2. Select [] or [] key and change H and V. Select [] or [] key and input the values read from the chart. Press [OK] key.

Select [] key to shift the value 0 to 9. Select [] key when proceeding in the reverse direction.

Select [] key to shift the value from 0 to alphabets of A to I. Select [] key when proceeding in the reverse direction.

3. Select the [OK] key.

The Magenta correction is complete.

4. Repeat step 3 and 4 to adjust Cyan and Yellow.

35/40 ppm models

3. Indicate the correction menu.

[][] key > [Magenta] > [OK] key

4. Input values.

1. Find the point where two lines are most aligned from each chart. If it is at "0", the correction is unnecessary. In case of the illustration below, "B" is the value that should be set.

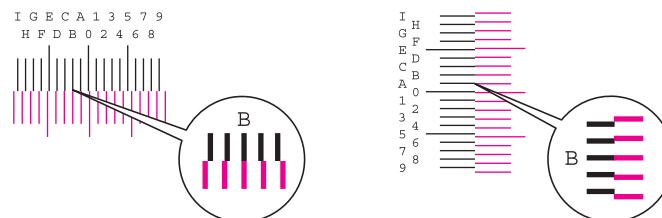


Figure 4-46

Read the values from H1 to H5 in the chart.

Read the value of V-3 (center) only of V1 to V5 in the chart.

2. Select [] or [] key and change H-1 to H-5, V-3. Select [] or [] key and input the values read from the chart. Press [OK] key.

After a while completing the Magenta correction, the [Color Registration (Detail)] is displayed.

Select [] key to shift the value 0 to 9. Select [] key when proceeding in the reverse direction.

Select [] key to shift the value from 0 to alphabets of A to I. Select [] key when proceeding in the reverse direction.

Numeric keys input is not available.

3. Repeat step 3 and 4 to adjust Cyan and Yellow.

4-4 Disassembly & Reassembly

(1) Outer covers

(1-1) Detaching and reattaching the front cover

Procedures

1. Open the top tray (b), by lifting the handle (a).

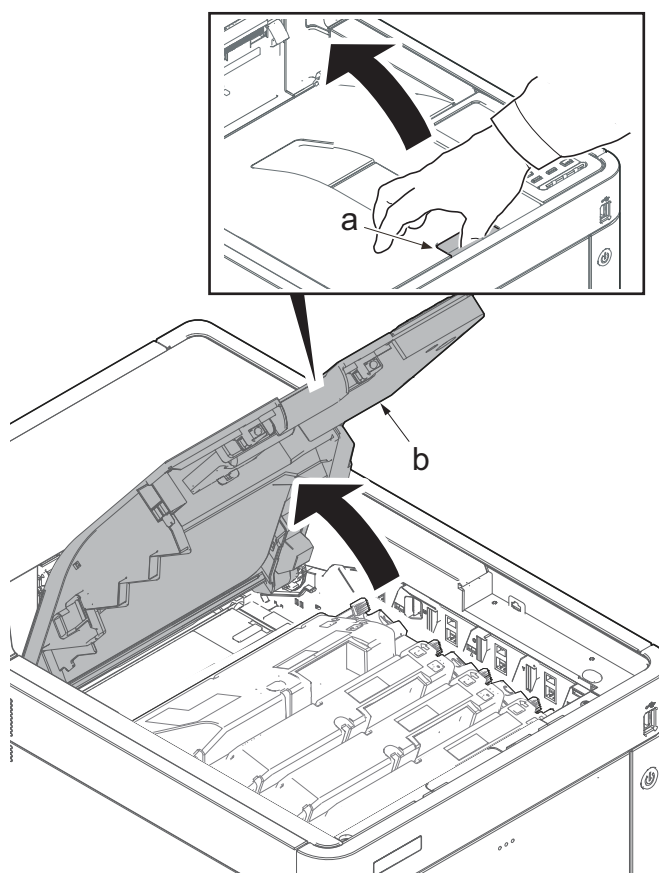
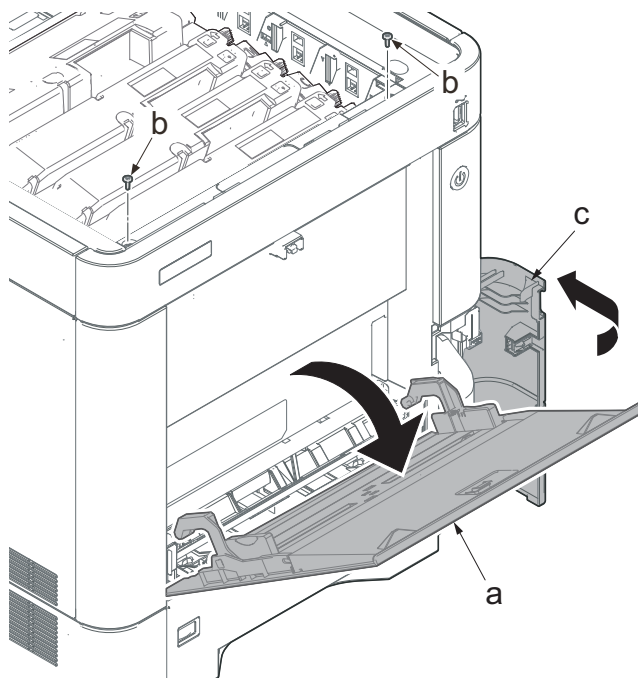
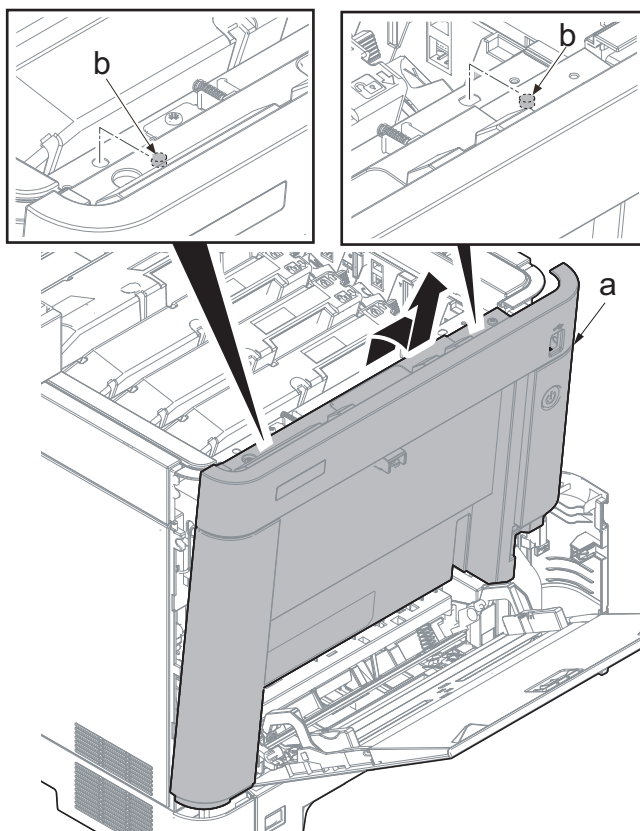


Figure 4-47

2. Open the MP tray (a).
3. Remove two screws (b)(M3x8).
4. Open the waste toner cover (c).

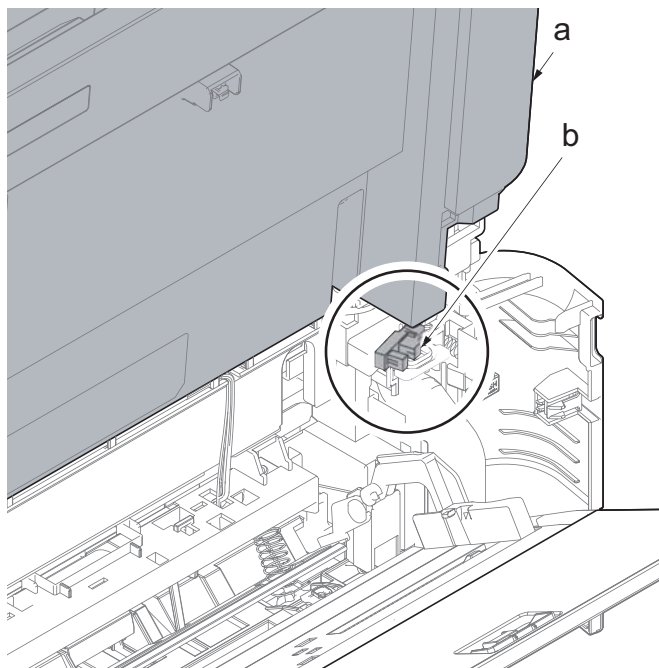
**Figure 4-48**

5. Slightly lift up the front cover (a) to release the boss (b).
6. Tilt the front cover (a) toward the machine front side.
7. Then, remove the front cover (a) by lifting it up.

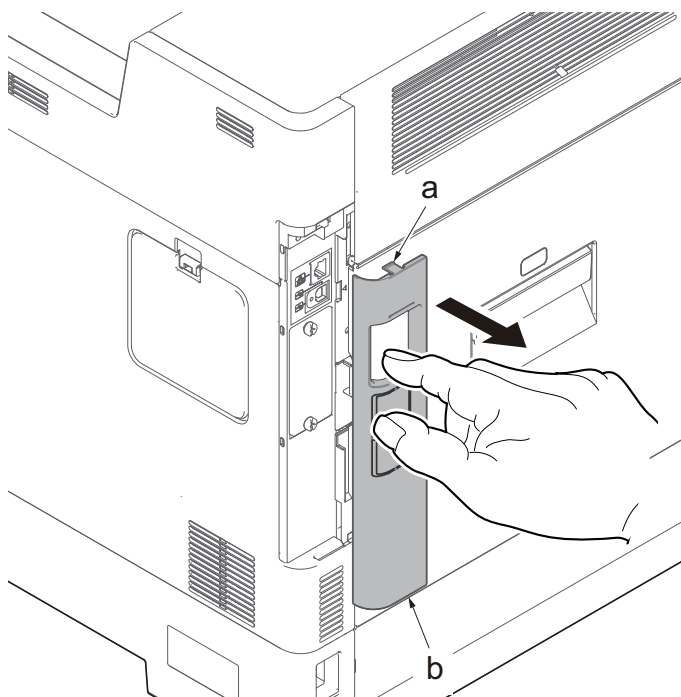
**Figure 4-49**

IMPORTANT

Make sure not to touch the waste toner cover sensor (b) when reattaching the front cover (a). If the waste toner cover sensor (b) comes off, even if you close the waste toner cover, [cover open] will be displayed.

**Figure 4-50****(1-2) Detaching and reattaching the interface cover.****Procedures**

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).

**Figure 4-51**

(1-3) Detaching and reattaching the upper right cover

Procedures

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).

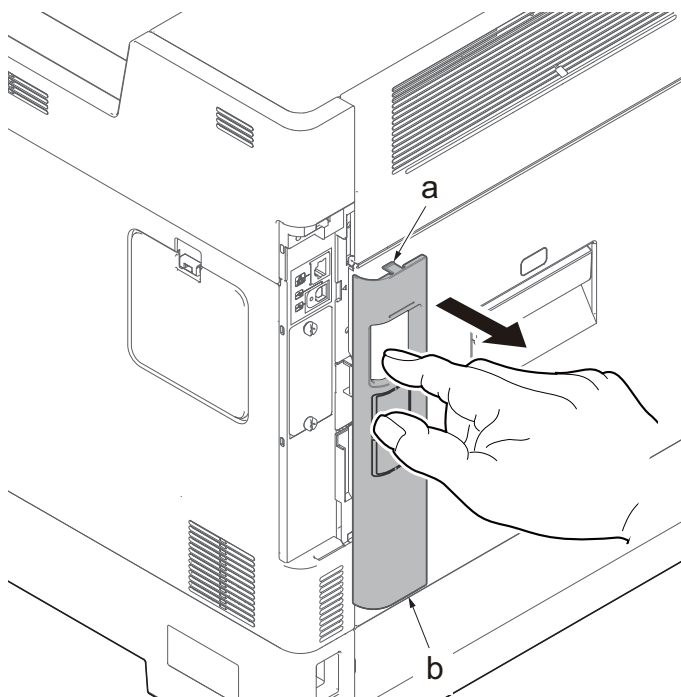


Figure 4-52

35/40 ppm models

3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.

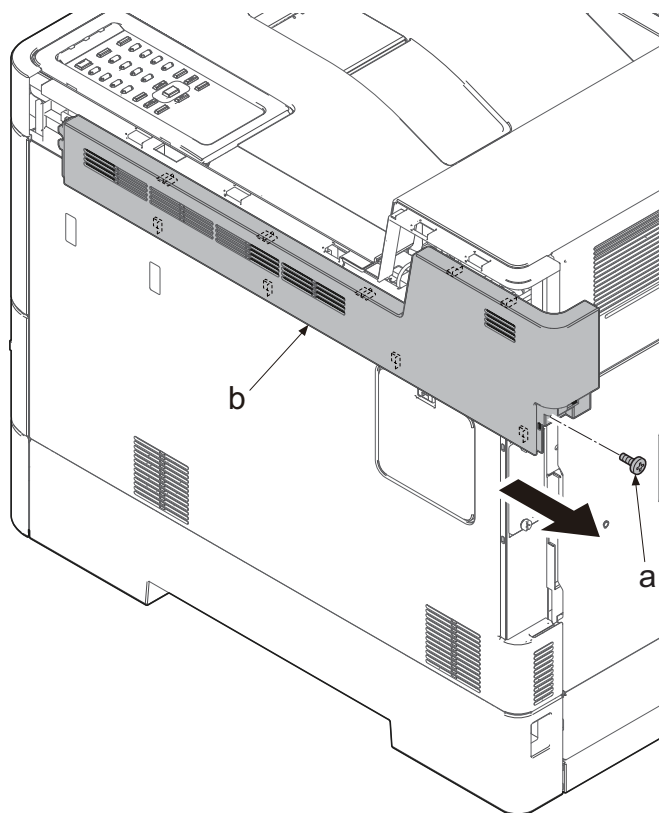
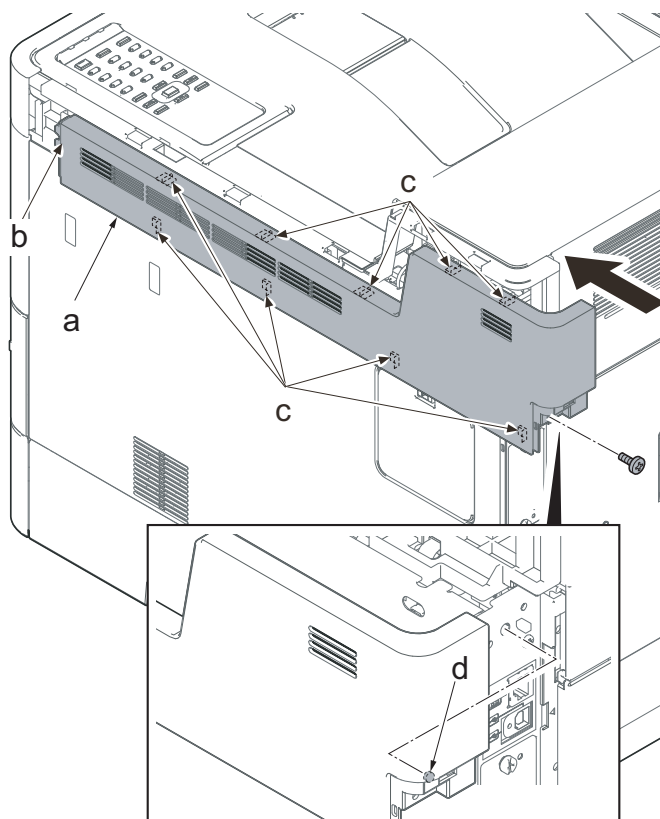


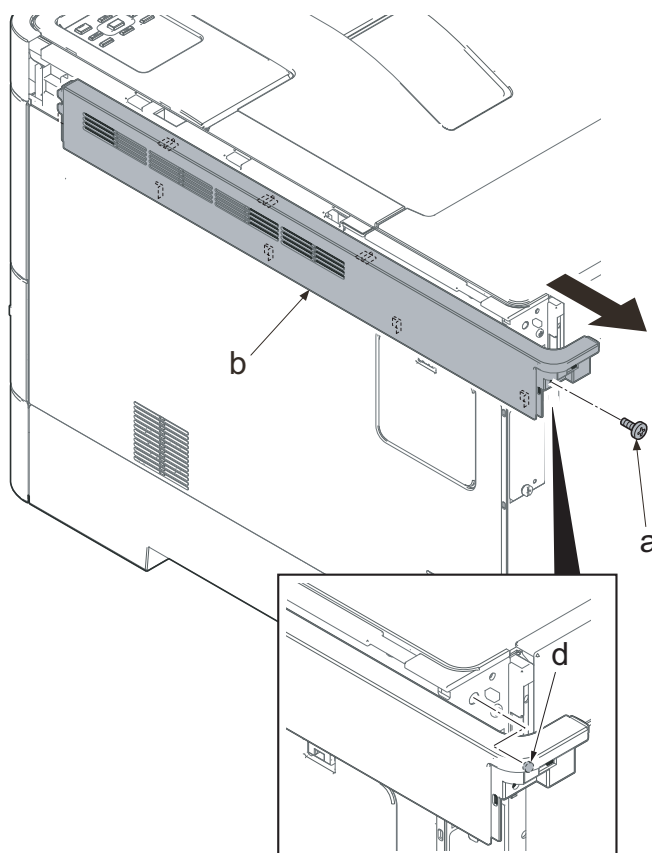
Figure 4-53

IMPORTANT

When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten nine hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.

**Figure 4-54****30 ppm models**

3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.

**Figure 4-55**

IMPORTANT

When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten seven hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.

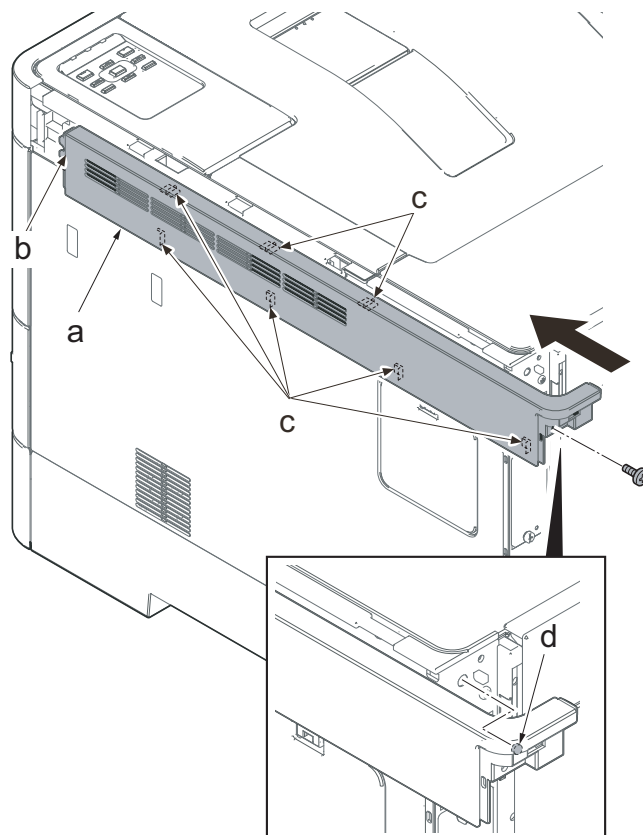


Figure 4-56

(1-4) Detaching and reattaching the middle right cover**Procedures**

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).

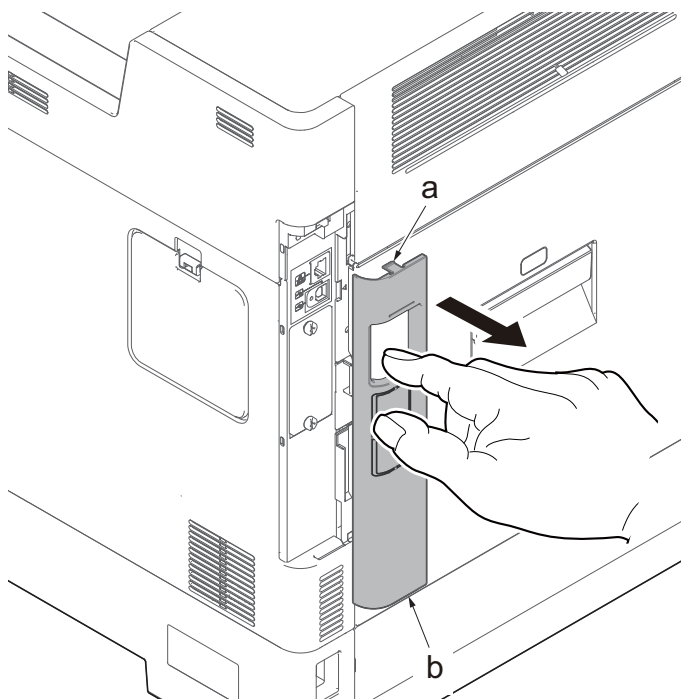
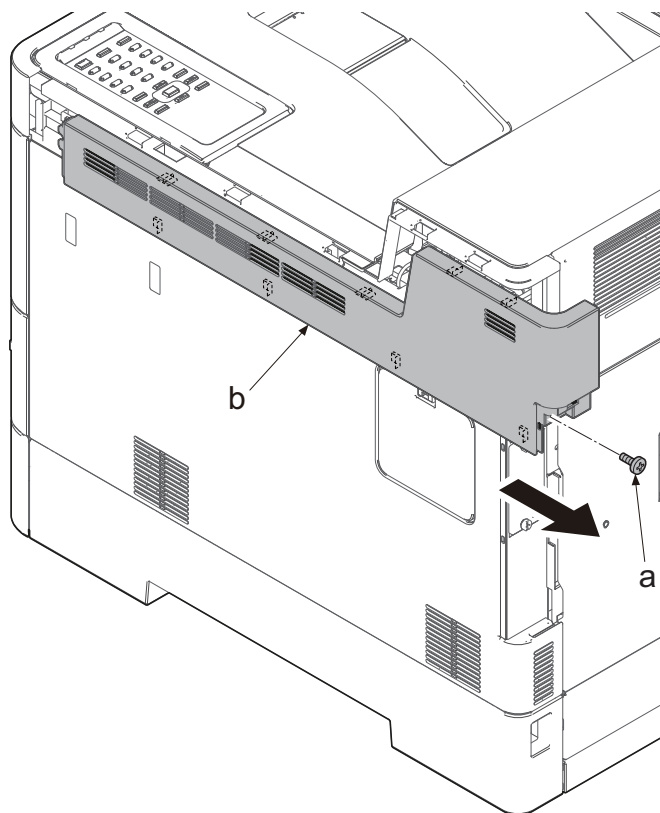


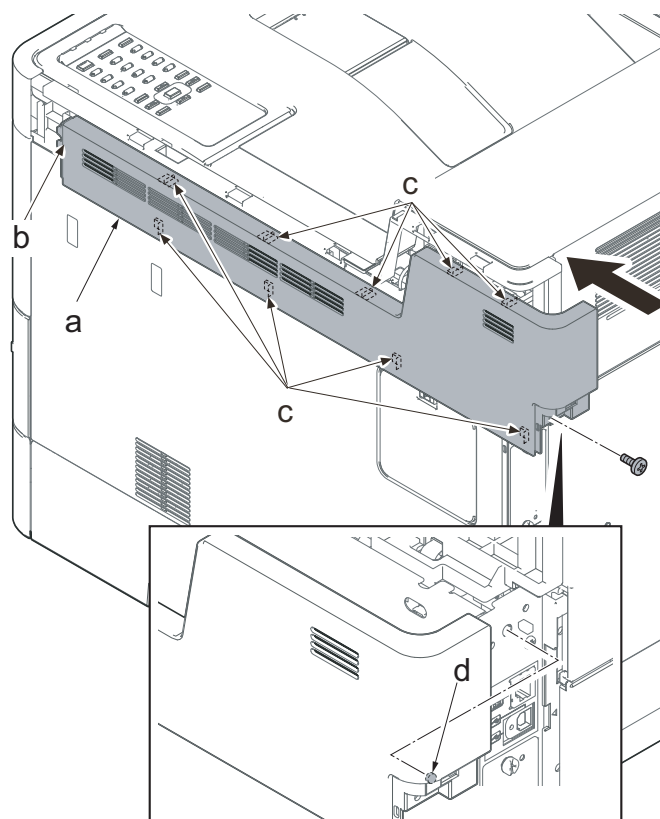
Figure 4-57

35/40 ppm models

3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.

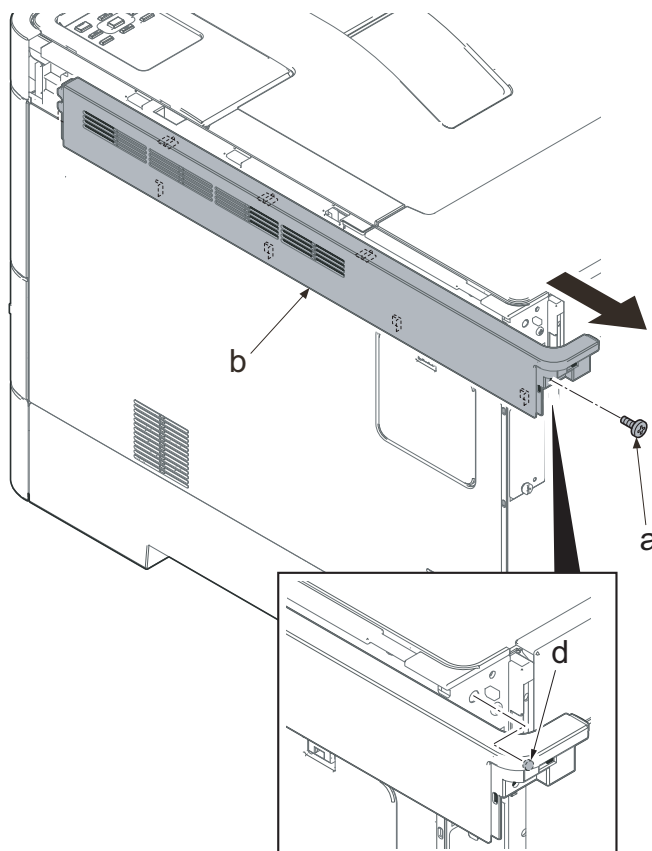
**Figure 4-58****IMPORTANT**

When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten nine hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.

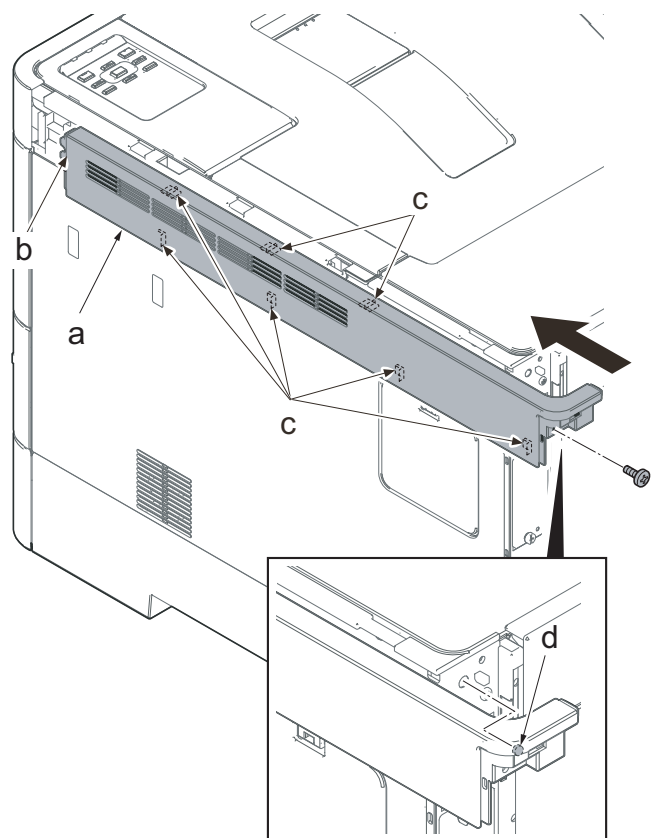
**Figure 4-59**

30 ppm models

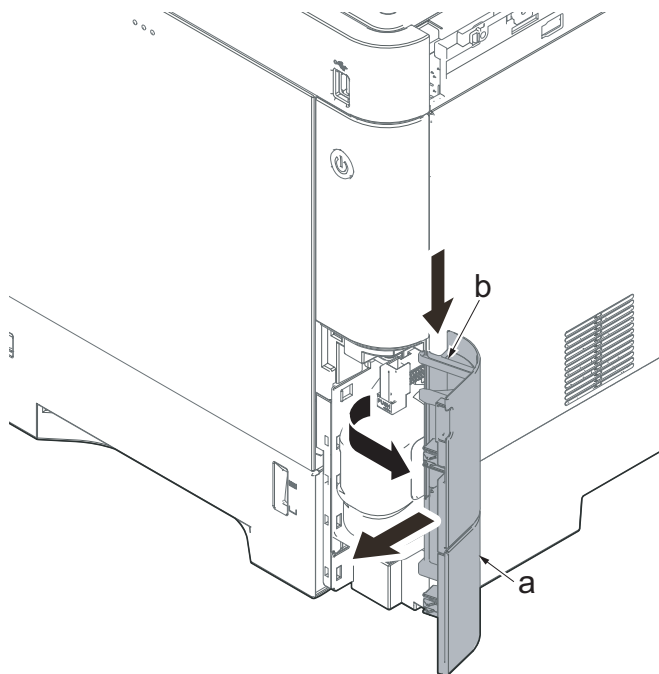
3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.

**Figure 4-60****IMPORTANT**

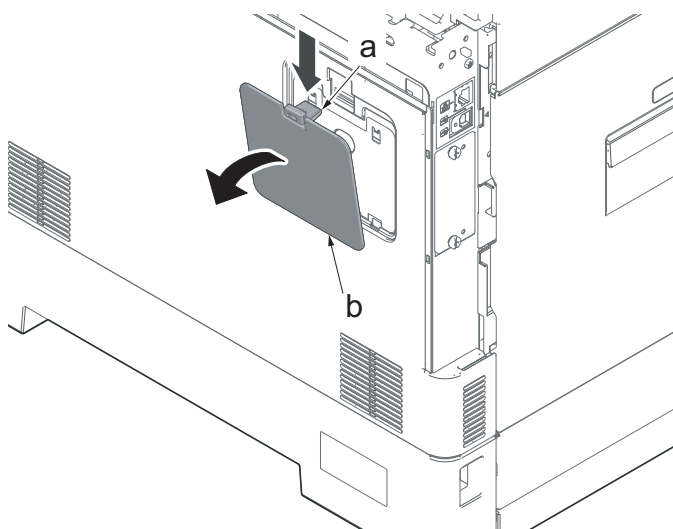
When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten seven hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.

**Figure 4-61**

5. Open the waste toner cover (a).
6. Press the arm (b) down.
7. Remove the waste toner cover (a).

**Figure 4-62**

8. Push the lever (a) and open the memory cover (b).
9. Remove the memory cover (b).

**Figure 4-63**

10. Lift up the shield cover (a) and pull it toward you to remove it.

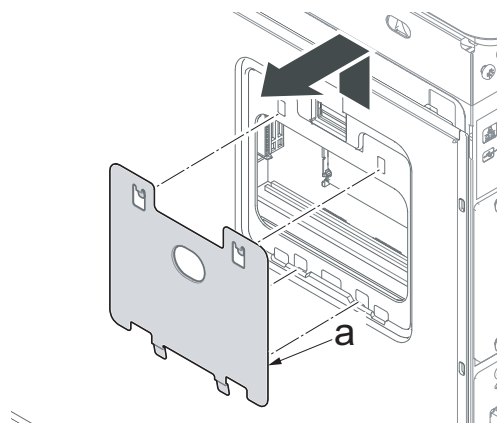


Figure 4-64

11. Open the rear cover (a).

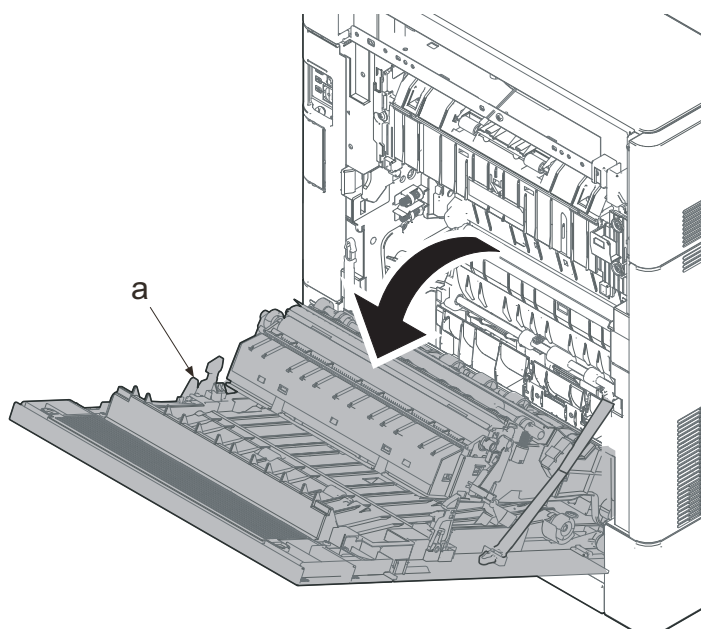


Figure 4-65

12. Push the machine front side of the middle right cover (a) toward the machine rear side and then lift up its machine rear side to detach it.

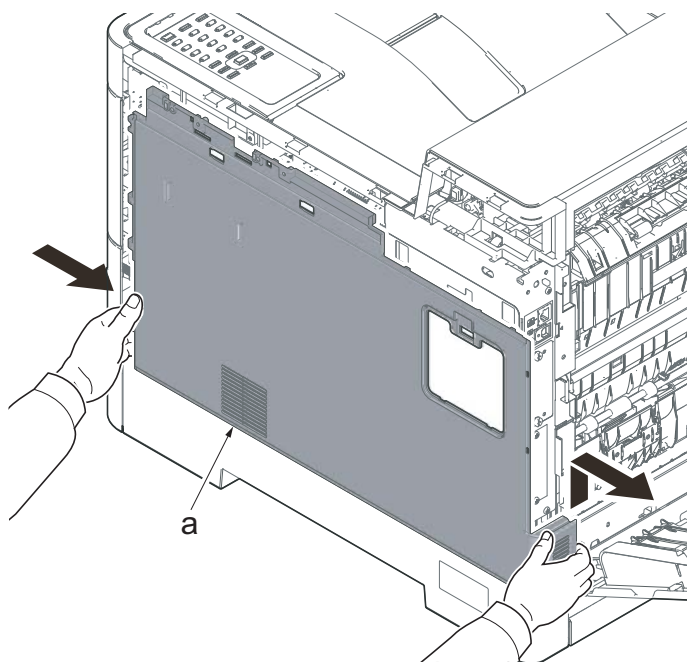


Figure 4-66

IMPORTANT

When reattaching the middle right cover (a), insert the lower rib into the the lower right cover (b). Slide it toward the machine front side to fasten three hooks (c) and then lower it to fasten three hooks (d), and fasten two hooks (e) at the machine rear side.

Check if three hooks (d) at the machine rear side are surely fastened.

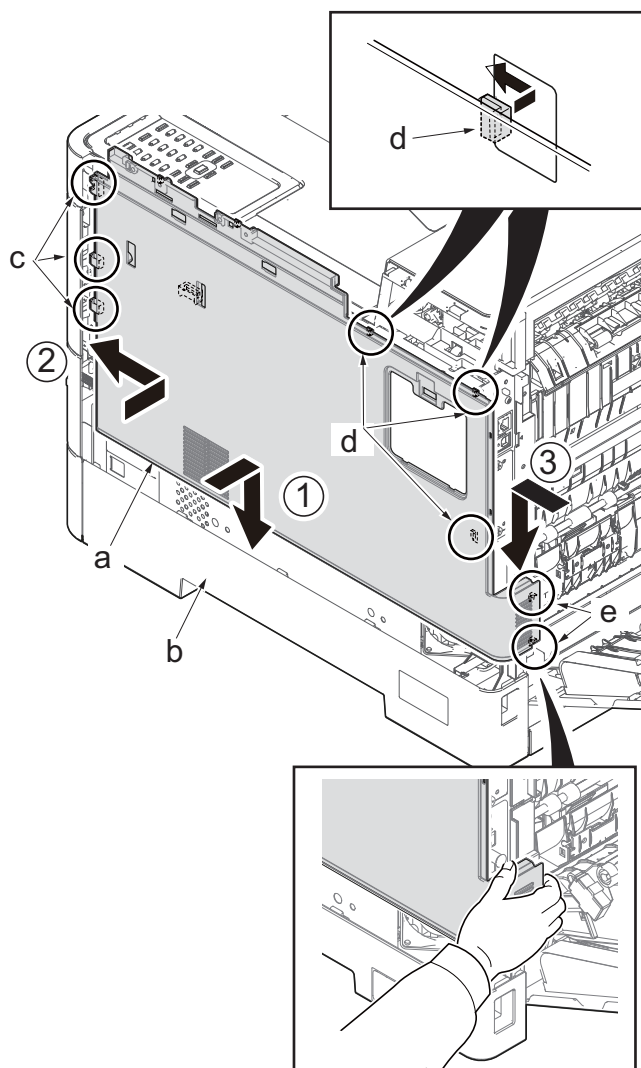


Figure 4-67

(1-5) Detaching and reattaching the lower right cover

Procedures

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).

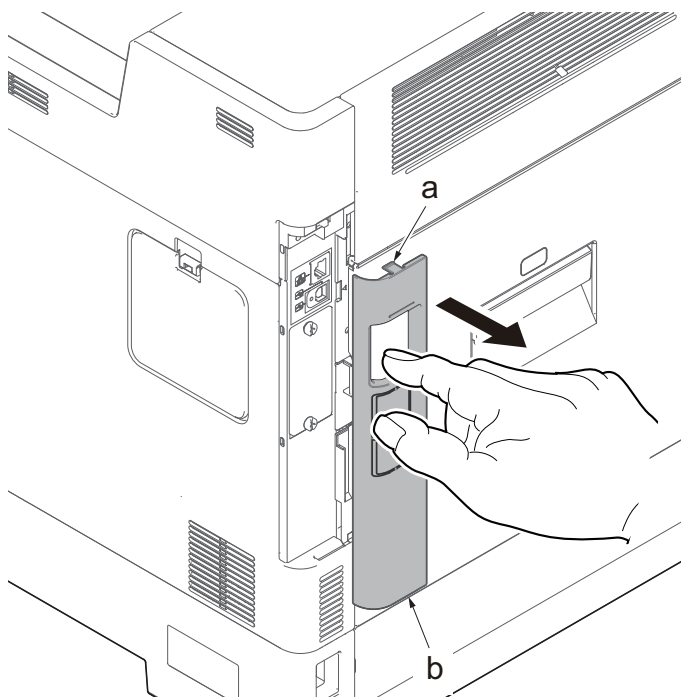


Figure 4-68

35/40 ppm models

3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.

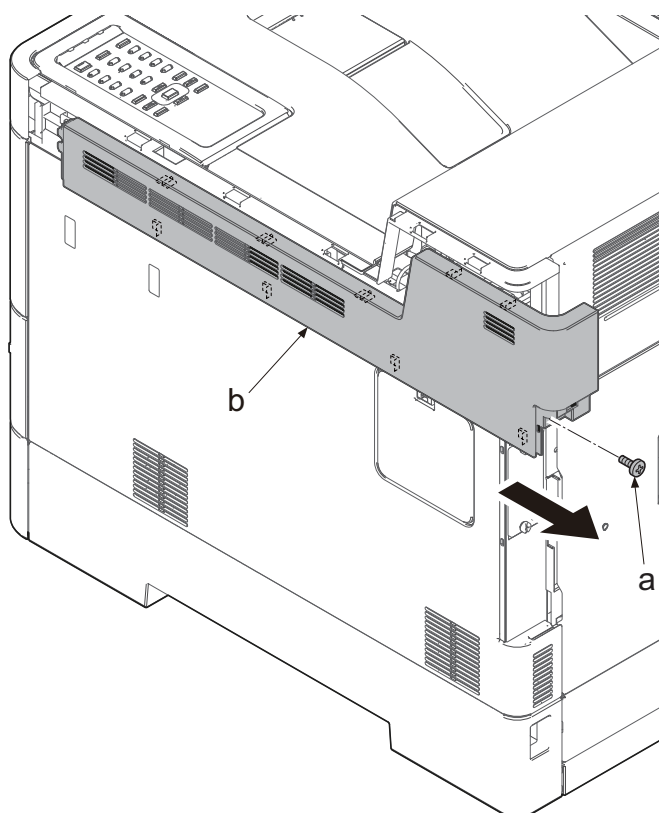
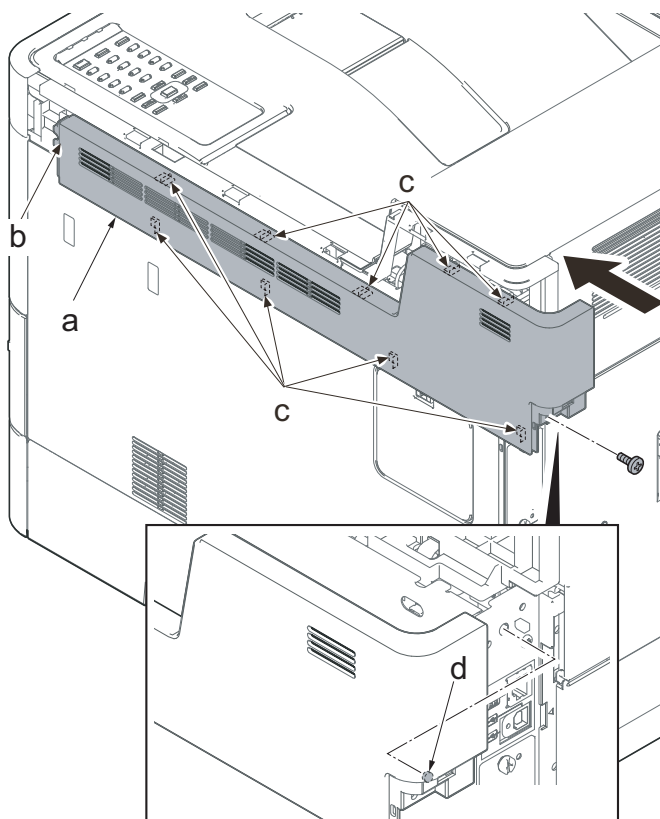


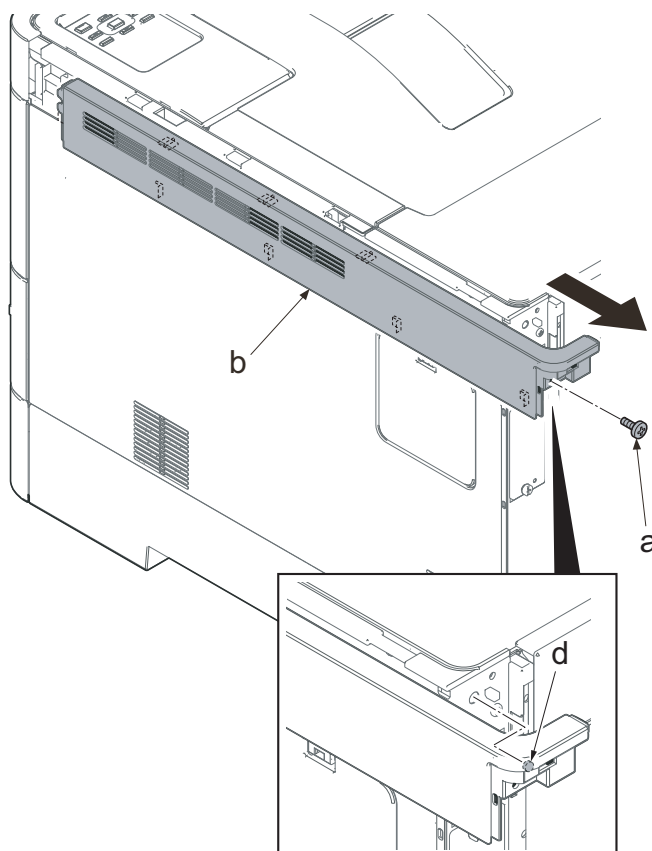
Figure 4-69

IMPORTANT

When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten nine hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.

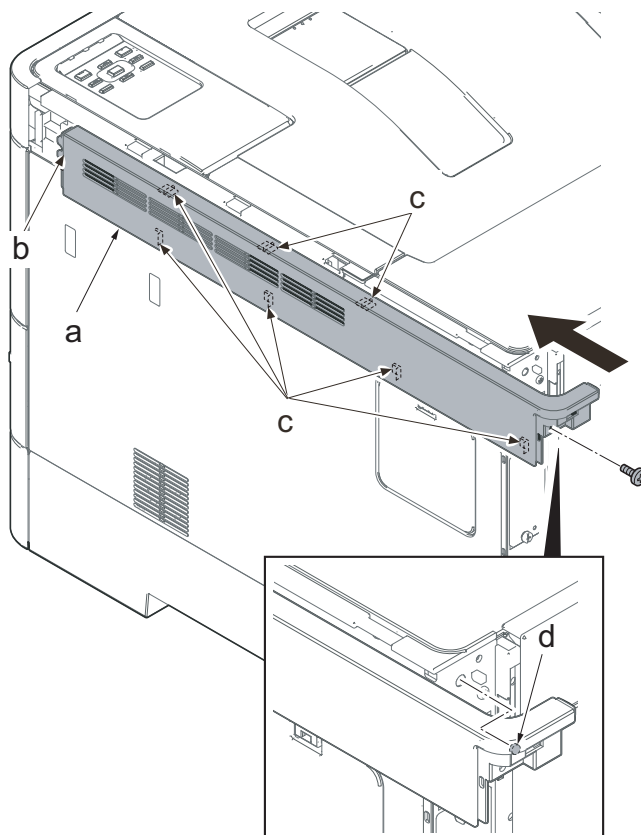
**Figure 4-70****30 ppm models**

3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.

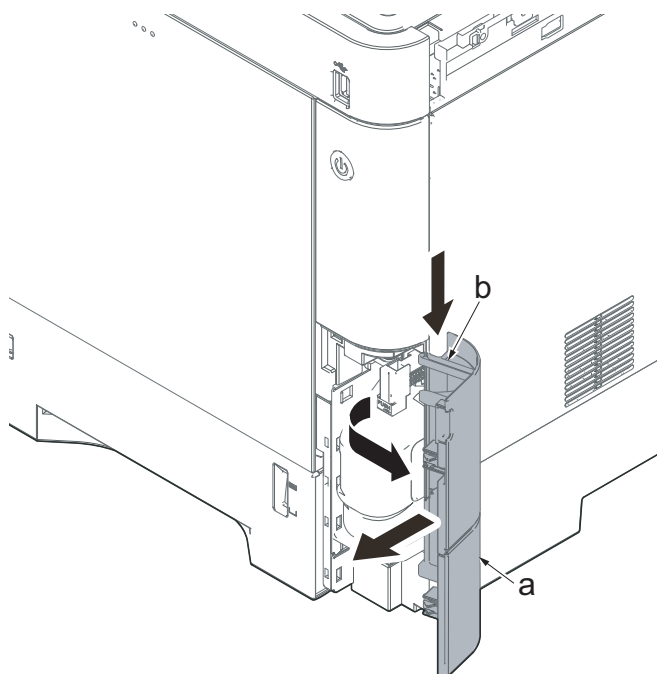
**Figure 4-71**

IMPORTANT

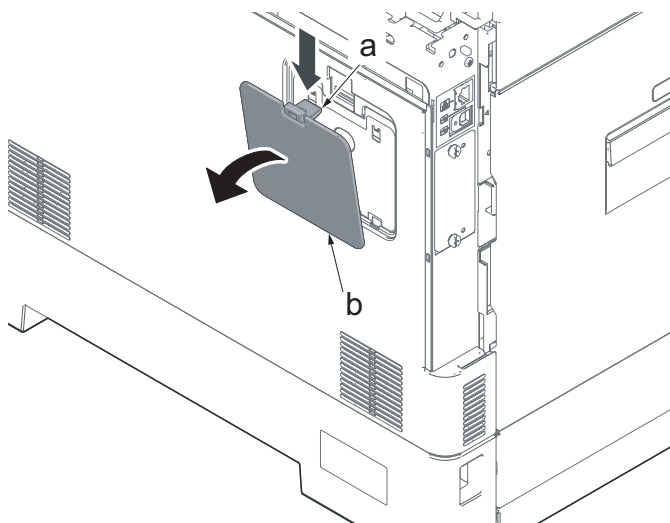
When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten seven hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.

**Figure 4-72**

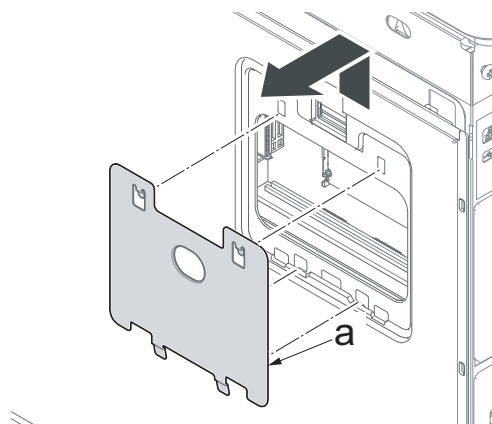
5. Open the waste toner cover (a).
6. Press the arm (b) down.
7. Remove the waste toner cover (a).

**Figure 4-73**

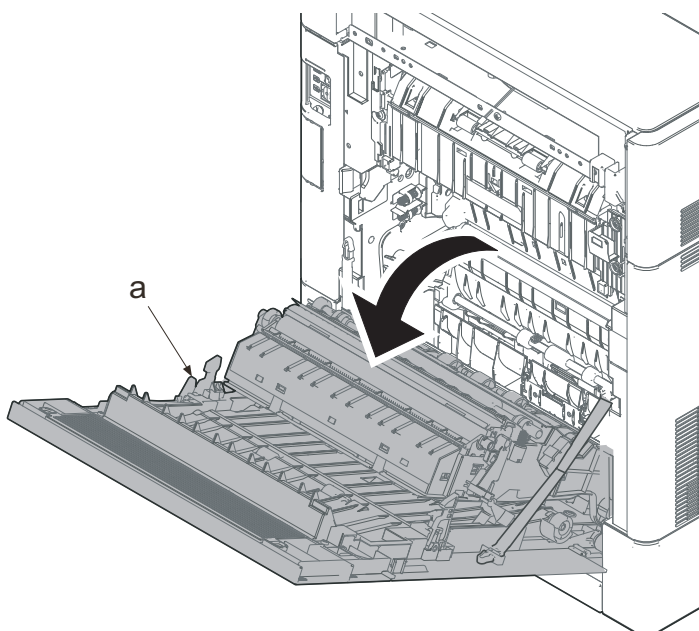
8. Push the lever (a) and open the memory cover (b).
9. Remove the memory cover (b).

**Figure 4-74**

10. Lift up the shield cover (a) and pull it toward you to remove it.

**Figure 4-75**

11. Open the rear cover (a).

**Figure 4-76**

12. Push the machine front side of the middle right cover (a) toward the machine rear side and then lift up its machine rear side to detach it.

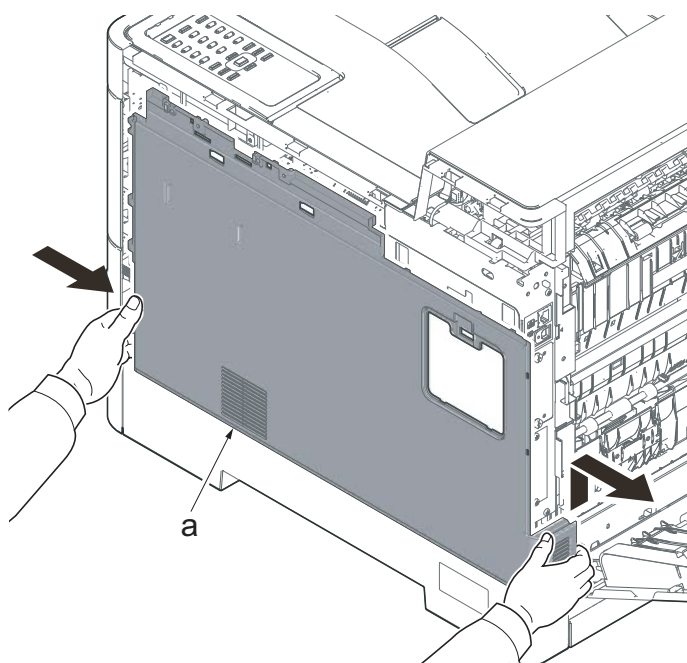


Figure 4-77

IMPORTANT

When reattaching the middle right cover (a), insert the lower rib into the the lower right cover (b). Slide it toward the machine front side to fasten three hooks (c) and then lower it to fasten three hooks (d), and fasten two hooks (e) at the machine rear side.

Check if three hooks (d) at the machine rear side are surely fastened.

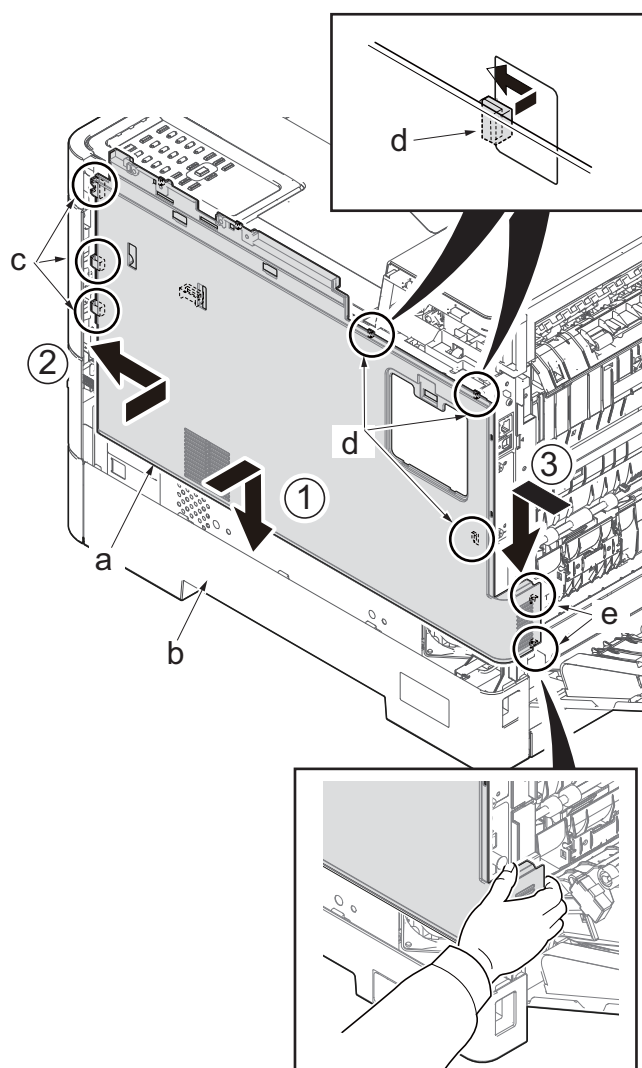


Figure 4-78

13. Remove the screw (a)(M3x8).
14. Release the hook (c) of the lower right cover (b) toward the machine right side and slide it toward the machine rear side to detach it.

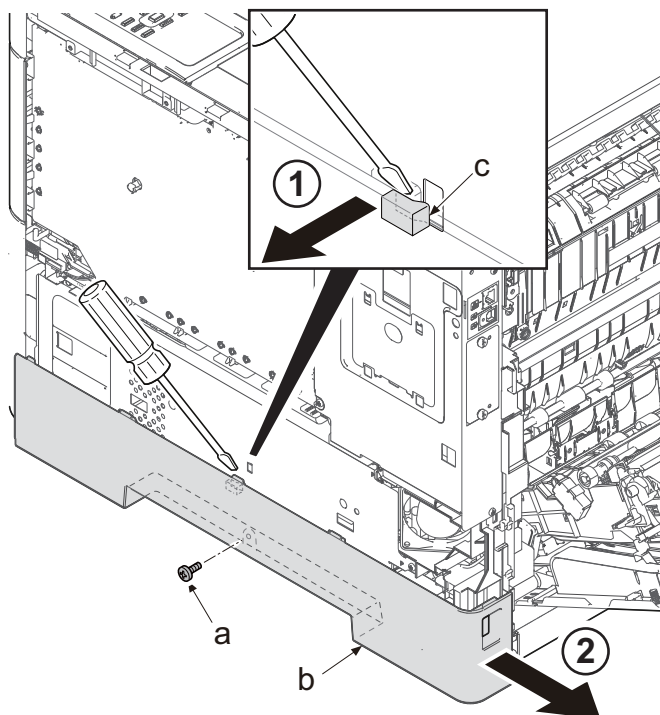


Figure 4-79

(1-6) Detaching and reattaching the upper left cover

Procedures

1. Open the rear cover (a).

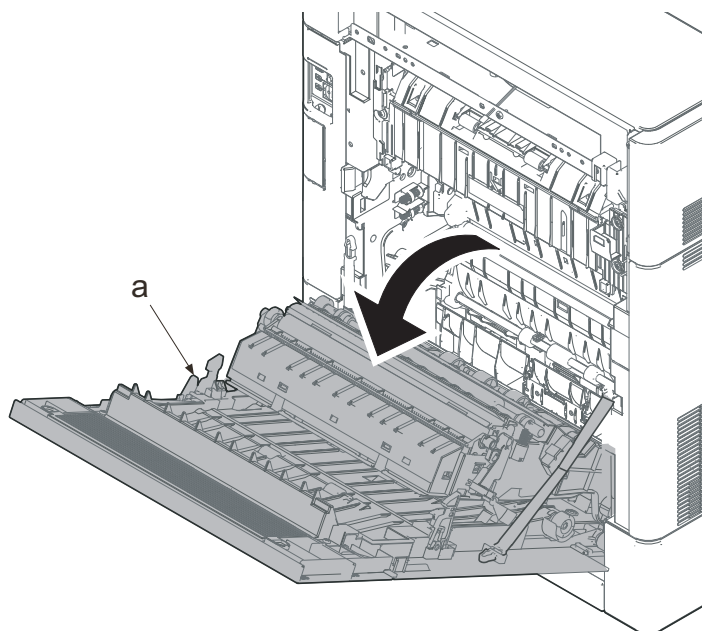


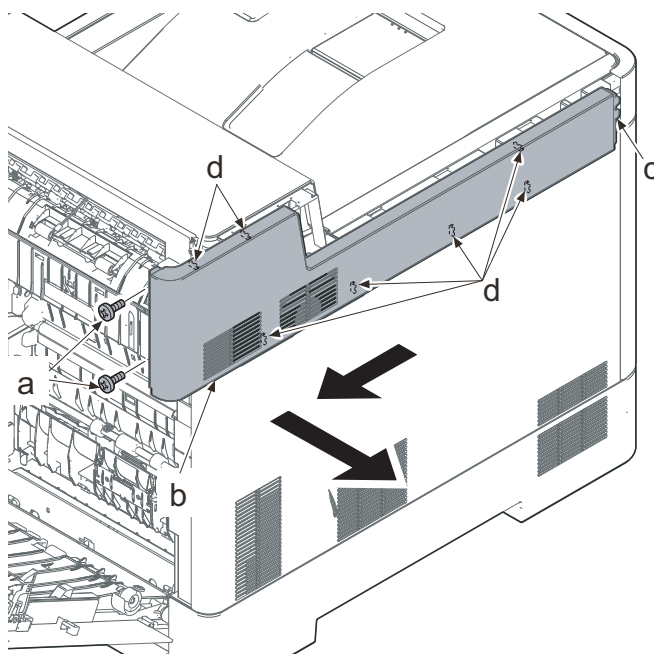
Figure 4-80

35/40 ppm models

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

IMPORTANT

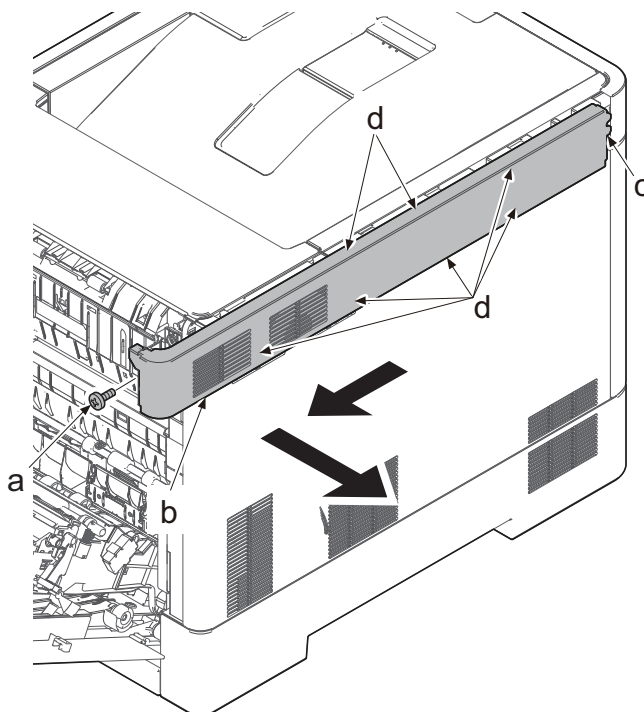
When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

**Figure 4-81****30 ppm models**

2. Remove the screw (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

**Figure 4-82**

(1-7) Detaching and reattaching the middle left cover

Procedures

1. Open the rear cover (a).

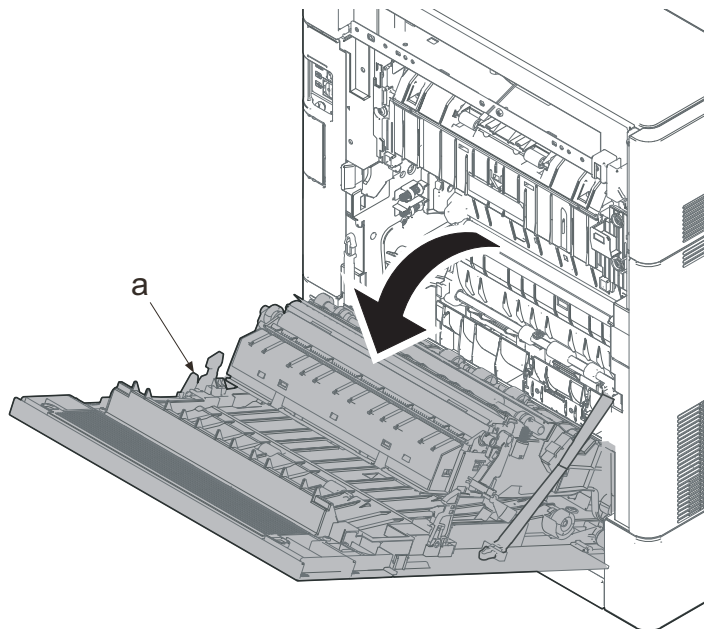


Figure 4-83

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

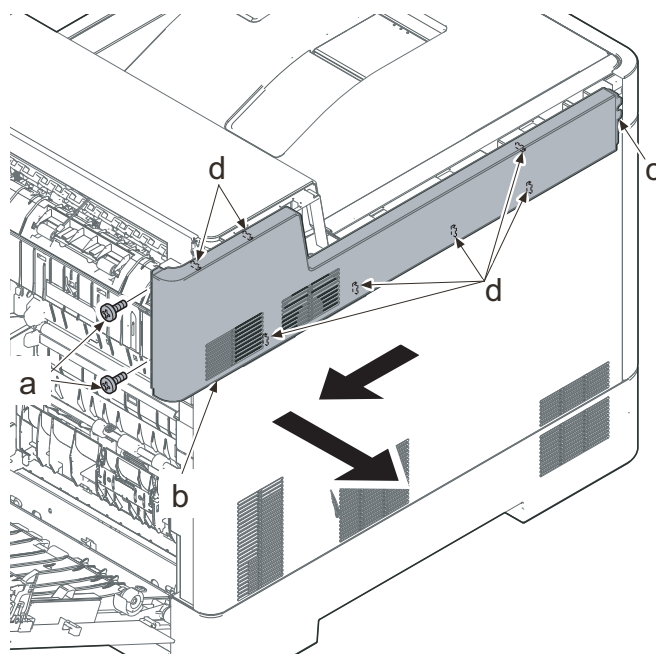


Figure 4-84

4. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
5. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
6. Detach the middle left cover (a).

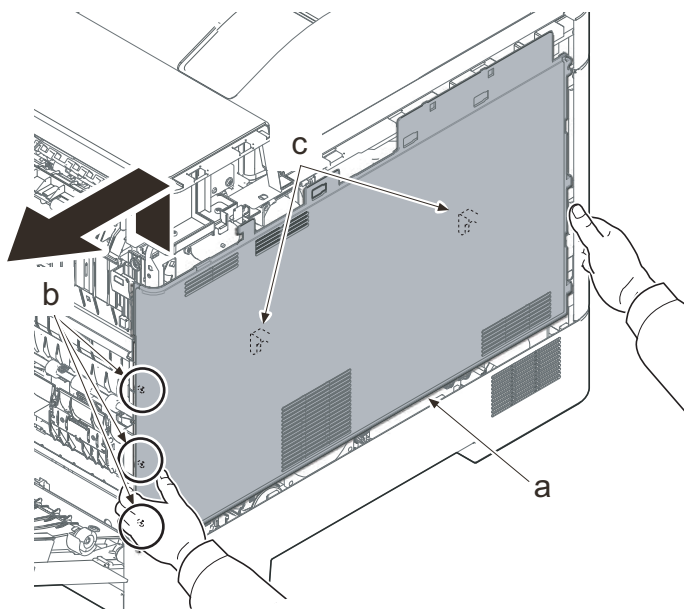


Figure 4-85

IMPORTANT

When reattaching the middle left cover (a), insert the lower rib into the lower left cover (b). And, slide it toward the machine front side to fasten three hooks (c) and four hooks (d), then lower the machine rear side of it to fasten three hooks (e) at the machine rear side.

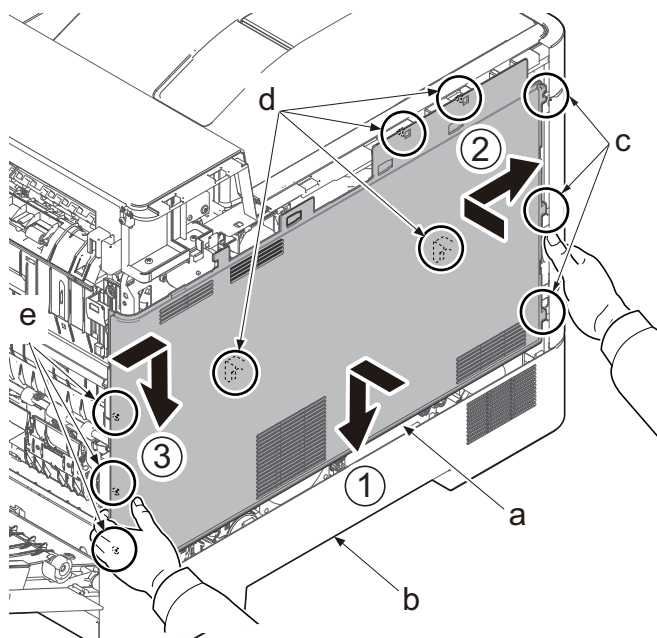


Figure 4-86

(1-8) Detaching and reattaching the lower left cover

Procedures

1. Open the rear cover (a).

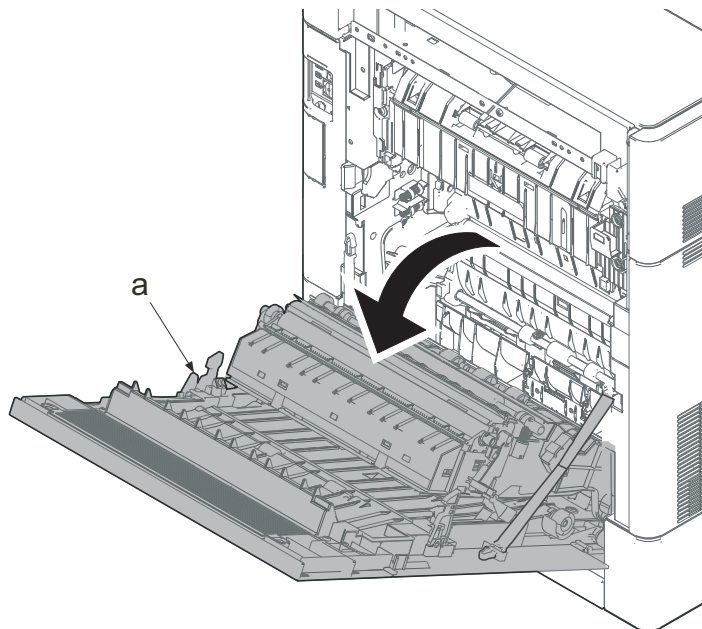


Figure 4-87

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

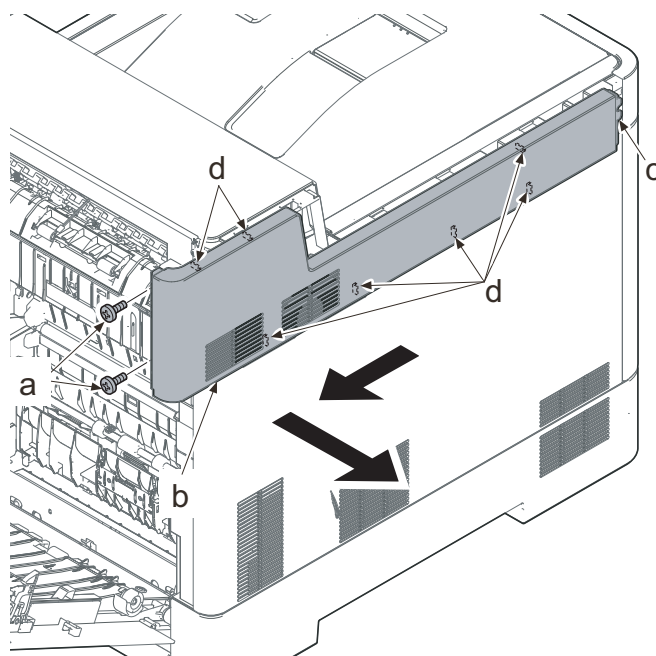


Figure 4-88

4. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
5. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
6. Detach the middle left cover (a).

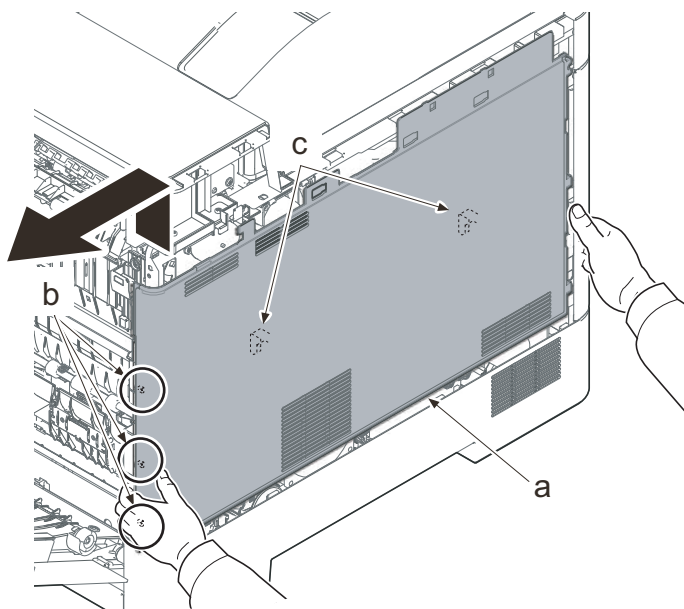


Figure 4-89

IMPORTANT

When reattaching the middle left cover (a), insert the lower rib into the lower left cover (b). And, slide it toward the machine front side to fasten three hooks (c) and four hooks (d), then lower the machine rear side of it to fasten three hooks (e) at the machine rear side.

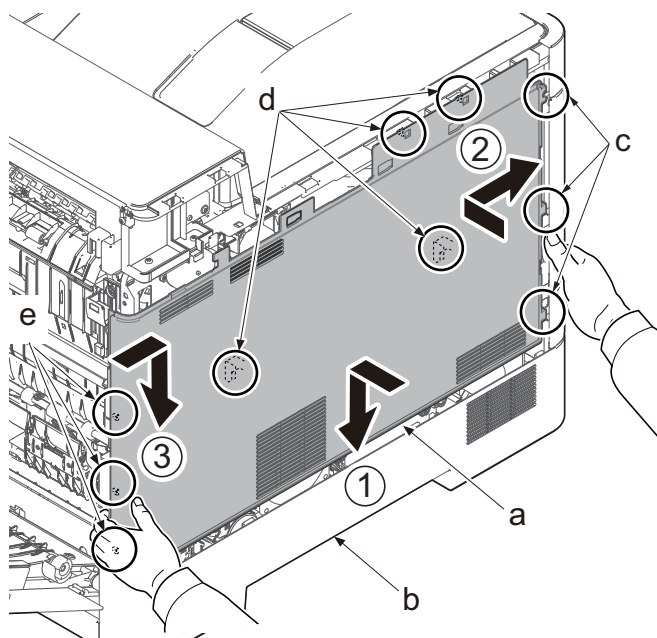
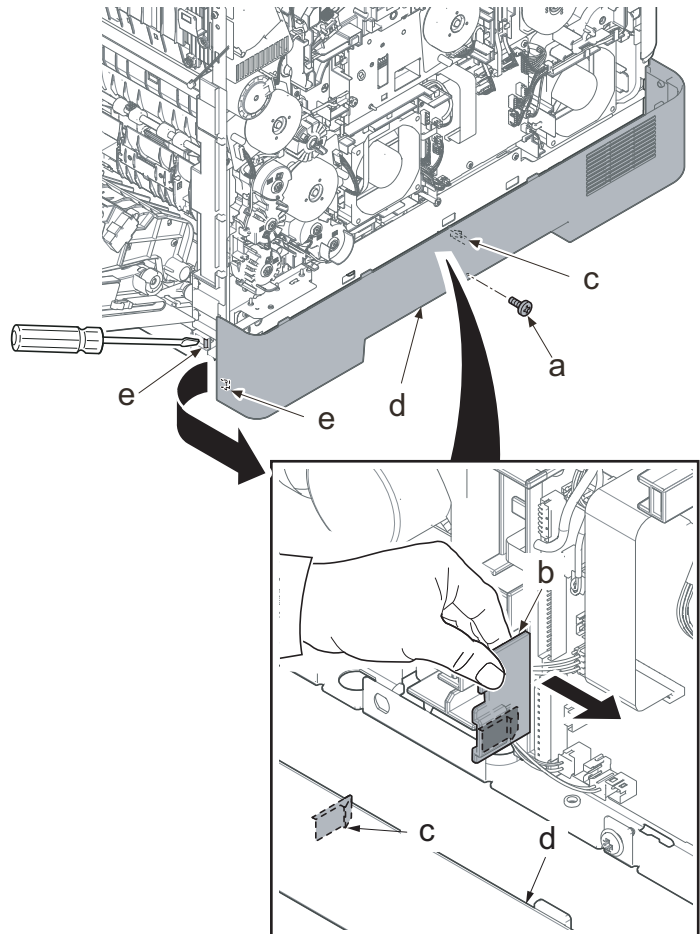


Figure 4-90

7. Remove the screw (a)(M3x8).
8. Pull the rib (b) toward you and release the center hook (c).
9. Insert a flat-blade screwdriver to release the hook (e).
10. Detach the lower left cover (d).

**Figure 4-91**

IMPORTANT

When attaching the lower left cover (a), insert two bosses (b) at the machine front side into the holes and apply the center hook (c). Then, push it toward the machine rear side. After that, secure the screw.

Check if the hook (c) at center is surely fastened.

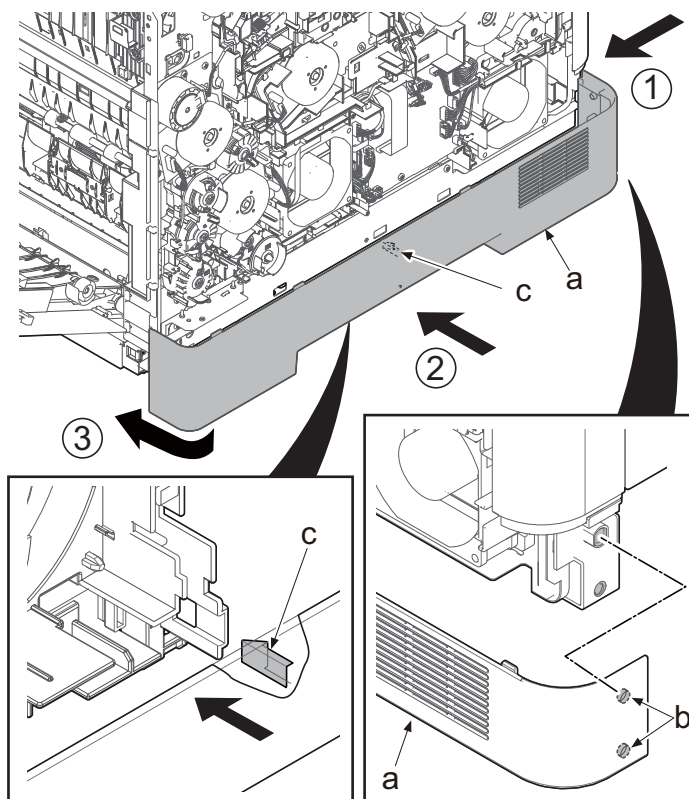


Figure 4-92

4-5 PWBs replacement

(1) Detaching and reattaching the main/engine PWB

Procedures

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).

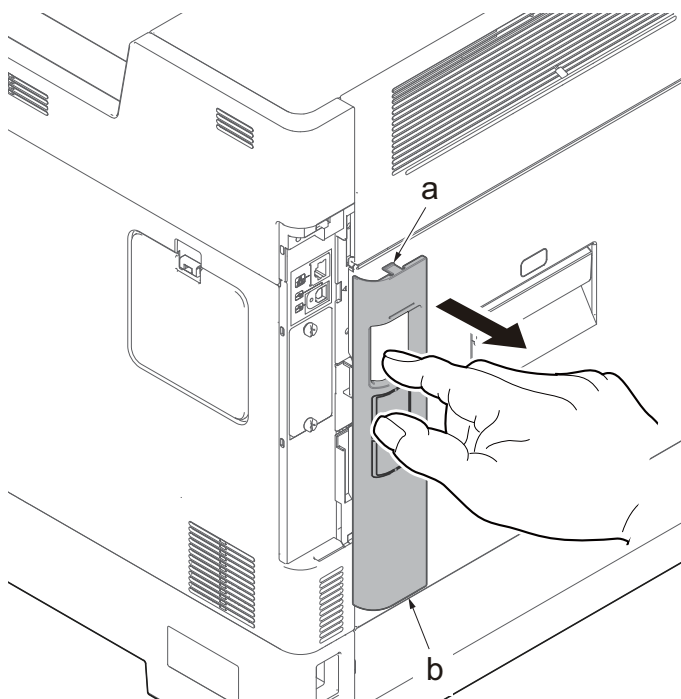


Figure 4-93

3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.

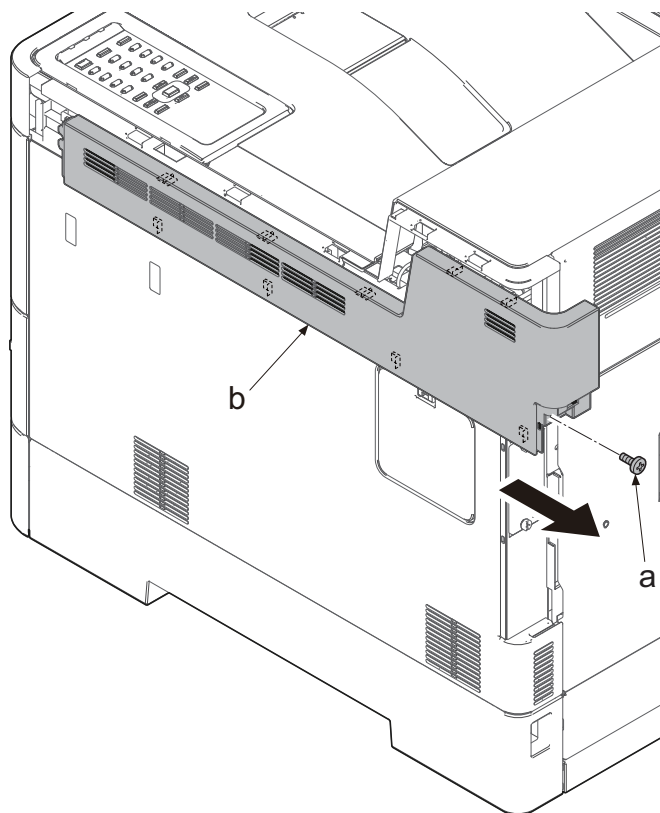


Figure 4-94

IMPORTANT

When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten nine hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.

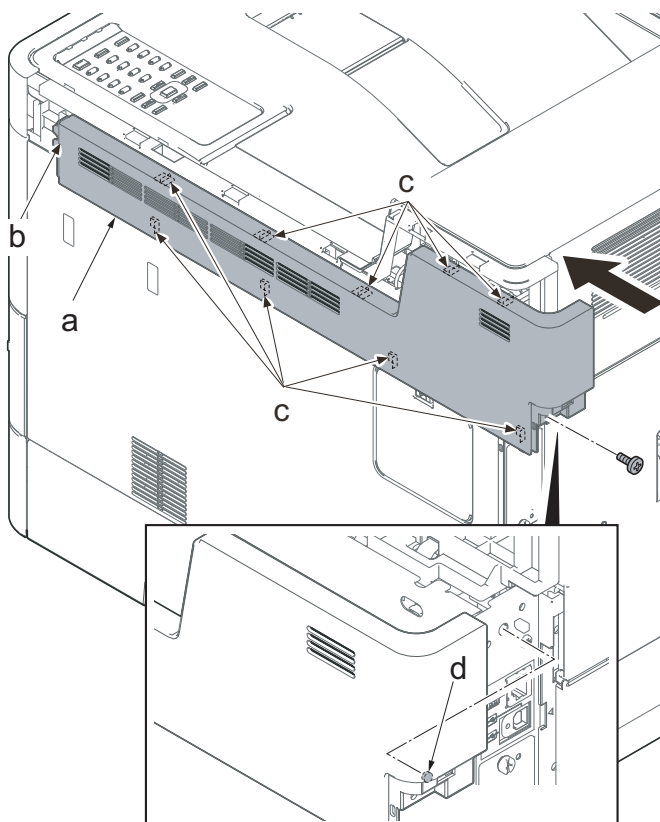
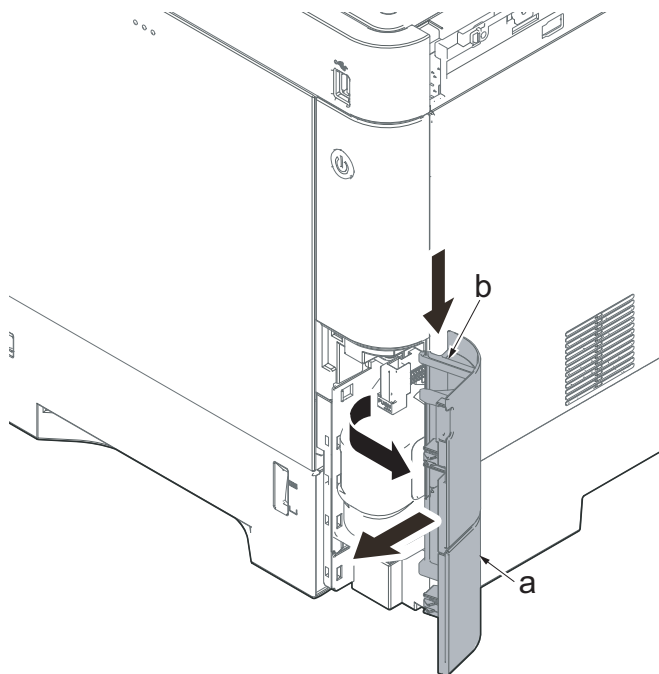
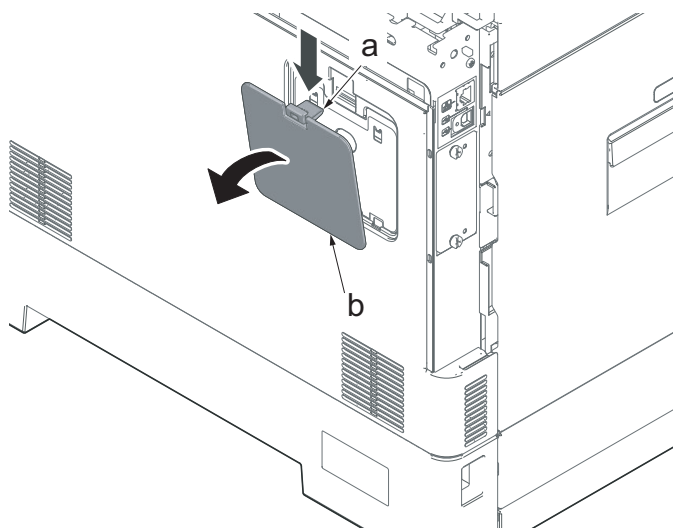


Figure 4-95

5. Open the waste toner cover (a).
6. Press the arm (b) down.
7. Remove the waste toner cover (a).

**Figure 4-96**

8. Push the lever (a) and open the memory cover (b).
9. Remove the memory cover (b).

**Figure 4-97**

10. Lift up the shield cover (a) and pull it toward you to remove it.

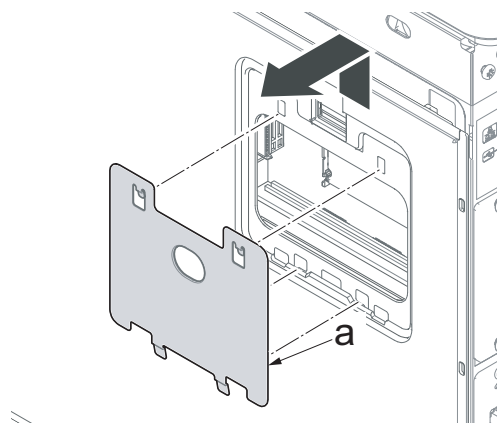


Figure 4-98

11. Open the rear cover (a).

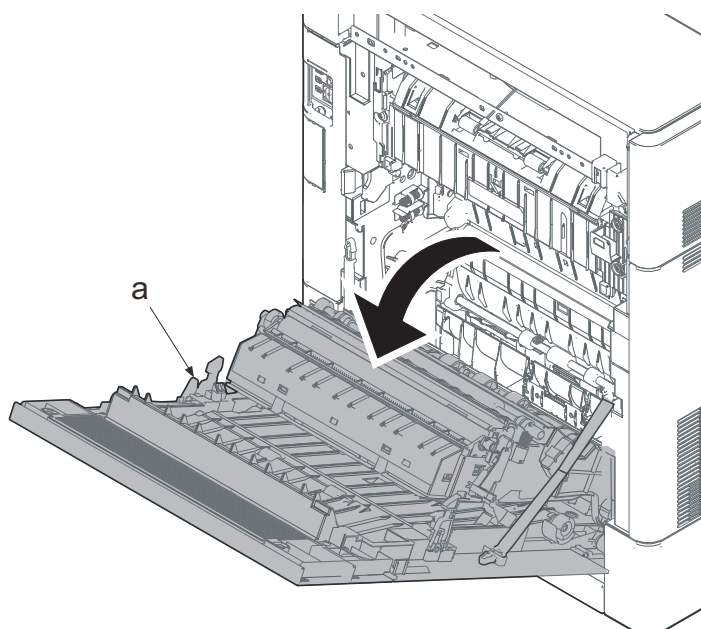


Figure 4-99

12. Push the machine front side of the middle right cover (a) toward the machine rear side and then lift up its machine rear side to detach it.

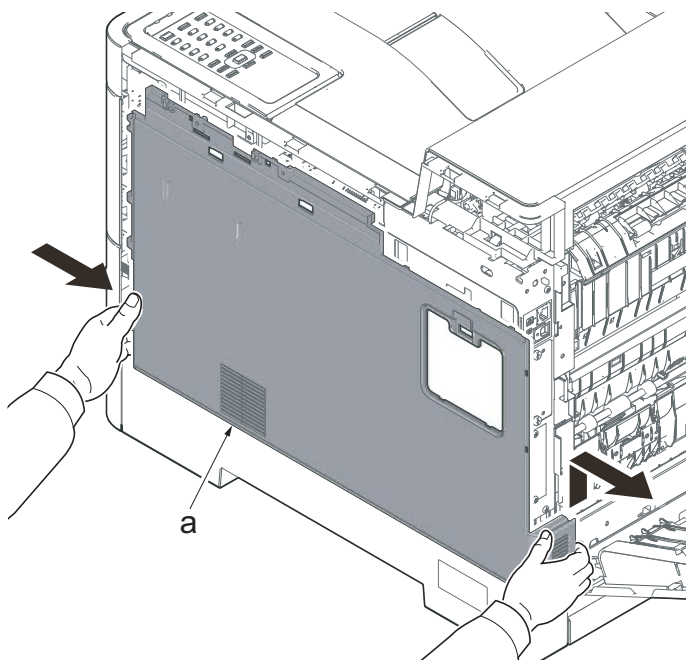


Figure 4-100

IMPORTANT

When reattaching the middle right cover (a), insert the lower rib into the the lower right cover (b). Slide it toward the machine front side to fasten three hooks (c) and then lower it to fasten three hooks (d), and fasten two hooks (e) at the machine rear side. Check if three hooks (d) at the machine rear side are surely fastened.

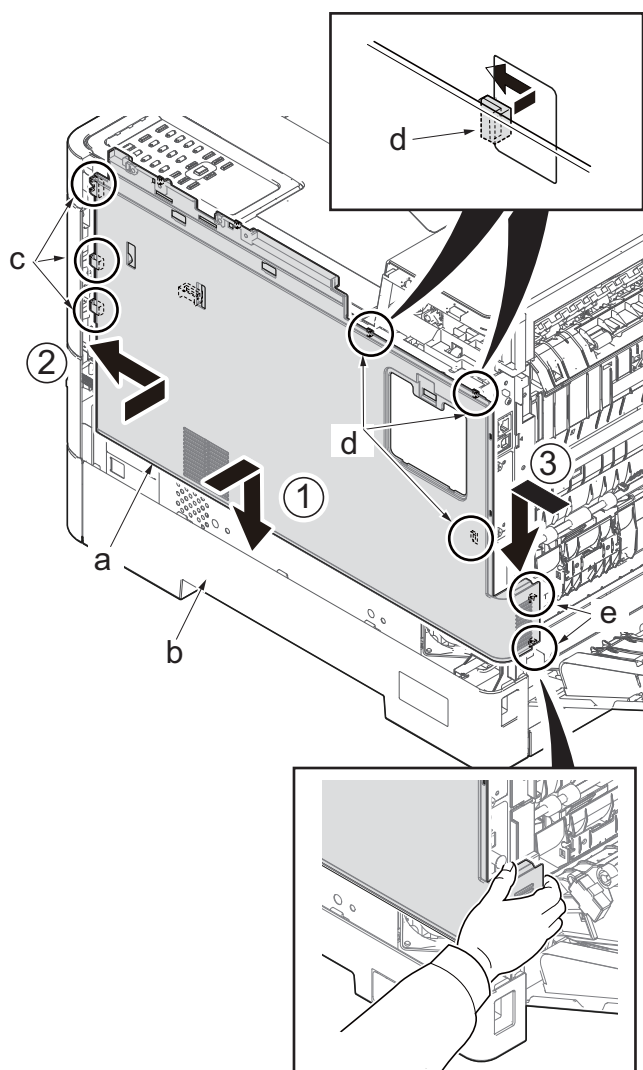


Figure 4-101

13. Remove the network connector cap (a).

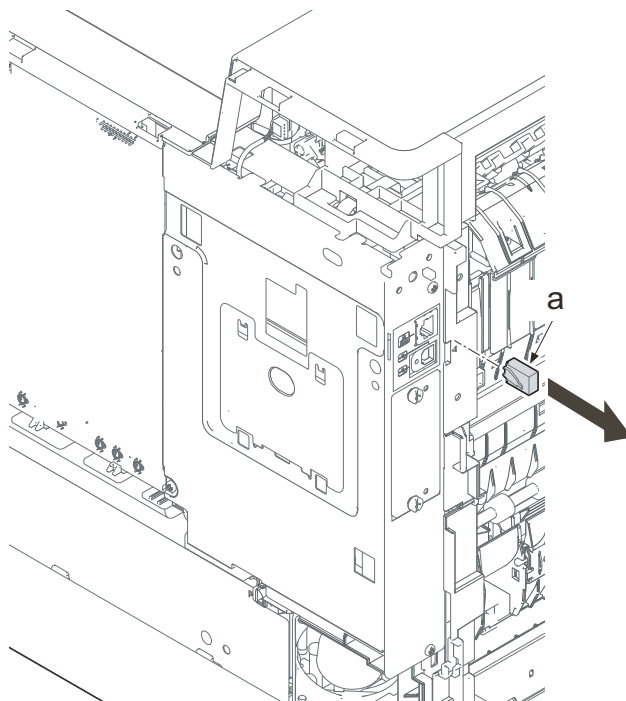


Figure 4-102

14. Remove the optional PWB (b), if installed.
*: Remove two screws (a)(M3x8), and detach it.

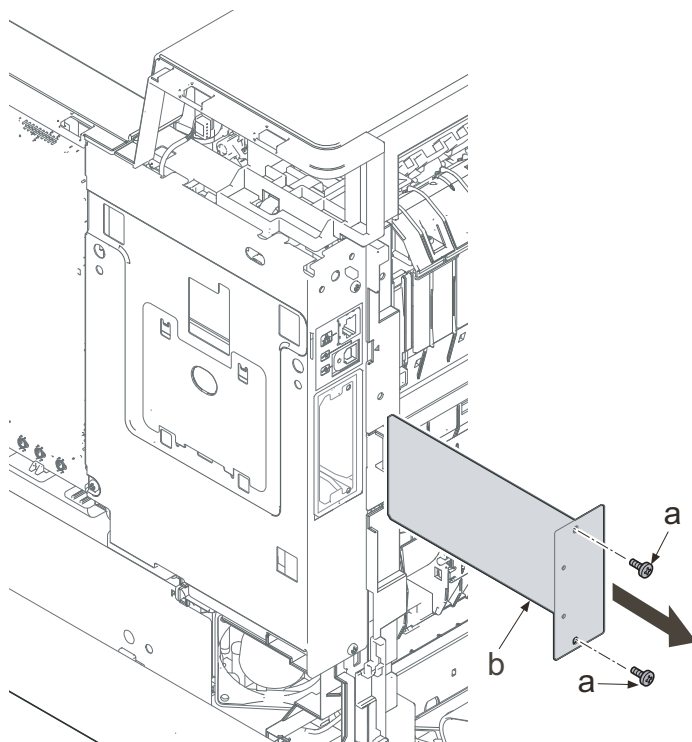


Figure 4-103

15. Remove four screws (a)(M3x8).

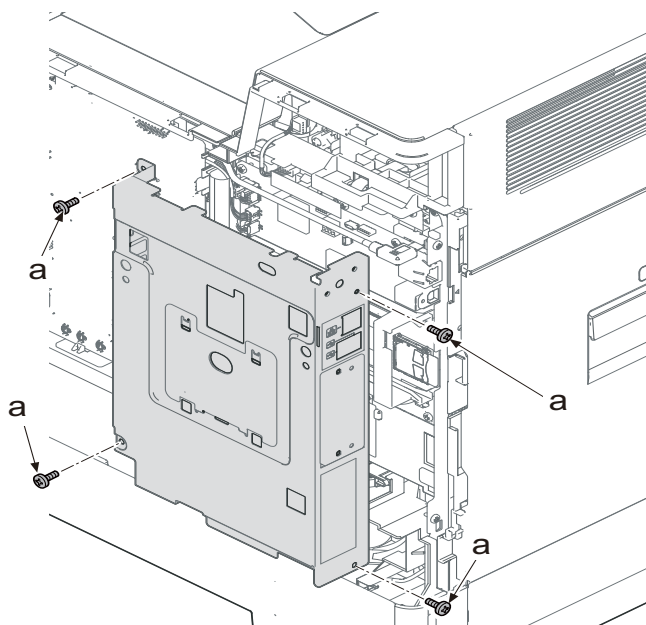


Figure 4-104

16. Remove the network connector (a) by sliding it toward the machine rear side and then remove the controller shield (b).

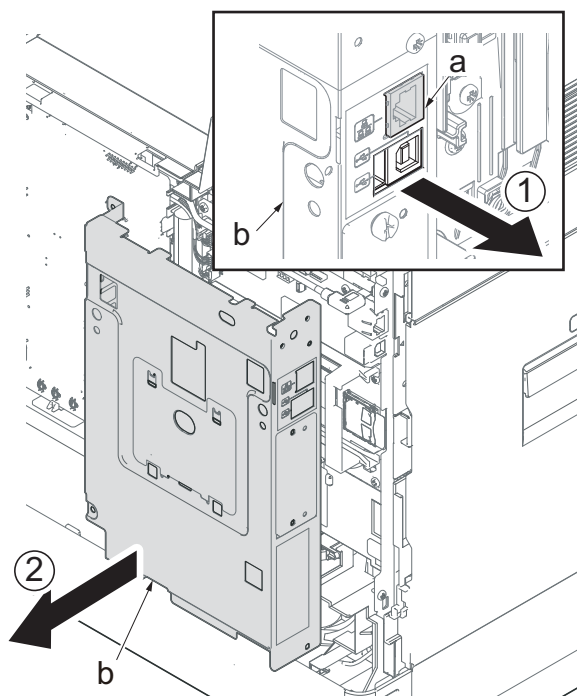


Figure 4-105

17. Open the wire alignment film (c) by releasing its square hole from the hook (b) of the PWB guide (a).

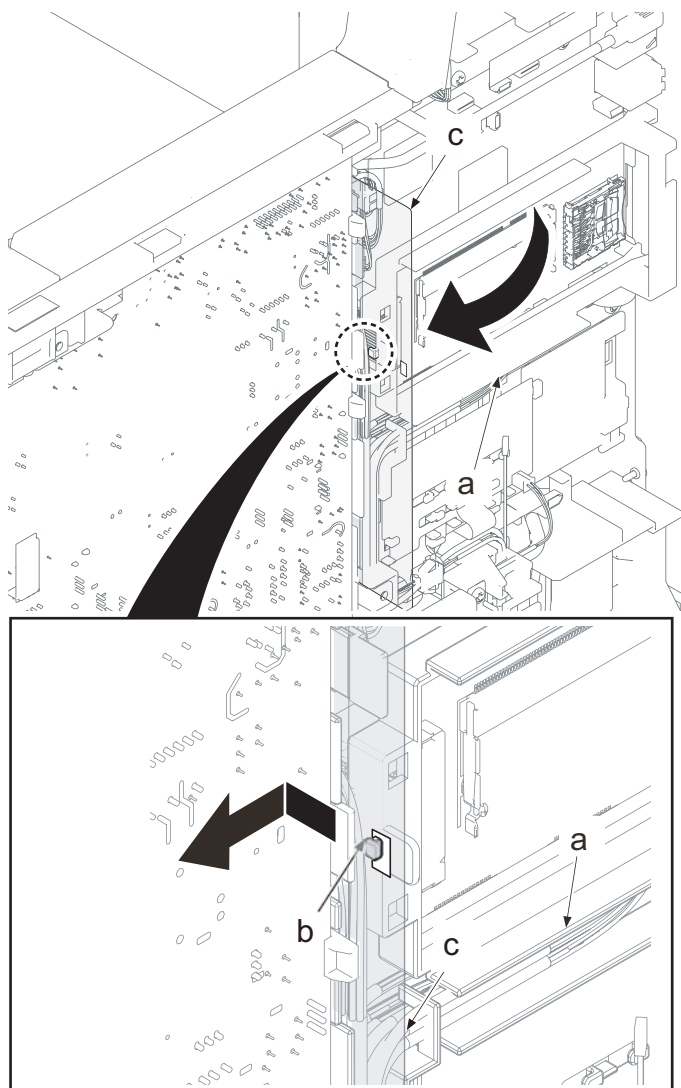


Figure 4-106

18. Release two hooks (b) of the PWB guides (a).

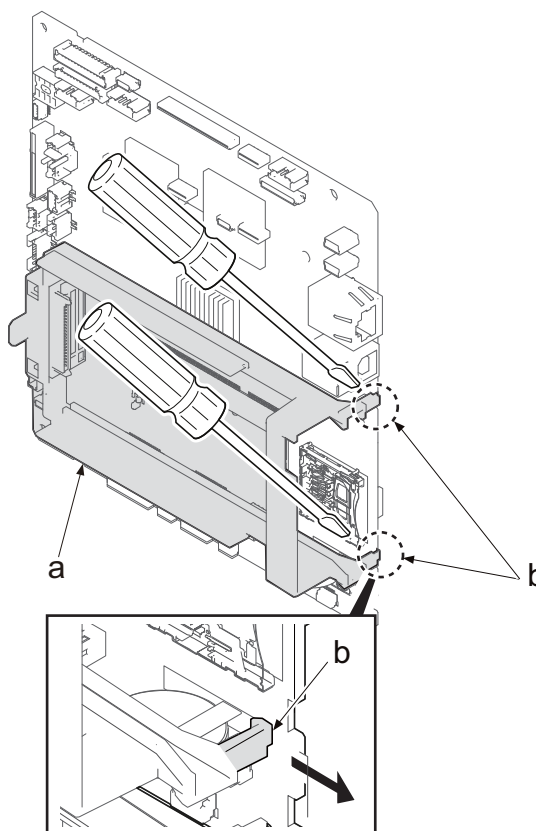


Figure 4-107

19. Slide the PWB guide (a) toward the machine rear side to release two hooks (b).

IMPORTANT

Check if two hooks (b) are fastened after reattaching the PWB guide (a).

The optional board connector can not be connected without applying the hook.

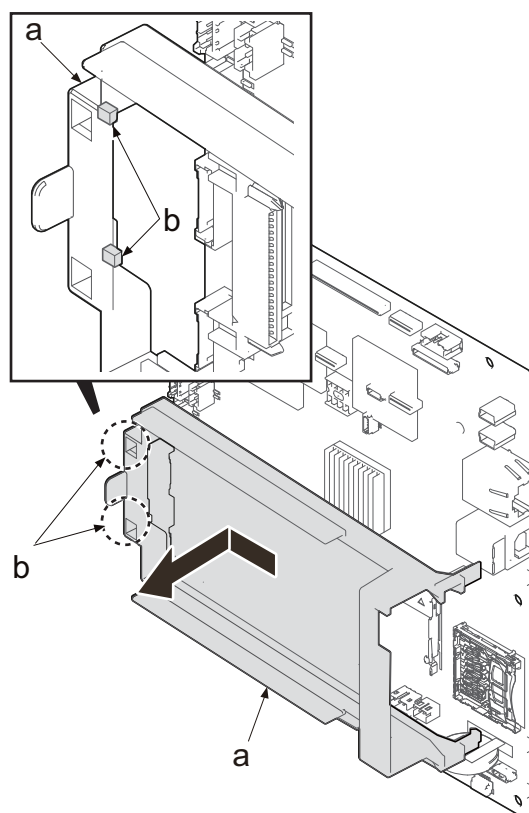


Figure 4-108

20. Disconnect all the connectors and the FFCs from the main/engine PWB (a).
- 30/35 ppm model: 19 connectors
- 40 ppm model: 20 connectors
(YC9: used in only 40 ppm model)
21. Release the wire from the hook (c) of the wire guide (b).

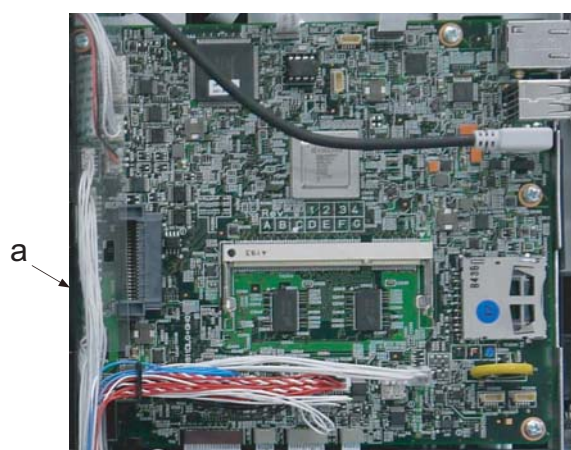
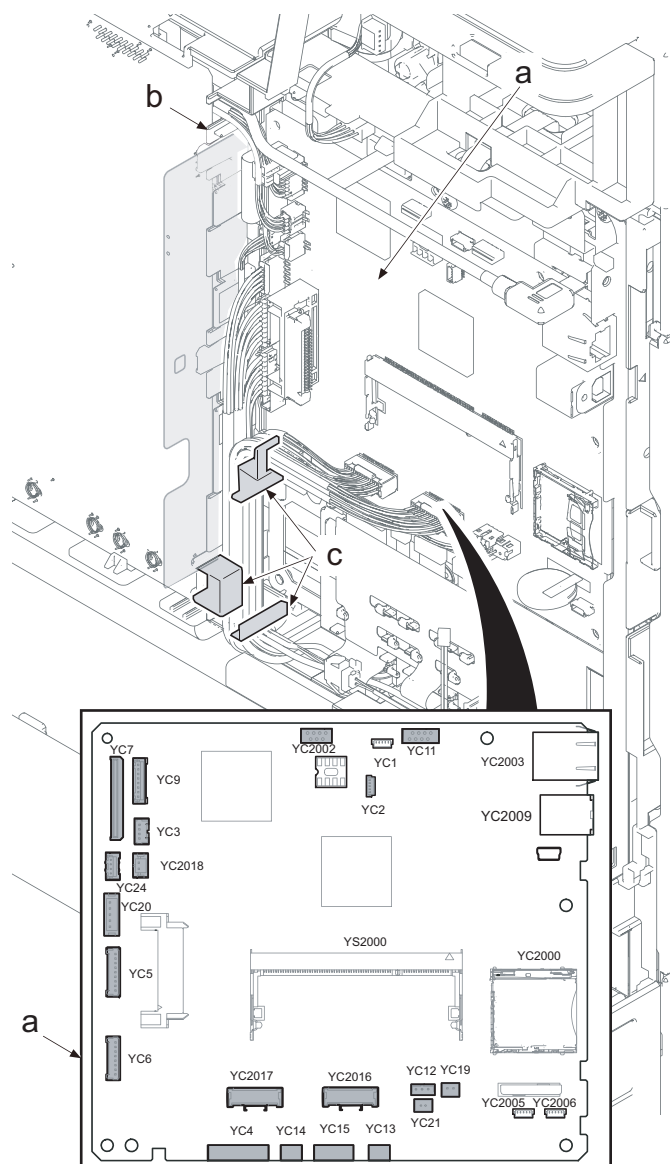


Figure 4-109

*: Remove the wire film (b) when disconnecting the lower FFC (a).

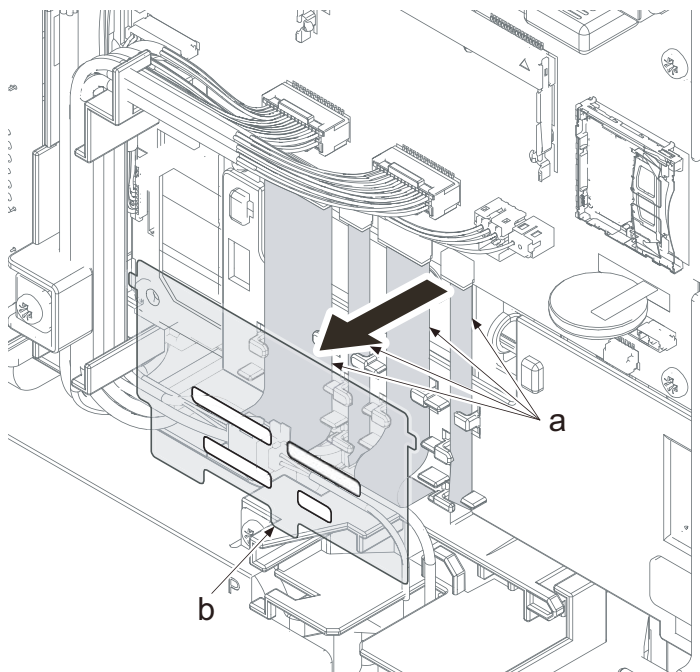


Figure 4-110

22. Remove two screws (a)(M3x8).
23. Release the hook (c) from the main/engine PWB (d) and remove the wire guide (b).

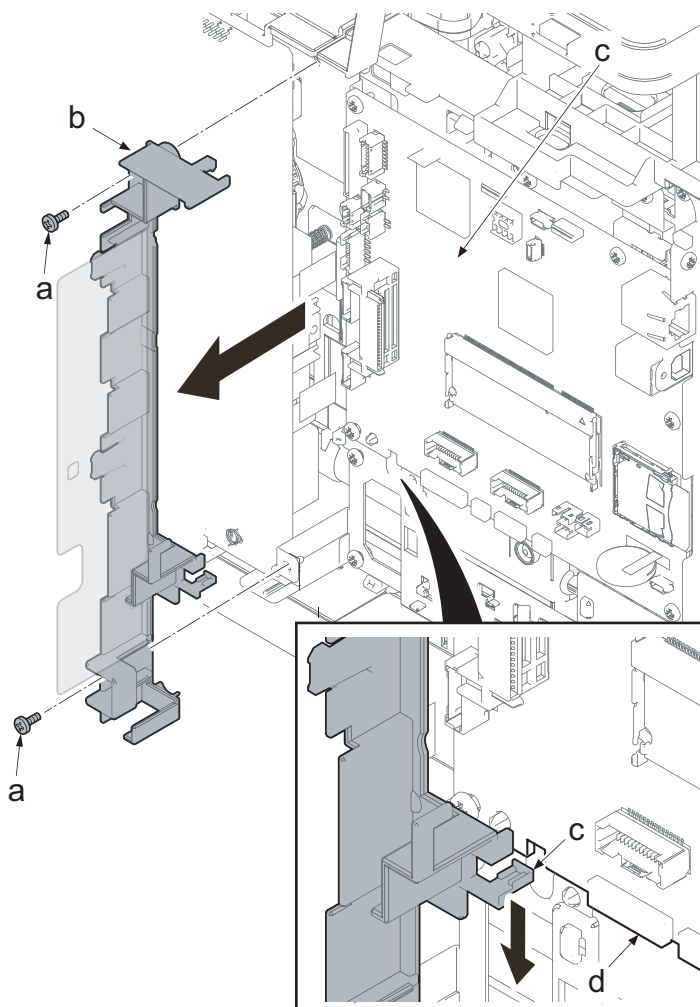


Figure 4-111

24. Remove four screws (a)(M3x8).
25. Remove the main/engine PWB (b).

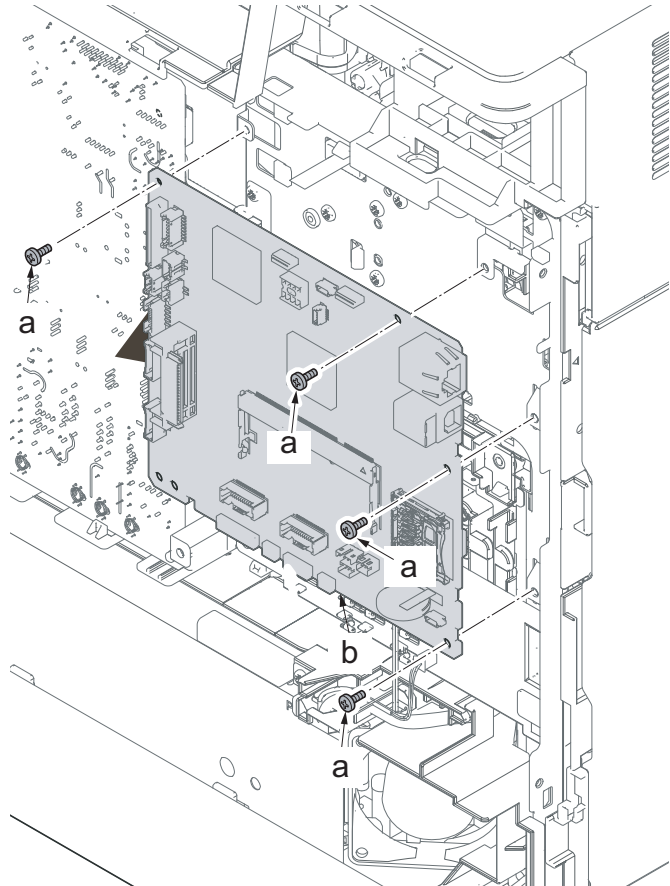


Figure 4-112

26. Replace the EEPROM(U19) (b) from the old PWB (a) to the new one.
27. Check the main/engine PWB and clean or replace it if necessary.
- *: Replace the optional memory from the old PWB to the new one, if installed.
28. Reattach the parts in the original position.

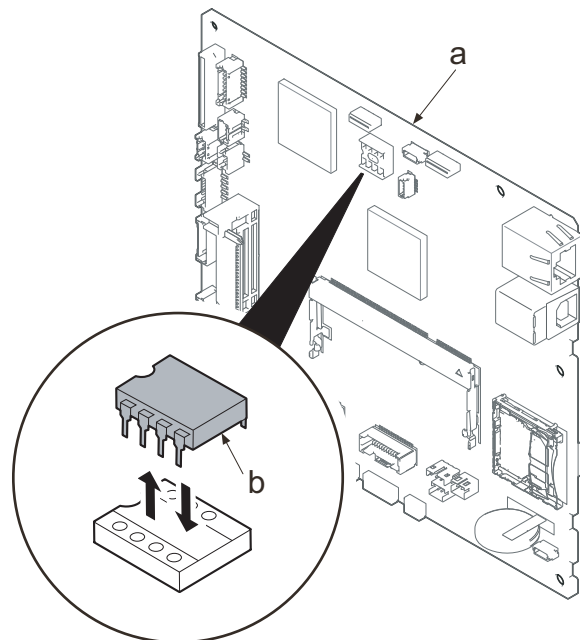


Figure 4-113

*: Execute the following after replacing the main/engine PWB.

1. Upgrade the main and the engine firmware to the latest version, and install the option language and color table1,2). (see page 1-6-58)
2. Execute the print image adjustment.
 - (1)Execute [Color Calibration] from the System Menu.

Execute the color calibration

30 ppm models

- 1.Display the screen.

[Menu] key > [] key > [Adjustment/Maintenance] > [] key

- 2.Adjust.

[] key > [Color Calibration] > [OK] key > [OK] key

[Color Calibration] is executed and [Adjustment/Maintenance] is displayed when completing it.

35/40 ppm models

1. Display the screen.

[Menu] key > [] key > [Adjustment/Maintenance] > [OK] key > [] key > [Color Calibration] > [OK] key

2. Adjust.

Select [Yes] to execute the color calibration.

[Color Calibration] is executed and [Adjustment/Maintenance] is displayed when completing it.

- (2)Execute [Color Registration] from the System Menu.

Execute the color registration

Normal correction

30 ppm models

- 1.Display the screen.

[Menu] key > [] key > [Adjustment/Maintenance] > [] key > [] key > [Color Registration (Normal)] > [] key

- 2.Print chart.

[] key > [Print chart] > [OK] key > [OK] key

The charts are printed. The chart indicating H-L (left), V (center) and H-R (right) per each color M (Magenta), C (Cyan) and Y (Yellow) is printed.

35/40 ppm model

- 1.Display the screen.

[Menu] key > [] key > [Adjustment/Maintenance] > [OK] key > [] key > [Color Registration] > [OK] key > [] key > [Normal] > [OK] key

- 2.Print chart.

[] key > [Print chart] > [OK] key > [Yes]

The charts are printed. The chart indicating H-L (left), V (center) and H-R (right) per each color M (Magenta), C (Cyan) and Y (Yellow) is printed.

After printing, the [Color registration (Normal)] is displayed.

Chart sample

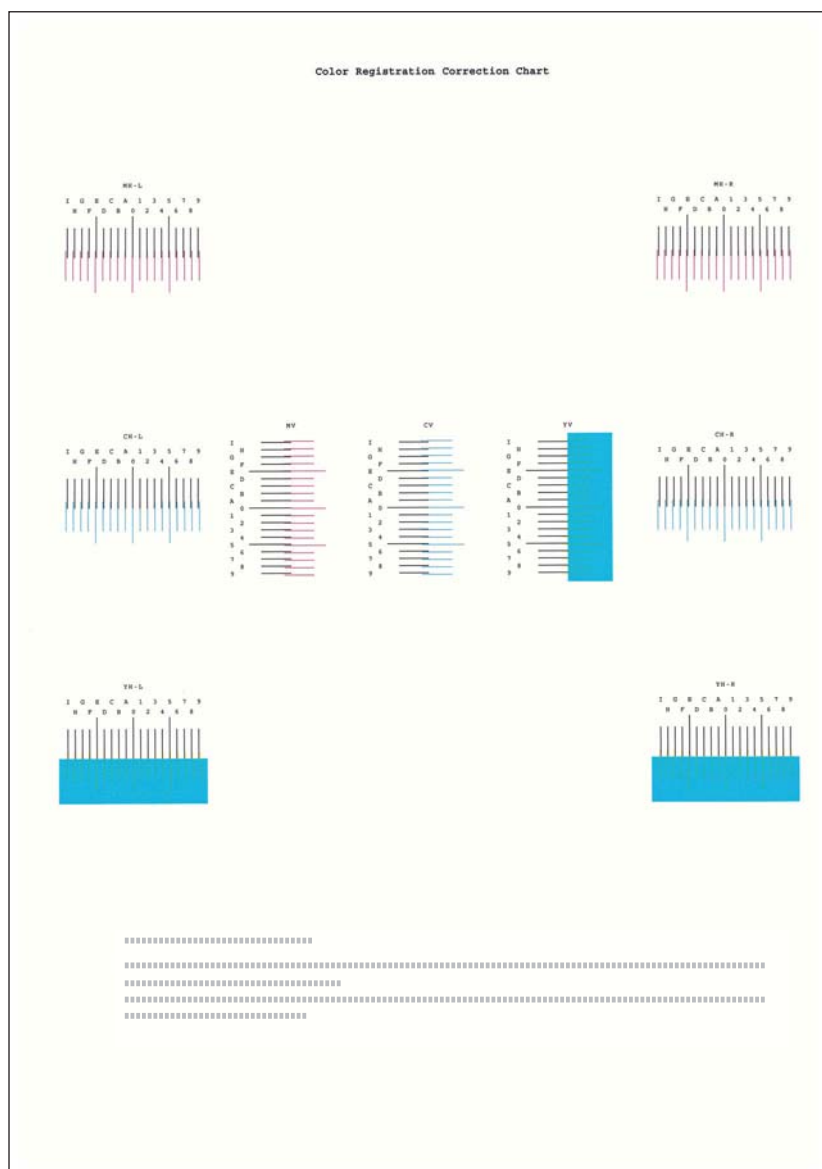


Figure 4-114

30 ppm models

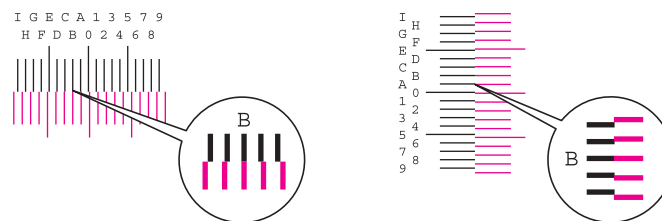
3. Indicate the correction menu.

[Menu] key > [] key > [Adjustment/Maintenance] > [] key > [] key > [Color Registration (Normal)] > [] key > [] key > [Magenta] > [OK] key

The correction menu for Magenta is displayed.

4. Input values.

1. Find the point where two lines are most aligned from each chart. If it is at "0", the correction is unnecessary. In case of the illustration below, "B" is the value that should be set.

**Figure 4-115**

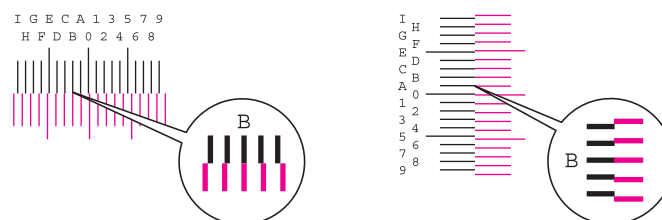
2. Select [] or [] key and change L, V and R. Select [] or [] key and input the values read from the chart. Press [OK] key.
 Select [] key to shift the value 0 to 9. Select [] key when proceeding in the reverse direction.
 Select [] key to shift the value from 0 to alphabets of A to I. Select [] key when proceeding in the reverse direction.
 Select [] key to shift the value from 0 to alphabets of A to I. Select [] key when proceeding in the reverse direction.
 Select the [OK] key.
 The Magenta correction is complete.
3. Repeat step 3 and 4 to adjust Cyan and Yellow.

35/40 ppm models

3. Indicate the correction menu.
 [][] key > [Magenta] > [OK] key
 The correction menu for Magenta is displayed.

4. Input values.

1. Find the point where two lines are most aligned from each chart. If it is at "0", the correction is unnecessary. In case of the illustration below, "B" is the value that should be set.

**Figure 4-116**

2. Select [] or [] key and change L, V and R. Select [] or [] key and input the values read from the chart. Press [OK] key.
 Select [] key to shift the value 0 to 9. Select [] key when proceeding in the reverse direction.
 Select [] key to shift the value from 0 to alphabets of A to I. Select [] key when proceeding in the reverse direction.
 Numeric keys input is not available.
3. Repeat step 3 and 4 to adjust Cyan and Yellow.

Detailed Setting**30 ppm models**

1. Display the screen.
 [Menu] key > [] key > [Adjustment/Maintenance] > [] key > [] key > [Color Registration (Detail)] > [] key
2. Print chart.
 [] key > [Print chart] > [OK] key > [OK] key
 The charts are printed. The chart indicating H1 to H5 (upper) and V1 to V5 (lower) per each color M (Magenta), C (Cyan) and Y (Yellow) is printed.

35/40 ppm models

1. Display the screen.
 [Menu] key > [] key > [Adjustment/Maintenance] > [OK] key > [] key > [Color Registration] > [OK] key > [] key > [Detail] > [OK] key
2. Print chart.
 [] key > [Print chart] > [OK] key > [Yes]
 The charts are printed. The chart indicating H1 to H5 (upper) and V1 to V5 (lower) per each color M (Magenta), C (Cyan) and Y (Yellow) is printed.
 After printing, the [Color Registration (Detail)] is displayed.

Chart sample (Detail)

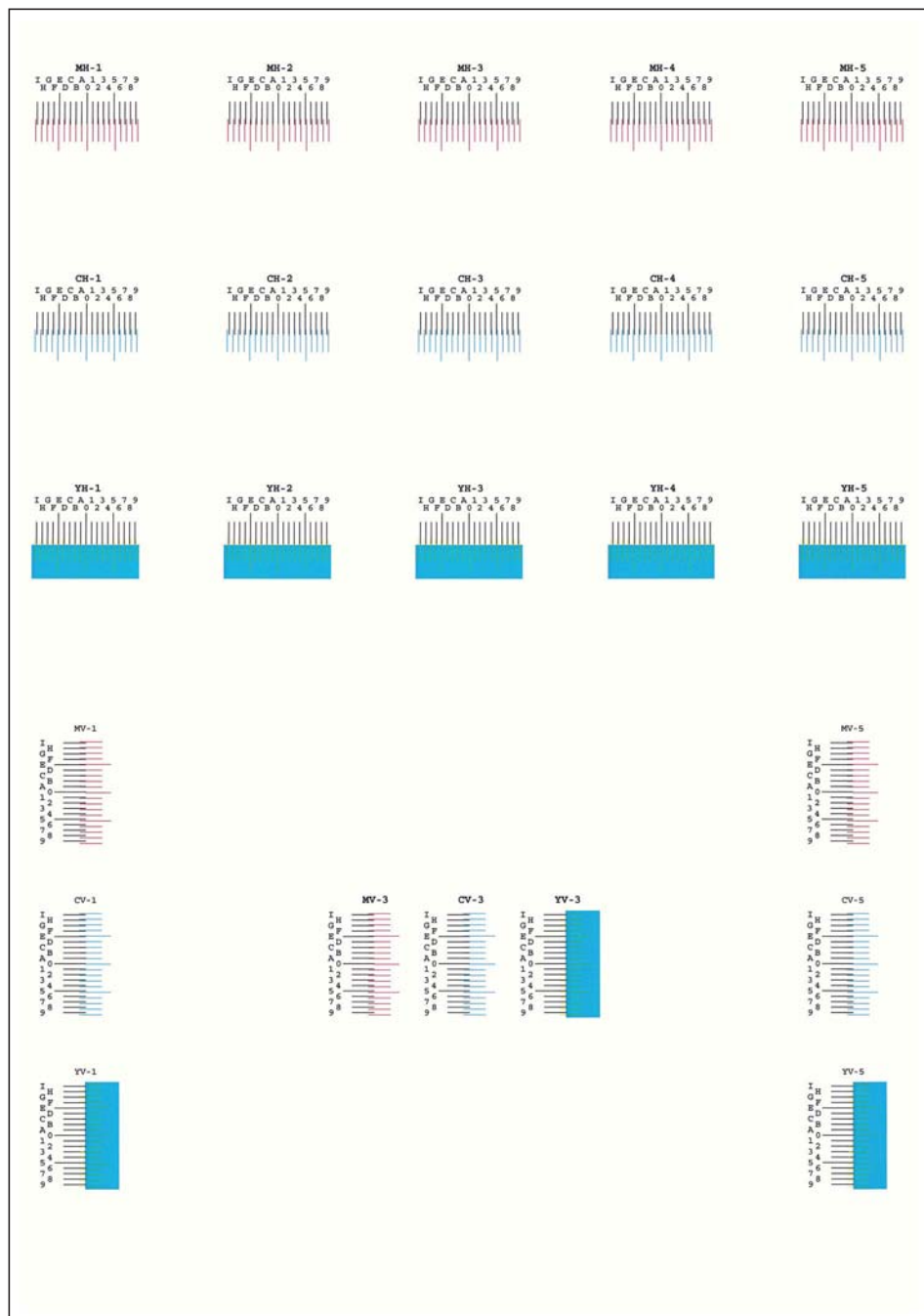


Figure 4-117

30 ppm models

3. Indicate the correction menu.

[Menu] key > [] key > [Adjustment/Maintenance] > [] key > [] key > [Color Registration (Detail)] > [] key > [] key > [Magenta] > [OK] key
The correction menu for Magenta is displayed.

4. Input values.

1. Find the point where two lines are most aligned from each chart. If it is at "0", the correction is unnecessary. In case of the illustration below, "B" is the value that should be set.

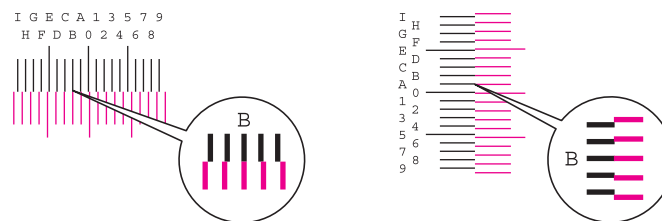


Figure 4-118

1. Read the values from H1 to H5 in the chart.

Read the value of V-3 (center) only of V1 to V5 in the chart.

2. Select [] or [] key and change H and V. Select [] or [] key and input the values read from the chart. Press [OK] key.

Select [] key to shift the value 0 to 9. Select [] key when proceeding in the reverse direction.

Select [] key to shift the value from 0 to alphabets of A to I. Select [] key when proceeding in the reverse direction.

3. Select the [OK] key.

The Magenta correction is complete.

4. Repeat step 3 and 4 to adjust Cyan and Yellow.

35/40 ppm models

3. Indicate the correction menu.

[] [] key > [Magenta] > [OK] key

4. Input values.

1. Find the point where two lines are most aligned from each chart. If it is at "0", the correction is unnecessary. In case of the illustration below, "B" is the value that should be set.

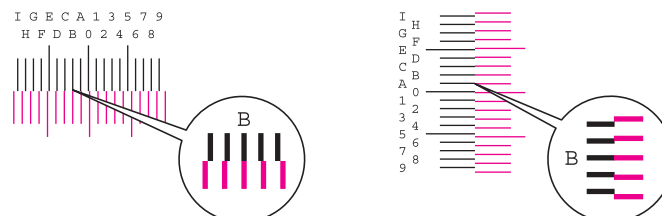


Figure 4-119

Read the values from H1 to H5 in the chart.

Read the value of V-3 (center) only of V1 to V5 in the chart.

2. Select [] or [] key and change H-1 to H-5, V-3. Select [] or [] key and input the values read from the chart. Press [OK] key.

After a while completing the Magenta correction, the color registration correction (Detail) is displayed.

Select [] key to shift the value 0 to 9. Select [] key when proceeding in the reverse direction.

Select [] key to shift the value from 0 to alphabets of A to I. Select [] key when proceeding in the reverse direction.

Numeric keys input is not available.

3. Repeat step 3 and 4 to adjust Cyan and Yellow.

3. Re-activate the license if optional licensed product is installed.

(1) Card Authentication Kit(B)

(2)UG-33 (ThinPrint)

(3)Data Security Kit(E)

*: Re-input four-digit encrypted code that was input at setup.

4. Reset the user initial values from the System Menu and Command Center.

(2) Detaching and reattaching the engine relay PWB

Procedures

1. Open the rear cover (a).

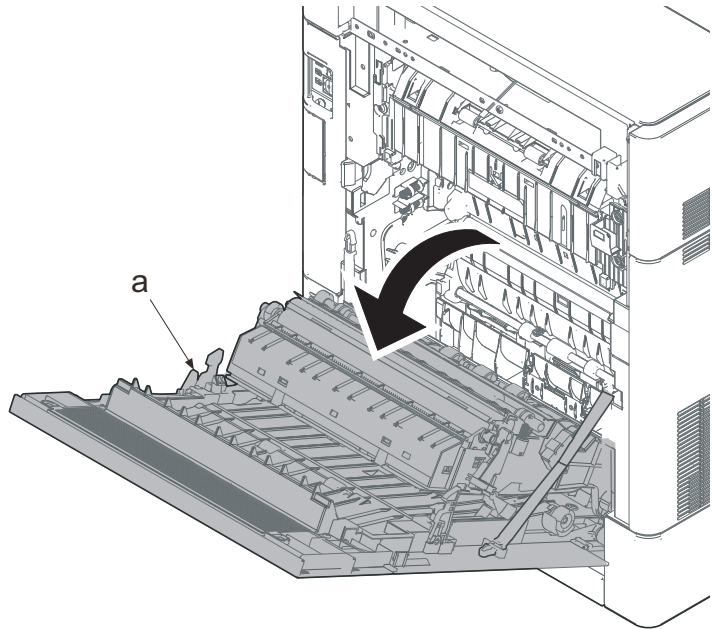


Figure 4-120

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

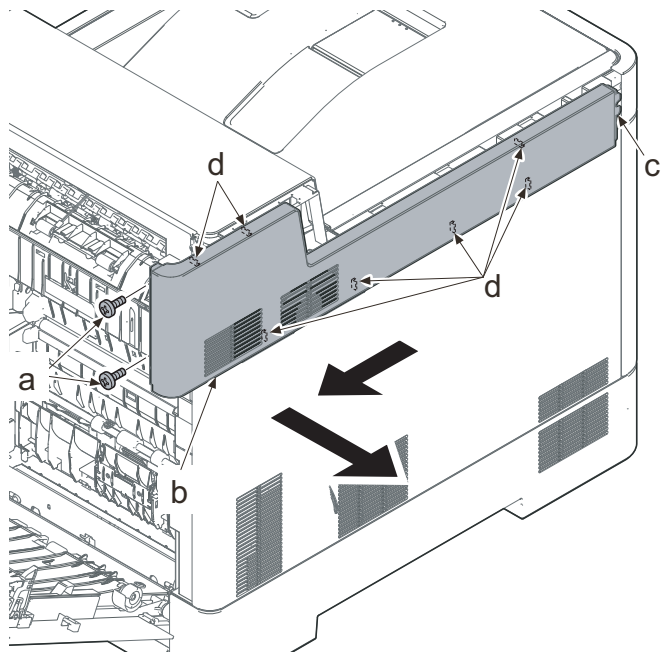


Figure 4-121

4. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
5. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
6. Detach the middle left cover (a).

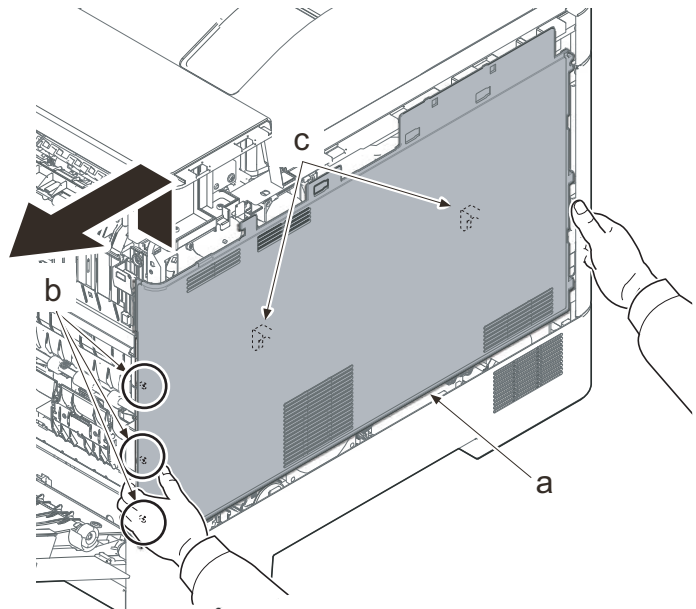


Figure 4-122

IMPORTANT

When reattaching the middle left cover (a), insert the lower rib into the lower left cover (b). And, slide it toward the machine front side to fasten three hooks (c) and four hooks (d), then lower the machine rear side of it to fasten three hooks (e) at the machine rear side.

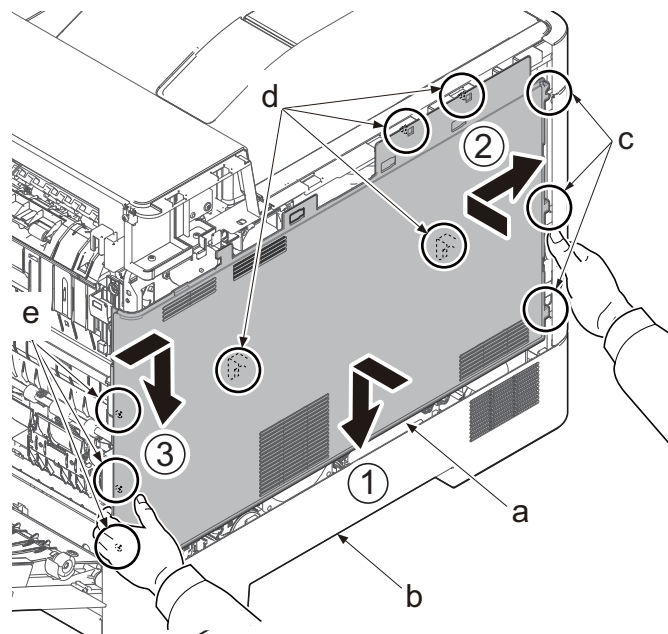


Figure 4-123

7. Remove the screw (a)(M3x8).
8. Pull the rib (b) toward you and release the center hook (c).
9. Detach the lower left cover (d).

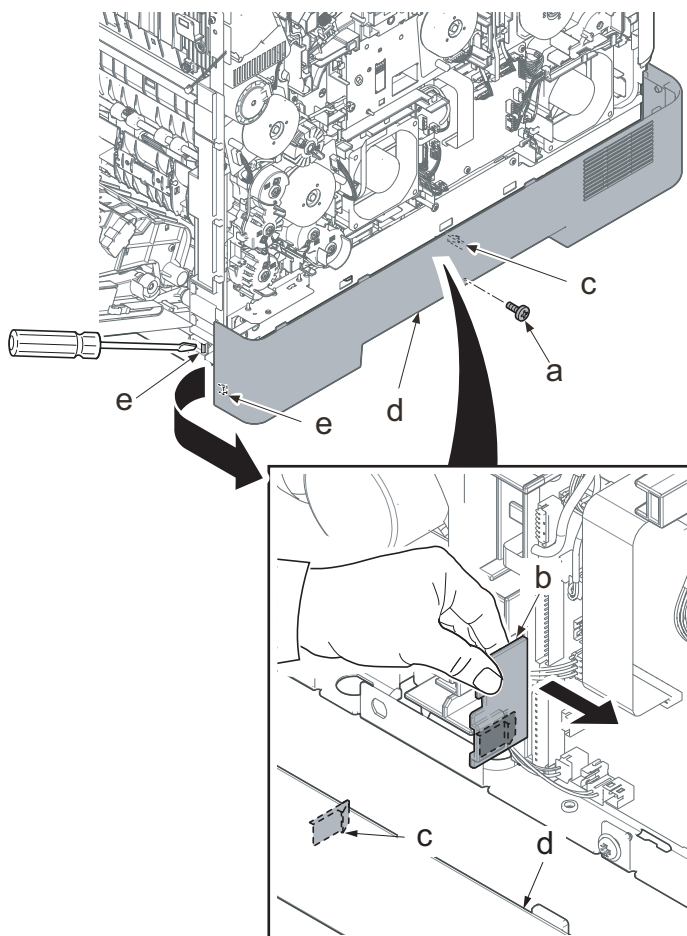


Figure 4-124

IMPORTANT

When attaching the lower left cover (a), insert two bosses at the machine front side into the holes and apply the center hook. Then, push it toward the machine rear side. After that, secure the screw.

Check if the hook at center is surely fastened.

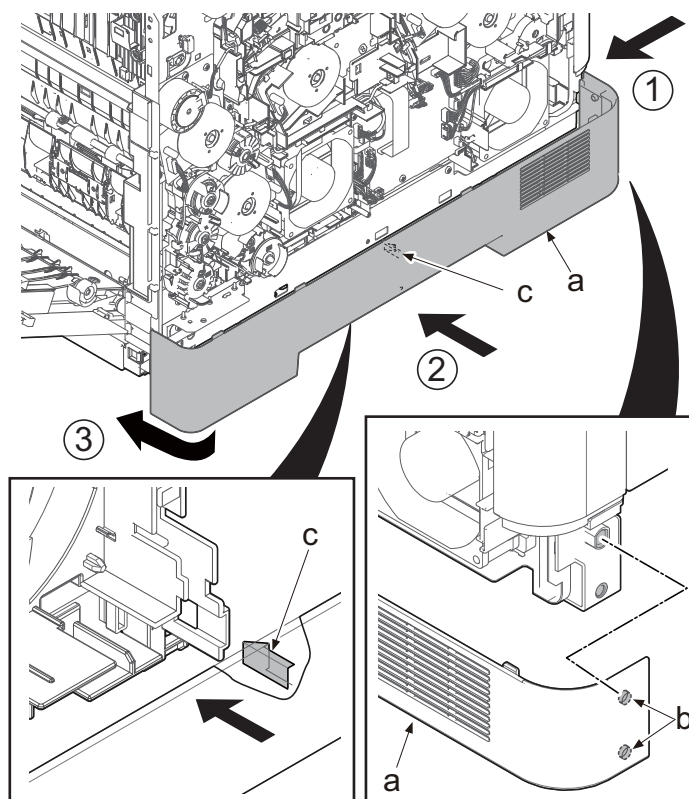


Figure 4-125

10. Disconnect all the connectors and FFCs from the engine relay PWB (a).
 30 ppm model: 23 connectors
 35/40 ppm model: 24 connectors
 (YC27: used in only 35/40 ppm model)

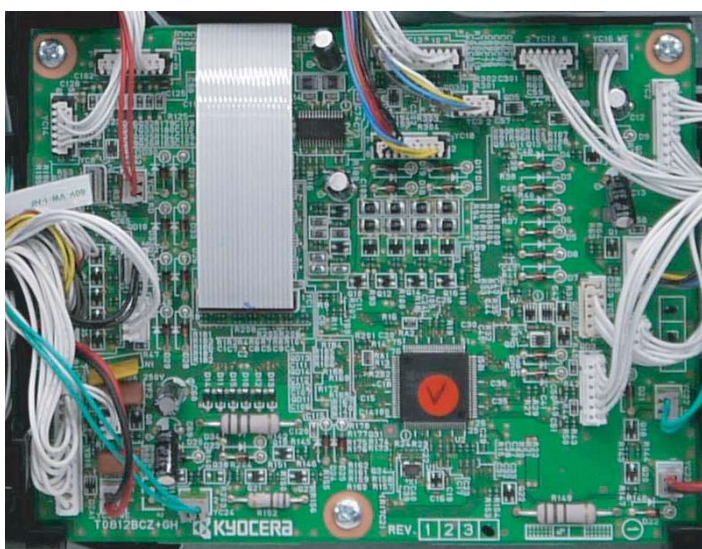
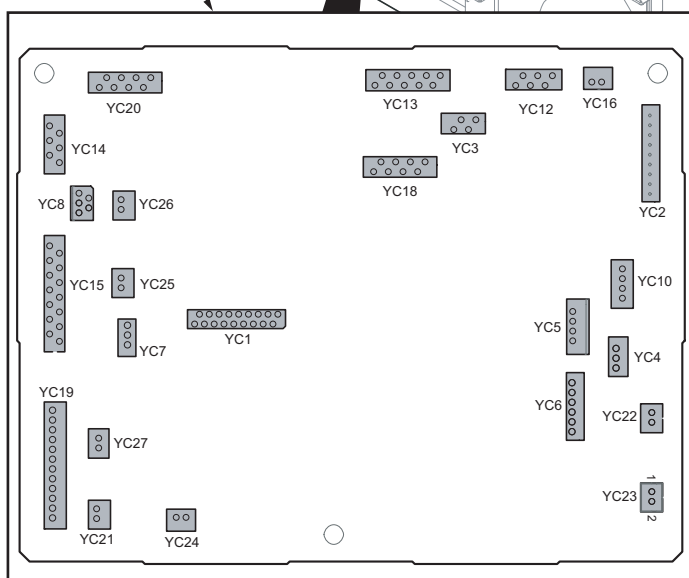
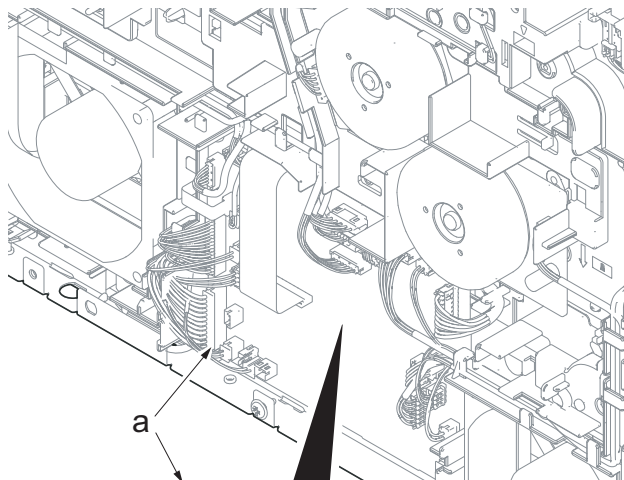


Figure 4-126

11. Remove three screws (a)(M3x8).
12. Detach the engine relay PWB (b).
13. Check the engine relay PWB and clean or replace it if necessary.
14. Reattach the parts in the original position.

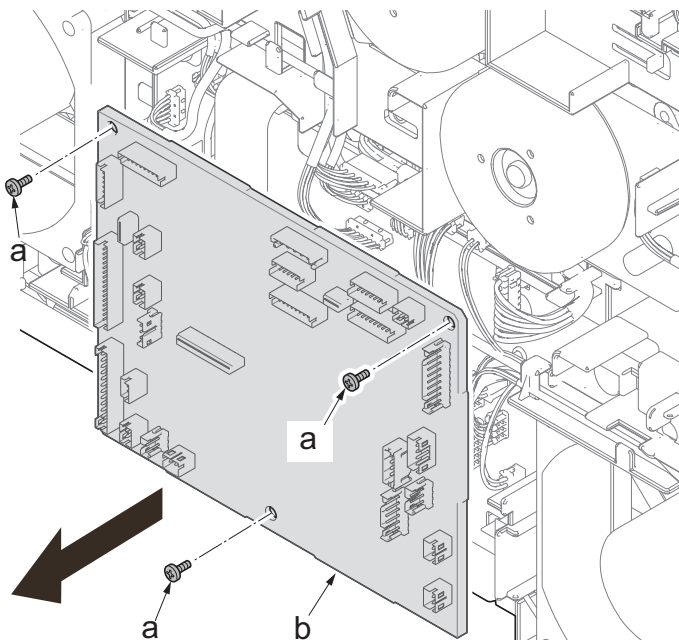


Figure 4-127

(3) Detaching and reattaching the high-voltage PWB

Procedures

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).

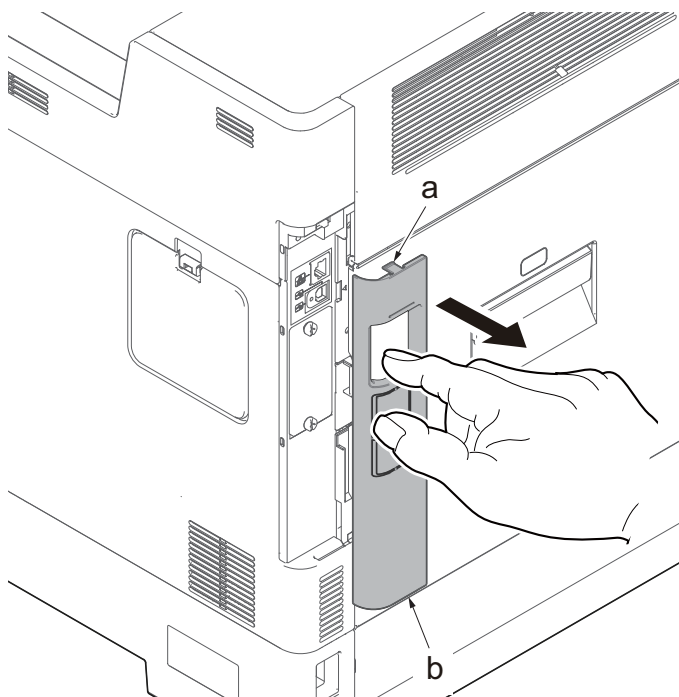


Figure 4-128

3. Remove the screw (a) (M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.

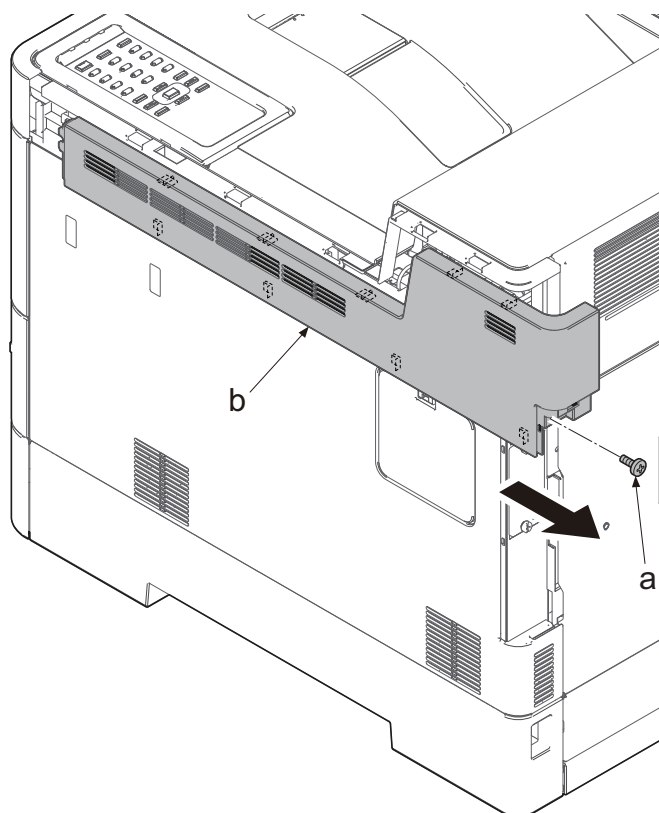


Figure 4-129

IMPORTANT

When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten nine hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.

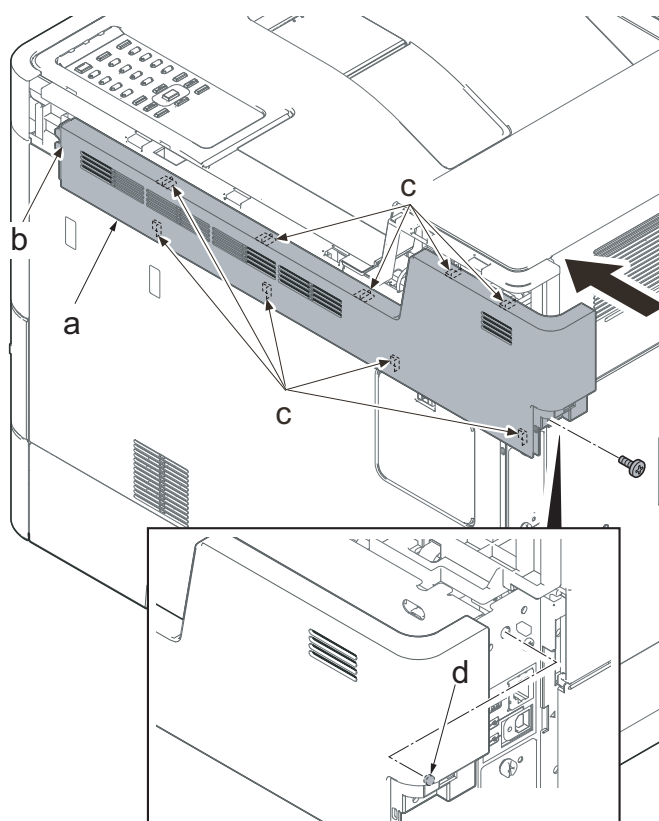
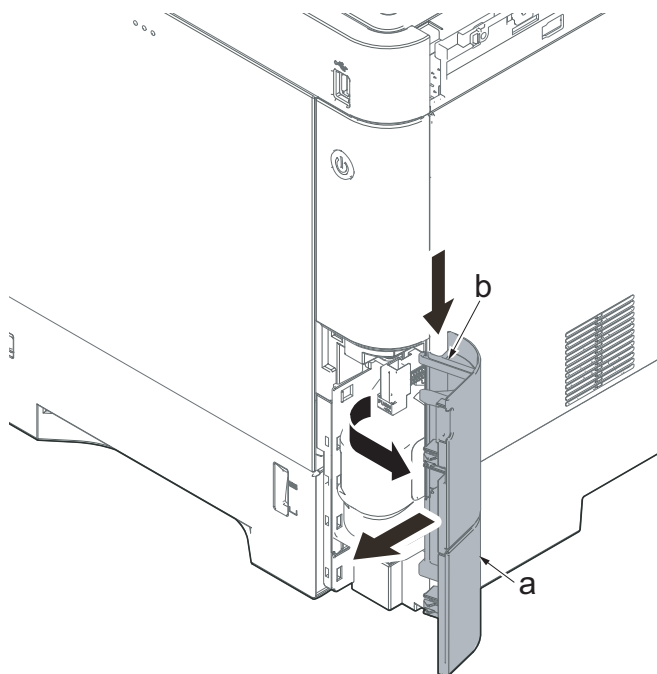
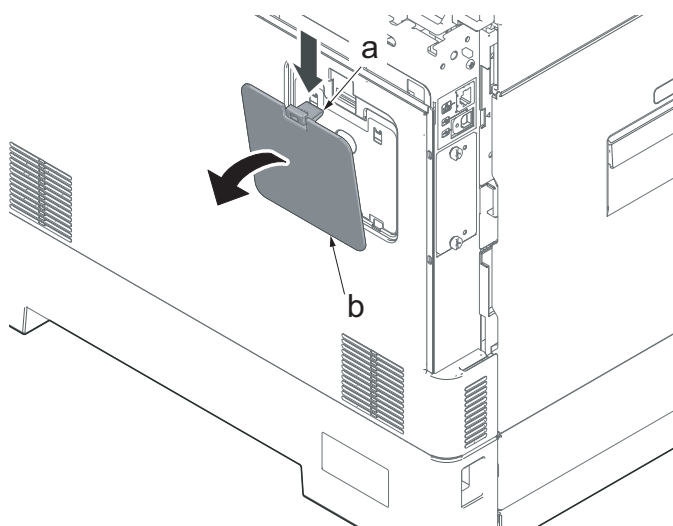


Figure 4-130

5. Open the waste toner cover (a).
6. Press the arm (b) down.
7. Remove the waste toner cover (a).

**Figure 4-131**

8. Push the lever (a) and open the memory cover (b).
9. Remove the memory cover (b).

**Figure 4-132**

10. Lift up the shield cover (a) and pull it toward you to remove it.

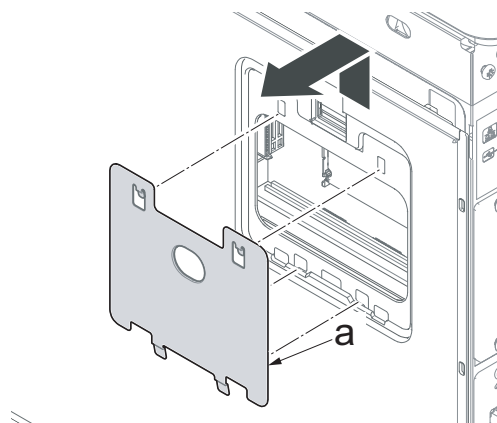


Figure 4-133

11. Push the machine front side of the middle right cover (a) toward the machine rear side and then lift up its machine rear side to detach it.

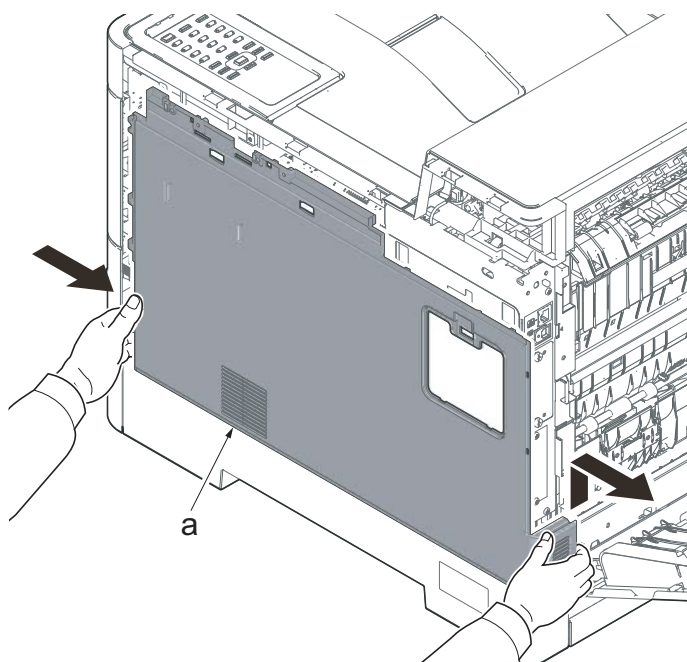


Figure 4-134

IMPORTANT

When reattaching the middle right cover (a), insert the lower rib into the the lower right cover. Slide it toward the machine front side to fasten three hooks (b) and then lower it to fasten five hooks (c), and fasten two hooks (d) at the machine rear side.

Check if two hooks (d) at the machine rear side are surely fastened.

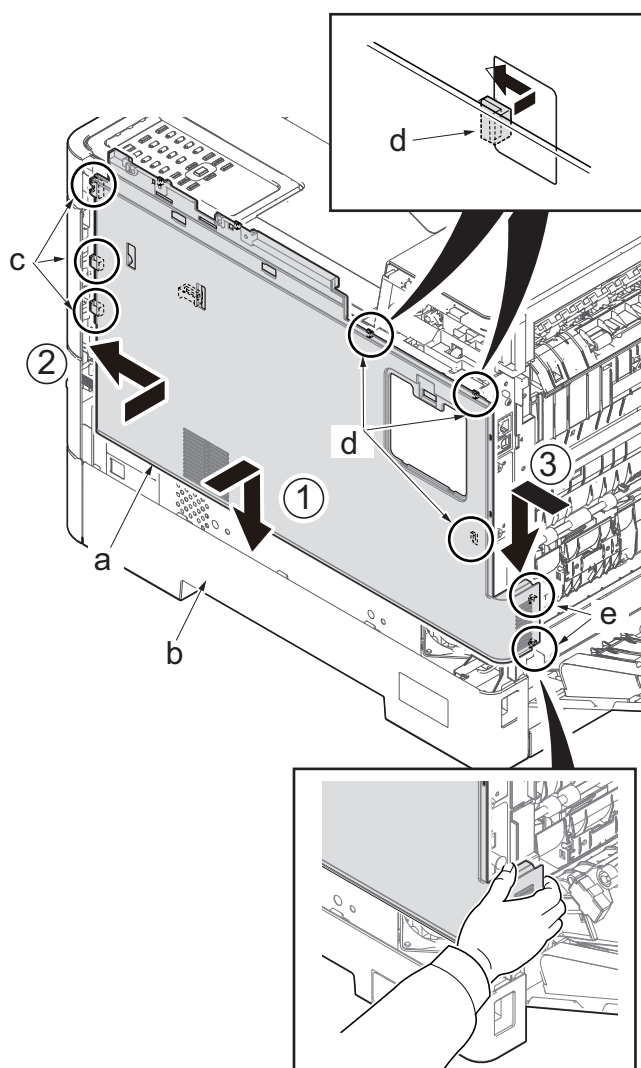
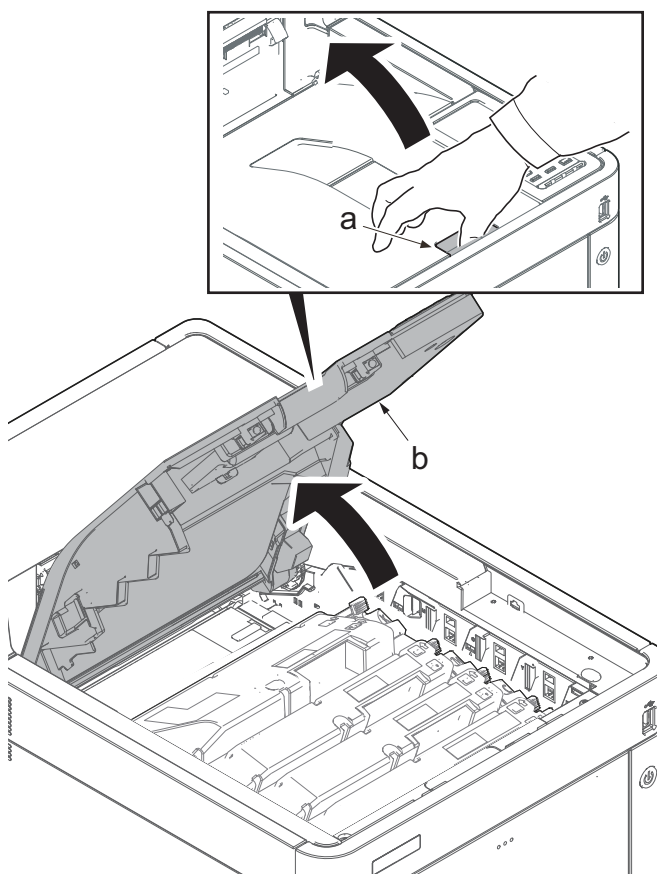
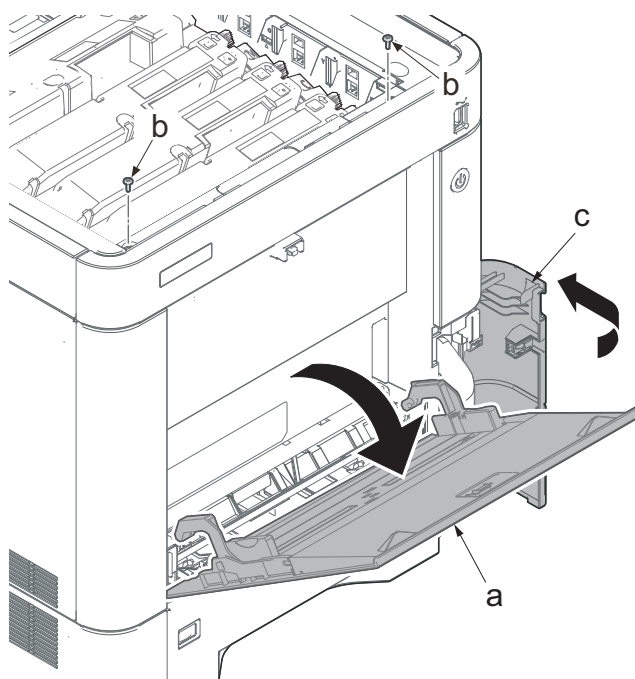


Figure 4-135

12. Pull the lever (a).
13. Open the top tray (b).

**Figure 4-136**

14. Open the MP tray (a).
15. Remove two screws (b)(M3x8).
16. Open the waste toner cover (c).

**Figure 4-137**

17. Slightly lift up the front cover (a) to release the boss (b).
18. Tilt the front cover (a) toward the machine front side.
19. Then, remove the front cover (a) by lifting it up.

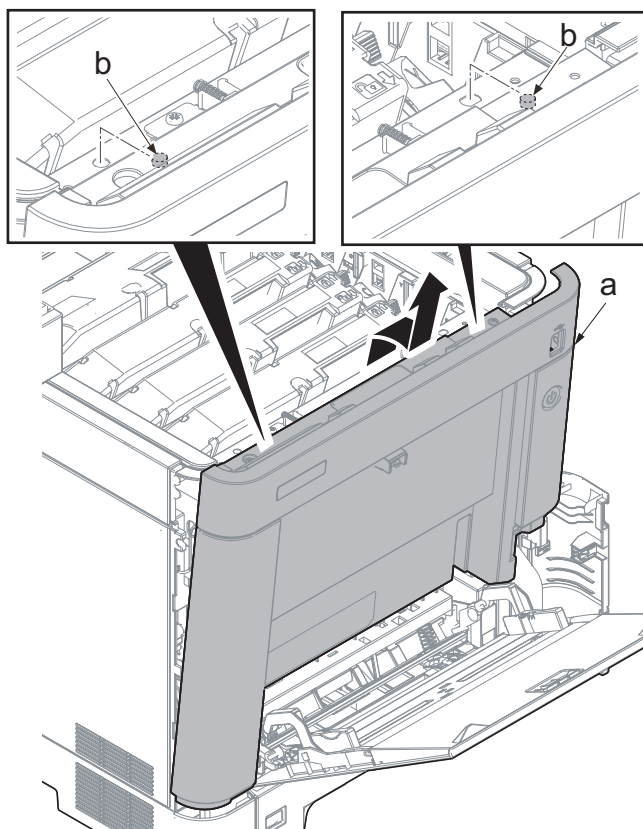


Figure 4-138

IMPORTANT

Make sure not to touch the waste toner cover sensor (b) when reattaching the front cover (a). If the waste toner cover sensor (b) comes off, even if you close the waste toner cover, [cover open] will be displayed.

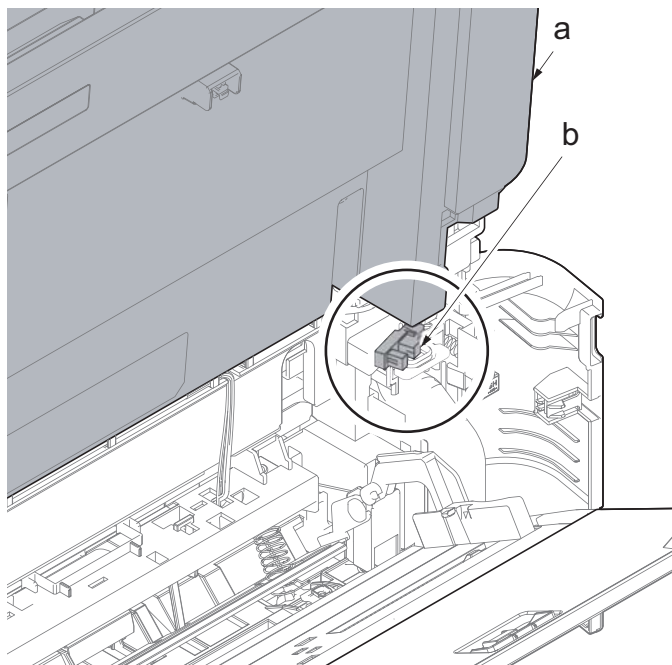


Figure 4-139

20. Remove the screw (a)(M3x8).

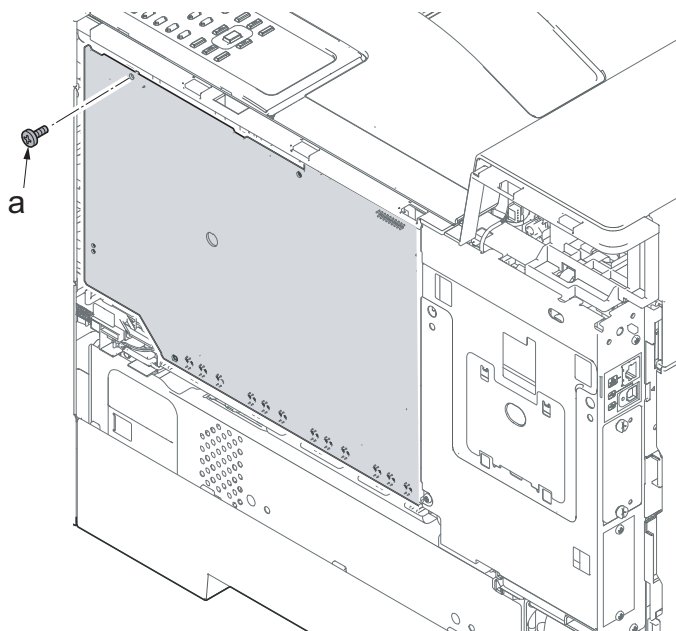


Figure 4-140

21. Release four hooks (a) at both sides of the high-voltage PWB (c).
22. Slightly tilt the PWB toward you and release the FFC (b).

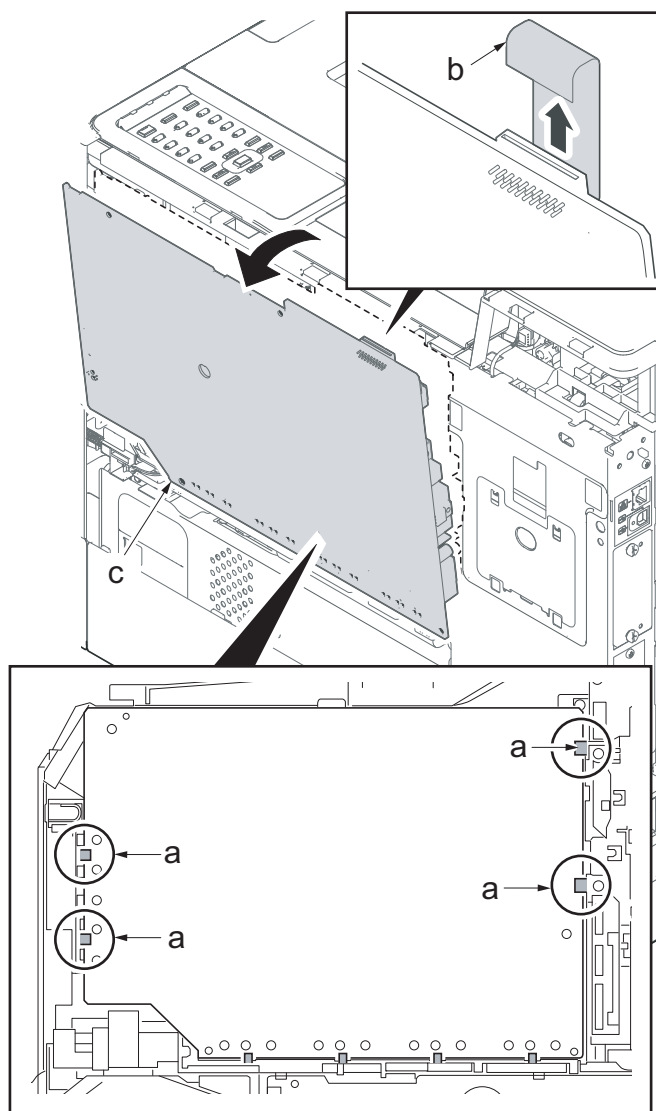


Figure 4-141

23. Tilt the high-voltage PWB (a) to 90 degrees and pull it out toward you.

*: The lower hook (b) on the PWB might break if removing it without pushing it down.

24. Check the paper feed drive unit and clean or replace it if necessary.
25. Reattach the parts in the original position.

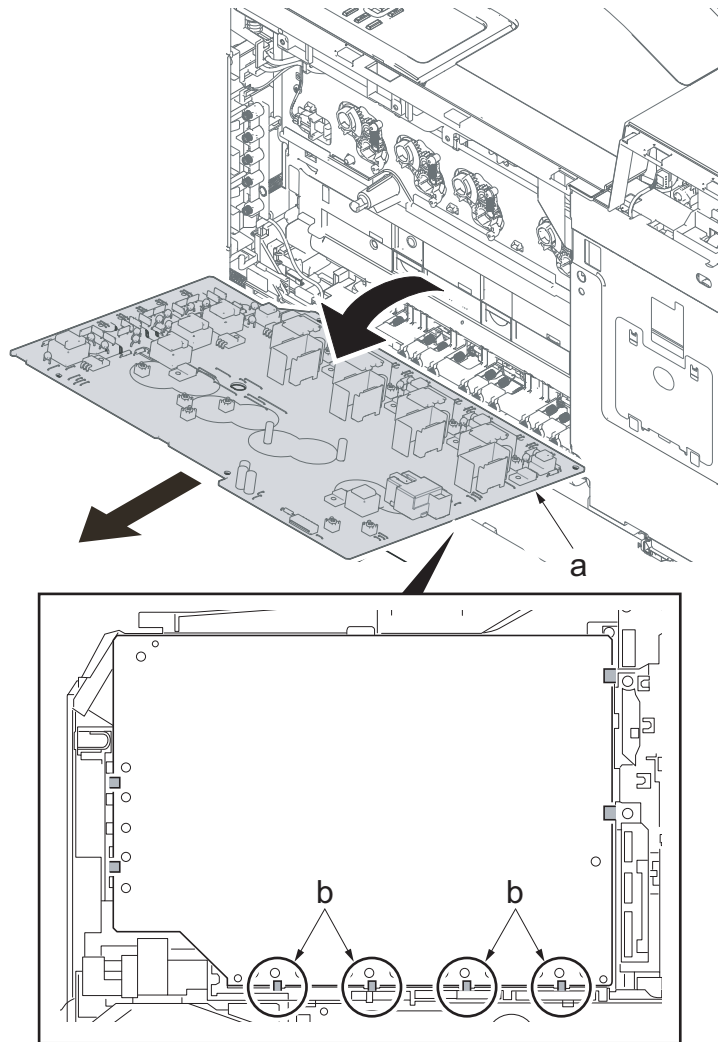


Figure 4-142

IMPORTANT

When reattaching the high-voltage PWB (d), insert the lower part of the PWB into four of the lower hooks (b) and insert the left and right positioning pins (c) into the holes. Then, raise the PWB and apply two hooks each at the left and right side.

After reattaching the high-voltage PWB (d), check that it is secured with two hooks at the each left and right side and four hooks (b). (If the hook is not fastened, the image failure might appear.)

Also, check the terminal spring (e) contacts the terminal (f).

Terminal:

Lower side: 12

Left side: 5 (30/ 35 ppm model)

1 (40 ppm model)

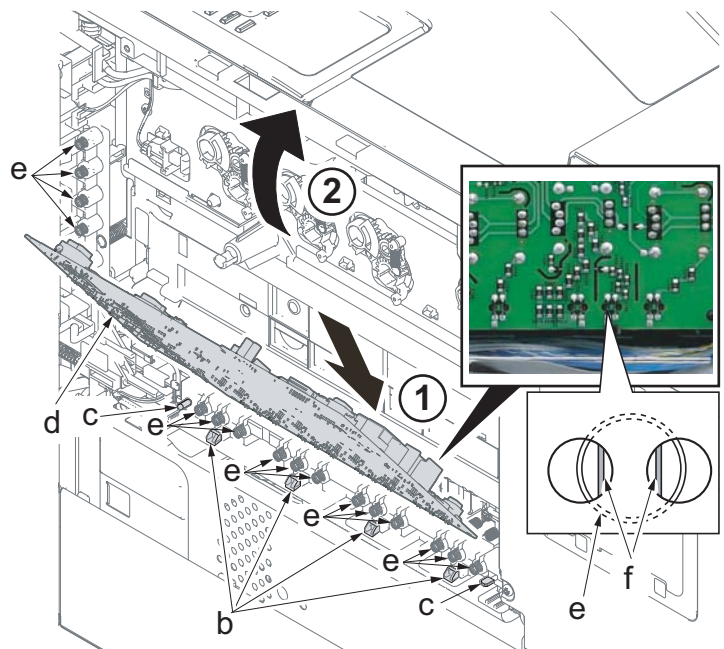


Figure 4-143

(4) Detaching and reattaching the high-voltage PWB 2 (for 40 ppm models only)

Procedures

1. Open the top tray (b), by lifting the handle (a).

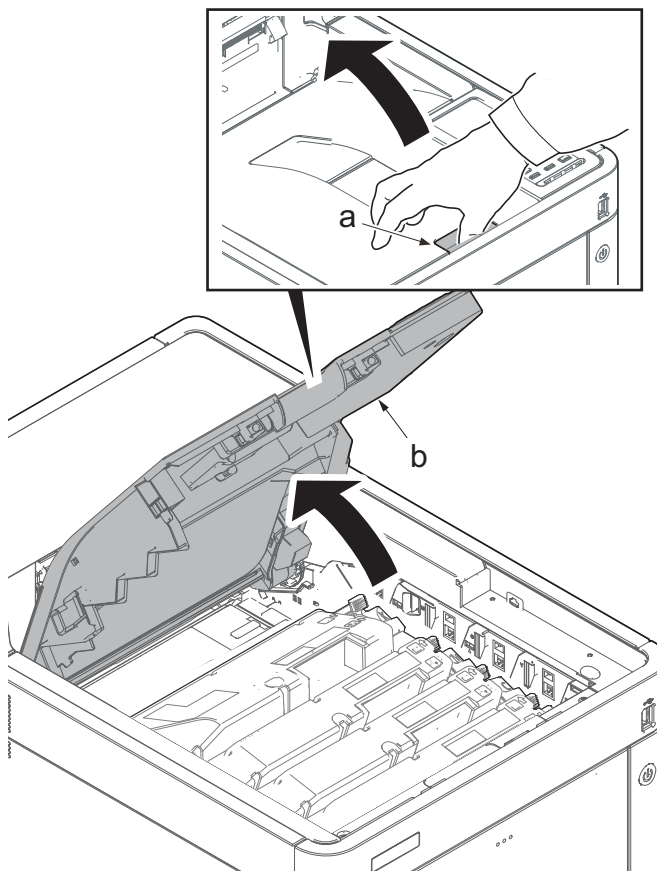


Figure 4-144

2. Open the MP tray (a).
3. Remove two screws (b)(M3x8).
4. Open the waste toner cover (c).

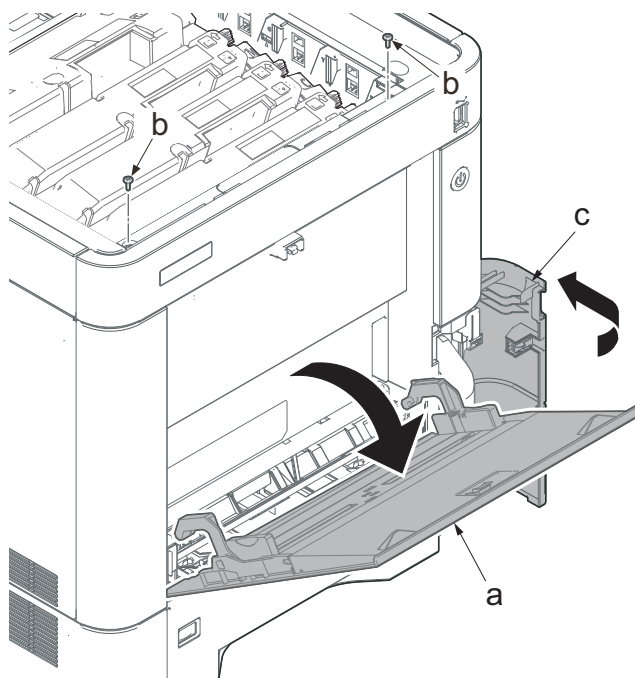


Figure 4-145

5. Slightly lift up the front cover (a) to release the boss (b).
6. Tilt the front cover (a) toward the machine front side.
7. Then, remove the front cover (a) by lifting it up.

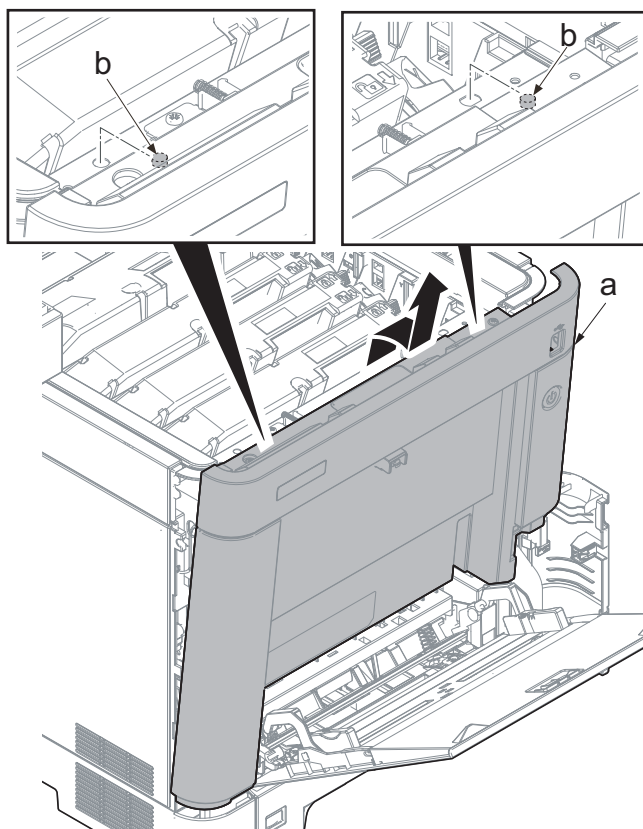


Figure 4-146

IMPORTANT

Make sure not to touch the waste toner cover sensor (b) when reattaching the front cover (a). If the waste toner cover sensor (b) comes off, even if you close the waste toner cover, [cover open] will be displayed.

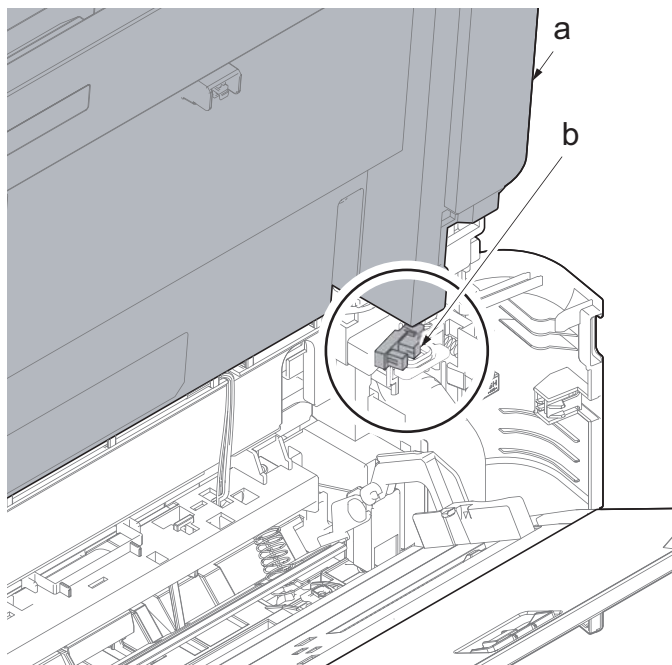
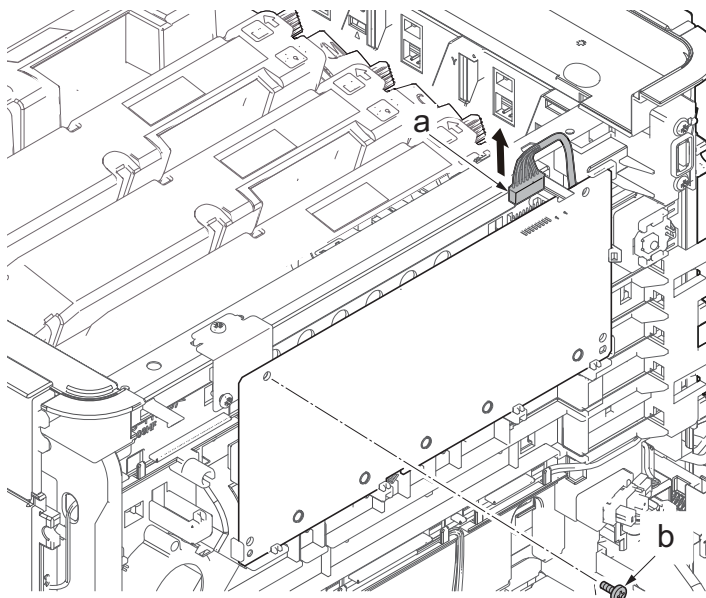
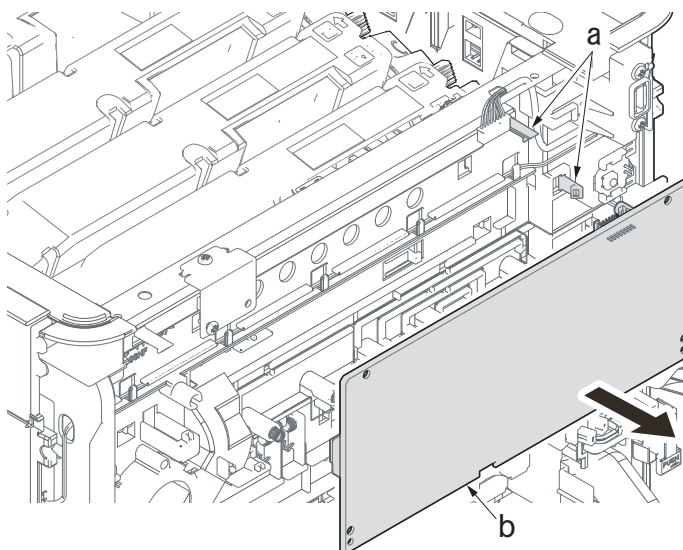


Figure 4-147

8. Disconnect the connector (a).
9. Remove the screw (b)(M3x8).

**Figure 4-148**

10. Release two hooks (a), and detach the high-voltage PWB 2 (b).

**Figure 4-149**

IMPORTANT

When reattaching the high-voltage PWB 2 (a), insert the lower part of the PWB into four of the lower hooks (b), and raise the PWB and fasten two hooks at the right side.

Also, check the terminal spring (c) contacts the terminal (d).

Terminal:

Lower side: 5

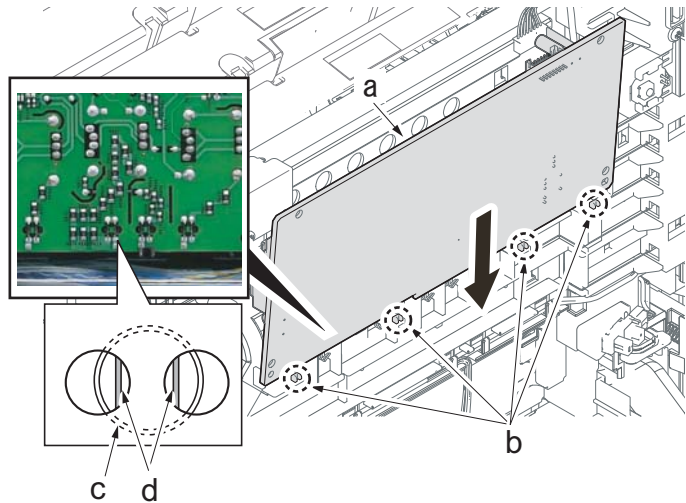


Figure 4-150

(5) Detaching and reattaching the power source PWB

Procedures

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).

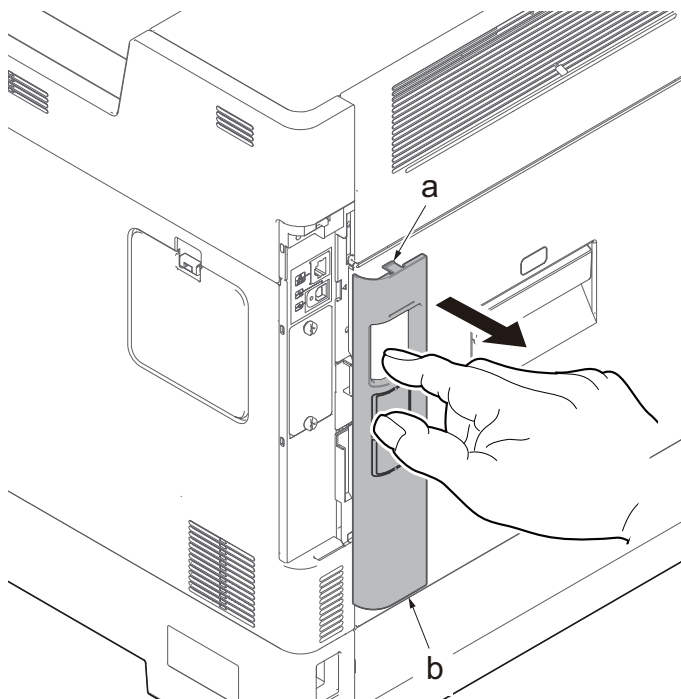


Figure 4-151

3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.

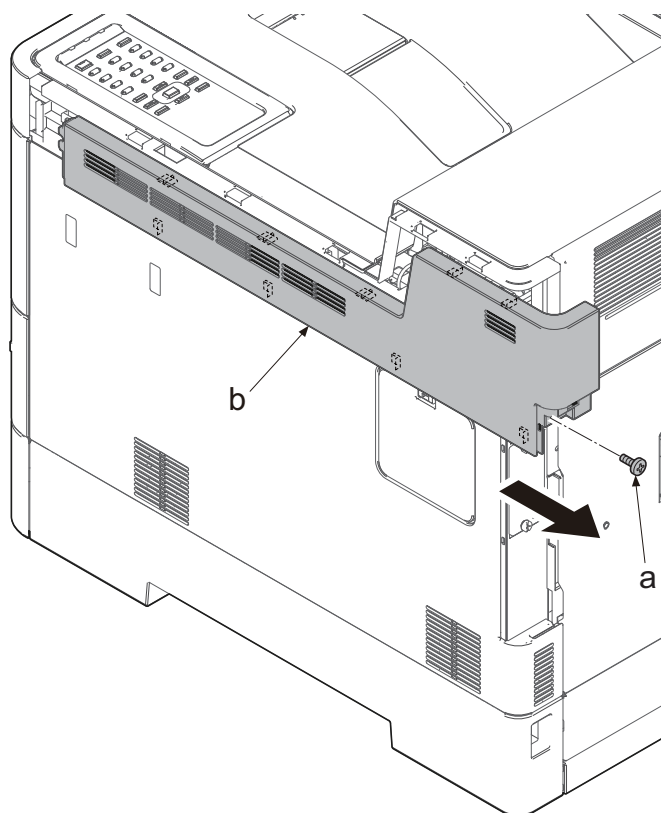


Figure 4-152

IMPORTANT

When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten nine hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.

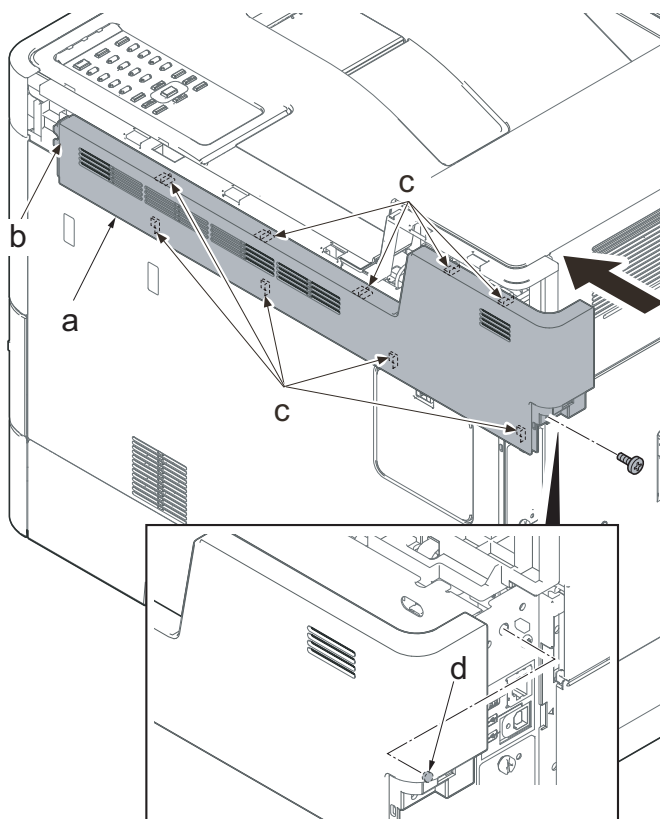


Figure 4-153

5. Open the waste toner cover (a).
6. Press the arm (b) down.
7. Remove the waste toner cover (a).

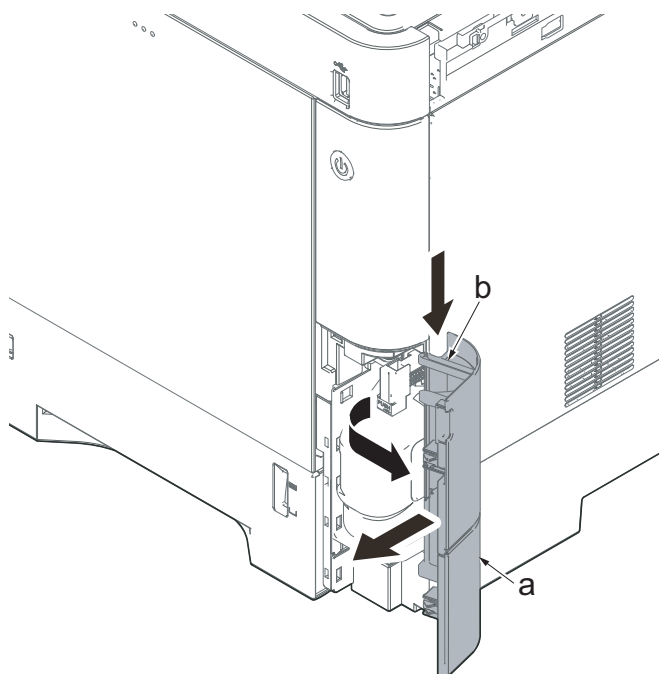
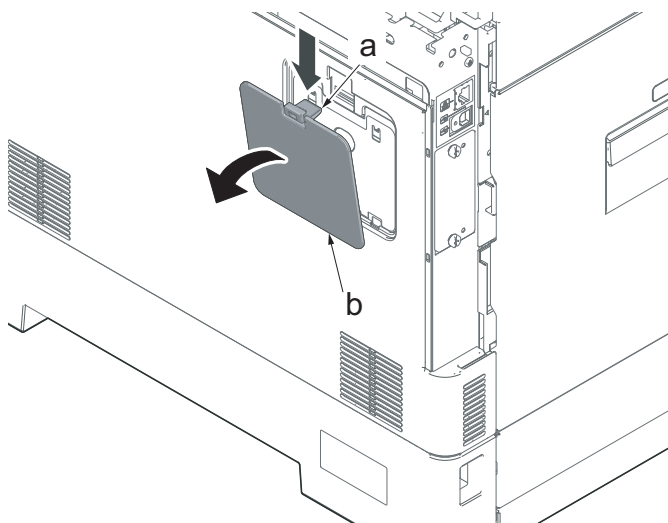
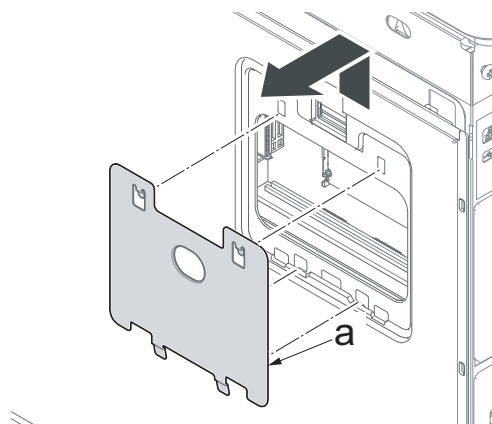


Figure 4-154

8. Push the lever (a) and open the memory cover (b).
9. Remove the memory cover (b).

**Figure 4-155**

10. Lift up the shield cover (a) and pull it toward you to remove it.

**Figure 4-156**

11. Push the machine front side of the middle right cover (a) toward the machine rear side and then lift up its machine rear side to detach it.

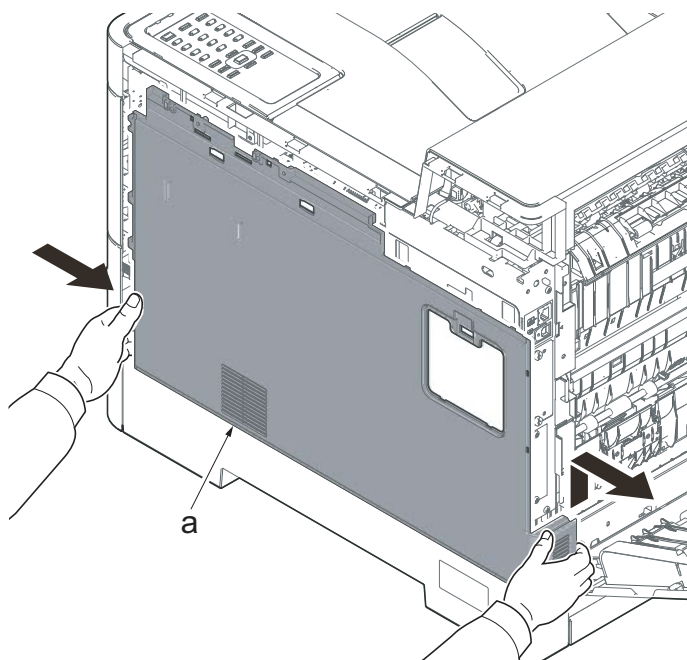


Figure 4-157

IMPORTANT

When reattaching the middle right cover (a), insert the lower rib into the the lower right cover (b). Slide it toward the machine front side to fasten three hooks (c) and then lower it to fasten three hooks (d), and fasten two hooks (e) at the machine rear side. Check if three hooks (d) at the machine rear side are surely fastened.

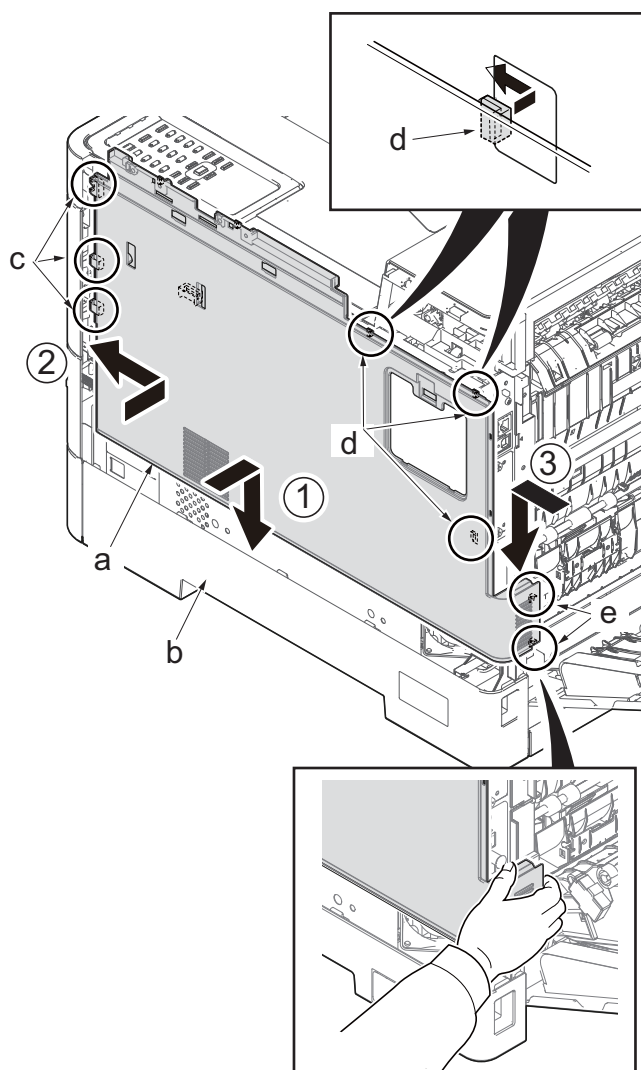


Figure 4-158

12. Remove the screw (a)(M3x8).
13. Release the hook (c) of the lower right cover (b) toward the machine right side and slide it toward the machine rear side to detach it.

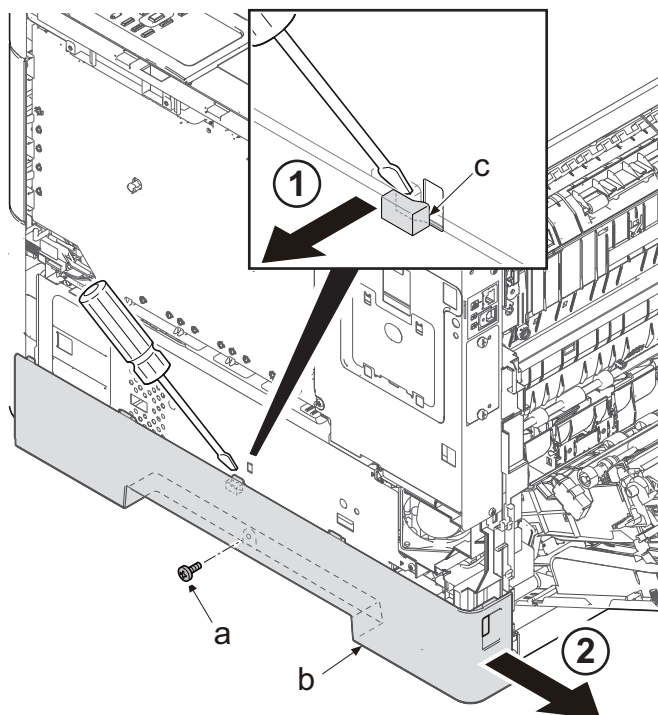


Figure 4-159

14. Remove two screws (a)(M3x8, P).
15. Remove the screw (b)(M3x8, S).
16. Release the hook (c).
17. Remove the power source shield (d).

*: The screw (a) and (b) are different and secure them at the original place.

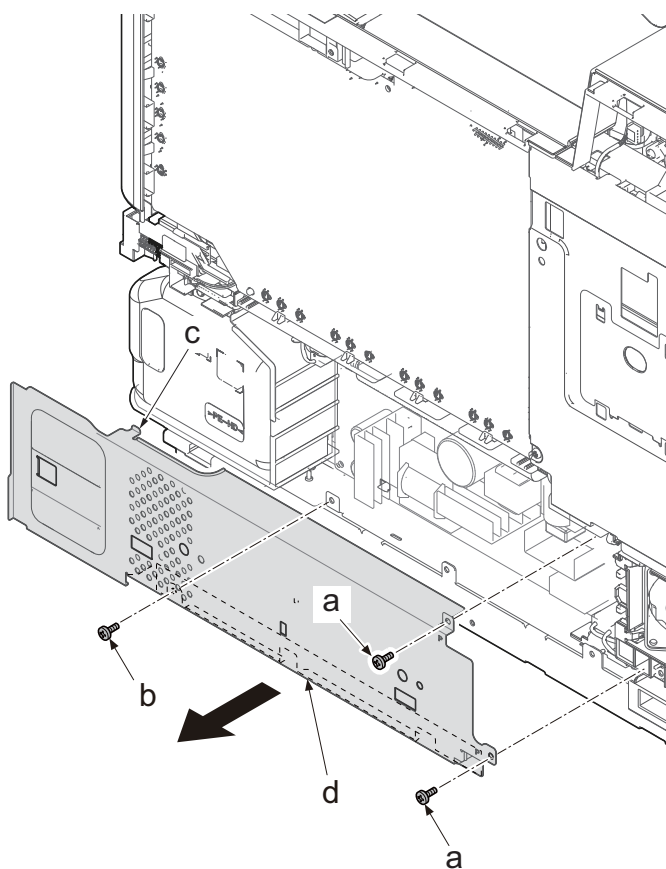


Figure 4-160

18. Disconnect all the connectors from the power source PWB (a). (five connectors)
19. Remove two screws (b)(M3x8).
20. Release two hooks (c).
21. Remove the power source PWB (a).
22. Check the power source PWB and clean or replace it if necessary.
23. Reattach the parts in the original position.

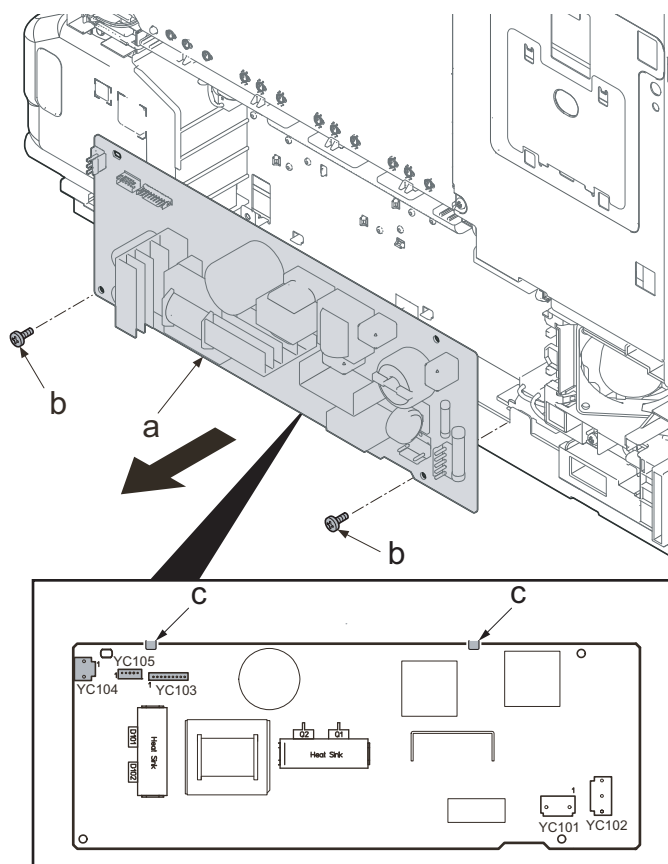


Figure 4-161

IMPORTANT

When reattaching the power source shield (a), insert the lower two hooks (b) into the square holes (c) of the main unit and fasten the upper hook (d). Then, secure it with the screw (e).

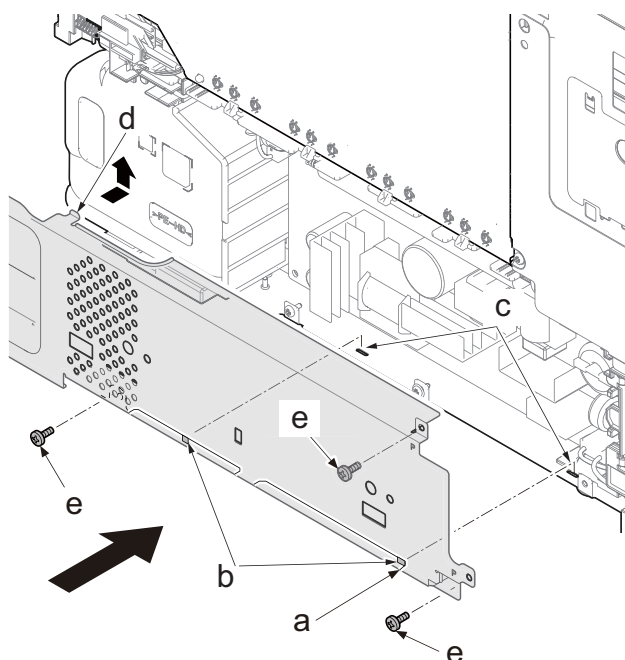


Figure 4-162

(6) Detaching and reattaching the operation panel PWB

Procedures

1. Open the top tray (a).
2. Insert a flat-blade screwdriver (c) into the square hole of the top tray (b) and release two hooks (e) of the operation panel (d).
3. Lift up the operation panel and remove it from the upper tray.

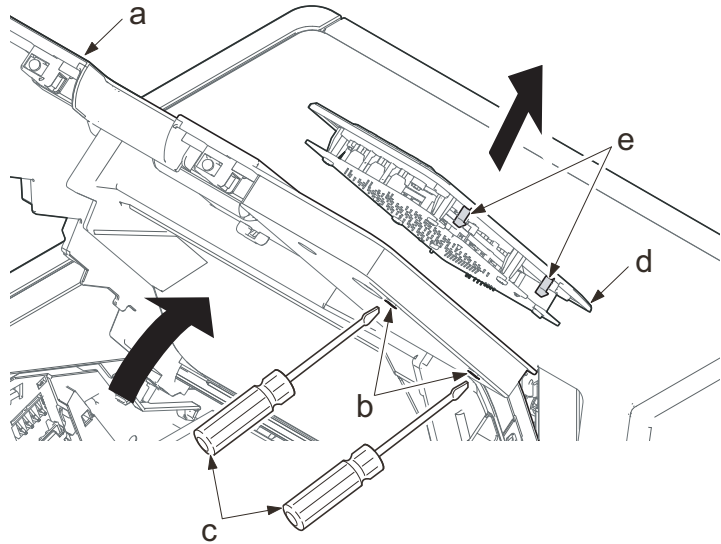


Figure 4-163

30 ppm models

4. Remove the FFC (a) and then remove the operation panel.

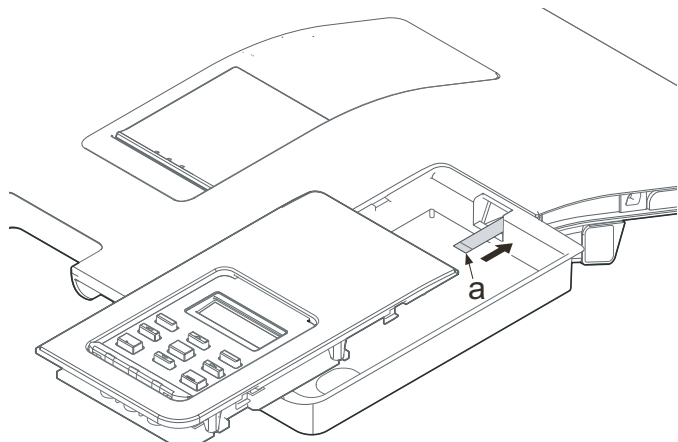


Figure 4-164

35/40 ppm models

4. Remove the FFC (a) and ground wire (b) and then remove the operation panel.

*: Attach the operation panel after passing the ground wire (b) connector through the aperture of the upper tray.

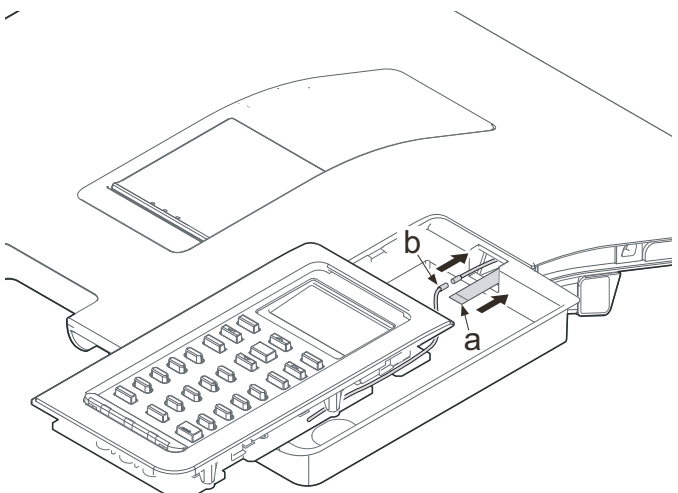


Figure 4-165

4-6 Other parts

(1) Optical section (Laser scanning)

(1-1) Detaching and reattaching the LSU

Procedures

1. Open the top tray (b), by lifting the handle (a).

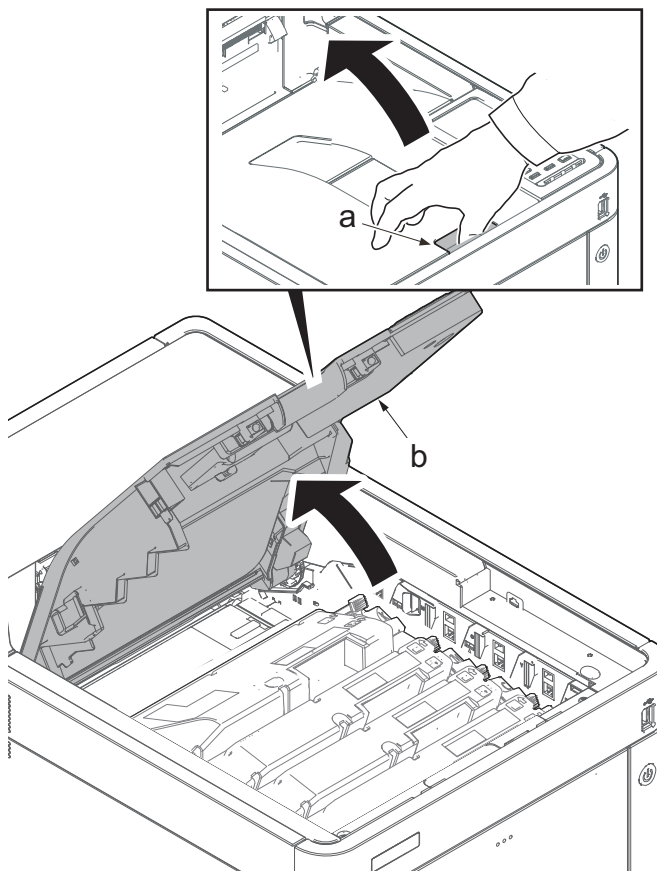


Figure 4-166

2. Rotate the lock lever (a).

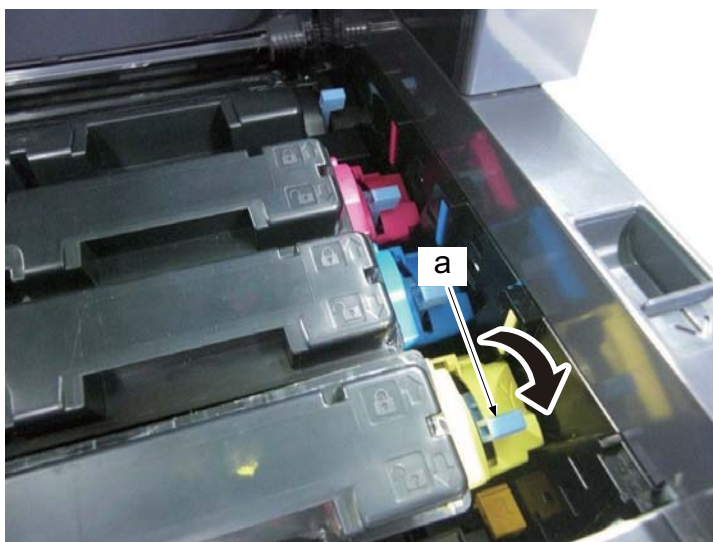


Figure 4-167

3. Detach the toner containers (K, M, C and Y)(a).

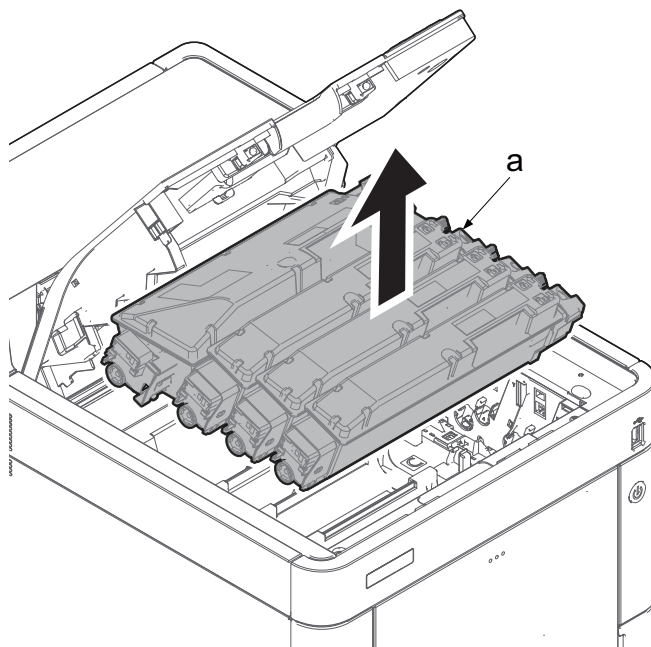


Figure 4-168

- *: When detaching the toner container (a), first lift its handle (b) and then pull it out upward.

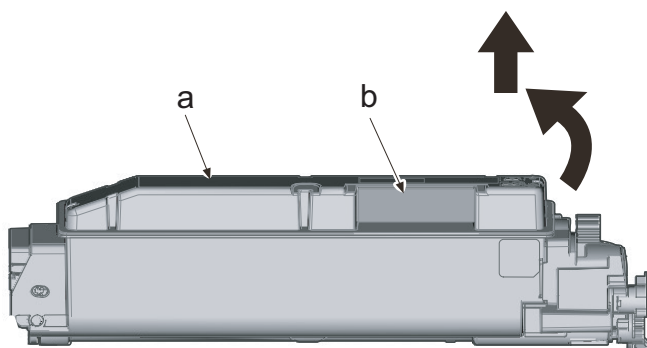


Figure 4-169

4. Pull the right shutter lever (a) in the direction of the arrow.

*: Close the toner feed inlet by pulling this lever.

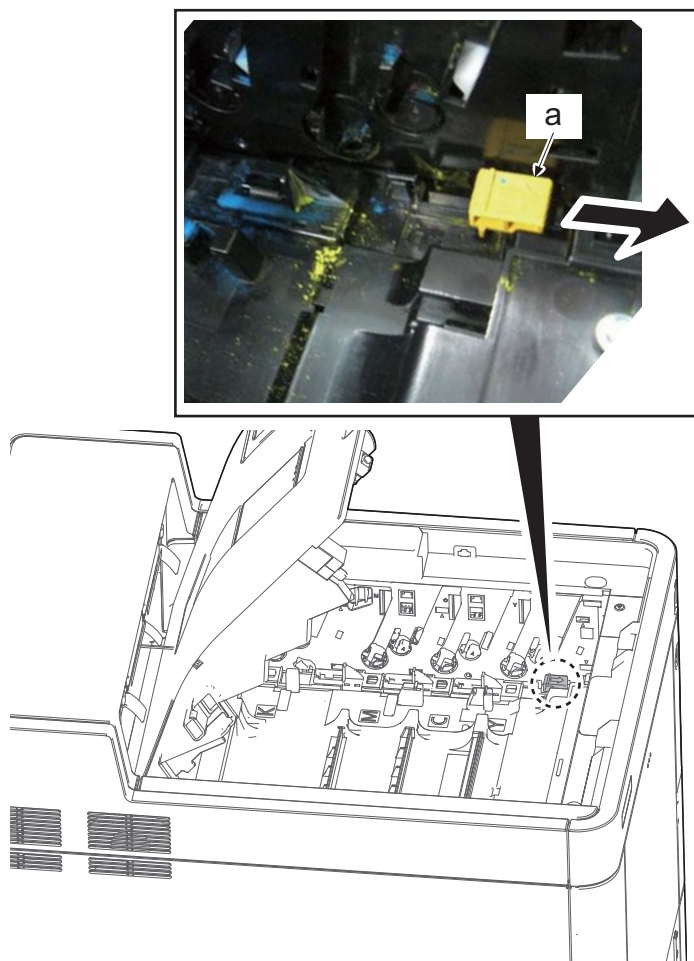


Figure 4-170

5. Remove the screw (a)(M3x12).

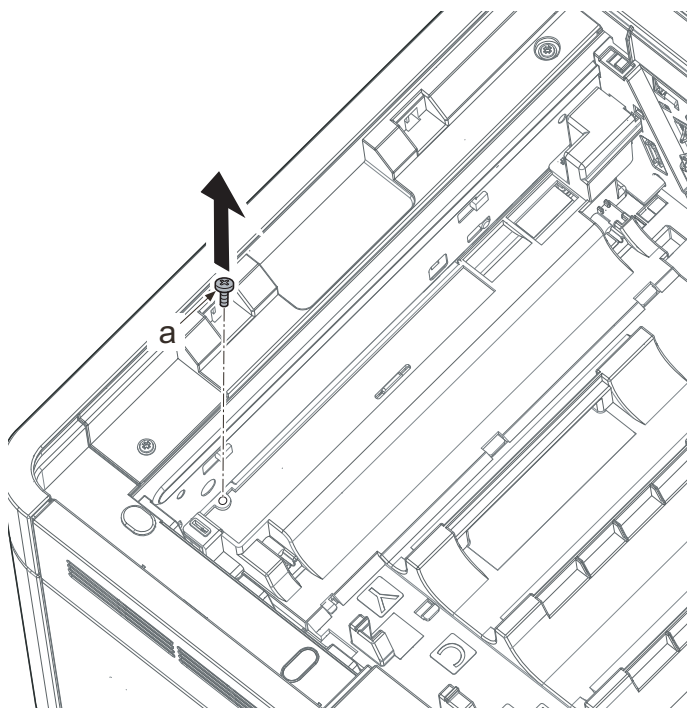


Figure 4-171

6. Remove the screw (a)(M3x12).
7. Remove the lever cover (b).
8. Lift up the drive release lever (c).

*: When raising the lever, the joint of the drive coupling is released.

IMPORTANT

If omitting to attach the lever cover, [Cover open] message is displayed while the tray switch is not turned on.

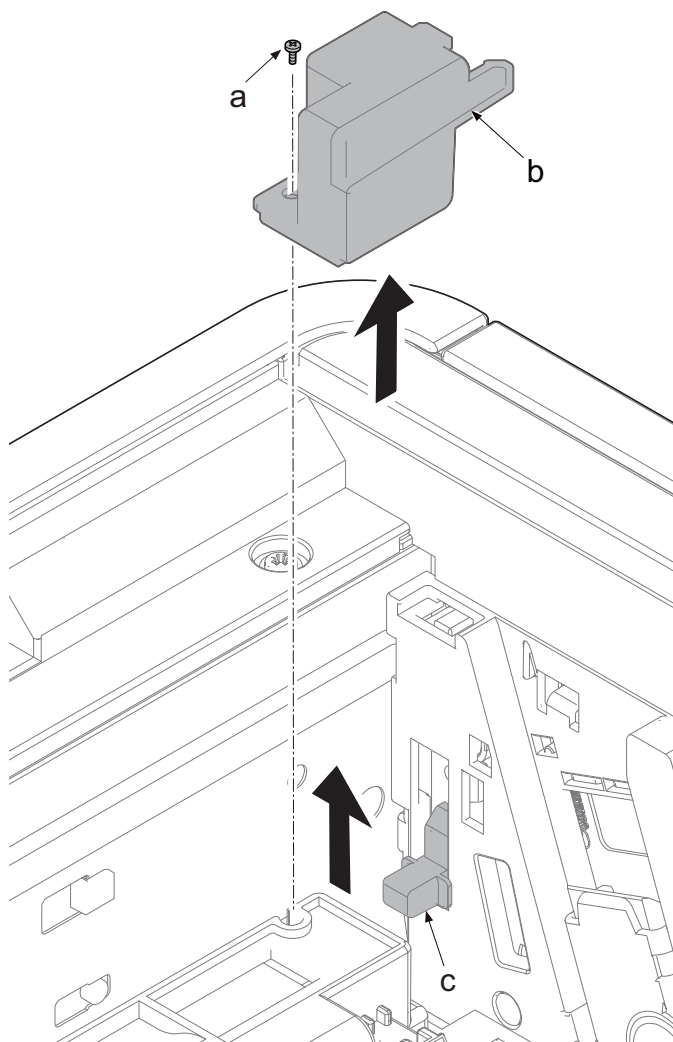


Figure 4-172

9. Hold the handle (a) and detach the primary transfer unit (b).

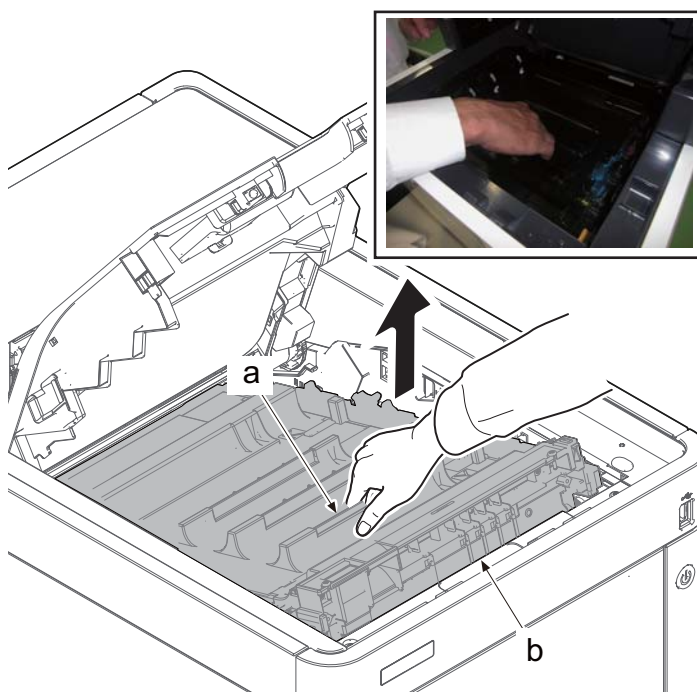


Figure 4-173

*: Hold the handle (b) at the machine front side and lift up the primary transfer unit (a). Then, further lift it up and pull it toward the machine front side to detach.

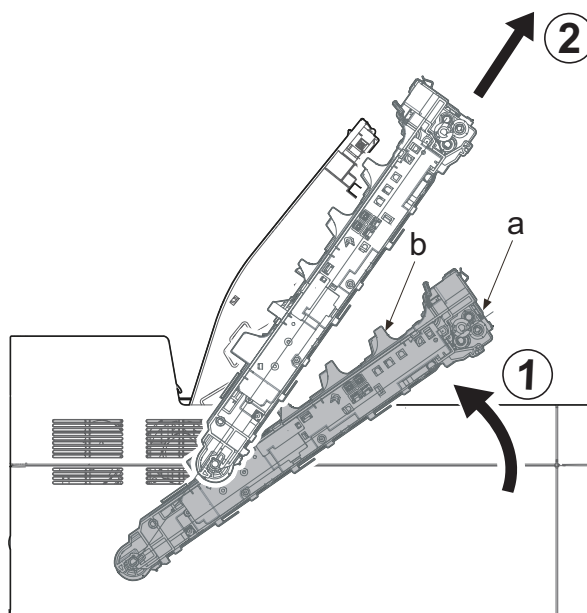


Figure 4-174

*: When removing the primary transfer unit (a) or it is unstable to install it, hold the handle (b) at the machine rear side by the other hand.

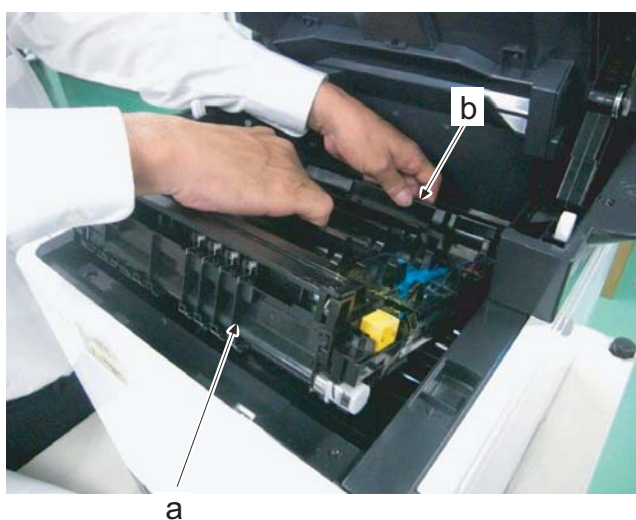


Figure 4-175

*: Do not touch the release lever (b) after detaching the primary transfer unit (a). This lever (b) is connected with the shutter lever (c) and so they are released together by installing the toner container into the main unit. The operation mistakenly open the toner feed inlet (d).

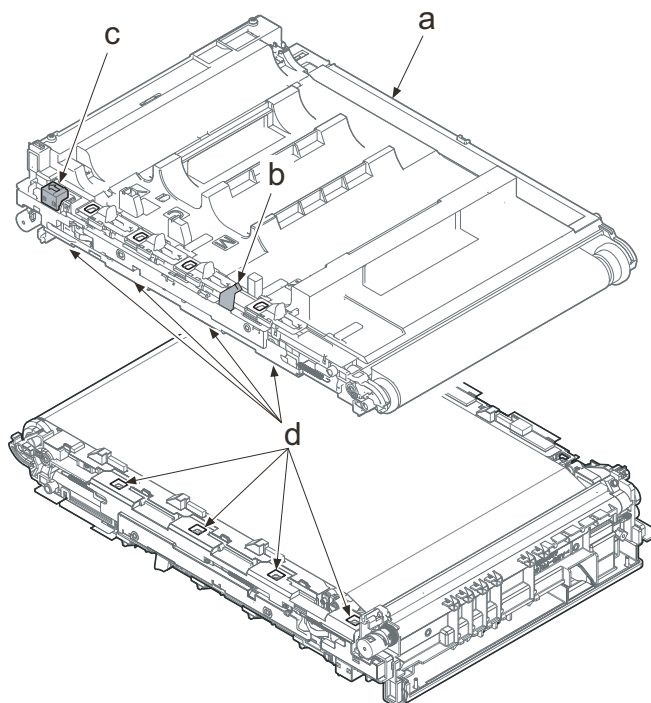


Figure 4-176

10. Detach the drum unit (a)(M,C and Y) by pulling it up.
Lift up the drum unit (K)(b) and pull it toward the machine front side to detach it.

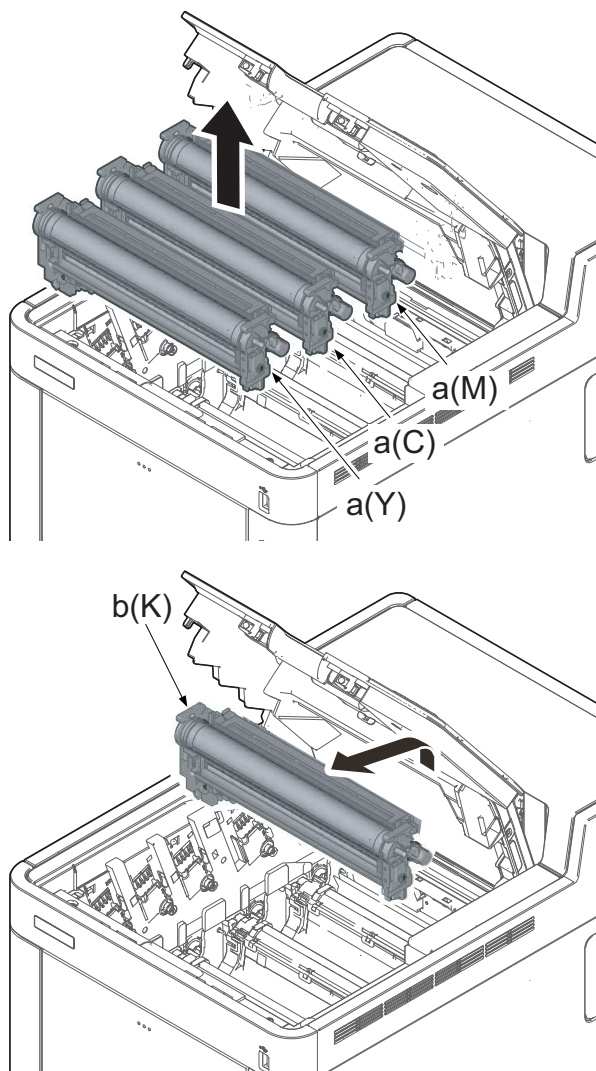


Figure 4-177

IMPORTANT

Hold the handles (b) on both sides when detaching the drum unit (a).

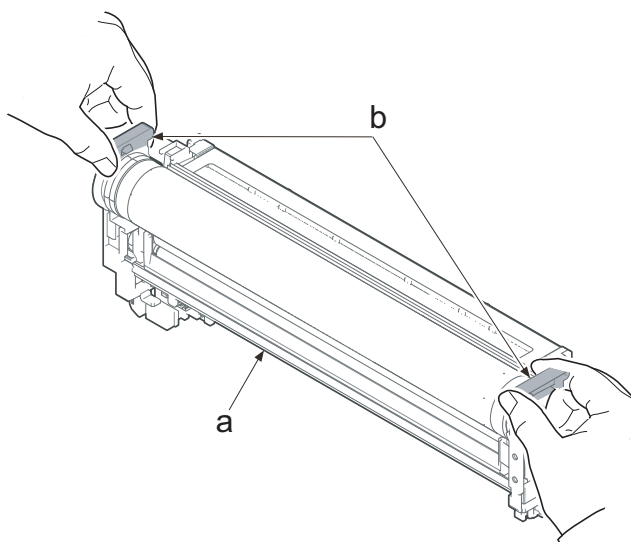


Figure 4-178

11. Detach the developer unit (K, M, C and Y)(a).

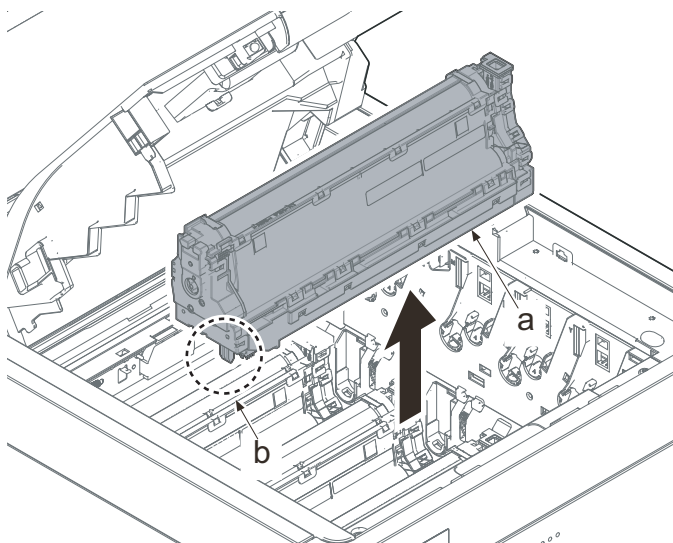


Figure 4-179

- *: When detaching the developer unit (a), hold both the left and right handles (b).

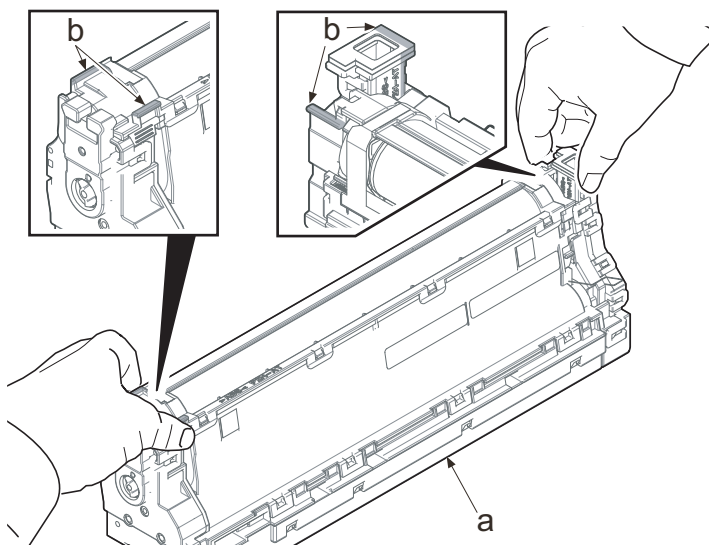


Figure 4-180

- *: Make sure not to touch the gears (a) in the drive section where there is grease.

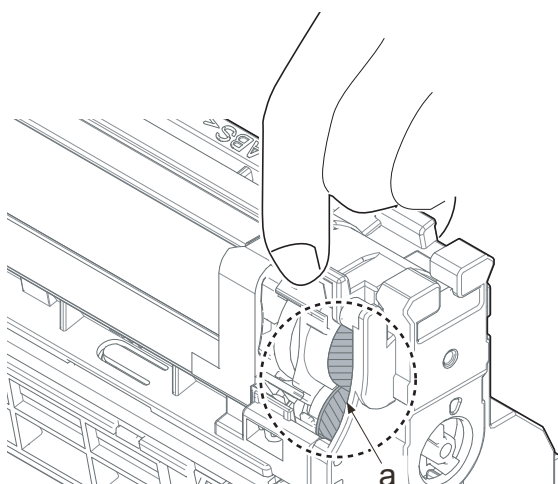


Figure 4-181

IMPORTANT

When attaching the developer unit (a), match the colors between the back side (b) of the developer unit and the right side (c) of the main unit.

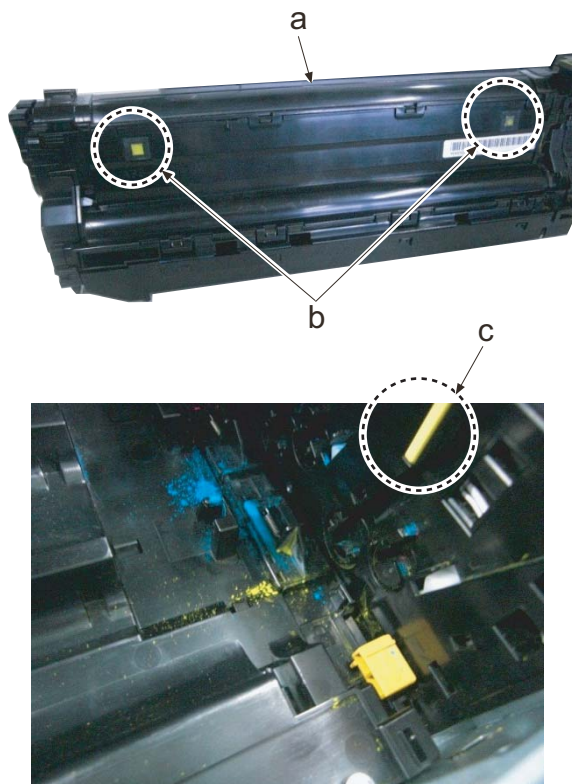


Figure 4-182

12. Open the rear cover (a).
13. Pull the lower part of the opening toward the machine rear side and release the hook (a).
14. Remove the interface cover (b).

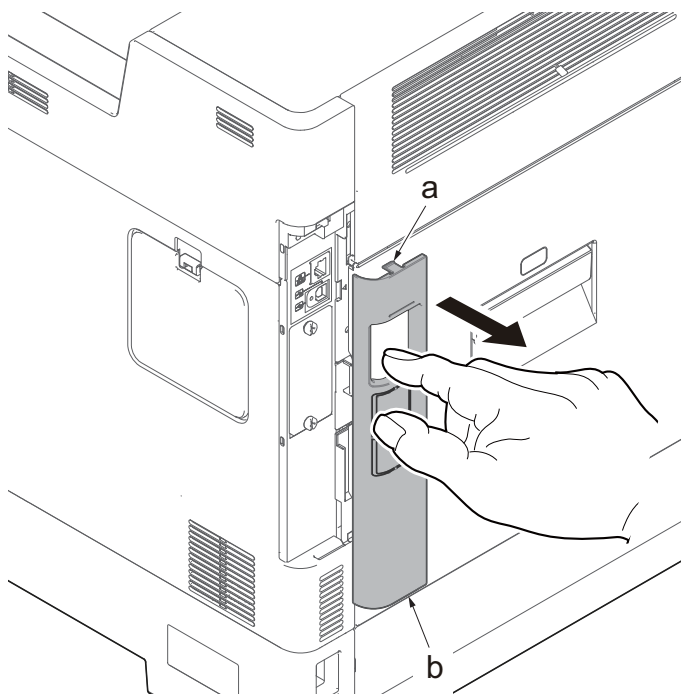


Figure 4-183

15. Remove the screw (a)(M3x8).
16. Slide the upper right cover (b) toward the machine rear side and detach it.

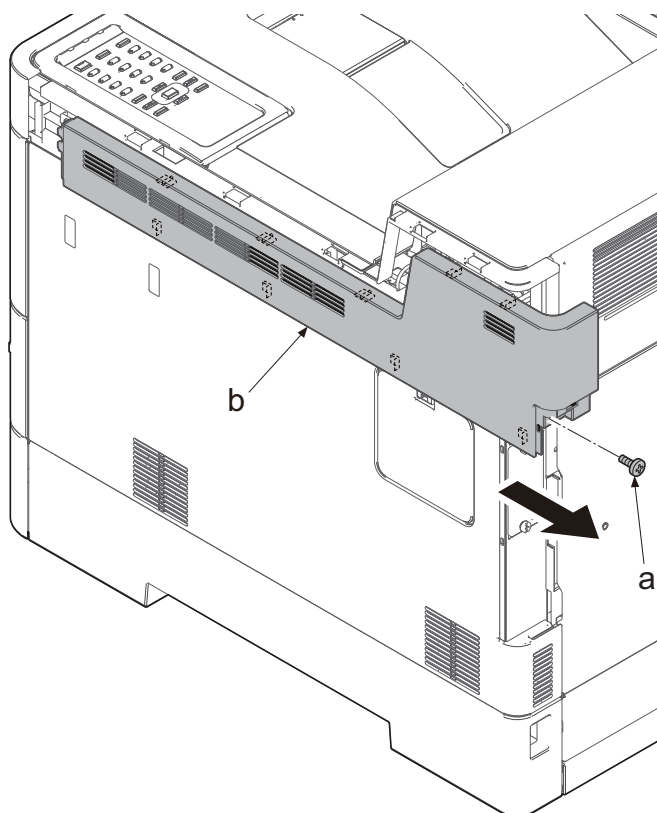


Figure 4-184

IMPORTANT

When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten nine hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.

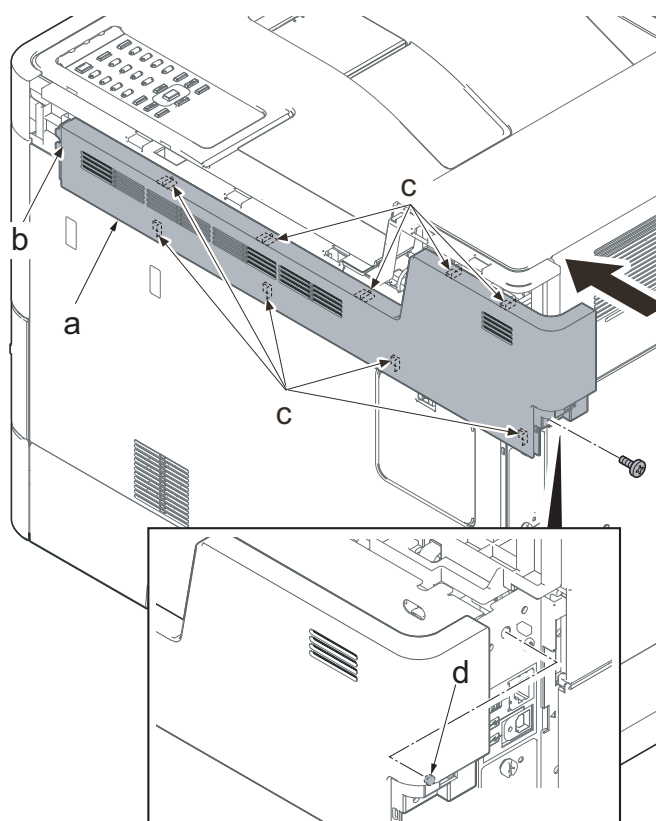
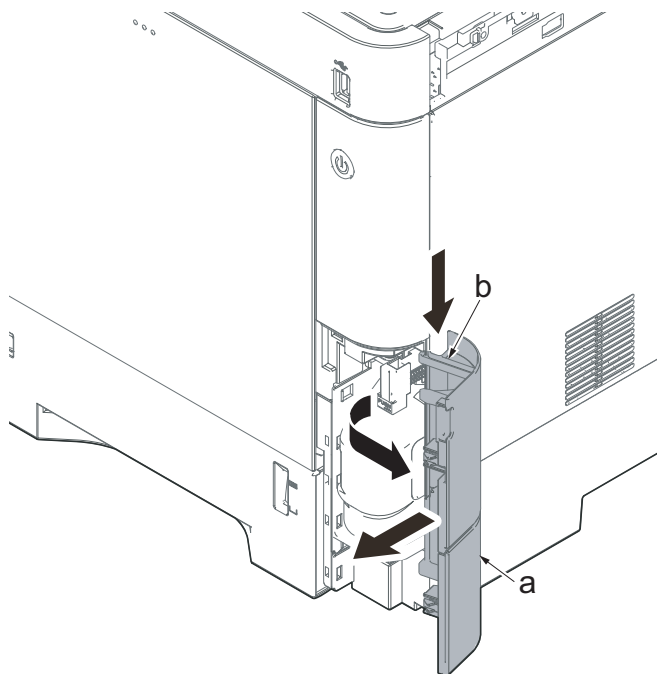
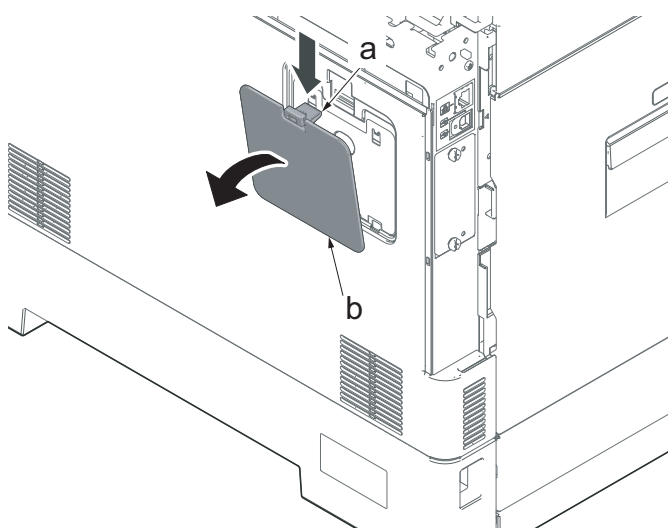


Figure 4-185

17. Open the waste toner cover (a).
18. Press the arm (b) down.
19. Remove the waste toner cover (a).

**Figure 4-186**

20. Push the lever (a) and open the memory cover (b).
21. Remove the memory cover (b).

**Figure 4-187**

22. Lift up the shield cover (a) and pull it toward you to remove it.

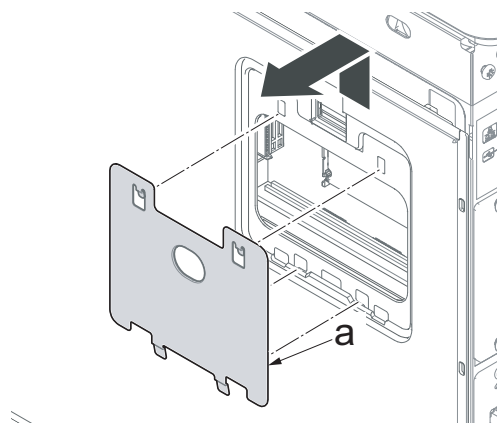


Figure 4-188

23. Push the machine front side of the middle right cover (a) toward the machine rear side and then lift up its machine rear side to detach it.

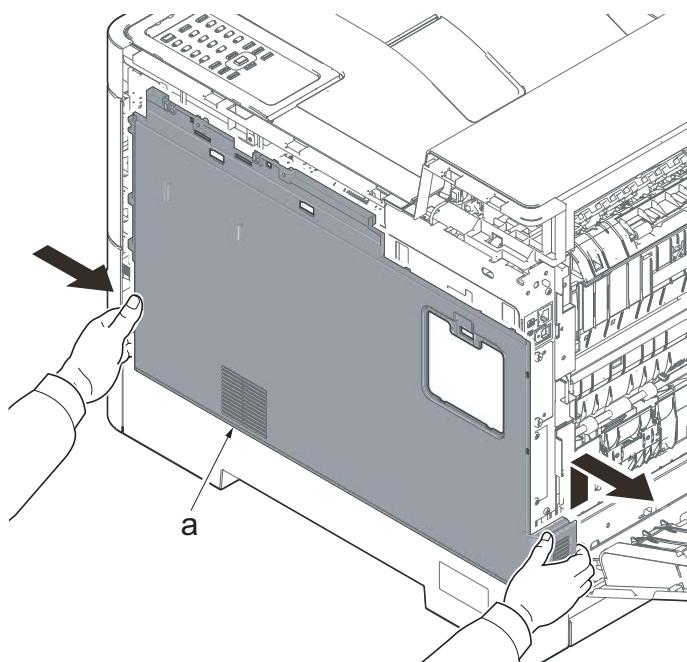


Figure 4-189

IMPORTANT

When reattaching the middle right cover (a), insert the lower rib into the the lower right cover (b). Slide it toward the machine front side to fasten three hooks (c) and then lower it to fasten three hooks (d), and fasten two hooks (e) at the machine rear side.

Check if three hooks (d) at the machine rear side are surely fastened.

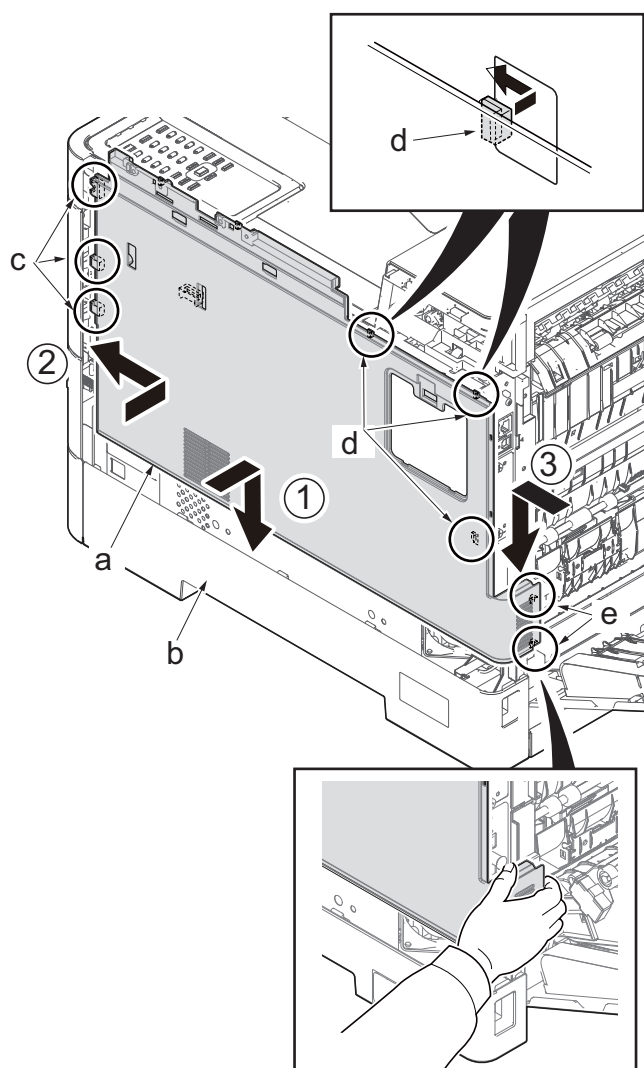


Figure 4-190

24. Remove the network connector cap (a).

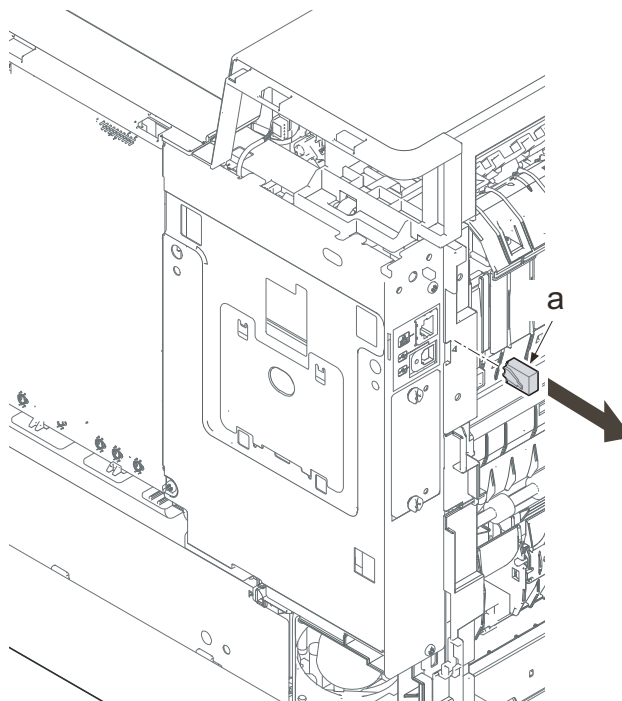


Figure 4-191

25. Remove the optional board (b), if installed.

*: Remove two screws (a)(M3x8), and detach it.

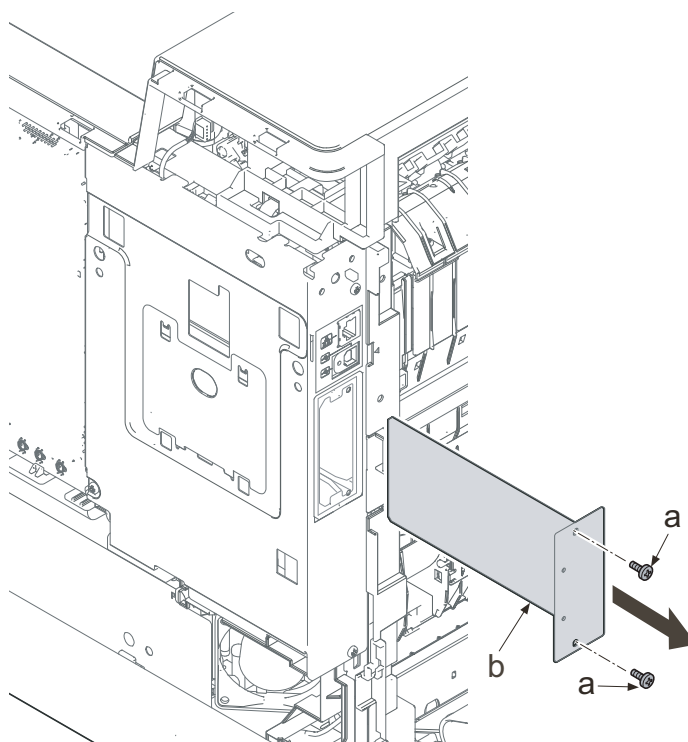
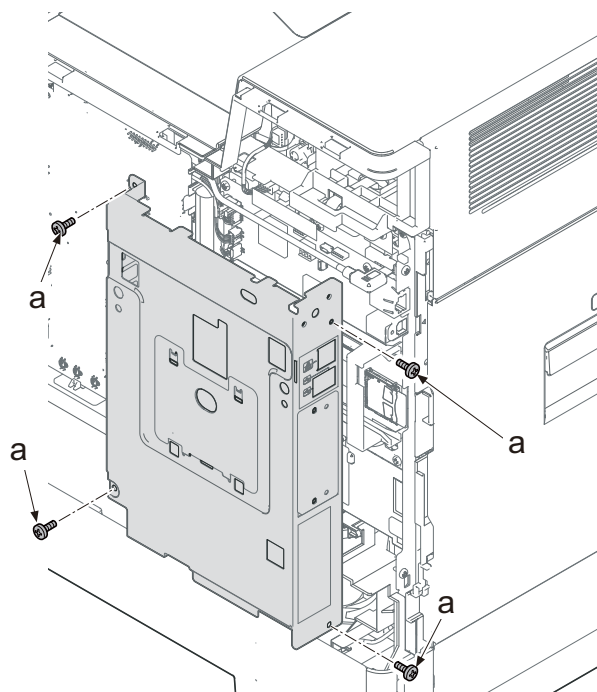
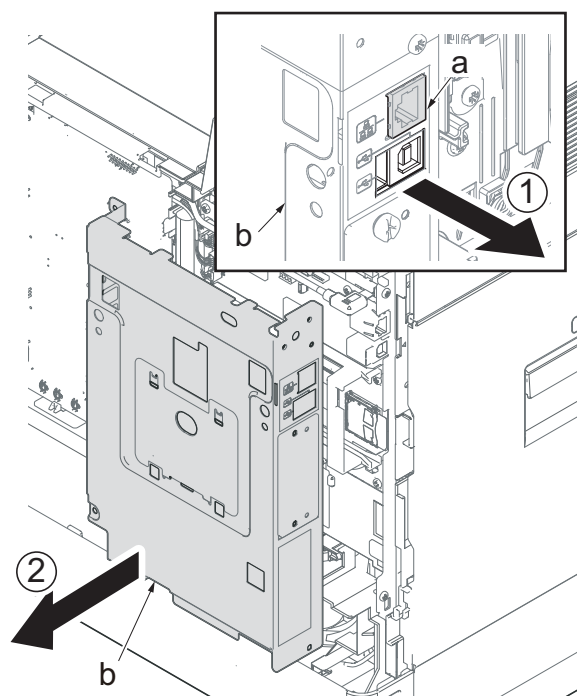


Figure 4-192

- 26. Remove four screws (a)(M3x8).
- 27. Remove the controller shield (d).

**Figure 4-193**

- 28. Remove the network connector (a) by sliding it toward the machine rear side and then remove the controller shield (b).

**Figure 4-194**

29. Open the wire alignment film (a) by releasing its square hole (b) from the hook (c).

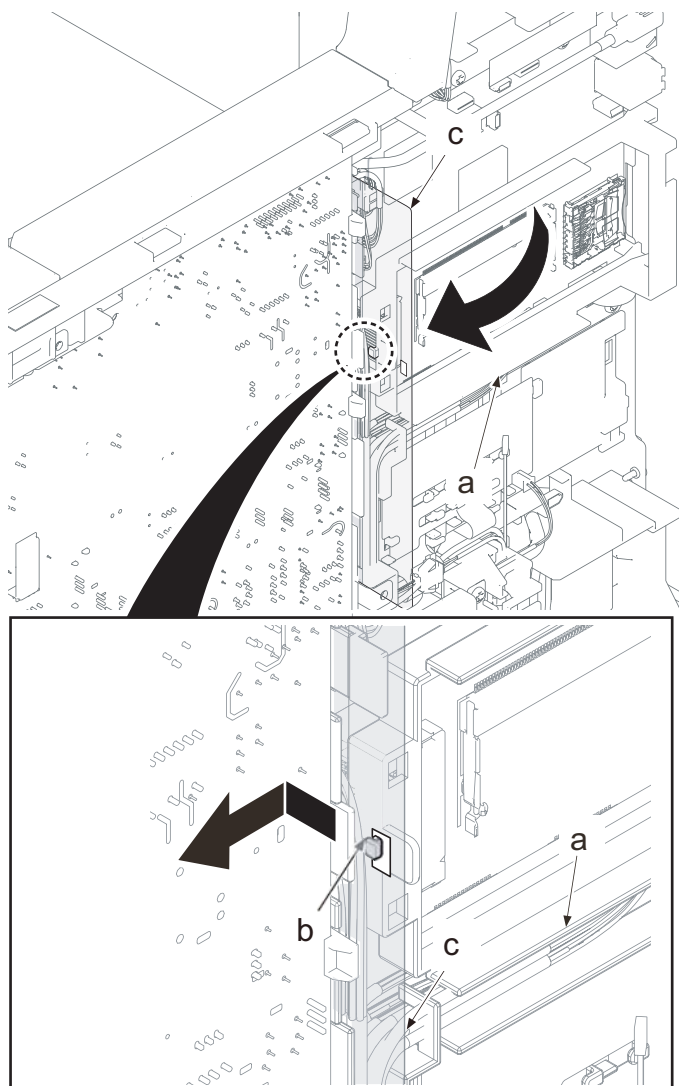


Figure 4-195

30. Release two hooks (b) of the PWB guides (a).

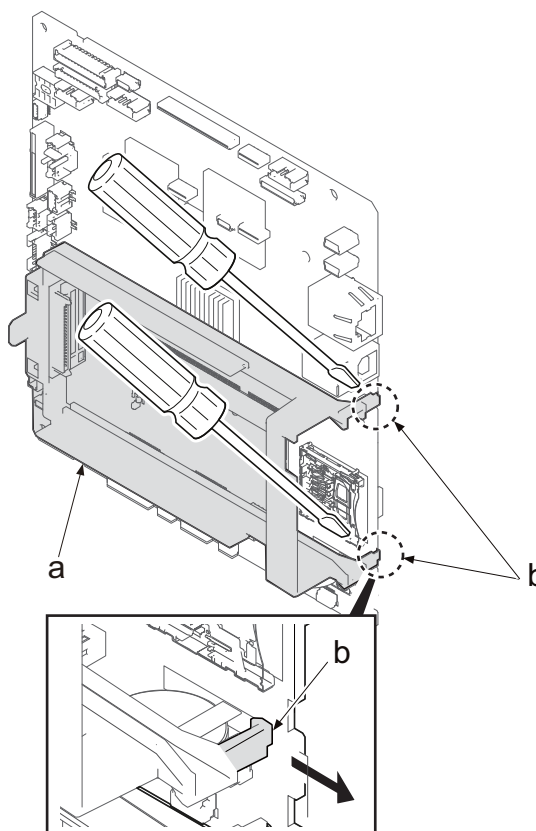


Figure 4-196

31. Slide the PWB guide (a) toward the machine rear side to release two hooks (b).

IMPORTANT

Check if two hooks (b) are fastened after reattaching the PWB guide (a).
The optional board connector can not be connected without applying the hook.

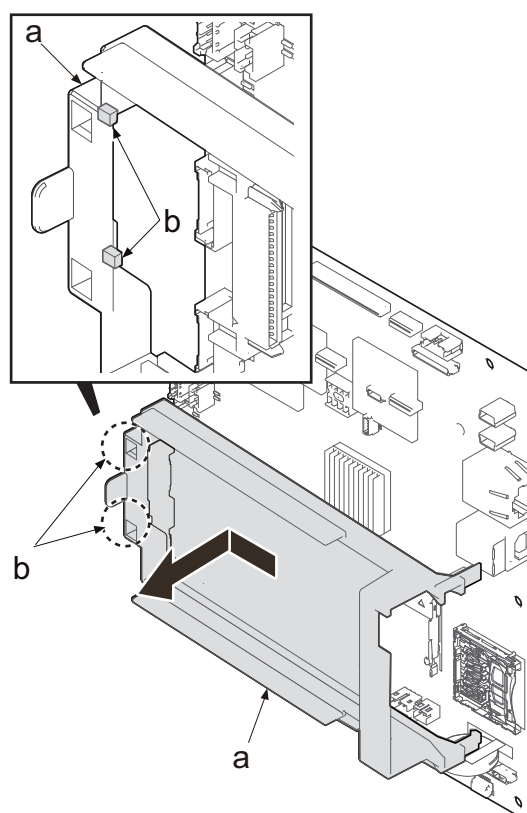


Figure 4-197

32. Disconnect two connectors (YC2016 and YC2017) from the main/engine PWB (a).
33. Release the wire (d) from three hooks (c) of the wire guide (d).

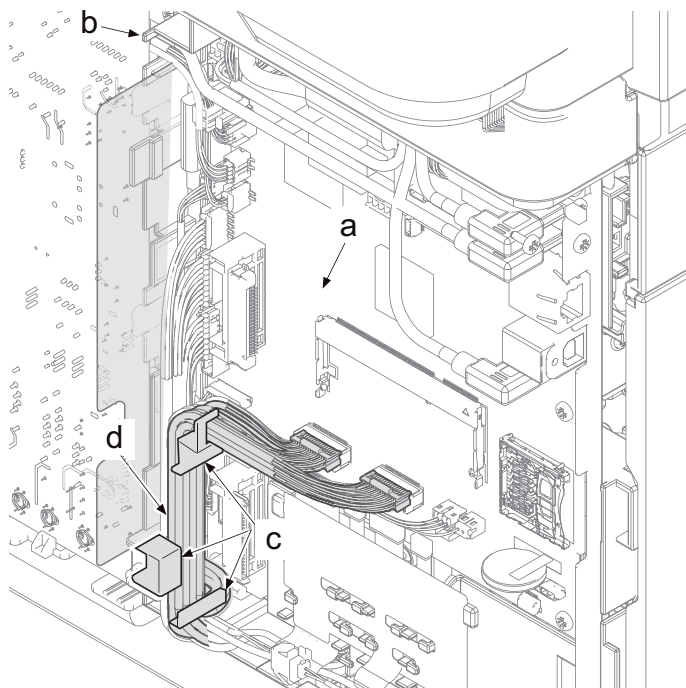


Figure 4-198

34. When removing the laser scanner unit (CY), open the wiring film (a) after removing the connector YC2017.

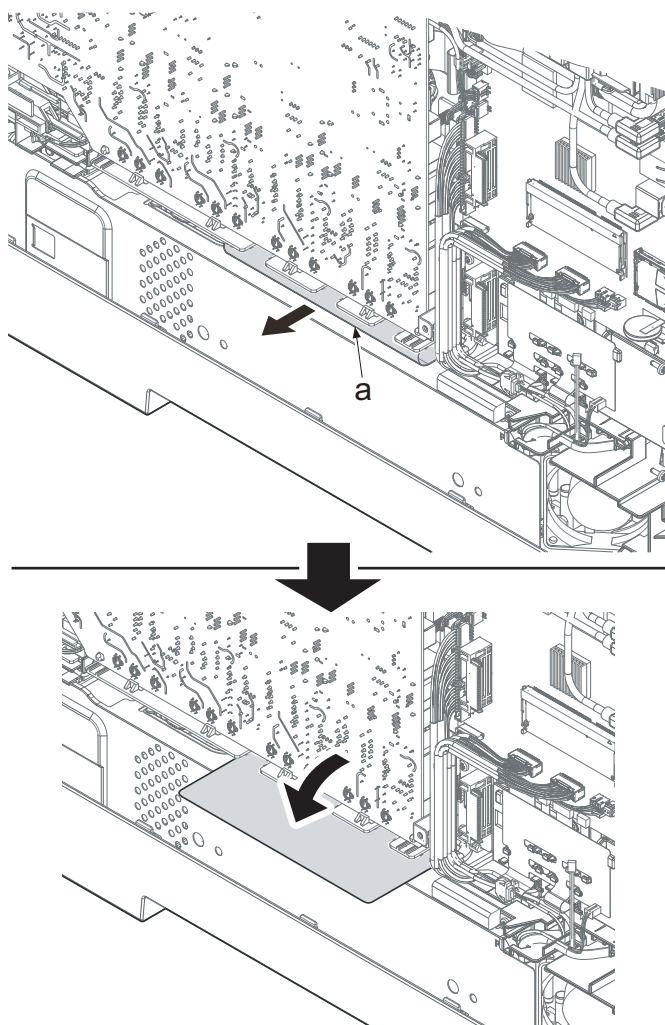


Figure 4-199

35. Pull the wire (a) into the main unit from the opening (b).

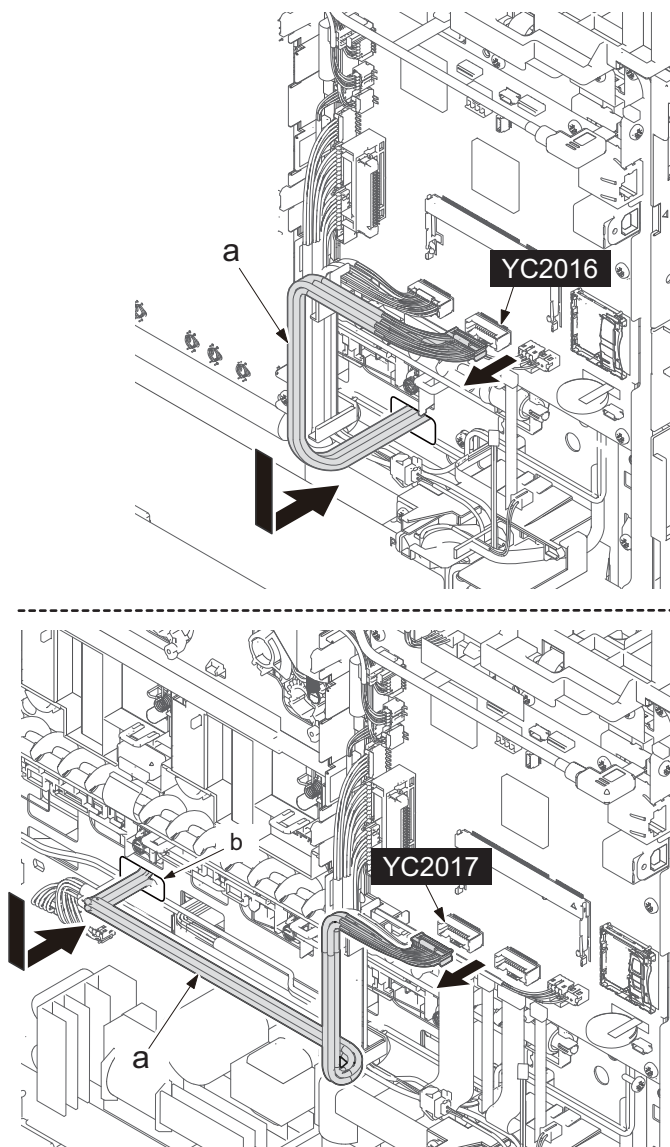


Figure 4-200

36. Remove the drum heater (K,M,C,Y)(a), if installed.
(for 40 ppm model only, to step 37 for not installed model and 30/35 ppm model)

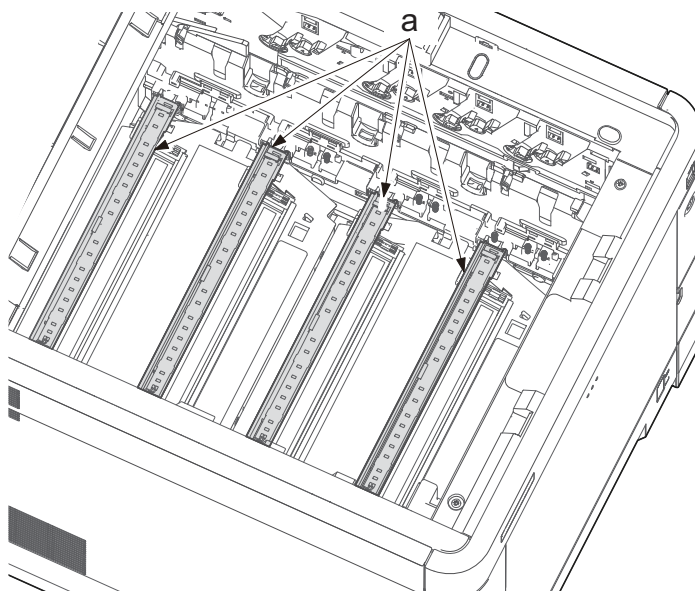


Figure 4-201

1. Disconnect the connector (b) of the drum relay PWB (a).

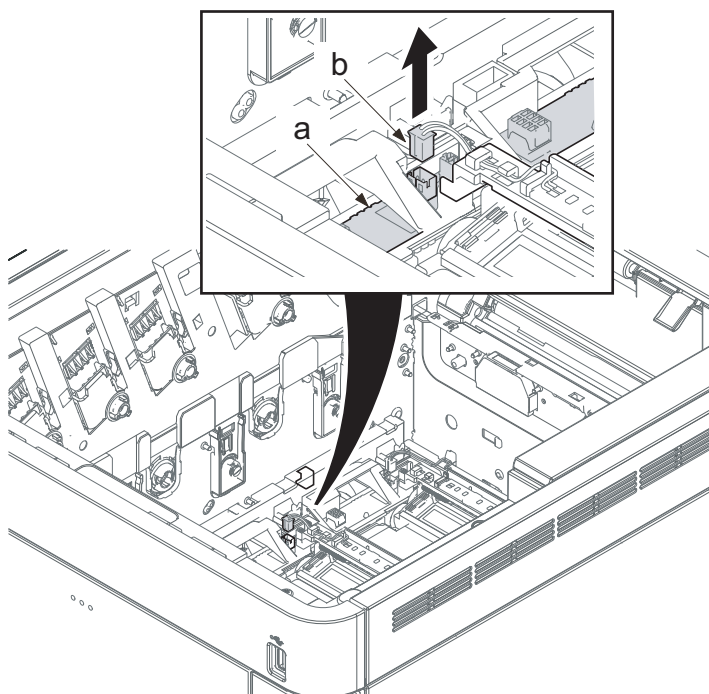
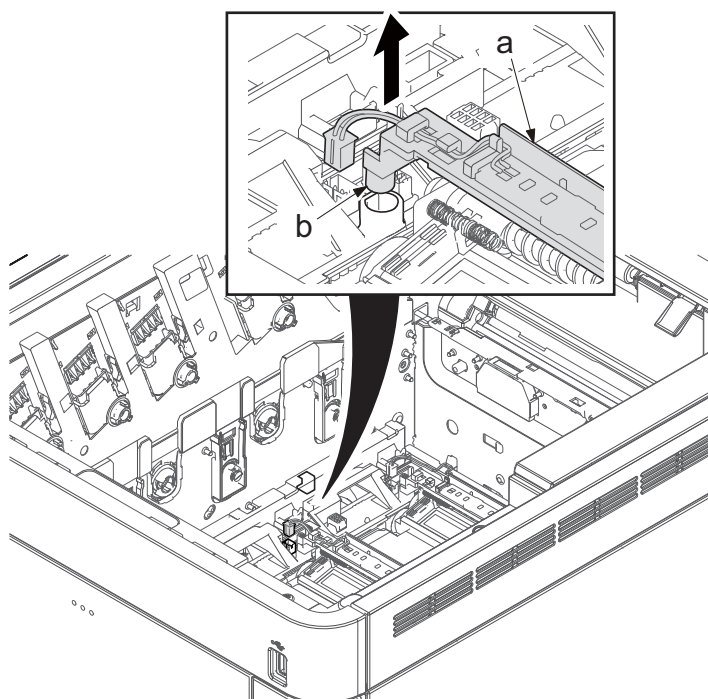
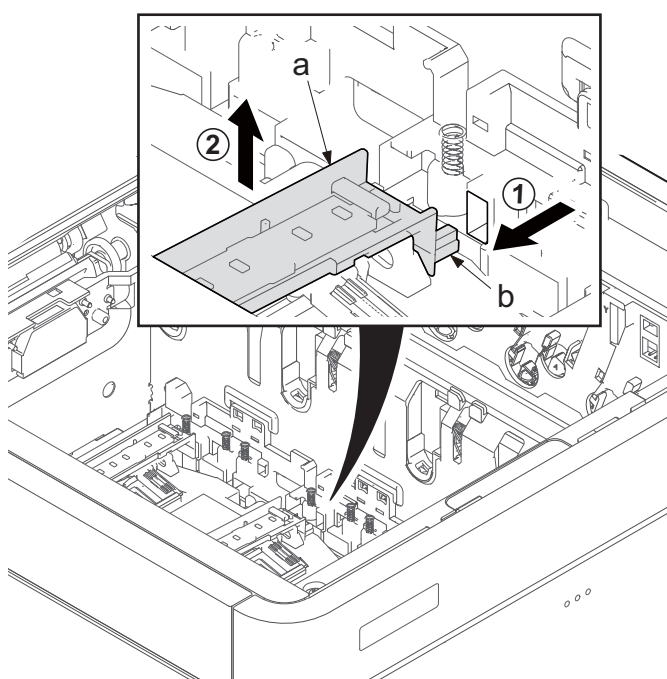


Figure 4-202

2. Lift up the machine left side of the drum heater (a) to remove the pin (b) from the boss.

**Figure 4-203**

3. Slide the boss (b) at the machine right side of the drum heater (a) to remove it.

**Figure 4-204**

* :Like this, remove four drum heaters (a).

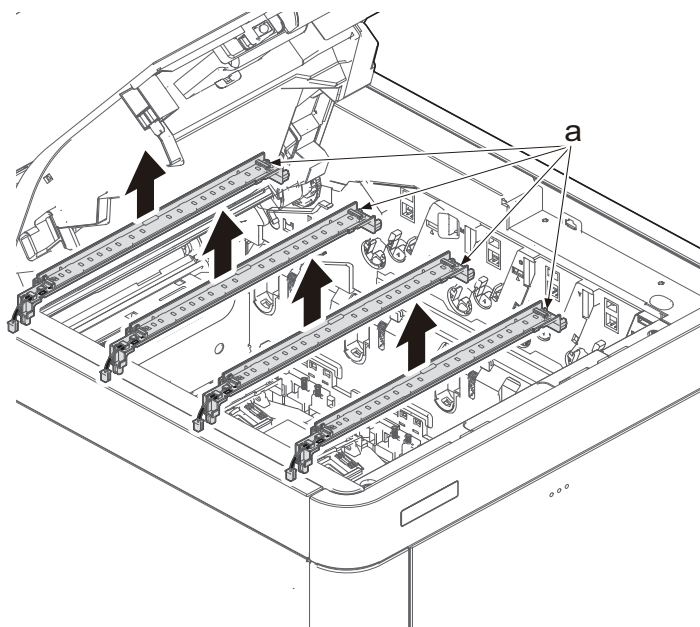


Figure 4-205

37. Remove each set of three pins (a).
 38. Detach the LSUs (b) for KM and CY.
 - *: Pull out the wire from the opening and remove it.
 39. Check the paper feed drive unit and clean or replace it if necessary.
 40. Reattach the parts in the original position.
 41. Execute the following after replacing with the new laser scanner unit.
- System Menu
[Adjustment/Maintenance]
- 1.Executes Color adjustment (Color Calibration)
 - 2.Executes Color Registration

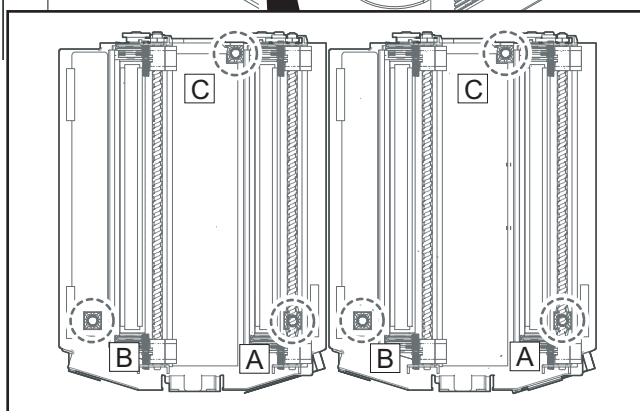
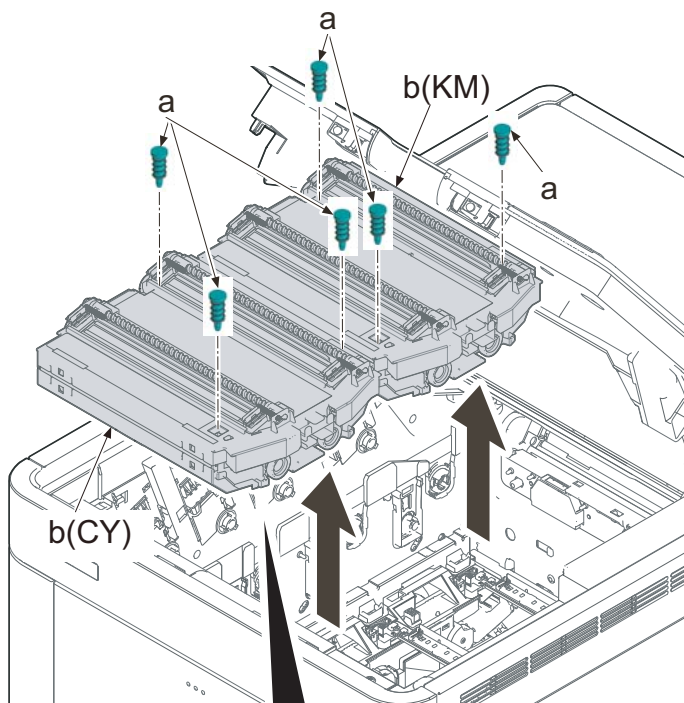


Figure 4-206

IMPORTANT

Secure the pins in order of A, B and C when reattaching the LSU.

Make sure to return the spiral (a) to the lock position after relocating it to reattach the pin (b) that is in the position A.

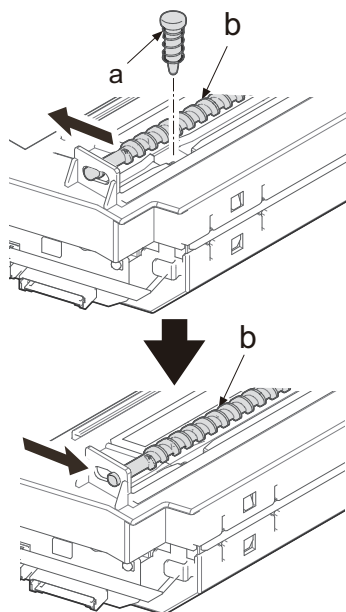


Figure 4-207

*: Make sure not to touch the APC PWB (b) when holding the LSU (a).

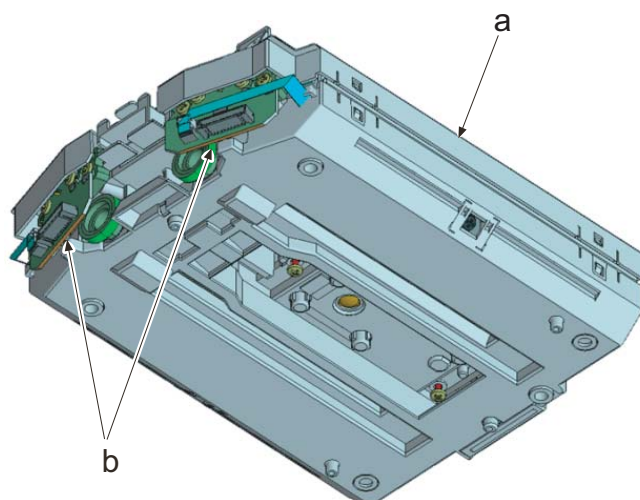


Figure 4-208

IMPORTANT

Pull the wire (b) out from the aperture (c) of the frame when reattaching the LSU (a).
There is an engraving (d) of an arrow indicating the opening position in the frame.

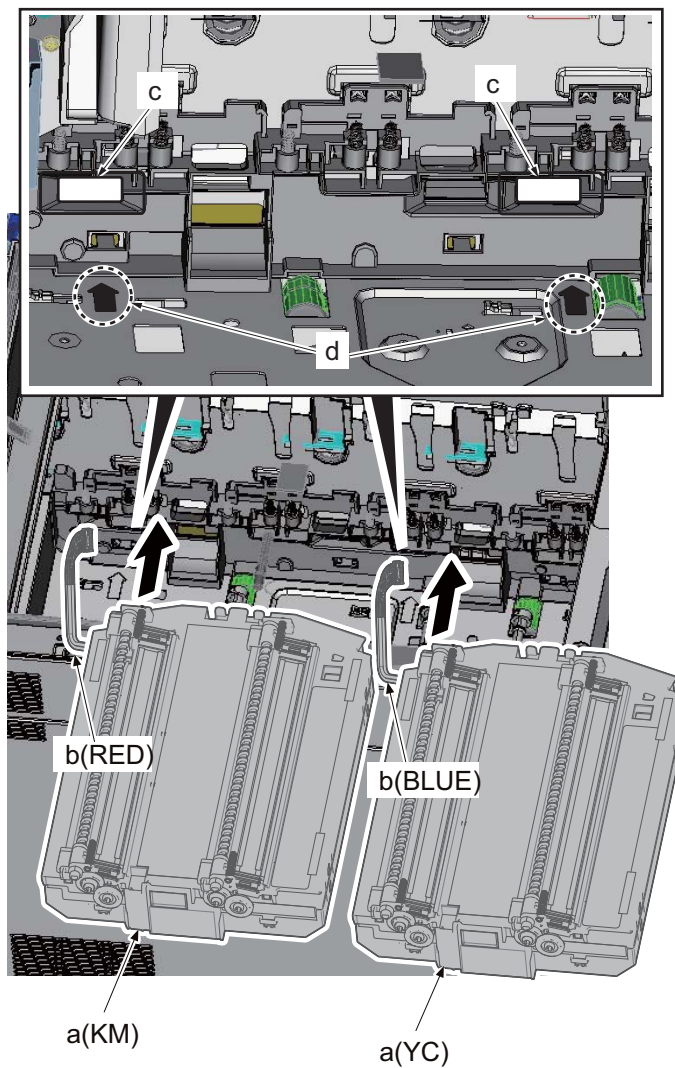


Figure 4-209

Please be care not locate the wire saddle (b) on the pin protrusion (c) before reattaching the LSU (a).

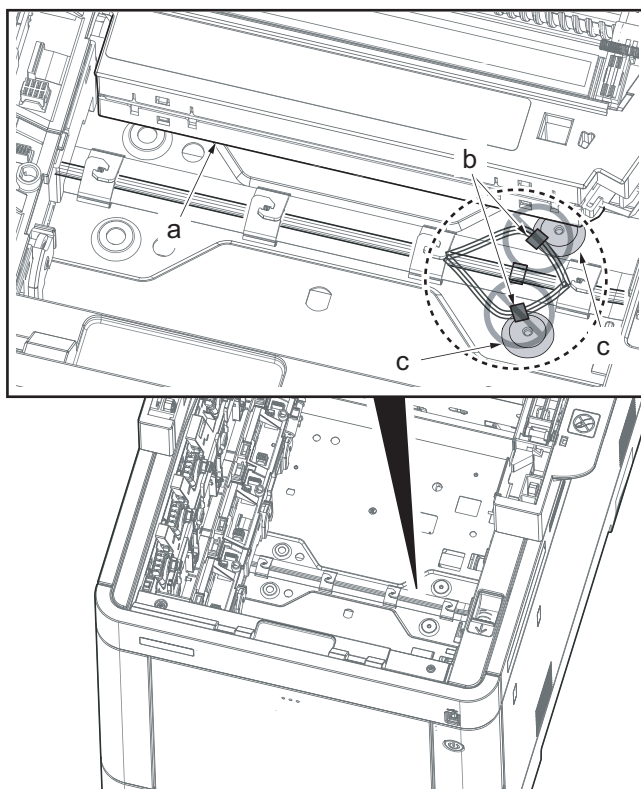


Figure 4-210

(2) MP tray paper feed section

(2-1) Detaching and reattaching the MP feed roller

Procedures

1. Pull out the cassette (a).

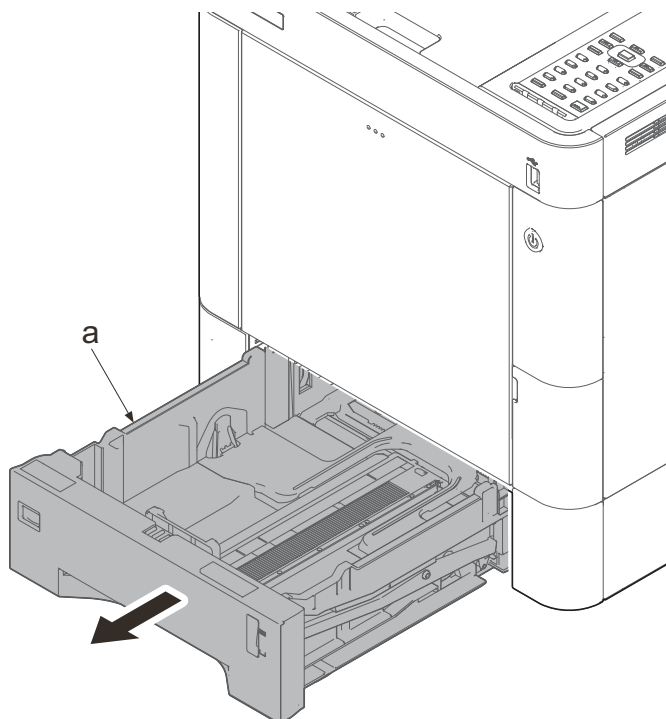


Figure 4-211

2. Lower the release lever (a).
3. Open the lower MP conveying unit (b).

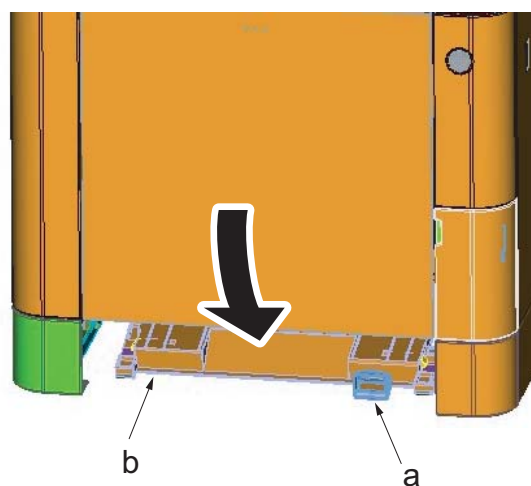
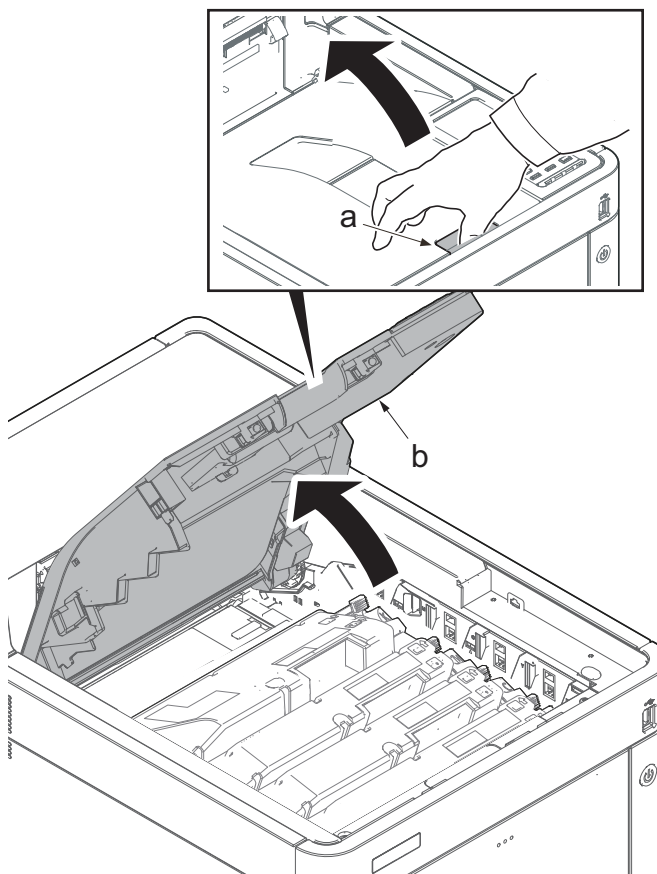
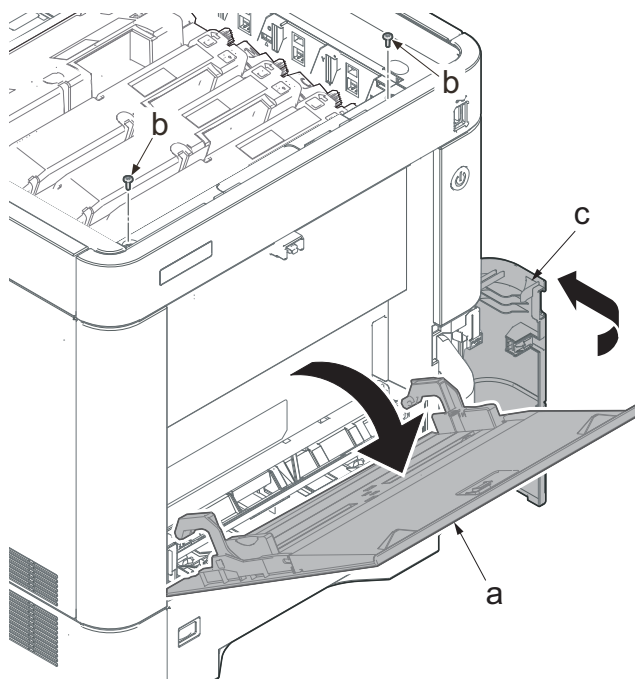


Figure 4-212

4. Pull the lever (a).
5. Open the top tray (b).

**Figure 4-213**

6. Open the MP tray (a).
7. Remove two screws (b)(M3x8).
8. Open the waste toner cover (c).

**Figure 4-214**

9. Slightly lift up the front cover (a) to release the boss (b).
10. Tilt the front cover (a) toward the machine front side.
11. Then, remove the front cover (a) by lifting it up.

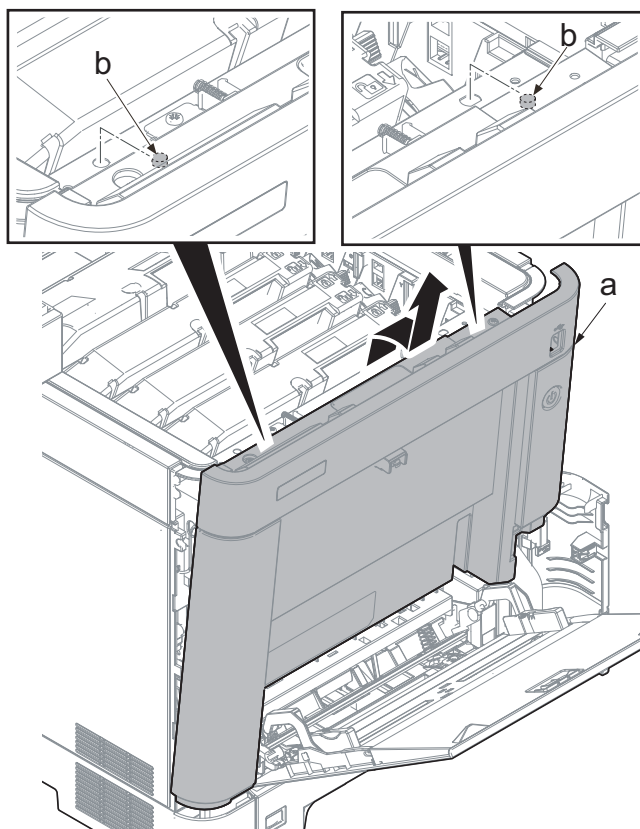


Figure 4-215

IMPORTANT

Make sure not to touch the waste toner cover sensor (b) when reattaching the front cover (a). If the waste toner cover sensor (b) comes off, even if you close the waste toner cover, [cover open] will be displayed.

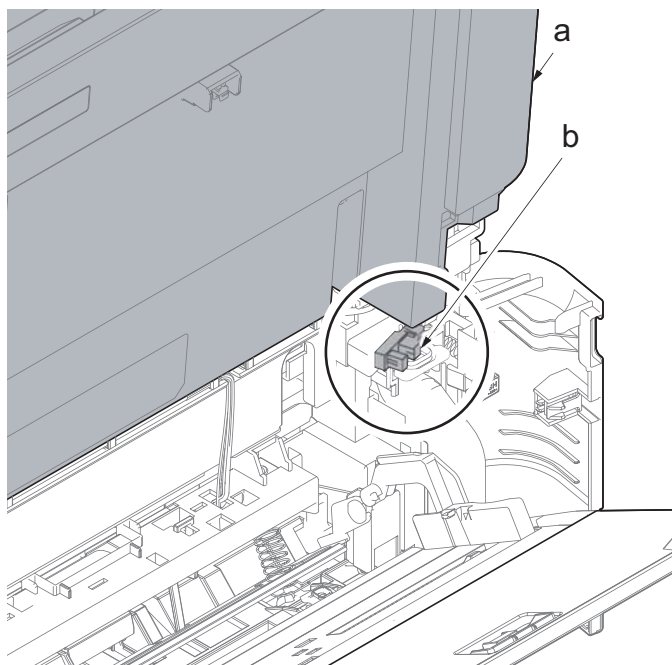


Figure 4-216

12. Open the MP tray (a) slightly.
13. Lift up the MP tray cover (b) and release two hooks (c).

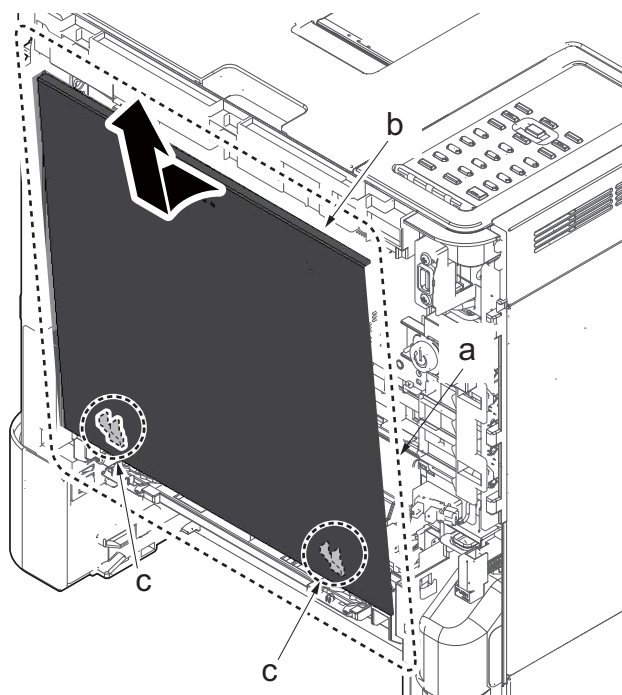
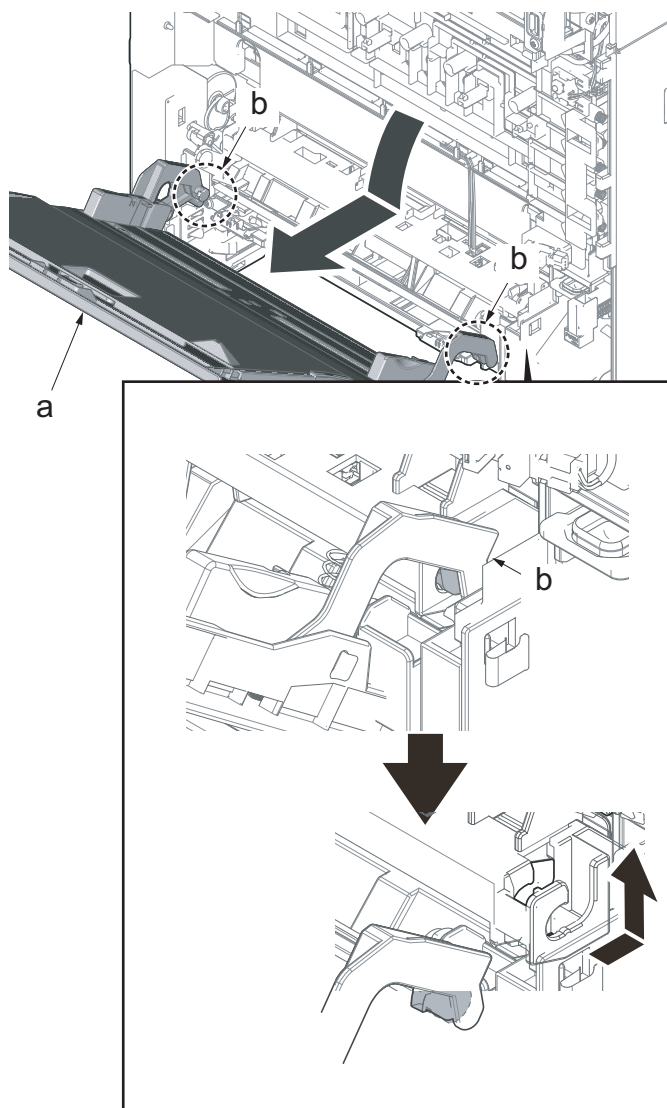


Figure 4-217

14. Fully open the MP tray (a).
15. Slide the arm (b) to the machine rear side and lift it up to remove.

**Figure 4-218**

16. Remove two screws (a)(M3x8).

17. Detach the lower MP paper feed unit (b).

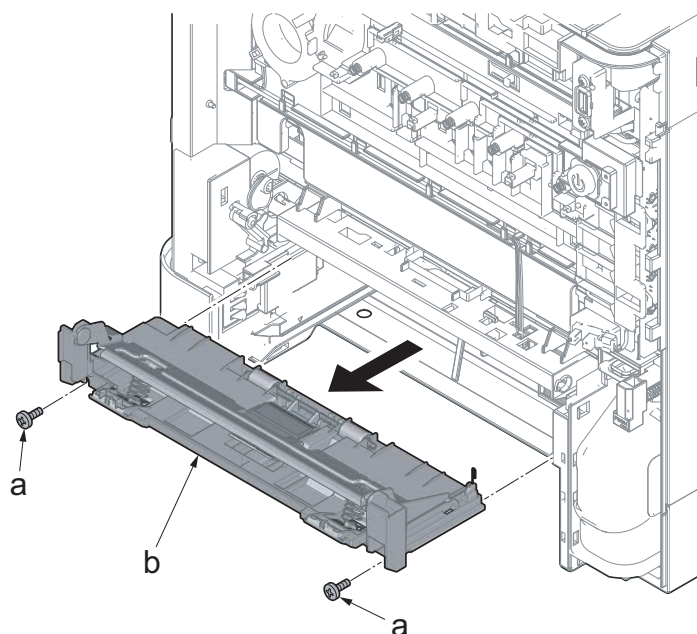


Figure 4-219

IMPORTANT

Lower the MP bottom plate (b) so that the lever (c) is on it when reattaching the lower MP paper feed unit (a).

*: The paper is not fed because the MP bottom plate (b) cannot ascend and descend when it is not in the correct position.

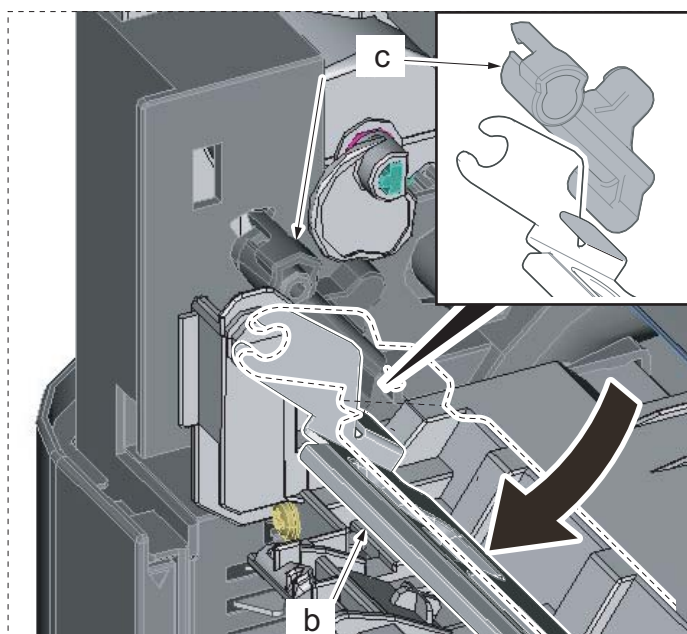


Figure 4-220

18. Pull the hook (a) toward the machine front side.
19. Slide the MP paper feed shaft (b).
20. Remove the MP feed roller (c).

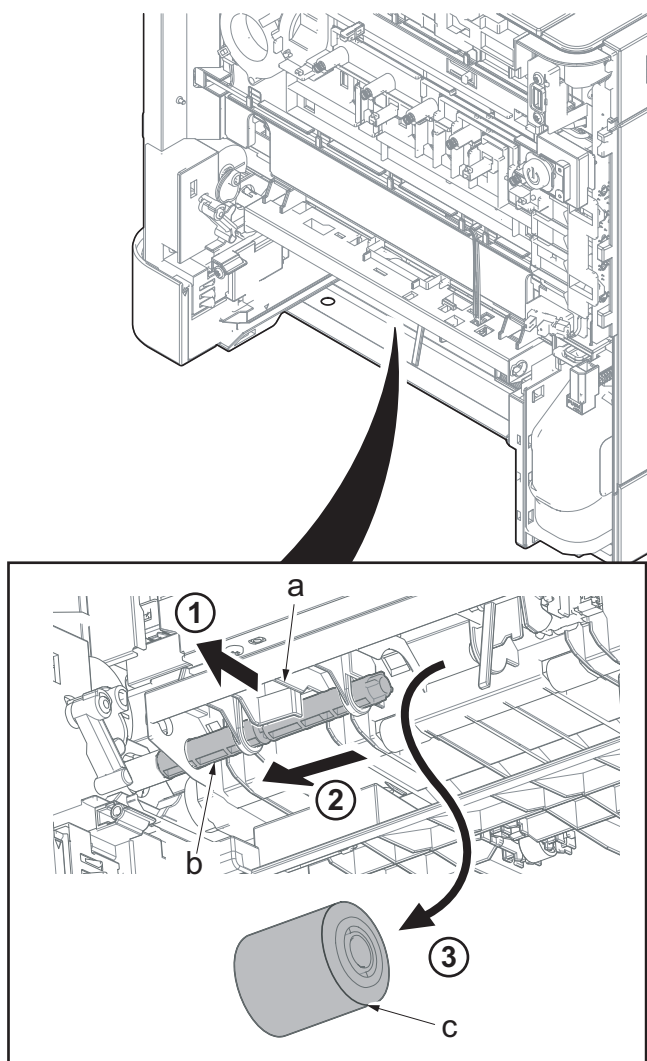


Figure 4-221

IMPORTANT

When reattaching the MP paper feed roller (a), be aware of the attachment direction.

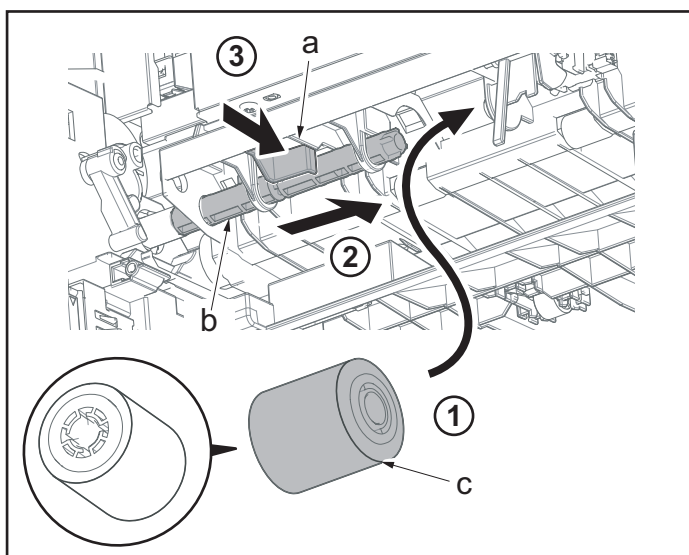


Figure 4-222

(2-2) Detaching and reattaching the MP conveying unit

Procedures

1. Remove the MP feed roller (a).
2. Pull the hook (b) toward the machine front side.
3. Slide the MP paper feed shaft (c).
4. Pull the MP paper feed shaft (c) out from the drive joint (d).

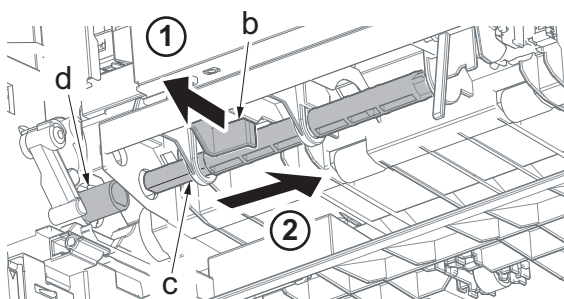


Figure 4-223

5. Disconnect the connector (b)(YC6) from the engine relay PWB (a).
6. Release the wire from eight hooks (c).

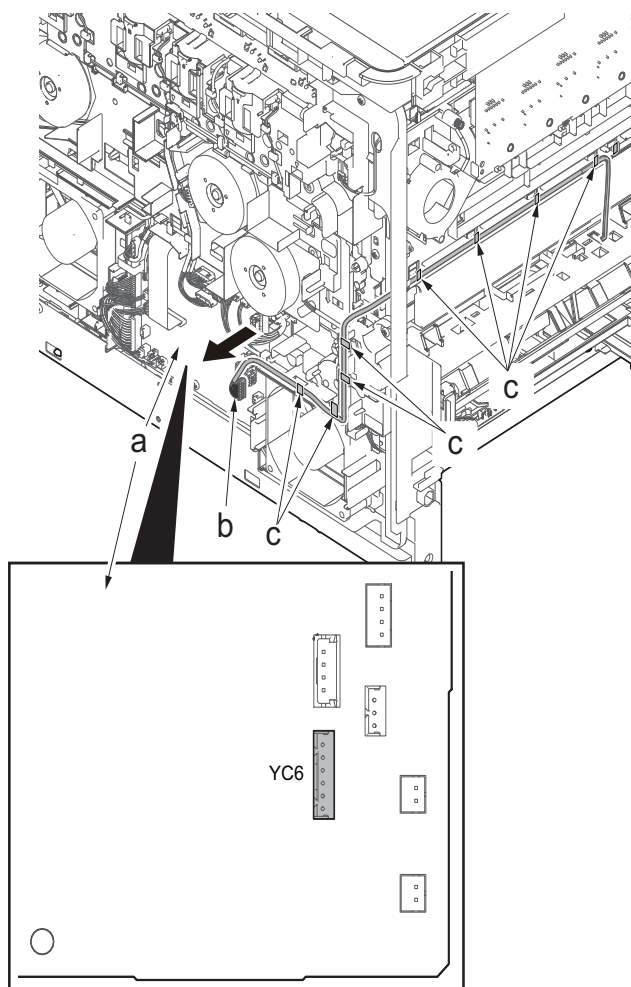


Figure 4-224

7. Remove two screws (a)(M3x8).
8. Detach the MP conveying unit (b) toward the machine front side.

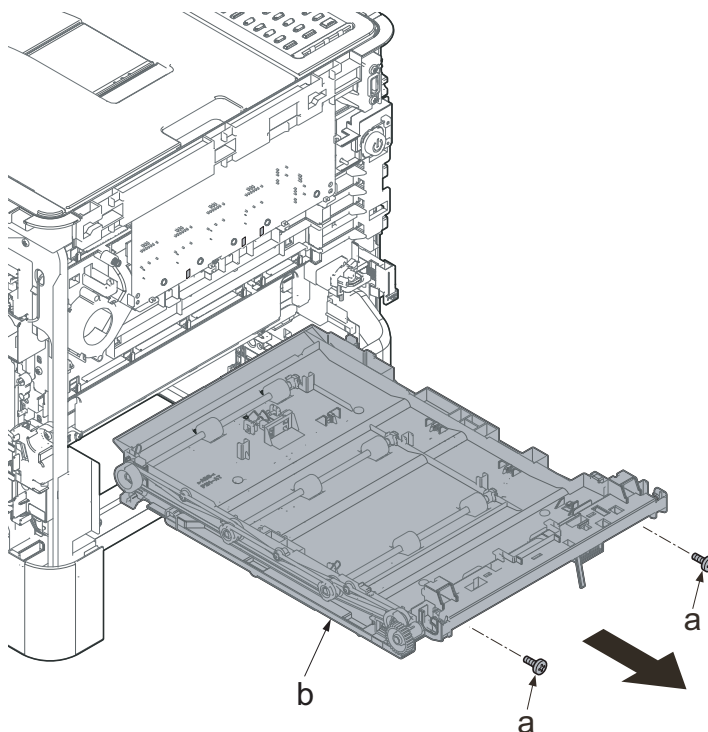


Figure 4-225

IMPORTANT

Check if the wire is fastened to the hook (b) before reattaching the MP conveying unit (a).

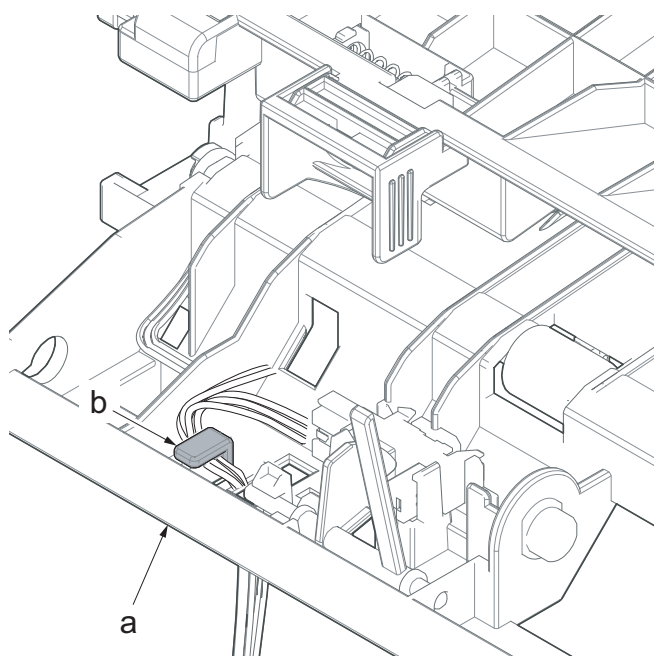


Figure 4-226

Lower the actuator (b) of the paper sensor
before reattaching the MP conveying unit (a).

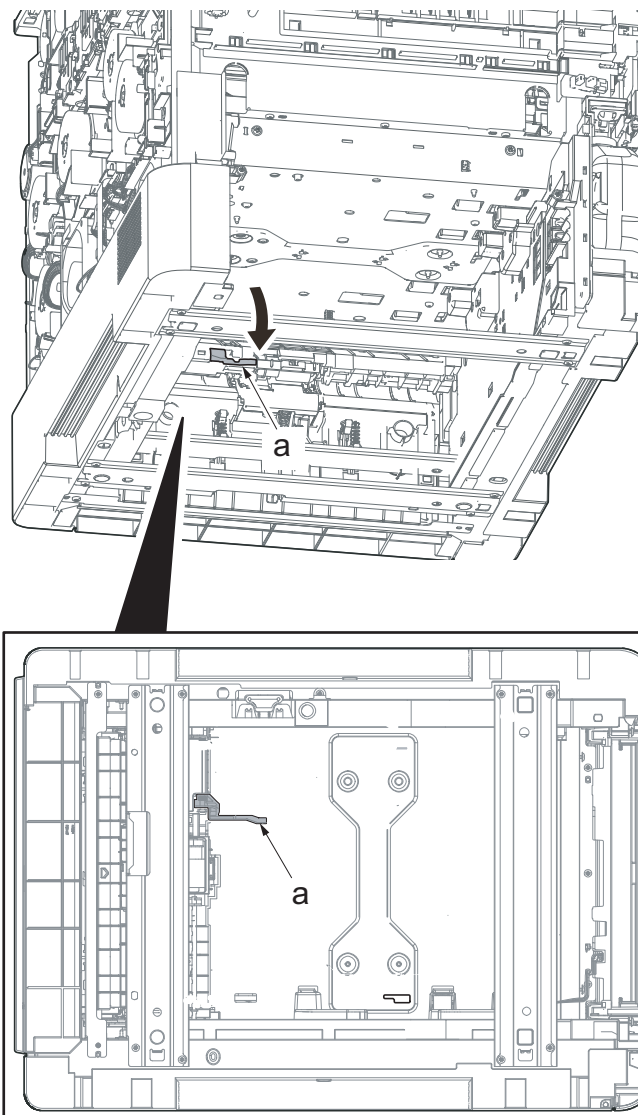


Figure 4-227

Insert the positioning (c) at the both sides into the cutout and then secure the screw.

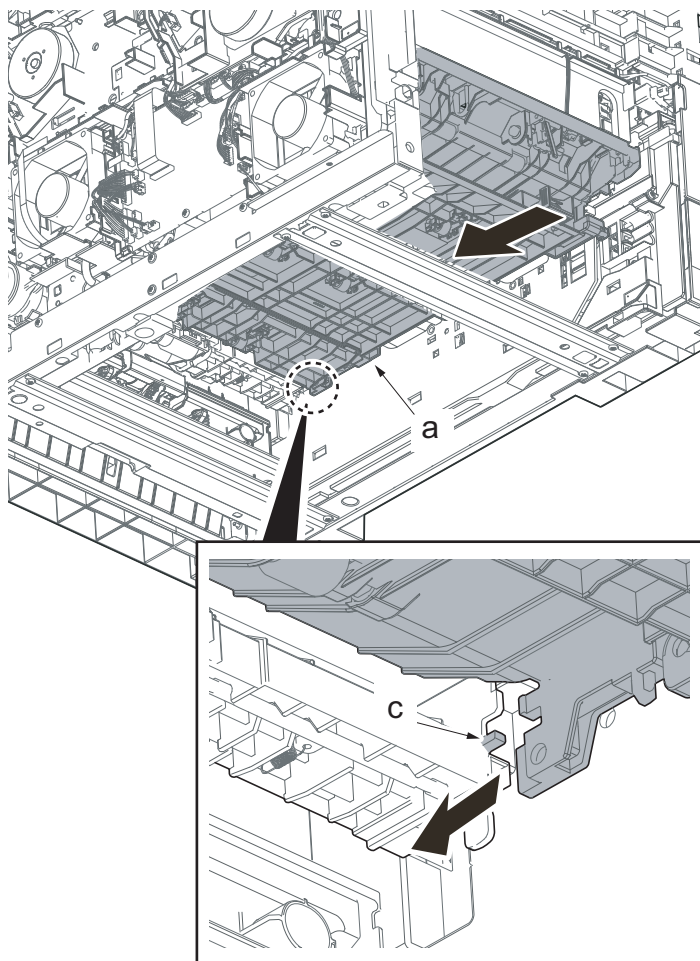


Figure 4-228

(3) Drum section

(3-1) Detaching and reattaching the main charger roller unit

Procedures

1. Detach the drum unit (a).
2. Pull the hook (c) of the main charger roller unit (b) in the drum unit (a) to release it.
3. Push the main charger roller unit (b) from the opposite side of the opening.

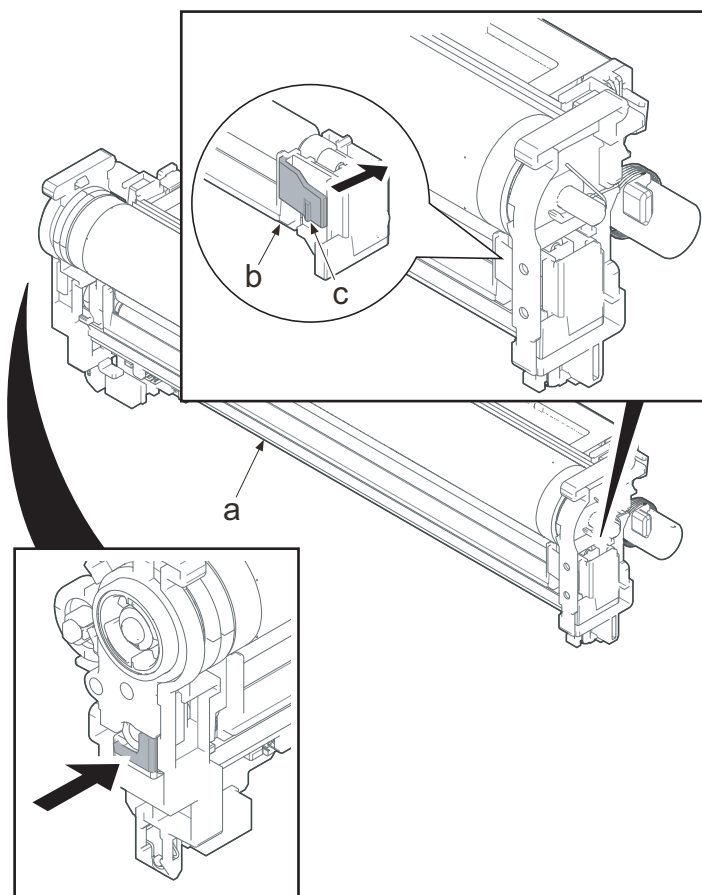


Figure 4-229

4. Pull the main charger roller unit (b) by holding the handle (a).

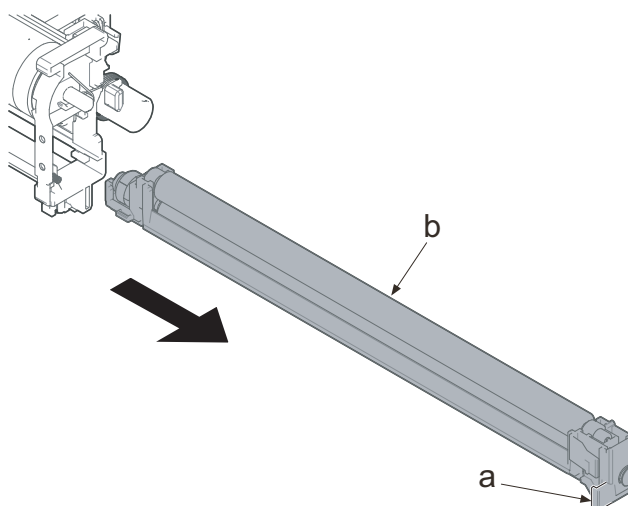


Figure 4-230

(4) Eject section

(4-1) Detaching and reattaching the eject unit

30 ppm models

Procedures

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).

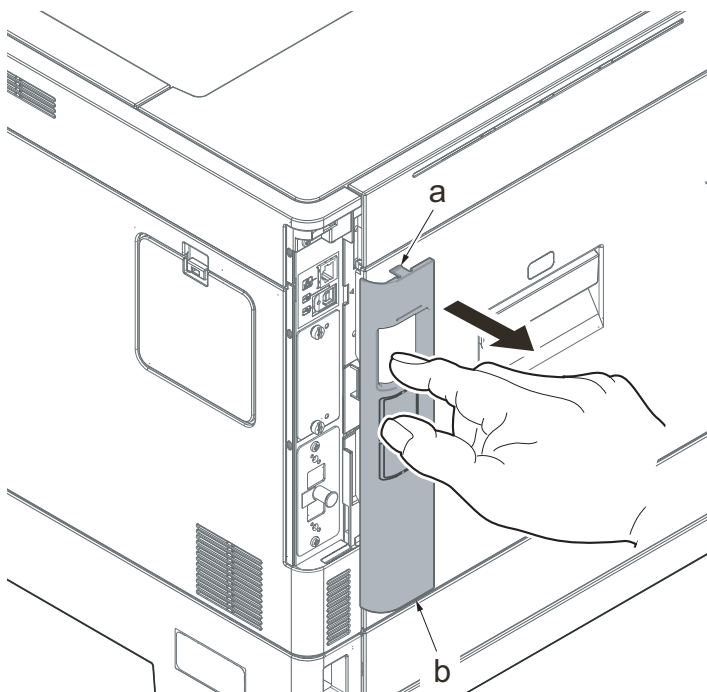


Figure 4-231

3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.

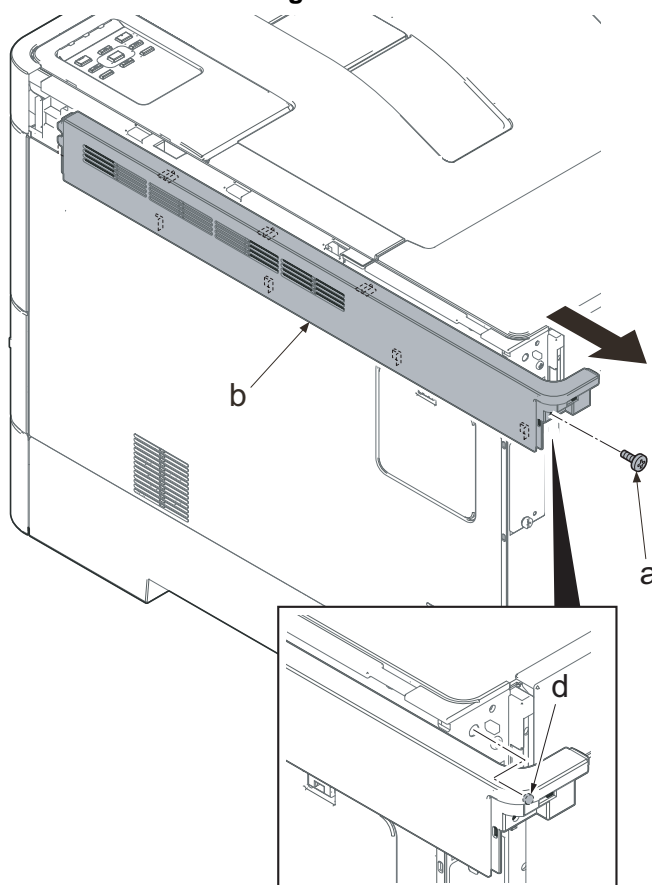
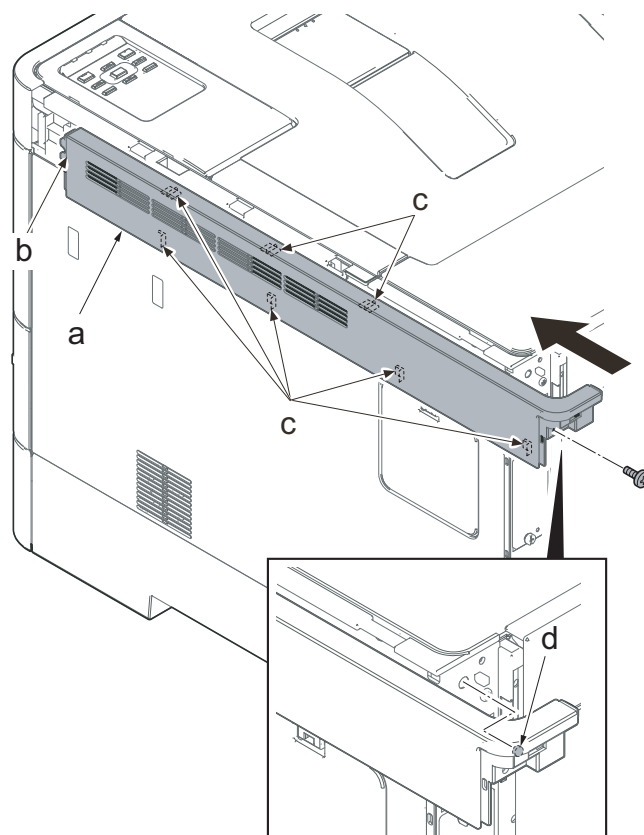


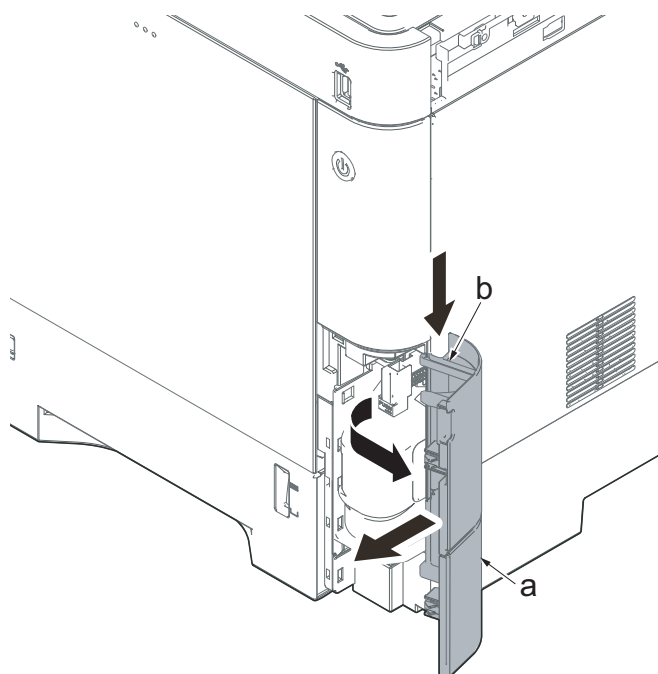
Figure 4-232

IMPORTANT

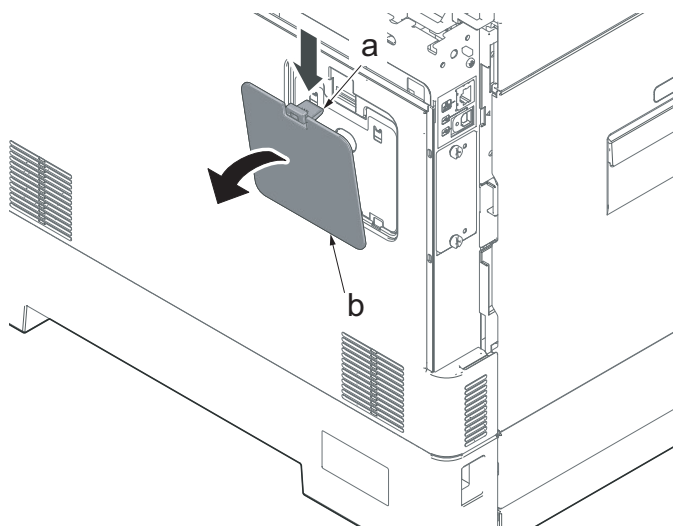
When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten seven hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.

**Figure 4-233**

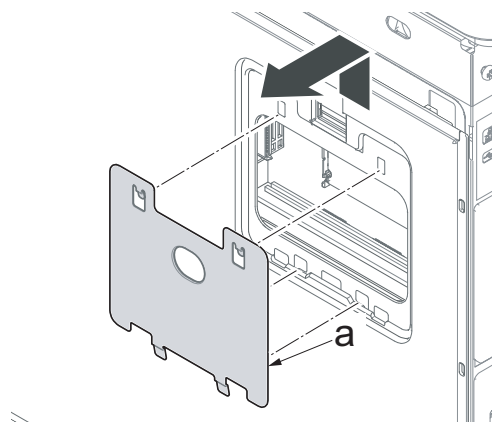
5. Open the waste toner cover (a).
6. Press the arm (b) down.
7. Remove the waste toner cover (a).

**Figure 4-234**

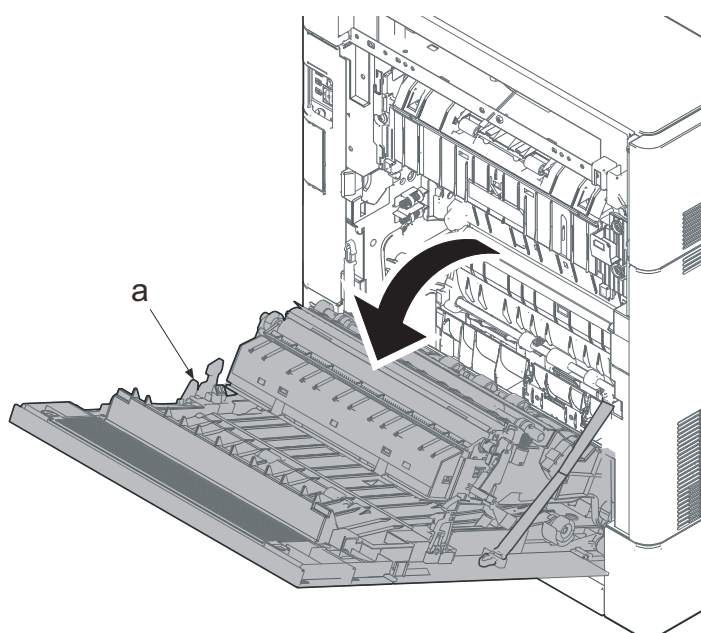
8. Push the lever (a) and open the memory cover (b).
9. Remove the memory cover (b).

**Figure 4-235**

10. Lift up the shield cover (a) and pull it toward you to remove it.

**Figure 4-236**

11. Open the rear cover (a).

**Figure 4-237**

12. Push the machine front side of the middle right cover (a) toward the machine rear side and then lift up its machine rear side to detach it.

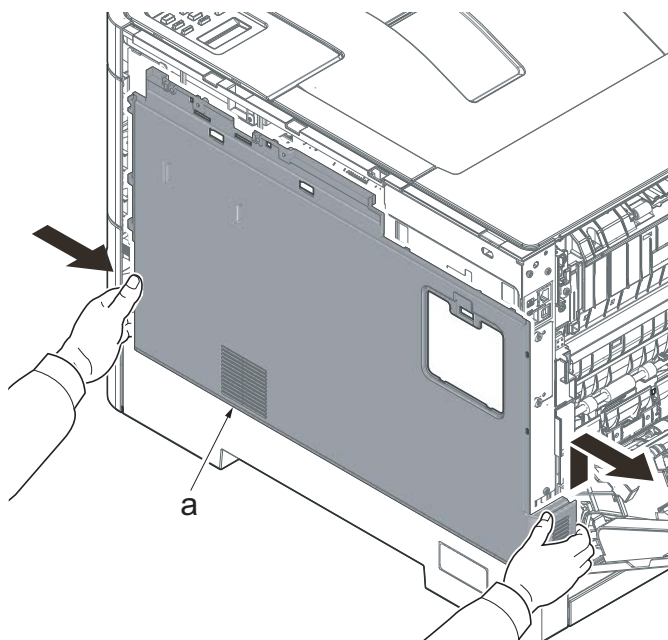


Figure 4-238

IMPORTANT

When reattaching the middle right cover (a), insert the lower rib into the the lower right cover (b). Slide it toward the machine front side to fasten three hooks (c) and then lower it to fasten three hooks (d), and fasten two hooks (e) at the machine rear side. Check if three hooks (d) at the machine rear side are surely fastened.

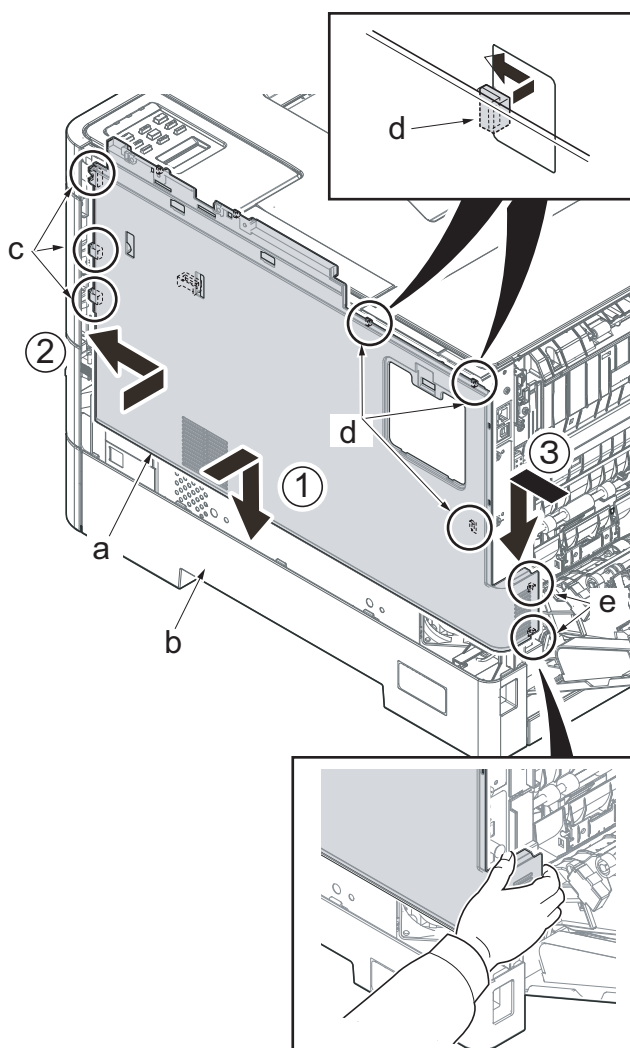


Figure 4-239

13. Remove the network connector cap (a).

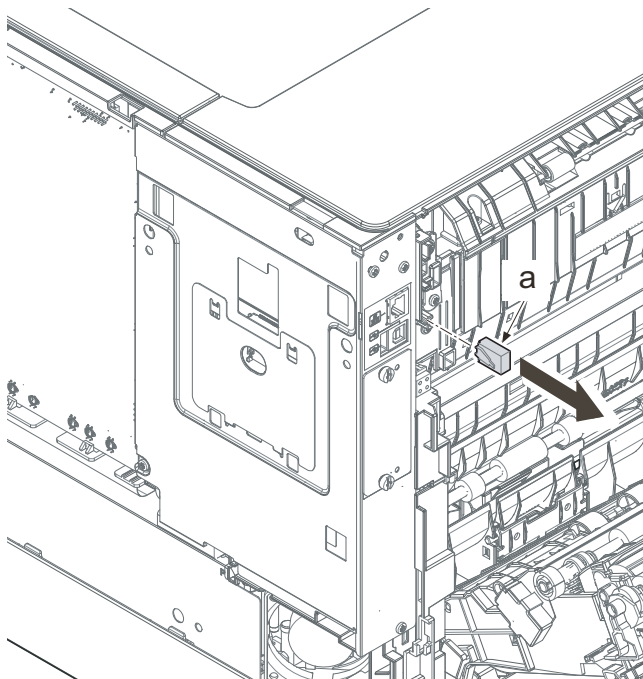


Figure 4-240

14. Remove the optional board (b), if installed.
*: Remove two screws (a)(M3x8), and detach it.

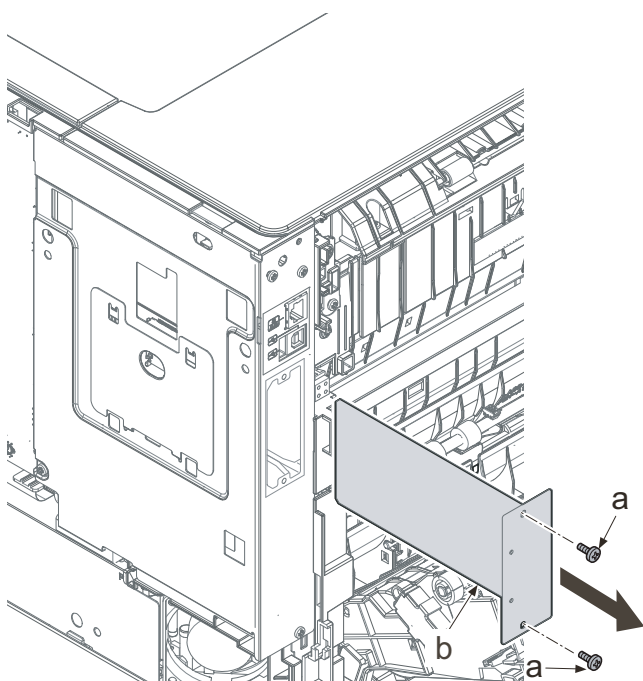


Figure 4-241

15. Remove four screws (a)(M3x8).

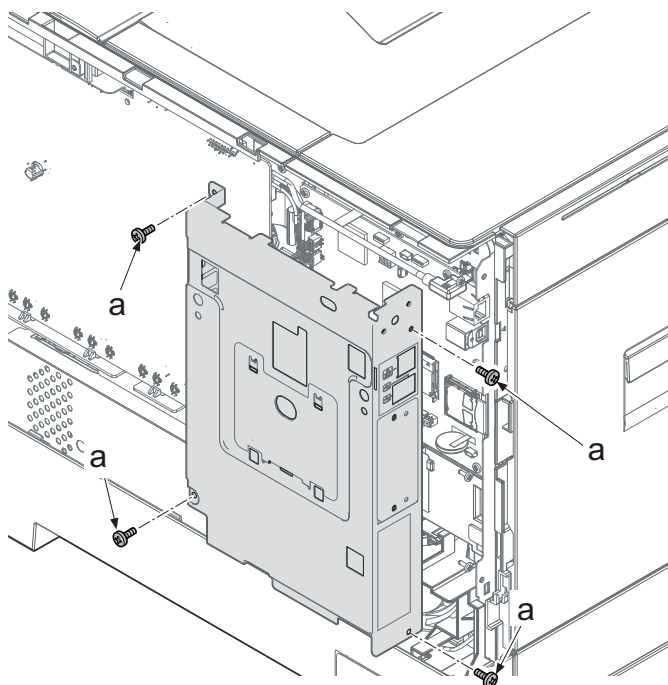


Figure 4-242

16. Remove the network connector (a) by sliding it toward the machine rear side and then remove the controller shield (b).

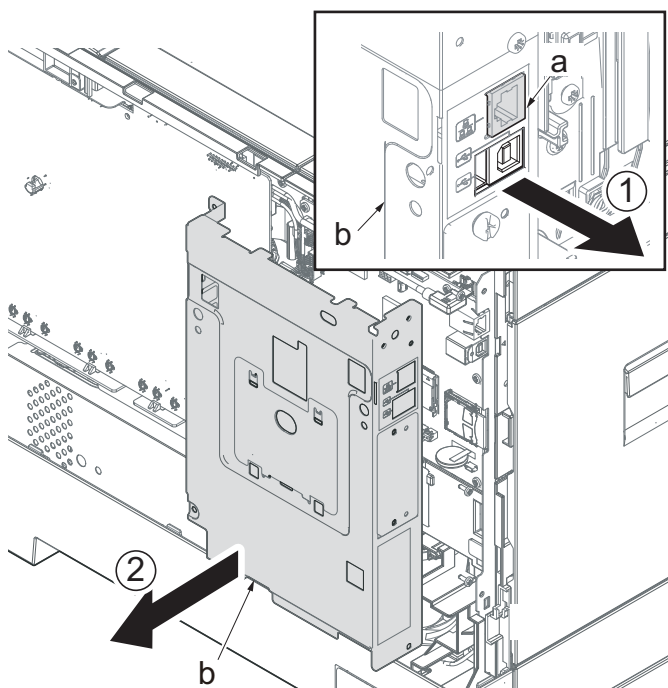


Figure 4-243

IMPORTANT

If removing the shield cover (b) when removing the controller shield (a), reattach it at that time.

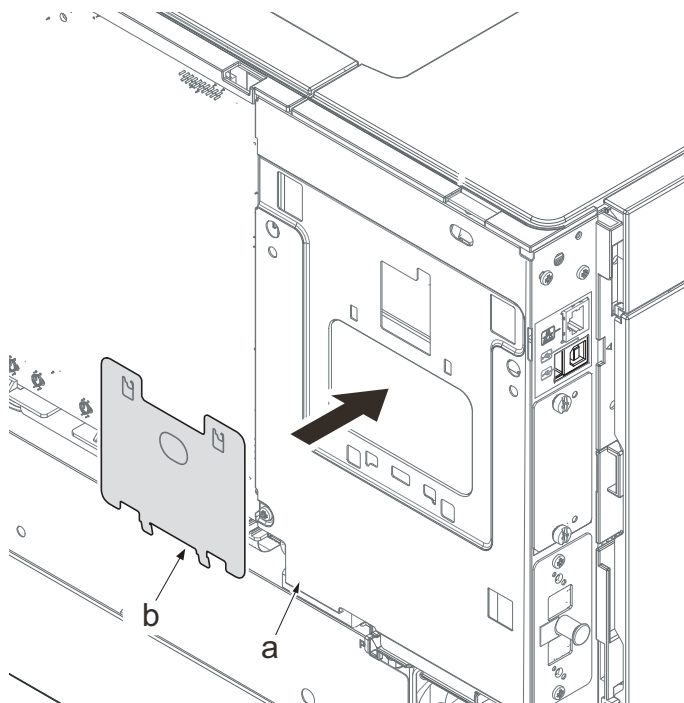


Figure 4-244

17. Remove the screw (a)(M3x8).

18. Slide the upper left cover (b) toward the machine rear side and detach it.

IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

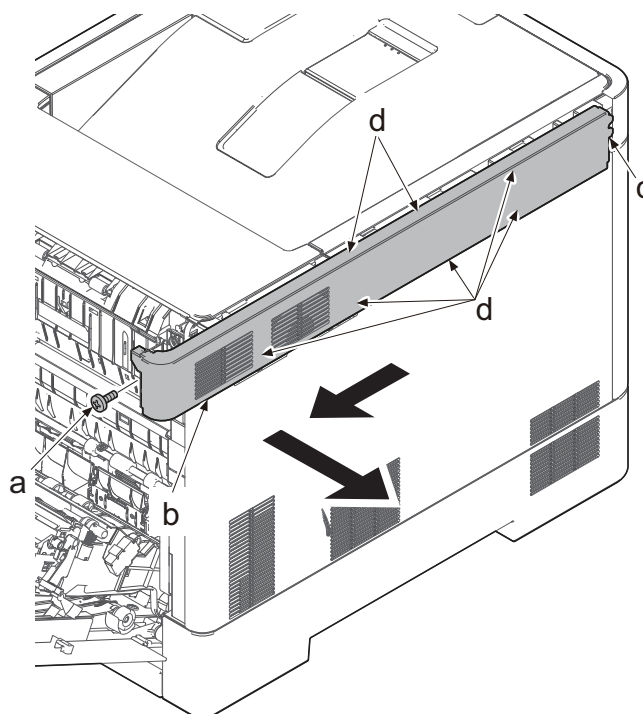
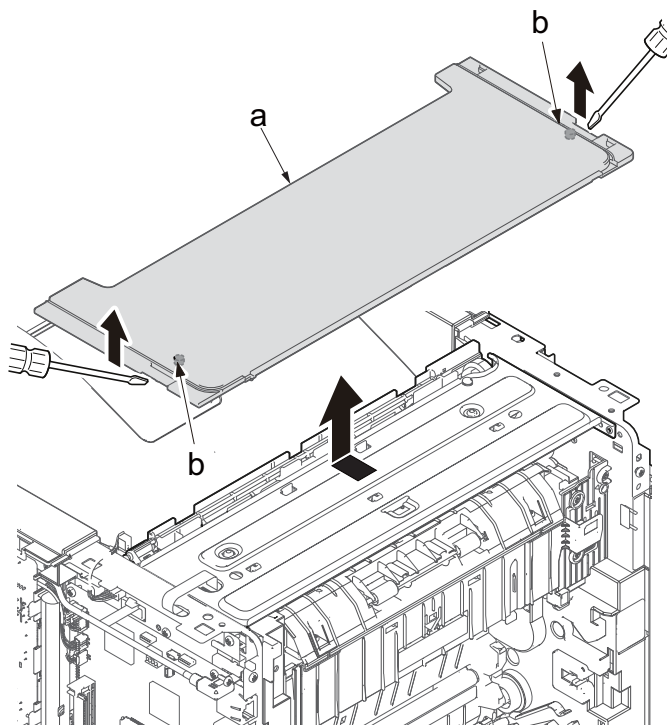
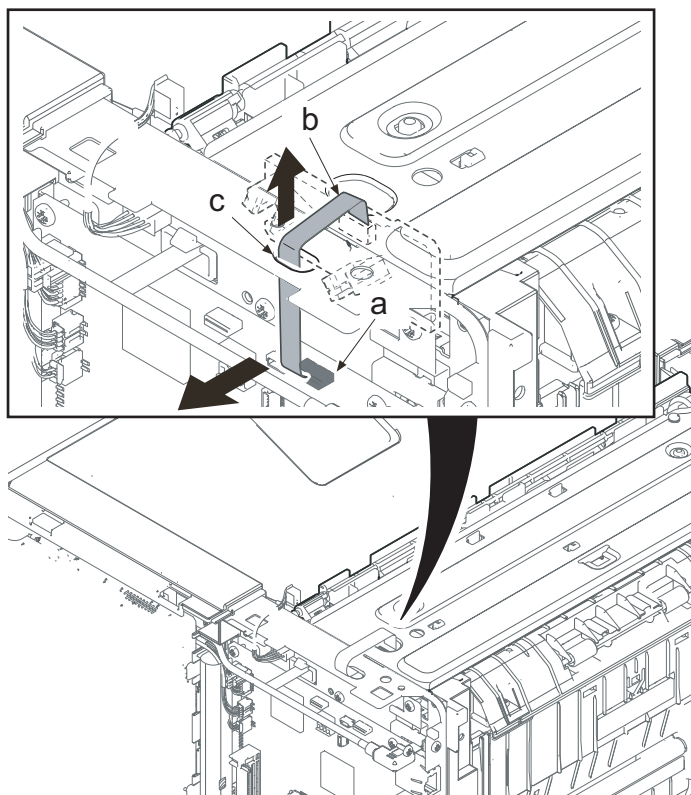


Figure 4-245

1. Release two pins (b), and detach the upper cover (a) by sliding it toward the machine front side.

**Figure 4-246**

2. Remove the FFC (b) from the connector (a) of the main/engine PWB. Pull out from the opening (c).

**Figure 4-247**

3. Remove four screws (a)(M3x8).

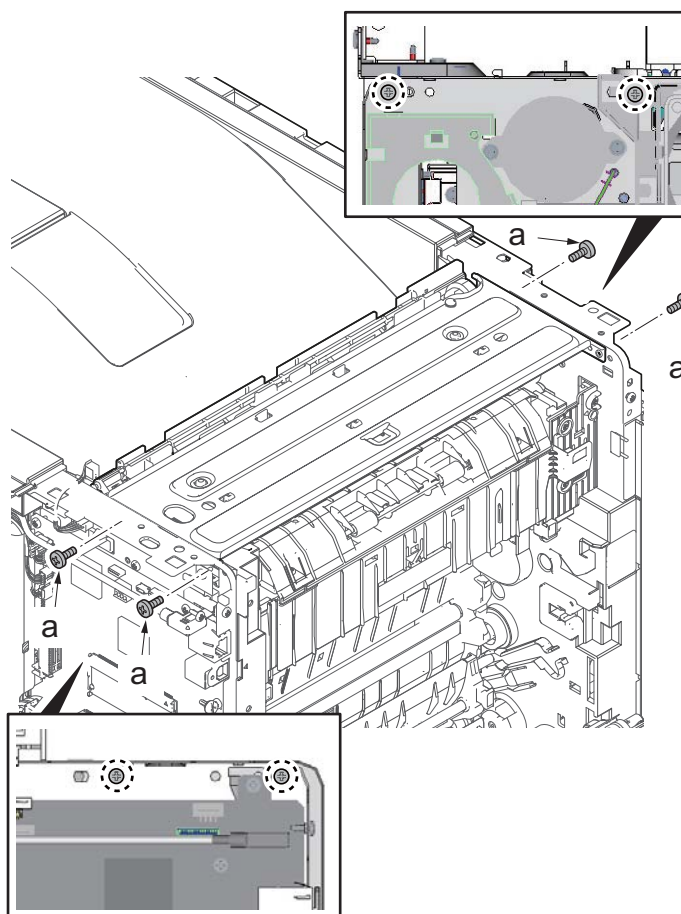


Figure 4-248

4. Disconnect the connector (b) of the eject PWB (a).

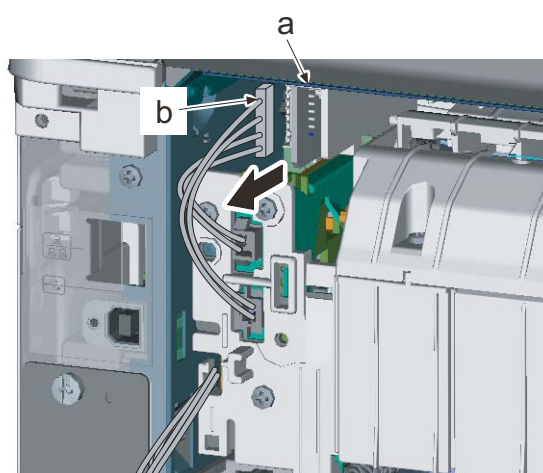


Figure 4-249

5. Detach the eject unit (a). Broaden the left and right frame of the main unit slightly to pull out the bosses of the stay of the eject unit (a) from the holes, and detach the eject unit (a).

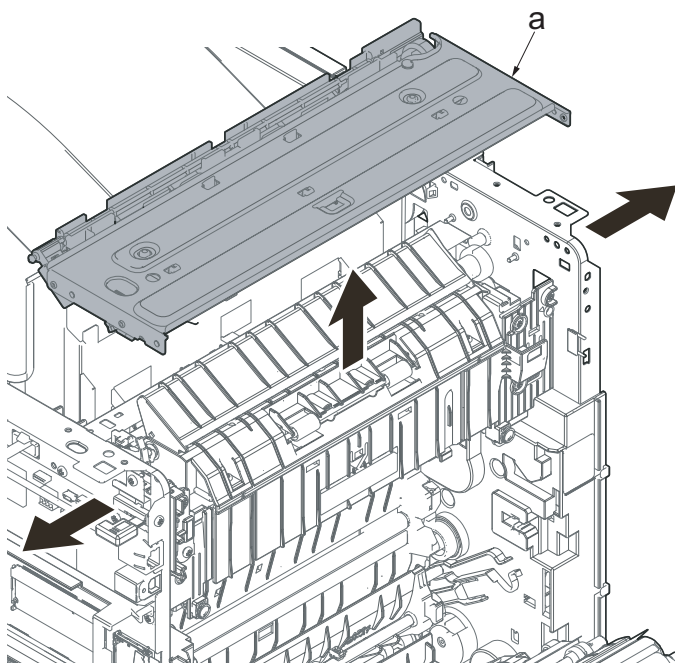


Figure 4-250

35/40 ppm models Procedures

1. Lift up the machine rear side to remove the hook and then remove the upper cover (a).

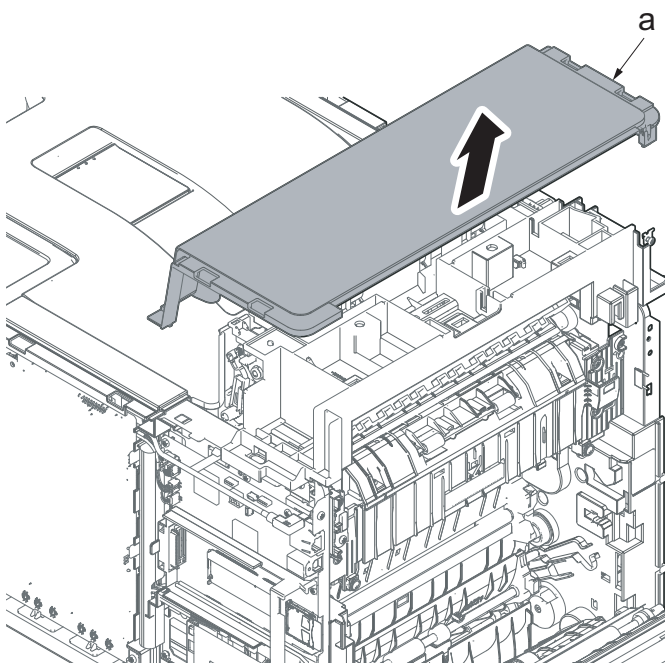


Figure 4-251

IMPORTANT

When reattaching the upper cover, apply two hooks (c). Press the machine rear side and apply three hooks (b).

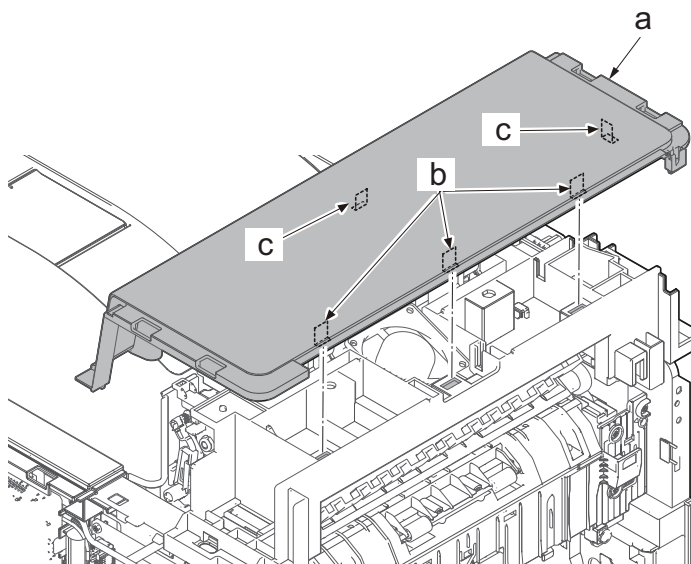


Figure 4-252

2. Disconnect the FFC (a) from the connector (b) of the main/engine PWB and pull it out from the opening (c).

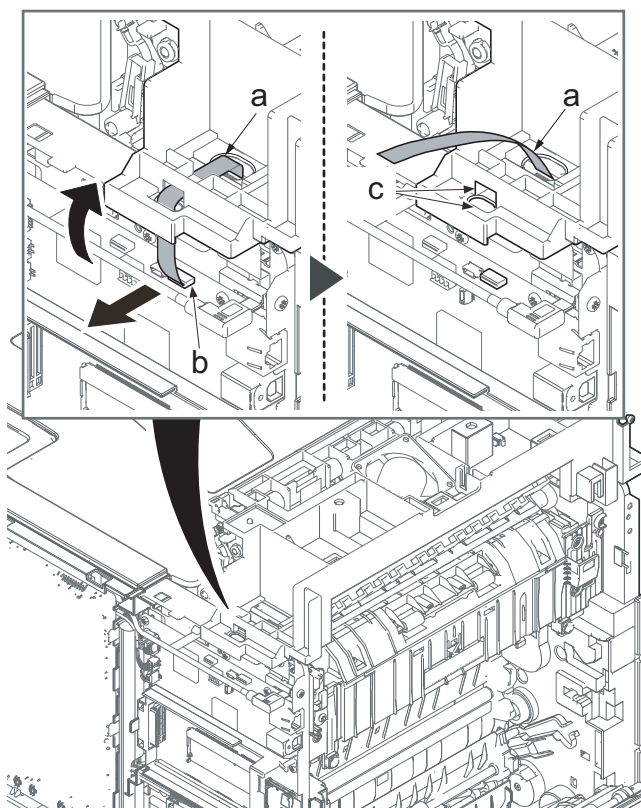


Figure 4-253

3. Disconnect the connector (a) of the eject fan motor and release the wire (b) from five hooks (c).

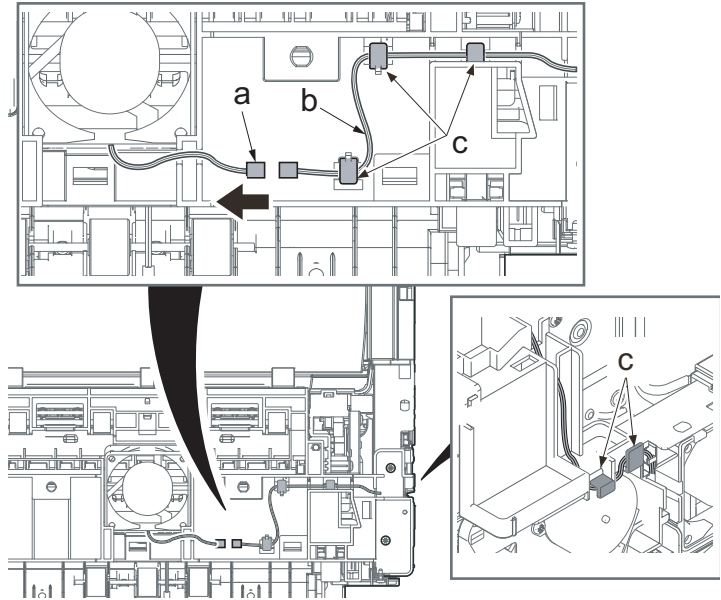


Figure 4-254

4. (40ppm model only)
Disconnect the connector (a) of the duplex fan motor and release the wire (b) from two hooks (c).

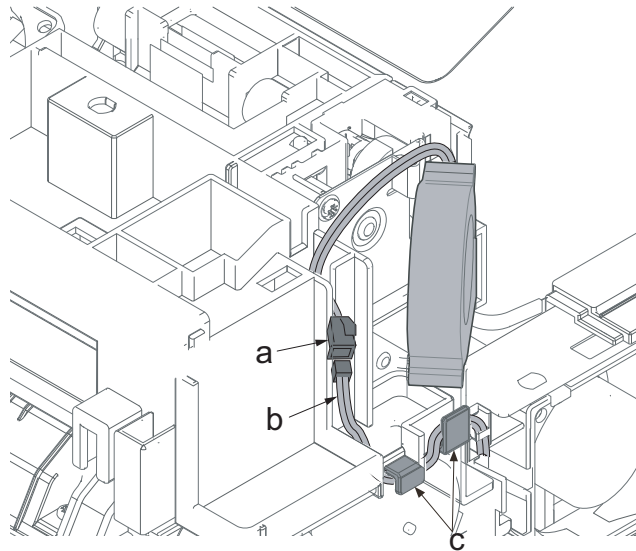


Figure 4-255

5. Remove four screws (a)(M3x8).
6. Lift up the upper stay unit (b), and detach it.

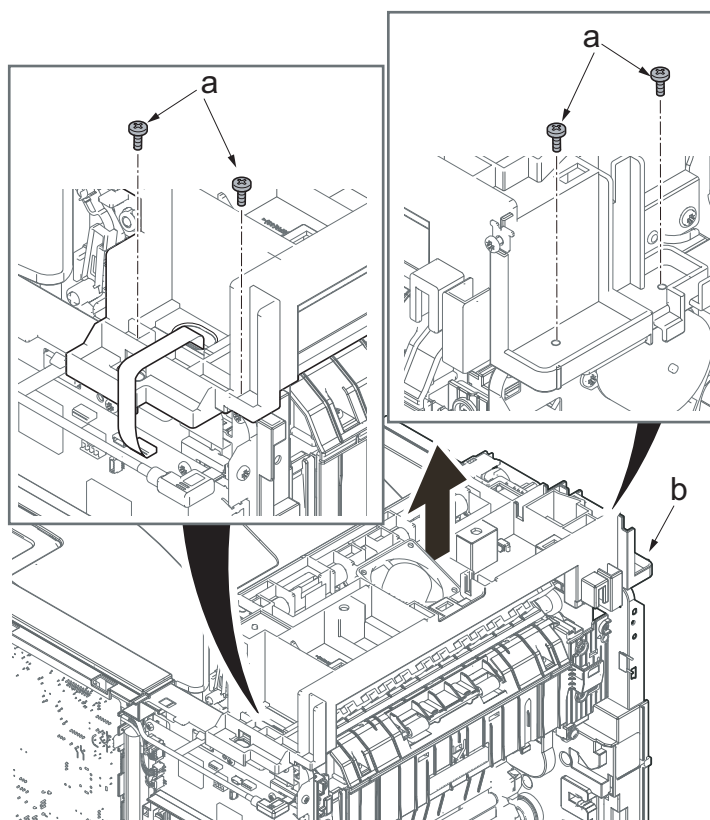


Figure 4-256

*: Secure the screws in the order of the number, when reattaching it.

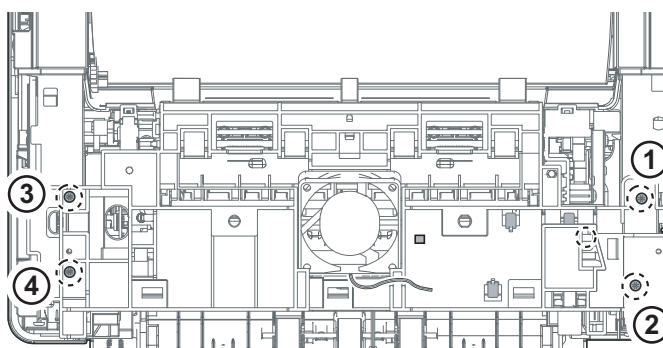


Figure 4-257

7. Remove the screw (a)(M3x8).
8. Remove the fuser wire cover (b).

*: First insert the hook (c) into the opening (d) and secure the screw.

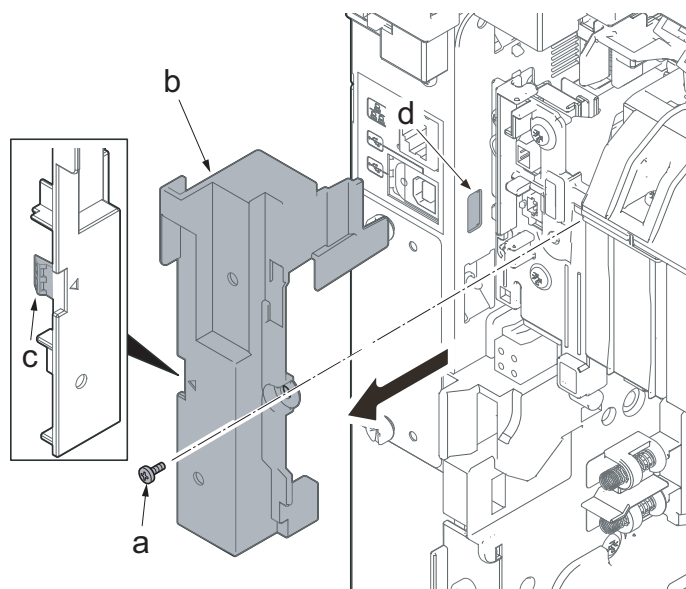


Figure 4-258

9. Disconnect the connector (b) of the eject PWB (a).

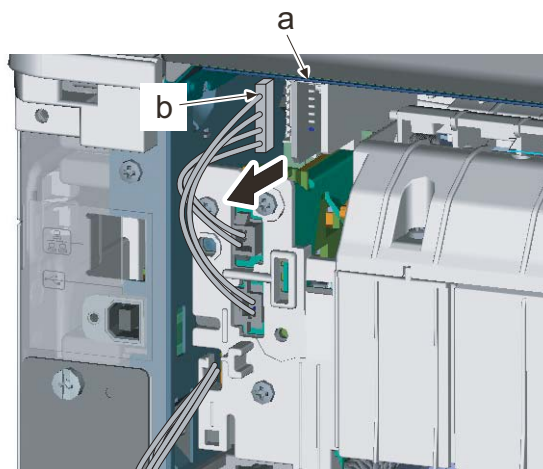


Figure 4-259

10. Detach the eject unit (a).

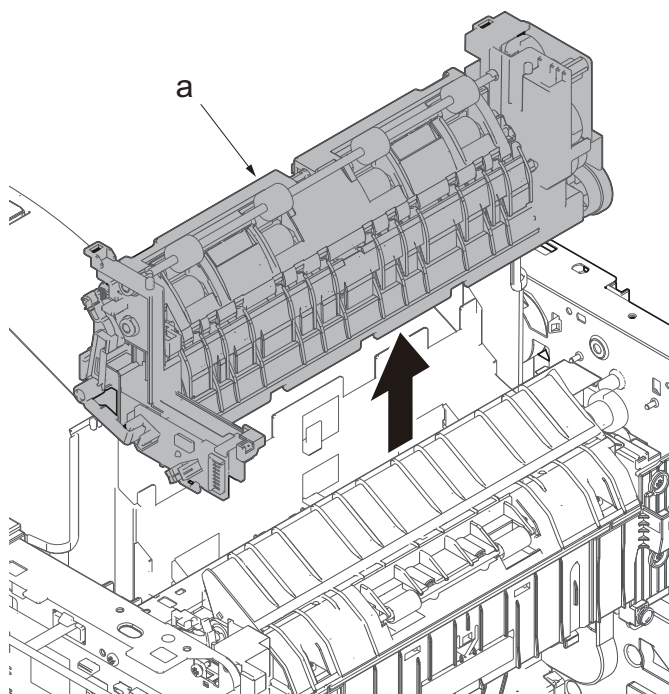


Figure 4-260

IMPORTANT

When reattaching the eject unit (a), insert the gear shaft (b) into the hole on the side plate and two positioning pins (c) into the holes. Then, insert the projections (e) into two square holes (d).

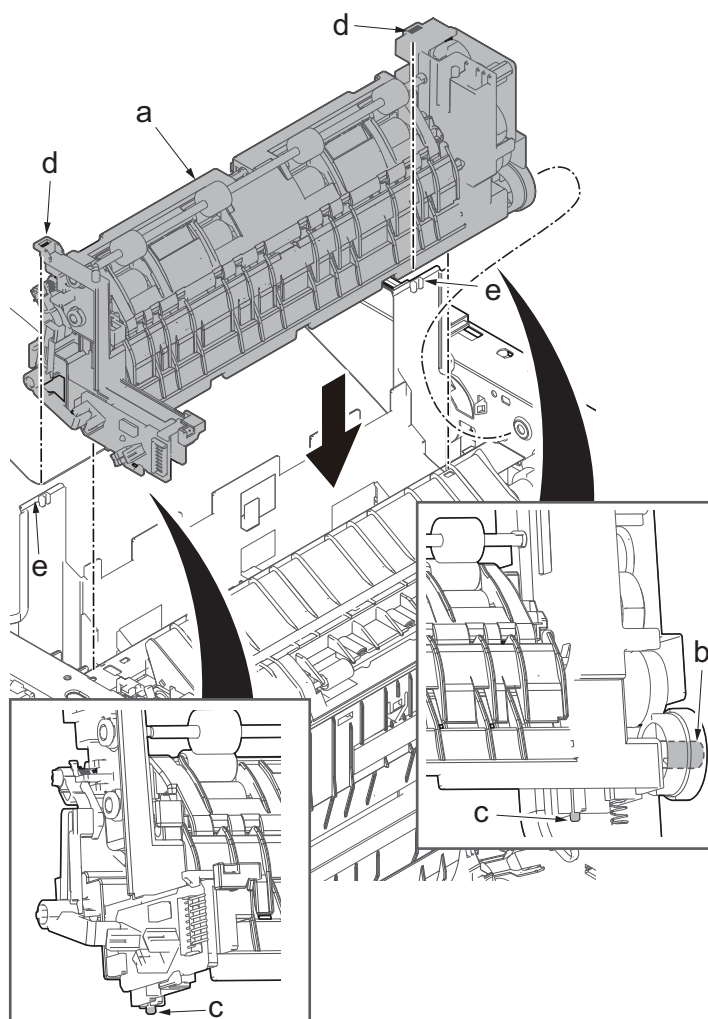


Figure 4-261

(5) Duplex paper conveying unit

(5-1) Detaching and reattaching the duplex paper conveying unit

Procedures

1. Open the rear cover (a).

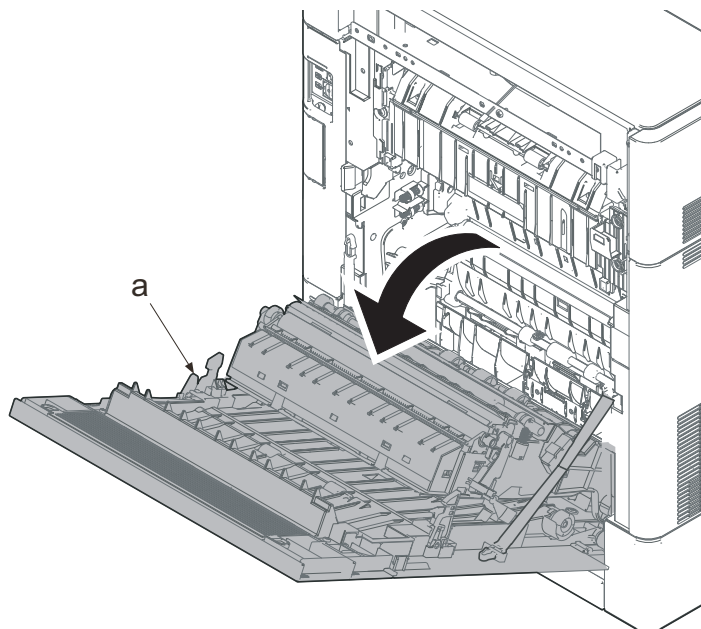


Figure 4-262

2. Pull the conveying stopper (a) toward the machine right side and rotate it by using a flat-blade screwdriver (b).
3. Release the hook (c) of the conveying stopper (a) from the rib (d) and pull the conveying stopper (a) out.

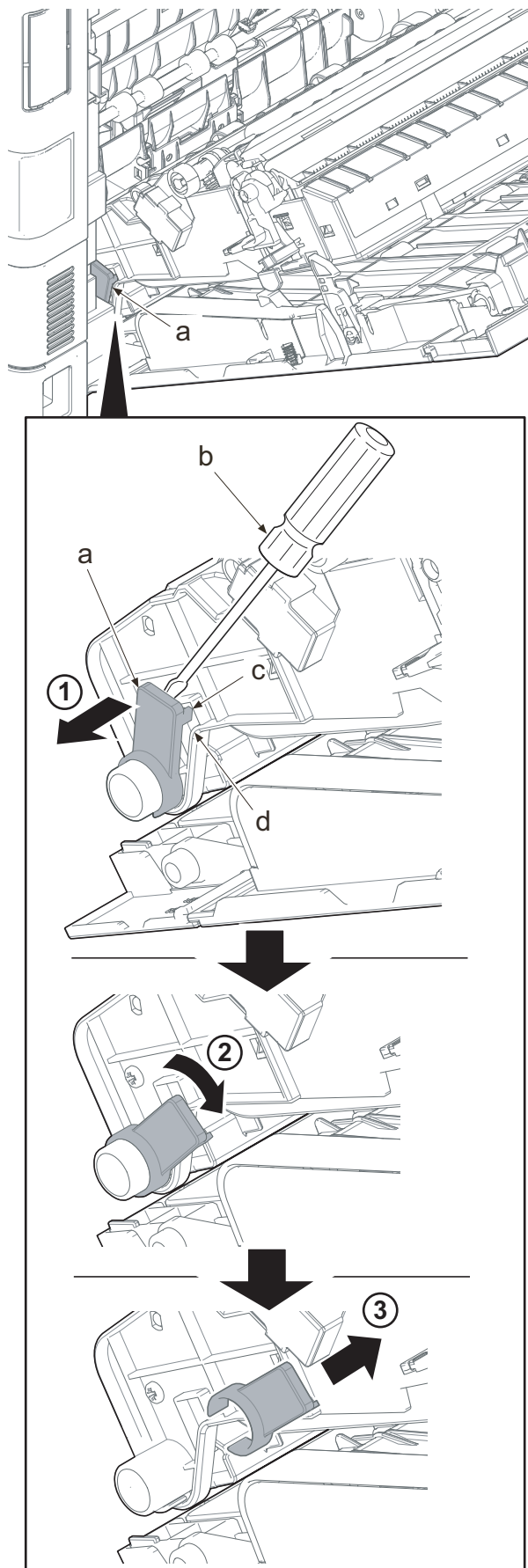


Figure 4-263

4. Slide the duplex paper conveying unit (a) toward the machine right side.
5. Release the fulcrum part of the duplex paper conveying unit (a) at the machine left side, and pull the unit out toward the machine rear side.

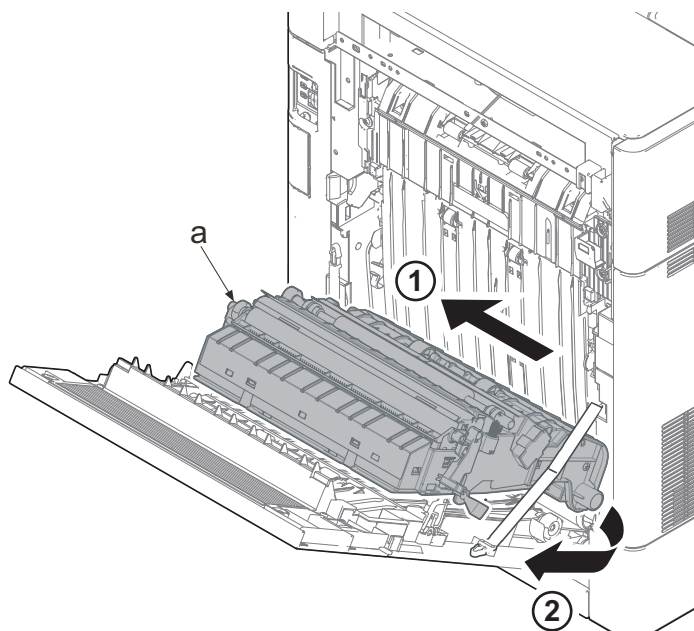


Figure 4-264

(6) Drive section

(6-1) Detaching and reattaching the main drive motor unit

Procedures

1. Open the rear cover (a).

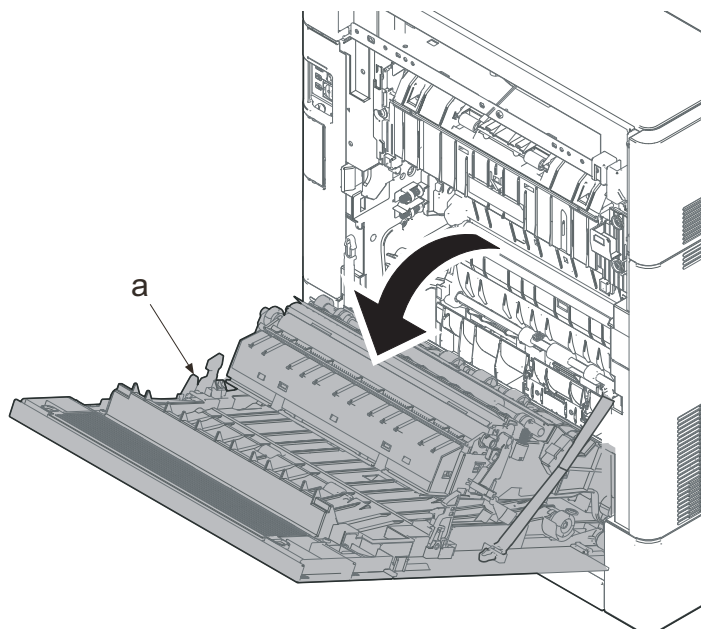


Figure 4-265

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

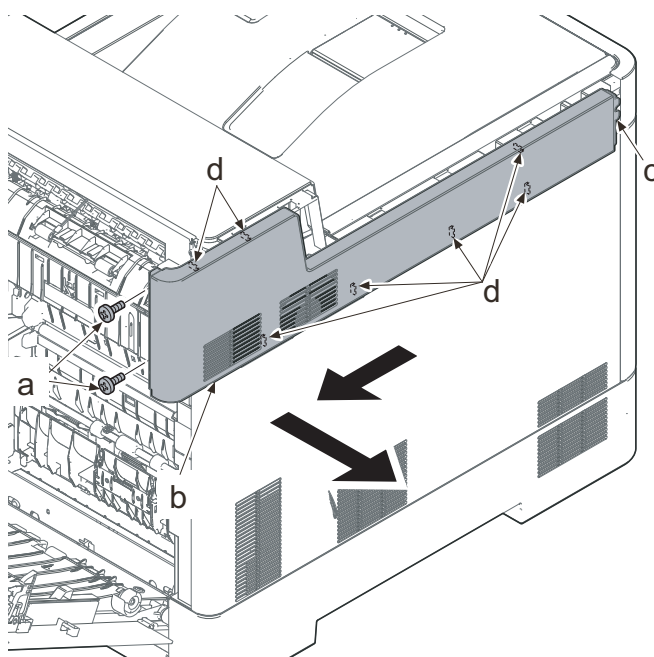


Figure 4-266

4. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
5. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
6. Detach the middle left cover (a).

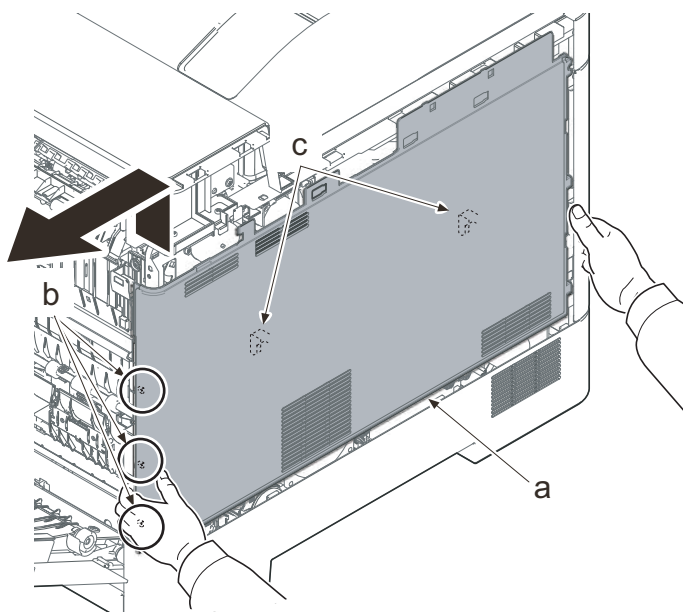
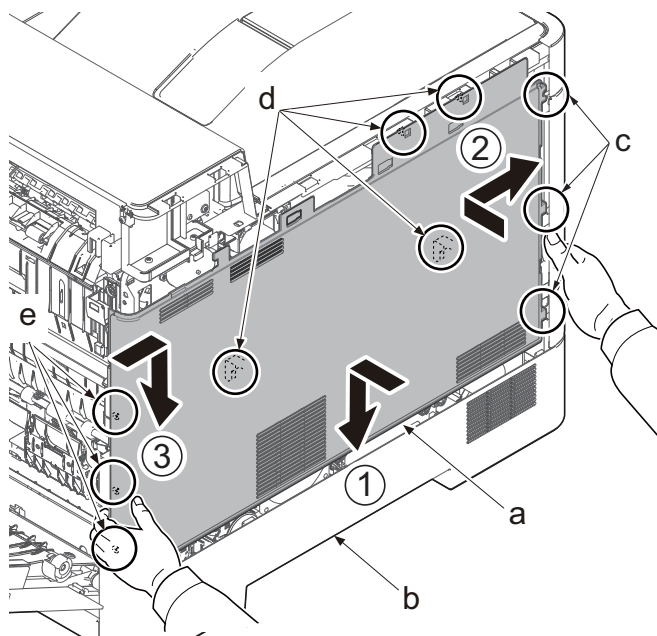


Figure 4-267

IMPORTANT

When reattaching the middle left cover (a), insert the lower rib into the the lower left cover (b). When reattaching it, fasten three hooks (c) and four hooks (d) by sliding it toward the machine front side, and then lower the machine rear side of it to fasten three hooks (e).

**Figure 4-268**

View of the main drive unit

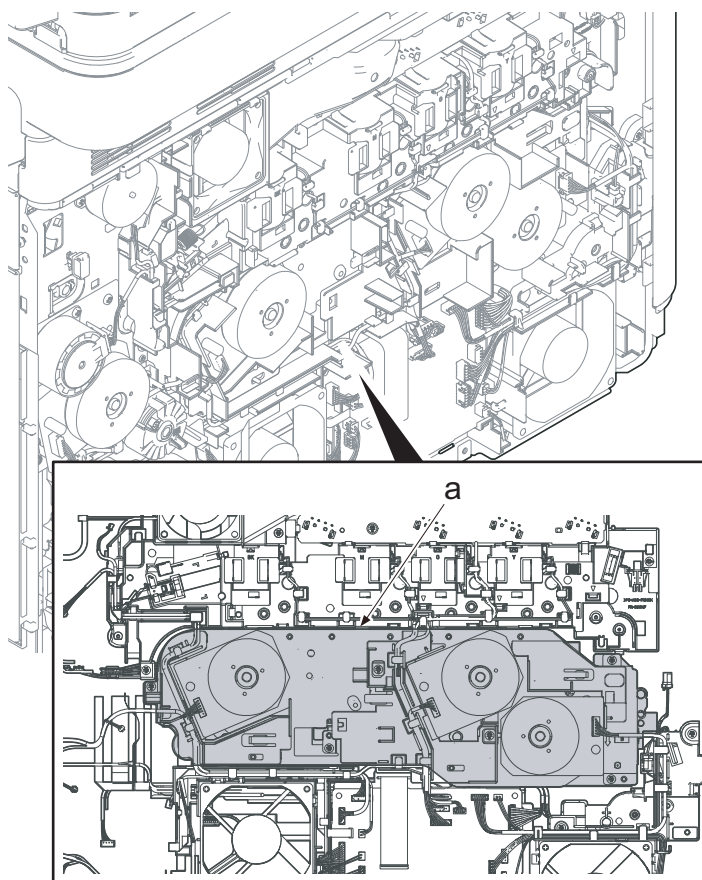


Figure 4-269

7. Disconnect the connector (b) of the drum motor 1 (a). Release the wire from the hook (c).

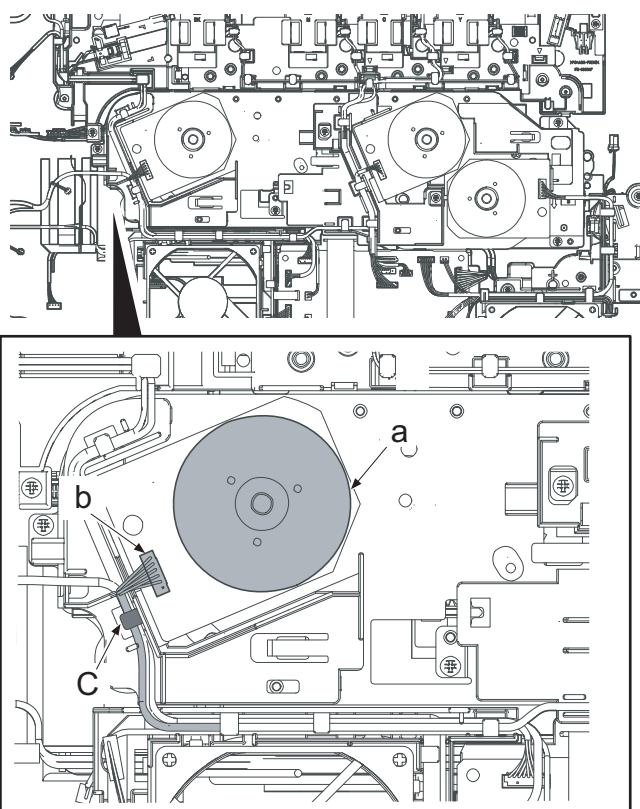


Figure 4-270

8. Disconnect the connector (b) from the engine relay PWB (a). Release the wire from eight hooks (d).

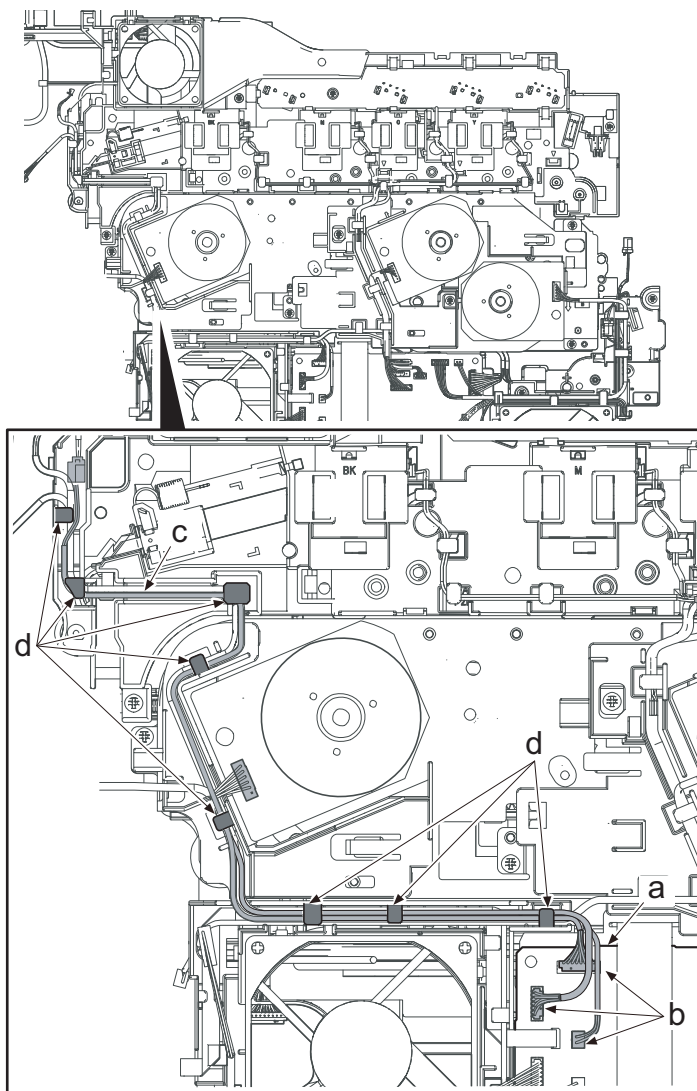


Figure 4-271

9. Disconnect the connector (b) of the drum motor 2 (a).
10. Release the wire from two hooks (f) of the wire guide (e).
11. Disconnect the connector (d) of the developer motor (c).

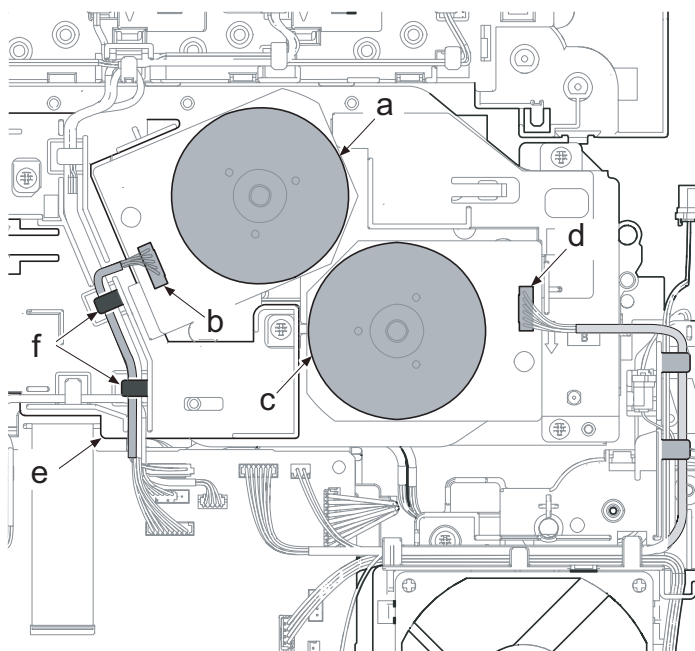
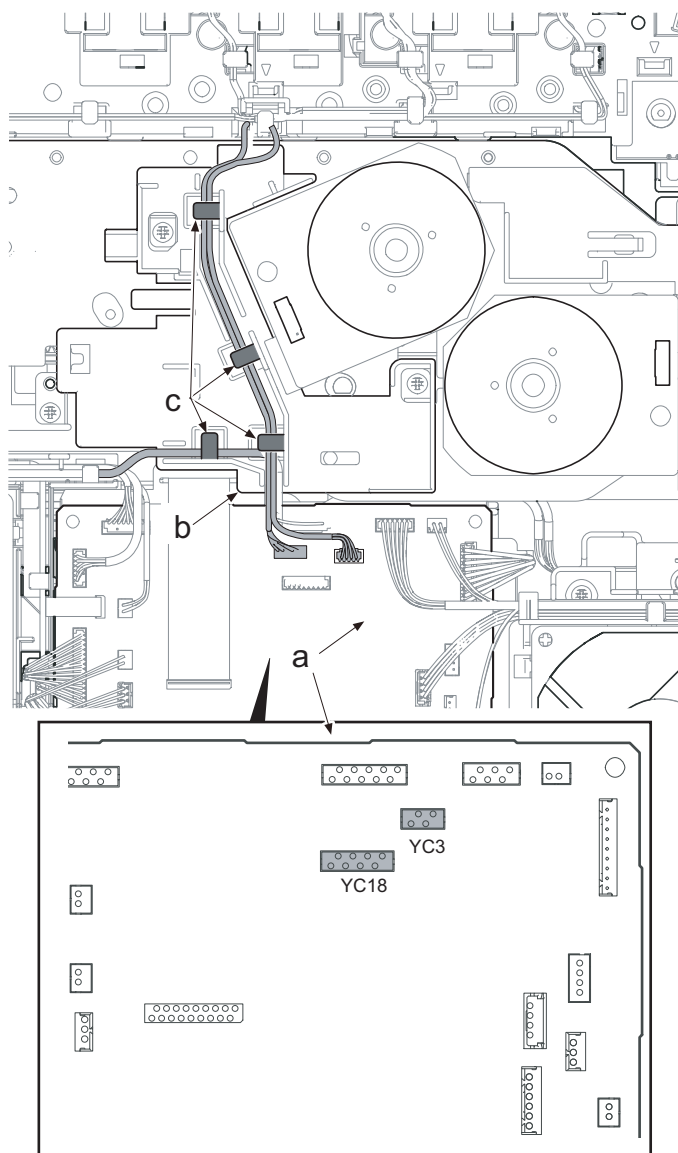


Figure 4-272

12. Disconnect two connectors from the engine relay PWB (a).
13. Release the wire from four hooks (c) of the wire guide (b).

**Figure 4-273**

14. Open the top tray (b).

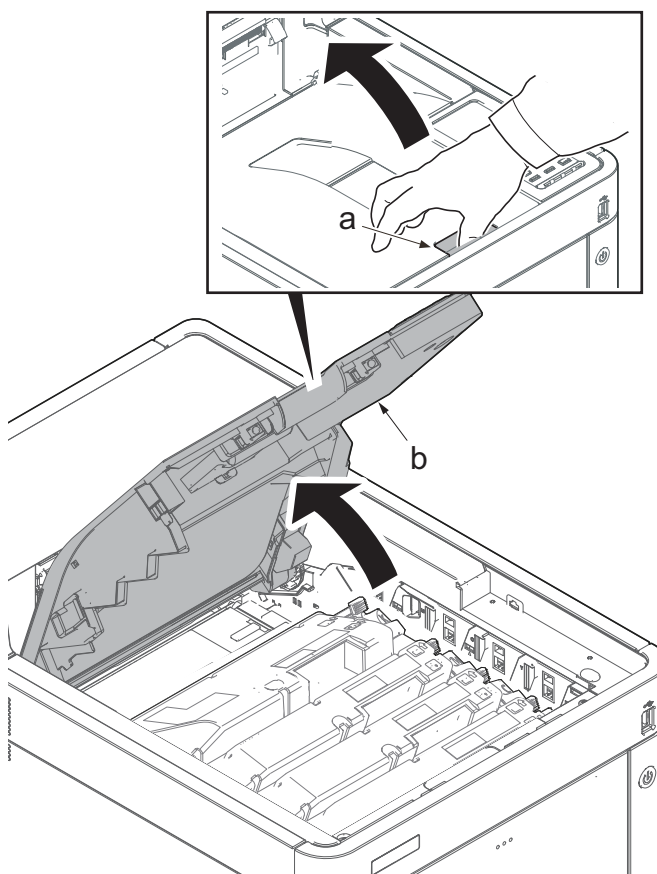


Figure 4-274

15. Detach the toner container Y (a).

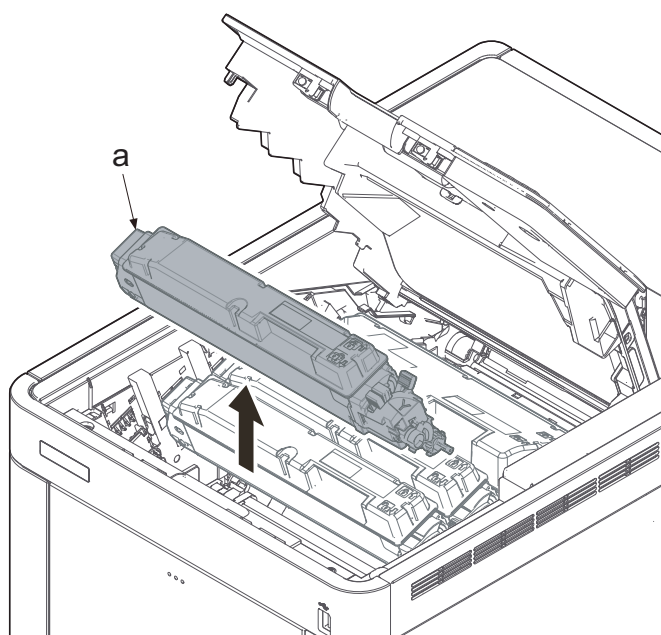


Figure 4-275

16. Remove the screw (a)(M3x12)
17. Remove the lever cover (b).
18. Lift up the drive release lever (c).

*: When raising the lever, the joint of the drive coupling is released.

IMPORTANT

If omitting to attach the lever cover, [Cover open] message is displayed while the tray switch is not turned on.

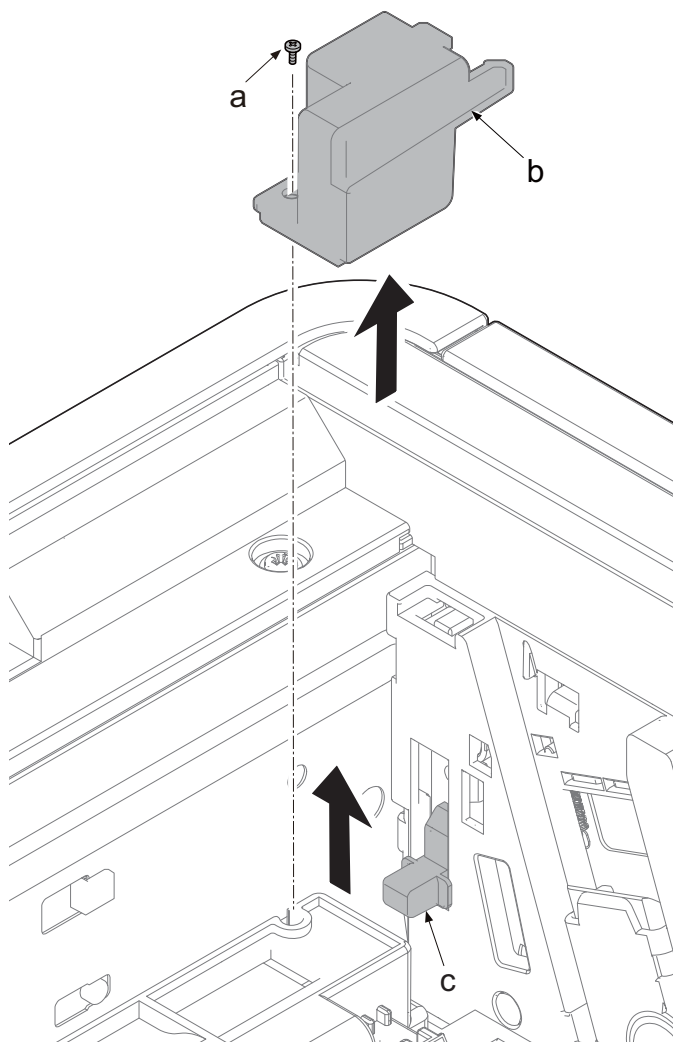


Figure 4-276

19. Remove six screws (a)(M3x8).
20. Detach the main drive motor unit (b).

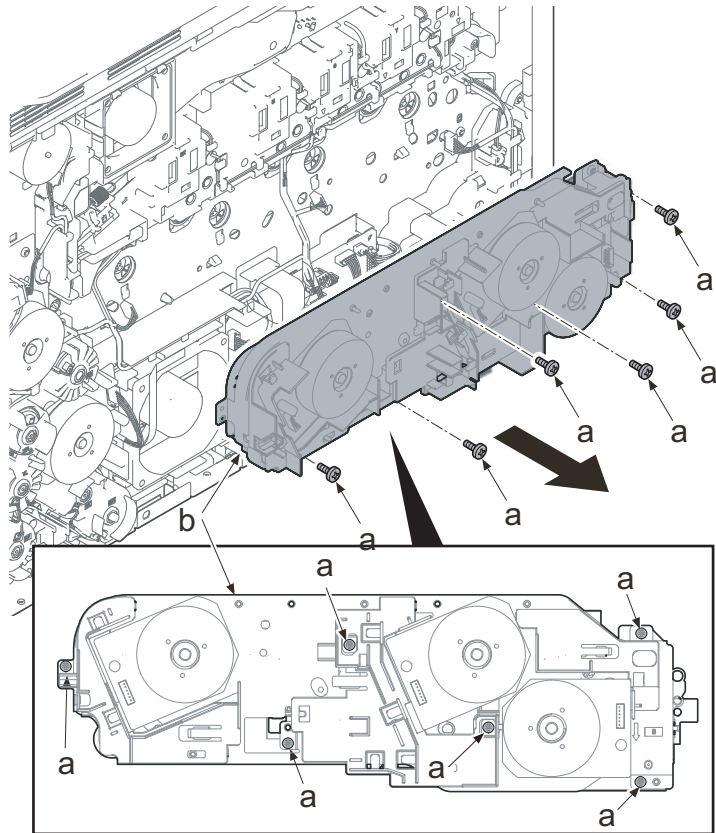


Figure 4-277

*: When detaching the main drive motor unit (a), pull out the drive release lever (b) from the drive release joint (c).

21. Check the main drive motor unit and clean or replace it if necessary.
22. Reattach the parts in the original position.

IMPORTANT

After reattaching the main drive motor unit (a), check if the couplings for driving the primary transfer unit, the developer unit and the drum unit are relocated by being connected with the drive release lever (b).

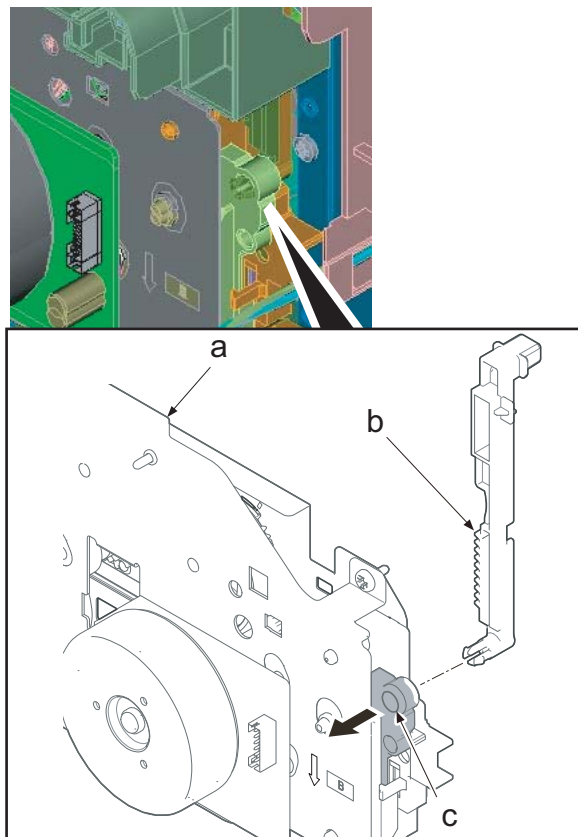


Figure 4-278

IMPORTANT

Attach the main drive motor unit (a) after confirming the drive coupling is at the release position.

(Drive release joint (b) is raised.)

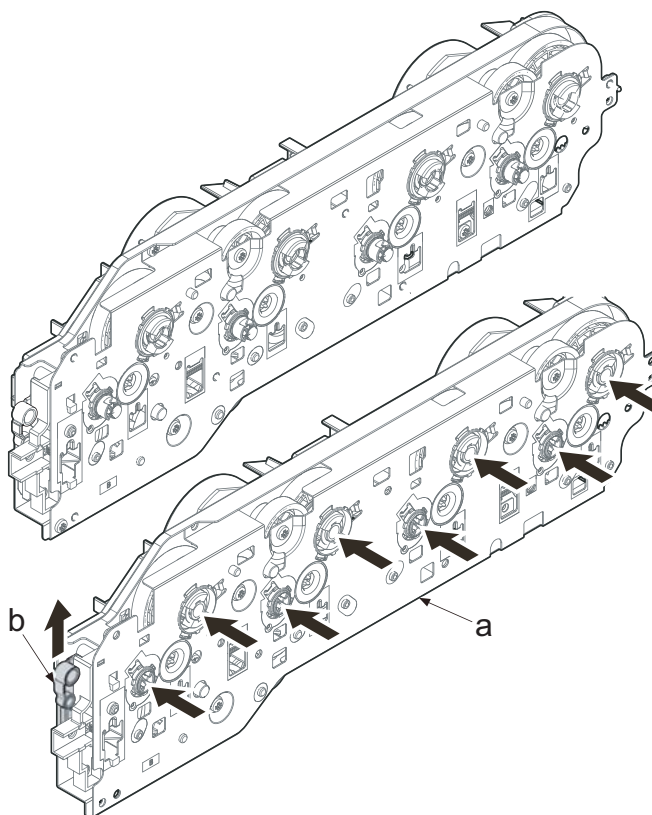


Figure 4-279

Insert the drive release lever (b) into the drive release joint (c) when reattaching the main drive motor unit (a).

Do not turn the developer motor (d) in the reverse direction of the engraving arrow (e).

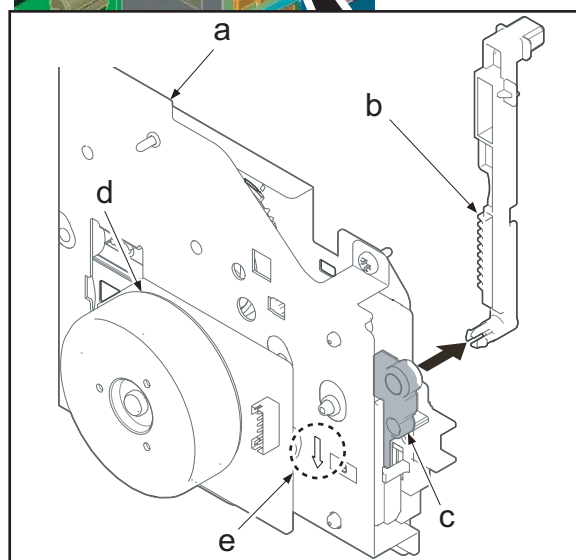
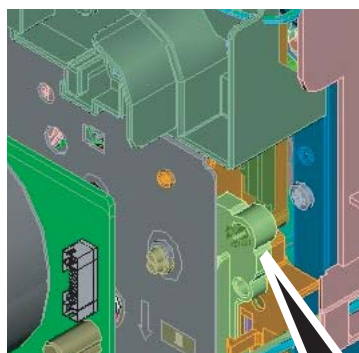


Figure 4-280

(6-2) Detaching and reattaching the paper feed drive unit

Procedures

1. Open the rear cover (a).

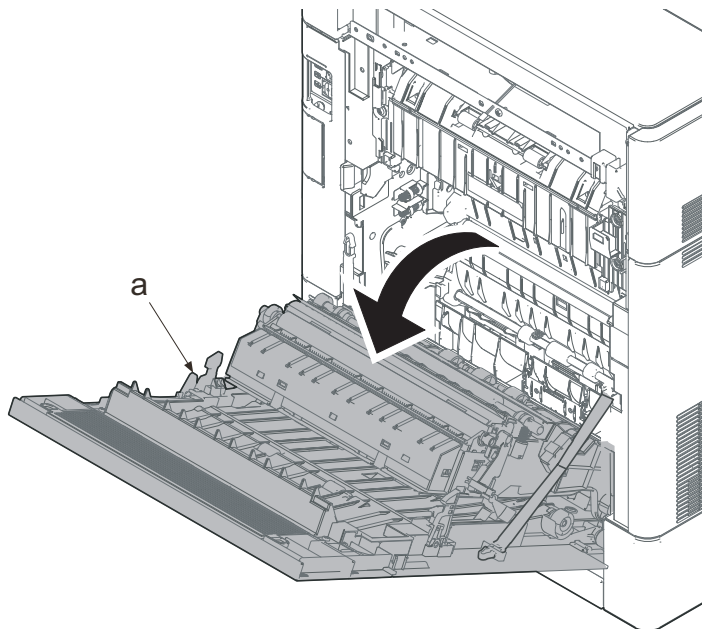


Figure 4-281

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

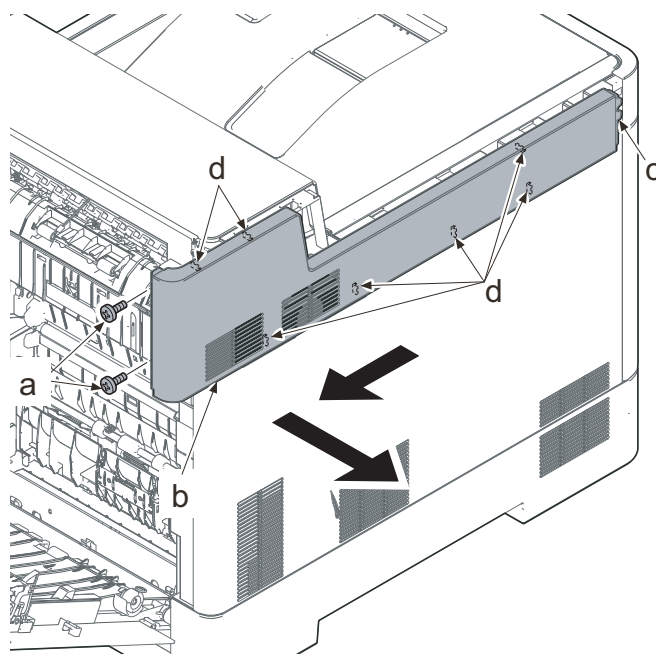


Figure 4-282

4. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
5. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
6. Detach the middle left cover (a).

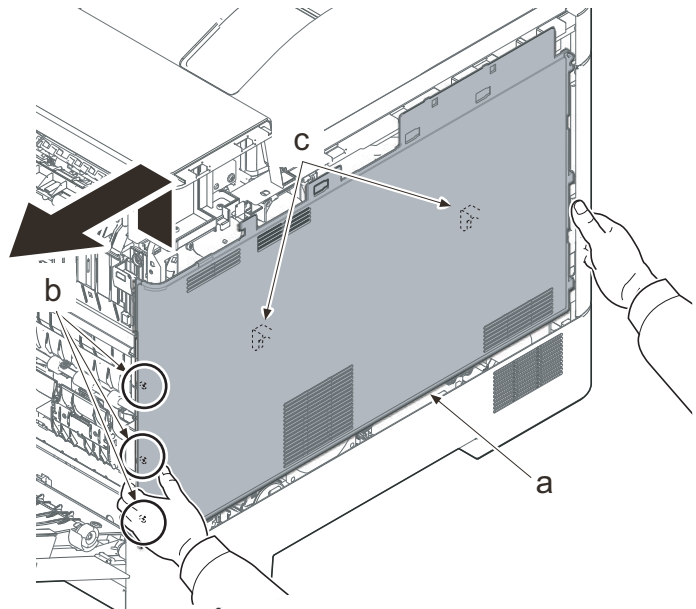


Figure 4-283

IMPORTANT

When reattaching the middle left cover (a), insert the lower rib into the lower left cover (b). And, slide it toward the machine front side to fasten three hooks (c) and four hooks (d), then lower the machine rear side of it to fasten three hooks (e) at the machine rear side.

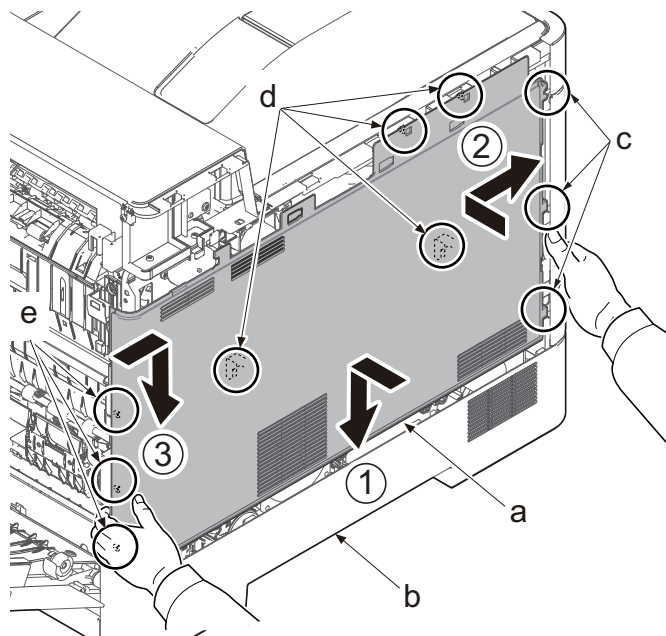
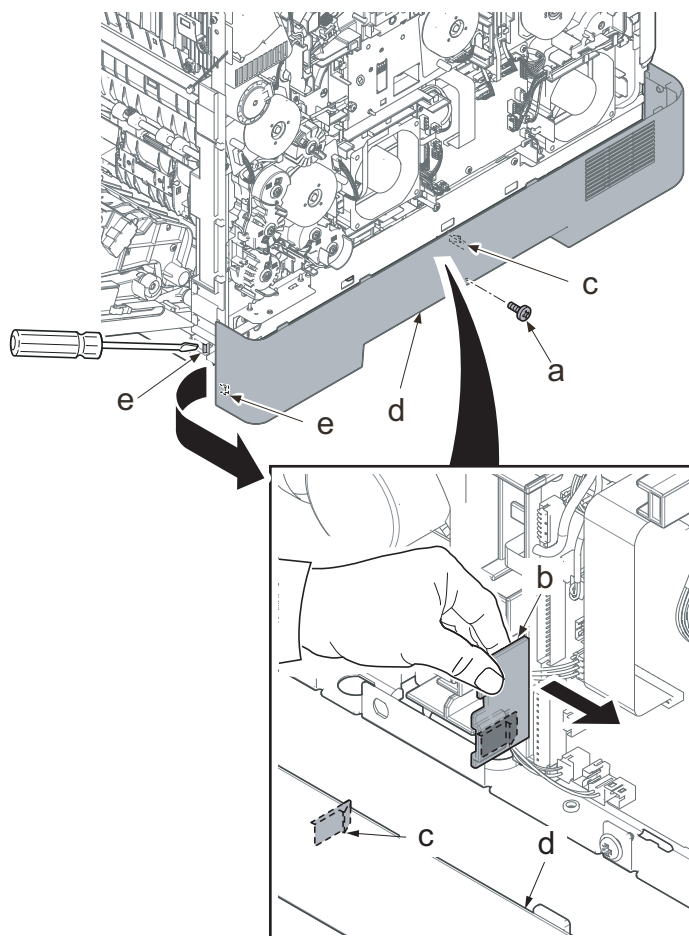


Figure 4-284

7. Remove the screw (a)(M3x8).
8. Pull the rib (b) toward you and release the center hook (c).
9. Detach the lower left cover (d).

**Figure 4-285**

IMPORTANT

When attaching the lower left cover (a), insert two bosses (b) at the machine front side into the holes and apply the center hook (c). Then, push it toward the machine rear side. After that, secure the screw.

Check if the hook (c) at center is surely fastened.

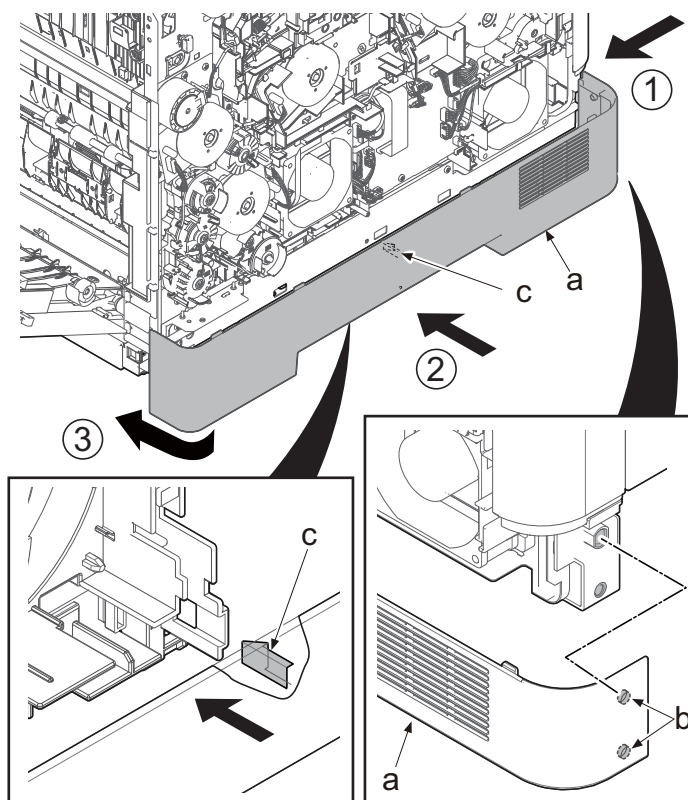


Figure 4-286

10. Disconnect the connector (b) of the primary transfer motor (a).
11. Release the wire from four hooks (c).

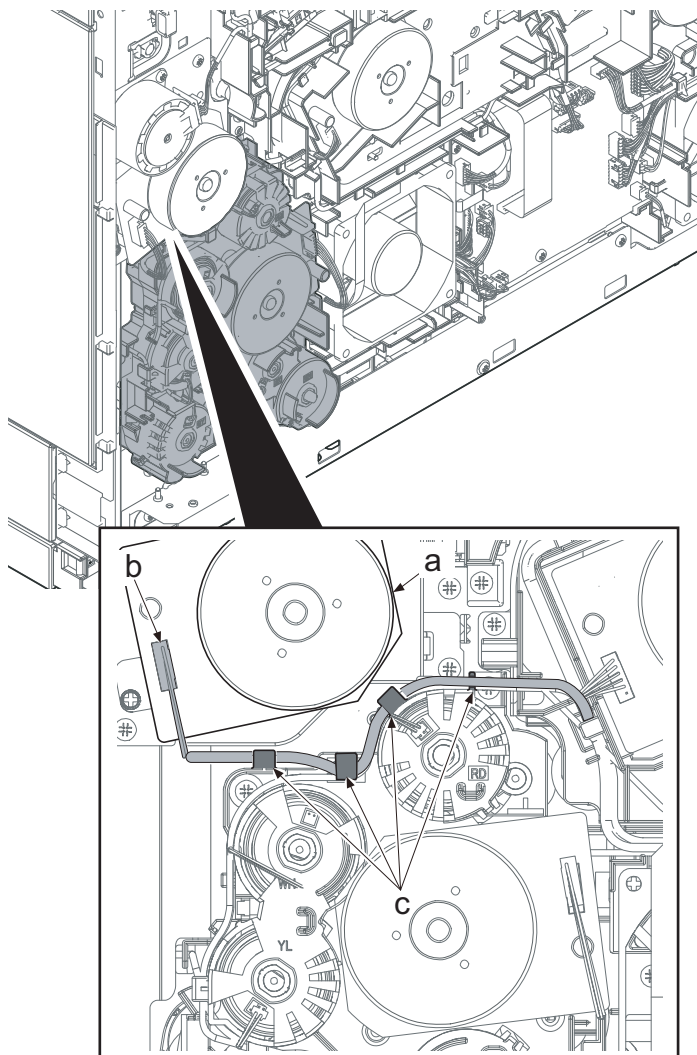
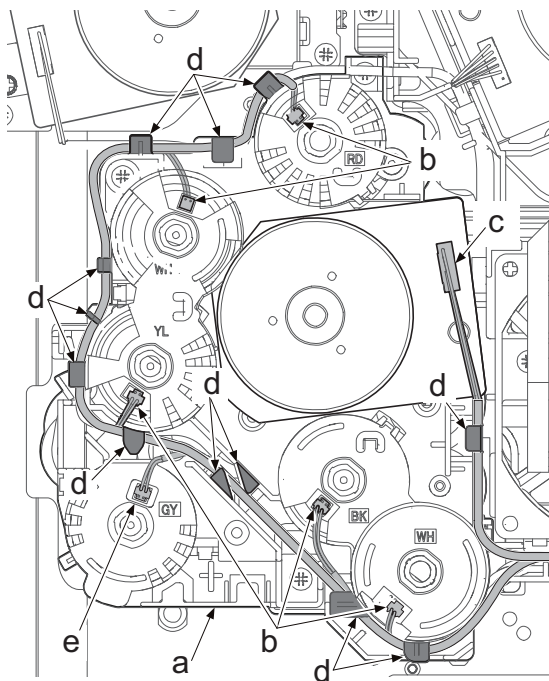
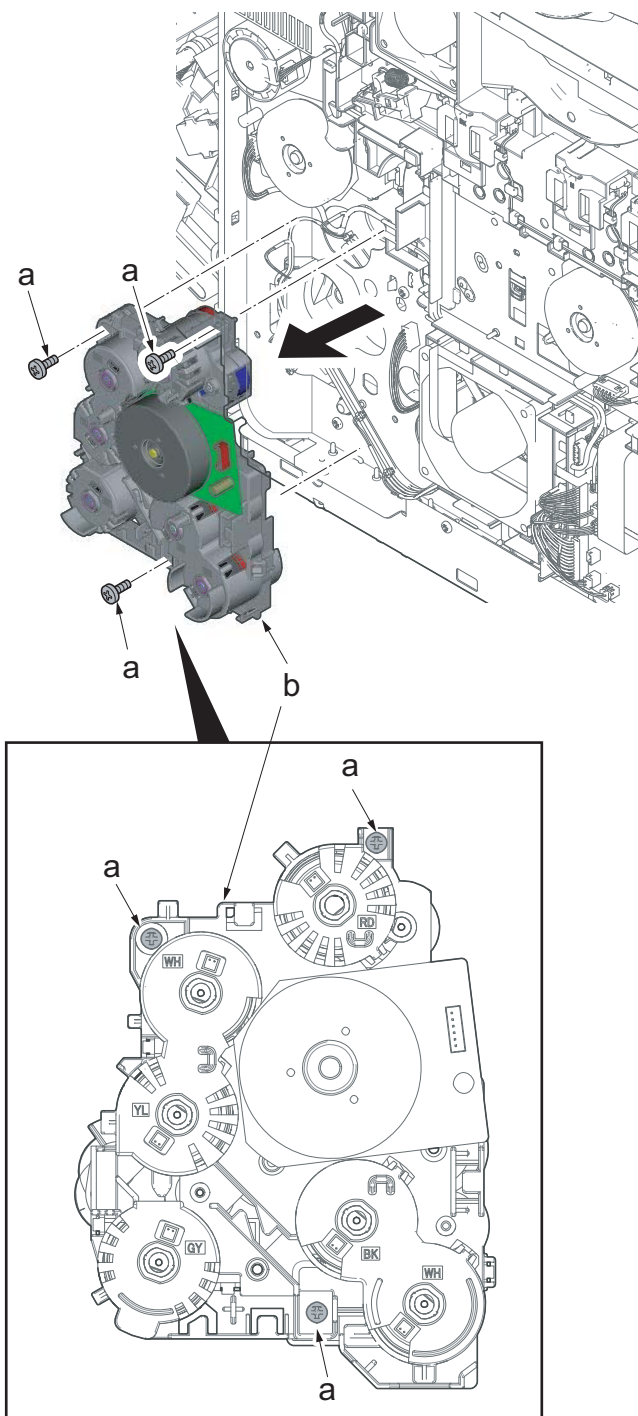


Figure 4-287

12. Disconnect the connectors (b and e) of the clutch in the paper feed drive unit (a).
- 30 ppm model: 5 connectors (b)
- 35/40 ppm model: 6 connectors (b and e)
13. Disconnect the connector (c) of the motor in the paper feed drive unit.
14. Release the wire from twelvehooks (d).

**Figure 4-288**

15. Remove three screws (a)(M3x12).
16. Detach the paper feed drive unit (b).
17. Check the paper feed drive unit and clean or replace it if necessary.
18. Reattach the parts in the original position.

**Figure 4-289**

(6-3) Detaching and reattaching the MP paper feed drive unit

Procedures

1. Open the rear cover (a).

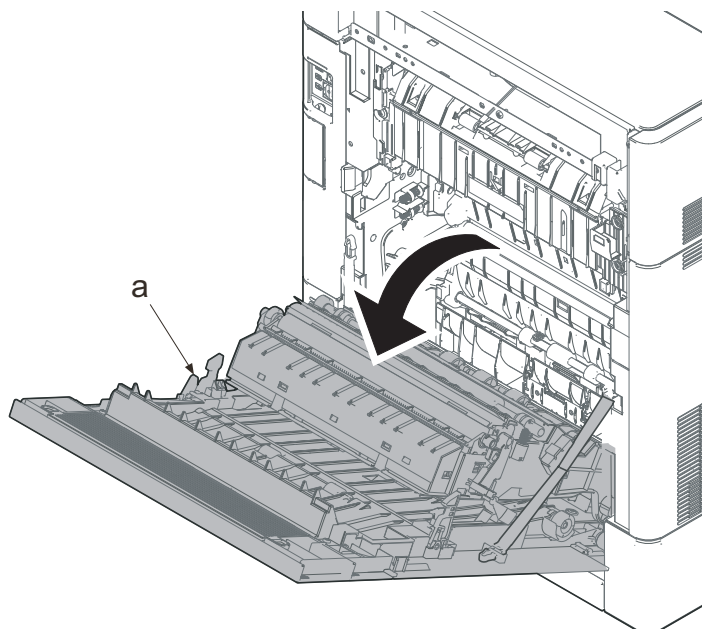


Figure 4-290

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

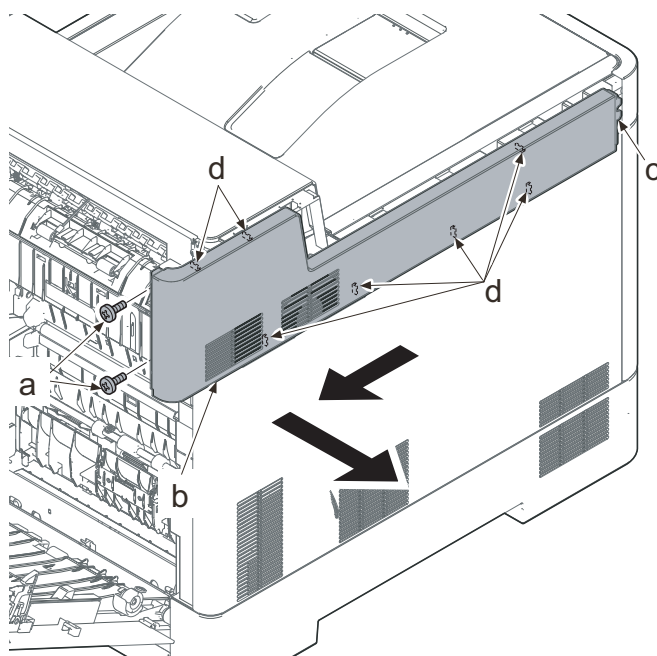


Figure 4-291

4. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
5. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
6. Detach the middle left cover (a).

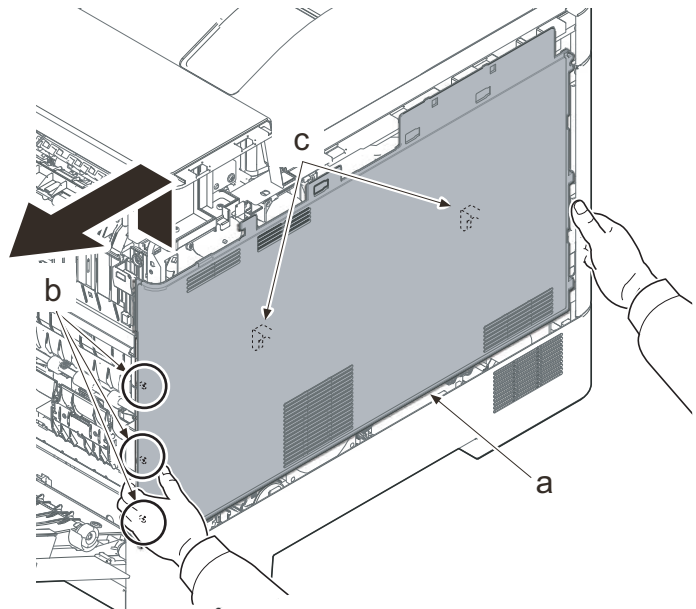


Figure 4-292

IMPORTANT

When reattaching the middle left cover (a), insert the lower rib into the lower left cover (b). And, slide it toward the machine front side to fasten three hooks (c) and four hooks (d), then lower the machine rear side of it to fasten three hooks (e) at the machine rear side.

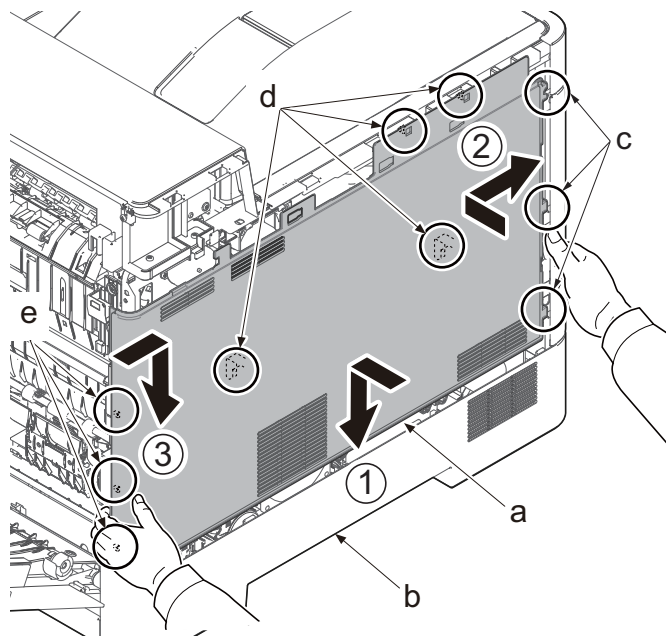
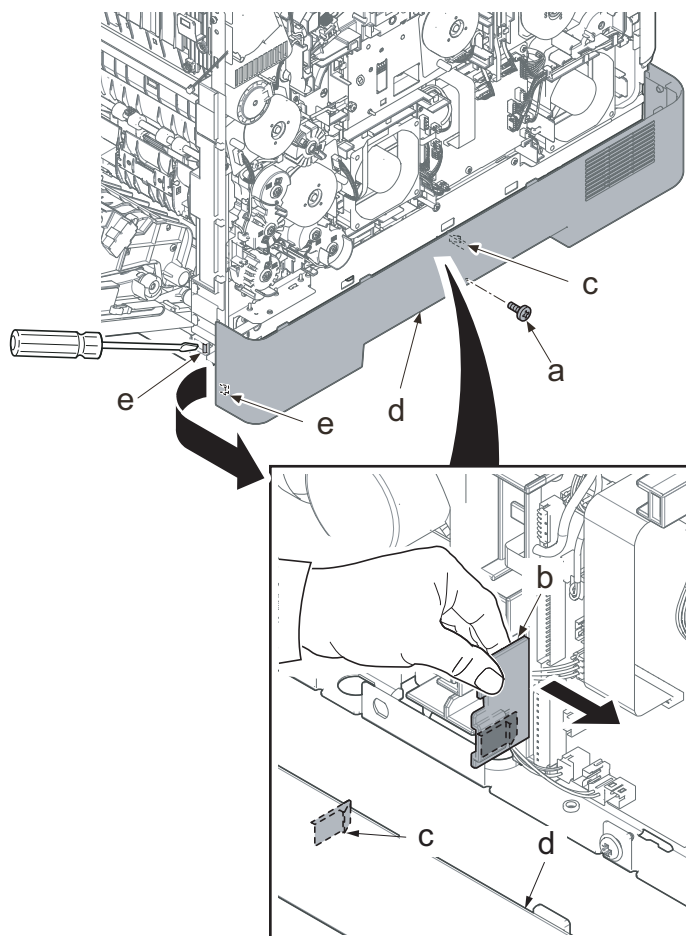


Figure 4-293

7. Remove the screw (a)(M3x8).
8. Pull the rib (b) toward you and release the center hook (c).
9. Detach the lower left cover (d).

**Figure 4-294**

IMPORTANT

When attaching the lower left cover (a), insert two bosses (b) at the machine front side into the holes and apply the center hook (c). Then, push it toward the machine rear side. After that, secure the screw.

Check if the hook (c) at center is surely fastened.

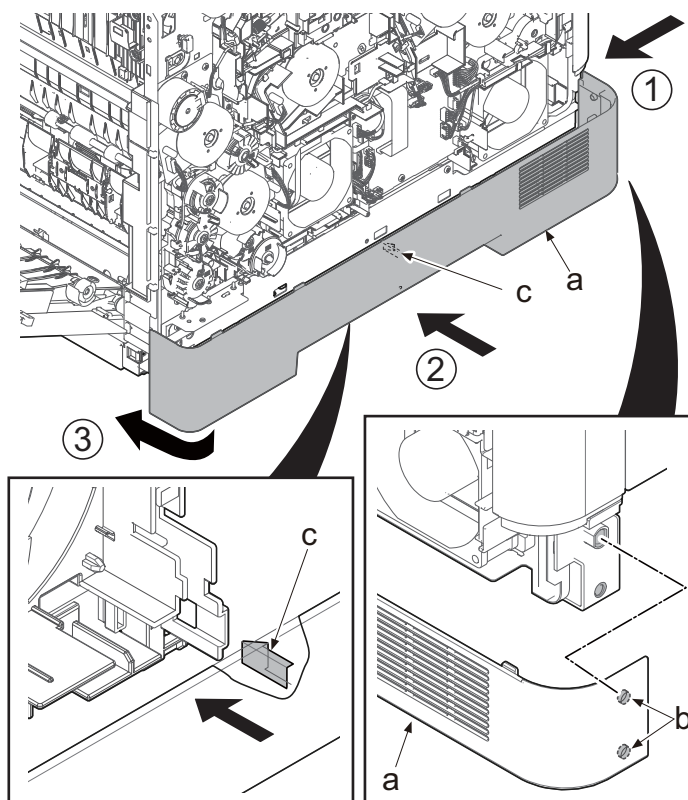


Figure 4-295

10. Open the top tray (b).

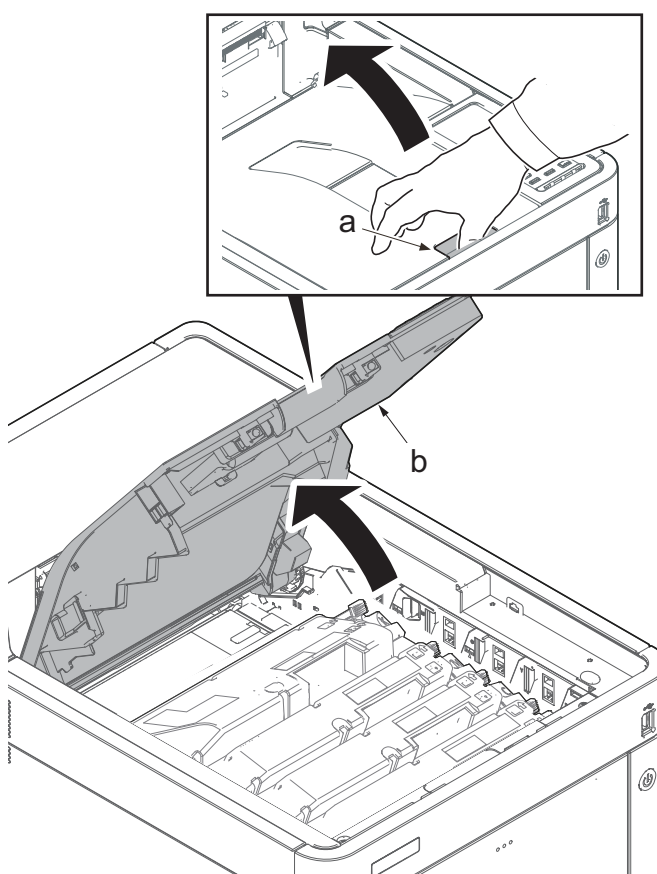
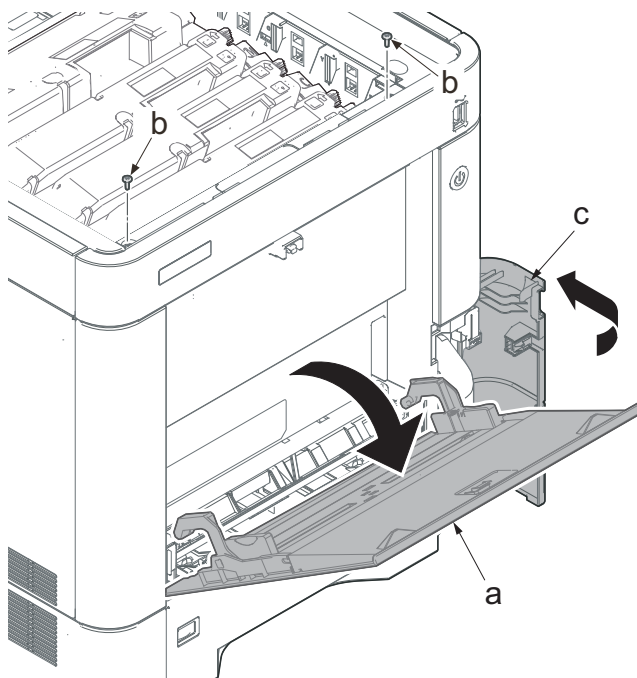
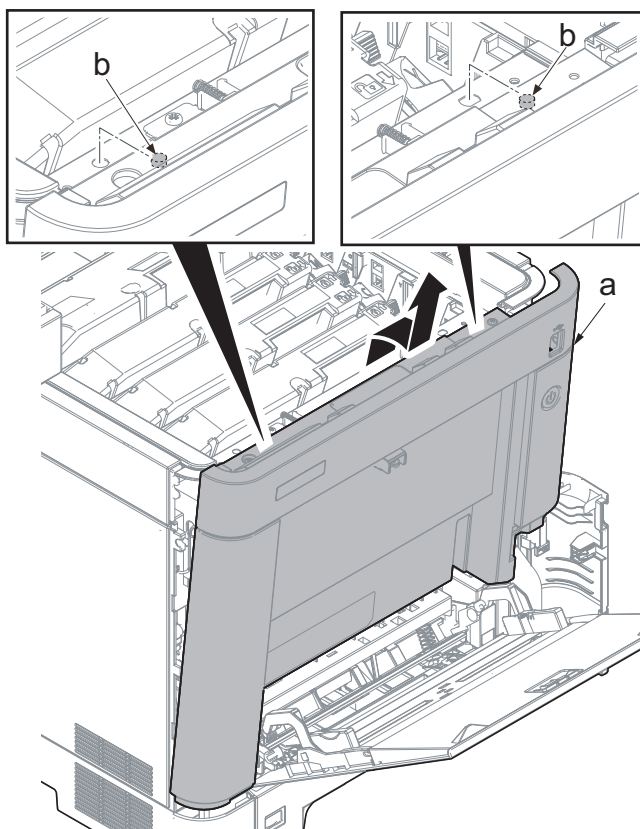


Figure 4-296

11. Open the MP tray (a).
12. Remove two screws (b)(M3x8).
13. Open the waste toner cover (c).

**Figure 4-297**

14. Slightly lift up the front cover (a) to release the boss (b).
15. Tilt the front cover (a) toward the machine front side.
16. Then, remove the front cover (a) by lifting it up.

**Figure 4-298**

IMPORTANT

Make sure not to touch the waste toner cover sensor (b) when reattaching the front cover (a). If the waste toner cover sensor (b) comes off, even if you close the waste toner cover, [cover open] will be displayed.

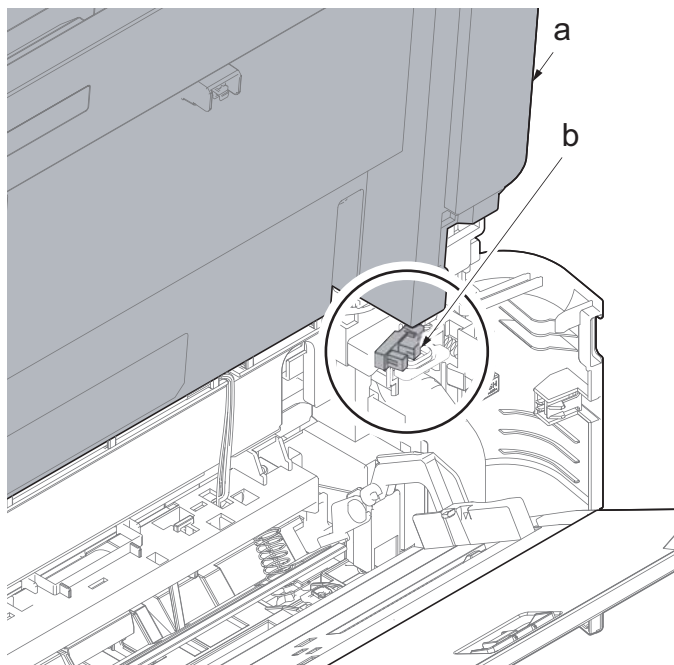


Figure 4-299

17. Pull out the cassette (a).
18. Open the MP tray (b) slightly.
19. Lift up the MP tray cover (c) and release two hooks (d).

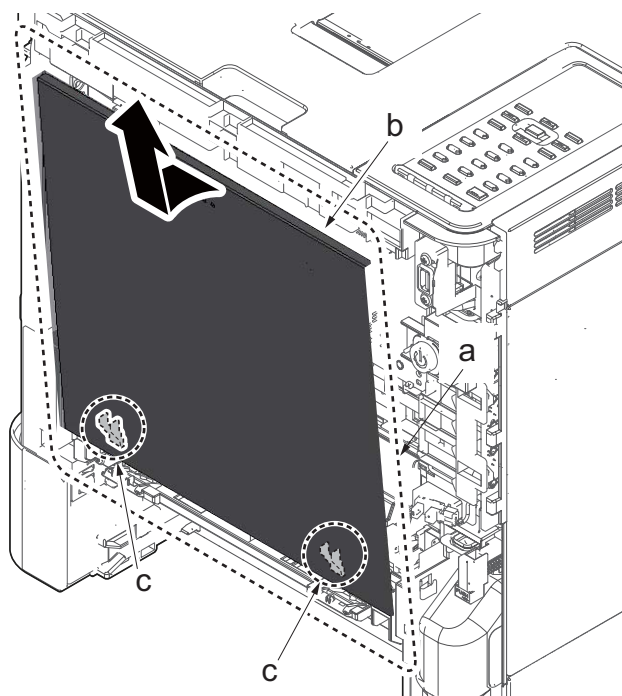
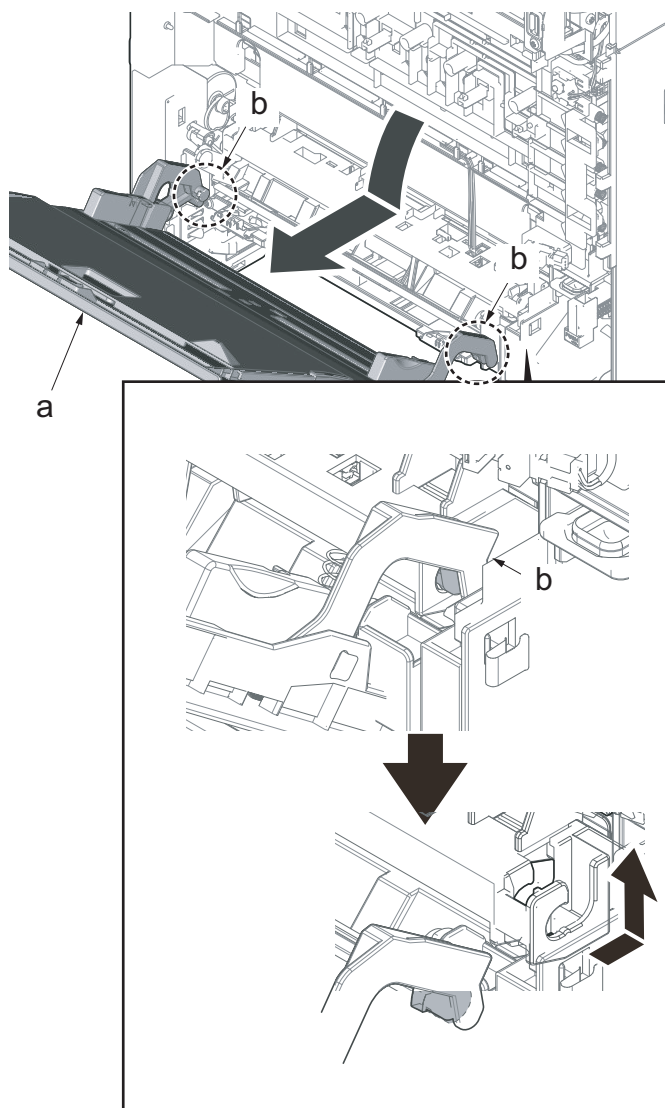
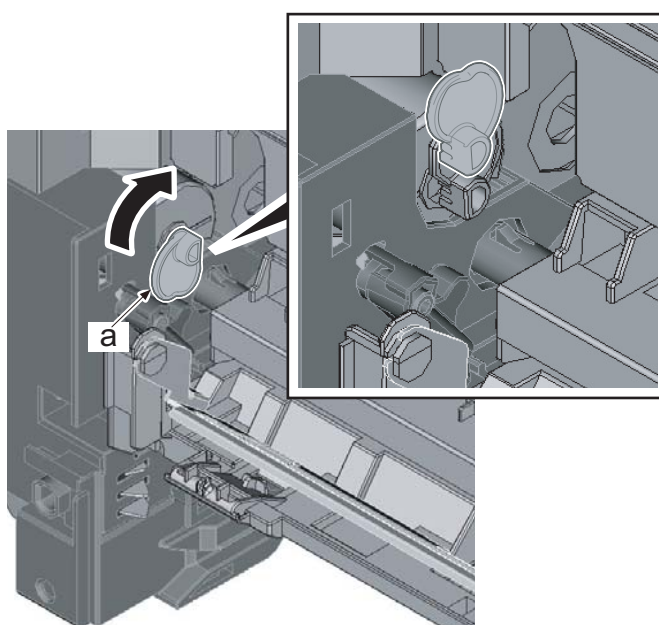


Figure 4-300

20. Fully open the MP tray (a).
21. Slide the arm (b) to the machine rear side and lift it up to remove.

**Figure 4-301**

22. Rotate the cam (a) inside the main unit to the position in the figure.

**Figure 4-302**

23. Disconnect eight connectors (b) from the engine relay PWB (a).

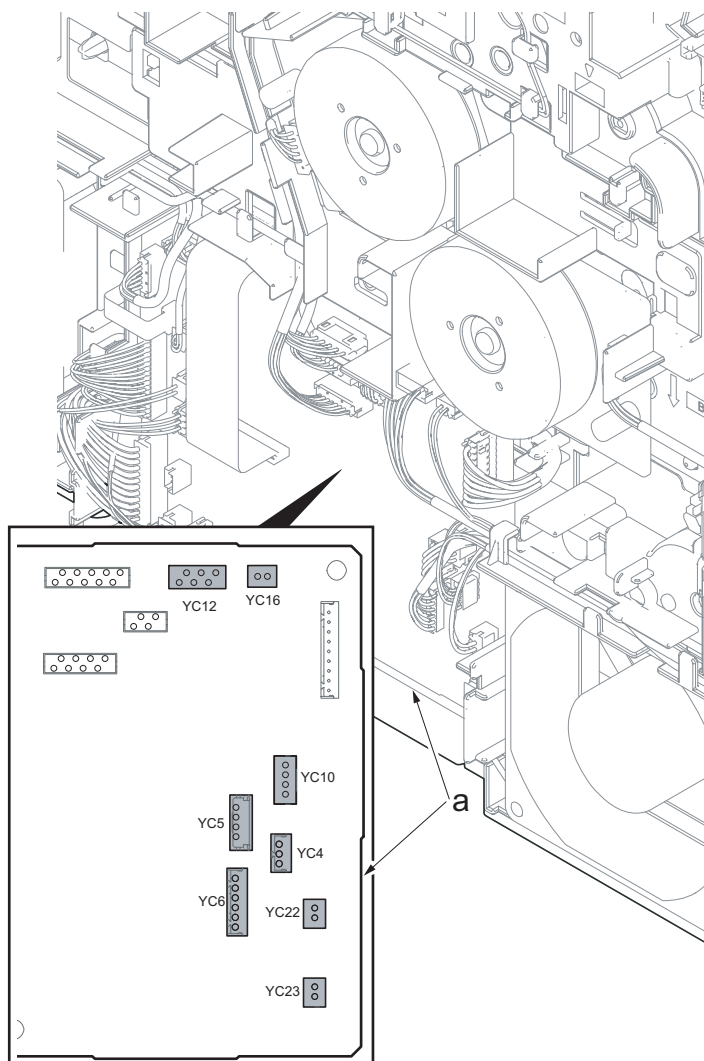


Figure 4-303

24. Release the wire (b) from five hooks (a).

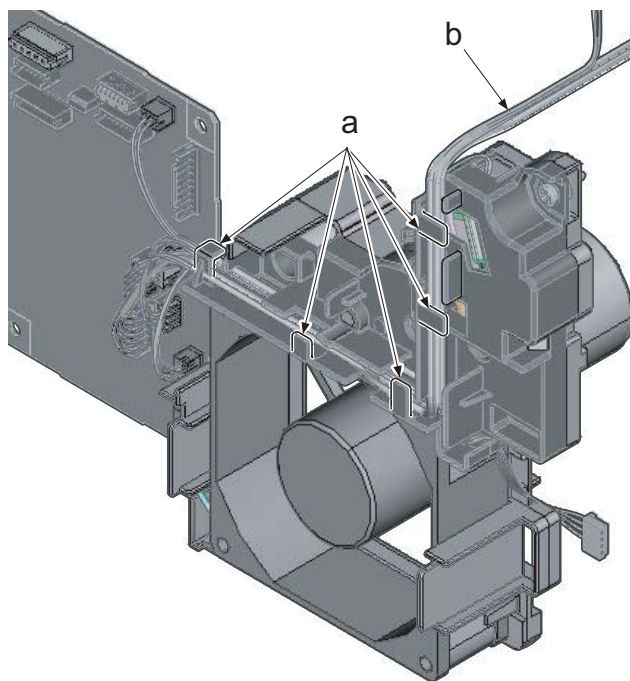


Figure 4-304

25. Remove two screws (a)(M3x12).
26. Lift up the MP paper feed drive unit (b) to release the lower two hooks (c).
27. Detach the MP paper feed drive unit (b).
28. Check the MP paper feed drive unit and clean or replace it if necessary.
29. Reattach the parts in the original position.

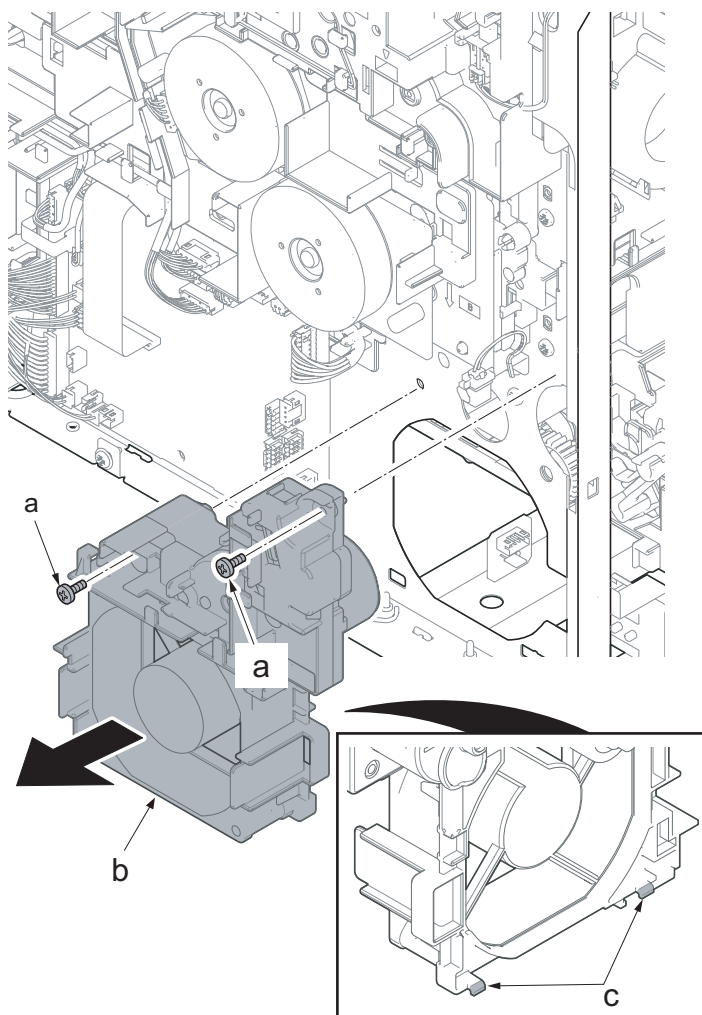


Figure 4-305

(6-4) Detaching and reattaching the toner motor unit

Procedures

1. Open the rear cover (a).

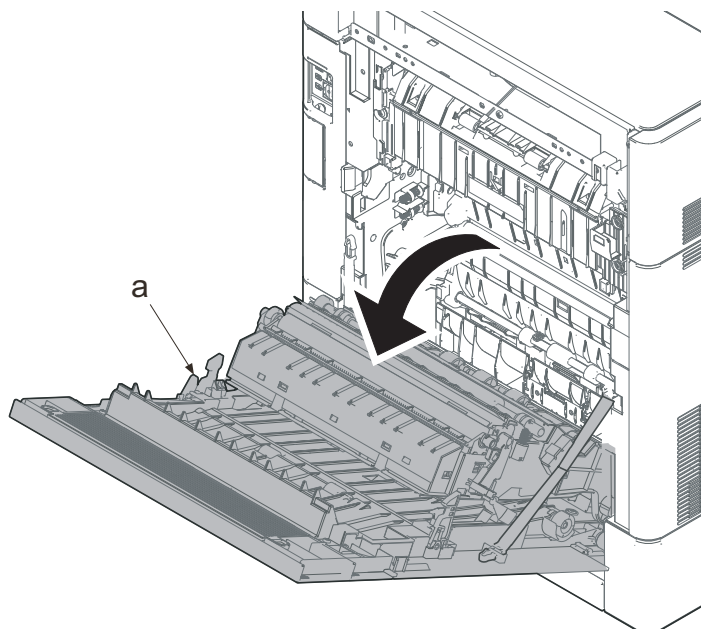


Figure 4-306

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

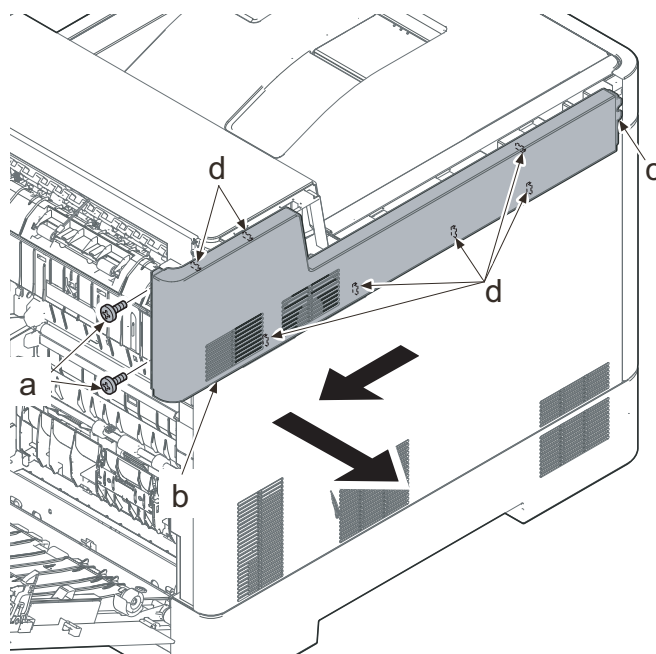


Figure 4-307

4. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
5. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
6. Detach the middle left cover (a).

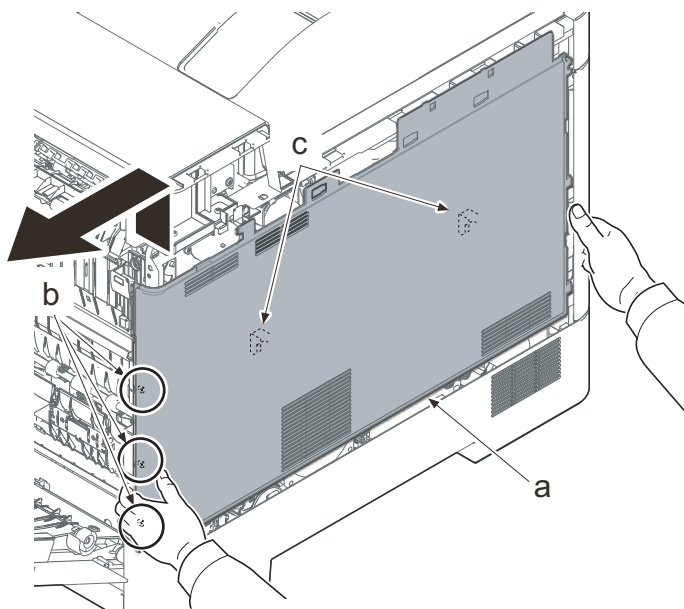


Figure 4-308

IMPORTANT

When reattaching the middle left cover (a), insert the lower rib into the lower left cover (b). And, slide it toward the machine front side to fasten three hooks (c) and four hooks (d), then lower the machine rear side of it to fasten three hooks (e) at the machine rear side.

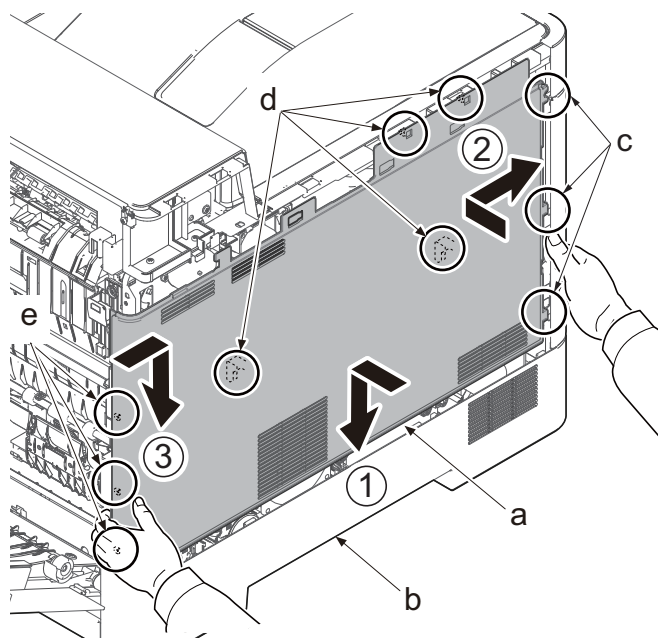
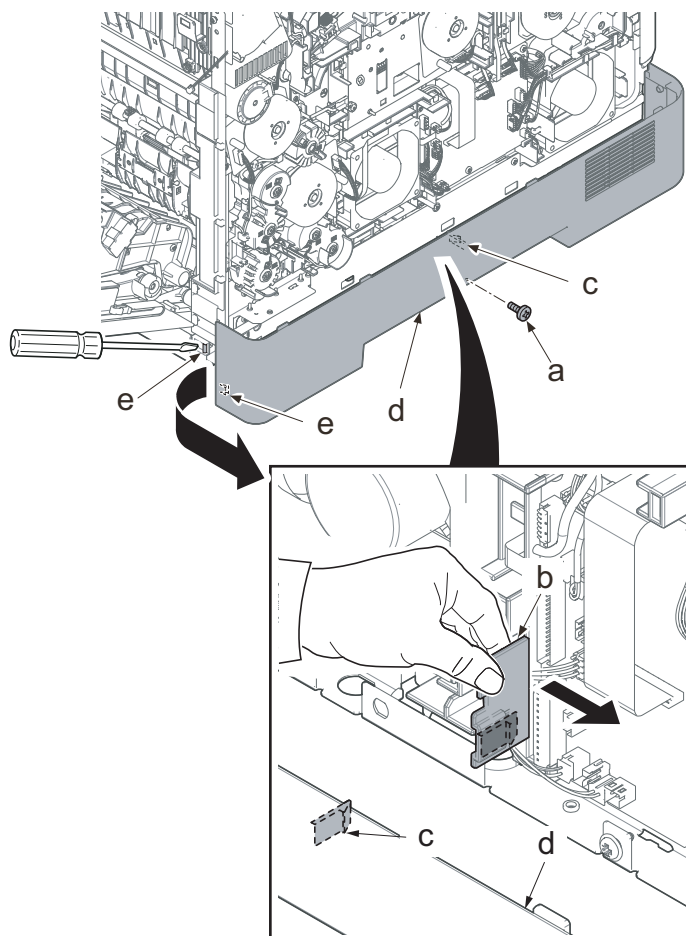


Figure 4-309

7. Remove the screw (a)(M3x8).
8. Pull the rib (b) toward you and release the center hook (c).
9. Detach the lower left cover (d).

**Figure 4-310**

IMPORTANT

When attaching the lower left cover (a), insert two bosses (b) at the machine front side into the holes and apply the center hook (c). Then, push it toward the machine rear side. After that, secure the screw.

Check if the hook (c) at center is surely fastened.

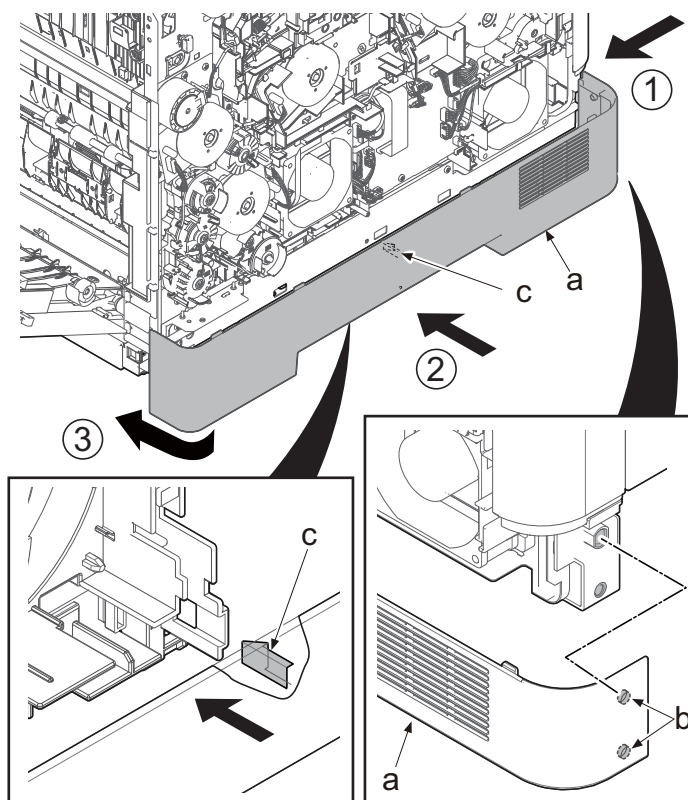


Figure 4-311

10. Detach the main drive motor unit (a). (1-4-158 Refer to page 1-6-58)

11. Disconnect the connector (b) of the tray switch (a).
12. Release the wires of the eject motor (d) and the fuser motor (e) from three hooks (c).
13. Disconnect the connector (g) of the container fan motor (f).

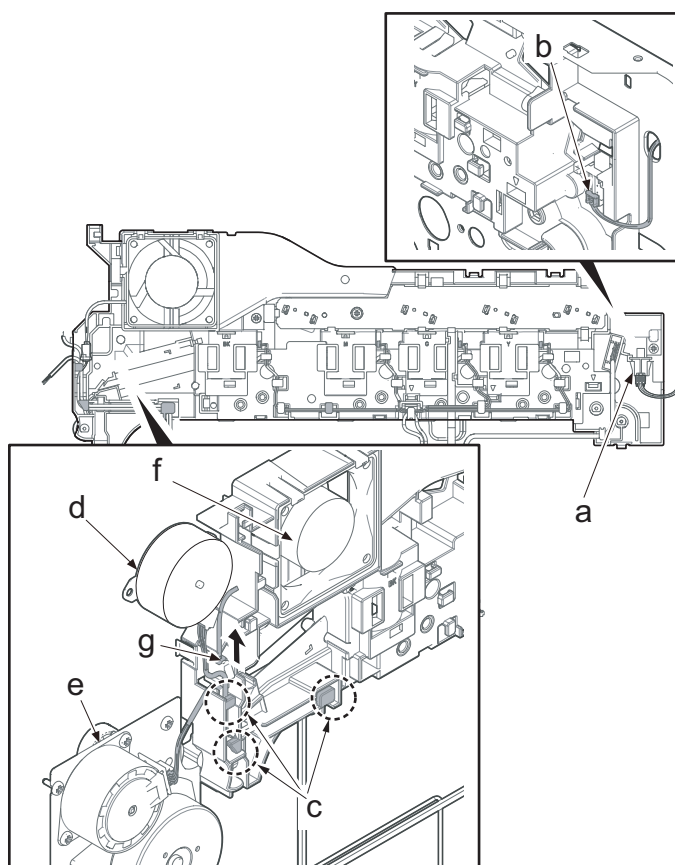


Figure 4-312

14. Release the wire from three hooks (a) of the toner motor unit (a).

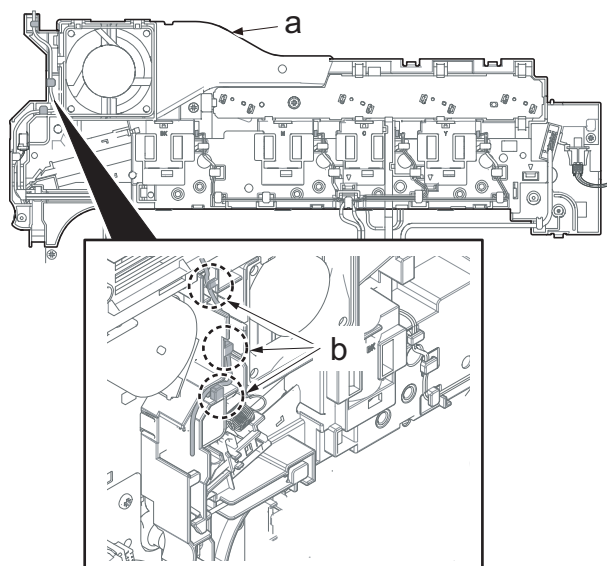


Figure 4-313

15. Release the hook (b) of the cleaner spring (a).

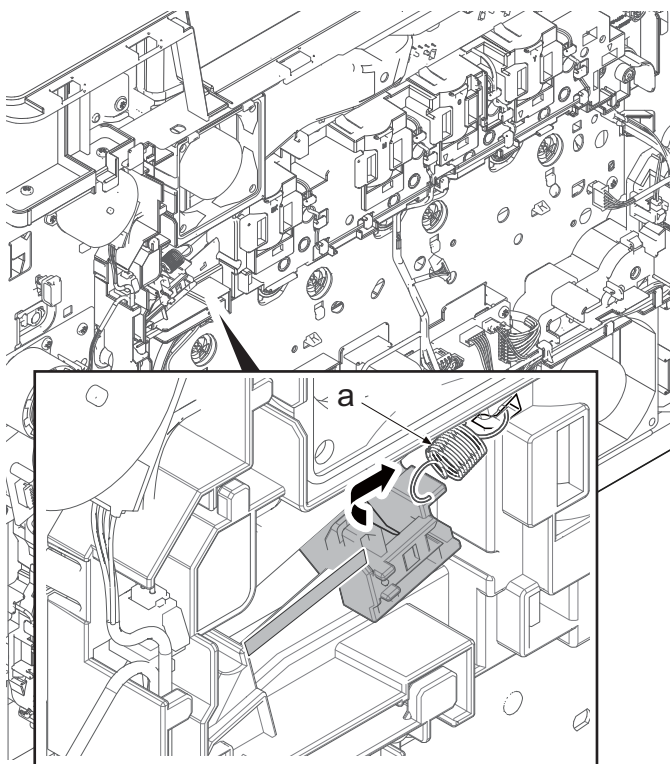


Figure 4-314

16. Open the top tray (b).

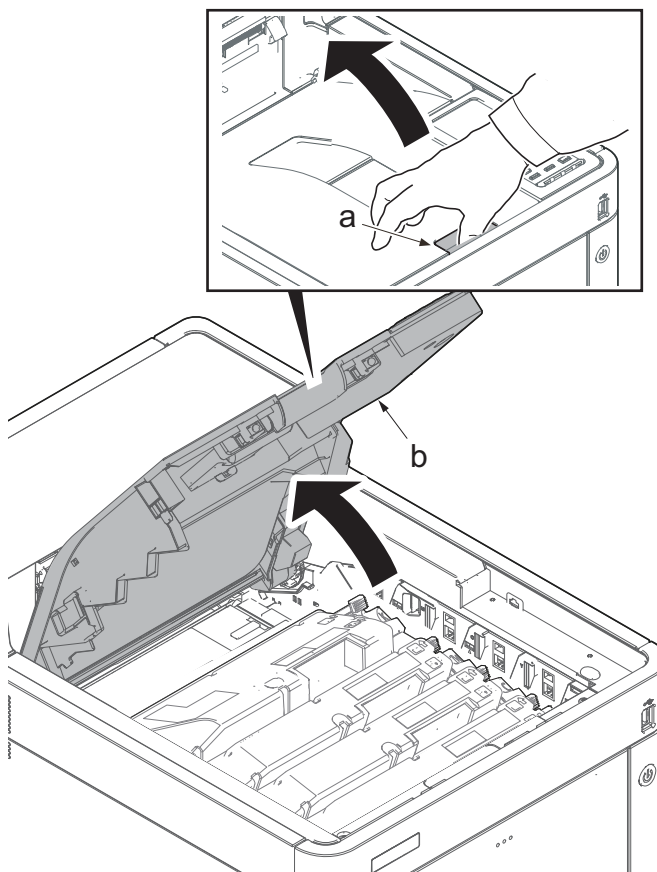


Figure 4-315

17. Relocate the cleaner slider (a) to the center of the rail (b).
18. Insert a flat-blade screwdriver (c) from the square hole.
19. Lift up the hook (d) to release.
20. Remove the cleaner slider (e) while rotating it.

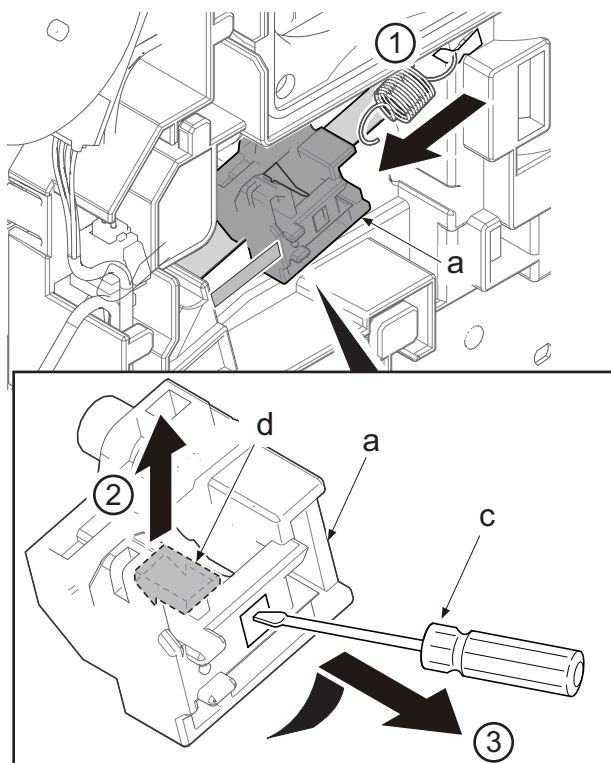


Figure 4-316

21. Remove the cleaner film (b) through the gap of the ribs (a).

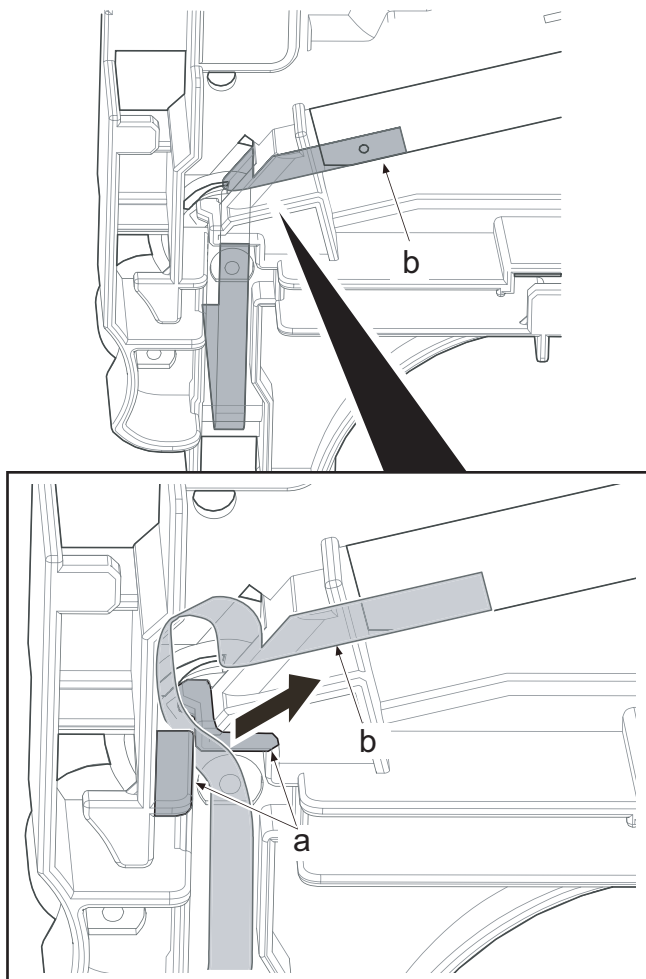


Figure 4-317

22. Remove four screws (b)(M3x8) from the toner motor unit (a).

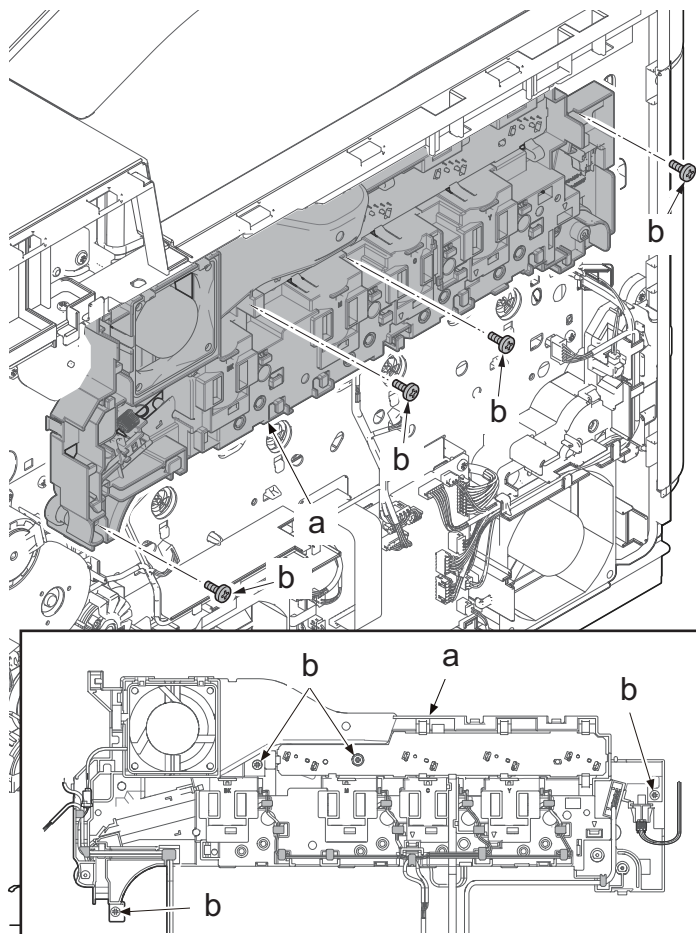
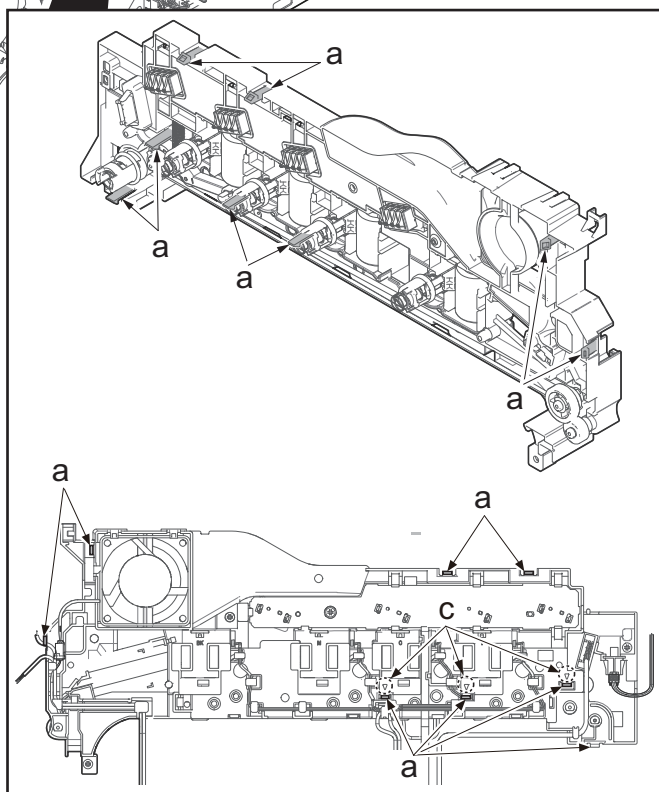
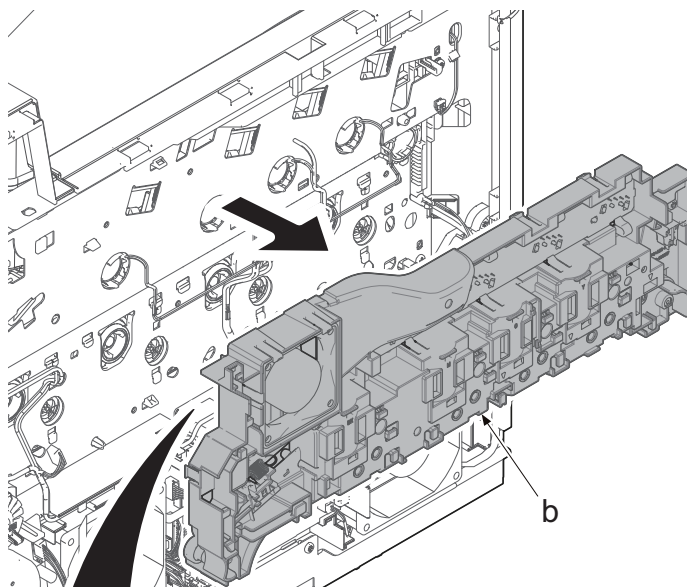


Figure 4-318

23. Release eight hooks (a).

24. Detach the toner motor unit (b).

*: Check the triangle engravings (c) as for the position of the three inside hooks.



(6-5) Detaching and reattaching the toner motor

Procedures

1. Remove the tension spring (a).
- *: Take care not to lose the spring.

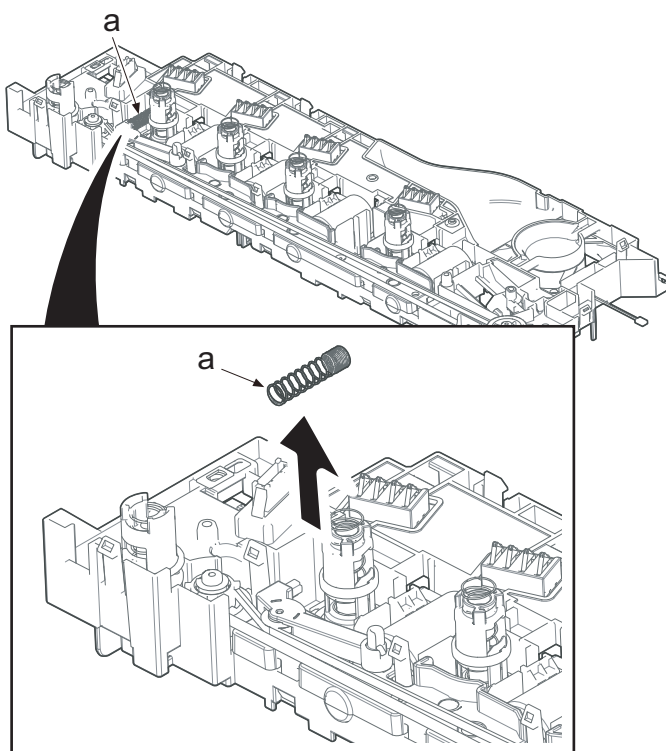


Figure 4-320

2. Release the tension arm (a) to loosen the tension..
3. Remove the belt (b).

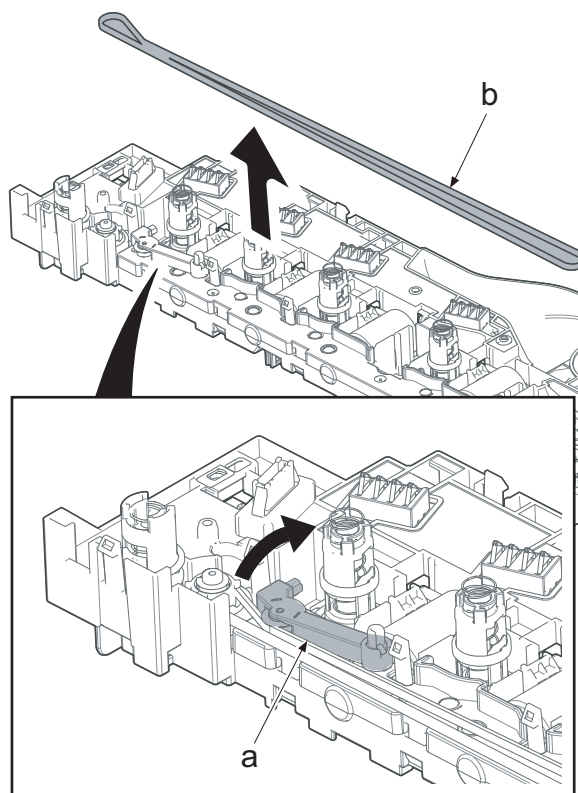
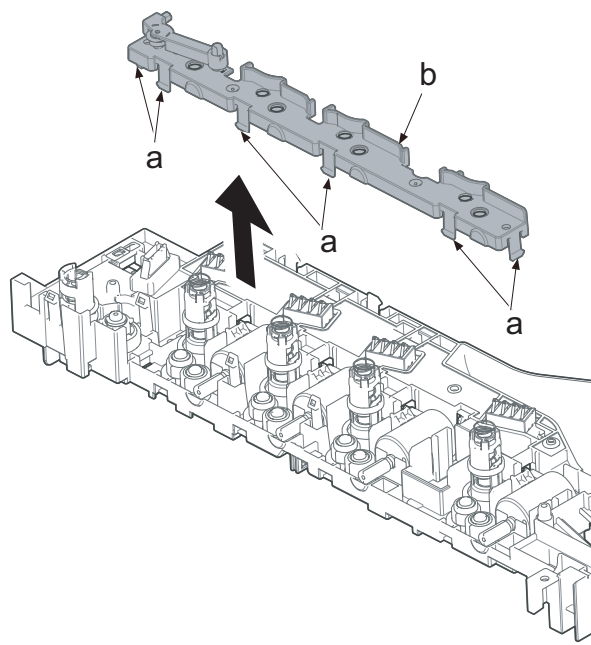
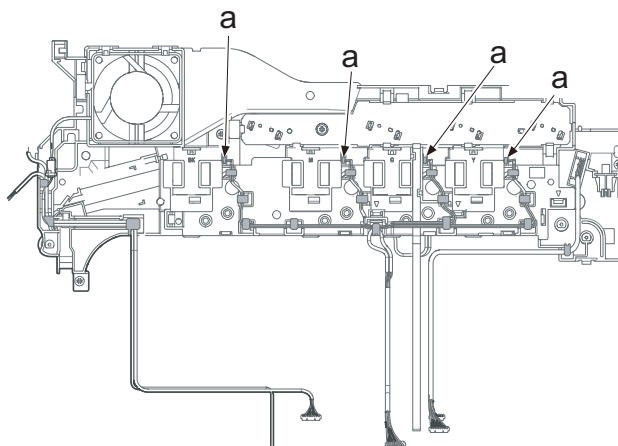


Figure 4-321

4. Release six hooks (a).
5. Remove the toner motor cover (b).

**Figure 4-322**

6. Disconnect the connector (a) of each toner motor.

**Figure 4-323**

7. Release each set of two hooks (a).
8. Remove four toner motors (b).

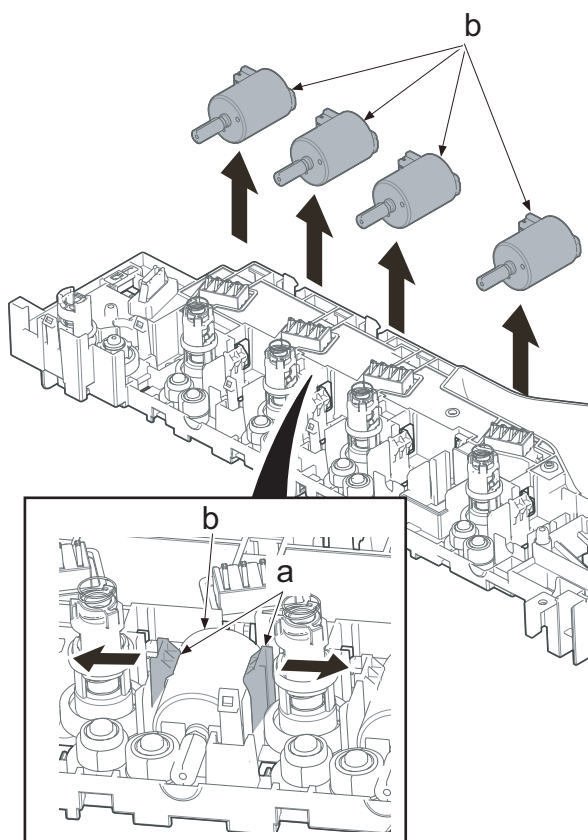


Figure 4-324

IMPORTANT

Apply one drop of grease (d)(EM-50LP) on the gear surface when attaching the new motor. Insert the boss (c) to the positioning hole (b) of the toner motor (a) and reattach it.

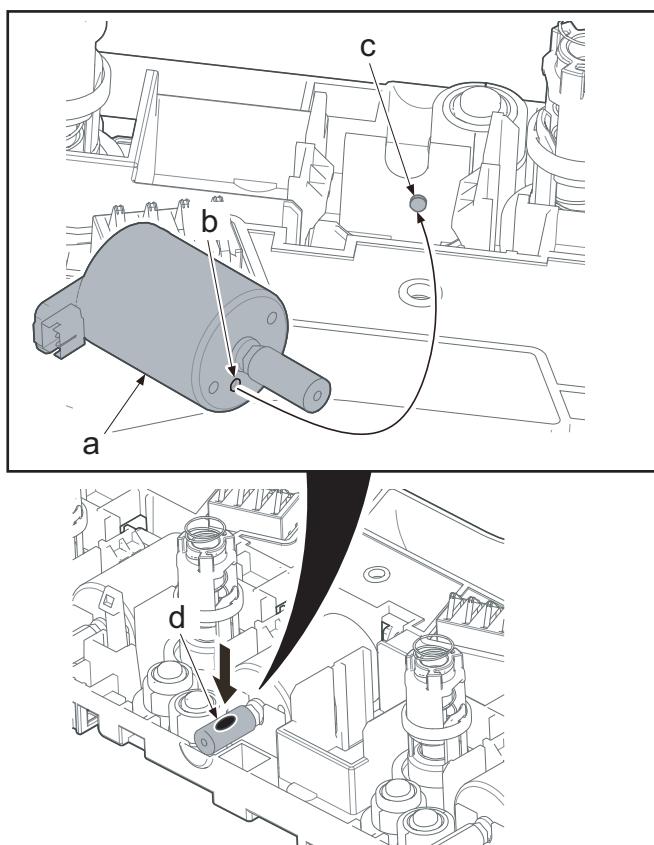


Figure 4-325

IMPORTANT

Reattach the drive cam (b) if coming off when reattaching the toner motor unit (a).
Check if the drive cam (b) gear is meshed with the lock lever (c) gear when reattaching the toner motor unit (a).

*: Drive can not be released without the drive cam.

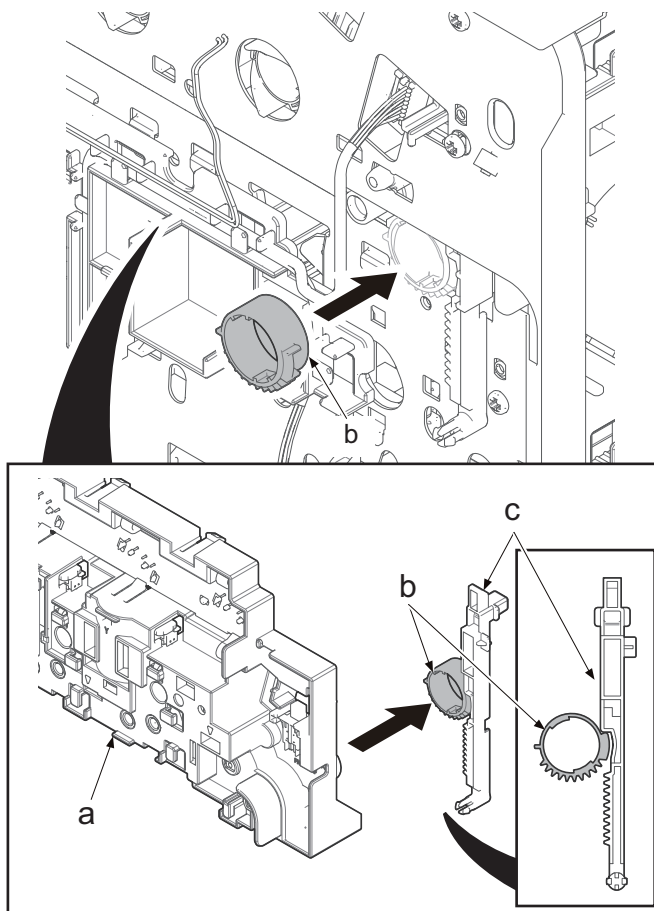


Figure 4-326

(6-6) Detaching and reattaching the lift motor

Procedures

1. Open the rear cover (a).

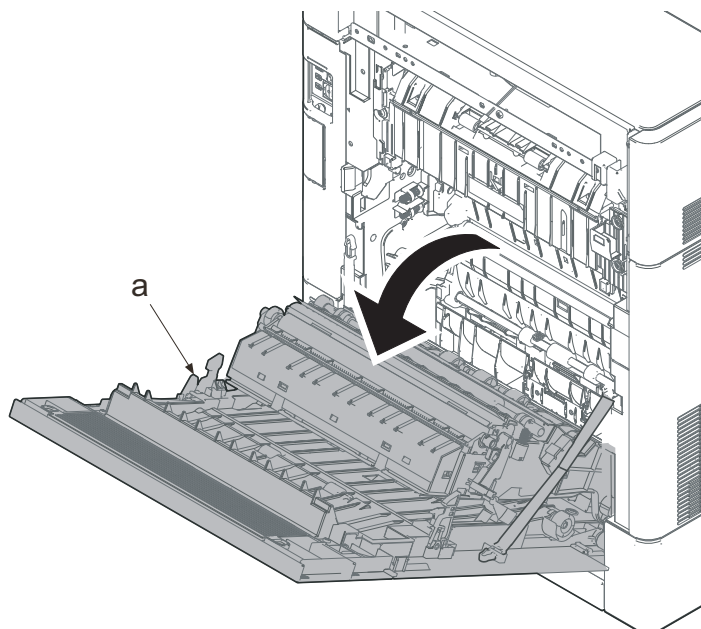


Figure 4-327

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

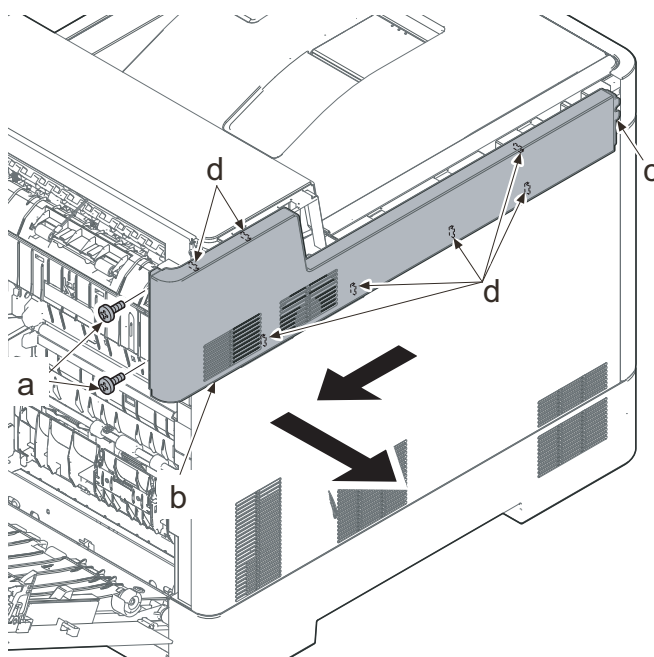


Figure 4-328

4. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
5. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
6. Detach the middle left cover (a).

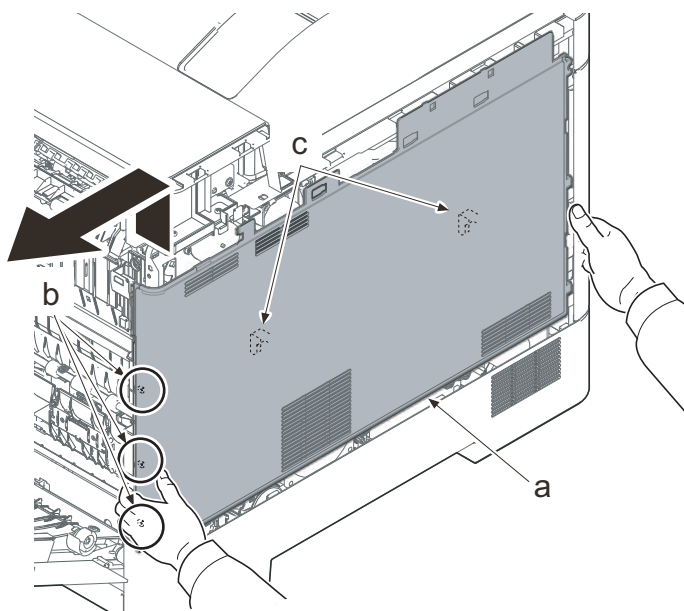
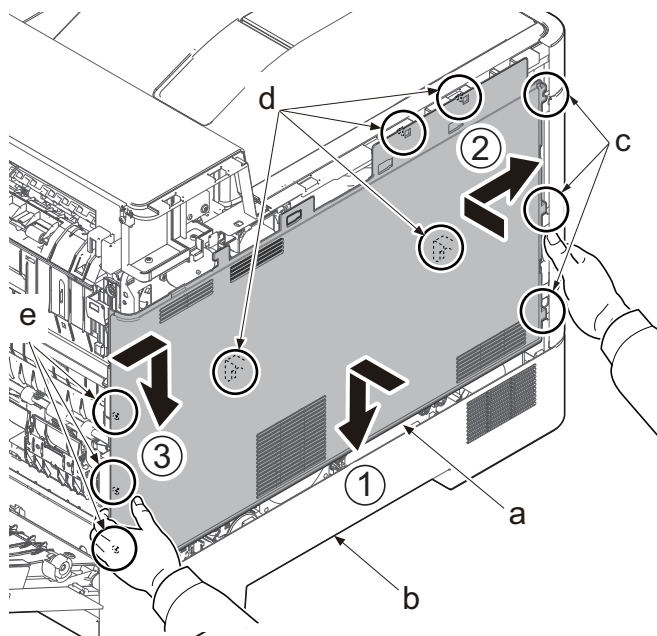


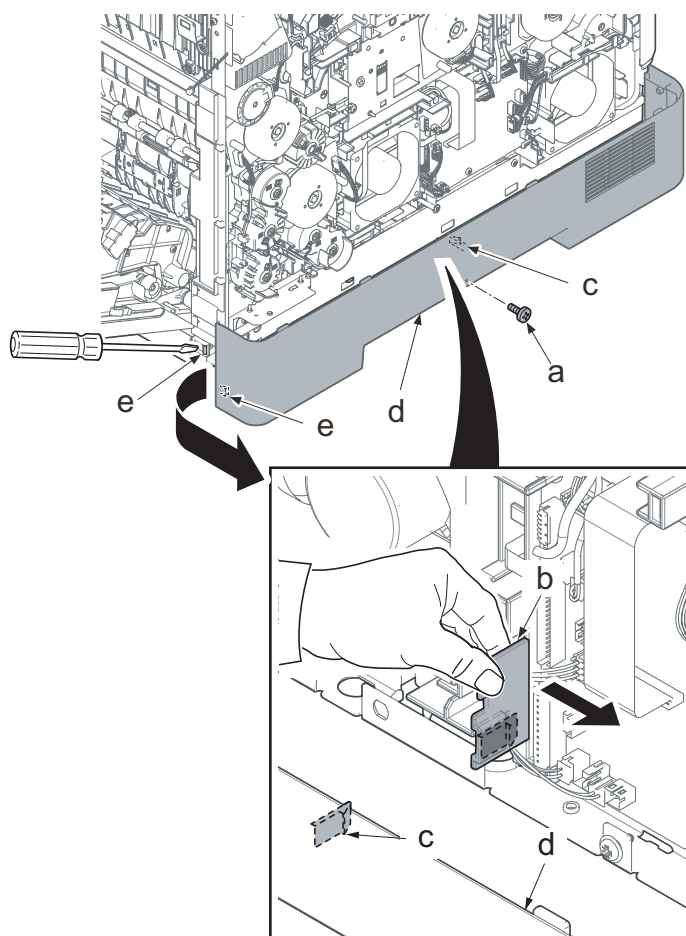
Figure 4-329

IMPORTANT

When reattaching the middle left cover (a), insert the lower rib into the lower left cover (b). And, slide it toward the machine front side to fasten three hooks (c) and four hooks (d), then lower the machine rear side of it to fasten three hooks (e) at the machine rear side.

**Figure 4-330**

7. Remove the screw (a)(M3x8).
8. Pull the rib (b) toward you and release the center hook (c).
9. Detach the lower left cover (d).

**Figure 4-331**

IMPORTANT

When attaching the lower left cover (a), insert two bosses (b) at the machine front side into the holes and apply the center hook (c). Then, push it toward the machine rear side. After that, secure the screw.

Check if the hook (c) at center is surely fastened.

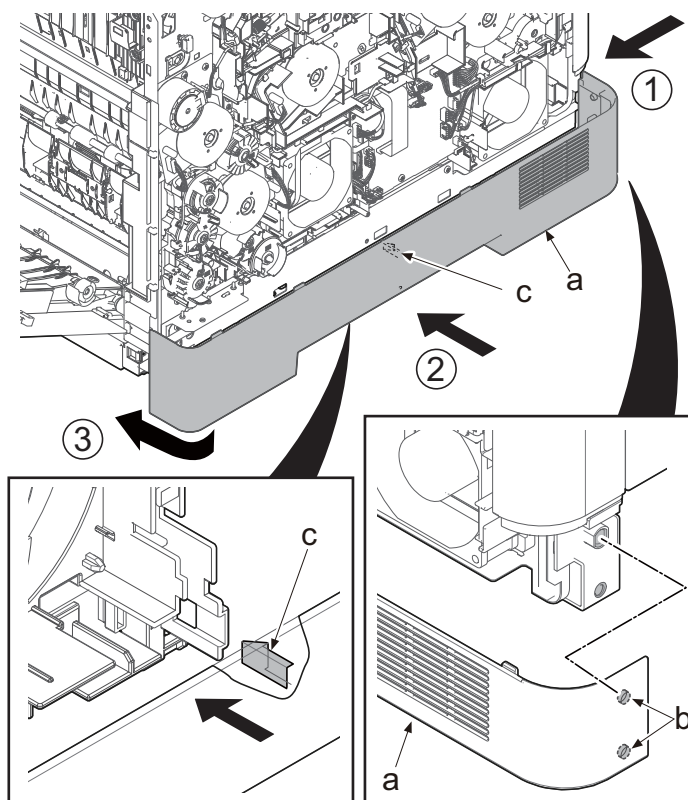


Figure 4-332

10. Disconnect all the connectors and FFCs from the engine relay PWB (a).
 30 ppm model: 23 connectors
 35/40 ppm model: 24 connectors
 (YC27: used in only 35/40 ppm model)

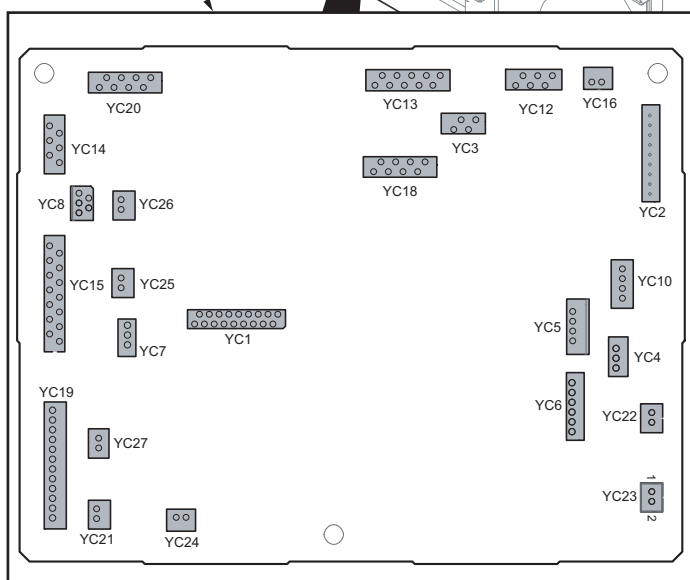
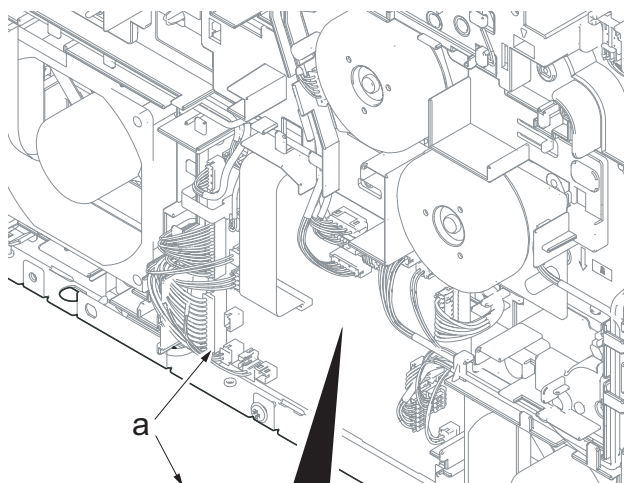


Figure 4-333

11. Remove three screws (a)(M3x8).
 12. Detach the engine relay PWB (b).

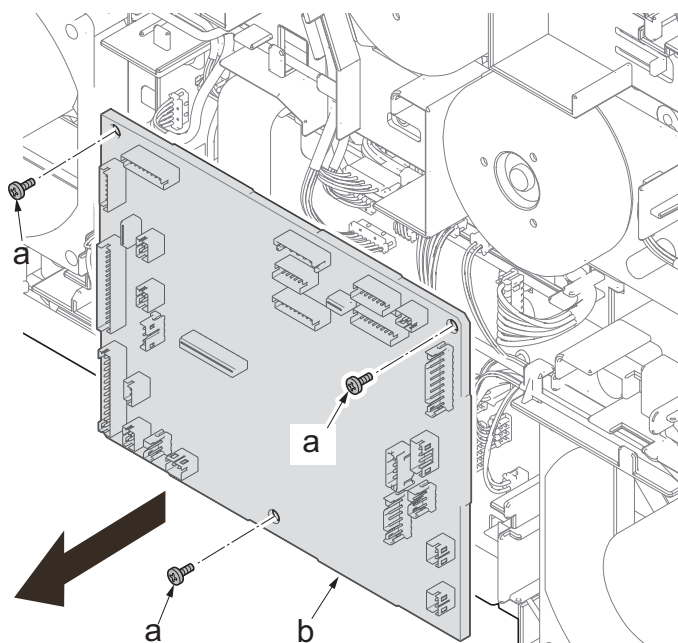


Figure 4-334

13. Disconnect the connector (b) of the lift motor (a).
14. Release the wire from ten hooks (c).

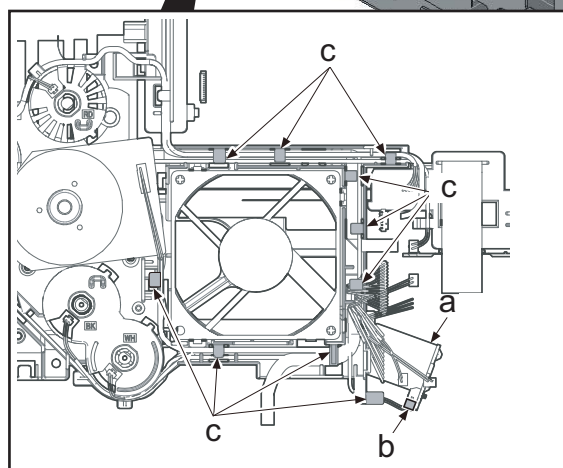
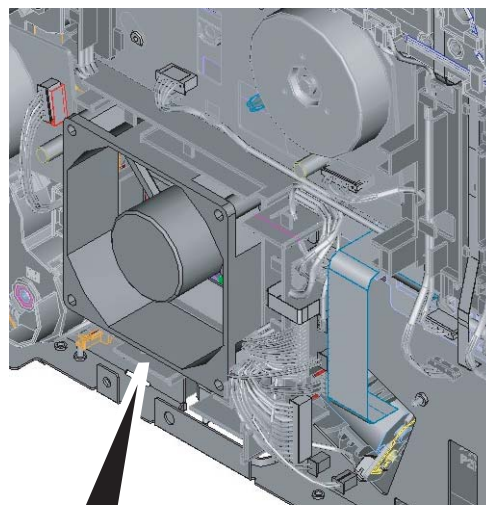


Figure 4-335

15. Release four hooks (a).
16. Remove the rear left duct (b).

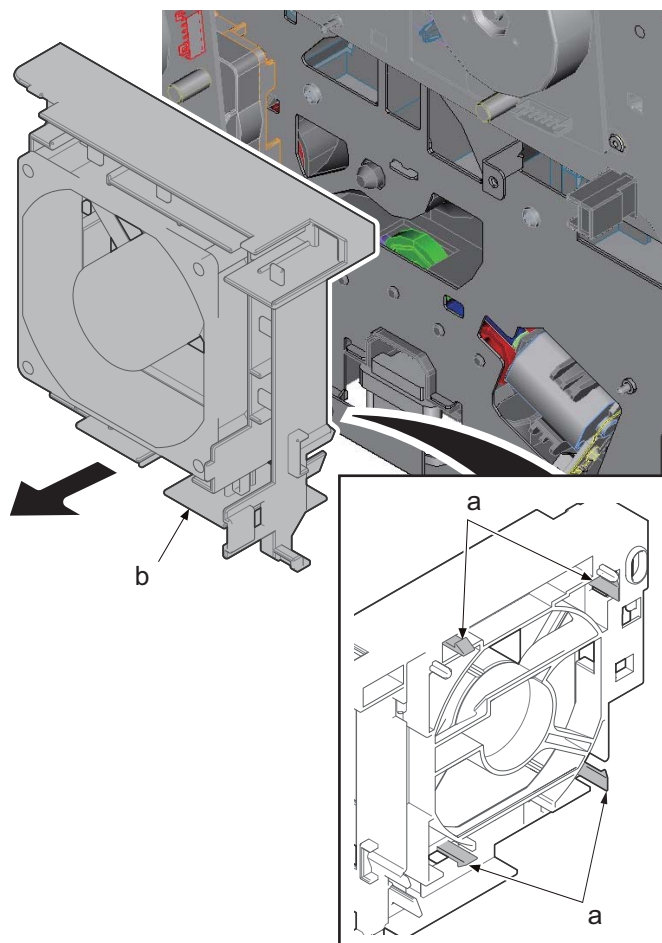


Figure 4-336

17. Release two hooks (a).
18. Remove the lift motor (b).
19. Check the lift motor and clean or replace it if necessary.
20. Reattach the parts in the original position.

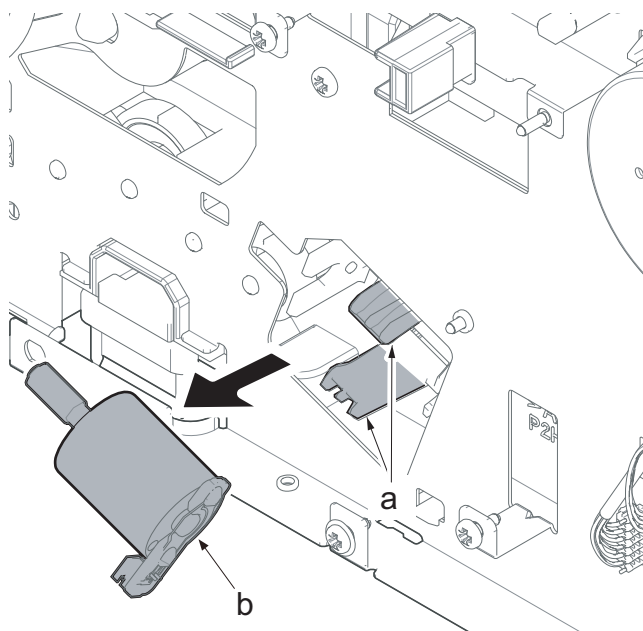
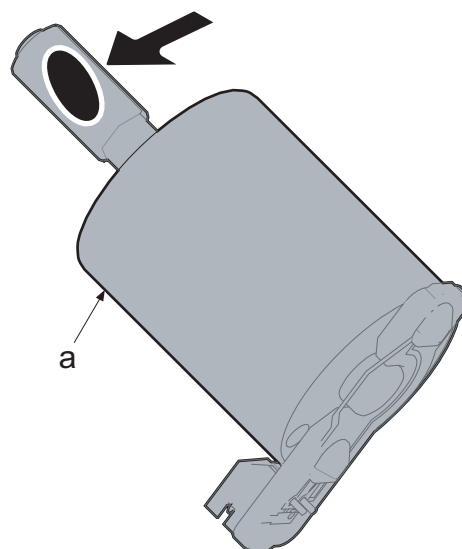


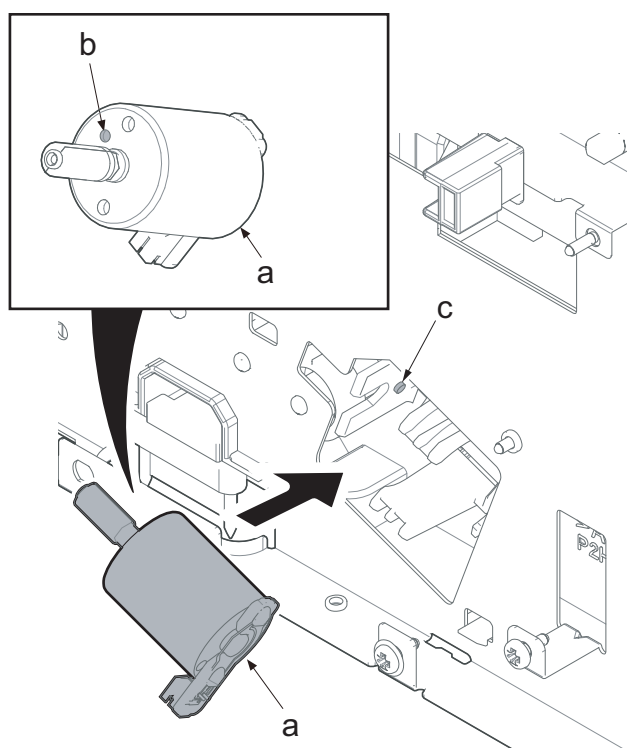
Figure 4-337

IMPORTANT

Apply one drop of grease (EM-50LP) on the gear surface when attaching the new motor (a).

**Figure 4-338**

Insert the boss (c) to the positioning hole (b) of the lift motor (a) and reattach it.

**Figure 4-339**

Attach the lift motor (a) after confirming it is not run over the rib (b).

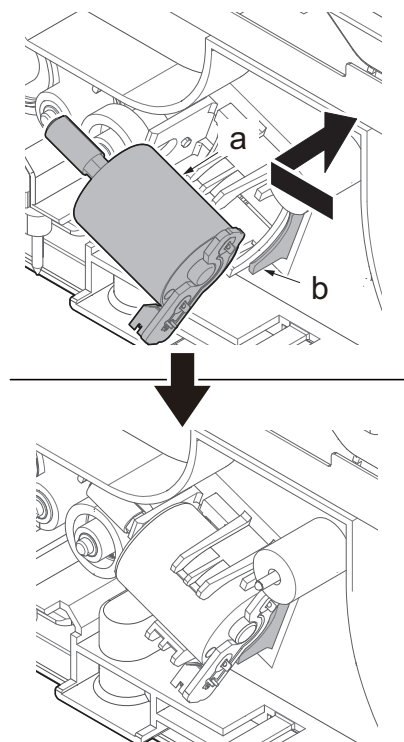


Figure 4-340

(7) Operation panel

(7-1) Detaching and reattaching the language sheet

30 ppm models

Procedures

1. Insert a flat-blade screwdriver (a) into the square hole (c) of the panel fixing plate (b) and remove it by lifting it up.

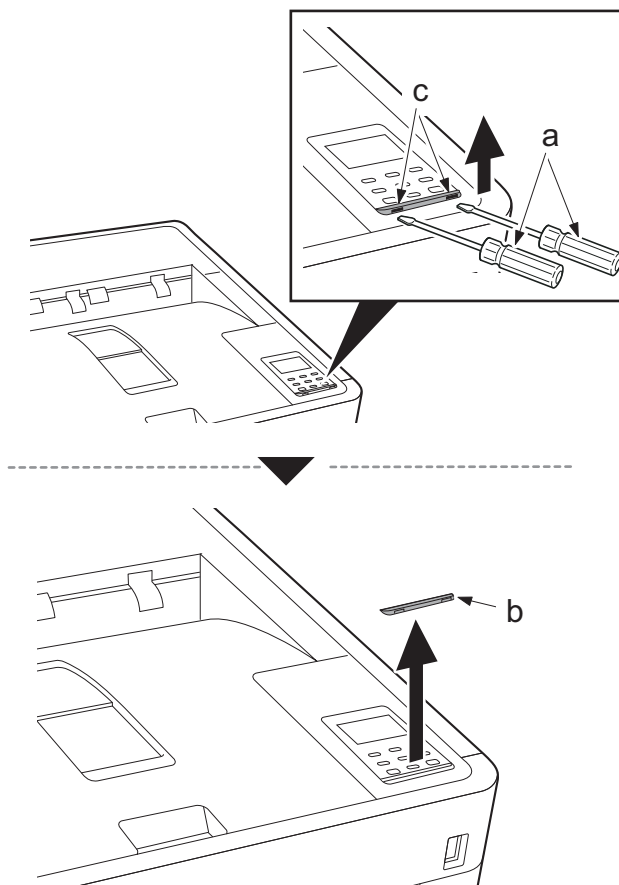


Figure 4-341

2. Remove the operation panel cover (a).
3. Replace the operation panel sheet (b) with the ones in the supported language.
4. Reattach the parts in the original position.

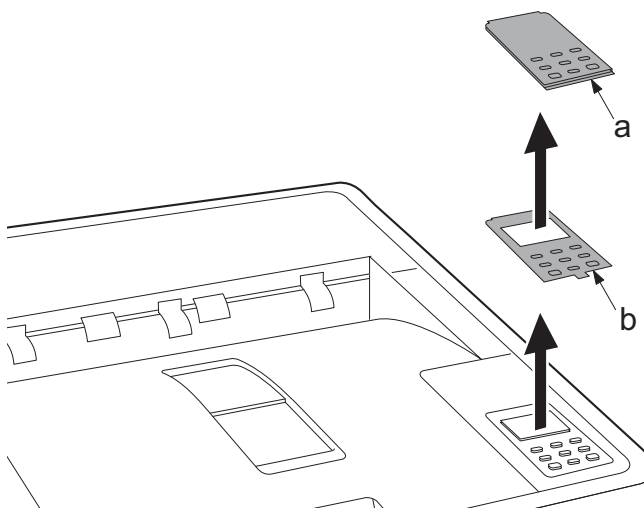
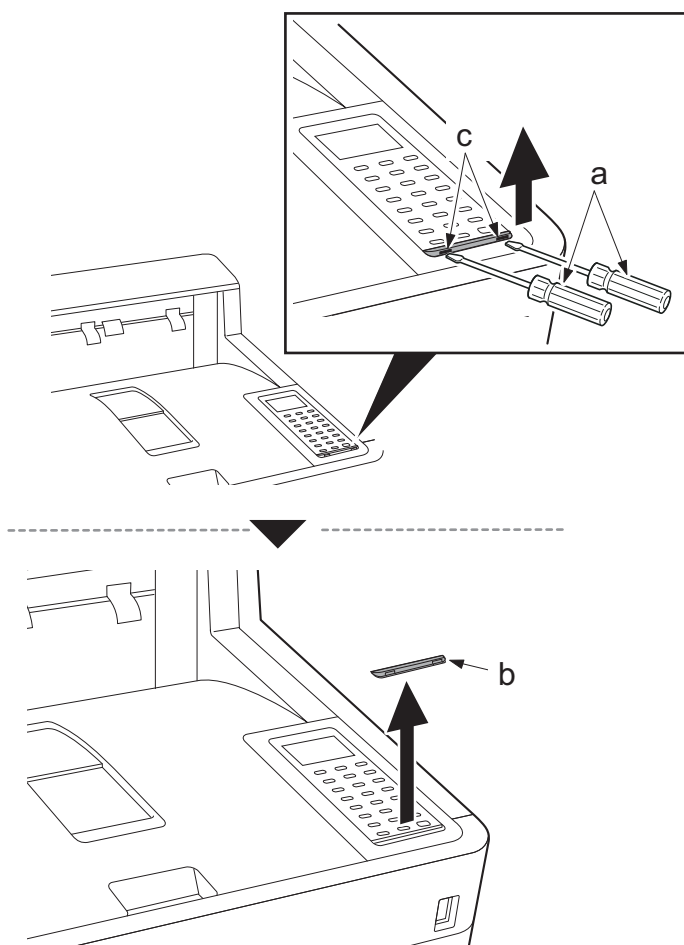


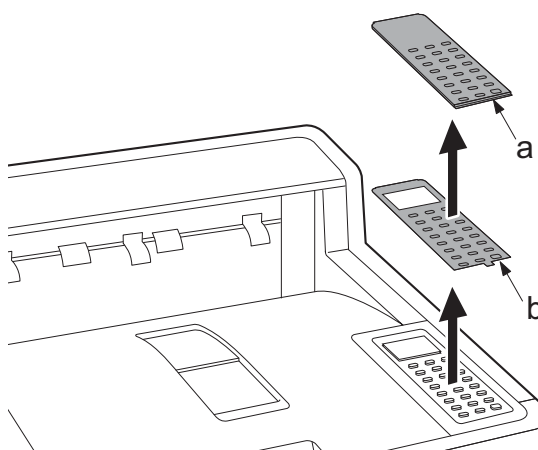
Figure 4-342

35 ppm models**Procedures**

1. Insert a flat-blade screwdriver (a) into the square hole (c) of the panel fixing plate (b) and remove it by lifting it up.

**Figure 4-343**

2. Remove the operation panel cover (a).
3. Replace the operation panel sheet (b) with the ones in the supported language.
4. Reattach the parts in the original position.

**Figure 4-344**

(8) Fan motor

(8-1) Attaching direction

IMPORTANT

When reattaching the fan motor, be aware of the attachment direction (in-take/exhaust).

30 ppm models

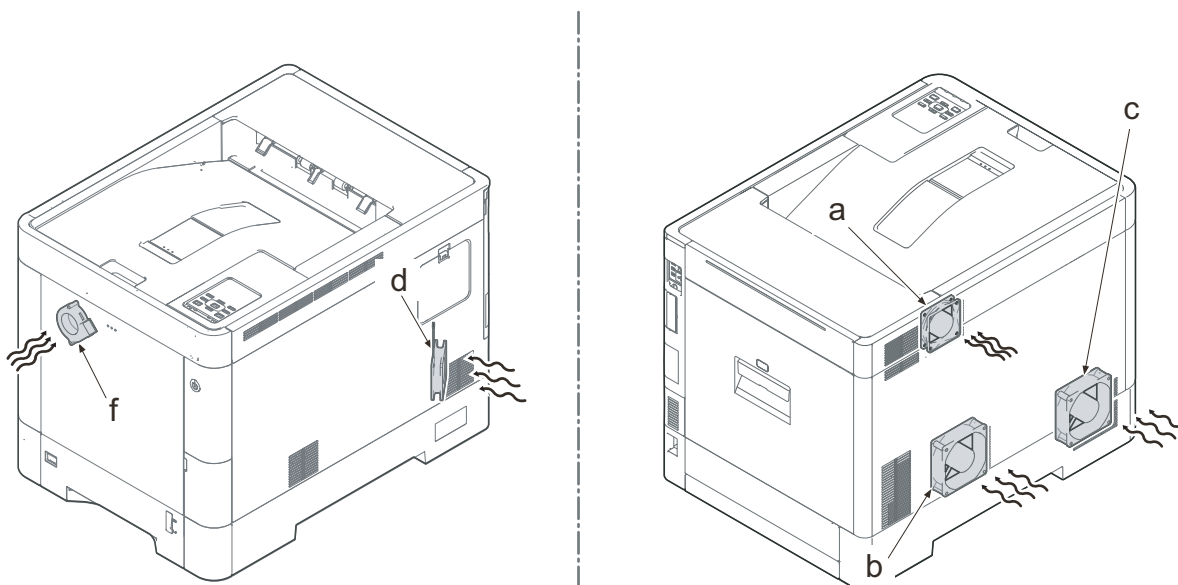


Figure 4-345

35/40 ppm models

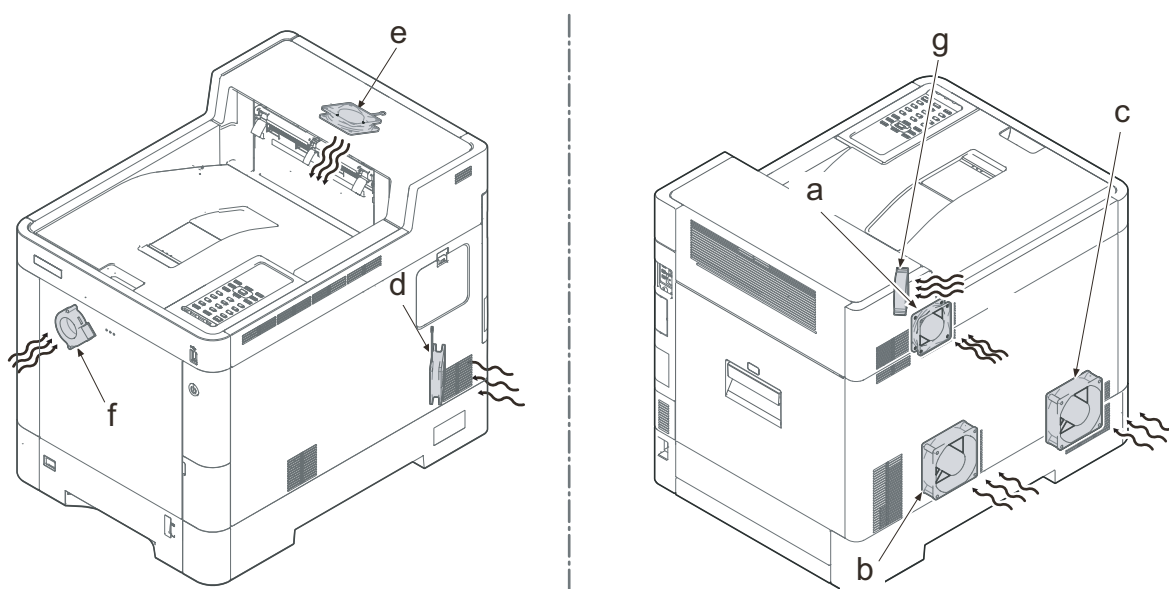


Figure 4-346

- a. Container fan motor: in-take (rating label: inside)
- b. LSU fan motor 1: in-take (rating label: inside)
- c. LSU fan motor 2: in-take (rating label: inside)
- d. Power source fan motor: in-take (rating label: inside)
- e. Eject fan motor (35/40 ppm models only): in-take (rating label: inside)
- f. Transfer fan motor: in-take (rating label: inside)
- g. Duplex fan motor (40 ppm models only): in-take (rating label: inside)

4-7 Disassembly and reassembly procedures of the paper feeder (option)

(1) Detaching and reattaching the retard roller unit and feed roller unit

(1-1) Detaching and reattaching the retard roller unit

<Procedure>

1. Open the PF rear cover (a).

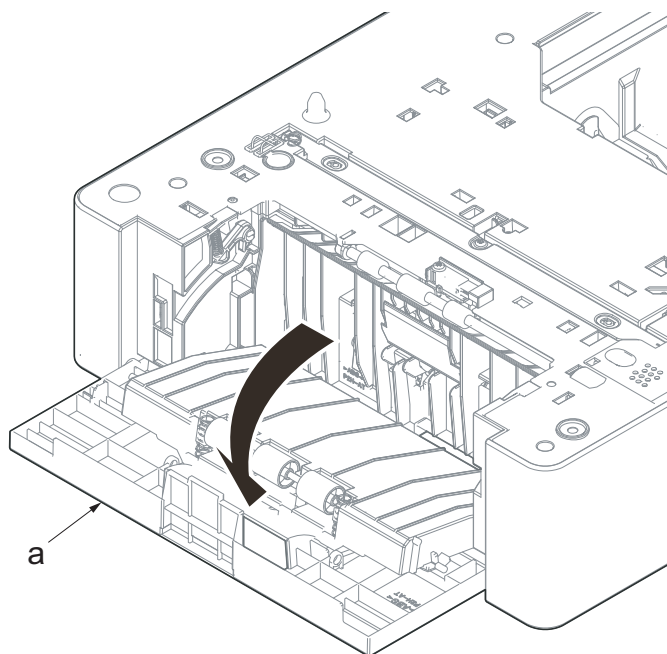


Figure 4-347

2. Release the hook (a) using a flat-blade screwdriver (d).
3. Remove the retard guide (c).

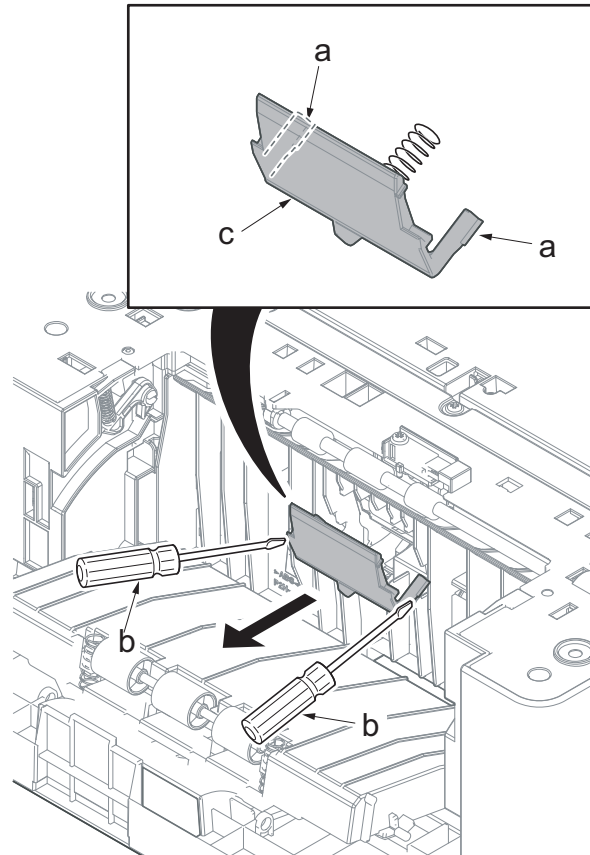


Figure 4-348

4. Remove the retard roller unit (a).
5. Check the retard roller unit and clean or replace it if necessary.
6. Reattach the parts once removed.

IMPORTANT

Install the cassette first when attaching the retard roller unit. The retard pressure release lever must be located at the machine front side from the retard roller unit to apply appropriate pressure.

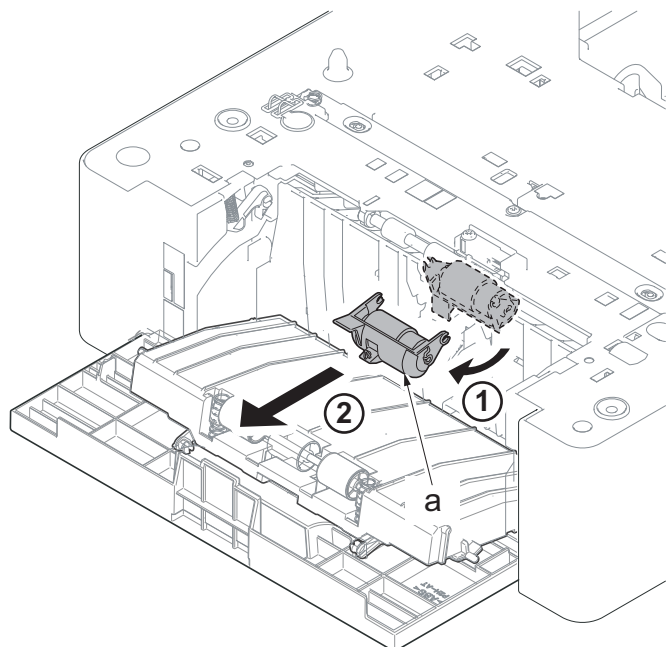


Figure 4-349

(2) Detaching and reattaching the paper feed roller unit

<Procedure>

1. Remove the cassette (a) from the paper feeder (b).
2. Remove the retard roller unit (d).

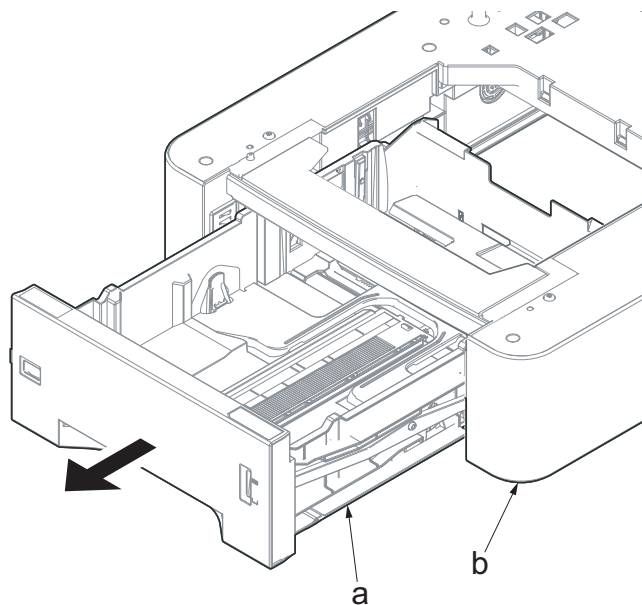


Figure 4-350

3. Place the paper feeder (a) while turning it over.

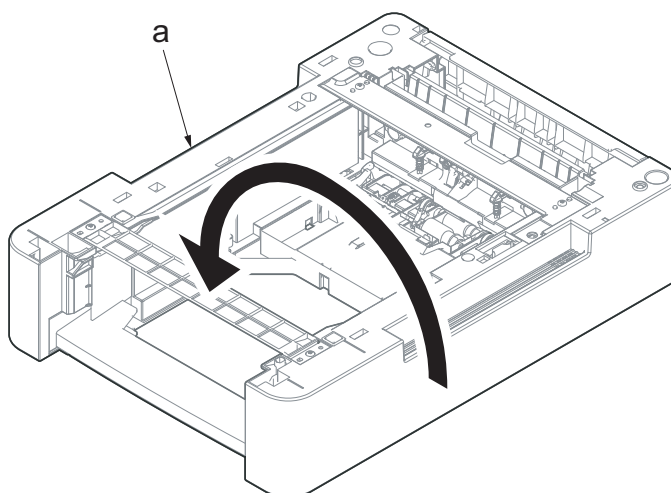


Figure 4-351

4. Push the lock lever (a).
5. Slide the feed roller pin (b) straight and release the lock.

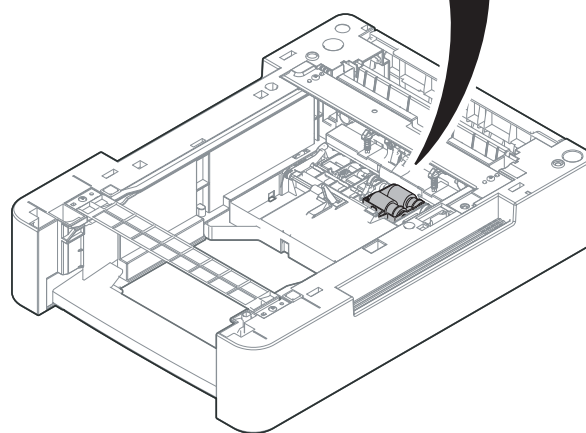
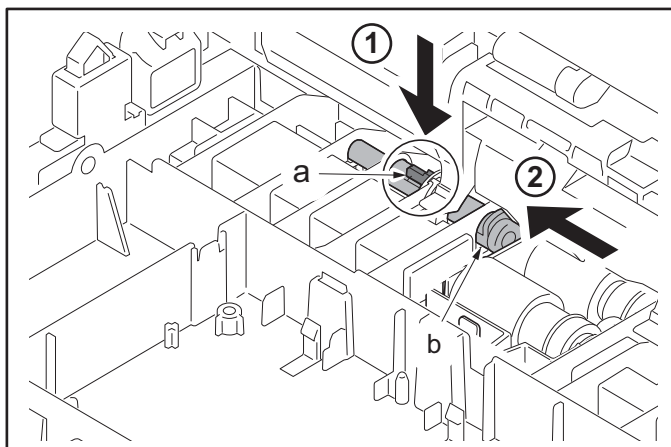


Figure 4-352

6. Push the lock lever (a).
7. Detach the paper feed roller unit (b).
8. Check the paper feed roller or pick up roller and clean or replace it if necessary.
9. Reattach the parts once removed.

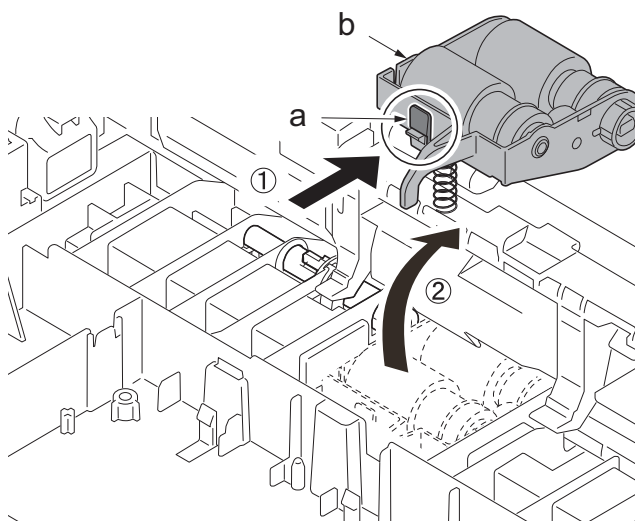


Figure 4-353

(3) Detaching and reattaching the PF main PWB

<Procedure>

1. Remove the cassette (a) from the paper feeder (b).

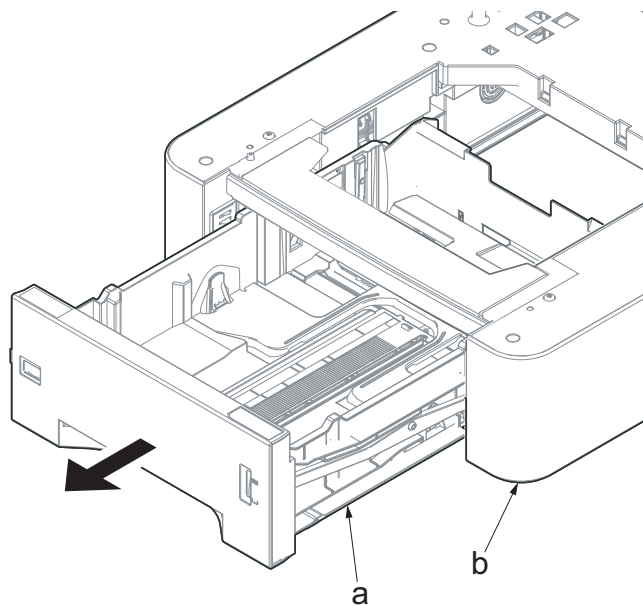


Figure 4-354

2. Place the paper feeder (a) while turning it over.

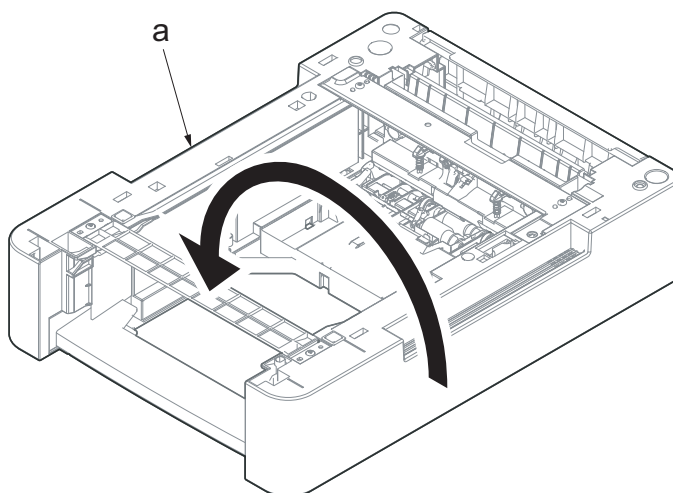


Figure 4-355

3. Release two hooks (b) of the PWB cover (a) using a flat-blade screwdriver (c).

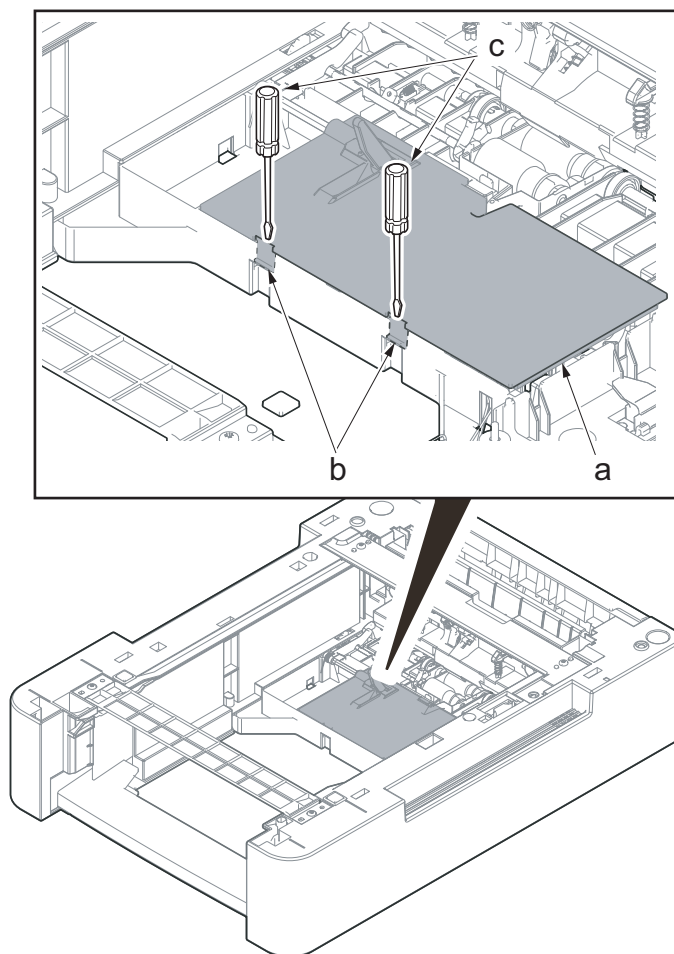


Figure 4-356

4. Detach the PWB cover (a).

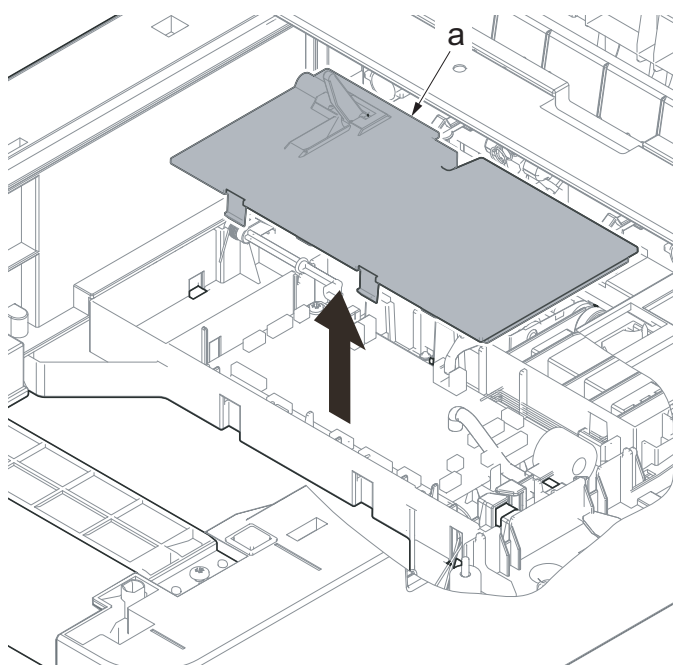


Figure 4-357

5. Remove the actuator (a) and spring (b).

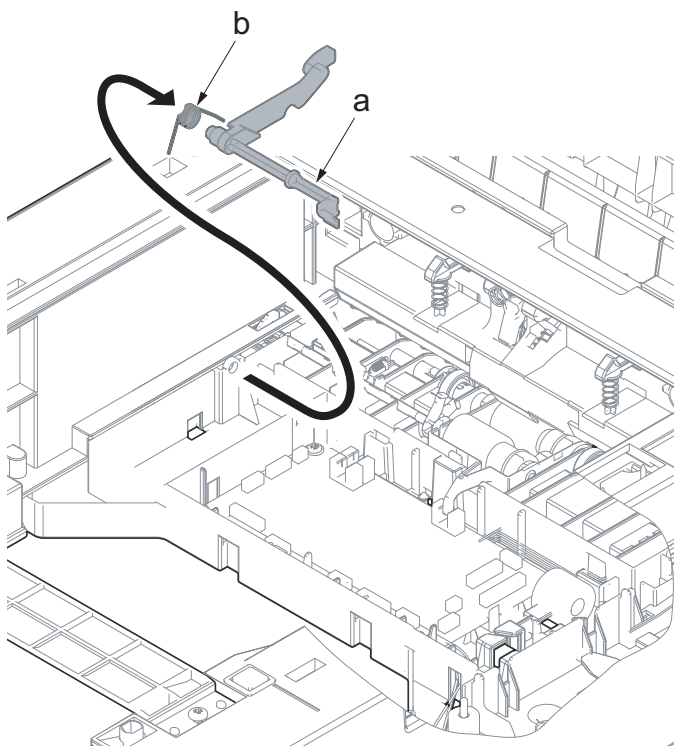


Figure 4-358

6. Disconnect all the connectors from the PF main PWB (a). (10 connectors)

*: YC10 connector is not used.

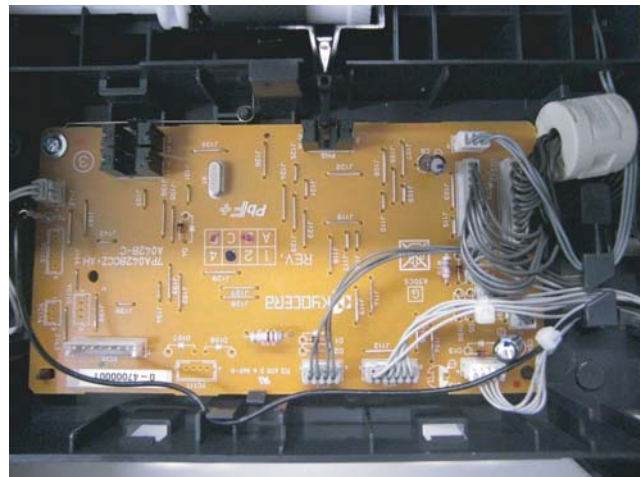
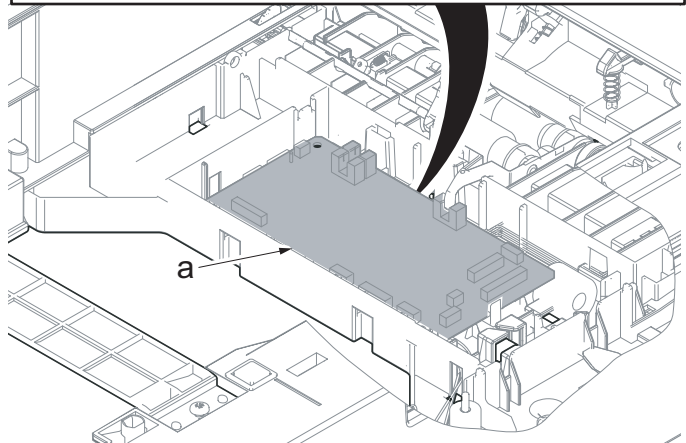
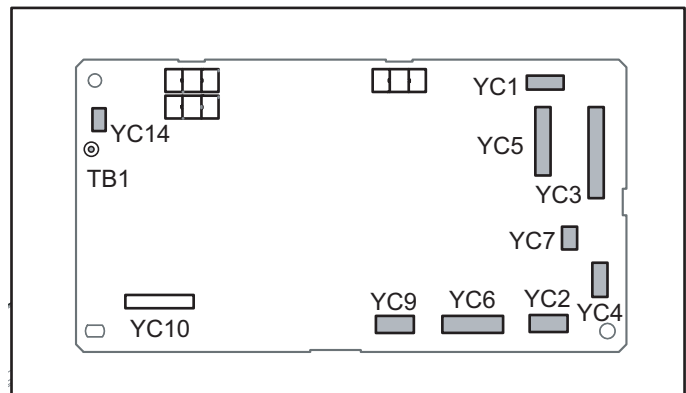
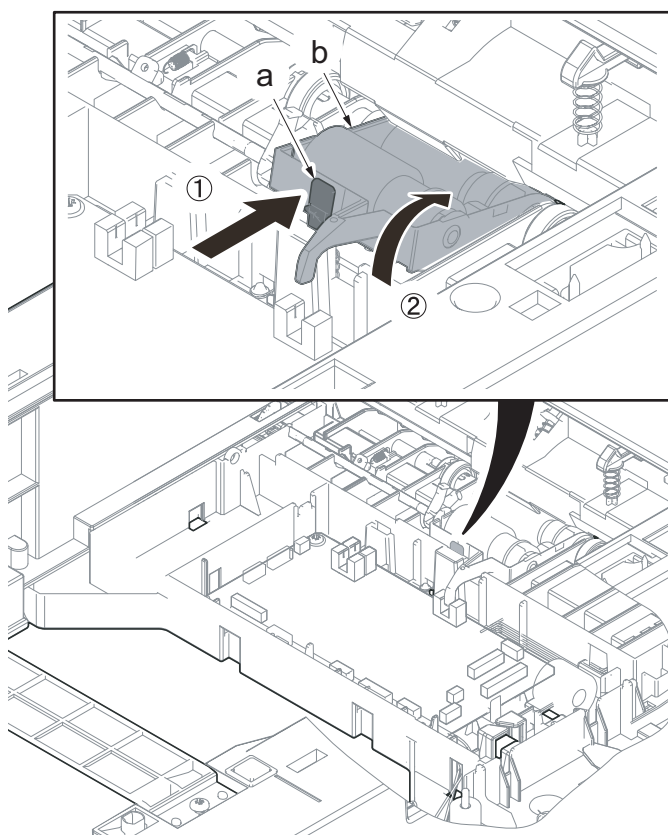
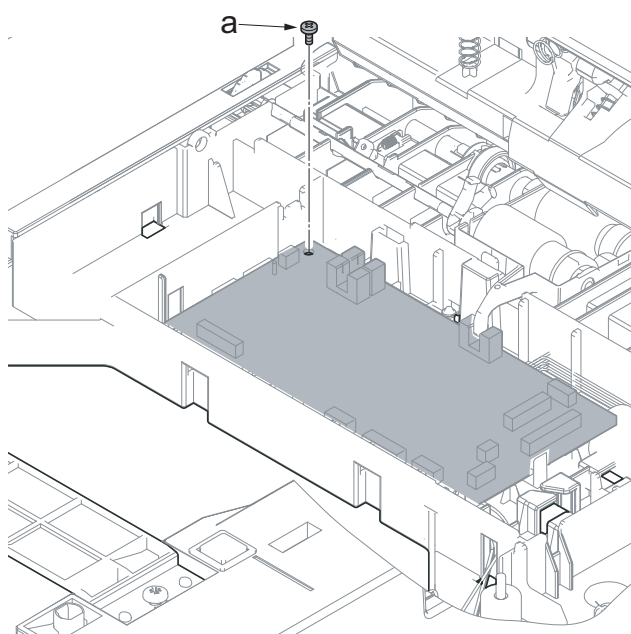


Figure 4-359

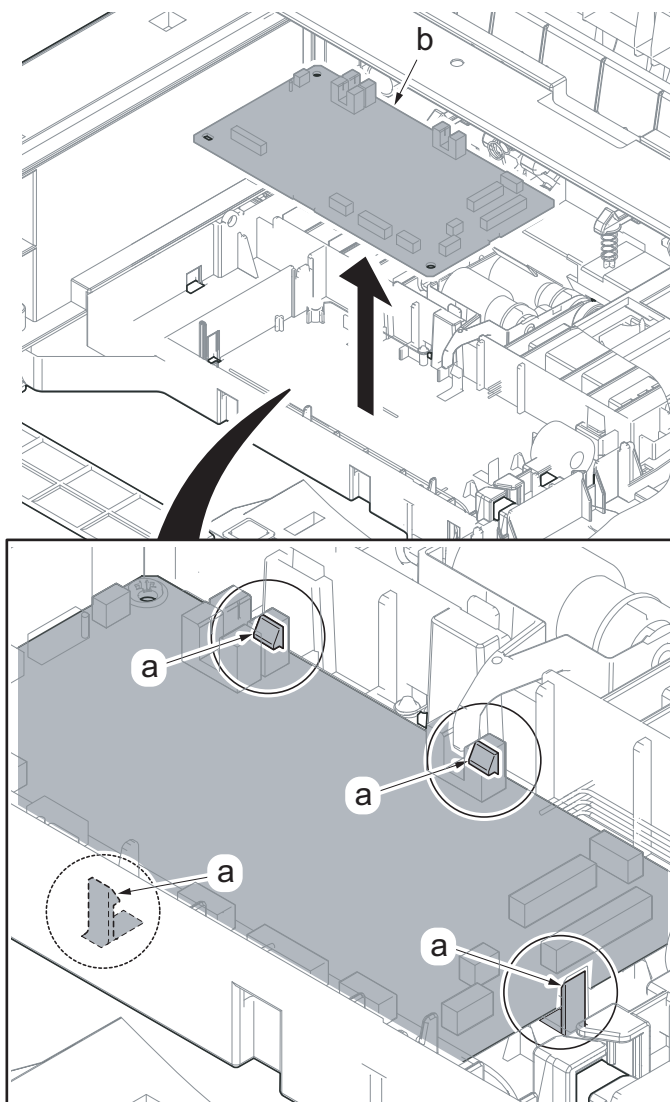
7. Push the lock lever (a).
8. Lift up the feed roller unit (b) to release the lock.

**Figure 4-360**

9. Remove the screw (a) (M3x8).

**Figure 4-361**

10. Remove four hooks (a) and then remove the PF main PWB (b).
11. Check the PF main PWB and clean or replace it if necessary.
12. Reattach the parts once removed.

**Figure 4-362**

(4) Detaching and reattaching the PF drive unit

<Procedure>

1. Remove the cassette (a) from the paper feeder (b).

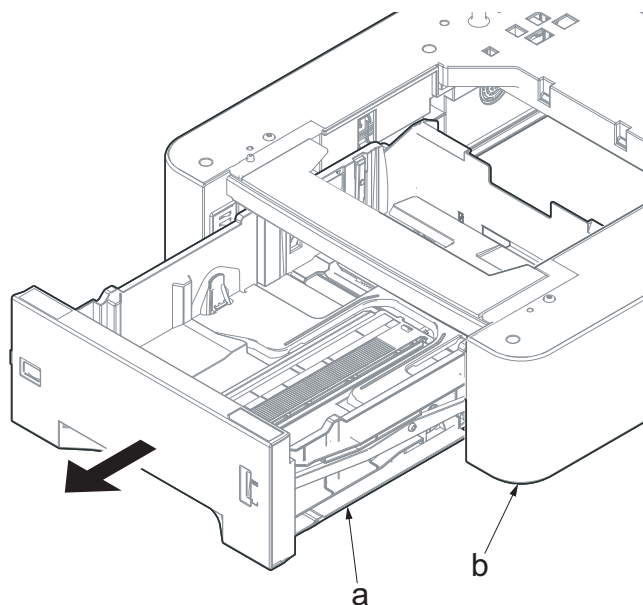


Figure 4-363

2. Remove eight screws (a)(M3x10)

IMPORTANT

Secure the screws in the order of the numbers.

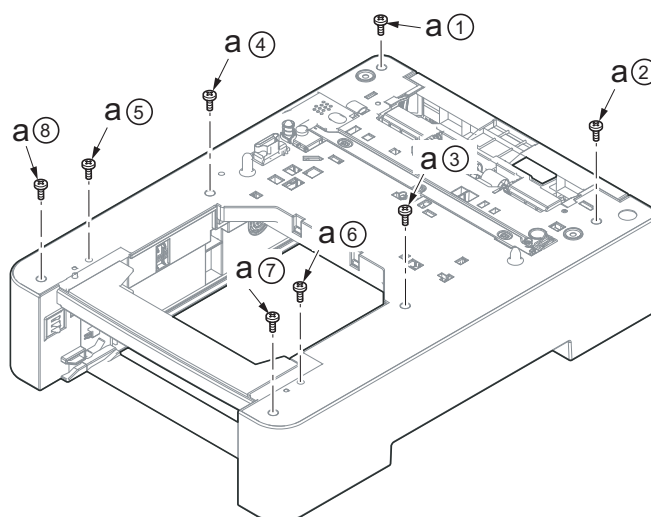


Figure 4-364

3. Place the paper feeder (a) while turning it over.

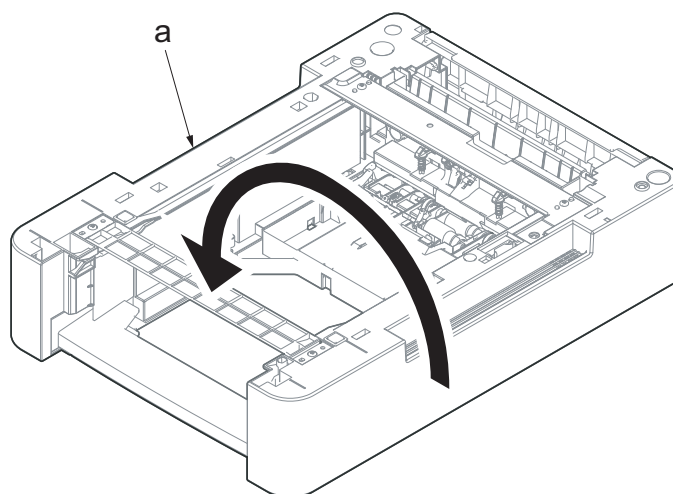


Figure 4-365

4. Release two hooks (b) of the PWB cover (a) using a flat-blade screwdriver (c).

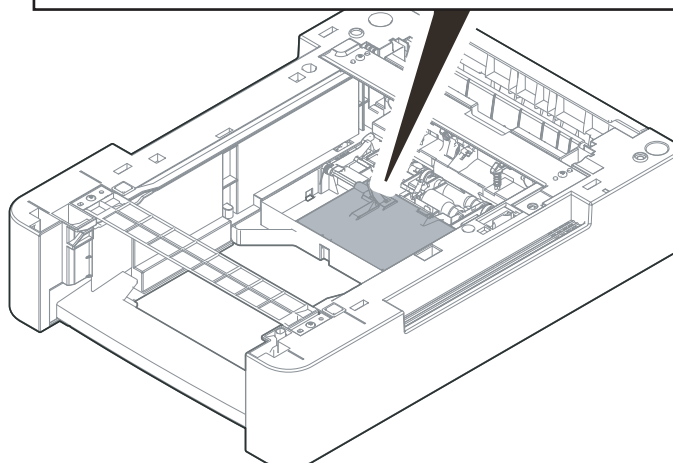
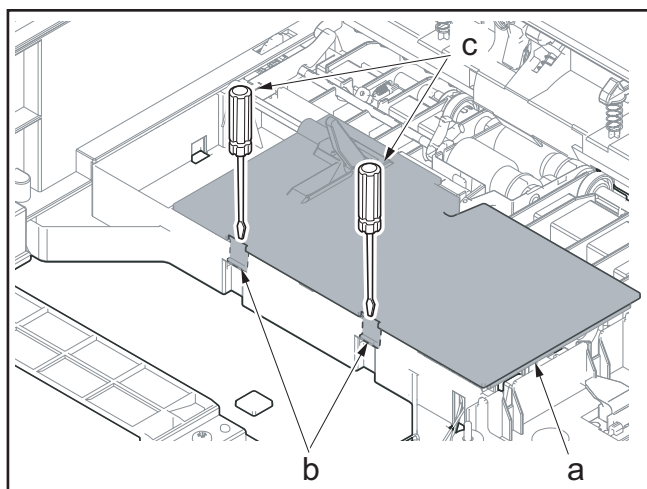


Figure 4-366

5. Detach the PWB cover (a).

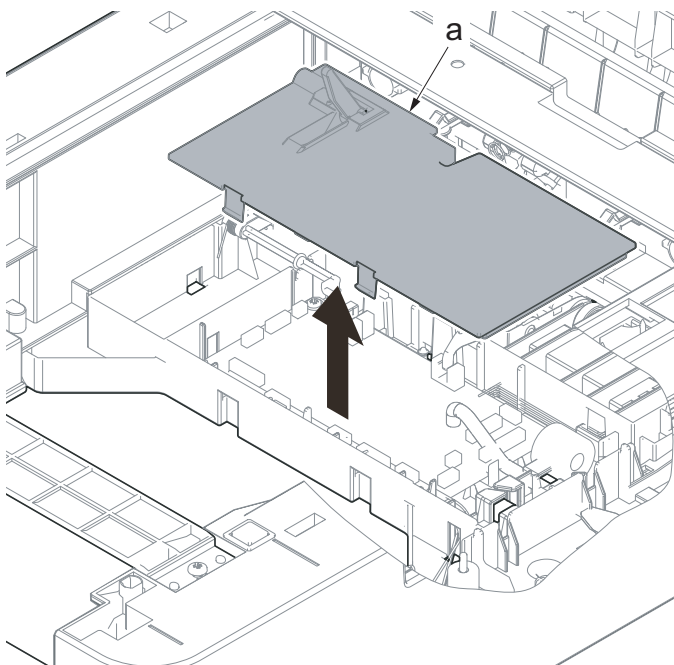


Figure 4-367

6. Remove the actuator (a) and spring (b).

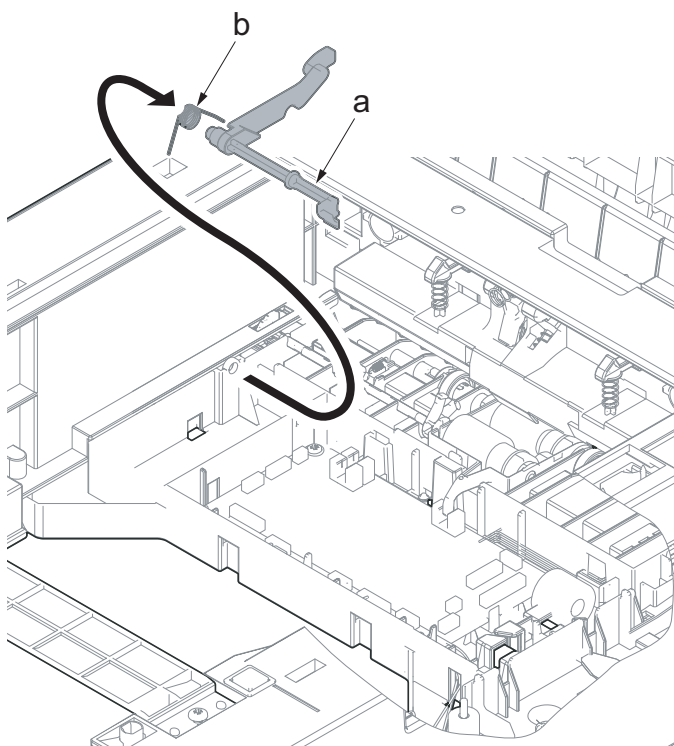


Figure 4-368

7. Disconnect nine connectors (b) from the PF main PWB (a).
YC1 to YC7, YC9, TB1

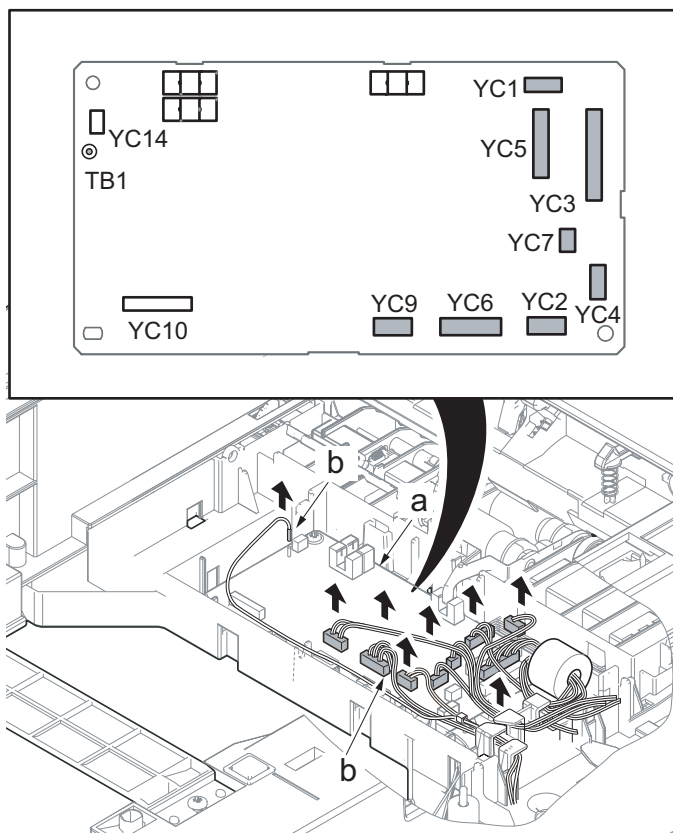


Figure 4-369

8. Remove the wire (a) from the hook (b).

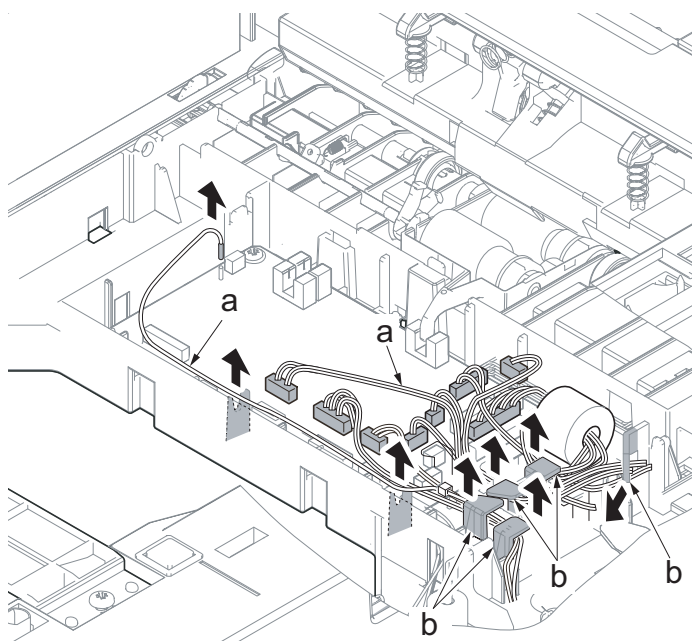


Figure 4-370

9. Place the paper feeder while turning it over. Release the hook (a) using a flat-blade screwdriver (b).

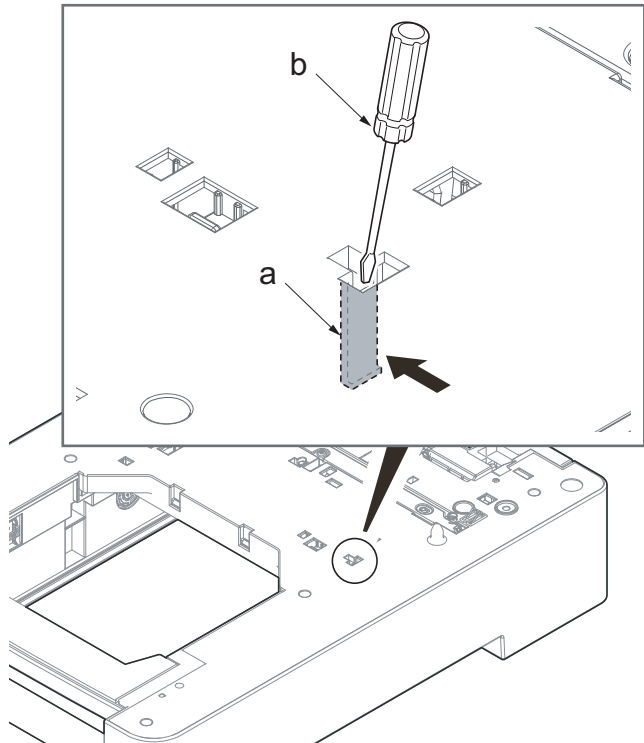


Figure 4-371

10. Place the paper feeder while turning it over. Release the hook (a) using a flat-blade screwdriver (b).

*: Release it while widening the cover with a flat-blad screwdriver.

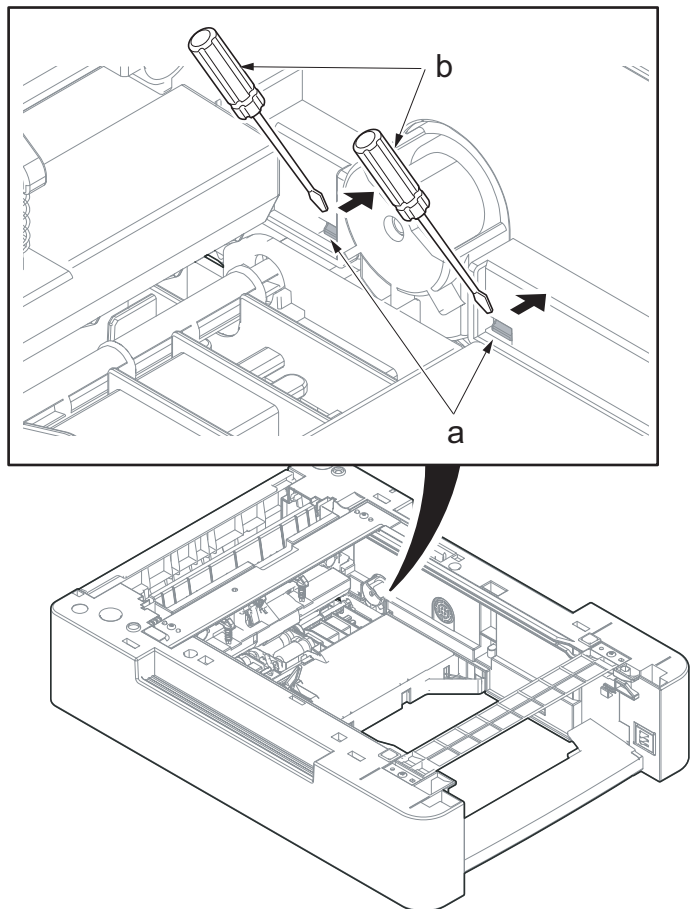


Figure 4-372

11. Lift up the paper feeder (b) and remove the upper cover (a).

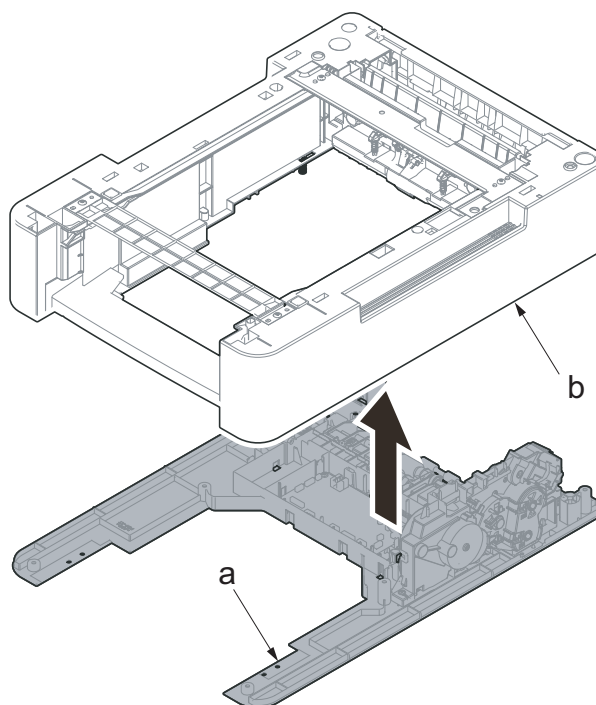


Figure 4-373

12. Push the lock lever (a).
13. Slide the feed roller pin (b) straight and release the lock.

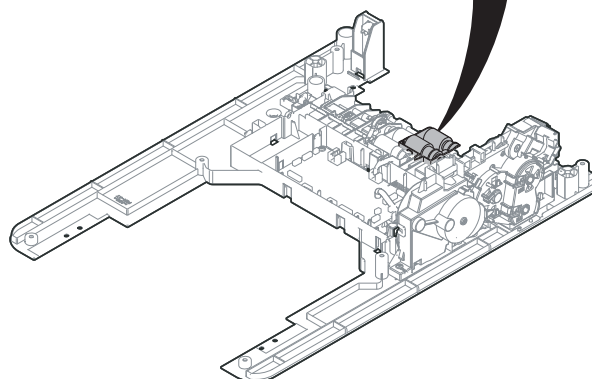
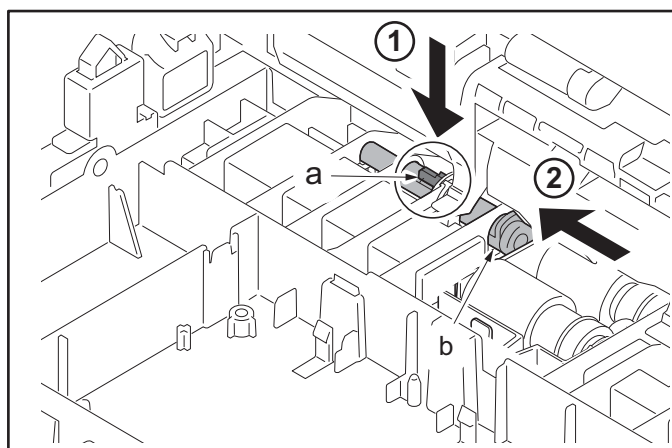
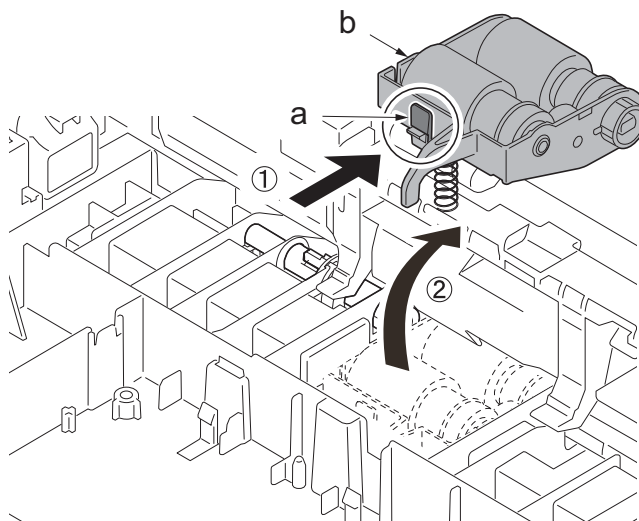
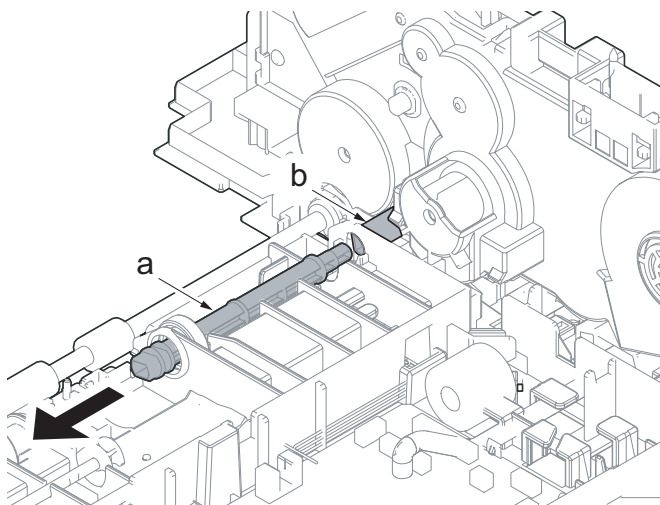


Figure 4-374

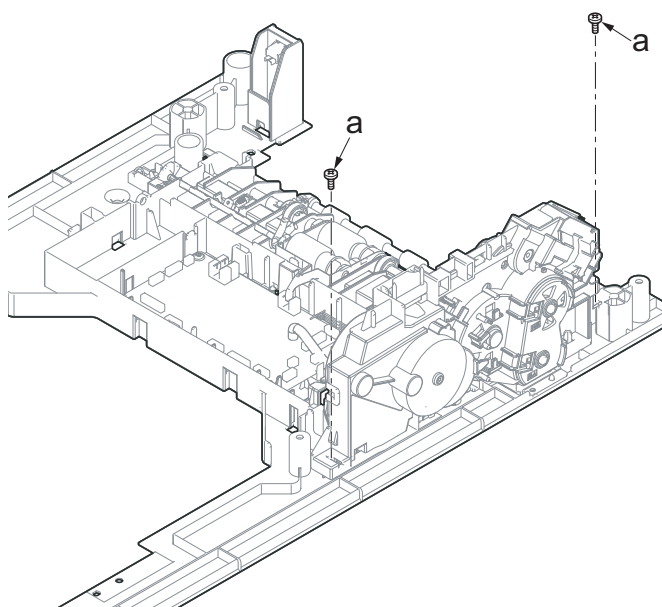
14. Push the lock lever (a).
15. Detach the paper feed roller unit (b).

**Figure 4-375**

16. Slide the feed roller drive pin (a) and release it from the drive joint (b).

**Figure 4-376**

17. Remove two screws (a) (M3x8).

**Figure 4-377**

18. Release the hook (a) with a flat-blade screwdriver (b) and remove the PF drive unit (c).
19. Check the PF drive unit and clean or replace it if necessary.
20. Reattach the parts once removed.

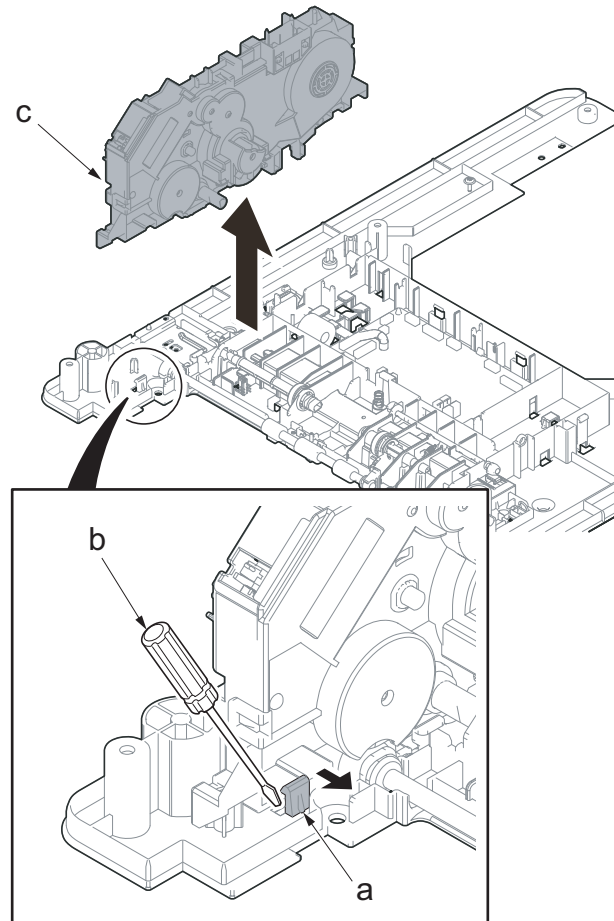


Figure 4-378

IMPORTANT

Before attaching the top cover (a), confirm the ground spring (b) is inserted in the hole on the main unit. Attach the spring with its projection facing down.

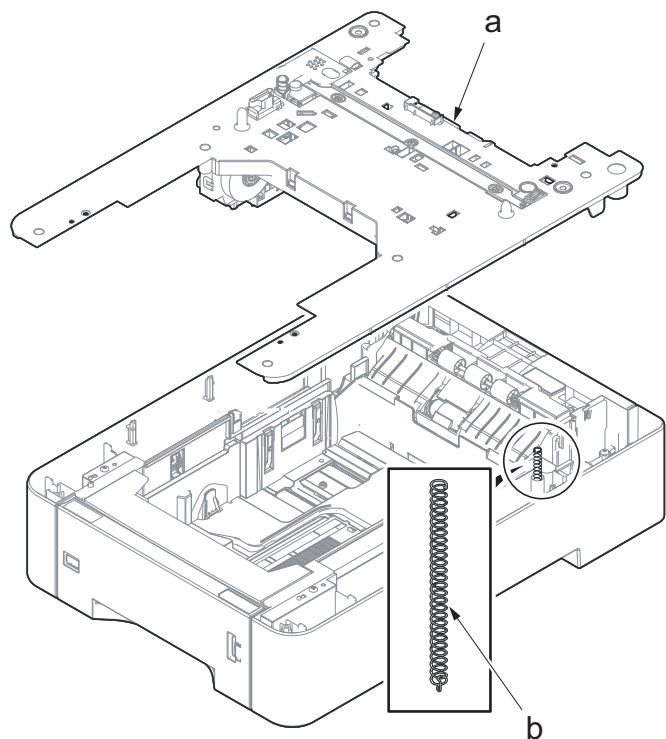


Figure 4-379

5 Firmware

5-1 Firmware Updates

Perform the following to update the firmware below.

Target firmware name	Master file name	Message
Optional language data for the controller	DL_OPT.2NR(30 ppm models) DL_OPT.2NT (35/40 ppm models)	OPT
Controller firmware	DL_CTRL.2NR (30 ppm models) DL_CTRL.2NS (35 ppm models) DL_CTRL.2NT (40 ppm models)	CTRL
First color table data	DL_PCLT1.2NW	CLT1
Second color table data	DL_PCLT2.2NW	CLT2
Firmware for the first PF (paper feeder)	DL_03PK.2PC	PF1
Firmware for the second PF (paper feeder)		PF2
Firmware for the third PF (paper feeder)		PF3
Engine firmware	DL_ENGN.2PC	ENGN

Preparations

Unzip the file containing the downloaded firmware and then copy the firmware and high-speed master file (skip files: ES_SKIP.ON) in the root folder of the USB memory.

*: If the high-speed master file exists, the same version firmware update is skipped.

Procedures

1. After turning the power switch on, the screen is properly displayed and then turn the power switch off.
2. Insert the USB memory with the firmware into the USB memory slot.
3. Turn the power switch on.
4. "FW-Update" is displayed and the firmware update starts.

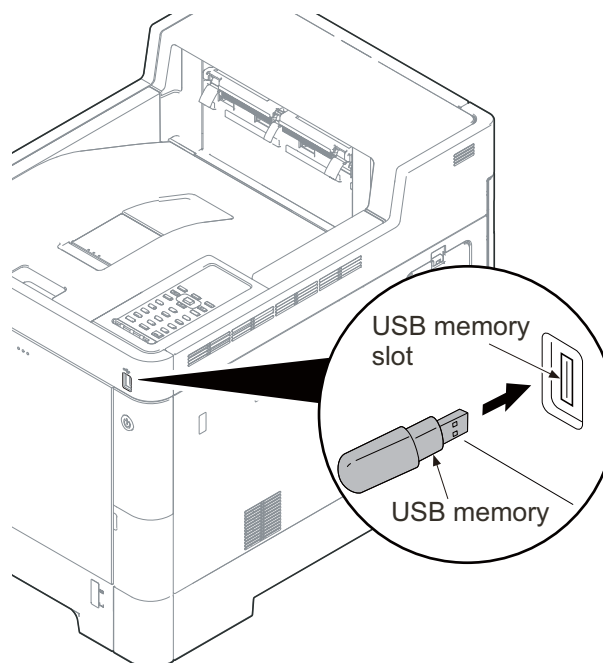


Figure 5-1

During the firmware upgrade, the progress indicator shows the firmware names and the progress.

Display sample

First line: Displays "FW-Update".

Second line: Progress indicator of the firmware update.



5. After the firmware update is successful, the first page displays the completion message and the following pages display the target firmware and the updated version.

First page

First line: Displays "FW-Update", (page number/total number of pages).

Second line: Displays "Completed". (Completion message)



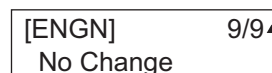
Second page and later

First line: Displays "CTRL", (the target firmware), (page number/total number of pages), the up and down key icon.

Second line: Displays the target firmware and the updated version.



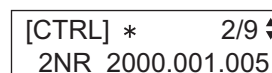
*: When there is no corresponding master file, "No Change" is displayed.



*: "-----" is displayed when the option equipment, etc. is not installed.



: "" is displayed after the target firmware that has been skipped.



6. Check if the new firmware versions are displayed.

7. Unplug the power cord and disconnect the USB memory.

8. After plugging in the power cord, check that the screen is displayed and then turn the power switch off.

Never turn the power switch off or disconnect the USB memory during the firmware update.

If any errors appear during the firmware update (such as the file can not be read), the process is cancelled immediately and the completion message is displayed.

First page

First line: Displays "FW-Update", (page number/total number of pages), the up and down key icon.

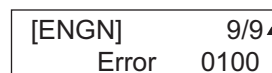
Second line: Displays "Error".



Second page and later

First line: Displays "ENGN", (the target firmware), (page number/total number of pages), the up and down key icon.

Second line: Displays "Error", the error code



Safe-Update

When the firmware update was interrupted by power shut-off or disconnecting the USB memory during the firmware update, the firmware update is retried at the next power-on.

Turn the main power on again while the USB memory is installed.

*: The firmware update that was already completed before power shut-down is skipped.

Error code	
No.	Descriptions
0100	No Master file
0200	Version mismatch of the master file
03xx	No Download File (No.xx)
04xx	File (No.xx) Checksum mismatch
05xx	File (No.xx) Preparation failure
06xx	File (No.xx) Oversize
08xx	File (No.xx) Writing failure
0000	Others
N001	Network connection failed. (There is no upgrade target interrupted)
N002	Network connection failed. (There is an upgrade target interrupted)

Emergency-Update

When the firmware update fails in Safe-Update, the following message or error code is displayed.

FW-Update Error FFFF

Update the firmware after the machine is recovered in the following procedures.

Preparations

Format the USB memory in "FAT" or "FAT32" in advance.

Unzip the compressed file downloaded containing the firmware for the controller PWB.

Copy all the unzipped files in the root folder of the USB memory.

e.g.

Removable disk (E)

+ DL_CTRL.2NR*

+ ulmage.kmmfp

+ 2nt.dtb

+ rootdiskimage.bin

- appdiskimage.bin

* :30 ppm models

35 ppm models: DL_CTRL.2NS

40 ppm models: DL_CTRL.2NT

Rename the unzipped files.

Rename "DL_CTRL.2NR" "KM_EMRG.2NR": 30 ppm models

Rename "DL_CTRL.2NS" "KM_EMRG.2NS": 35 ppm models

Rename "DL_CTRL.2NT" "KM_EMRG.2NT": 40 ppm models

Procedures

1. Unplug the power cord.
2. Insert the USB memory with the firmware into the USB memory slot.
3. Plug the power cord into the wall outlet and turn the power switch on.

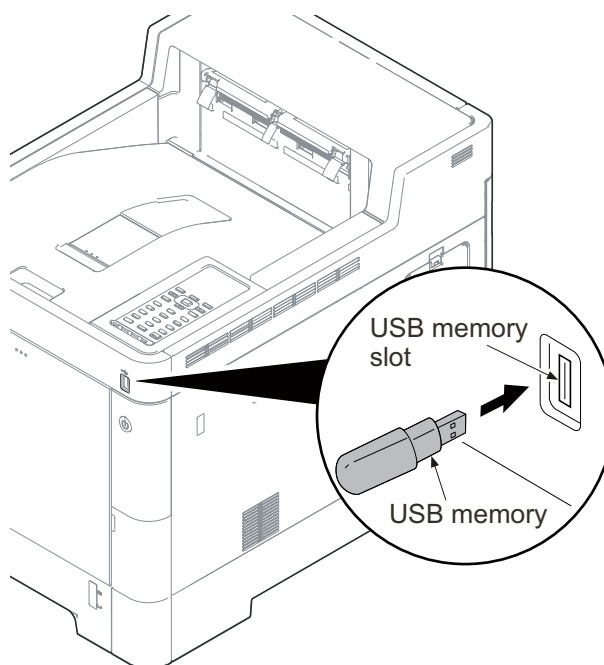
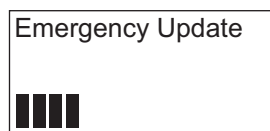
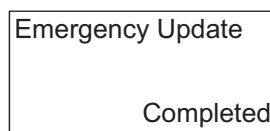


Figure 5-2

4. Restoration of the firmware update for the PWB starts.
"Emergency Update" is displayed on the operation panel.

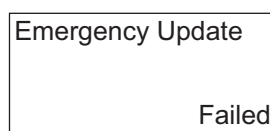


5. When rewriting is successful, "Completed" is displayed.



6. Unplug the power cord and disconnect the USB memory from the USB memory slot.
7. Unzip the file containing the downloaded firmware and then copy the firmware and high-speed master file (skip files: ES_SKIP.ON) in the root folder of the USB memory.
8. Execute the normal firmware update.

*:When rewriting fails, "Failed" is displayed.



If any errors appear during the firmware update, the process is cancelled and the error message is displayed on the operation panel. Redo after checking the following contents in that case.

Error code

No.	Descriptions
1	Check if the USB memory is properly installed.
2	Check if the management file "KM_EMRG.XXX" is generated from the official master file "DL_CTRL.XXX".
3	Check if the contents in the USB memory are sufficient.
4	Execute the firmware update again after formatting the USB memory.

This page is intentionally left blank.

6 Service mode

6-1 Service mode

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

(1) Executing the service mode (30/35 ppm models)

30 ppm models

[Message Display]

Ready to print

1. Press the Menu Key.

Report print
USB Memory

Job Box
Counter

Paper settings
Print settings

Network
Device common

Security
User/Job Account

Aplication
Administrator

Adjust/Maintenance

4. Select [Service]
using the cursor up/down keys.

5. Press the ">" key.

Quiet Mode
Color Calibration

Registration
Normal

Restart Printer
Service

6. Select the setting item.

Print Status Page
Print Network Status Page

Print Op Network Status Page
Print Test Page

Write Data
Maintenance

DEV-CLN
LSU

Drum
Altitude Adj.

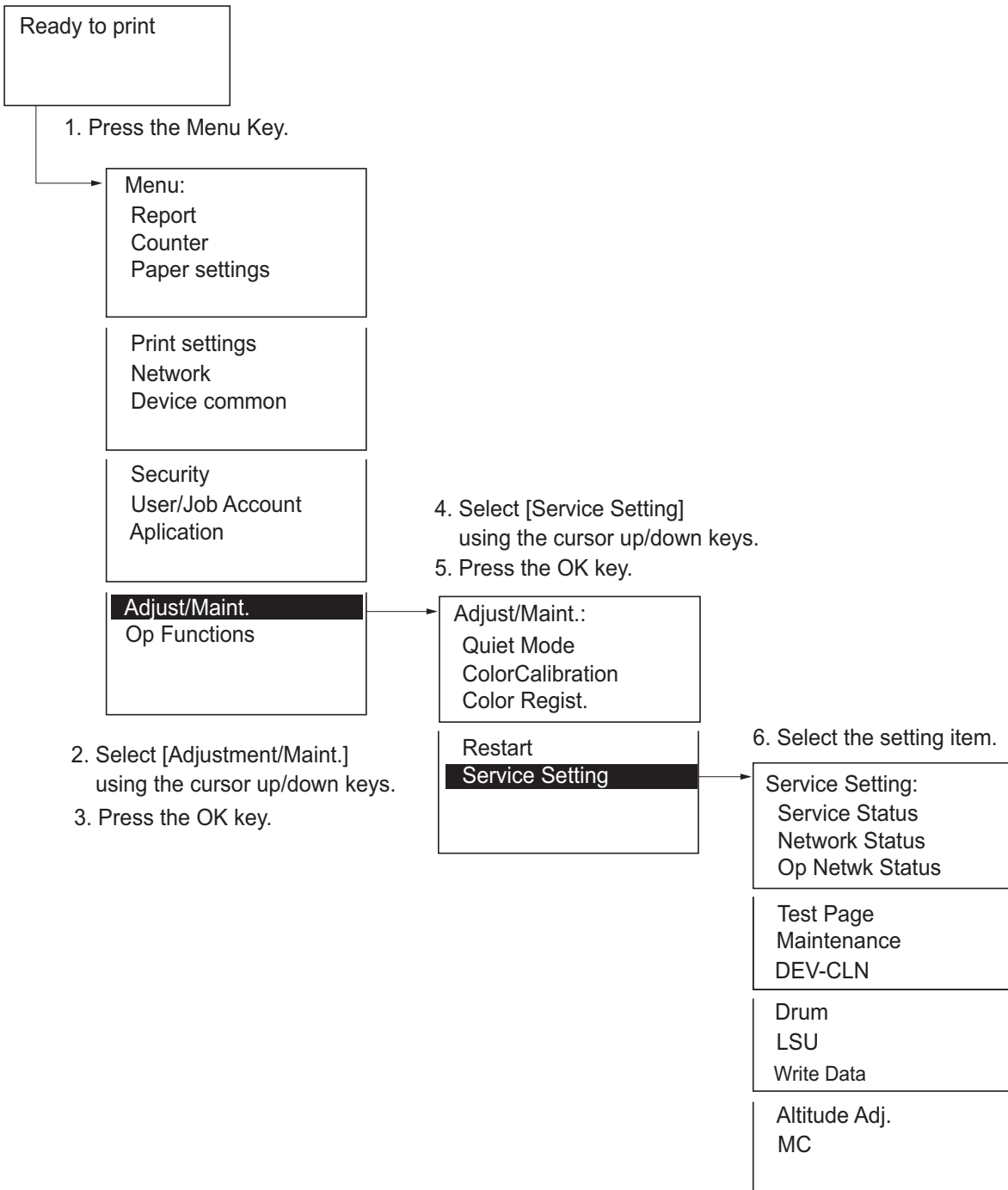
MC

2. Select [Adjustment/Maintenance]
using the cursor up/down keys.

3. Press the ">" key.

35 ppm models

[Message Display]



Service setting

Items	Contents	page
Status Pages	Printing a service status page.	P.6-4
Network Status	Printing a network status page.	P.6-12
OP Network status	Printing an OP Network status page.	P.6-12
Test Page	The test page is printed with halftones.	P.6-13
Write Data	To write data into a USB memory.	P.6-14
Maintenance	Counter reset for the maintenance kit	P.6-14
DEV-CLN	Perform developer refreshing.	P.6-15
LSU	Clean the LSU dust shield glass.	P.6-16
Drum	Clean the drum surface.	P.6-16
Altitude Adjustment	Perform the altitude Adjustment Setting.	P.6-16
MC	Sets the main charger output.	P.6-17

(2) Descriptions of service modes

Print Status Page

Description

Printing a service status page. The status page includes various settings and service data.

Purpose

This is used to retrieve the setting environment information and service data.

Method

1. Enter the Service Setting menu.
2. Select [Service Status Page].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm models)
By the left selection key, select [Yes]. (35 ppm models)
5. Service status page will be printed.

Completion

- Press the [Menu] key. (30 ppm models)
By the right selection key, select [Exit]. (35 ppm models)

Figure 6-1

Detail of service status page (2)

Service Status Page

Printer

2014/10/31 12:00

Firmware Version 2NT_2000.001.062 2014.10.27

[XXXXXXXX] [XXXXXXXX] [XXXXXXXX]

Engine Information

```
(31) NVRAM Version      _CI04709_CI04709
(32) MAC Address        00:C0:EE:D0:01:0D
```

Send Information

(33) Date and Time 12/10/27
(34) Address

[illegible]

(76) 3/
0/1.0/2.5 (77) (78) (79)
1/0/1/1/ 2014/10/15 12:34:56 (80)
1/5/ (81)(82)
1/ (83)
0/15:47 (84) (85)
1/ (86)
ABCDEF GHIJKL/ABCDEF GHIJKL/ABCDEF GHIJKL/ABCDEF GHIJKL/ (87)
ABCDEF GHIJKL/ABCDEF GHIJKL/ABCDEF GHIJKL/ABCDEF GHIJKL/ (88)

2

[XXXXXXXXXX]

No.	Items	Contents
(1)	Firmware Version	-
(2)	System date	-
(3)	Engine software version	-
(4)	Engine boot version	-
(5)	Operation panel software 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 2	Installed/Not Installed
(14)	Presence or absence of the optional paper feeder 3	Installed/Not Installed
(15)	Presence or absence of the optional paper feeder 4	Installed/Not Installed
(16)	Presence or absence of the optional memory card (SD)	Installed/Not Installed
(17)	Presence or absence of the optional SSD	Installed/Not Installed
(18)	Presence or absence of the optional Card Authentication Kit	Installed/Not Installed/Trial
(19)	Presence or absence of the optional Security Kit(E)	Installed/Not Installed
(20)	Presence or absence of the optional UG-33	Installed/Not Installed/Trial
(21)	The connection state of the optional USB Keyboard	Connected/Not Connected
(22)	Type of the USB keyboard	US-English/US-English with Euro symbol
(23)	MP tray priority setting	Off/Auto/Always
(24)	Page count converted to the A4/Letter size	Print Coverage provides a close-matching reference of toner consumption and will not match the actual toner consumption.
(25)	Average coverage for total	Black/Cyan/Magenta/yellow
(26)	Cleared date and output date	-
(27)	Coverage on the last output page	-
(28)	FRPO setting	-

No.	Items	Contents
(29)	RP code	Code the engine software version and the date of the latest update.
		Code the main software version and the date of the latest update.
		Code the engine software version and the date of the previous update.
		Code the main software version and the date of the previous update.
(30)	Altitude Adjustment	Normal/1001-2000m/2001-3000m/3001-3500m
(31)	NVRAM 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 firmware version Normal if (a) and (d) are underscored, and (b) and (e) are identical with (c) and (f).
(32)	Mac address	-
(33)	The last sent date and time	-
(34)	Transmission address	-
(35)	Destination information	-
(36)	Area information	-
(37)	Margin setting	Top margin/Left margin
(38)	Top offset for each cassette	MP tray Top offset/Paper feeder 2 Top offset/Paper feeder 3 Top offset/Paper feeder 4 Top offset/Duplex Top offset/Rotation copy Top offset
(39)	Left offset for each cassette	MP tray Left offset/Paper feeder 2 Left offset/Paper feeder 3 Left offset/Paper feeder 4 Left offset/Duplex Left offset/Rotation copy Left offset
(40)	L value	Top margin integer part/Top margin decimal part/Left margin integer part /Left margin decimal part

No.	Items	Contents
(41)	Life counter (The first line)	Machine life/MP tray/Paper feeder 1/Paper feeder 2/ Paper feeder 3/Paper feeder 4/Duplex
	Life counter (The second line)	Drum unit K/Drum unit C/Drum unit M/Drum unit Y/Pri- mary transfer unit/Secondary transfer unit/Developer unit K/Developer unit C/Developer unit M/Developer unit Y/ Main charger unit K/Main charger unit C/Main charger unit M/Main charger unit Y/Fuser unit/Maintenance kit
(42)	Panel lock information	F00: OFF F01: Partial lock1 F02: Partial lock2 F03: Partial lock3 F04: Full lock
(43)	USB information	U00: Not Connected U01: Full speed U02: Hi speed
(44)	Paper handling information	0: Paper source unit select 1: Paper source unit fix
(45)	Auto cassette change	0: OFF 1: ON (Default)
(46)	Color printing double count mode	0: All single counts 3: Folio (Less than 330mm length), Single counts
(47)	Black and white printing double count mode	0: All single counts 3: Folio (Less than 330mm length), Single counts
(48)	Billing counts timing	0: When secondary paper feed starts 1: When the paper is ejected
(49)	Temperature (machine inside)	-
(50)	External temperature	-
(51)	Relative humidity (machine outside)	-
(52)	Absolute humidity (machine outside)	-
(53)	Asset Number	-
(54)	Job end judgment time-out time	-
(55)	Job end detection mode	0: Detects as one job, even if contained multiple jobs 1: Detects as individual job, dividing multiple jobs at a break in job
(56)	Prescribe environment reset	0: Off 1: On
(57)	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 Fuser settings 0: Light 0: High 1: Normal 1 1: Middle 2: Normal 2 2: Low 3: Normal 3 3: Vellum 4: Heavy 1 5: Heavy 2 Duplex settings 6: Heavy 3 0: Disable 9: Extra Heavy 1: Enable

No.	Items	Contents
(58)	IO Calibration information	K/C/M/Y
(59)	Bias Calibration information	-
(60)	Sensor initial information	-
(61)	Calibration information	-
(62)	Calibration information	-
(63)	Calibration information	-
(64)	Calibration information	-
(65)	Calibration information	-
(66)	Paper loop correction shift amount	-
(67)	Paper loop correction interval	-
(68)	Paper loop correction patch amount	-
(69)	Calibration information	-
(70)	RFID information?K,C,M,Y?	-
(71)	Software version of the optional paper feeder	-
(72)	Optional message version	-
(73)	Color table version for printer	-
(74)	Color table 2 version for printer	-
(75)	Maintenance information	-
(76)	MC correction	1 to 7
(77)	Configuring the toner coverage counters	0: Full-color count display 1: Color coverage count display
(78)	Low coverage setting	0.1 to 100.0
(79)	Middle coverage setting	0.1 to 100.0
(80)	Data sanitization information	Main Memory/SSD/Performed time 1: Success 0: Fail - : Not performed or Not installed
(81)	Toner low setting	0: Disabled 1: Enabled
(82)	Toner low detection level	5 to 100 (%)
(83)	Full-page print mode	0: Normal mode (Factory setting) 1: Full-page mode
(84)	Wake-up mode	0: Off (Don't wake up) 1: On (Do wake up)
(85)	Wake-up timer	Displays the wake-up time
(86)	BAM conformity mode setting	0: Un-suiting Mode 1: Conformity Mode
(87)	Drum serial number	Black/Cyan/Magenta/yellow
(88)	Developer serial number	Black/Cyan/Magenta/yellow

No.	Items	Contents																				
	<div>Code conversion</div> <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>		A	B	C	D	E	F	G	H	I	J	0	1	2	3	4	5	6	7	8	9
A	B	C	D	E	F	G	H	I	J													
0	1	2	3	4	5	6	7	8	9													

Network Status

Description

Printing a network status page.

Purpose

To acquire the detailed network setting information.

Method

1. Enter the Service Setting menu.
2. Select [NW Status].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm models)
By the left selection key, select [Yes]. (35 ppm models)
5. Network status page will be printed.

Completion

Press the [Menu] key. (30 ppm models)
By the right selection key, select [Exit]. (35 ppm models)

OP Network Status * When Optional NIC is installed

Description

Printing an OP Network status page.

Purpose

To acquire the detailed OP Network setting information.

Method

1. Enter the Service Setting menu.
2. Select [OP NW Status].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm models)
By the left selection key, select [Yes]. (35 ppm models)
5. OP Network status page will be printed.

Completion

Press the [Menu] key. (30 ppm models)
By the right selection key, select [Exit]. (35 ppm models)

Test Page

Description

Outputs the test page which is printed in four colors respectively with halftones of three different levels.

Purpose

To output the test page to judge the cause of the image error.

Method

1. Enter the Service Setting menu.
2. Using the [] [] keys, select [Test Page].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm models)
By the left selection key, select [Yes]. (35 ppm models)
5. Test page will be printed.

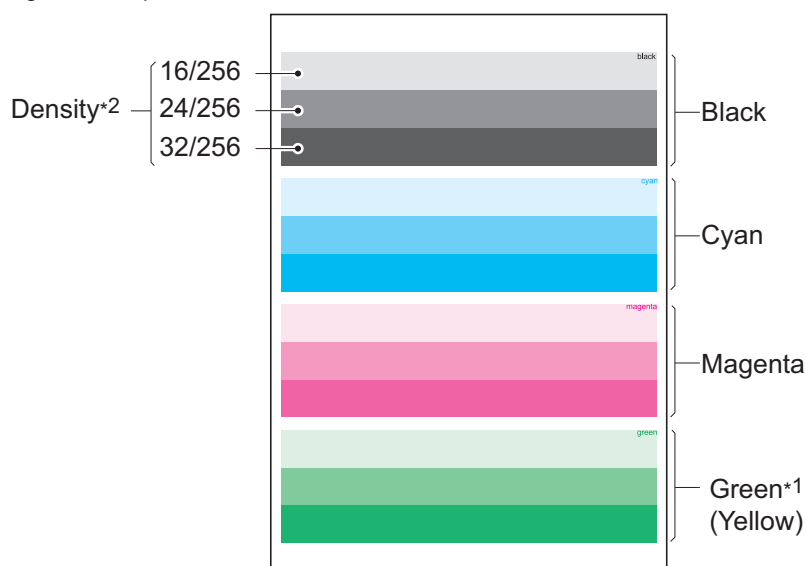


Figure 6-2

*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.

Completion

Press the [Menu] key. (30 ppm models)

By the right selection key, select [Exit]. (35 ppm models)

Write Data

Description

To write data into a USB memory.

Execution is possible only when a USB memory is detected.

Method

Install the USB memory before attempting to write data.

1. Enter the Service Setting menu.
2. Using the [] [] keys, select [Write Data].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm models)
By the left selection key, select [Yes]. (35 ppm models)
5. [Data waiting] is displayed and the printer waits for data to be written.
6. When the data is sent, [Processing] appears and the data is written to USB memory. When data writing ends, the display returns to [Ready].

Completion

Press the [Menu] key. (30 ppm models)

By the right selection key, select [Exit]. (35 ppm models)

Maintenance

Description

Counter reset for the maintenance kit

The [Install MK] message means that maintenance kit should be replaced at fixed pages of printing. The interval counter must be manually reset using this service item.

* :This is displayed on the system menu, only when the maintenance kit becomes at the time to replace.

Maintenance kit MK-5141 (for 30 ppm models) :200,000 images

Maintenance kit MK-5151 (for 35 ppm models) :200,000 images

Maintenance kit includes the following units

Drum unit
Developer unit (K,Y,M,C)
Primary transfer unit
Secondary transfer unit
Fuser unit
Paper feed roller unit
Retard roller unit

Purpose

To reset the life counter for maintenance kit.

Replacing procedure

Drum unit (P.4-12)
Developer unit (K,Y,M,C) (P.4-14)
Primary transfer unit (P.4-6)
Secondary transfer unit (P.4-6)
Fuser unit (P.4-17)
Paper feed roller unit (P.4-25)
Retard roller unit (P.4-20)

Method

1. Enter the Service Setting menu.
2. Using the [] [] keys, select [Maintenance].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm models)
By the left selection key, select [Yes]. (35 ppm models)
5. [Completed] is displayed. The counter for each component is reset immediately.

Remarks

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 (P.6-4 see page 1-3-2, page P.6-27 1-3-18). This may be used to determine the possibility that the counter was erroneously or unintentionally reset.

DEV-CLN

Description

The laser output of the image data for developer refreshing is carried out, and the operation of exposure, developing and primary transfer is performed, for ten pages ? equivalent. (paper is not fed).

Purpose

To perform when the image failure or problem in developer unit occur

Method

1. Enter the Service Setting menu.
2. Select [Developer refreshing].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm models)
By the left selection key, select [Yes]. (35 ppm models)
5. Developer refreshing will be executed.

Completion

- Press the [Menu] key. (30 ppm models)
By the right selection key, select [Exit]. (35 ppm models)

LSU

Description

The LSU cleaning motor drives the cleaning pad to wipe the LSU dust shield glass.

Purpose

To perform when the image failure occurs and stripes are seen in the vertical direction

Method

1. Enter the Service Setting menu.
2. Using the [] [] keys, select [Laser scanner cleaning].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm models)
By the left selection key, select [Yes]. (35 ppm models)
5. Laser scanner cleaning will be executed.

Completion

Press the [Menu] key. (30 ppm models)

By the right selection key, select [Exit]. (35 ppm models)

Drum

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. Using the [] [] keys, select [Drum refreshing].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm models)
By the left selection key, select [Yes]. (35 ppm models)
5. Drum refreshing will be executed.

Completion

Press the [Menu] key. (30 ppm models)

By the right selection key, select [Exit]. (35 ppm models)

Altitude Adjustment

Description

Perform the altitude Adjustment Setting.

Purpose

To perform when print quality deteriorates in an installation at the altitude of 1001 meters or higher

Method

1. Enter the Service Setting menu.
2. Using the [] [] keys, select [Altitude Adj.].
3. Press the [OK] key.
4. Using the [] [] keys, select [Normal], [1001 - 2000m], [2001 - 3000m] or [3001 - 3500m].
5. Press the [OK] key to set the setting.

Completion

Press the [Menu] key. (30 ppm models)

By the right selection key, select [Exit]. (35 ppm models)

MC

Description

Sets the main charger output.

Purpose

To perform when the image density declines, dirt of a background or an offset has occurred.

Method

1. Enter the Service Setting menu.
2. Using the [] [] keys, select [MC].
3. Press the [OK] key.
4. Using the [] [] keys, select the setting "1 to 7".
5. Press the [OK] key to set the setting.

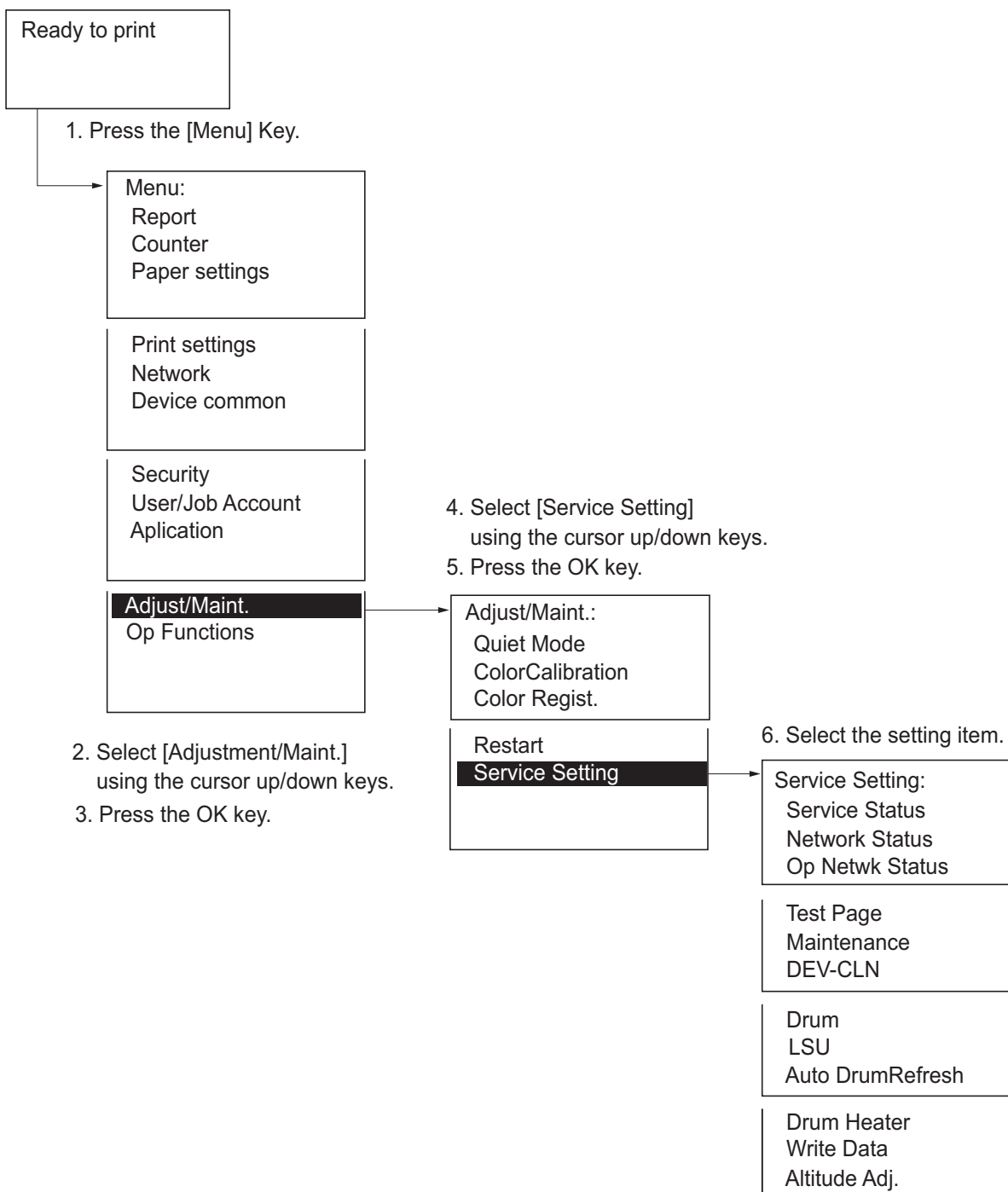
Completion

Press the [Menu] key. (30 ppm models)

By the right selection key, select [Exit]. (35 ppm models)

(3) Executing the service mode (40 ppm model)

[Message Display]



Service setting

Items	Contents	page
Service Status Page	Printing a service status page.	P.6-20
Network Status	Printing a network status page.	P.6-20
OP Network status	Printing an OP Network status page.	P.6-20
Test Page	The test page is printed with halftones.	P.6-21
Maintenance	Counter reset for the maintenance kit	P.6-22
DEV-CLN	Perform developer refreshing.	P.6-23
Drum	Perform drum refreshing.	P.6-24
LSU	Clean the LSU dust shield glass.	P.6-24
Auto Drum Refresh	Perform drum surface refreshing operation, during a certain period of time.	P.6-25
Write Data	To write data into a USB memory.	P.6-26
Altitude Adjustment	Perform the altitude Adjustment Setting.	P.6-26

(4) Descriptions of service modes

Service Status Page

Description

Printing a service status page. The status page includes various settings and service data.

Function

This is used to retrieve the setting environment information and service data.

Procedure

1. Enter the Service Setting menu.
2. Select [Service Status Page].
3. Press the [OK] key.
4. By the left selection key, select [Yes].

Service status page will be printed.

* :Refer to "Detail of service status page" for the detailed contents. (P.6-5Refer to page 1-6-58)

Completion

By the right selection key, select [Exit].

Network Status

Description

Printing a network status page.

Purpose

To acquire the detailed network setting information.

Method

1. Enter the Service Setting menu.
 2. Select [NW Status].
 3. Press the [OK] key.
 4. By the left selection key, select [Yes].
- Network status page will be printed.

Completion

By the right selection key, select [Exit].

OP Network Status * When Optional NIC is installed

Description

Printing an OP Network status page.

Purpose

To acquire the detailed OP Network setting information.

Method

1. Enter the Service Setting menu.
 2. Select [OP NW Status].
 3. Press the [OK] key.
 4. By the left selection key, select [Yes].
- OP Network status page will be printed.

Completion

By the right selection key, select [Exit].

Test Page

Description

Outputs the test page which is printed in four colors respectively with halftones of three different levels.

Purpose

To output the test page to judge the cause of the image error.

Method

1. Enter the Service Setting menu.
2. Using the [] [] keys, select [Test Page].
3. Press the [OK] key.
4. By the left selection key, select [Yes].
Test page will be printed.

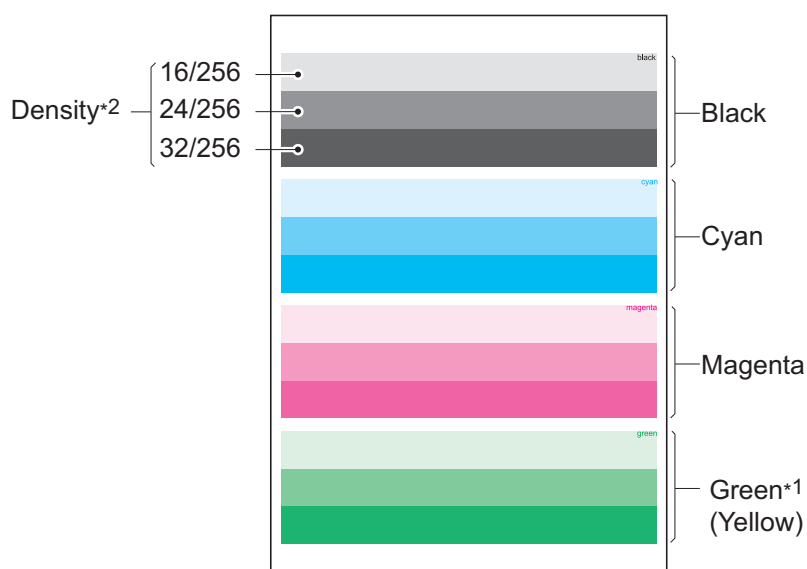


Figure 6-3

*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.

Completion

By the right selection key, select [Exit].

Maintenance

Description

Counter reset for the maintenance kit

The [Install MK] message means that maintenance kit should be replaced at fixed pages of printing. The interval counter must be manually reset using this service item.

* :This is displayed on the system menu, only when the maintenance kit becomes at the time to replace.

Maintenance kit MK-5161 (for 40 ppm models) :300,000 images

Maintenance kit includes the following units

Drum unit

Developer unit (K,Y,M,C)

Primary transfer unit

Secondary transfer unit

Fuser unit

Paper feed roller unit

Retard roller unit

Purpose

To reset the life counter for maintenance kit.

Replacing procedure

Drum unit (P.4-12)

Developer unit (K,Y,M,C) (P.4-14)

Primary transfer unit (P.4-6)

Secondary transfer unit (P.4-28?)

Fuser unit (P.4-17)

Paper feed roller unit (P.4-25)

Retard roller unit (P.4-20)

Method

1. Enter the Service Setting menu.
2. Using the [] [] keys, select [Maintenance].
3. Press the [OK] key.
4. By the left selection key, select [Yes].
5. [Completed] is displayed. The counter for each component is reset immediately.

Remarks

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 (P.6-4 see page 1-3-2, page P.6-27 1-3-18). This may be used to determine the possibility that the counter was erroneously or unintentionally reset.

DEV-CLN

Description

The laser output of the image data for developer refreshing is carried out, and the operation of exposure, developing and primary transfer is performed, for ten pages ? equivalent. (paper is not fed).

Purpose

To perform when the image failure or problem in developer unit occur

Method

- 1.Enter the Service Setting menu.
- 2.Select [Developer refreshing].
- 3.Press the [OK] key.
- 4.By the left selection key, select [Yes].
- 5.Developer refreshing will be executed.

Completion

By the right selection key, select [Exit].

Drum

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. Using the [] [] keys, select [Drum refreshing].
3. Press the [OK] key.
4. By the left selection key, select [Yes]. Drum refreshing will be executed.

Completion

By the right selection key, select [Exit].

LSU

Description

The LSU cleaning motor drives the cleaning pad to wipe the LSU dust shield glass.

Purpose

To perform when the image failure occurs and stripes are seen in the vertical direction

Method

1. Enter the Service Setting menu.
2. Using the [] [] keys, select [Laser scanner cleaning].
3. Press the [OK] key.
4. By the left selection key, select [Yes]. Laser scanner cleaning will be executed.

Completion

By the right selection key, select [Exit].

Auto Drum Refresh

Description

Auto drum surface refresh

The drum surface refreshing operation is normally performed when the power is turned on or during warm-up when the main unit is recovering from the sleep mode, but even then only at those times that the temperature/humidity sensor detects the drum surface to be in a state of dew condensation.

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. Using the [] [] keys, select [Auto Drum refreshing].
3. Press the [OK] key.
4. Using the [] [] keys, select the desire mode (Off/Short/Standard/Long).
5. By the left selection key, select [Yes]. Drum refreshing will be executed.

Completion

By the right selection key, select [Exit].

Write Data

Description

To write data into a USB memory.

Execution is possible only when a USB memory is detected.

Method

Install the USB memory before attempting to write data.

1. Enter the Service Setting menu.
2. Using the [] [] keys, select [Write Data].
3. Press the [OK] key.
4. By the left selection key, select [Yes].
5. [Data waiting] is displayed and the printer waits for data to be written.
6. When the data is sent, [Processing] appears and the data is written to USB memory. When data writing ends, the display returns to [Ready].

Completion

By the right selection key, select [Exit].

Altitude Adjustment

Description

Perform the altitude Adjustment Setting.

Purpose

To perform when print quality deteriorates in an installation at the altitude of 1001 meters or higher

Method

1. Enter the Service Setting menu.
2. Using the [] [] keys, select [Altitude Adj.].
3. Press the [OK] key.
4. Using the [] [] keys, select [Normal], [1001 - 2000m], [2001 - 3000m] or [3001 - 3500m].
5. Press the [OK] key to set the setting.

Completion

By the right selection key, select [Exit].

(5) Print Event Log

Print Event Log

Description

Printing a history list of occurrences of paper jam, self-diagnostics, toner replacements, etc.

Purpose

Analyze the failure by determining the cause depending on the history of occurrence.

Method

1. Connect the USB interface connector or LAN interface connector to the main unit and PC.
2. Connect the power cord to the machine.
3. Turn the power switch on. Make sure the machine is ready.
4. Send the following PRESCRIBE command sequence from the PC to the machine.

```
!R!KCFG"ELOG";EXIT;
```

5. Event Log will be printed.

Completion

Press the [Stop] key.

Remarks: Details of configurations (See above 4.)

Notes on Connecting to USB

- (1) 1. Save the Prescribe commands above as a text file in the PC.
- (2) 2. Select the Sharing tab of the printer properties and share the printer.
- (3) 3. Select a USB port in the Port tab.
(Specify the printer name for sharing.)
- (4) 4. From the DOS Prompt, execute the following command line:
copy filename\\computer-name\shared-printer
File-name should be the name of the file that was saved in step 1.

Notes on connecting via network (using FTP protocol)

- (1) 1. Save the Prescribe commands above as a text file in the PC.
- (2) 2. From the DOS Prompt, execute the following command line:
ftp printer-IP-address
Do not specify user name and password.
- (3) 3. From the DOS Prompt, execute the following command:
put file-name
File-name should be the name of the file that was saved in step 1.

Detail of event log

Event Log				(2) 2014/10/19 15:15		
Printer				(3)	(4)	(5)
(1) Firmware version 2NT_2000.001.077 2014.09.19				[XXXXXXXX]	[XXXXXXXX]	[XXXXXXXX]
(7) Paper Jam Log				(11) Counter Log		
#	Count.	Event Descriptions	Date and Time	(f) J0000: 0 J4302: 0		
12	555555	0501.01.08.01.00	2014/02/12 17:30	J0100: 1	J4303: 1	
11	444444	4002.01.08.01.00	2014/02/12 17:30	J0101: 11	J4304: 11	
10	333333	0501.01.08.01.00	2014/02/12 17:30	J0104: 222	J4309: 2	
9	222222	4002.01.08.01.00	2014/02/12 17:30	J0105: 1	J9000: 1	
8	111111	0501.01.08.01.00	2014/02/12 17:30	J0106: 1	J9004: 0	
7	999999	4002.01.08.01.00	2014/02/12 17:30	J0107: 1	J9010: 1	
6	888888	0501.01.08.01.00	2014/02/12 17:30	J0110: 1	J9060: 1	
5	777777	0501.01.08.01.00	2014/02/12 17:30	J0111: 1	J9061: 2	
4	666666	0501.01.08.01.00	2014/02/12 17:30	J0211: 1	J9062: 1	
3	555555	0501.01.08.01.00	2014/02/12 17:30	J0212: 1	J9110: 1	
2	444444	0501.01.08.01.00	2014/02/12 17:30	J0213: 999	J9120: 0	
1	1	4002.01.08.01.00	2014/02/12 17:30	J0501: 1	J9200: 1	
				J0502: 1	J9210: 1	
				J0503: 1	J9220: 2	
				J0504: 1		
				J0508: 1		
				J0509: 1	(g) C0000: 0	
				J0511: 1	C0001: 1	
				J0512: 1	C0002: 2	
				J0513: 1	C0003: 3	
				J0514: 1	C0004: 4	
				J0518: 1	C0005: 5	
				J0519: 1	C0006: 6	
				J1403: 1	C0007: 7	
				J1404: 1	C0008: 8	
				J1413: 1	C0009: 9	
				J1414: 1	C0010: 10	
				J1604: 1	C0011: 11	
				J1614: 1	C0012: 12	
				J4002: 1	C0013: 13	
				J4003: 1	C0014: 14	
				J4004: 1	C0015: 15	
				J4009: 1	C0016: 16	
				J4012: 1	C0017: 17	
				J4013: 1	C0018: 18	
				J4014: 1	C0019: 19	
				J4019: 1	C0020: 20	
				J4201: 1	C0021: 21	
				J4202: 0	C0022: 22	
				J4203: 1	C0023: 23	
				J4204: 1	(h) T00: 10	
				J4208: 0	M00: 20	
				J4209: 1	M02: 30	
				J4211: 11		
				J4212: 222		
				J4213: 1		
				J4214: 2		
				J4218: 1		
				J4219: 2		
				J4301: 1		
				(6) [XXXXXXXXXXXX]		

Figure 6-4

Description of event log

No.	Items	Contents		
(1)	System version			
(2)	System date			
(3)	Engine software version			
(4)	Engine boot version			
(5)	Engine software version			
(6)	Machine serial number			
(7)	Paper Jam Log	#	Count.	Event
		Remembers 1 to 16 th of occurrence. If the occurrence of the previous paper jam is less than 16, all of the paper jams are logged. When the occurrence exceeds 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 paper jam (b) Paper source (c) Paper size (d) Paper type (e) Paper eject
		(a) Detail of Cause of paper jam (Hexadecimal)		
		: Refer to "17-1 Paper Misfeed Detection" (page 1-7-1),for the detail of Cause of paper jam. (page P.7-4)		
		(b) Detail of paper source (Hexadecimal)		
		00: MP tray 01: Cassette 1 02: Cassette 2 (paper feeder) 03: Cassette 3 (paper feeder) 04: Cassette 4 (paper feeder) 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 08: 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: Hagaki 20: Oufuku Hagaki 21: Oficio II	22: Special 1 23: Special 2 24: A3 Wide 25: Ledger Wide 26: 26: Full bleed paper (12 x 8) 27: 8K 28: 16K-R A8: 16K-E 32: Statement-R B2: Statement-E 33: Folio 34: Youkei type 2 35: Youkei type 4

No.	Items	Contents		
(7) cont.	Paper Jam Log	(d) Detail of paper type (Hexadecimal)		
		01: Plain 02: Transparency 03: Preprinted 04: Labels 05: Bond 06: Recycled 07: Vellum 08: Rough 09: Letterhead	0A: Color 0B: Prepunched 0C: Envelope 0D: Cardstock 0E: Coated 0F: 2nd side 10: Media 16 11: High quality	15: Custom 1 16: Custom 2 17: Custom 3 18: Custom 4 19: Custom 5 1A: Custom 6 1B: Custom 7 1C: Custom 8
(8)	Service Call Log	#	Count.	Service Code
		Remembers 1 to 8 th of occurrence of self diagnostics error. If the occurrence of the previous diagnostics error is less than 8, all of the diagnostics errors are logged.	The total page count at the time of the self diagnostics error.	Self diagnostic error code (See page 1-6-58) Example: 01.6000 01: Self diagnostic error6000: Self diagnostic error code number
(9)	Maintenance Log	#	Count.	item
		Remembers 1 to 8 of occurrence of replacement. If the occurrence of the previous replacement of toner container is less than 8, all of the occurrences of replacement are logged.	The total page count at the time of the replacement of the maintenance replacing item. 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.	Code of maintenance replacement 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-5140/ 5142/ 5144 (for 30 ppm model only) MK-5150/ 5152/ 5154 (for 35 ppm model only) MK-5160/ 5162/ 5164 (for 40 ppm model only)

No.	Items	Contents		
(10)	Unknown Toner Log	#	Count.	item
		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.	The total page count at the time of the request of toner container replacement, when using the non-genuine toner container.	Unknown toner log code (1 byte, 2 categories) First byte (Replacing item) 01: Toner container (Fixed to 01) Second byte (Type of replacing item) 00: Black 01: Cyan 02: Magenta 03: Yellow
(11)	Counter Log Consist of three log counters of paper jams, self diagnostics errors, and maintenance replacement items.	(f) Paper jam	(g) Self diagnostic error	(h) Maintenance replacing item
		Indicates the log counter of paper jams depending on location. Refer to Paper Jam Log. All instances including those are not occurred are displayed.	Indicates the log counter of self diagnostics errors depending on cause. Example: C6000: 4 Self diagnostic error 6000 has happened four times.	Indicates the log counter depending on the maintenance replacing item. T: Toner container 00: Black 01: Cyan 02: Magenta 03: Yellow M: Maintenance kit 01: MK-5140/ 5142/ 5144 (for 30 ppm model only) MK-5150/ 5152/ 5154 (for 35 ppm model only) MK-5160/ 5162/ 5164 (for 40 ppm model only) Example: T00: 1 The toner container (Black) 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.

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7 Troubleshooting

7-1 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 paper conveying unit or paper conveying cover.

The locations are displayed on the operation panel when a paper jam has occurred.

Misfeed location indicators

30 ppm models

The locations are displayed on the operation panel when a paper jam has occurred.

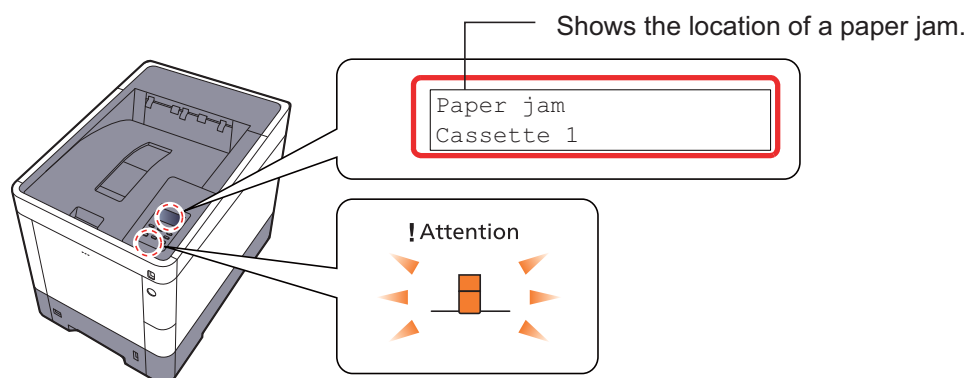


Figure 7-1

Misfeed location indicators	Paper jam:
Paper jam MP Tray	Misfeed in MP tray
Paper jam Cassette 1 (~4)	Misfeed in the cassette 1 to 4
Paper jam Rear Cover	Misfeed inside the rear cover 1 (conveying)
Paper jam Rear Cover 2	Misfeed inside the rear cover 2
Paper jam Rear Cover 3	Misfeed inside the rear cover 3
Paper jam Rear Cover	Misfeed inside the rear cover 1

Misfeed location indicators	Paper jam:
<div><div>Paper jam</div><div>Duplex unit</div></div>	Misfeed in the duplex unit

35/40 ppm models

The locations are displayed on the operation panel when a paper jam has occurred.

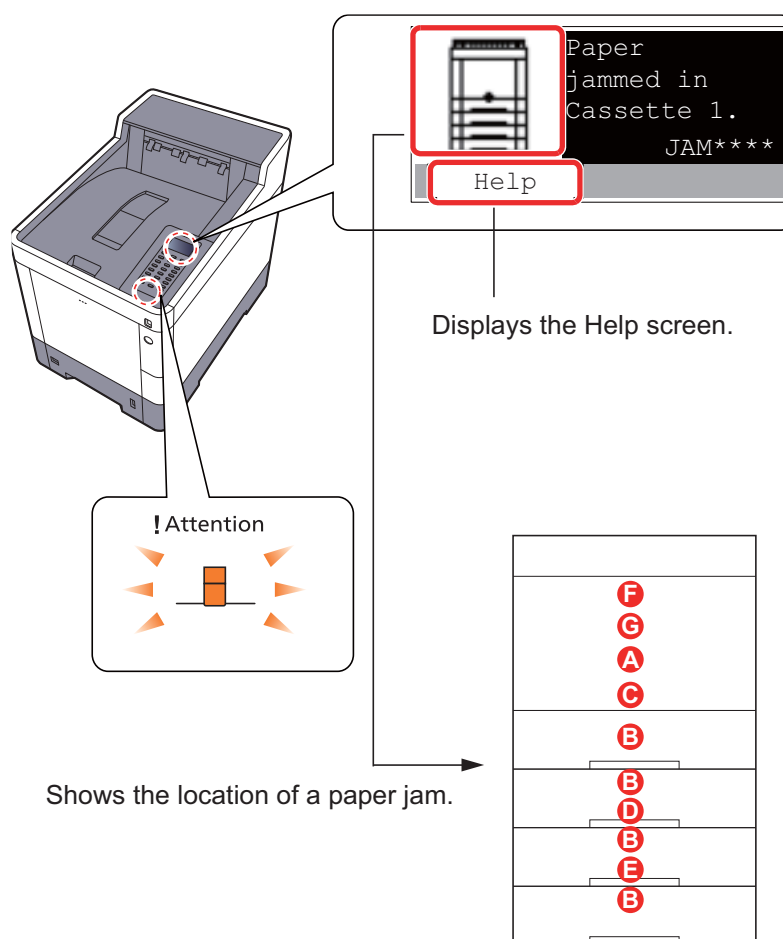
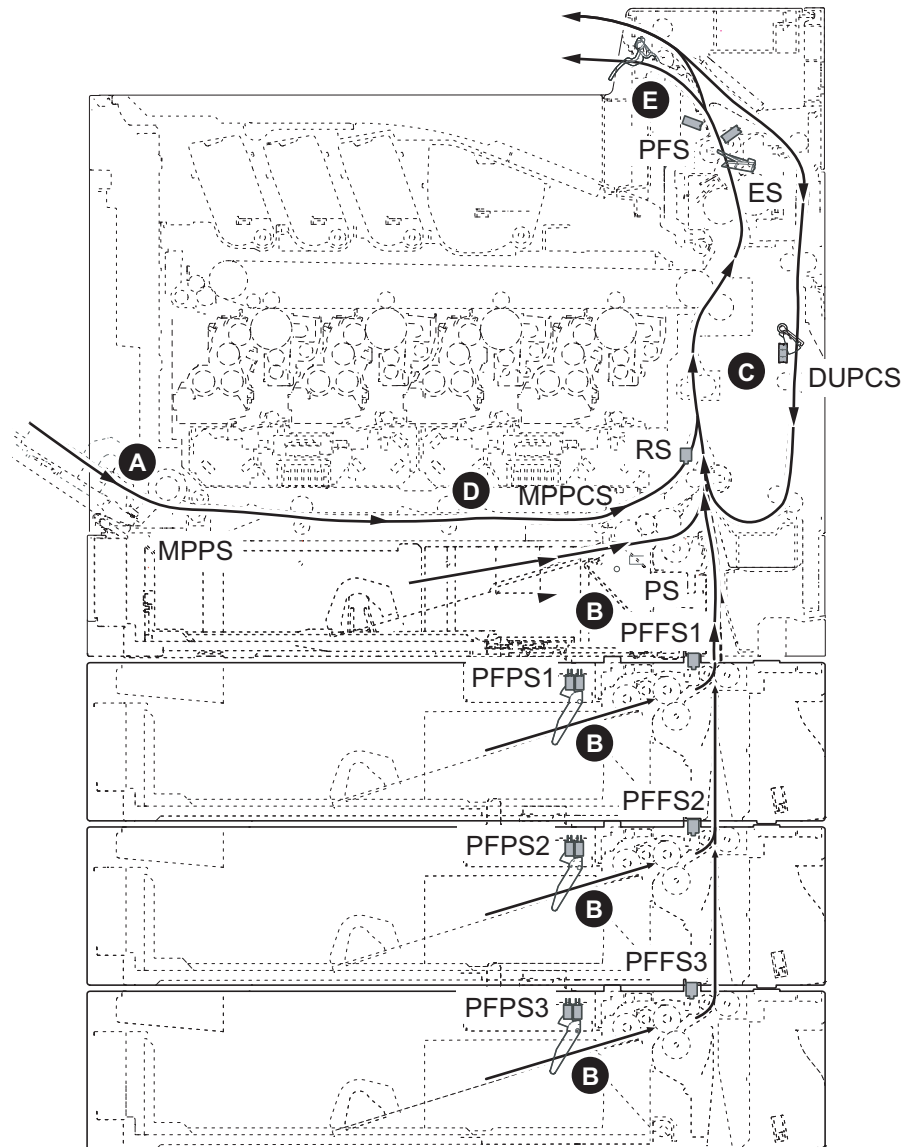


Figure 7-2

- A. Misfeed in MP tray
- B. Misfeed in the cassette 1 to 4
- C. Misfeed inside the rear cover 1 (conveying)

- D. Misfeed inside the rear cover 2
- E. Misfeed inside the rear cover 3
- F. Misfeed inside the rear cover 1
- G. Misfeed in the duplex unit

(2) Paper misfeed detection condition**Machine + PF (Option)****Figure 7-3**

List of JAM Code

Code	Contents	Detection conditions	JAM Position*
0000	Initial jam	The power is turned on when a sensor in the conveying system is on.	-
0100	Secondary feeding timeout	Secondary paper feed request given by the controller is unreachable.	-
0101	Wait for ready of print-process package	Before the paper feeding, the reply of Standby-Ready from the driving function does not come for 40 s, or before the secondary paper feeding, the reply of StartReady from the drive function does not come for 40 s.	-
0104	Wait for ready of conveying package	Before the paper feeding or the secondary paper feeding starts, the permission notice of the paper feeding or the secondary paper feeding does not come for 40 s.	-
0105	Drive prevention jam	A drive does not stop.	-
0106	Paper feeding request for duplex printing time out	Paper feeding request for duplex printing given by the controller is unreachable.	-
0107	Wait for ready of fuser package	Before the paper feeding or the secondary paper feeding starts, the secondary paper feeding temperature does not come for 80 s.	-
0110	Rear cover open jam	The rear cover is opened during printing.	-
0111	Top cover open jam	The inner tray is opened during printing.	-
0211	Cassette cover 2 open jam	The cassette cover 2 is opened during printing.	-
0212	Cassette cover 3 open jam	The cassette cover 3 is opened during printing.	-
0213	Cassette cover 4 open jam	The cassette cover 4 is opened during printing.	-
0501	No paper feeding jam	Registration sensor (RS) does not turn on during paper feed from cassette 1.	B
0502		PF feed sensor 1 (PFFS1) does not turn on during paper feed from cassette 2.	B
0503		PF feed sensor 2 (PFFS2) does not turn on during paper feed from cassette 3.	B
0504		PF feed sensor 3 (PFFS3) does not turn on during paper feed from cassette 4.	B
0508		Registration sensor (RS) does not turn on during paper feed from duplex section. * When the eject motor is reversely rotating. 35/40 ppm printer model only: when the duplex clutch is ON	B
0509		MP conveying sensor (MPPCS) does not turn on during paper feed from MP tray, even if the specified time has passed after the solenoid turned on.	A

Code	Contents	Detection conditions	JAM Position*
0511	Multiple sheets jam	Registration sensor (RS) does not turn off during paper feed from cassette 1.	B
0512		PF feed sensor 1 (PFFS1) does not turn off during paper feed from cassette 2.	B
0513		PF feed sensor 2 (PFFS2) does not turn off during paper feed from cassette 3.	B
0514		PF feed sensor 3 (PFFS3) does not turn off during paper feed from cassette 4.	B
0518	Multiple sheets jam	Registration sensor (RS) does not turn off during paper feed from duplex section.	E
0519		MP conveying sensor (MPPCS) does not turn off during paper feed from MP tray.	E
1403	PF feed sensor 2 non arrival jam	PF feed sensor 2 (PFFS2) does not turn on during paper feed from cassette 3.	B
1404		PF feed sensor 3 (PFFS3) does not turn on during paper feed from cassette 4.	B
1413	PF feed sensor 2 stay jam	PF feed sensor 2 (PFFS2) does not turn off during paper feed from cassette 3.	C
1414		PF feed sensor 3 (PFFS3) does not turn off during paper feed from cassette 4.	C
1604	PF feed sensor 3 non arrival jam	PF feed sensor 3 (PFFS3) does not turn on during paper feed from cassette 4.	B
1614	PF feed sensor 3 stay jam	PF feed sensor 3 (PFFS3) does not turn off during paper feed from cassette 4.	C
4002	Registration sensor non arrival jam	Registration sensor (RS) does not turn on during paper feed from cassette 2.	C
4003		Registration sensor (RS) does not turn on during paper feed from cassette 3.	B
4004		Registration sensor (RS) does not turn on during paper feed from cassette 4.	B
4009		Registration sensor (RS) does not turn on during paper feed from MP tray.	A
4012	Registration sensor stay jam	Registration sensor (RS) does not turn off during paper feed from cassette 2.	D
4013		Registration sensor (RS) does not turn off during paper feed from cassette 3.	D
4014		Registration sensor (RS) does not turn off during paper feed from cassette 4.	D
4019		Registration sensor (RS) does not turn off during paper feed from MP tray.	D

Code	Contents	Detection conditions	JAM Position*
4201	Eject sensor non arrival jam	Eject sensor (ES) does not turn on during paper feed from cassette 1.	E
4202		Eject sensor (ES) does not turn on during paper feed from cassette 2.	E
4203		Eject sensor (ES) does not turn on during paper feed from cassette 3.	E
4204		Eject sensor (ES) does not turn on during paper feed from cassette 4.	E
4208		Eject sensor (ES) does not turn on during paper feed from duplex section.	D
4209		Eject sensor (ES) does not turn on during paper feed from MP tray.	D
4211	Eject sensor stay jam	Eject sensor (ES) does not turn off during paper feed from cassette 1.	E
4212		Eject sensor (ES) does not turn off during paper feed from cassette 2.	E
4213		Eject sensor (ES) does not turn off during paper feed from cassette 3.	E
4214		Eject sensor (ES) does not turn off during paper feed from cassette 4.	E
4218		Eject sensor (ES) does not turn off during paper feed from duplex section.	E
4219		Eject sensor (ES) does not turn off during paper feed from MP tray.	E

* Refer to figure 7-4 for the paper misfeed indication (see page 7-4).

(3) First check items

If the paper is fed askew, jammed, curled, or leading-edge dog-eared, first check the following items.

Check items	Check description	Corrective Action
Paper	1. Check the paper delivered is dog-eared, skewed or creased.	If a dog-ear occurs, check there are no objects existing in the conveying paths, and if any, fix it. If the paper is fed askew or creased, execute No.2. below
	2. Check how paper is loaded in the cassette (paper feeder). Check that the paper has been properly aligned with the width adjuster cursor and the rear guide; it has been loaded without skewing; or it is not damaged. (creased paper, main unit jam)	Adjust the cursors to the size of the paper.
	3. Check how paper is loaded. Check if the cutting edge of the paper bundle inside is crumpled or bent.	If the cutting edge of the paper bundle is crumpled, fan the paper before loading. If the paper is folded, stretch before loading in the cassette.
	4. Check the paper is moist, wavy, or curled.	Load the paper in the cassette upside down. Load paper in the cassette after rotating it 180 degrees. Change the paper.
	5. Check if the paper loaded in the cassette was stored in a continuously humid place.	Instruct the user to store paper in a dry, less humid place.
	6. Check if the paper conforms to the specification.	Isolate the cause of the problem by replacing the paper with the recommended paper. (see page 1-1)

Check items	Check description	Corrective Action
Settings/ Detection	1. Check if the margin is 4.0 ± 2.5 mm from the leading edge of paper.	If the check line is not situated at $4.0 \text{ mm} \pm 2.5 \text{ mm}$ from the leading edge, adjust the leading margin by the Maintenance menu in Product Library.
	2. Check the operation panel if the paper size is correctly set. (multi-feed jam) (MFP: Perform U000 to obtain a Event Log to check if the paper size and the size of the paper loaded are met when jam has occurred and if the size of the original document and the paper size are met.) (see page 6-20)	If the paper size is incorrectly displayed, set the size of the paper cassette properly.
	3. Check that paper settings are made in accordance with the paper being used. (Jam caused by faulty separation)	Select Original/Paper settings under [Common Settings] in the system menu to set media type and weight of paper.
Rear cover	Check the rear cover of the main unit are slightly strained and closed	Open the rear cover and close it firmly. (Check the position of the safety switch)
Conveying guide Entry guide Feedshift guide	1. Check that the foreign objects including torn paper, paper clips, etc., do not exist in the paper conveying paths.	If foreign objects such as torn paper, etc. remain in the paper conveying path, remove them
	2. Check that the paper conveying guide and the separation needles are not contaminated with toner, paper dust, etc.	If dirty, clean the guide, ribs (by a cloth), and the separation needles (by a cleaning brush). If the ribs of the conveying guides were broken or deposited with toner, replace the conveying guide.
	3. Check that the paper conveying guide has no barrs, deformations, or abrasions; and it is properly attached without being floated.	Clean the conveying guide or the paper entry guide. Remove any protrusions including barrs. If floated, reattach. If deformation or abrasion is observed, replace it.
	4. Check that the guide is smoothly operative. Check that the guide is smoothly operative by hand.	If the guide does not operate smoothly, replace the guide or the unit.
	5. Check that the guide is smoothly operative.	If the guide is inoperative or won't operate smoothly, reattach the guide or replace the unit.

Check items	Check description	Corrective Action
Conveying roller Paper feed roller	1. Check the conveying rollers have no paper dust, toner, or foreign objects stucked. Check the variation of the external diameter of the roller or abrasion is not observed with the conveying roller.	Clean the conveying rollers or the pulleys. If variation in the external diameter or abrasion is observed, replace it.
	2. Turn the cover safety switch and check the motor and the clutch are operated normally.	If the conveying motor or the clutch is inoperative, replace it. If stained, replace the clutch. If the clutch is kept turned on due to a tensioned wire, realign the wire.
	3. Check the conveying roller rotates without overloading. Check the bushing or the roller shaft is not contaminated. Check that the spring has not fallen off and is attached so that it is properly applying pressure against the rollers or pulleys.	Clean the roller shaft or bushing. Reattach it while checking the pressure of the spring.
Sensor	1. Check if it does not operate with smoothness due to an abnormal move or dropping off of the actuator of the conveying switch.	Reattach the actuator or the return spring.
	2. Check that the surface of the sensor is not contaminated with toner, paper dust, etc.	If dirty, clean the sensor.
	3. Check the sensors are operated normally.	If the sensor is inoperative, replace the switch.
Static	Check if the location is susceptible to build static discharge at the conveying guide during printing.	Reattach and reconnect the static discharge sheet at the eject unit and the metal guide at the transfer unit so that they are properly grounded.

(4) Items and corrective actions relating to the device that will cause paper jam

Jam types	Check description	Corrective Action
No paper feeding jam or the leading edge of paper is curled back at the position of the roller (J0501, J0502, J0503, J0504, J0509)	1. Check if the jammed paper or printed paper has a tear at its leading edge caused by the roller.	Replace the paper feed roller. (Service life of roller: 200000 images for 30/35 ppm models, 300000 images for 40 ppm models) Clean the roller, or decrease the spring pressure to pinch the retard rollers if the component is under to its expected life. Or replace the spring.
	2. Check abrasion and paper dusts on the feed roller and forwarding rollers.	Clean the paper feed roller and the pickup roller. Or, if not corrected, replace.
	3. Check the pickup roller and paper feed roller are rotating.	If disconnected or or stained, replace the conveying drive unit.
	4. Check that the conveying force of the pickup roller is sufficient.	Increase the conveying force during paper pickup by increasing the spring load of the pickup roller.
Multiple-feed Jam (J0511, J0512, J0513, J0514, J0519)	1. Check if the cutting edge of the paper bundle is crumpled or the cassette is loaded with multiple times of replenishing paper.	If the cutting edge of the paper bundle is crumpled or the cassette is loaded with multiple times of replenishing paper, load new paper.
	2. Checking paper size Check that the size of the loaded paper and the paper size chosen on the operator panel are met.	If the paper size does not match If the cassette cursors have gaps with paper, set them properly. Insert the cassette until the paper size detector switch is turned on. If the size is not detectable even after inserting all the way, check the position of the size detector switch, or replace the size detection switch.
		If the paper size matches If paper is used out of the specification such as coated paper, inkjet paper, etc., replace the paper. Reattach the retard roller in the primary paper feed unit if it is mounted to the opposite direction. Check if the retard spring has not been fallen off of the mounting position. If the retard spring is not dropped off of the mount position, decrease the spring pressure that is applied to the separation rollers. Replace the retard roller unit.
	3. Check if paper dusts and abrasion are observed on the retard roller.	If the paper fanning roller is dirty, clean. If abrasion is observed, replace.

Jam types	Check description	Corrective Action
Multiple-feed Jam (J0511, J0512, J0513, J0514, J0519)	4. Check the clutch that are rotating following other component when the motor is turned on.	If the clutch rotates following other component and its stain is observed, replace the conveying drive unit.
Duplex no paper feeding Jam (J0508) Duplex Multiple-feed Jam (J0518)	Check if the registration sensor is detected.	If the registration sensor is not working, replace the registration sensor.
PF conveying sensor stay jam (J1413, J1414, J1614)	1. Check to see if the actuator of the paper conveying sensor is smoothly operative.	If it does not operate smoothly, reattach or replace the actuator's return spring.
	2. Check the operation of the sensor.	If the sensor is inoperative, replace it.
	3. Check if the PF paper feed clutch rotates following other component.	If stained, replace the clutch. Re-assemble the clutch so that it is not continuously energized. Change of wirings, etc.
	4. Check if the conveying guide is attached while twisted. (If the attached parts of the guide is floated, the actuator does not protrude sufficiently.)	If the bracket is attached while twisted, remove the screw securing the conveying guide and properly reattach the bracket in the right positioning.
	5. Check no wrinkles are observed at the sluck of paper during paper feeding.	Adjust the cursors to the size of the paper.
PF conveying sensor non arrival jam (J1403, J1404, J1604)	1. Check to see if the actuator is smoothly operative.	Reattach or replace the actuator's return spring.
	2. Check the operation of the motor. Check the transmission of the gear drive by the clutch operation. * : * Check the conveying roller rotates and is smoothly movable in the thrust direction.	If the roller does not rotate smoothly, loosen the screws for adjusting the position (at the gear train bracket) to mount the driving gears, and tighten so that a gap between the gears and frame is eliminated.

Jam types	Check description	Corrective Action
Fuser eject sensor non arrival jam, stay jam (J420X,J421X)	1. If paper jams at the feedshift guide, check if the guide is smoothly operative.	If the clearance between the housing and the feedshift guide is too small for the guide to smoothly move, replace the feedshift guide.
	2. Check to see if the actuator of the eject sensor is smoothly operative.	1. If the actuator is not in proper position, or does not return due to falling of the return spring, reattach it. 2. If the actuator is damaged or deformed, replace it.
	3. Check if the eject sensor does not show a false detection.	Replace the defective eject sensor or the eject unit.

(5) Paper jam at feeding from paper feeder 1

Electrical parts that could cause paper jam during paper conveying at the primary feed (to the registration roller)

Timing of detection

Jam code
J0501, J0511

Corrective Action

Related parts	
Registration sensor	Main/engine PWB
Paper feed clutch	Engine relay PWB
Middle clutch	
Paper conveying and developer motor	

Check action at the occurrence step J0501/J502	Corrective action at the occurrence of J0501	Point of checking connection of On/Off control signal output connector (terminal)
1	Items for Initial Checks	(see page 7-8)
2	Registration sensor: Check continuity, location and operation of registration sensor	Main/engine PWB YC12-2
3	Main/engine PWB: Replace	
4	Engine relay PWB: Replace	
5	Paper feed clutch: Operation check	Engine relay PWB YC15-13
6	Middle clutch: Operation check	Engine relay PWB YC15-9
7	Conveying/Developer motor: Operation check	Engine relay PWB YC15-1/2/3/4

(6) Paper jam at feeding from cassette 2 (paper feeder 1)

Electrical parts that could cause paper jam during paper conveying at the primary feed (to the registration roller)

Timing of detection

Jam code
J0502, J0512, J4002, J4012

Corrective Action

Related parts	
PF paper feed sensor	Paper conveying and developer motor
PF paper feed clutch	Registration sensor
PF Paper conveying and developer motor	PF main PWB
PF conveying clutch	Main/Engine PWB (MEPWB)
Middle clutch	Engine relay PWB (ECPWB)

Check action at the occurrence step J0502/J0512	Corrective action at the occurrence	Point of checking connection of On/Off control signal output connector (terminal)
1	Items for Initial Checks	(see page 7-8)
2	PF Feed sensor 1: Conduct connectivity check, mounting location check, operation check	PF main PWB YC5-6
3	PF paper feed clutch: Operation check	PF main PWB YC9-2
4	PF conveying clutch: Operation check	PF main PWB YC9-4
5	PF Paper conveying and developer motor: Operation check	PF main PWB YC6-1/2/3/4
6	PF main PWB: Replace	

Check action at the occurrence step J4002/J4012	Corrective action at the occurrence	Point of checking connection of On/Off control signal output connector (terminal)
1	Items for Initial Checks	(see page 7-8)
2	Check continuity, location and operation of registration sensor (RS)	Main/engine PWB YC12-2
3	Main/engine PWB: Replace	(see page 4-62)
4	Middle clutch: Operation check	Engine relay PWB YC15-9

Check action at the occurrence step J4002/J4012	Corrective action at the occurrence	Point of checking connection of On/Off control signal output connector (terminal)
5	Conveying/Developer motor: Operation check	Engine relay PWB YC15-1/2/3/4
6	Engine relay PWB: Replace	

(7) Paper jam at feeding from the MP tray

Electrical parts that could cause paper jam during paper conveying at the primary feed (to the registration roller)

Timing of detection

Jam code
J0509,J0519

Corrective Action

Related parts	
Registration sensor	MP conveying clutch
MP solenoid	Main/engine PWB
Paper conveying and developer motor	Engine relay PWB

Check action at the occurrence step J0509/J0519	Corrective action at the occurrence	Point of checking connection of On/Off control signal output connector (terminal)
1	Items for Initial Checks	(see page 7-8)
2	Check continuity, location and operation of registration sensor	Main/engine PWB YC12-2
3	MP solenoid: Operation check	Engine relay PWB YC16-2
4	MP conveying clutch: Operation check	Engine relay PWB YC15-11
5	Conveying/Developer motor: Operation check	Engine relay PWB YC15-1/2/3/4
6	Engine relay PWB: Replace	
7	Main/engine PWB: Replace	(see page 4-62)

(8) Paper jam at the duplex re-feeding section

Electrical parts that could cause paper jam during paper conveying at the primary feed (to the registration roller)

Timing of detection

Jam code
J0508,J0518

Corrective Action

Related parts	
Registration sensor	Main/engine PWB
Middle clutch	Engine relay PWB
Paper conveying and developer motor	

Check action at the occurrence step J0508/J0518	Corrective action at the occurrence	Point of checking connection of On/Off control signal output connector (terminal)
1	Items for Initial Checks	(see page 7-8)
2	Check continuity, location and operation of registration sensor	Main/engine PWB YC12-2
3	Main/engine PWB: Replace	(see page 4-62)
4	Middle clutch: Operation check	Engine relay PWB YC15-9
5	Paper conveying and developer motor	Engine relay PWB YC15-1/2/3/4
6	Engine relay PWB: Replace	

(9) Electrical parts that could cause paper jam at the transfer , the fuser and the eject parts

Timing of detection

Jam code
J4201,J4211

Corrective Action

Related parts	
Eject sensor	Main/engine PWB
Paper conveying and developer motor	Engine relay PWB
Duplex eject motor	

Checking procedure at the occurrence step J4201/J4211	Corrective action at the occurrence of J41XX	Point of checking connection of On/Off control signal output connector (terminal)
1	Items for Initial Checks	(see page 7-8)
2	Check continuity, location and operation of eject sensor	Main/engine PWB YC11-7
3	Main/engine PWB: Replace	(see page 4-62)
4	Duplex eject motor: Operation check	Engine relay PWB YC20-1/2/3/4
5	Conveying/Developer motor: Operation check	Engine relay PWB YC15-1/2/3/4
6	Engine relay PWB: Replace	

7-2 Self diagnostic

(1) Self diagnostic function

This machine is equipped with self-diagnostic function. When a problem is detected, the machine stops operation 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.

(2) Self diagnostic codes

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

* : * Before attempting to check the power supply and the fuser unit, be sure to turn the power switch off and unplug the machine from power. Allow at least 5 s before starting to conduct service until the capacitors on the circuit boards have been completely discharged.

Indica- tion	Contents	Related parts	Check procedures/corrective measures
0100	Backup memory device error Outputs an abnormal status from the flash memory.	Flash memory (Main/engine PWB)	<ol style="list-style-type: none"> 1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Check that the connectors on the main/engine PWB are properly connected, and if not, re-connect them. 3. Replace the main/engine PWB. (see page 4-62)
0120	MAC address data error In case MAC address is invalid data	Flash memory (Main/engine PWB)	<ol style="list-style-type: none"> 1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Check the MAC address on the network status page. 3. Replace the main/engine PWB. (see page 4-62)
0130	Backup memory read/write error (Main/engine PWB) Read/write to the NAND memory can not be executed	Flash memory (Main/engine PWB) (Main/Engine PWB)	<ol style="list-style-type: none"> 1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Check that the connectors on the main/engine PWB are properly connected, and if not, re-connect them. 3. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
0140	Backup memory data error (Main/engine PWB) At power up, the data that was read from the NAND memory has been determined to be a error.	Flash memory (Main/engine PWB) (Main/Engine PWB)	1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Replace the main/engine PWB. (see page 4-62)
0150	EEPROM read/write error (Main/engine PWB) 1. No response is issued from the device in reading/writing for 5 ms or more and this problem is repeated 5 times successively. 2. Mismatch of reading data from two locations occurs 8 times successively. 3. Mismatch between writing data and reading data occurs 8 times successively.	EEPROM (Main/Engine PWB)	1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Check that the EEPROM is properly installed on the main/engine PWB and if not, reinstall it. 3. Replace the main/engine PWB. (see page 4-62) 4. Check the EEPROM and if it is damaged, contact the service support.
0160	EEPROM data error (Main/engine PWB) Reading data from EEPROM is detected abnormal.	EEPROM (Main/engine PWB)	1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. If the EEPROM data are corrupted, contact the service support.
0170	Billing counting error Mismatch between the value of the main/engine PWB and EEPROM, in one of the value of billing counter, life counter, or scanner counter.	EEPROM (Main/engine PWB)	1. Check that the EEPROM installed in the main/engine PWB is correct and, if not, install the correct EEPROM for the model. 2. Replace the main/engine PWB. (see page 4-62) 3. If the EEPROM data are corrupted, contact the service support.
0190	Backup memory device error (Main/engine PWB) At power up, read/write data from FRAM can not be performed. (retry: 3times)	FRAM (Main/engine PWB)	1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Check that the connectors on the main/engine PWB are properly connected, and if not, re-connect them. 3. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
0360	Communication error between the engine ASIC During the readback data checked after data transmission, the checksum error or the video signal is not inverted. (failed 10 consecutive times)	Main/Engine PWB	<ol style="list-style-type: none"> 1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Check that the connectors on the main/engine PWB are properly connected, and if not, re-connect them. 3. Replace the main/engine PWB. (see page 4-62)
0800	Image formation problems The printing sequence JAM (J010X) is detected for 2 consecutive times.	Main/Engine PWB	<ol style="list-style-type: none"> 1. Check if the problem is a printing operation error detection in a particular file, and if it is possible to obtain the reproduction of phenomena by the identification of the job that detected the error, take the job log. 2. If the problem occurs in unspecified job, check the connectors on the main/engine PWB, and reattach it. 3. Replace the main/engine PWB. (see page 4-62)
0840	Faults of RTC Check at power up. The RTC setting has reverted to a previous state. The machine has not been powered for 5 years (compared to the settings stored periodically in the EEPROM). The RTC setting is older than 00:01 on January 1, 2000. Checked periodically (at every 5 minutes) after power-up. The RTC setting has reverted to a state older than the last time it was checked. 10 minutes have been passed since the previous check.	Settings of RTC	<ol style="list-style-type: none"> 1. Execute Date Setting using the system menu.
		Backup battery (Main/engine PWB) (Main/Engine PWB)	<ol style="list-style-type: none"> 1. Check if the backup battery on the main/engine PWB is not short-circuited. 2. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. If the same service call error is displayed, replace the backup battery.
		Main/Engine PWB	<ol style="list-style-type: none"> 1. If the communication error (due to a noise, etc.) is present with the RTC on the main/engine PWB, check that the PWB is properly grounded or secured by screws. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
1010	Lift motor error (main unit) The following states have been detected 5 times in succession. The lift motor overcurrent is detected for 80 ms. After the cassette is installed, the upper limit detection sensor does not turn ON within 10 s. During printing, after the upper limit detection sensor detects off, and 1 s after ascending control, and the upper limit detection sensor does not detect on. The upper limit detection sensor does not turn off within 5 s after descending control. The upper limit detection sensor does not turn on within 5 s after ascending control.	Bottom plate	1. Check to see if the bottom plate can move smoothly and repair or replace it if any problem is found.
		Defective connector cable or poor contact in the connector	1. Reinsert the connector. 2. If a wire is pinched by other component, or has defect conduction, replace it. Lift motor and Engine relay PWB (YC25) Engine relay PWB (YC1) and Main/engine PWB (YC4) Lift sensor and Engine relay PWB (YC8)
		Drive transmission system for the lift motor	1. Check if the gears rotate smoothly. If not, clean or grease the bushes and gears. 2. Check broken gears and replace if any.
		Lift motor	Replace the lift motor.
		Lift sensor (upper limit detection sensor)	1. Check if the actuator of the lift sensor can be turned ON/OFF to suit the rise of the cassette bottom plate. 2. Replace the lift sensor
		Engine relay PWB	1. Replace the engine relay PWB. (see page 4-80)
		Main/Engine PWB	1. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
1020	PF lift motor error (PF1) The following states have been detected 5 times in succession. The lift motor overcurrent is detected for 200 ms. After the cassette is installed, the upper limit detection sensor does not turn ON within 10 s. During printing, after the upper limit detection sensor detects off, and 1 s after ascending control, and the upper limit detection sensor does not detect on. The upper limit detection sensor does not turn off within 5 s after descending control. The upper limit detection sensor does not turn on within 5 s after ascending control.	Bottom plate	Check to see if the bottom plate can move smoothly and repair or replace it if any problem is found.
		Defective connector cable or poor contact in the connector	1. Reconnect the connector if its connection is loose. 2. If a wire is pinched by other component, or has defect conduction, replace it. PF lift motor 1 and PF main PWB (YC7) LPF1 main PWB and Engine relay PWB (YC19)
		Drive transmission system for the lift motor	1. Check if the gears rotate smoothly. If not, clean or grease the bushes and gears. 2. Check broken gears and replace if any.
		PF lift motor 1	Replace the PF lift motor 1.
		PF1 main PWB PF lift sensor (upper limit detection sensor)	1. Check if the actuator of the PF lift sensor can be turned ON/OFF to suit the rise of the cassette bottom plate. 2. Replace the PF1 main PWB. (see page 4-213).
		Engine relay PWB	Replace the engine relay PWB. (see page 4-80)

Indication	Contents	Related parts	Check procedures/corrective measures
1030	PF lift motor error (PF2) The following states have been detected 5 times in succession. The lift motor overcurrent is detected for 200 ms. After the cassette is installed, the upper limit detection sensor does not turn ON within 10 s. During printing, after the upper limit detection sensor detects off, and 1 s after ascending control, and the upper limit detection sensor does not detect on. The upper limit detection sensor does not turn off within 5 s after descending control. The upper limit detection sensor does not turn on within 5 s after ascending control.	Bottom plate	Check to see if the bottom plate can move smoothly and repair or replace it if any problem is found.
		Defective connector cable or poor contact in the connector	1. Reconnect the connector if its connection is loose. 2. If a wire is pinched by other component, or has defect conduction, replace it. PF lift motor 2 and PF main PWB (YC7) PF2 main PWB and Engine relay PWB (YC19)
		Drive transmission system for the lift motor	1. Check if the gears rotate smoothly. If not, clean or grease the bushes and gears. 2. Check broken gears and replace if any.
		PF lift motor 2	Replace the PF lift motor 2.
		PF2 main PWB (PF lift sensor) (upper limit detection sensor)	1. Check if the actuator of the PF lift sensor can be turned ON/OFF to suit the rise of the cassette bottom plate. 2. Replace the PF2 main PWB. (see page 4-213).
		Engine relay PWB	Replace the engine relay PWB. (see page 4-80)

Indication	Contents	Related parts	Check procedures/corrective measures
1040	PF lift motor error (PF3) The following states have been detected 5 times in succession. The lift motor overcurrent is detected for 200 ms. After the cassette is installed, the upper limit detection sensor does not turn ON within 10 s. During printing, after the upper limit detection sensor detects off, and 1 s after ascending control, and the upper limit detection sensor does not detect on. The upper limit detection sensor does not turn off within 5 s after descending control. The upper limit detection sensor does not turn on within 5 s after ascending control.	Bottom plate	Check to see if the bottom plate can move smoothly and repair or replace it if any problem is found.
		Defective connector cable or poor contact in the connector	1. Reconnect the connector if its connection is loose. 2. If a wire is pinched by other component, or has defect conduction, replace it. PF lift motor 3 and PF main PWB (YC7) PF3 main PWB and Engine relay PWB (YC19)
		Drive transmission system for the lift motor	1. Check if the gears rotate smoothly. If not, clean or grease the bushes and gears. 2. Check broken gears and replace if any.
		PF lift motor 3	Replace the PF lift motor 3.
		PF3 main PWB (PF lift sensor) (upper limit detection sensor)	1. Check if the actuator of the PF lift sensor can be turned ON/OFF to suit the rise of the cassette bottom plate. 2. Replace the PF3 main PWB. (see page 4-213).
		Engine relay PWB	Replace the engine relay PWB. (see page 4-80)
1810	Paper feeder communication error (first cassette) A communication error from paper feeder is detected 10 times in succession.	Paper feeder 1	Check the wiring connection status with the main unit, and if necessary, reconnecting it.
		PF1 main PWB	1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. PF1 main PWB (YC3) and Engine relay PWB (YC19) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Reinstall the PF firmware. 4. Replace the PF1 main PWB. (see page 4-213).
		Engine relay PWB	1. Replace the engine relay PWB.(see page 4-80)
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
1820	Paper feeder communication error (second cassette) A communication error from paper feeder is detected 10 times in succession.	Paper feeder 2	Check the wiring connection status with PF1, and if necessary, reconnect it.
		PF2 main PWB	<ol style="list-style-type: none"> 1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. PF2 main PWB (YC3) and PF1 main PWB (YC5,4) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Reinstall the PF firmware. 4. Replace the PF2 main PWB.
		PF1 main PWB	Replace the PF1 main PWB. (see page 4-213)
1830	Paper feeder communication error (third cassette) A communication error from paper feeder is detected 10 times in succession.	Paper feeder 3	Check the wiring connection status with PF2, and if necessary, reconnect it.
		PF3 main PWB	<ol style="list-style-type: none"> 1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. PF3 main PWB (YC3) and PF2 main PWB (YC5,4) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Reinstall the PF firmware. 4. Replace the PF3 main PWB.
		PF2 main PWB	Replace the PF2 main PWB. (see page 4-213)
1900	Paper feeder 1 EEPROM error (first cassette) When writing the data, read and write data does not match 4 times in succession.	PF1 main PWB EEPROM	<ol style="list-style-type: none"> 1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Confirm that the wiring connector to the main unit is firmly connected, and if necessary, connect the connector all the way in. 3. Replace the PF1 main PWB.
1910	Paper feeder 2 EEPROM error (second cassette) When writing the data, read and write data does not match 4 times in succession.	PF2 main PWB (EEPROM)	<ol style="list-style-type: none"> 1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Confirm that the wiring connector with the PF1 is firmly connected, and if necessary, connect the connector all the way in. 3. Replace the PF2 main PWB.

Indication	Contents	Related parts	Check procedures/corrective measures
1920	Paper feeder 3 EEPROM error (third cassette) When writing the data, read and write data does not match 4 times in succession.	PF3 main PWB (EEPROM)	1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Confirm that the wiring connector with the PF2 is firmly connected, and if necessary, connect the connector all the way in. 3. Replace the PF3 main PWB.
2101	Developer motor steady-state error (C,M,Y) After motor is stabilized, the stable signal is turned OFF for continuous 2 s.	Developer unit	1. Check that the developer roller can be rotated by hand, and if it is locked, replace the developer unit.
		Developer motor	1. Check if the couplings and gears rotate smoothly, and if necessary replace them. 2. Reconnect the connector if its connection is loose. 3. Check continuity within the connector wire. If none, replace the wire. Developer motor and Engine relay PWB (YC12) Engine relay PWB (YC1) and Main/engine PWB (YC4) 4. Replace the developer motor (see page 4-158)
		Engine relay PWB	Replace the engine relay PWB.(see page 4-80)
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
2111	Developer motor startup error (C,M,Y) After the motor starting, the stable signal is not turned ON within 3 s.	Developer unit	1. Check that the developer roller can be rotated by hand, and if it is locked, replace the developer unit.
		Developer motor	1. Check if the couplings and gears rotate smoothly, and if necessary replace them. 2. Reconnect the connector if its connection is loose. 3. Check continuity within the connector wire. If none, replace the wire. Developer motor and Engine relay PWB (YC12) Engine relay PWB (YC1) and Main/engine PWB (YC4) 4. Replace the developer motor (see page 4-158)
		Engine relay PWB	Replace the engine relay PWB. (see page 4-80)
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
2201	Drum motor CY steady-state error After motor is stabilized, the stable signal is turned OFF for continuous 2 s.	Drum unit C or Drum unit Y	Check that the drum can be rotated by hand, and if it is locked, replace the drum unit C or drum unit Y.
		Defective connector cable or poor contact in the connector	1. Reconnect the connector if its connection is loose. 2. Check continuity within the connector wire. If none, replace the wire. Drum motor CY and Engine relay PWB (YC13) Engine relay PWB (YC1) and Main/engine PWB (YC4)
		Drive transmission system for the drum motor CY	1. Check if the couplings and gears rotate smoothly, and if not, clean or grease the gears. 2. Check broken couplings and gears, and replace if any.
		Drum motor CY	Replace the drum motor CY.
		Engine relay PWB	Replace the engine relay PWB. (see page 4-80)
		Main/Engine PWB	Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
2202	Drum motor KM steady-state error After motor is stabilized, the stable signal is turned OFF for continuous 2 s.	Drum unit K or Drum unit M	Check that the drum can be rotated by hand, and if it is locked, replace the drum unit K or drum unit M.
		Defective connector cable or poor contact in the connector	1. Reconnect the connector if its connection is loose. 2. Check continuity within the connector wire. If none, replace the wire. Drum motor KM and Engine relay PWB (YC13) Engine relay PWB (YC1) and Main/engine PWB (YC4)
		Drive transmission system for the drum motor KM	1. Check if the couplings and gears rotate smoothly, and if not, clean or grease the gears. 2. Check broken couplings and gears, and replace if any.
		Drum motor KM	Replace the drum motor KM.
		Engine relay PWB	Replace the engine relay PWB. (see page 4-80)
		Main/Engine PWB	Replace the main/engine PWB. (see page 4-62)
2211	Drum motor CY startup error After the motor starting, the stable signal is not turned ON within 3 s.	Drum unit C or Drum unit Y	Check that the drum can be rotated by hand, and if it is locked, replace the drum unit C or drum unit Y.
		Defective connector cable or poor contact in the connector	1. Reconnect the connector if its connection is loose. 2. Check continuity within the connector wire. If none, replace the wire. Drum motor CY and Engine relay PWB (YC13) Engine relay PWB (YC1) and Main/engine PWB (YC4)
		Drive transmission system for the drum motor CY	1. Check if the couplings and gears rotate smoothly, and if not, clean or grease the gears. 2. Check broken couplings and gears, and replace if any.
		Drum motor CY	Replace the drum motor CY.
		Engine relay PWB	Replace the engine relay PWB. (see page 4-80)
		Main/Engine PWB	Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
2212	Drum motor KM startup error After the motor starting, the stable signal is not turned ON within 3 s.	Drum unit K or Drum unit M	Check that the drum can be rotated by hand, and if it is locked, replace the drum unit K or drum unit M.
		Defective connector cable or poor contact in the connector	1. Reconnect the connector if its connection is loose. 2. Check continuity within the connector wire. If none, replace the wire. Drum motor KM and Engine relay PWB (YC13) Engine relay PWB (YC1) and Main/engine PWB (YC4)
		Drive transmission system for the drum motor KM	1. Check if the couplings and gears rotate smoothly, and if not, clean or grease the gears. 2. Check broken couplings and gears, and replace if any.
		Drum motor KM	Replace the drum motor KM.
		Engine relay PWB	Replace the engine relay PWB. (see page 4-80)
		Main/Engine PWB	Replace the main/engine PWB. (see page 4-62)
2500	Paper feed motor error After the motor starting, the stable signal is not turned ON within 3 s. After motor is stabilized, the stable signal is turned OFF for continuous 2 s.	Defective connector cable or poor contact in the connector	1. Reconnect the connector if its connection is loose. 2. Check continuity within the connector wire. If none, replace the wire. Paper conveying and developer motor and Engine relay PWB (YC15) Engine relay PWB (YC1) and Main/engine PWB (YC4)
		Drive transmission system for the Paper conveying and developer motor	1. Check if the rollers and gears rotate smoothly. If not, clean or grease the bushes and gears. 2. Replace the gears, if damaged.
		Paper conveying and developer motor	Replace the Paper conveying and developer motor.
		Engine relay PWB	Replace the engine relay PWB. (see page 4-80)
		Main/Engine PWB	Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
2600	PF drive motor 1 error (PF1) During the motor drive, the stable signal is not turned on for continuous 5 s.	Defective connector cable or poor contact in the connector	1. Reconnect the connector if its connection is loose. 2. Check continuity within the connector wire. If none, replace the wire. PF drive motor 1 and PF1 main PWB (YC6)
		Drive transmission system for the PF drive motor	1. Check if the rollers and gears rotate smoothly. If not, clean or grease the bushes and gears. 2. Replace the gears, if damaged.
		PF drive motor 1	Replace the PF drive motor 1.
		PF main PWB	Replace the PF main PWB. (see page 4-213).
2610	PF drive motor 2 error (PF2) During the motor drive, the stable signal is not turned on for continuous 5 s.	Defective connector cable or poor contact in the connector	1. Reconnect the connector if its connection is loose. 2. Check continuity within the connector wire. If none, replace the wire. PF drive motor 2 and PF2 main PWB (YC6)
		Drive transmission system for the PF drive motor	1. Check if the rollers and gears rotate smoothly. If not, clean or grease the bushes and gears. 2. Replace the gears, if damaged.
		PF drive motor 2	Replace the PF drive motor 2.
		PF main PWB	Replace the PF main PWB. (see page 4-213).
2620	PF drive motor 3 error (PF3) During the motor drive, the stable signal is not turned on for continuous 5 s.	Defective connector cable or poor contact in the connector	1. Reinsert the connector. 2. Check continuity within the connector wire. If none, replace the wire. PF drive motor 3 and PF3 main PWB (YC6)
		Drive transmission system for the PF drive motor	1. Check if the rollers and gears rotate smoothly. If not, clean or grease the bushes and gears. 2. Replace the gears, if damaged.
		PF drive motor 3	Replace the PF drive motor 3.
		PF main PWB	Replace the PF main PWB. (see page 4-213).

Indication	Contents	Related parts	Check procedures/corrective measures
2760	Primary transfer belt motor startup error After the motor starting, the stable signal is not turned ON within 3 s.	Primary transfer unit	1. Check that the belt can be rotated by hand, and if it is locked, get rid of the factor. 2. Replace the primary transfer unit.
		Defective connector cable or poor contact in the connector	1. Reconnect the connector if its connection is loose. 2. Check continuity within the connector wire. If none, replace the wire. Primary transfer motor and Engine relay PWB (YC14) Engine relay PWB (YC1) and Main/engine PWB (YC4)
		Drive transmission system for the Primary transfer motor	1. Check if the rollers and gears rotate smoothly. If not, clean or grease the bushes and gears. 2. Replace the gears, if damaged.
		Primary transfer motor	Replace the Primary transfer motor.
		Engine relay PWB	Replace the engine relay PWB. (see page 4-80)
		Main/Engine PWB	Replace the main/engine PWB. (see page 4-62)
2820	Primary transfer belt motor steady-state error After motor is stabilized, the stable signal is turned OFF for continuous 2 s.	Primary transfer unit	1. Check that the belt can be rotated by hand, and if it is locked, check if foreign objects such as jammed paper, and if jammed, get rid of it. 2. Replace the primary transfer unit.
		Defective connector cable or poor contact in the connector	1. Reconnect the connector if its connection is loose. 2. Check continuity within the connector wire. If none, replace the wire. Primary transfer motor and Engine relay PWB (YC14) Engine relay PWB (YC1) and Main/engine PWB (YC4)
		Drive transmission system for the Primary transfer motor	1. Check if the rollers and gears rotate smoothly. If not, clean or grease the bushes and gears. 2. Replace the gears, if damaged.
		Primary transfer motor	Replace the Primary transfer motor.
		Engine relay PWB	Replace the engine relay PWB. (see page 4-80)
		Main/Engine PWB	Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
4001	Polygon motor (Black, Magenta) startup error After the polygon motor starting, the motor stable signal is not turned ON after 6 s.	Polygon motor (Black, Magenta)	<ol style="list-style-type: none"> 1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. LSU and Main/engine PBW (YC2016) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the LSU. (see page 4-104)
		Main/Engine PWB	<ol style="list-style-type: none"> 1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
4002	Polygon motor (Cyan, Yellow) startup error After the polygon motor starting, the motor stable signal is not turned ON after 6 s.	Polygon motor (Cyan, Yellow)	<ol style="list-style-type: none"> 1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. LSU and Main/engine PBW (YC2017) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the LSU. (see page 4-104)
		Main/Engine PWB	<ol style="list-style-type: none"> 1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
4011	Polygon motor (Black, Magenta) steady error After the polygon motor stabilization, the motor stable signal is turned OFF for consecutive 6 s.	Polygon motor (Black, Magenta)	<ol style="list-style-type: none"> 1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. LSU and Main/engine PBW (YC2016) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the LSU. (see page 4-104)
		Main/Engine PWB	<ol style="list-style-type: none"> 1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
4012	Polygon motor (Cyan, Yellow) steady error After the polygon motor stabilization, the motor stable signal is turned OFF for consecutive 6 s.	Polygon motor (Cyan, Yellow)	<ol style="list-style-type: none"> 1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. LSU and Main/engine PBW (YC2017) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the LSU. (see page 4-104)
		Main/Engine PWB	<ol style="list-style-type: none"> 1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
4101	Laser BD (Black) error The laser can not be received for 1 s, after the Yellow laser emission starts.	LSU (Black, Magenta)	<ol style="list-style-type: none"> 1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. LSU and Main/engine PBW (YC2016) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the LSU. (see page 4-104)
		Main/Engine PWB	<ol style="list-style-type: none"> 1. Check both main and engine firmware, and upgrade to the latest version, if necessary. 2. Replace the main/engine PWB. (see page 4-62)
4102	Laser BD (Cyan) error The laser can not be received for 1 s, after the Cyan laser emission starts.	LSU (Cyan, Yellow)	<ol style="list-style-type: none"> 1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. LSU and Main/engine PBW (YC2017) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the LSU. (see page 4-104)
		Main/Engine PWB	<ol style="list-style-type: none"> 1. Check both main and engine firmware, and upgrade to the latest version, if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
4103	Laser BD (Magenta) error The laser can not be received for 1 s, after the Magenta laser emission starts.	LSU (Black, Magenta)	<ol style="list-style-type: none"> 1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. LSU and Main/engine PBW (YC2016) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the LSU. (see page 4-104)
		Main/Engine PWB	<ol style="list-style-type: none"> 1. Check both main and engine firmware, and upgrade to the latest version, if necessary. 2. Replace the main/engine PWB. (see page 4-62)
4104	Laser BD (Yellow) error The laser can not be received for 1 s, after the Yellow laser emission starts.	LSU (Cyan, Yellow)	<ol style="list-style-type: none"> 1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. LSU and Main/engine PBW (YC2017) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the LSU. (see page 4-104)
		Main/Engine PWB	<ol style="list-style-type: none"> 1. Check both main and engine firmware, and upgrade to the latest version, if necessary. 2. Replace the main/engine PWB. (see page 4-62)
4201	Laser BD (Black) steady-state error During the polygon motor steady rotation, the BD signal of Black is not detected.	LSU (Black, Magenta)	<ol style="list-style-type: none"> 1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. LSU and Main/engine PBW (YC2016) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the LSU. (see page 4-104)
		Main/Engine PWB	<ol style="list-style-type: none"> 1. Check both main and engine firmware, and upgrade to the latest version, if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
4202	Laser BD (Cyan) steady-state error During the polygon motor steady rotation, the BD signal of Cyan is not detected.	LSU (Cyan, Yellow)	1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. LSU and Main/engine PBW (YC2017) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the LSU. (see page 4-104)
		Main/Engine PWB	1. Check both main and engine firmware, and upgrade to the latest version, if necessary. 2. Replace the main/engine PWB. (see page 4-62)
4203	Laser BD (Magenta) steady-state error During the polygon motor steady rotation, the BD signal of Magenta is not detected.	LSU (Black, Magenta)	1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. LSU and Main/engine PBW (YC2016) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the LSU. (see page 4-104)
		Main/Engine PWB	1. Check both main and engine firmware, and upgrade to the latest version, if necessary. 2. Replace the main/engine PWB. (see page 4-62)
4204	Laser BD (Yellow) steady-state error During the polygon motor steady rotation, the BD signal of Yellow is not detected.	LSU (Cyan, Yellow)	1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. LSU and Main/engine PBW (YC2017) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the LSU. (see page 4-104)
		Main/Engine PWB	1. Check both main and engine firmware, and upgrade to the latest version, if necessary. 2. Replace the main/engine PWB. (see page 4-62)

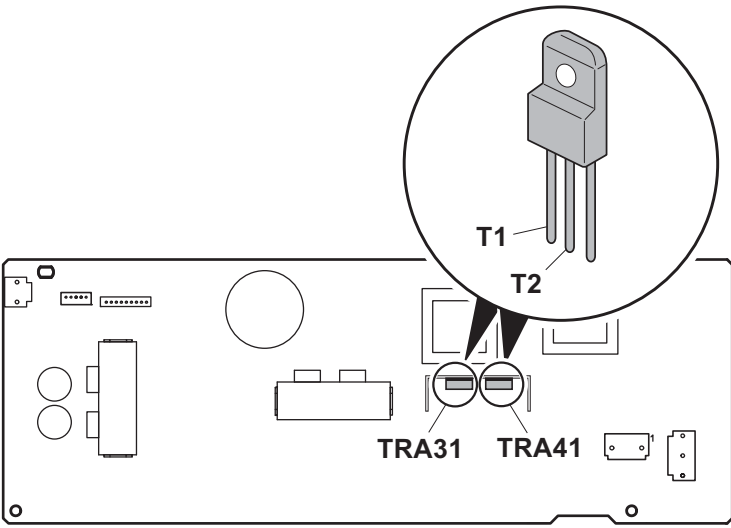
Indication	Contents	Related parts	Check procedures/corrective measures
4600	LSU cleaning motor error During driving the LSU cleaning motor, an over-current is detected for 5 s successively.	LSU cleaning spiral	<ol style="list-style-type: none"> 1. Execute [LSU cleaning] using [Adjustment/Maintenance] of the system menu. 2. Check that the drive gear and cleaning spiral can rotate and they are not unusually loaded, and if necessary, clean and grease.
		LSU cleaning motor	<ol style="list-style-type: none"> 1. Confirm that the LSU cleaning motor has been firmly attached. 2. Replace the LSU cleaning motor.
		Engine relay PWB	<ol style="list-style-type: none"> 1. Reconnect the connector if its connection is loose. 2. If a wire is pinched by other component, or has defect conduction, replace it. LSU cleaning motor and Engine relay PWB (YC26) <ol style="list-style-type: none"> 3. Replace the engine relay PWB. (see page 4-80)
4700	VIDEO_ASIC device error <ol style="list-style-type: none"> 1. Communication with the video ASIC has failed 5 times successively. 2. After writing to VIDEO ASIC, the error that the reading value from same address does not match occurs 8 times successively. 	Main/Engine PWB	<ol style="list-style-type: none"> 1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Check that the connectors on the main/engine PWB are properly connected, and if not, re-connect them. 3. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
5101	Main high-voltage error K (40 ppm model) When adjusting Vpp in the main charger adjustment, the inflowing current of the drum unit (K) is excessively low.	Drum unit	1. Confirm that the drum or the drum screw can rotate. 2. If it won't rotate, replace the drum unit.
		Main charger roller unit	1. Confirm that the Main charger roller unit has been firmly attached. 2. Replace the Main charger roller unit.
		High-voltage PWB	1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. High-voltage PWB (YC101) and Main/engine PBW (YC7) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the High-voltage PWB. (see page 4-84)
		Main/Engine PWB	1. Check both main and engine firmware, and upgrade to the latest version, if necessary. 2. Replace the main/engine PWB. (see page 4-62)
5102	Main high-voltage error C (40 ppm model) When adjusting Vpp in the main charger adjustment, the inflowing current of the drum unit (C) is excessively low.	Drum unit	1. Confirm that the drum or the drum screw can rotate. 2. If it won't rotate, replace the drum unit.
		Main charger roller unit	1. Confirm that the Main charger roller unit has been firmly attached. 2. Replace the Main charger roller unit.
		High-voltage PWB	1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. High-voltage PWB (YC101) and Main/engine PBW (YC7) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the High-voltage PWB. (see page 4-84)
		Main/Engine PWB	1. Check both main and engine firmware, and upgrade to the latest version, if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
5103	Main high-voltage error M (40 ppm model) When adjusting Vpp in the main charger adjustment, the inflowing current of the drum unit (M) is excessively low.	Drum unit	1. Confirm that the drum or the drum screw can rotate. 2. If it won't rotate, replace the drum unit.
		Main charger roller unit	1. Confirm that the Main charger roller unit has been firmly attached. 2. Replace the Main charger roller unit.
		High-voltage PWB	1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. High-voltage PWB (YC101) and Main/engine PBW (YC7) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the High-voltage PWB. (see page 4-84)
		Main/Engine PWB	1. Check both main and engine firmware, and upgrade to the latest version, if necessary. 2. Replace the main/engine PWB. (see page 4-62)
5104	Main high-voltage error Y (40 ppm model) When adjusting Vpp in the main charger adjustment, the inflowing current of the drum unit (Y) is excessively low.	Drum unit	1. Confirm that the drum or the drum screw can rotate. 2. If it won't rotate, replace the drum unit.
		Main charger roller unit	1. Confirm that the Main charger roller unit has been firmly attached. 2. Replace the Main charger roller unit.
		High-voltage PWB	1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. High-voltage PWB (YC101) and Main/engine PBW (YC7) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the High-voltage PWB. (see page 4-84)
		Main/Engine PWB	1. Check both main and engine firmware, and upgrade to the latest version, if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
6000	Broken fuser main heater wire During the warming up, the temperature detected by the center thermistor does not reach 100 °C/212.0 °F for 20 s. During the warming up, the temperature detected by the center thermistor does not reach the stable display temperature for 30 s successively, after it reach to 100 °C/212.0 °F.	Fuser unit	1. Check there is no paper jam.. 2. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Fuser unit and Eject PWB (YC2) Eject PWB (YC1) and Main/engine PWB (YC11) 3. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 4. If the fuser heater is not turned on (broken thermostat wire), replace the fuser unit. (see page 4-17)
		Power source PWB	1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Power source PWB (YC105) and Main/engine PWB (YC20) 2. Replace the power source PWB. (see page 4-97)
		Eject PWB	Replace the eject PWB.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
6020	Abnormally high fuser center thermistor temperature The center thermistor detected the temperature exceeds 240 °C/464.0 °F for 1 s successively.	Fuser unit	1. Check there is no paper jam.. 2. Check if the fuser roller has foreign objects such as the toner contamination. 3. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Fuser unit and Eject PWB (YC2) Eject PWB (YC1) and Main/engine PWB (YC11) 4. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 5. Replace the fuser unit. (see page 4-17)
		Power source PWB	1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Power source PWB (YC105) and Main/engine PWB (YC20) If the fuser heater is turned on at all times, replace the power source PWB. (see page 4-97)
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Check if the main/engine PWB is properly secured with screws. 3. Replace the main/engine PWB. (see page 4-62)
6030	Broken fuser center thermistor wire During the edge thermistor detects more than 30 °C/86.0 °F the center thermistor detects low temperature for 1.6 s.	Fuser unit	1. Check there is no paper jam.. 2. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Fuser unit and Eject PWB (YC2) Eject PWB (YC1) and Main/engine PWB (YC11) 3. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 4. Replace the fuser unit. (see page 4-17)
		Eject PWB	Replace the eject PWB.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indica- tion	Contents	Related parts	Check procedures/corrective measures
6040	Fuser heater error (35/40 ppm models) Input value from the fuser center thermistor is abnormal for 1 s successively.	Fuser unit	1. Check there is no paper jam.. 2. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Fuser unit and Eject PWB (YC2) Eject PWB (YC1) and Main/engine PWB (YC11) 3. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 4. Replace the fuser unit. (see page 4-17)
		Eject PWB	Replace the eject PWB.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
6000 6020 6030 6220 6230 Common	Broken fuser heater wire Abnormally high fuser center thermistor temperature Broken fuser center thermistor wire Abnormally high fuser edge thermistor temperature Broken fuser edge thermistor wire	Connector pin	If the interface connector pins of the fuser unit and the main unit are deformed owing to foreign oobjects, replace the connectors or the units including the connectors.
		Triac TRA31: for main heater control TRA41: for sub heater control (35/40 ppm models only)	Unplug the power cord, and then check if the continuity between T1 and T2 of triac TRA31 / TRA41 (TRA41: 35/40 ppm model only) on the power source PWB has a resistance of M level and no short-circuit. (see Figure 7-4) If there is a short-circuit, replace the power source PWB. (see page 4-97)
			
Figure 7-4			

Indication	Contents	Related parts	Check procedures/corrective measures
6050	Abnormally low fuser center thermistor temperature During the warming up and the printing, the center thermistor has detected less than 100 °C/212.0 °F for 1 s successively.	Reduction of the power supply voltage	1. Check that no voltage drop of more than 10% of the rated is caused during printing. 2. If the power is overloaded, change the AC outlet that supplies power.
		Fuser unit	1. Check there is no paper jam.. 2. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Fuser unit and Eject PWB (YC2) Eject PWB (YC1) and Main/engine PWB (YC11) 3. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 4. If the fuser heater is not turned on (broken thermostat wire), replace the fuser unit. (see page 4-17)
		Power source PWB	1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Power source PWB (YC105) and Main/engine PWB (YC20) 2. Replace the power source PWB. (see page 4-97)
		Eject PWB	Replace the eject PWB.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
6200	Fuser heater error (sub heater: 35/40 ppm models) During the warming up, even if the main heater (sub heater for 35ppm models) is turned on for 30 s successively, the temperature detected by the edge thermistor does not reach 100 °C/212.0 °F. During the warming up, the temperature detected by the edge thermistor does not reach the stable display temperature, even if the main heater (sub heater for 35/40ppm models) is turned on for 30 s successively, after the temperature detected by the edge thermistor has reached to 100 °C/212.0 °F.	Fuser unit	1. Check there is no paper jam.. 2. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Fuser unit and Eject PWB (YC2) Eject PWB (YC1) and Main/engine PWB (YC11) 3. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 4. If the fuser sub-heater is not turned on (broken thermostat wire), replace the fuser unit. (see page 4-17)
		Power source PWB	1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Power source PWB (YC105) and Main/engine PWB (YC20) 2. Replace the power source PWB. (see page 4-97)
		Eject PWB	Replace the eject PWB.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
6220	Abnormally high fuser heater temperature The temperature detected by the edge thermistor exceeds 240 °C/464.0 °F for 1 s successively.	Fuser unit	1. Check there is no paper jam.. 2. Check if the fuser roller has foreign objects such as the toner contamination. 3. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Fuser unit and Eject PWB (YC2) Eject PWB (YC1) and Main/engine PWB (YC11) 4. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 5. Replace the fuser unit. (see page 4-17)
		Power source PWB	1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Power source PWB (YC105) and Main/engine PWB (YC20) 2. If the fuser heater is turned on at all times, replace the power source PWB. (see page 4-97)
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Check if the main/engine PWB is properly secured with screws. 3. Replace the main/engine PWB. (see page 4-62)
6230	Broken fuser edge thermistor wire Fuser edge thermistor detects low temperature for 1.6 s.	Fuser unit	1. Check there is no paper jam.. 2. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Fuser unit and Eject PWB (YC2) Eject PWB (YC1) and Main/engine PWB (YC11) 3. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 4. Replace the fuser unit. (see page 4-17)
		Eject PWB	Replace the eject PWB.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
6250	Abnormally low fuser edge thermistor temperature During the warming up and the printing, the edge thermistor has detected less than 100 °C/212.0 °F for 1 s successively.	Reduction of the power supply voltage	1. Check that no voltage drop of more than 10% of the rated is caused during printing. 2. If the power is overloaded, change the AC outlet that supplies power.
		Fuser unit	1. Check there is no paper jam.. 2. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Fuser unit and Eject PWB (YC2) Eject PWB (YC1) and Main/engine PWB (YC11) 3. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 4. If the fuser heater is not turned on (broken thermostat wire), replace the fuser unit. (see page 4-17)
		Power source PWB	1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Power source PWB (YC105) and Main/engine PWB (YC20) 2. Replace the power source PWB. (see page 4-97)
		Eject PWB	Replace the eject PWB.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
6400	Zero-cross signal error During the fuser heater on, and no detection the disconnection 24V, the zero-cross signal is not input for 1 s successively.	Power source PWB	1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Power source PWB (YC105) and Main/engine PWB (YC20) 2. Replace the power source PWB. (see page 4-97)
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
6610	The fuser pressure release error The fuser release sensor does not turn on or off, after 30 s from starting pressurization or depressurization operation.	Fuser unit	1. Check there is no paper jam.. 2. Check if the fuser pressure can be reduced by inverse rotation of the fuser gear by hand. 3. Check if the Press-release sensor light is blocked out by the actuator during depressurization operation. 4. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Fuser unit (Press-release sensor) and Eject PWB (YC2) Eject PWB (YC1) and Main/engine PWB (YC11) 5. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 6. Replace the fuser unit. (see page 4-17)
		Fuser motor	1. Check if the fuser motor is rotating. 2. When turning the power on, check if the fuser motor rotates reversely. 3. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Fuser motor and Engine relay PWB (YC20) 4. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 5. Replace the fuser motor.
		Eject PWB	Replace the eject PWB.
		Engine relay PWB	Replace the engine relay PWB. (see page 4-80)
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
6910	Engine firmware unexpected error The drum motor drive continued more than 60 minutes except during printing. (engine lock) The charge bias is turned off, during the developer bias is on. If the writing operation to the EEPROM is locked for 30 sec. Fuser temperature is abnormal, for more than a predetermined time.	Main/Engine PWB	1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Check if the main/engine PWB is properly secured with screws. (Grounding check) 3. Check that the connectors on the main/engine PWB are properly connected, and if not, re-connect them. 4. Check the engine firmware and upgrade to the latest version if necessary. 5. Replace the main/engine PWB. (see page 4-62)
7001	Toner motor K error During driving the toner motor, an over-current detection signal is detected for 40 ms successively. When detected during warming up The message of "Shake the toner container (K)" is displayed. (exited by the opening and closing of the inner tray) Repeat the operation above, for three times. Four times or more, if an over-current detection signal is detected for 5 s successively, a service call error message appears.	Toner container Black	1. Check that the spiral of the toner container can be rotated by hand 2. Replace the toner container.
		Drive transmission system for the toner motor	1. Check if the couplings and gears rotate smoothly, and if not, clean or grease the gears. 2. Check broken couplings and gears, and replace if any.
		Defective connector cable or poor contact in the connector	1. Reconnect the connector if its connection is loose. 2. If a wire is pinched by other component, or has defect conduction, replace it. Toner motor and Engine relay PWB (YC18) Engine relay PWB (YC1) and Main/engine PWB (YC4)
		Toner motor	1. Check how the toner motor is attached. 2. Replace the toner motor.
		Engine relay PWB	Replace the engine relay PWB. (see page 4-80)
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
7002	Toner motor C error During driving the toner motor, an over-current detection signal is detected for 40 ms successively. When detected during warming up The message of "Shake the toner container (C)" is displayed. (exited by the opening and closing of the inner tray) Repeat the operation above, for three times. Four times or more, if an over-current detection signal is detected for 5 s successively, a service call error message appears.	Toner container Cyan	1. Check that the spiral of the toner container can be rotated by hand 2. Replace the toner container.
		Drive transmission system for the toner motor	1. Check if the couplings and gears rotate smoothly, and if not, clean or grease the gears. 2. Check broken couplings and gears, and replace if any.
		Defective connector cable or poor contact in the connector	1. Reconnect the connector if its connection is loose. 2. If a wire is pinched by other component, or has defect conduction, replace it. Toner motor and Engine relay PWB (YC18) Engine relay PWB (YC1) and Main/engine PWB (YC4)
		Toner motor	1. Check how the toner motor is attached. 2. Replace the toner motor.
		Engine relay PWB	Replace the engine relay PWB. (see page 4-80)
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
7003	<p>Toner motor M error During driving the toner motor, an over-current detection signal is detected for 40 ms successively.</p> <p>When detected during warming up The message of "Shake the toner container (M)" is displayed. (exited by the opening and closing of the inner tray)</p> <p>Repeat the operation above, for three times. Four times or more, if an over-current detection signal is detected for 5 s successively, a service call error message appears.</p>	Toner container Magenta	<ol style="list-style-type: none"> 1. Check that the spiral of the toner container can be rotated by hand 2. Replace the toner container.
		Drive transmission system for the toner motor	<ol style="list-style-type: none"> 1. Check if the couplings and gears rotate smoothly, and if not, clean or grease the gears. 2. Check broken couplings and gears, and replace if any.
		Defective connector cable or poor contact in the connector	<ol style="list-style-type: none"> 1. Reconnect the connector if its connection is loose. 2. If a wire is pinched by other component, or has defect conduction, replace it. <p>Toner motor and Engine relay PWB (YC18) Engine relay PWB (YC1) and Main/engine PWB (YC4)</p>
		Toner motor	<ol style="list-style-type: none"> 1. Check how the toner motor is attached. 2. Replace the toner motor.
		Engine relay PWB	Replace the engine relay PWB. (see page 4-80)
		Main/Engine PWB	<ol style="list-style-type: none"> 1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
7004	Toner motor Y error During driving the toner motor, an over-current detection signal is detected for 40 ms successively. When detected during warming up The message of "Shake the toner container (Y)" is displayed. (exited by the opening and closing of the inner tray) Repeat the operation above, for three times. Four times or more, if an over-current detection signal is detected for 5 s successively, a service call error message appears.	Toner container Yellow	1. Check that the spiral of the toner container can be rotated by hand 2. Replace the toner container.
		Drive transmission system for the toner motor	1. Check if the couplings and gears rotate smoothly, and if not, clean or grease the gears. 2. Check broken couplings and gears, and replace if any.
		Defective connector cable or poor contact in the connector	1. Reconnect the connector if its connection is loose. 2. If a wire is pinched by other component, or has defect conduction, replace it. Toner motor and Engine relay PWB (YC18) Engine relay PWB (YC1) and Main/engine PWB (YC4)
		Toner motor	1. Check how the toner motor is attached. 2. Replace the toner motor.
		Engine relay PWB	Replace the engine relay PWB. (see page 4-80)
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
7101	Toner sensor K error For a certain period of time, the sensor output value is less than 0.1V, or more than 3.2V.	Toner container Black	1. Check that the toner container has been properly installed, and if necessary, re-install. 2. Check that the toner supply inlet of the toner container can be opened by the lever operation. 3. Replace the toner container.
		Primary transfer unit	1. Check whether the toner supply inlet at the upper side of the unit opens by attaching the toner container. 2. Check whether the toner supply inlet at the lower side of the unit is open by the lever operation. 3. Check if toner is clogged in the toner supplying pass in the cleaning section. 4. Replace the primary transfer unit.
		Developer unit (toner sensor)	1. Confirm that the connector of the developer unit is firmly connected, and if necessary, push the unit all the way in. Developer unit (toner sensor) and Drum relay PWB (YC6) Drum relay PWB (YC1) and Main/engine PWB (YC15) 2. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 3. Check if the gears and spirals in the developer unit rotate smoothly. 4. Replace the developer unit. (see page 4-14)
		Toner motor	1. Check that the toner motor is properly attached. 2. Check the couplings and gears can rotate or they are not unusually loaded, and if necessary, replace. 3. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Toner motor and Engine relay PWB (YC18) Engine relay PWB (YC1) and Main/engine PWB (YC4) 4. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 5. Replace the toner motor.
		Drum relay PWB	Replace the drum relay PWB.

Indication	Contents	Related parts	Check procedures/corrective measures
7101		Main/Engine PWB	<ol style="list-style-type: none"> 1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
7102	Toner sensor C error For a certain period of time, the sensor output value is less than 0.1V, or more than 3.2V.	Toner container Cyan	<ol style="list-style-type: none"> 1. Check that the toner container has been properly installed, and if necessary, re-install. 2. Check that the toner supply inlet of the toner container can be opened by the lever operation. 3. Replace the toner container.
		Primary transfer unit	<ol style="list-style-type: none"> 1. Check whether the toner supply inlet at the upper side of the unit opens by attaching the toner container. 2. Check whether the toner supply inlet at the lower side of the unit is open by the lever operation. 3. Check if toner is clogged in the toner supplying pass in the cleaning section. 4. Replace the primary transfer unit.
		Developer unit (toner sensor)	<ol style="list-style-type: none"> 1. Confirm that the connector of the developer unit is firmly connected, and if necessary, push the unit all the way in. Developer unit (toner sensor) and Drum relay PWB (YC8) Drum relay PWB (YC1) and Main/engine PWB (YC15) 2. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 3. Check if the gears and spirals in the developer unit rotate smoothly. 4. Replace the developer unit. (see page 4-14)

Indication	Contents	Related parts	Check procedures/corrective measures
7102		Toner motor	<ol style="list-style-type: none"> 1. Check that the toner motor is properly attached. 2. Check the couplings and gears can rotate or they are not unusually loaded, and if necessary, replace. Replace, if damaged. 3. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. <p>Toner motor and Engine relay PWB (YC18) Engine relay PWB (YC1) and Main/engine PWB (YC4)</p> <ol style="list-style-type: none"> 4. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 5. Replace the toner motor.
		Drum relay PWB	Replace the drum relay PWB.
		Main/Engine PWB	<ol style="list-style-type: none"> 1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
7103	Toner sensor M error For a certain period of time, the sensor output value is less than 0.1V, or more than 3.2V.	Toner container Magenta	<ol style="list-style-type: none"> 1. Check that the toner container has been properly installed, and if necessary, re-install. 2. Check that the toner supply inlet of the toner container can be opened by the lever operation. 3. Replace the toner container.
		Primary transfer unit	<ol style="list-style-type: none"> 1. Check whether the toner supply inlet at the upper side of the unit opens by attaching the toner container. 2. Check whether the toner supply inlet at the lower side of the unit is open by the lever operation. 3. Check if toner is clogged in the toner supplying pass in the cleaning section. 4. Replace the primary transfer unit.

Indication	Contents	Related parts	Check procedures/corrective measures
7103		Developer unit (toner sensor)	<ol style="list-style-type: none"> 1. Confirm that the connector of the developer unit is firmly connected, and if necessary, push the unit all the way in. Developer unit (toner sensor) and Drum relay PWB (YC7) Drum relay PWB (YC1) and Main/engine PWB (YC15) 2. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 3. Check if the gears and spirals in the developer unit rotate smoothly. 4. Replace the developer unit. (see page 4-14)
		Toner motor	<ol style="list-style-type: none"> 1. Check that the toner motor is properly attached. 2. Check the couplings and gears can rotate or they are not unusually loaded, and if necessary, replace. 3. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Toner motor and Engine relay PWB (YC18) Engine relay PWB (YC1) and Main/engine PWB (YC4) 4. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 5. Replace the toner motor.
		Drum relay PWB	Replace the drum relay PWB.
		Main/Engine PWB	<ol style="list-style-type: none"> 1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
7104	Toner sensor Y error For a certain period of time, the sensor output value is less than 0.1V, or more than 3.2V.	Toner container Yellow	1. Check that the toner container has been properly installed, and if necessary, re-install. 2. Check that the toner supply inlet of the toner container can be opened by the lever operation. 3. Replace the toner container.
		Primary transfer unit	1. Check whether the toner supply inlet at the upper side of the unit opens by attaching the toner container. 2. Check whether the toner supply inlet at the lower side of the unit is open by the lever operation. 3. Check if toner is clogged in the toner supplying pass in the cleaning section. 4. Replace the primary transfer unit.
		Developer unit (toner sensor)	1. Confirm that the connector of the developer unit is firmly connected, and if necessary, push the unit all the way in. Developer unit (toner sensor) and Drum relay PWB (YC9) Drum relay PWB (YC1) and Main/engine PWB (YC4) 2. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 3. Check if the gears and spirals in the developer unit rotate smoothly. 4. Replace the developer unit. (see page 4-14)
		Toner motor	1. Check that the toner motor is properly attached. 2. Check the couplings and gears can rotate or they are not unusually loaded, and if necessary, replace. 3. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Toner motor and Engine relay PWB (YC18) Engine relay PWB (YC1) and Main/engine PWB (YC4) 4. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 5. Replace the toner motor.
		Drum relay PWB	Replace the drum relay PWB.

Indication	Contents	Related parts	Check procedures/corrective measures
7104		Main/Engine PWB	<ol style="list-style-type: none"> 1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
7200	Broken inner thermistor (Developer) The sensor input sampling is greater than the reference value. (After detection, controlled at 25°C/77.0 °F)	Developer unit K	<ol style="list-style-type: none"> 1. Confirm that the connector of developer unit K is firmly connected, and if necessary, push the unit all the way in. Developer unit K (toner sensor) and Drum relay PWB (YC6) Drum relay PWB (YC1) and Main/engine PWB (YC4) 2. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 3. Replace the developer unit K. (see page 4-14)
		Drum relay PWB	Replace the drum relay PWB.
		Main/Engine PWB	<ol style="list-style-type: none"> 1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
7221	Broken inner thermistor (LSU Magenta & Black) The sensor input sampling is greater than the reference value. (After detection, controlled at 25°C/77.0 °F)	LSU (Magenta & Black)	1. Confirm that the wiring connector of LSU (Magenta & Black) is firmly connected, and if necessary, connect the connector all the way in. LSU (Magenta & Black) and Main/engine PWB (YC2016) 2. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 3. Replace the LSU (Magenta & Black). (see page 4-104)
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
7222	Broken inner thermistor (LSU Cyan & Yellow) The sensor input sampling is greater than the reference value. (After detection, controlled at 25°C/77.0 °F)	LSU (Cyan & Yellow)	1. Confirm that the wiring connector of LSU (Cyan & Yellow) is firmly connected, and if necessary, connect the connector all the way in. LSU (Cyan & Yellow) and Main/engine PWB (YC2017) 2. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 3. Replace the LSU (Cyan & Yellow). (see page 4-104)
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
7401	Developer unit K type mismatch error (Black) Improper adaptation of the main unit and developer unit is detected.	Developer unit K	Check if the developer unit of different models is mounted, and replace it to the correct one. (see page 4-14)
7402	Developer unit C type mismatch error (Cyan) Improper adaptation of the main unit and developer unit is detected.	Developer unit C	Check if the developer unit of different models is mounted, and replace it to the correct one. (see page 4-14)

Indication	Contents	Related parts	Check procedures/corrective measures
7403	Developer unit M type mismatch error (Magenta) Improper adaptation of the main unit and developer unit is detected.	Developer unit M	Check if the developer unit of different models is mounted, and replace it to the correct one. (see page 4-14)
7404	Developer unit Y type mismatch error (Yellow) Improper adaptation of the main unit and developer unit is detected.	Developer unit Y	Check if the developer unit of different models is mounted, and replace it to the correct one. (see page 4-14)
7411	Drum unit K type mismatch error (Black) Improper adaptation of the main unit and drum unit is detected.	Drum unit K	Check if the drum unit of different models is attached, and replace it to the correct one. (see page 4-12)
7412	Drum unit C type mismatch error (Cyan) Improper adaptation of the main unit and drum unit is detected.	Drum unit C	Check if the drum unit of different models is attached, and replace it to the correct one. (see page 4-12)
7413	Drum unit M type mismatch error (Magenta) Improper adaptation of the main unit and drum unit is detected.	Drum unit M	Check if the drum unit of different models is attached, and replace it to the correct one. (see page 4-12)
7414	Drum unit Y type mismatch error (Yellow) Improper adaptation of the main unit and drum unit is detected.	Drum unit Y	Check if the drum unit of different models is attached, and replace it to the correct one. (see page 4-12)

Indication	Contents	Related parts	Check procedures/corrective measures
7601	ID sensor L error (Left side) When the measured value of the ID sensor matches any of the following. If the light potential P-wave is lower than the dark potential P-wave (+0.5V). If light potential S-wave is lower than the dark potential S-wave. The dark potential P/S-wave is greater than 0.8V, or less than 0.15V.	ID sensor L (Left side)	1. Clean the ID sensor surface. 2. Check how the ID sensor is attached. 3. Check if the error is detected after performing the calibration. 4. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. ID sensor and Main/engine PWB (YC13) 5. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 6. Replace the ID sensor.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
7602	ID sensor R error (Right side) When the measured value of the ID sensor matches any of the following. If the light potential P-wave is lower than the dark potential P-wave (+0.5V). If light potential S-wave is lower than the dark potential S-wave. The dark potential P/S-wave is greater than 0.8V, or less than 0.15V.	ID sensor R (Right side)	1. Clean the ID sensor surface. 2. Check how the ID sensor is attached. 3. Check if the error is detected after performing the calibration. 4. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. ID sensor and Main/engine PWB (YC14) 5. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 6. Replace the ID sensor.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
7800	Broken outer thermistor The sensor input sampling is greater than the reference value. (After detection, controlled at 25 °C/77.0 °F)	Temperature sensor	1. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Outer temperature sensor and Main/engine PWB (YC24) 2. If the wiring is disconnected, short-circuited or has ground fault, replace the wire. 3. Replace the temperature sensor PWB.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
7901	Drum unit K EEPROM error No response is issued from the device in reading/writing for 5 ms or more and this problem is repeated 5 times successively. Mismatch of reading data from two locations occurs 8 times successively. Mismatch between writing data and reading data occurs 8 times successively.	Drum unit K	1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Confirm that the connector of the drum unit is firmly connected, and if necessary, push the unit all the way in. 3. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Drum unit and Drum relay PWB (YC2) Drum relay PWB (YC1) and Main/engine PWB (YC15) 4. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 5. Replace the drum unit. (see page 4-12)
		Drum relay PWB	Replace the drum relay PWB.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
7902	Drum unit C EEPROM error No response is issued from the device in reading/writing for 5 ms or more and this problem is repeated 5 times successively. Mismatch of reading data from two locations occurs 8 times successively. Mismatch between writing data and reading data occurs 8 times successively.	Drum unit C	1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Confirm that the connector of the drum unit is firmly connected, and if necessary, push the unit all the way in. 3. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Drum unit and Drum relay PWB (YC4) Drum relay PWB (YC1) and Main/engine PWB (YC15) 4. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 5. Replace the drum unit. (see page 4-12)
		Drum relay PWB	Replace the drum relay PWB.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
7903	Drum unit M EEPROM error No response is issued from the device in reading/writing for 5 ms or more and this problem is repeated 5 times successively. Mismatch of reading data from two locations occurs 8 times successively. Mismatch between writing data and reading data occurs 8 times successively.	Drum unit M	1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Confirm that the connector of the drum unit is firmly connected, and if necessary, push the unit all the way in. 3. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Drum unit and Drum relay PWB (YC3) Drum relay PWB (YC1) and Main/engine PWB (YC15) 4. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 5. Replace the drum unit. (see page 4-12)
		Drum relay PWB	Replace the drum relay PWB.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
7904	Drum unit Y EEPROM error No response is issued from the device in reading/writing for 5 ms or more and this problem is repeated 5 times successively. Mismatch of reading data from two locations occurs 8 times successively. Mismatch between writing data and reading data occurs 8 times successively.	Drum unit Y	1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Confirm that the connector of the drum unit is firmly connected, and if necessary, push the unit all the way in. 3. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Drum unit and Drum relay PWB (YC5) Drum relay PWB (YC1) and Main/engine PWB (YC15) 4. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 5. Replace the drum unit. (see page 4-12)
		Drum relay PWB	Replace the drum relay PWB.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
7911	Developer unit K EEPROM error No response is issued from the device in reading/writing for 5 ms or more and this problem is repeated 5 times successively. Mismatch of reading data from two locations occurs 8 times successively. Mismatch between writing data and reading data occurs 8 times successively.	Developer unit K	1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Confirm that the connector of the developer unit is firmly connected, and if necessary, push the unit all the way in. 3. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Developer unit and Drum relay PWB (YC6) Drum relay PWB (YC1) and Main/engine PWB (YC15) 4. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 5. Replace the developer unit. (see page 4-14)
		Drum relay PWB	Replace the drum relay PWB.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
7912	Developer unit C EEPROM error (1)No response is issued from the device in reading/writing for 5 ms or more and this problem is repeated 5 times successively. (2)Mismatch of reading data from two locations occurs 8 times successively. (3)Mismatch between writing data and reading data occurs 8 times successively.	Developer unit C	1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Confirm that the connector of the developer unit is firmly connected, and if necessary, push the unit all the way in. 3. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Developer unit and Drum relay PWB (YC8) Drum relay PWB (YC1) and Main/engine PWB (YC15) 4. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 5. Replace the developer unit. (see page 4-14)
		Drum relay PWB	Replace the drum relay PWB.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
7913	Developer unit M EEPROM error (1)No response is issued from the device in reading/writing for 5 ms or more and this problem is repeated 5 times successively. (2)Mismatch of reading data from two locations occurs 8 times successively. (3)Mismatch between writing data and reading data occurs 8 times successively.	Developer unit M	1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Confirm that the connector of the developer unit is firmly connected, and if necessary, push the unit all the way in. 3. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Developer unit and Drum relay PWB (YC7) Drum relay PWB (YC1) and Main/engine PWB (YC15) 4. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 5. Replace the developer unit. (see page 4-14)
		Drum relay PWB	Replace the drum relay PWB.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)
7914	Developer unit Y EEPROM error No response is issued from the device in reading/writing for 5 ms or more and this problem is repeated 5 times successively. Mismatch of reading data from two locations occurs 8 times successively. Mismatch between writing data and reading data occurs 8 times successively.	Developer unit Y	1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Confirm that the connector of the developer unit is firmly connected, and if necessary, push the unit all the way in. 3. Confirm that the wiring connector is firmly connected, and if necessary, connect the connector all the way in. Developer unit and Drum relay PWB (YC9) Drum relay PWB (YC1) and Main/engine PWB (YC15) 4. If the wire is disconnected, short-circuited or has ground fault, or the connector pin is deformed, replace the wire. 5. Replace the developer unit. (see page 4-14)
		Drum relay PWB	Replace the drum relay PWB.
		Main/Engine PWB	1. Check the engine firmware and upgrade to the latest version if necessary. 2. Replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
F000	Communication error between Main/engine PWB and Operation panel PWB	Main/Engine PWB	<ol style="list-style-type: none"> 1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Check the wirings and connectors between the main/engine PWB and the operation panel PWB. Operation panel PWB and Main/engine PWB (YC2002). 3. Replace the main/engine PWB. (see page 4-62)
		Operation panel PWB	Replace the operation panel PWB. (see page 4-103)
F010	Program read error	Main/Engine PWB	<ol style="list-style-type: none"> 1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. If not corrected, replace the main/engine PWB and check operation. (see page 4-62)
F020	Main/engine PWB RAM checksum error	Main memory of the main/engine PWB (RAM)	<ol style="list-style-type: none"> 1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. If not corrected, replace the main/engine PWB and check operation. (see page 4-62)
F040	Communication error between Main/engine PWB and Print engine	Main/Engine PWB	<ol style="list-style-type: none"> 1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Repair or replace the wire from the main/engine PWB that may be grounded. (Check short-circuit between 5V and 3.3V.) 3. Check both main and engine firmware, and upgrade to the latest version, if necessary. 4. If not corrected, replace the main/engine PWB. (see page 4-62)

Indication	Contents	Related parts	Check procedures/corrective measures
F050	Print engine main program error	Main/Engine PWB	<ol style="list-style-type: none"> 1. Unplug the power cord from the wall outlet, and wait five seconds. Then plug the power cord and then turn on the power switch. 2. Confirm that the EEPROM has been properly installed. 3. Check both main and engine firmware, and upgrade to the latest version, if necessary. 4. If not corrected, replace the main/engine PWB. (see page 4-62)

7-3 Image formation problems

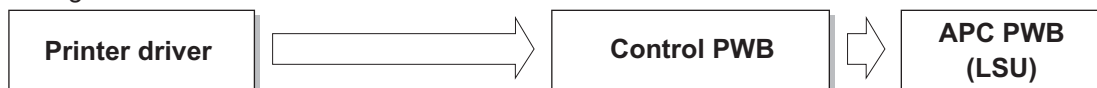
Isolate the component an image defect has occurred from.

Main unit as the cause of defect

(A defect of image forming occurs from the rendering process that involves charging, drum, LSU, developer, and primary transferring.)

Flow of image data

Printing data from PC :



7-4 Poor image (Image rendering problems: Mono-color printer engine)

(1) No image appears (entirely white).



P.7-71

(2) No image appears (entirely black).



P.7-73

(3) Image is too light.



P.7-74

(4) The background is colored.



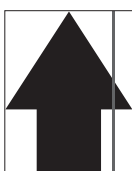
P.7-76

(5) White streaks are printed vertically.



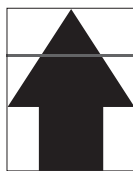
P.7-78

(6) Black or color streaks appear longitudinally.



P.7-79

(7) Black, white or color streaks appear horizontally.



P.7-80

(8) Uneven density vertically.



P.7-81

(9) Uneven density horizontally.



P.7-82

(10) Black or color dots appear on the image.



P.7-83

(11) Offset occurs.



P.7-84

(12) Part of image is missing.



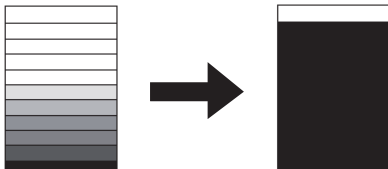
P.7-84

(13) Image is out of focus.



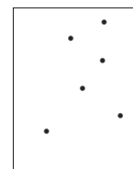
P.7-85

(14) Poor grayscale reproducibility.



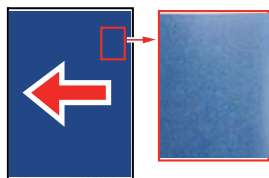
P.7-85

(15) Unevenly repeating horizontal streaks in the printed objects Colored spots in the printed objects



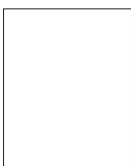
P.7-86

(16) Grainy image. Grainy image.



P.7-87


(1) No image appears (entirely white).

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. No or defective developing bias output. 2. Failure of the rotation of the developer roller. 3. Defective primary transfer. 4. Defective the laser output from the laser scanner unit (LSU). 5. Drum does not operate.

	Defective part	Check description	Corrective Action
1	Developer unit	Select [Test page] using [Service Setting] in [Adjustment/Maintenance] of the system menu, and generate four-color PGs to check the following with the color which is defective.	
		Check whether the developer drive gear is damaged.	Replace the developer unit, if damaged.
		Check the developing roller by manually rotating the roller.	If the developer unit is in fault, replace the developer unit. (see page 4-14)
		Check if the connection terminals of the developer unit and the high-voltage PWB are dirty or deformed.	If the connecting terminals are dirty, clean them. If the connecting terminals are deformed, correct them for proper continuity.
2	Main drive unit (C,M,Y)	Check if the gears or couplings that drive the developer unit in the drive unit are damaged.	Replace the main drive unit, if damaged.
3	Developer clutch (Bk)	Check if the developer clutch in the conveying drive unit is welded.	Replace the conveying drive unit, if damaged.
4	High-voltage PWB	Check that the terminal of the developer roller and primary transfer roller is in contact with the terminal of the high-voltage PWB. Check the connection of the connectors in the high-voltage PWB. Or, verify conduction of the	<ol style="list-style-type: none"> 1. If the connecting terminals are dirty, clean them. 2. If the connecting terminals are deformed, correct them for proper continuity. 3. Reconnect the connector if its connection is loose. Or, if there is no continuity, replace the wire. High-voltage PWB and Main/engine
		Developer bias and transfer bias supplied by the high-voltage PWB (developer, transfer) is faulty.	Replace the high-voltage PWB. (see page 4-84,4-93)

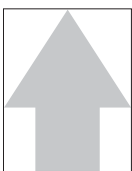
	Defective part	Check description	Corrective Action
5	High-voltage PWB 2 (40 ppm printer models only)	Check that the terminal of the primary transfer roller is in contact with the terminal of the high-voltage PWB 2. Check the connection of the connectors in the high-voltage PWB. Or, verify conduction of the wires.	1. If the connecting terminals are dirty, clean them. 2. If the connecting terminals are deformed, correct them for proper continuity. 3. Reconnect the connector if its connection is loose. Or, if there is no continuity, replace the wire. High-voltage PWB 2 and Main/engine PWB
		Transfer current supplied by the high-voltage PWB 2 (transfer) is faulty.	Replace the high-voltage PWB 2 (transfer). (see page 4-84,4-93)
6	Laser scanner unit (LSU)	Check the connector for connection. Or, check continuity of the wire.	1. Reconnect the FFC if its connection is loose. Or, if there is no continuity, replace the wire. 2. Replace the laser scanner unit. (see page 4-104)
7	Main/Engine PWB	Check that a control signal is output from the main/engine PWB.	Replace the main/engine PWB. (see page 4-62)

(2) No image appears (entirely black).

Print sample	Cause of trouble
	1. No main charging. 2. The laser from the LSU is activated simultaneously for all colors.

	Defective part	Check description	Corrective Action
1	Charger roller	Confirm the charging roller is properly mounted.	If the charging roller is not fixed properly, fix the roller properly.
		Check if the connecting terminals between the charge roller and high-voltage PWB are deformed.	If the connecting terminals are deformed, correct them for proper continuity.
2	Drum unit	Check if there is improper contact with the high-voltage PWB.	1. If the connecting terminals are deformed, correct them for proper continuity. 2. Reattach the drum unit.
		Check the ground terminal so as to confirm the grounding is proper.	If the connecting terminals are deformed, correct them for proper continuity.
3	High-voltage PWB	Check the connector for connection. Or, check continuity of the wire. High-voltage PWB (YC1,2) and Main/engine PWB (YC16)?	Reconnect the connector if its connection is loose. Or, if there is no continuity, replace the wire.
		Main charger current supplied by the high-voltage PWB is faulty.	Replace the high-voltage PWB.
4	Laser scanner unit (LSU)	Switching on and off the laser diode on the LSU PWB is out of control.	Replace the laser scanner unit. (see page 4-104)
5	Main/Engine PWB	The video data of the main/engine PWB is faulty.	Replace the main/engine PWB. (see page 4-62)

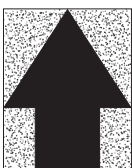
(3) Image is too light.

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. Variance in environments (dew formation). 2. Toner is under supplied, or deteriorated in quality. 3. The volatage of the developer bias is too low. 4. The volatage of the primary transfer current is too low. 5. The power of LSU laser is too low. 6. The surface potential of the drum is too high.

	Defective part	Check description	Corrective Action
1	Drum unit	Check whether the drum is dew condensed.	If dew condensation is observed, execute [Drum refresh]. (System Menu > Adjustment/Maintenance)
2	Developer unit	Select [Test page] using [Sevice Setting] in [Adjustment/Maintenance] of the system menu, and generate four-color PGs to check the following with the color which is defective. (see page 6-13)	
		Check if the machine executed a low-density printing for a prolonged period.	<ol style="list-style-type: none"> 1. If the machine continues low coverage printing, execute the developer refresh. (System Menu > Adjustment/Maintenance) 2. If developer refreshing does not correct the problem, perform the following. Execute the color adjustment using [Adjustment/Maintenance] of the system menu. (see page 4-29)
		Check if the connecting terminals for developer bias are deformed.	If the connecting terminals are deformed, correct them for proper continuity.
		Defective developer bias setting	Execute the color adjustment using [Adjustment/Maintenance] of the system menu. (see page 4-29)
3	Toner container	Shake the toner container up and down approx. 10 times, and check the following: <ol style="list-style-type: none"> 1. Check the messege of the toner replenishing is shown. 2. Check whether the toner supply inlet opens. 	If the message prompting toner replenishing is shown, the toner inlet is not open, replace the toner container.
4	Toner motor	Check the revolution of the toner motor.	or the toner supply motor is not rotating, replace the motor.
5	High-voltage PWB	Developer bias and transfer bias is faulty.	Replace the high-voltage PWB.

	Defective part	Check description	Corrective Action
6	Primary transfer unit	1. Check if the connecting terminals are deformed.	1. If the connecting terminals are deformed, correct them for proper continuity. 2. Replace the primary transfer unit.
7	LSU	1. Laser beam supplied by the LSU is faulty. 2. Dirty mirror unit inside.	Replace the laser scanner unit. (see page 4-104)
8	Drum unit	1. Check if the eraser is dirty. 2. Check whether it is lit.	1. If the eraser is dirty, clean it. 2. If not corrected after cleaning, or it does not light, replace the fuser unit. (see page 4-17)
9	Main/Engine PWB	Defective Main/engine PWB.	Replace the main/engine PWB. (see page 4-62)


(4) The background is colored.

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. Toner is deteriorated in quality. (Under-charged) 2. Toner is over-supplied. 3. The volatage of the developer bias is too high. 4. The layer of toner is too thick on the developer roller (too much toner). 5. The surface potential of the drum is too low (under low temperature environment).

	Defective part	Check description	Corrective Action
1	Developer unit	Select [Test page] using [Service Setting] in [Adjustment/Maintenance] of the system menu, and generate four-color PGs to check the following with the color which is defective.(see page 6-13)	
		1. Check whether toner is over-supplied, or whether the device was being continuously operated with high density under a high temperature environment.	If the device was being continuously operated with high density under a hot environment, perform developing refreshing. (System Menu > Adjustment/Maintenance)
		2. Check contamination and deformation on the connecting terminals for the developer bias.	If the connecting terminals for developer bias are dirty, clean. If the connecting terminals are deformed, correct them for proper continuity.
		3. Defective developer bias setting	Execute the color adjustment using [Adjustment/Maintenance] of the system menu. (see page 4-29)
2	Drum unit	1. Check if the machine is used in an environment of low temperature.	If the room temperature is 16 °C/60.8 °F or less, try to use in the environment of more than 16 °C/60.8 °F.
		2. Confirm that the drum unit has been firmly attached.	Reattach the drum unit. (see page 4-12)
		3. Check that the ground terminal is not contaminated or the conductive grease is not applied with the connecting terminals.	If the connecting terminals are dirty, clean them. If the amount of the grease applied is too small, apply conductive grease to the bearing on the receiver side of the drum drive axle.
		4. Check if the charger roller is dirty.	If the charger roller is dirty, clean.Or replace it.


	Defective part	Check description	Corrective Action
3	High-voltage PWB	Developer bias and charging current supplied by the high-voltage PWB is faulty.	Replace the high-voltage PWB. (see page 4-84,4-93)
4	Main/Engine PWB	Defective engine PWB.	Replace the main/engine PWB. (see page 4-62)
5	Toner motor	Check if the toner motor is continuously rotating. Check if the wires are short-circuited.	If the wires are short-circuited and the toner motor is continuously rotating, replace the toner motor.

(5) White streaks are printed vertically.

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. Dirty LSU slit glass. 2. Foreign objects inside the developer unit. 3. Internal contamination 4. Dirty drum unit inside.


	Defective part	Check description	Corrective Action
1	LSU	Check if the LSU slit glass is dirty.	If the LSU slit glass is dirty, execute the laser scanner cleaning.
2	Developer unit	Select [Test page] using [Service Setting] in [Adjustment/Maintenance] of the system menu, and generate four-color PGs. (see page 6-13)	Replace the developer unit in fault. (see page 4-14)
3	Light path between the LSU and the drum	Check if there are dusts, dirt, or toner obstructing the light paths.	If foreign objects exist on the frame or the sealings between the developer unit and the drum unit, remove them.
4	Drum unit	Check if the charger roller is dirty.	If the charger roller is dirty, clean. Or replace it.
		Check if the eraser is dirty.	If the eraser is dirty, clean it.

(6) Black or color streaks appear longitudinally.

Print sample	Cause of trouble
	1. Dirty charge roller 2. Damaged or dirty drum unit 3. Damaged or paper dust accumulated cleaning blade


	Defective part	Check description	Corrective Action
1	Charger roller unit	Confirm there is no toner streaks on the surface of the charging roller.	If the charger roller has streaks on its surface, clean it. Or, replace the charger roller.
2	Drum unit	Check if drum is dirty on its surface.	Execute [Drum refresh]. (System Menu > Adjustment/Maintenance)
		Check if the drum has scratches. Check whether the edge of the cleaning blade is damaged. Check whether it is abraded or paper dust is accumulated. Check whether toner is accumulated in the cleaning section.	Replace the drum unit.

(7) Black, white or color streaks appear horizontally.

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. Dirty developer unit and terminals 2. Damaged or dirty drum unit Defective grounding. 3. Dirty primary transfer roller terminals


	Defective part	Check description	Corrective Action
1	Developer unit	<ol style="list-style-type: none"> 1. Check the print image on paper has a problem in the interval of the circumference of the developer roller. 2. Check that the developing roller is dirty at its ends or at the developing bias tab. 	<ol style="list-style-type: none"> 1. If the ends of the developing roller and the connecting terminals for developer bias are dirty, clean. 2. Replace the developer unit. (see page 4-14)
2	Drum unit	<ol style="list-style-type: none"> 1. Check the print image on paper has a problem in the interval of the circumference of the drum. 	Execute [Drum refresh]. (System Menu > Adjustment/Maintenance)
		<ol style="list-style-type: none"> 2. Check if the drum has scratches. 	Replace the drum unit.
		<ol style="list-style-type: none"> 3. Check the grounding tab of the drum or the drum drive shaft. 	<ol style="list-style-type: none"> 1. Check how the drum unit is attached, and if it is not properly attached, reattach it. 2. Replace the drum unit.
3	Primary transfer roller (Primary transfer unit)	Check if the connecting terminals between the high-voltage PWB and the primary transfer roller are contaminated with toner. Or, the connecting terminals are deformed losing contacts.	<ol style="list-style-type: none"> 1. If the connecting terminals are dirty, clean them. 2. If the connecting terminals are deformed, correct them for proper continuity. 3. Replace the primary transfer unit.
4	High-voltage PWB	The bias voltage output supplied by the high-voltage PWB is not even.	Check how the high-voltage PWB is attached, secure the screws so that the grounding is ensured. Or replace. (see page 4-84,4-93)

(8) Uneven density vertically.

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. LSU laser beam radiation uneven. 2. Improper contact on the transfer belt with the drum 3. Drum condensation. 4. The layer of toner on the developer roller uneven.


	Defective part	Check description	Corrective Action
1	LSU	The emission of laser dispersed from the LSU is not even. (Mirror is dropped off inside.)	Reattach the LSU. Or replace.
2	Primary transfer roller (Primary transfer unit)	Check how the primary transfer roller is attached.	If the transfer roller or belt is not correctly positioned, reattach it. Or replace the primary transfer unit. (see page 4-6)
3	Drum unit	<ol style="list-style-type: none"> 1. Check if toner is evenly layered on the drum surface. 2. Check whether the device has been operated under a highly humid environment. 	<ol style="list-style-type: none"> 1. Execute [Drum refresh]. 2. Use the machine in an environment where dew condensation does not occur. 3. Replace the drum unit.
4	Developer unit	Check that toner is evenly layered on the developing roller.	<ol style="list-style-type: none"> 1. If the toner supply is not uniform, execute the developer refresh. 2. Replace the developer unit.

(9) Uneven density horizontally.

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. Uneven rotation of the main drive. 2. Failure of the rotation of the charger roller. 3. Improper contact on the developer unit terminals 4. Defective LSU.

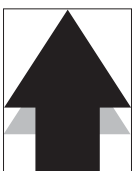
	Defective part	Check description	Corrective Action
1	Main drive	Check to see if the drive mechanism for the developer unit and drum unit is smoothly operative.	<ol style="list-style-type: none"> 1. Check how the developer unit, drum unit, and primary transfer unit are mounted. If the drive transmission section is dirty, clean and apply grease. 2. Check if the main drive unit is properly secured with screws, and if not, reattach it.
2	Charger roller	Confirm that the LSU cleaning motor has been firmly attached.	<ol style="list-style-type: none"> 1. Reattach the charger roller. 2. Replace the charger roller. (see page 4-140)
3	Charger cleaning roller	Check if the direction of fiber of charger cleaning roller surface is uniform.	<ol style="list-style-type: none"> 1. Clean or replace the charger cleaning roller.
4	Developer unit	Check if the developer bias connection terminal of the developer unit is dirty with toner.	<ol style="list-style-type: none"> 1. If the connecting terminals are dirty, clean them. 2. Clean or replace the developer unit.
5	LSU	Check if the problem is due to the non-uniformity of the laser beam output, by checking the image print.	Replace the laser scanner unit. (see page 4-104)

(10) Black or color dots appear on the image.

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. Dirty charge roller 2. Damaged or dirty drum unit 3. Damaged or paper dust accumulated cleaning blade


	Defective part	Check description	Corrective Action
1	Drum unit	Check the print image on paper has a problem in the interval of the circumference of the drum.	If the drum has scratches, replace the drum unit. (see page 4-12)
2	Charger roller	Check the print image on paper has a problem in the interval of the circumference of the charger roller.	If the print image on paper has a problem in the interval of the circumference of the charger roller, replace the charge roller.
3	Developer unit	1. Check if the developer bias is leaked.	<ol style="list-style-type: none"> 1. If leaking, clean the end of the developer roller. 2. If the machine is installed in an altitude, adjust the altitude setting. (System menu > Adjustment/Maintenance > Service setting)
		3. Check the print image on paper has a problem in the interval of the circumference of the developer roller.	<ol style="list-style-type: none"> 1. If the print image on paper has a problem in the interval of the circumference of the developer roller, clean the developer roller. 2. Replace the developer unit. (see page 4-14)

(11) Offset occurs.

Print sample	Cause of trouble
	1. Damaged or dirty drum unit 2. Developer bias leakage.


	Defective part	Check description	Corrective Action
1	Drum unit	Check the print image on paper has a problem in the interval of the circumference of the drum.	If the developer unit is dirty with toner, etc., clean and then reattach it. Or replace. (see page 4-14)
2	Developer unit	1. Check if offsets are observed in the constant interval which is equivalent to the circumference of the developer roller.	If the developer unit is dirty with toner, etc., clean and then reattach it. Or replace.

(12) Part of image is missing.

Print sample	Cause of trouble
	1. Damaged or dirty drum unit 2. Deformed or dirty primary transfer belt on its surface

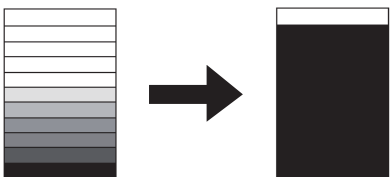
	Defective part	Check description	Corrective Action
1	Drum unit	Check the print image on paper has a problem in the interval of the circumference of the drum.	If the print image on paper has a problem in the interval of the circumference of the drum, execute drum refreshing. (System Menu > Adjustment/Maintenance)
2	Primary transfer belt (Primary transfer unit)	Check if the primary transfer belt is deformed or contaminated on its surface.	If the surface of the primary transfer belt is deformed or dirty, clean the belt or replace the unit. (see page 4-6)

(13) Image is out of focus.

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. Drum unit condensation. 2. Dirty LSU slit glass.

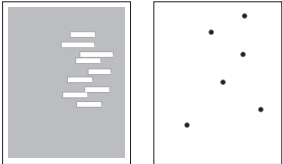
	Defective part	Check description	Corrective Action
1	Drum unit	Check that the surface of the drum has dew condensation.	Execute [Drum refresh]. (System Menu > Adjustment/Maintenance)
2	LSU	Check whether the LSU slit glass is contaminated entirely.	<ol style="list-style-type: none"> 1. If the LSU slit glass is dirty, execute the laser scanner cleaning. 2. Replace the laser scanner unit. (see page 4-104)

(14) Poor grayscale reproducibility.

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. Image adjustment problems

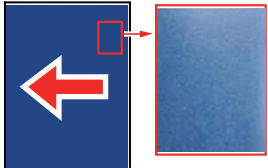
	Defective part	Check description	Corrective Action
1	Image adjustment	Check if color adjustment is sufficient.	Execute the color adjustment using [Adjustment/Maintenance] of the system menu. (see page 4-29)

(15) Unevenly repeating horizontal streaks in the printed objects Colored spots in the printed objects

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. Installation at a high altitude. 2. Defective drum unit grounding. 3. Using the paper with high surface resistance.

	Defective part	Check description	Corrective Action
1	Developer unit	Check the device is installed in an altitude higher than 1001m sea level.	If the machine is installed in an altitude higher than 1001 m sea level, change the altitude setting. (System menu > Adjustment/Maintenance > Service setting) ([Normal], [1001 - 2000m], [2001 - 3000m] or [3001 - 3500m])
2	Drum unit	Check if there is improper contact with the high-voltage PWB.	<ol style="list-style-type: none"> 1. If the connecting terminals are deformed, correct them for proper continuity. 2. Reattach the drum unit.
		Check the ground terminal so as to confirm the grounding is proper.	If the connecting terminals are deformed, correct them for proper continuity.
3	Paper	Check if paper is of high surface resistance.	Change the paper to another.

(16) Grainy image.

Print sample	Cause of trouble
	1. Installation at a high altitude. 2. Using the paper with high surface resistance.

	Defective part	Check description	Corrective Action
1	Developer unit	Check the device is installed in an altitude higher than 1001m sea level.	If the machine is installed in an altitude higher than 1001 m sea level, change the altitude setting. (System menu > Adjustment/Maintenance > Service setting) ([Normal], [1001 - 2000m], [2001 - 3000m] or [3001 - 3500m])
2	Paper	Check if paper is of high surface resistance.	Change the paper to another.

7-5 Poor image (Caused by transferring toner, paper conveying, or fusing: Four-color printer engine)

- (1) No image appears (entirely white).



P.7-90

- (2) Image is too light.



P.7-91

- (3) The background is colored.



P.7-91

- (4) White streaks are printed vertically.



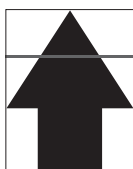
P.7-92

- (5) Black or color streaks appear longitudinally.



P.7-93

- (6) Black, white or color streaks appear horizontally.



P.7-94



- (7) Uneven transferring toner.



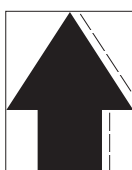
P.7-95

- (8) Black or color dots appear on the image.



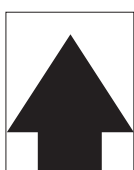
P.7-95

- (9) Image is blurred (Shifted transferring).



P.7-97

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



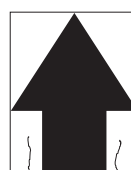
P.7-98

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



P.7-98

- (12) Paper is creased.



P.7-99

- (13) Offset occurs.



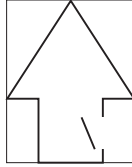
P.7-100

(14) Image is partly missing (Outlines objects and white dots).



P.7-101

(15) Fusing failure



P.7-102

(16) Image is out of focus.



P.7-102

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



P.7-103

(18) Dirty paper with toner.



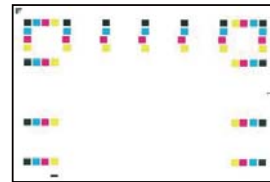
P.7-103

(19) Poor color reproduction



P.7-104

(20) Color shift



P.7-105

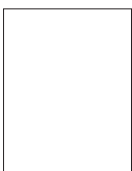


(21) Dirty reverse side of paper.



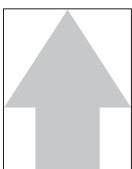
P.7-106

(1) No image appears (entirely white).

Print sample	Cause of trouble
	1. Defective the secondary transfer bias output.

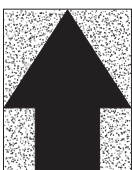
	Defective part	Check description	Corrective Action
1	Secondary transfer roller	Check that the rear cover is firmly closed.	Check how the rear cover is locked and open it once, then close it.
2	High-voltage PWB	1. Check the connection of the connectors. High-voltage PWB (YC1) Engine PWB (YC8) 2. Check continuity within the connector wire.	1. Reconnect the connector if its connection is loose. 2. If there is no continuity, replace the wire. 3. Replace the high-voltage PWB. (see page 4-84,4-93)f
3	Main/Engine PWB	1. Check the connection of the connectors. 2. Check continuity within the connector wire. 3. Check if the secondary transfer high voltage-on signal is output from the main/engine PWB.	1. Reconnect the connector if its connection is loose. 2. If there is no continuity, replace the wire. 3. If signals are not detected, replace the Main/engine PWB. (see page 4-62)

(2) Image is too light.

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. The paper absorbs moisture. 2. The contact pressure at the secondary transfer roller and the primary transfer belt is too low. 3. The voltage applied to the secondary transfer current is incorrect.

	Defective part	Check description	Corrective Action
1	Paper	<ol style="list-style-type: none"> 1. Check if the paper has moisture absorbed. 2. Check the humidity of the place where the paper was stored.. 	1. If the paper is moist, replace it. Choose a dry place to store paper.
2	Paper conveying unit	Check that the rear cover is firmly closed.	Check how the rear cover is locked and open it once, then close it.
3	Secondary transfer roller	Check the location of the secondary transfer roller.	Reattach the secondary transfer roller, if it is hanged off.
4	High-voltage PWB	Check if the connecting terminals between high-voltage PWB and secondary transfer roller are dirty or deformed.	<ol style="list-style-type: none"> 1. If the connecting terminals are dirty, clean them. 2. If the connecting terminals are deformed, correct them for proper continuity.


(3) The background is colored.

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. Defective primary transfer unit grounding. 2. Dirty secondary transfer roller

	Defective part	Check description	Corrective Action
1	Primary transfer unit	<ol style="list-style-type: none"> 1. Check if the belt is whitened on its surface. 2. Check if the ground plate of the primary transfer unit is deformed. 	<p>When the entire belt surface has deteriorated due to whitening, execute the color adjustment, and if not improved, replace the primary transfer unit. (see page 4-6)</p> <p>If the grounding tab is deformed, correct it so that it is properly grounded.</p>


	Defective part	Check description	Corrective Action
2	Secondary transfer roller	Check the ground terminal so as to confirm the transfer bias grounding is proper. Check if the roller surface is dirty entirely.	1. Correct the grounding terminal so as to contact with the roller shaft properly. 2. If the secondary transfer roller surface is entirely dirty, clean or replace it.

(4) White streaks are printed vertically.

Print sample	Cause of trouble
	1. Dirty primary transfer unit 2. Dirty secondary transfer roller


	Defective part	Check description	Corrective Action
1	Primary transfer unit	Check whether white streaks occur at the same position as the smear on the primary transfer belt.	1. Clean the primary transfer belt if it is dirty. 2. Replace the primary transfer unit. (see page 4-6)
2	Secondary transfer roller	Check whether white streaks occur at the same position as the smear on the transfer roller.	Clean the secondary transfer roller if it is dirty. If not corrected after cleaning, replace the secondary transfer roller. (see page 4-28)

(5) Black or color streaks appear longitudinally.

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. Poor voltage impressed for the primary transfer belt cleaning. 2. Dirty secondary transfer roller 3. Dirty separation brush. 4. Dirty fuser unit inside.


	Defective part	Check description	Corrective Action
1	Primary transfer unit	Check if paper dusts have accumulated at the cleaning section.	<ol style="list-style-type: none"> 1. If paper dust is accumulated, clean the cleaning section. 2. If not corrected after cleaning, replace the primary transfer unit. (see page 4-6)
		Check if the cleaning bias connector or the connecting terminals of high voltage are dirty or deformed.	<ol style="list-style-type: none"> 1. If dirty, clean the connectors or connecting terminals. 2. If the connecting terminals are deformed, correct them for proper continuity. 3. Replace the high-voltage PWB.? 4. Replace the high-voltage PWB 2, for 40 ppm printer model.
		Check if the primary transfer belt is contaminated or damaged on its surface.	<ol style="list-style-type: none"> 1. If smear or scratch is observed on the primary transfer unit, replace the unit. (see page 4-6)
2	Secondary transfer roller	Check if the secondary transfer roller is contaminated, deformed or abraded.	<ol style="list-style-type: none"> 1. Clean the secondary transfer roller if it is dirty. 2. Replace the secondary transfer roller if it is deformed or abraded. (see page 4-28)
3	Separation brush	Check if the separation brush is dirty with paper dust or waste toner.	If the separation brush is dirty, clean it.
4	Fuser unit	<ol style="list-style-type: none"> 1. The paper separation plate is contaminated with toner. 2. Check if the device is adjusted for a correct paper weight that matches the paper in use. 	<ol style="list-style-type: none"> 1. If the paper separation plate is dirty, clean the paper separation plate. 2. If the settings for paper weight and the paper being used do not match, make a proper configuration.
5	Eject guide	The rib is contaminated with toner.	If dirty, clean.

(6) Black, white or color streaks appear horizontally.

Print sample	Cause of trouble
	1. Defective primary transfer unit grounding. 2. Dirty secondary transfer roller


	Defective part	Check description	Corrective Action
1	Primary transfer unit	Check if the phenomenon appears in the interval of the circumference of the primary transfer belt.	1. If the print image has a problem, clean the primary transfer belt with a soft cloth. 2. If not corrected after cleaning, replace the primary transfer unit.
2	Fuser unit	Check the print image on paper has a problem in the interval of the circumference of the fuser roller.	If the print image has a problem, clean the fuser roller. If not corrected after cleaning, replace the fuser unit.

(7) Uneven transferring toner.

Print sample	Cause of trouble
	1. Defective primary transfer unit grounding. 2. Dirty secondary transfer roller

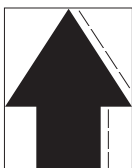
	Defective part	Check description	Corrective Action
1	Primary transfer unit	Check if paper dusts have accumulated at the cleaning section.	1. If paper dust is accumulated, clean the cleaning section. 2. If not corrected after cleaning, replace the primary transfer unit. (see page 4-6)
		Check if the cleaning bias connector or the connecting terminals of high voltage are dirty or deformed.	1. If the connector or terminals are dirty, clean them. 2. If the connecting terminals are deformed, correct them for proper continuity. 3. Replace the high-voltage PWB. Replace the high-voltage PWB 2, for 40 ppm printer model. (see page 4-84,4-93)
		Check if the primary transfer belt is contaminated or damaged on its surface.	1. Replace the primary transfer unit. (see page 4-6)
2	Secondary transfer roller	Check if the secondary transfer roller is contaminated, deformed or abraded.	1. Clean the secondary transfer roller if it is dirty. 2. If not corrected after cleaning, replace the secondary transfer roller. (see page 4-28)
3	Fuser unit	Check that the roller, its drive unit, or the fusing pressure release mechanism is deformed, abraded, or damaged.	If the roller, its driving unit, or the fusing pressure release mechanism is deformed, abraded, or damaged, replace the fuser unit. (see page 4-17)

(8) Black or color dots appear on the image.

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. Damaged or dirty primary transfer belt 2. Dirty secondary transfer roller 3. Dirty fuser unit inside.


	Defective part	Check description	Corrective Action
1	Primary transfer unit	Check the primary transfer belt cleaning.	<ol style="list-style-type: none"> 1. Clean the cleaning section. 2. If not corrected after cleaning, replace the primary transfer unit. (see page 4-6)
		Check if smears or scuffs appear in the interval of the circumference of the primary transfer belt.	Replace the primary transfer unit. (see page 4-6)
2	Secondary transfer roller	Check the print image on paper has a problem in the interval of the circumference of the secondary transfer roller.	<ol style="list-style-type: none"> 1. If the print image has a problem, clean the secondary transfer roller. 2. If not corrected after cleaning, replace the secondary transfer roller. (see page 4-28)
3	Fuser unit	Check the print image on paper has a problem in the interval of the circumference of the fuser roller and the fuser belt.	<ol style="list-style-type: none"> 1. If the print image has a problem, clean the fuser roller and fuser belt. 2. If not corrected after cleaning, replace the fuser unit. (see page 4-17)

(9) Image is blurred (Shifted transferring).

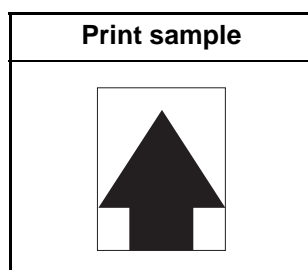
Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. The paper used does not conform to the specification. 2. Imbalanced fuser unit pressures.

	Defective part	Check description	Corrective Action
1	Paper	<ol style="list-style-type: none"> 1. Check that the type of the paper used is within the range of specifications. 2. Check the settings of the type and weight of the paper. 	<ol style="list-style-type: none"> 1. If the type of the paper being used is out of specifications, replace a suitable type of paper. 2. If the settings made for the paper being used is inadequate, configure the settings according to the paper being used.
2	Fuser unit	<ol style="list-style-type: none"> 1. Check the fuser pressure balance. 2. Check if the fuser paper insertion guide is deformed. 	<ol style="list-style-type: none"> 1. If the pressures at the front and rear are unbalanced, replace the fuser unit. (see page 4-17) 2. If the fuser unit is deformed, replace it. (see page 4-17)
3	Paper conveying motor	Check to see if the drive mechanism for paper conveying is smoothly operative.	If the drive does not operate normally, apply grease.
4	Paper conveying guide	The paper conveying guide is deformed.	If the paper conveying guide is deformed, replace the paper conveying guide.

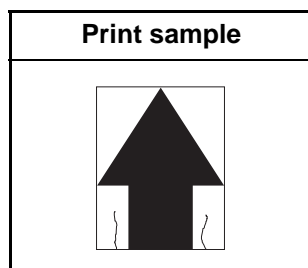
(10) The leading edge of the image is consistently misaligned with the original.

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. Improperly adjusted leading edge timing. 2. Improper amount of slack of the original document before the registration.

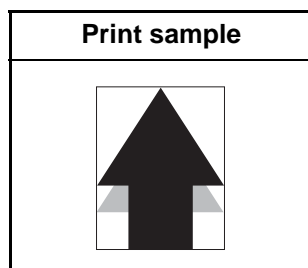
	Defective part	Check description	Corrective Action
1	Registration roller	1. Check whether the leading edge timing is adequately adjusted.	If adjustment is insufficient, adjust the leading edge timing by the maintenance menu in Product Library. (For MFP model, perform U034.)
		2. Check if the registration sensor ON timing (original loop amount) is proper.	When the paper feeding failure has occurred, clean the paper feed roller or replace the paper to check if the failure is improved.

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

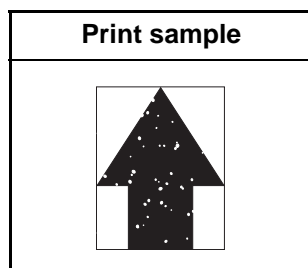
	Defective part	Check description	Corrective Action
1	Registration clutch, Registration roller	Check if the registration roller is dirty, or the registration clutch and the Paper conveying and developer motor operate smoothly.	<ol style="list-style-type: none"> 1. Clean the registration roller. 2. If it is not fixed properly, fix it properly. 3. If not operating smoothly, replace the conveying drive unit.

(12) Paper is creased.

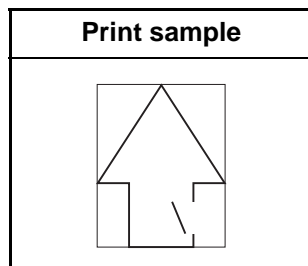
	Defective part	Check description	Corrective Action
1	Paper width guides	Check the paper-width guides fits the paper.	If the width adjuster cursors are not flush with paper, set them correctly.
2	Paper	1. Check paper is curled or wavy. 2. Check that the paper has been stored in a humid place.	1. If the paper is curled or wavy, replace it. 2. Choose a dry place to store paper.
3	Registration roller	The pressures at the front and back springs are unbalanced.	Replace the spring with the one having a correct pressure.
4	Fuser unit	The pressuring spring of the fuser unit is defective.	Replace the fuser unit. (see page 4-17)

(13) Offset occurs.

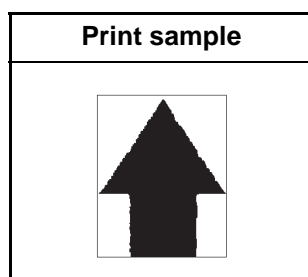
	Defective part	Check description	Corrective Action
1	Paper	<ol style="list-style-type: none"> 1. Check that the type of the paper used is within the range of specifications. 2. Check the settings of the type and weight of the paper. 	<ol style="list-style-type: none"> 1. If the type of the paper being used is out of specifications, replace a suitable type of paper. 2. Configure the settings according to the paper being used.
2	Primary transfer unit	Check if offsets are occurred in the interval of the outer circumference of the primary transfer belt.	<ol style="list-style-type: none"> 1. If occurred in the interval of the outer circumference of the primary transfer belt, clean it 2. Ensure that the cleaning bias terminal of the cleaning roller contacts the terminal of the high-voltage PWB. 3. Replace the primary transfer unit. (see page 4-6)
3	Fuser unit	Check the print image on paper has a problem in the interval of the circumference of the fuser roller.	If the rollers in the fuser unit are dirty, clean them or replace the unit.

(14) Image is partly missing (Outlines objects and white dots).

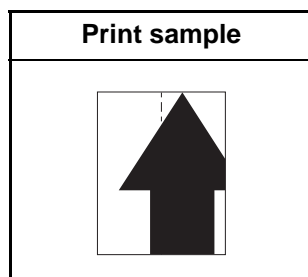
	Defective part	Check description	Corrective Action
1	Paper	Check that the paper has moisture absorbed. Check that the paper has been stored in a humid place.	1. If the paper is moist, replace it. Choose a dry place to store paper. 2. If necessary, install the cassette heater.
2	Primary transfer unit	Check if smears, deformation or scuffs appear in the interval of the circumference of the primary transfer belt.	1. Clean the primary transfer belt with a soft cloth. 2. Replace the primary transfer unit.
3	Secondary transfer roller	Check the print image on paper has a problem in the interval of the circumference of the secondary transfer roller.	1. Clean the secondary transfer roller. 2. Replace the secondary transfer roller.

(15) Fusing failure

	Defective part	Check description	Corrective Action
1	Paper	1. Check that the type of the paper used is within the range of specifications. 2. Check the settings of the type and weight of the paper.	1. If the type of the paper being used is out of specifications, replace a suitable type of paper. 2. Choose a paper weight appropriate for the weight of the paper actually being used.
2	Paper weight setting	Check If the weight of the paper is correctly set.	If the weight of the paper is not correctly set, choose the correct weight that matches the paper being used.
3	Fuser unit	The fuser pressure setting (spring) is defective.	Replace the fuser unit.


(16) Image is out of focus.

	Defective part	Check description	Corrective Action
1	Paper	Check that the paper has moisture absorbed. Check that the paper has been stored in a humid place.	1. If the paper is moist, replace it. 2. Choose a dry place to store paper.

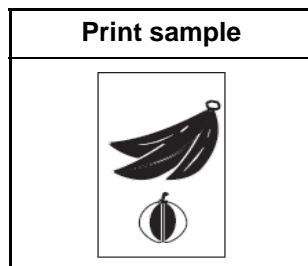
(17) Image center does not align with the original center.

	Defective part	Check description	Corrective Action
1	Paper setting	Check if paper is set correctly.	Reload paper if the paper was not loaded correctly.
2	Image position adjustment	Check the center alignment during writing images.	If adjustment is insufficient, adjust the center line by the maintenance menu in Product Library.

(18) Dirty paper with toner.

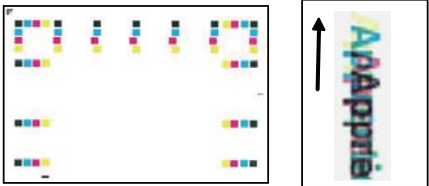
Print sample	Cause of trouble
	1. The toner scattering inside the machine, during continuous high density printing

	Defective part	Check description	Corrective Action
1	Conveying guide	Check if the conveying guide is dirty with toner.	If the conveying guide is dirty with toner, clean the developer unit, the drum unit and the primary transfer unit.
2	Internal toner scattering	Check that the device has been continuously operated for printing a large volume of high coverage data.	Clean the inside of machine.

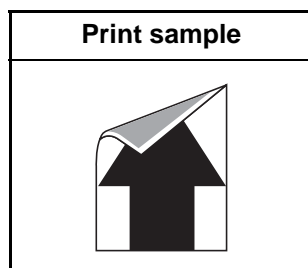
(19) Poor color reproduction

	Defective part	Check description	Corrective Action
1	Paper	Check that the paper has moisture absorbed. Check that the paper has been stored in a humid place.	1. If the paper is moist, replace it. 2. Choose a dry place to store paper.
2	Paper specifications	Slight unevenness in glossiness is observed at the high density area of the image on paper.	1. Check the specification of the paper and use a suitable type of paper. 2. If the rough paper intended for monochrome printing is being used, change the paper to the type intended for color printing.
3	Paper type	Check the settings of the type and weight of the paper.	If paper type and weight do not match the paper to use, set them properly.
4	Image adjustment	Check if the target density adjustment has performed.	Execute the color adjustment using [Adjustment/Maintenance] of the system menu. (see page 4-29)
5	Printer driver setting	Check that what color table is being selected for the printer.	1. Select the appropriate color table for printer at [Color reproduction] in [Imaging] tab of the printer driver. 2. Download the color table required.
		Check that the print data is of CMYK.	If the print data is of CMYK, select an adequate mode by the KPD L Color Conversion Process.

(20) Color shift

Print sample	Cause of trouble
	<ol style="list-style-type: none"> 1. Defective ID sensor density detection 2. Primary transfer belt is deteriorated. (whitened)

	Defective part	Check description	Corrective Action
1	Color Registration Adjustment	Confirm that the color adjustment (the color registration adjustment) has not be executed before executing the calibration.	Unplug the power cord from the wall outlet, and perform the power reset, and execute the calibration by [Adjustment / Maintenance] in the system menu, and then execute the color registration. (see page 4-29)
2	ID sensor	Check if the ID sensor shutter is open during the color adjustment (the calibration).	<ol style="list-style-type: none"> 1. If the sensor shutter is not open, correct it to open. 1. Clean the ID sensor surface. Or replace.
3	Primary transfer unit	Execute the color adjustment (the calibration) to check if the ID sensor can read successfully image density. (To check the degradation of the primary transfer belt)	<ol style="list-style-type: none"> 1. If the color registration patches on the left and right ends of the primary transfer belt appears twice after performing the color adjustment (the calibration), replace the primary transfer unit.

(21) Dirty reverse side of paper.

	Defective part	Check description	Corrective Action
1	Secondary transfer roller	Check if the secondary transfer roller is dirty with toner.	1. Clean the secondary transfer roller. 2. Check if the transfer bias terminal is in contact with the roller.
2	Press roller	Check that foreign objects are stuck on the fuser press roller.	1. If foreign objects exist, clean the fuser pressure roller. 2. If the paper and the paper weight setting do not match, choose the proper paper weight setting.
3	Upper paper conveying guide	The upper conveying guide is dirty with toner.	If the upper conveying guide is dirty with toner, clean the conveying guide, the developer unit, the drum unit and the primary transfer unit.

7-6 Electric problems

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

Troubleshooting 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 power switch is turned on.	1. No electricity at the power outlet.	Measure the input voltage.
	2. The power cord is not plugged properly.	Check the connection of the connectors.
	3. Broken power cord.	Check for continuity. If none, replace the wire.
	4. Defective power switch.	Check continuity across the contacts. If none, replace the power switch.
	5. Defective power source PWB.	Replace the power source PWB. (see page 4-97)
	6. Defective Engine relay PWB.	Replace the engine relay PWB. (see page 4-80)
	7. Defective Main/engine PWB.	Replace the main/engine PWB and check operation. (see page 4-62)
(2) Duplex eject motor does not operate.	1. Defective connector cable or poor contact in the connector	Reconnect the connector if its connection is loose. Also check the continuity within the connector wire. If none, replace the wire. Duplex eject motor and Engine relay PWB (YC20) Engine relay PWB (YC1) and Main/engine PWB (YC4)
	2. Defective drive transmission system.	Check if the rollers and gears rotate smoothly. If not, clean or grease the bushes and gears. Check broken gears and replace if any.
	3. Defective motor.	Reattach the duplex eject motor. Or replace.
	4. Defective PWB.	Replace the engine relay PWB. (see page 4-80)
		Replace the main/engine PWB. (see page 4-62)
(3) Toner motor does not operate.	1. Defective connector cable or poor contact in the connector	Reconnect the connector if its connection is loose. Also check the continuity within the connector wire. If none, replace the wire. Toner motor and Engine relay PWB (YC18) Engine relay PWB (YC4) and Main/engine PWB (YC1)
	2. Defective motor.	Reattach the toner motor. Or replace.
	3. Defective PWB.	Replace the engine relay PWB. (see page 4-80)
		Replace the main/engine PWB. (see page 4-62)
(4) Power source fan motor does not rotate.	1. Defective connector cable or poor contact in the connector	Reconnect the connector if its connection is loose. Also check the continuity within the connector wire. If none, replace the wire. Power source fan motor and Main/engine PWB (YC19)
	2. Defective motor.	Replace the power source fan motor.
	3. Defective PWB.	Replace the main/engine PWB. (see page 4-62)

Problem	Causes	Check procedures/corrective measures
(5) LSU fan motor does not operate.	1. Defective connector cable or poor contact in the connector	Reconnect the connector if its connection is loose. Also check the continuity within the connector wire. If none, replace the wire. LSU fan motor and Engine relay PWB (YC23,24) Engine relay PWB (YC1) and Main/engine PWB (YC4)
	2. Defective motor.	Replace the LSU fan motor.
	3. Defective PWB.	Replace the engine relay PWB. (see page 4-80)
		Replace the main/engine PWB. (see page 4-62)
(6) Container fan motor does not operate.	1. Defective connector cable or poor contact in the connector	Reinsert the connector. Also check the continuity within the connector wire. If none, replace the wire. Container fan motor and engine relay PWB (YC24)
	2. Defective motor.	Replace the container fan motor.
	3. Defective PWB.	Replace the main/engine PWB. (see page 4-62)
(7) Paper feed clutch does not operate.	1. Defective connector cable or poor contact in the connector	Reinsert the connector. Also check the continuity within the connector wire. If none, replace the wire. Paper feed clutch and Engine relay PWB (YC15) Engine relay PWB (YC1) and Main/engine PWB (YC4)
	2. Defective clutch.	Replace the conveying drive unit.
	3. Defective PWB.	Replace the engine relay PWB. (see page 4-80)
		Replace the main/engine PWB. (see page 4-62)
(8) Registration clutch does not operate.	1. Defective connector cable or poor contact in the connector	Reconnect the connector if its connection is loose. Also check the continuity within the connector wire. If none, replace the wire. Registration clutch and Main/engine PWB (YC21)
	2. Defective clutch.	Replace the conveying drive unit.
	3. Defective PWB.	Replace the main/engine PWB. (see page 4-62)
(9) Duplex clutch does not operate. (35/40 ppm printer model only)	1. Defective connector cable or poor contact in the connector	Reconnect the connector if its connection is loose. Also check the continuity within the connector wire. If none, replace the wire. Duplex clutch and Engine relay PWB (YC15) Engine relay PWB (YC1) and Main/engine PWB (YC4)
	2. Defective clutch.	Replace the conveying drive unit.
	3. Defective PWB.	Replace the main/engine PWB. (see page 4-62)

Problem	Causes	Check procedures/corrective measures
(10) Developer clutch does not operate.	1. Defective connector cable or poor contact in the connector	Reconnect the connector if its connection is loose. Also check the continuity within the connector wire. If none, replace the wire. Developer clutch and Engine relay PWB (YC15) Engine relay PWB (YC1) and Main/engine PWB (YC4)
	2. Defective clutch.	Replace the conveying drive unit.
	3. Defective PWB.	Replace the engine relay PWB. (see page 4-80)
		Replace the main/engine PWB. (see page 4-62)
(11) Middle clutch does not operate.	1. Defective connector cable or poor contact in the connector	Reconnect the connector if its connection is loose. Also check the continuity within the connector wire. If none, replace the wire. Paper feed clutch and Engine relay PWB (YC15) Engine relay PWB (YC1) and Main/engine PWB (YC4)
	2. Defective clutch.	Replace the conveying drive unit.
	3. Defective PWB.	Replace the engine relay PWB. (see page 4-80)
		Replace the main/engine PWB. (see page 4-62)
(12) MP solenoid does not operate.	1. Defective connector cable or poor contact in the connector	Reconnect the connector if its connection is loose. Also check the continuity within the connector wire. If none, replace the wire. MP solenoid and Engine relay PWB (YC16) Engine relay PWB (YC1) and Main/engine PWB (YC4)
	2. Defective the solenoid.	Replace the MP solenoid.
	3. Defective PWB.	Replace the engine relay PWB. (see page 4-80)
		Replace the main/engine PWB. (see page 4-62)
(13) 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	Reconnect the connector if its connection is loose. Also check the continuity within the connector wire. If none, replace the wire. Cassette PWB and Engine relay PWB (YC8)
	2. Deformed actuator.	Check and replace if necessary.
	3. Defective sensor.	Replace the cassette PWB.
	4. Defective PWB.	Replace the engine relay PWB. (see page 4-80)
(14) 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	Reconnect the connector if its connection is loose. Also check the continuity within the connector wire. If none, replace the wire. MP paper sensor and Engine relay PWB (YC18)
	2. Deformed actuator.	Check and replace if necessary.
	3. Defective sensor.	Replace the MP paper sensor.
	4. Defective PWB.	Replace the engine relay PWB. (see page 4-80)

Problem	Causes	Check procedures/corrective measures
(15) The size of paper on the MP tray is not displayed correctly.	1. Defective connector cable or poor contact in the connector	Reinsert the connector. Also check the continuity within the connector wire. If none, replace the wire. Cassette size detection switch and Engine relay PWB (YC5)
	2. Defective switch.	Replace the cassette size detection switch.
	3. Defective PWB.	Replace the engine relay PWB. (see page 4-80)
(16) A paper jam in the paper feed, paper conveying or eject section is indicated when the power switch is turned on.	1. Defective connector cable or poor contact in the connector	Reinsert the connector. Also check the continuity within the connector wire. If none, replace the wire. Registration sensor and Main/engine PWB (YC12) Eject sensor, Eject full sensor and Main/engine PWB (YC11)
	2. A piece of paper torn from paper is caught around PF paper feed sensor, eject sensor or paper full sensor.	Check and remove torn paper if any.
	3. Defective sensor.	Replace the registration sensor, PF paper feed sensor, paper full sensor or eject sensor.
	4. Defective PWB.	Replace the engine relay PWB. (see page 4-80)
		Replace the main/engine PWB. (see page 4-62)
(17) A message indicating cover open is displayed when the rear cover is closed.	1. Defective connector cable or poor contact in the connector	Reconnect the connector if its connection is loose. Also check the continuity within the connector wire. If none, replace the wire. Interlock switch and Power source PWB (YC104)
	2. Defective switch.	Check the interlock switch, and if necessary, replace it.
	3. Defective PWB.	Replace the power source PWB. (see page 4-97)

7-7 Mechanical problems

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

Problem	Causes/check procedures	Corrective Action
(1) No primary paper feed.	Check if the surfaces of the following rollers are dirty with paper dust. Pickup roller Paper feed roller MP paper feed roller	Clean with a wet cloth.
	Check if the following rollers are deformed. Pickup roller Paper feed roller MP paper feed roller	Check and replace if deformed.(see page P.4-25)
	Paper feed unit installed incorrectly.	Check and repair if necessary.
(2) No secondary paper feed.	Check if the surfaces of the following rollers are dirty with paper dust. Lower registration roller Lower registration roller	Clean with a wet cloth.
	Paper conveying unit is improperly attached	Check and repair if necessary.
(3) Skewed paper feed.	Paper width guide in the cassette installed incorrectly.	Check the paper width guide is attached properly and reattach or replace if necessary.
(4) Multiple sheets of paper are fed.	1. Check if the paper is excessively curled.	Change the paper if the paper is excessively curled.
	2. The paper in the cassette is not set correctly.	Load the paper correctly.
	3. Check if the retard roller is abraded.	Replace the retard roller if it is worn. (see page 4-20)
(5) Paper jams.	Check if the paper is excessively curled.	Change the paper if the paper is excessively curled.
	Check if the contact between the upper and lower registration rollers is correct.	Check and repair if necessary.
	Check if the heat roller or press roller is extremely dirty or deformed.	Check and replace the fuser unit. (see page 4-17)
(6) Toner drops on the paper conveying path.	Check if the developer unit, drum unit, and primary transfer unit is extremely dirty.	Clean the developer unit, drum unit, and primary transfer unit.
(7)The message of toner replenishing does not disappear. (K)	1. Check that the spiral of the toner container can be rotated. 2. Check whether the toner supply inlet opens by the lever operation.	Replace the toner container.
	Check if the roller in the developer unit rotates and the developer clutches, etc., that transfer the drive are damaged.	1. Replace the developer unit. 2. Replace the conveying drive unit.

Problem	Causes/check procedures	Corrective Action
(8)The message of toner replenishing does not disappear. (C,M,Y)	1. Check that the spiral of the toner container can be rotated. 2. Check whether the toner supply inlet opens by the lever operation.	Replace the toner container.
	Check if the roller in the developer unit rotates and the couplings, etc., that transfer the drive are damaged.	1. Replace the developer unit. 2. Replace the main drive unit.
(9) Abnormal sound is generated.	Check if the rollers, pullys and gears rotate smoothly.	Grease the bushes and gears.
	Check if the roller in the developer unit rotates.	If the developer roller is locked, replace the developer unit.
	Check if the problem has occurred between the cleaning section in the primary transfer unit and the drive transmission section of the main unit.	1. If the waste toner is clogged inside the cleaning unit, clean it. 2. If it is the sliding noise from the side of the waste joint gear in the main body, grease the gear.
	Check the occurrence from the fuser unit. During printing drive, or at the power is turned on, the fuser motor is rotated reversely for the pressure releasing operation.	Check if the meshing of gears is proper, and if necessary, reattach the fuser unit. Grease the fuser release drive gear.
	Check if it occurs when the cassette lift motor operates.	Check if the cassette lift motor is attached properly, and if necessary, reattach it.

8 PWBs

8-1Description for PWB

(1) Main/Engine PWB

(1-1) Connector position

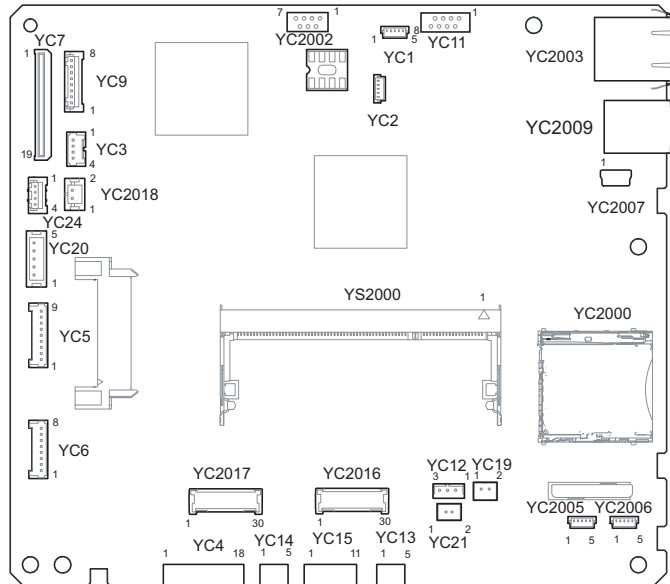


Figure 8-1

(1-2) PWB photograph

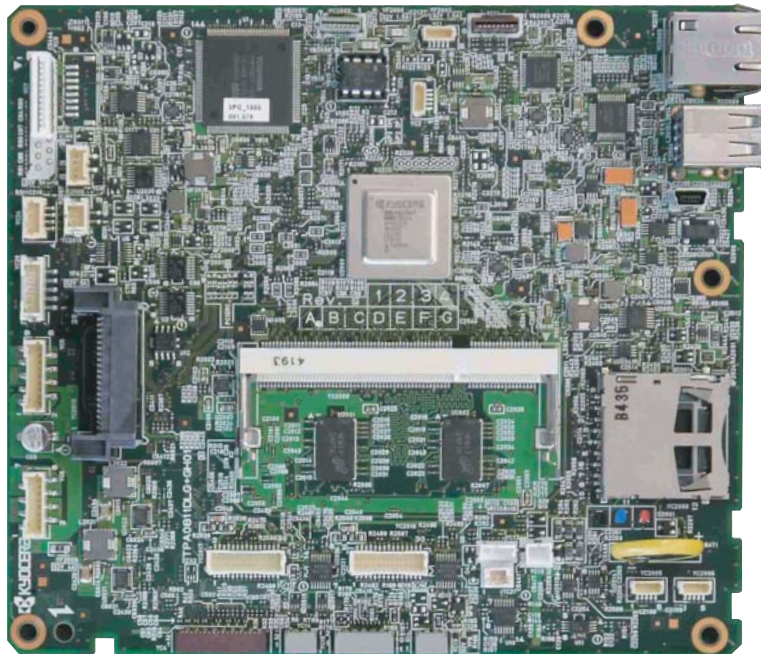


Figure 8-2

(1-3) Connector lists

Connector	Pin	Signal	I/O	Voltage	Description
YC2	1	+24V1	O	DC24V	DC24V power output
Connected to the engine relay PWB	2	GND	-	-	Ground
	3	GND	-	-	Ground
	4	GND	-	-	Ground
	5	GND	-	-	Ground
	6	+24V3	O	DC24V	DC24V power output
	7	+24V3	O	DC24V	DC24V power output
	8	+24V3	O	DC24V	DC24V power output
YC3	1	GND	-	-	Ground
Connected to the toner container switch and inner tray switch	2	TCONERRN	I	DC0V/3.3V	TCS: On/Off
	3	GND	-	-	Ground
	4	TOPOPNI	I	DC0V/3.3V	TTSW: On/Off
YC4	1	EGASSDI	I	DC0V/3.3V(pulse)	Serial communication data input
Connected to the engine relay PWB	2	GND	-	-	Ground
	3	EGASCS	O	DC0V/3.3V	Serial communication chip select signal
	4	EGASEN	I	DC0V/3.3V	Serial communication enable signal
	5	+3.3V1	O	DC3.3V	DC3.3V power output
	6	EGASSDO	O	DC0V/3.3V(pulse)	Serial communication data output
	7	+3.3V3	O	DC3.3V	DC3.3V power output
	8	EGASSCK	O	DC0V/3.3V(pulse)	Serial communication clock signal
	9	WAKEUPINTN	I	DC0V/3.3V	Engine CPU return signal
	10	FRAM2SDA	I/O	DC0V/3.3V	Security communication data
	11	ERRTEMP	O	DC0V/3.3V	Abnormal high temperature detection signal
	12	FRAM2SCL	O	DC0V/3.3V(pulse)	Security communication clock
	13	+3.3V3	O	DC3.3V	DC3.3V power output
	14	OPSDO	O	DC0V/3.3V(pulse)	Option serial data output
	15	OPDYN	I	DC0V/3.3V	Option ready signal
	16	OPSDI	I	DC0V/3.3V(pulse)	Option serial data input
	17	GND	-	-	Ground
	18	OPSCK	O	DC0V/3.3V(pulse)	Option serial clock signal

Connector	Pin	Signal	I/O	Voltage	Description
YC5 Connected to the power source PWB	1	+24V1	O	DC24V	DC24V power output
	2	+24V1	O	DC24V	DC24V power output
	3	GND	-	-	Ground
	4	GND	-	-	Ground
	5	GND	-	-	Ground
	6	GND	-	-	Ground
	7	+24V2	O	DC24V	DC24V power output
	8	+24V2	O	DC24V	DC24V power output
	9	+24V2	O	DC24V	DC24V power output
YC7 Connected to the high-voltage PWB	1	+24V3	O	DC24V	DC24V power output
	2	+24V3	O	DC24V	DC24V power output
	3	DACSLD1	O	DC0V/3.3V(pulse)	DAC1 load signal
	4	DACSLD2	O	DC0V/3.3V(pulse)	DAC2 load signal
	5	DACSCLK	O	DC0V/3.3V(pulse)	DAC clock signal
	6	GND	-	-	Ground
	7	DACSDO	I/O	DC0V/3.3V(pulse)	DAC data signal
	8	HVREMN	O	DC0V/3.3V	Primary/Secondary transfer remote signal
	9	HVCLKK	O	DC0V/3.3V	Developer clock signal
	10	MISENS	I	Analog	Main charger current detection output
	11	GND	-	-	Ground
	12	GND	-	-	Ground
	13*2	HVDCLKY	O	DC0V/3.3V(pulse)	Developer (Y) clock signal
	14*2	HVDCLKM	O	DC0V/3.3V(pulse)	Developer (M) clock signal
	15*2	HVDCLKC	O	DC0V/3.3V(pulse)	Developer (C) clock signal
	16*2	MCHGCLK	O	DC0V/3.3V(pulse)	Main charger clock signal
	17*2	MYISENS	I	Analog	Main charger current (Y) detection output
	18*2	MMISENS	I	Analog	Main charger current (M) detection output
	19*2	MCISENS	I	Analog	Main charger current (C) detection output

Connector	Pin	Signal	I/O	Voltage	Description
YC9*2	1	GND	-	-	Ground
Connected to the high-voltage PWB 2	2	T2KCNT			
	3	T1CCNT			
	4	CLCNT			
	5	HVREM			
	6	T1YCNT			
	7	T1MCNT			
	8	+24V3	O	DC24V	DC24V power output
YC11	1	NCTHCOM	I	Analog	NC compensating voltage
Connected to the eject PWB	2	FTHERM1	I	Analog	FTH1 detection voltage
	3	FCTHDET	I	Analog	FTH2 detection voltage
	4	+3.3V4	O	DC3.3V	DC3.3V power output
	5	PDIRN	I	DC0V/3.3V	ENVS: On/Off
	6	PDFULL	I	DC0V/3.3V	PFS: On/Off
	7	FUSJAM	I	DC0V/3.3V	ES: On/Off
	8	GND	-	-	Ground
YC12	1	GND	-	-	Ground
Connected to the registration sensor	2	REGPAP	I	DC0V/3.3V	RS: On/Off
	3	+3.3V3	O	DC3.3V	DC3.3V power output
YC13	1	VOPL	I	Analog	IDS1 S signal input
Connected to the ID sensor 1	2	VOSL	I	Analog	IDS1 P signal input
	3	GND	-	-	Ground
	4	LEDREFL	O		IDS1 reference signal output
	5	+3.3V3	O	DC3.3V	DC3.3V power output
YC14	1	VOPR	I	Analog	IDS2 S signal input
Connected to the ID sensor 2	2	VOSR	I	Analog	IDS2 P signal input
	3	GND	-	-	Ground
	4	LEDREFR	O	Analog	IDS2 reference signal output
	5	+3.3V3	O	DC3.3V	DC3.3V power output

Connector	Pin	Signal	I/O	Voltage	Description
YC15	1	GND	-	-	Ground
Connected to the drum relay PWB	2	PTSCL	O	DC0V/3.3V(pulse)	E2PROM communication clock signal
	3	+3.3V3	O	DC3.3V	DC3.3V power output
	4	PTSDA	I/O	DC0V/3.3V(pulse)	E2PROM communication data signal
	5	TNSENK	I	Analog	Toner sensor remaining level signal (C)
	6	TNSENK	I	Analog	Toner sensor remaining level signal (Y)
	7	TNSENK	I	Analog	Toner sensor remaining level signal (K)
	8	TNSENK	I	Analog	Toner sensor remaining level signal (M)
	9	DRMHEATDR	O	DC24V	DC24V power output
	10	DLP THERM	I	Analog	Developer thermistor
	11	ERASEDR	O	DC24V	Eraser (BK) ON signal
YC19	1	+24V1	O	DC24V	DC24V power output
Connected to the power source fan motor	2	LVUFANDRN	O	DC0V/12V/24V	PSFM: : full speed/half speed/Off
YC20	1	PSSLEEPN	O	DC0V/3.3V	Sleep mode signal: On/Off
Connected to the power source PWB	2	ZCROSSN	I	DC0V/3.3V(pulse)	Zero cross signal
	3	RELAYON	O	DC0V/3.3V	Power relay signal: On/Off
	4	HEATREM1	O	DC0V/3.3V	FH1: On/Off
	5	HEATREM2*1	O	DC0V/3.3V	FH2: On/Off
YC21	1	+24V3	O	DC24V	DC24V power output
Connected to the registration clutch	2	REGCLDRVN	O	DC0V/3.3V	RCL: On/Off
YC24	1	AIRTEMP	I	Analog	OTEMS detection voltage (temperature)
Connected to the external temperature sensor	2	+3.3V3	O	DC3.3V	DC3.3V power output
	3	HUMOUT	I	Analog	OTEMS detection voltage (humidity)
	4	HUMCLK	O	DC0V/3.3V(pulse)	OTEMS clock signal
YC2002	1	+5V1_PANEL_C	O	DC5V	DC5V power output
Connected to the operation panel PWB	2	FPRSTN	O	DC0V/3.3V	Panel reset signal
	3	+3.3V1_C	O	DC3.3V	DC3.3V power output
	4	FPTXD	I	DC0V/3.3V(pulse)	Reception data
	5	FPRXD	O	DC0V/3.3V(pulse)	Transmission data

Connector	Pin	Signal	I/O	Voltage	Description
	6	GND	-	-	Ground
	7	WAKEUP_PN LKEY	I	DC0V/3.3V	Sleep return notification signal
YC2016	1	POLREMN1	O	DC0V/3.3V	Polygon motor ready signal
Connected to the APC PWB K, APC PWB M, and Polygon motor KM	2	GND	-	-	Ground
	3	POLRDYN1	I	DC0V/3.3V	Polygon motor ready signal
	4	+24V3	O	DC24V	DC24V power output
	5	POLCLK1	O	DC0V/3.3V(pulse)	Polygon motor clock signal
	6	PDKN	I	DC0V/3.3V	BD (K)
	7	PDMN	I	DC0V/3.3V	BD (M)
	8	+3.3V3_VIDE O	O	DC3.3V	DC3.3V power output
	9	+3.3V3_VIDE O	O	DC3.3V	DC3.3V power output
	10	VREFK	O	Analog	Reference voltage 1 (K)
	11	VREFM	O	Analog	Reference voltage 1 (M)
	12	VDOK1P	O	LVDS+	Video 1 differential P (K)
	13	VDOM1P	O	LVDS+	Video 1 differential P (M)
	14	VDOK1N	O	LVDS-	Video 1 differential N (K)
	15	VDOM1N	O	LVDS-	Video 1 differential N (M)
	16	GND	-	-	Ground
	17	GND	-	-	Ground
	18	OUTPEKN	O	DC0V/3.3V	Output enable (K)
	19	OUTPEMN	O	DC0V/3.3V	Output enable (M)
Connected to the APC PWB K, APC PWB M, and Polygon motor KM	20	SAMPLEK1N	O	DC0V/3.3V	Sample hold 1 (K)
	21	SAMPLEM1N	O	DC0V/3.3V	Sample hold 1?M?
	22	LSUTHERMK	I	Analog	LSU thermistor (K)
	23	VDOM2P	O	LVDS+	Video 2 differential P (K)
	24	VDOK2P	O	LVDS+	Video 2 differential P (M)
	25	VDOM2N	O	LVDS-	Video 2 differential N (K)
	26	VDOK2N	O	LVDS-	Video 2 differential N (M)
	27	SAMPLEM2N	O	DC0V/3.3V	Sample hold 2 (K)
	28	SAMPLEK2N	O	DC0V/3.3V	Sample hold 2?M?
	29	+5.0V2	O	DC5V	DC5V power output
	30	+5.0V3	O	DC5V	DC5V power output

Connector	Pin	Signal	I/O	Voltage	Description
YC2017	1	POLREMN1	O	DC0V/3.3V	Polygon motor ready signal
Connected to the APC PWB C, APC PWB Y, and Polygon motor CY	2	GND	-	-	Ground
	3	POLRDYN1	I	DC0V/3.3V	Polygon motor ready signal
	4	+24V3	O	DC24V	DC24V power output
	5	POLCLK1	O	DC0V/3.3V(pulse)	Polygon motor clock signal
	6	PDCN	I	DC0V/3.3V	BD (C)
	7	PDYN	I	DC0V/3.3V	BD (Y)
	8	+3.3V3_VIDE O	O	DC3.3V	DC3.3V power output
	9	+3.3V3_VIDE O	O	DC3.3V	DC3.3V power output
	10	VREFC	O	Analog	Reference voltage 1 (C)
	11	VREFY	O	Analog	Reference voltage 1 (Y)
	12	VDOC1P	O	LVDS+	Video 1 differential P (C)
	13	VDOY1P	O	LVDS+	Video 1 differential P (Y)
	14	VDOC1N	O	LVDS-	Video 1 differential N (C)
	15	VDOY1N	O	LVDS-	Video 1 differential N (Y)
	16	GND	-	-	Ground
	17	GND	-	-	Ground
	18	OUTPECN	O	LVDS+	Output enable (C)
	19	OUTPEYN	O	LVDS+	Output enable (Y)
	20	SAMPLEC1N	O	LVDS-	Sample hold 1?C?
	21	SAMPLEY1N	O	LVDS-	Sample hold 1?Y?
	22	LSUTHERMC	I	Analog	LSU thermistor (C)
	23	VDOY2P	O	LVDS	Video 2 differential P (Y)
	24	VDOC2P	O	LVDS	Video 2 differential P (C)
	25	VDOY2N	O	LVDS	Video 2 differential N (Y)
	26	VDOC2N	O	LVDS	Video 2 differential N (C)
Connected to the APC PWB C, APC PWB Y, and Polygon motor CY	27	SAMPLEY2N	O	DC0V/3.3V	Sample hold 2?Y?
	28	SAMPLEC2N	O	DC0V/3.3V	Sample hold 2?C?
	29	+5.0V3	O	DC5V	DC5V power output
	30	+5.0V3	O	DC5V	DC5V power output
YC2018	1	POWERSW	O	DC0V/24V	PSSW: On/Off
Connected to the power switch	2	GND	-	-	Ground

*1: for 35/40 ppm models only

*2: for 40 ppm models only

(2) Engine relay PWB

(2-1) Connector position

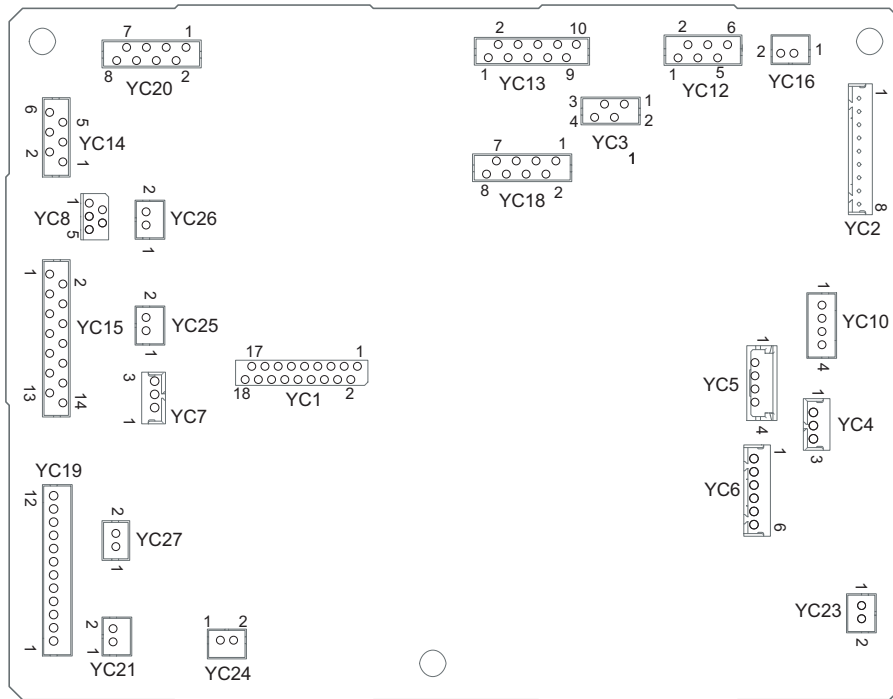


Figure 8-3

(2-2) PWB photograph

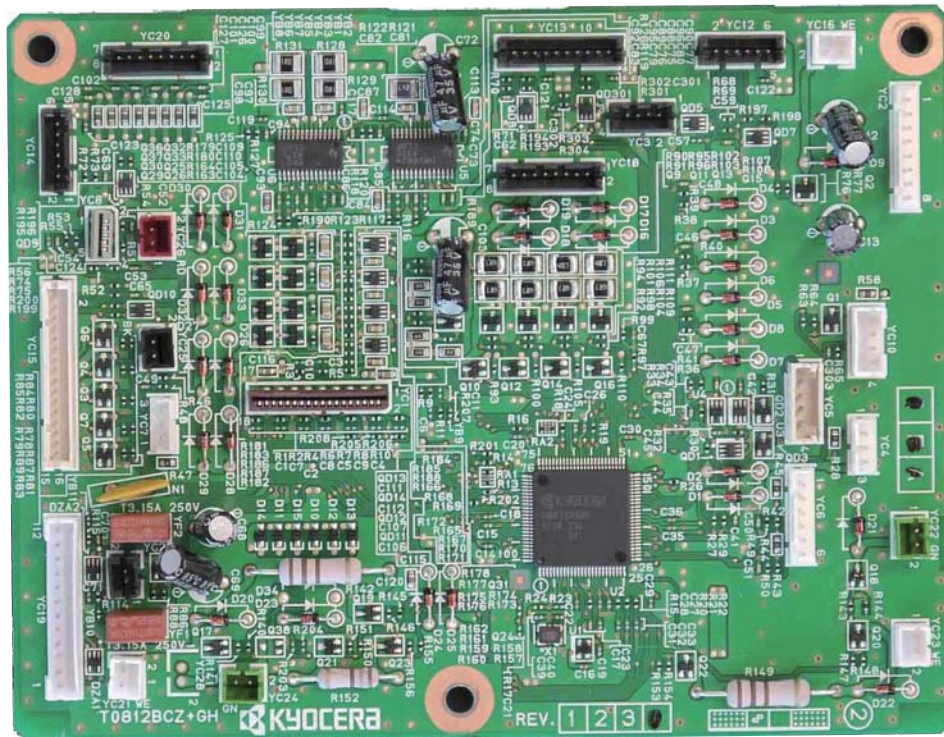


Figure 8-4

(2-3) Connector lists

Connector	Pin	Signal	I/O	Voltage	Description
YC1	1	EGASSDI	I	DC0V/3.3V(pulse)	Serial communication data input
Connected to the main/ engine PWB	2	GND	-	-	Ground
	3	EGASCS	O	DC0V/3.3V	Serial communication chip select signal
	4	EGASEN	I	DC0V/3.3V	Serial communication enable signal
	5	+3.3V1	O	DC3.3V	DC3.3V power output
	6	EGASSDO	O	DC0V/3.3V(pulse)	Serial communication data output
	7	+3.3V3	O	DC3.3V	DC3.3V power output
	8	EGASSCK	O	DC0V/3.3V(pulse)	Serial communication clock signal
	9	WAKEU-PINTN	I	DC0V/3.3V	Engine CPU return signal
	10	FRAM2SDA	I/O	DC0V/3.3V	Security communication data
	11	ERRTEMP	O	DC0V/3.3V	Abnormal high temperature detection signal
	12	FRAM2SCL	O	DC0V/3.3V(pulse)	Security communication clock
	13	+3.3V3	O	DC3.3V	DC3.3V power output
	14	OPSDO	O	DC0V/3.3V(pulse)	Option serial data output
	15	OPDYN	I	DC0V/3.3V	Option ready signal
	16	OPSDI	I	DC0V/3.3V(pulse)	Option serial data input
	17	GND	-	-	Ground
	18	OPSCK	O	DC0V/3.3V(pulse)	Option serial clock signal
YC2	1	+24V3	O	DC24V	DC24V power output
Connected to the main/ engine PWB	2	+24V3	O	DC24V	DC24V power output
	3	+24V3	O	DC24V	DC24V power output
	4	GND	-	-	Ground
	5	GND	-	-	Ground
	6	GND	-	-	Ground
	7	GND	-	-	Ground
	8	+24V1	O	DC24V	DC24V power output
YC3	1	FRAM2SCL	O	DC0V/3.3V(pulse)	FRAMTS clock signal
Connected to the toner container relay PWB	2	+3.3V3	O	DC3.3V	DC3.3V power output
	3	FRAM2SDA	I/O	DC0V/3.3V	FRAMTS data signal
	4	GND	-	-	Ground
YC4	1	+3.3V1_LED1	O	DC3.3V	DC3.3V power output
Connected to the waste toner cover sensor	2	GND	-	-	Ground
	3	WSTOPN	I	DC0V/3.3V	WTCS: On/Off

Connector	Pin	Signal	I/O	Voltage	Description
YC5	1	CAS2	I	DC0V/3.3V	CSSW(SW2): On/Off
Connected to the cassette size detection switch	2	CAS1	I	DC0V/3.3V	CSSW(SW1): On/Off
	3	COM	-	-	Ground
	4	CAS0	I	DC0V/3.3V	CSSW(SW0): On/Off
YC6	1	+3.3V3_LED1	O	DC3.3V	DC3.3V power output
Connected to the MP paper sensor and MP conveying sensor	2	GND	-	-	Ground
	3	MPFPAP	I	DC0V/3.3V	MPPS: On/Off
	4	+3.3V3_LED2	O	DC3.3V	DC3.3V power output
	5	GND	-	-	Ground
	6	MPFJAM	I	DC0V/3.3V	MPPCS: On/Off
YC7	1	+3.3V3_LED3	O	DC3.3V	DC3.3V power output
Connected to the duplex sensor	2	GND	-	-	Ground
	3	DUPPAP	I	DC0V/3.3V	DUPCS: On/Off
YC8	1	GND	-	-	Ground
Connected to the cassette PWB	2	PAPVOL2	I	DC0V/3.3V	PS2: On/Off
	3	PAPVOL1	I	DC0V/3.3V	PS1: On/Off
	4	LIFTSEN	I	DC0V/3.3V	LS: On/Off
	5	+3.3V3	O	DC3.3V	DC3.3V power output
YC10	1	LEDA	O	DC3.3V	DC3.3V power output
Connected to the waste toner sensor	2	LEDK	O	DC0V/3.3V(pulse)	WTS emission signal
	3	PTRE	I	Analog	WTS detection signal
	4	PTRC	O	DC3.3V	DC3.3V power output
YC12	1	MOTREV	O	DC0V/3.3V	DEVM forward/reverse control signal
Connected to the developer motor	2	DLPC-MTRDYN	I	DC0V/24V	DEVM ready signal
	3	DLPCMTCLK	O	DC0V/24V(pulse)	DEVM clock signal
	4	DLPC-MTREMNI	O	DC0V/24V	DEVM: On/Off
	5	GND	-	-	Ground
	6	+24V3	O	DC24V	DC24V power output

Connector	Pin	Signal	I/O	Voltage	Description
YC13 Connected to the drum motor 1 and drum motor 2	1	DRMMTRDYN	I	DC0V/24V	DRM1 ready signal
	2	DRMMTCLK	O	DC0V/24V(pulse)	DRM1 clock signal
	3	DRM-MTREM N	O	DC0V/24V	DRM1: On/Off
	4	GND	-	-	Ground
	5	+24V3	O	DC24V	DC24V power output
	6	DRMMT2RDY N	I	DC0V/24V	DRM2 ready signal
YC13	7	DRMMT2CLK	O	DC0V/24V(pulse)	DRM2 clock signal
	8	DRMMT2REM N	O	DC0V/24V	DRM2: On/Off
	9	GND	-	-	Ground
	10	+24V3	O	DC24V	DC24V power output
YC14 Connected to the primary transfer motor	1	IMGCCW	I	DC0V/3.3V	CCW fixed control
	2	IMGMTRDYN	I	DC0V/24V	TRM ready signal
	3	IMGMTCLK	O	DC0V/24V(pulse)	TRM clock signal
	4	IMGMTREM N	O	DC0V/24V	TRM: On/Off
	5	GND	-	-	Ground
	6	+24V3	O	DC24V	DC24V power output
YC15 Connected to the paper feed motor, developer clutch, middle clutch, MP conveying clutch, paper feed clutch and duplex clutch.	1	MOTREV	O	DC0V/3.3V	PFM forward/reverse control signal
	2	FEDMTRDYN	I	DC0V/24V	PFM Ready signal
	3	FEDMTCLK	O	DC0V/24V(pulse)	PFM clock signal
	4	FEDMTREM N	O	DC0V/24V	PFM: On/Off
	5	GND	-	-	Ground
	6	+24V3	O	DC24V	DC24V power output
	7	DLPKCLDRN	O	DC0V/24V	DEVCL: On/Off
	8	+24V3	O	DC24V	DC24V power output
	9	MIDCLDRN	O	DC0V/24V	MIDCL: On/Off
	10	+24V3	O	DC24V	DC24V power output
	11	MPFCLDRN	O	DC0V/24V	MPFCL: On/Off
	12	+24V3	O	DC24V	DC24V power output
	13	FEDCLDRN	O	DC0V/24V	PFCL: On/Off
	14	+24V3	O	DC24V	DC24V power output
	15*1	DUPCLDRN	O	DC0V/24V	DUCL: On/Off
	16*1	+24V3	O	DC24V	DC24V power output

Connector	Pin	Signal	I/O	Voltage	Description
YC16	1	+24V3	O	DC24V	DC24V power output
Connected to the MP solenoid	2	MPFSOLDR	O	DC0V/24V	MPSOL: On/Off
YC18	1	TNMYDRVN	O	DC0V/24V(pulse)	TM-Y drive control signal
Connected to the toner motor Y, C, M and K	2	+24V3	O	DC24V	DC24V power output
	3	TNMCDRVN	O	DC0V/24V(pulse)	TM-C drive control signal
	4	+24V3	O	DC24V	DC24V power output
	5	TNMMDRVN	O	DC0V/24V(pulse)	TM-M drive control signal
	6	+24V3	O	DC24V	DC24V power output
	7	TNMKDRVN	O	DC0V/24V(pulse)	TM-K drive control signal
	8	+24V3	O	DC24V	DC24V power output
YC19	1	+3.3V3	O	DC3.3V	DC3.3V power output
Connected to the paper feeder	2	-	-	-	N.C
	3	OPSEL2	O	DC0V/3.3V	Paper feeder select signal
	4	OPSEL1	O	DC0V/3.3V	Paper feeder select signal
	5	OPSEL0	O	DC0V/3.3V	Paper feeder select signal
	6	GND	-	-	Ground
	7	GND	-	-	Ground
	8	OPSD0	O	DC0V/3.3V(pulse)	Paper feeder serial communication data signal output
	9	OPSDI	I	DC0V/3.3V(pulse)	Paper feeder serial communication data signal input
	10	OPRDYN	I	DC0V/3.3V	Paper feeder ready signal
	11	OPSCLK	O	DC0V/3.3V(pulse)	Paper feeder clock signal
	12	+24V3	O	DC24V	DC24V power output
YC20	1	STDUPB1	O	DC0V/24V(pulse)	DUM B1drive control signal
Connected to the fuser motor and duplex conveying motor	2	STDUPB3	O	DC0V/24V(pulse)	DUM B3drive control signal
	3	STDUPA3	O	DC0V/24V(pulse)	DUM A3 drive control signal
	4	STDUPA1	O	DC0V/24V(pulse)	DUM A1 drive control signal
	5	STFUSBN	O	DC0V/24V(pulse)	FUM BN drive control signal
	6	STFUSAN	O	DC0V/24V(pulse)	FUM AN drive control signal
	7	STFUSB	O	DC0V/24V(pulse)	FUM B drive control signal
	8	STFUSA	O	DC0V/24V(pulse)	FUM A drive control signal
YC21	1	+24V1	O	DC24V	DC24V power output
Connected to the LSU fan motor 1	2	LSUKMFAN-DRN	O	DC0V/24V	LSUFM1: On/Off

Connector	Pin	Signal	I/O	Voltage	Description
YC22	1	+24V1	O	DC24V	DC24V power output
Connected to the transfer fan motor	2	IMGFANDRN	O	DC0V/24V	TRFM: On/Off
YC23	1	+24V1	O	DC24V	DC24V power output
Connected to the LSU fan motor 2	2	LSUCYFAN-DRN	O	DC0V/24V	LSUFM2: On/Off
YC24	1	+24V1	O	DC24V	DC24V power output
Connected to the container motor	2	TCONTFAN-DRVN	O	DC0V/24V	CFM: On/Off
YC25	1	LIFTMTB	O	DC0V/24V(pulse)	LM B drive control signal
Connected to the lift motor	2	LIFTMTA	O	DC0V/24V(pulse)	LM A drive control signal
YC26	1	LSUMTB	O	DC0V/24V(pulse)	LSUCM B drive control signal
Connected to the LSU cleaning motor	2	LSUMTA	O	DC0V/24V(pulse)	LSUCM A drive control signal
YC27*1	1	+24V3	O	DC24V	DC24V power output
Connected to the eject fan motor	2	EXITFANDRN	O	DC0V/24V	EJFM: On/Off
YC28*2	1	+24V3	O	DC24V	DC24V power output
Connected to the duplex fan motor	2	UFPFANDRN	O	DC0V/24V	DUFM: On/Off

*1: for 35/40 ppm models only

*2: for 40 ppm models only

(3) High-voltage PWB

(3-1) Connector position

30/35 ppm models

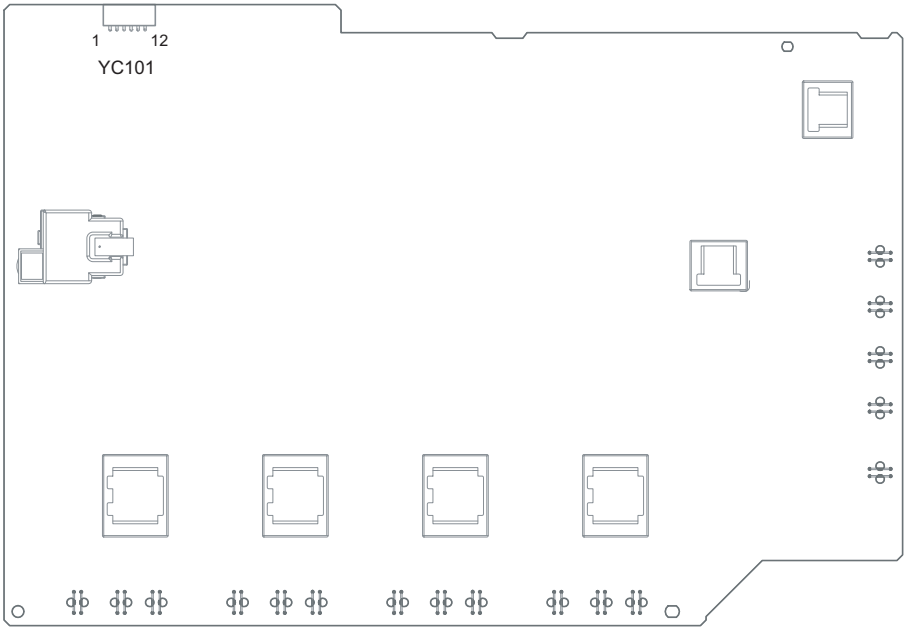


Figure 8-5

40 ppm models

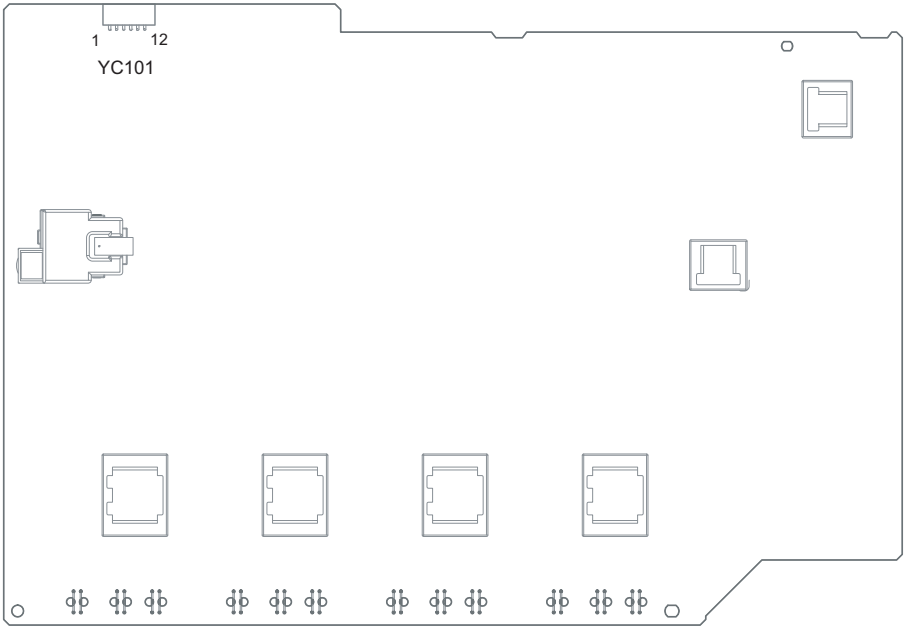


Figure 8-6

(3-2) PWB photograph

30/35 ppm model

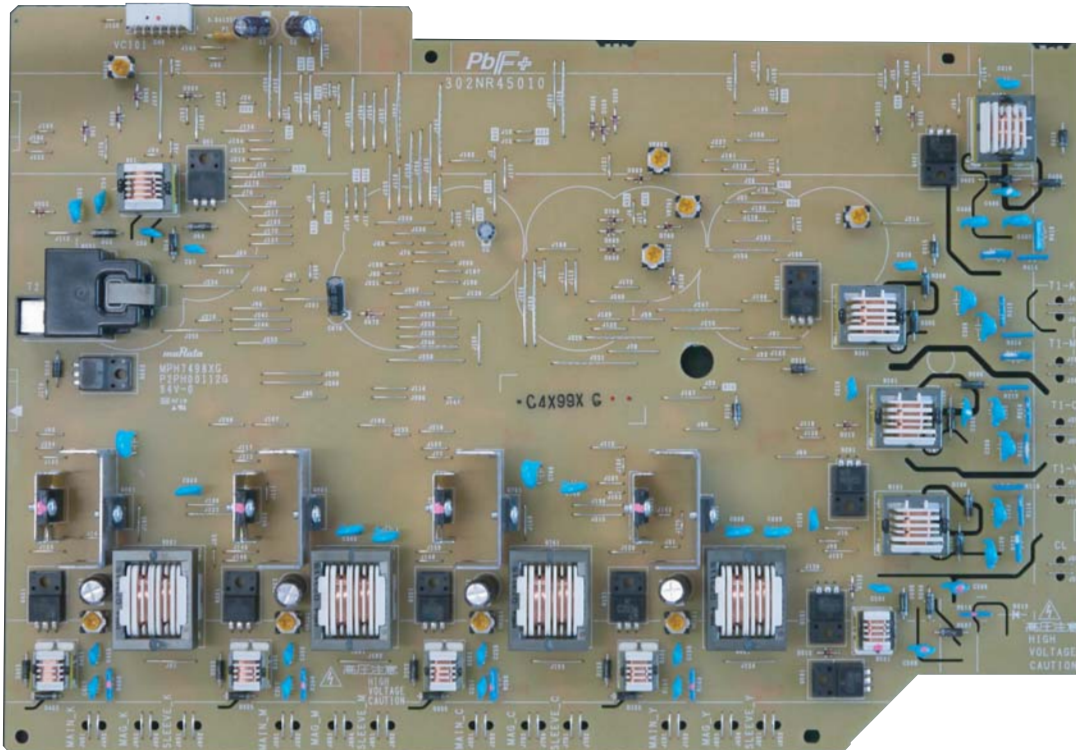


Figure 8-7

40 ppm model

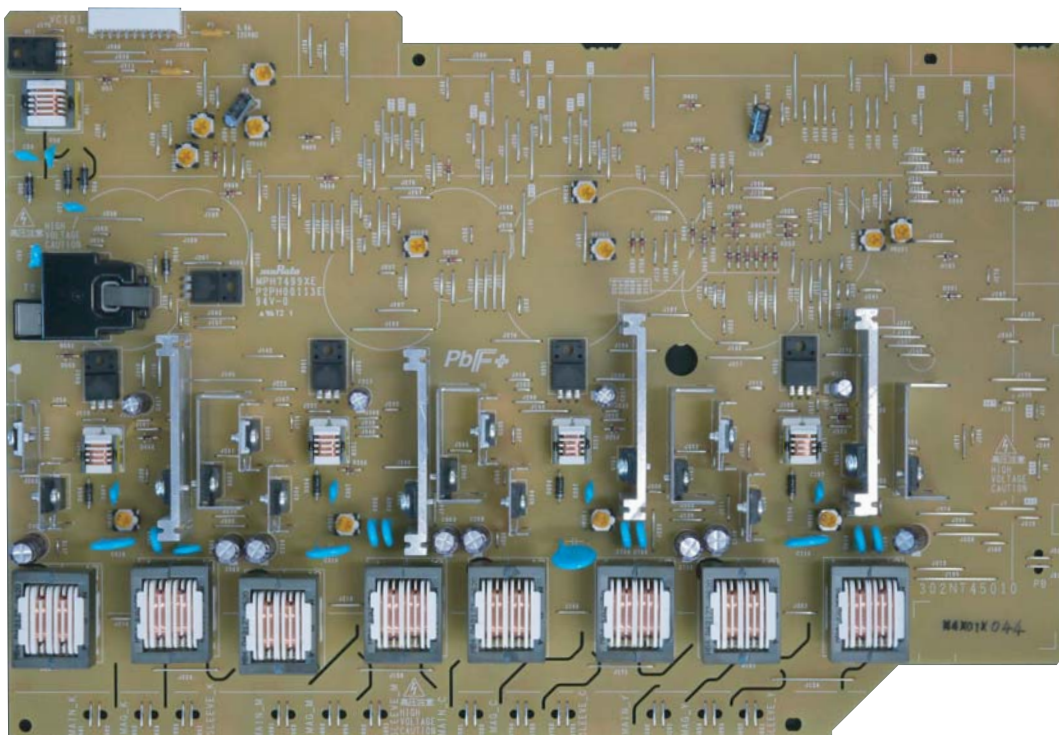


Figure 8-8

(3-3) Connector lists

Connector	Pin	Signal	I/O	Voltage	Description
YC101 Connected to the main/ engine PWB	1	+24V3	I	DC24V	DC24V power input
	2	+24V3	I	DC24V	DC24V power input
	3	DACSLD1	I	DC0V/3.3V	DAC1 load signal
	4	DACSLD2	I	DC0V/3.3V	DAC2 load signal
	5	DACSCLK	I	DC0V/3.3V(pulse)	DAC clock signal
	6	GND	-	-	Ground
	7	DACSDO	I/O	DC0V/3.3V(pulse)	DAC data signal
	8	HVREMNI	I	DC0V/3.3V	Primary/Secondary transfer remote signal
	9	HVCLK	I	DC0V/3.3V(pulse)	Developer (K) clock signal
	10	MKISENS	O	Analog	Main charger current (K) detection output
	11	GND	-	-	Ground
	12	GND	-	-	Ground
	13*	HVDCLKY	I	DC0V/3.3V(pulse)	Developer (Y) clock signal
	14*	HVDCLKM	I	DC0V/3.3V(pulse)	Developer (M) clock signal
	15*	HVDCLKC	I	DC0V/3.3V(pulse)	Developer (C) clock signal
	16*	MCHGCLK	I	DC0V/3.3V(pulse)	Main charger clock signal
	17*	MYISENS	O	Analog	Main charger current (Y) detection output
	18*	MMISENS	O	Analog	Main charger current (M) detection output
	19*	MCISENS	O	Analog	Main charger current (C) detection output

*1: 40 ppm models only

(4) High-voltage PWB 2

*: for 40 ppm models only

(4-1) Connector position

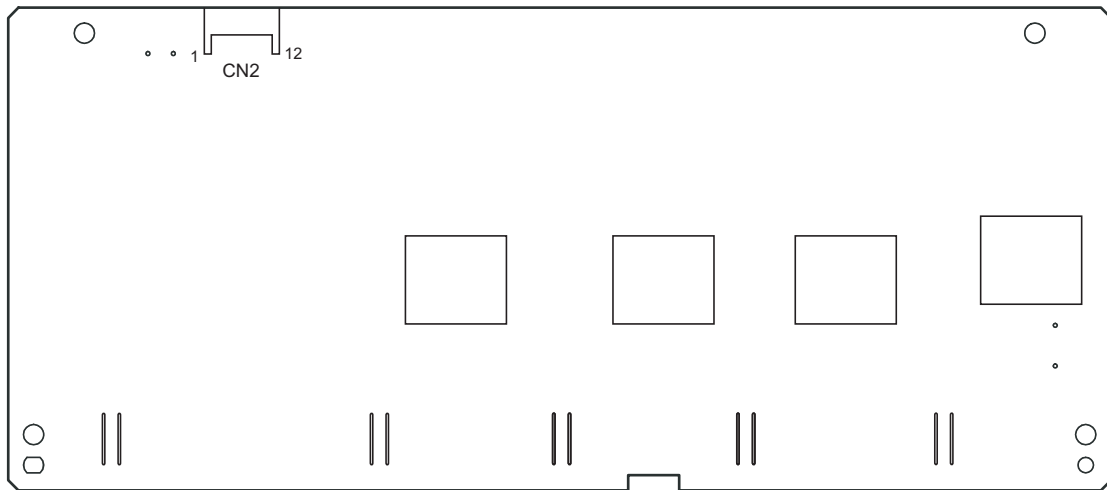


Figure 8-9

(4-2) PWB photograph

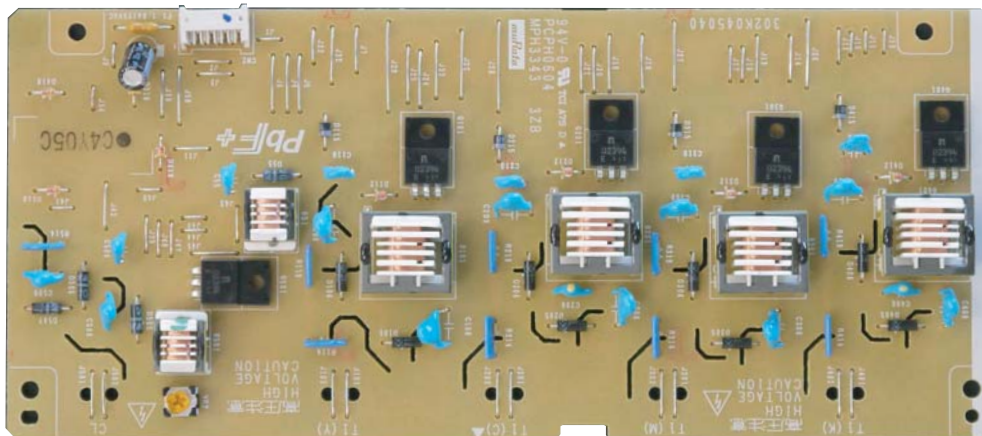


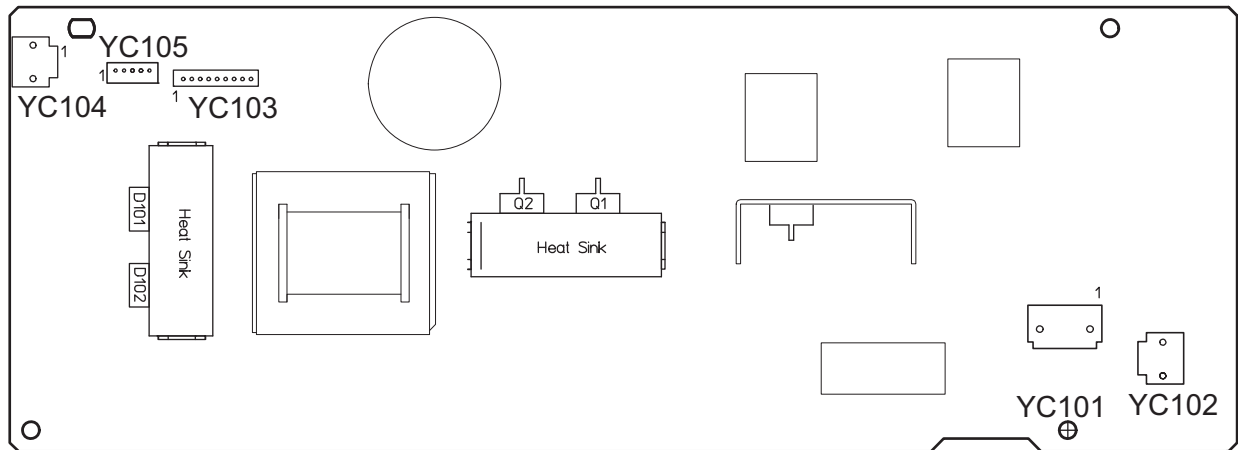
Figure 8-10

(4-3) Connector lists

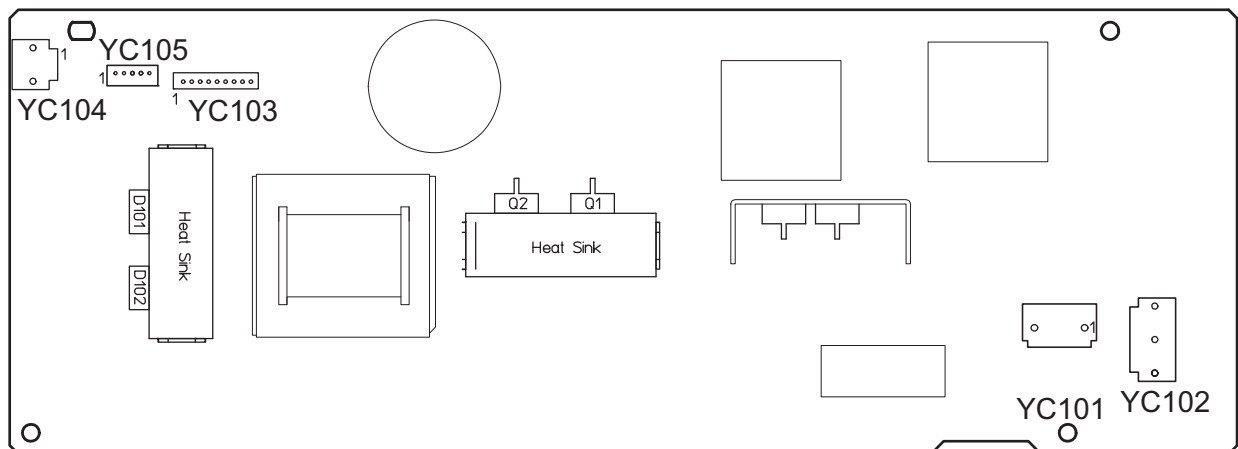
Connector	Pin	Signal	I/O	Voltage	Description
CN2	1	+24V3	I	DC24V	DC24V power input
Connected to the main/ engine PWB	2	T1MCNT	I	+3.3V Analog	Primary transfer DC output control signal (M)
	3	T1YCNT	I	+3.3V Analog	Primary transfer DC output control signal (Y)
	4	HVREM	I	DC0V/3.3V	Primary transfer (Reverse) output OFF/ON signal
	5	CLCNT	I	+3.3V Analog	Cleaning DC output control signal
	6	T1CCNT	I	+3.3V Analog	Primary transfer DC output control signal (C)
	7	T2KCNT	I	+3.3V Analog	Primary transfer DC output control signal (K)
	8	GND	-	-	Ground

(5) Power source PWB**(5-1) Connector position**

30 ppm model

**Figure 8-11**

35/40 ppm models

**Figure 8-12**

(5-2) PWB photograph

30 ppm models

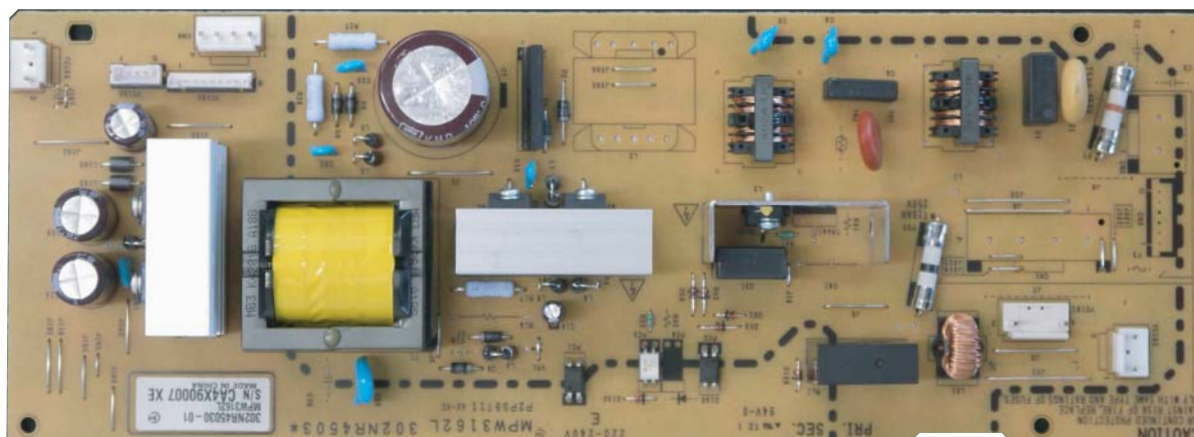


Figure 8-13

35/40 ppm models

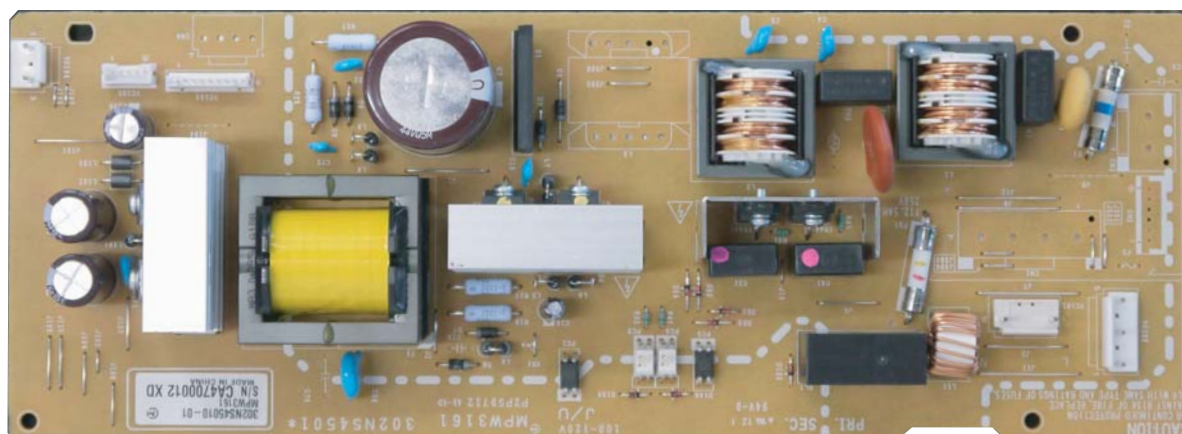


Figure 8-14

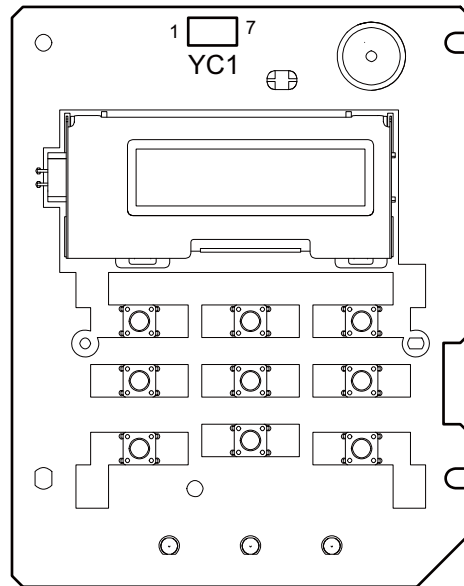
(5-3) Connector lists

Connector	Pin	Signal	I/O	Voltage	Description
YC101 Connected to the inlet	1	LIVE	I	100VAC	AC power input
	2	NEUTRAL	I	100VAC	AC power input
YC102 Connected to the fuser unit	1	NEUTRAL1	I	100VAC	Fuser heater 1
	3	LIVE	O	100VAC	AC power input
	5	NEUTRAL2*1	I	100VAC	Fuser heater 2
YC103 Connected to the main/ engine PWB	1	+24V2	O	DC24V	DC24V power output to MEPWB
	2	+24V2	O	DC24V	DC24V power output to MEPWB
	3	+24V2	O	DC24V	DC24V power output to MEPWB
	4	GND	-	-	Ground
	5	GND	-	-	Ground
	6	GND	-	-	Ground
	7	GND	-	-	Ground
	8	+24V1	O	DC24V	DC24V power output to MEPWB
	9	+24V1	O	DC24V	DC24V power output to MEPWB
YC104 Connected to the interlock switch	1	+24V2	I	DC24V	DC24V power input to ILSW
	2	N.C.	-	-	Not used
	3	+24V1	O	DC24V	DC24V power output from ILSW
YC105 Connected to the main/ engine PWB (30 ppm models only)	1	HEATREM1	I	DC0V/3.3V	FH1: On/Off
	2	RELAY	I	DC0V/3.3V	Power relay signal: On/Off
	3	ZCROSS	O	DC0V/ 3.3V(pulse)	Zero cross signal
	4	PSSLEEPN	I	DC0V/3.3V	Sleep mode signal: On/Off
	5	N.C.	-	-	Not used
YC105 Connected to the main/ engine PWB (35/40 ppm models only)	1	HEATREM2	I	DC0V/3.3V	FH2: On/Off
	2	HEATREM1	I	DC0V/3.3V	FH1: On/Off
	3	RELAY	I	DC0V/3.3V	Power relay signal: On/Off
	4	ZCROSS	O	DC0V/ 3.3V(pulse)	Zero cross signal
	5	PSSLEEPN	I	DC0V/3.3V	Sleep mode signal: On/Off

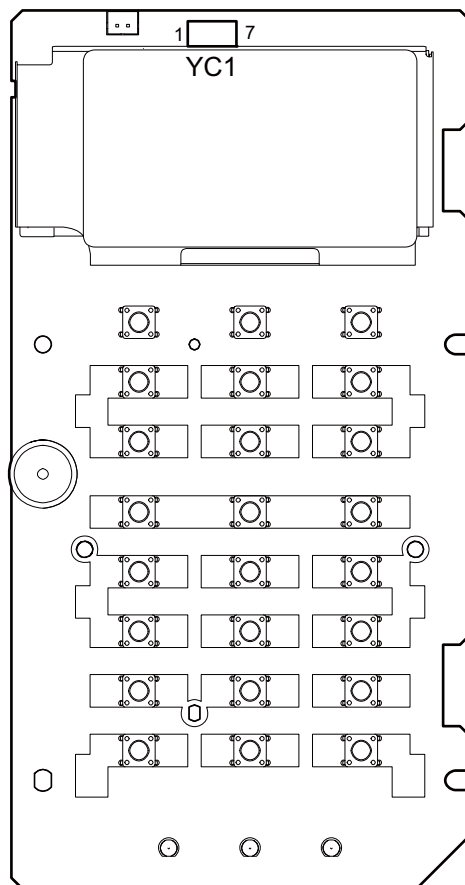
*1: 35/40 ppm models only

(6) Operation panel PWB**(6-1) Connector position**

30 ppm model

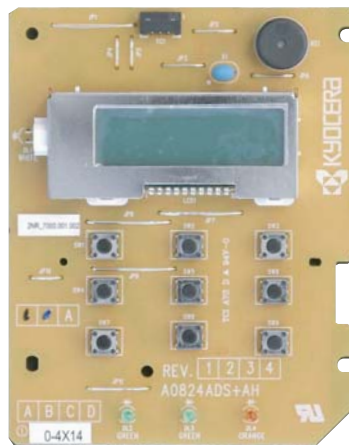
**Figure 8-15**

35/40 ppm model

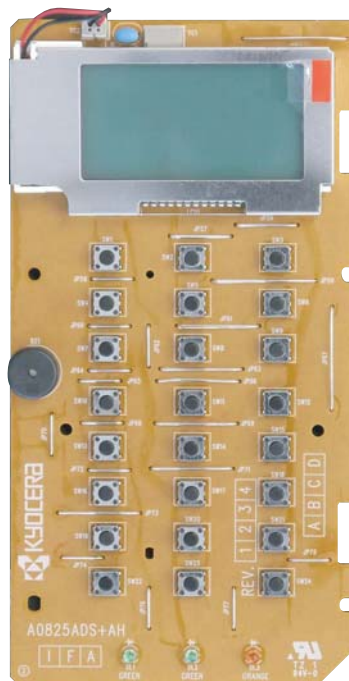
**Figure 8-16**

(6-2) PWB photograph

30 ppm models

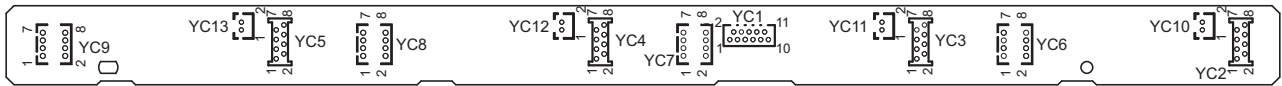
**Figure 8-17**

35/40 ppm models

**Figure 8-18**

(6-3) Connector lists

Connector	Pin	Signal	I/O	Voltage	Description
YC1	1	+5V1	O	DC5V	DC5V power output 0
Connected to the panel-R PWB	2	FPRSTN	O	DC0V/3.3V(pulse)	Scan signal 1
	3	+3.3V1	O	DC3.3V	DC3.3V power output 2
	4	FPTXD	O	DC0V/3.3V(pulse)	Scan signal 3
	5	FPRXD	O	DC0V/3.3V(pulse)	Scan signal 4
	6	LEDRIGHT0	O	DC0V/3.3V(pulse)	Operation panel LED display drive signal 0
	7	WAKEUP_PN LKEY	I	DC0V/3.3V(pulse)	Operation panel key scan return signal 0

(7) Drum relay PWB**(7-1) Connector position****Figure 8-19****(7-2) PWB photograph****Figure 8-20**

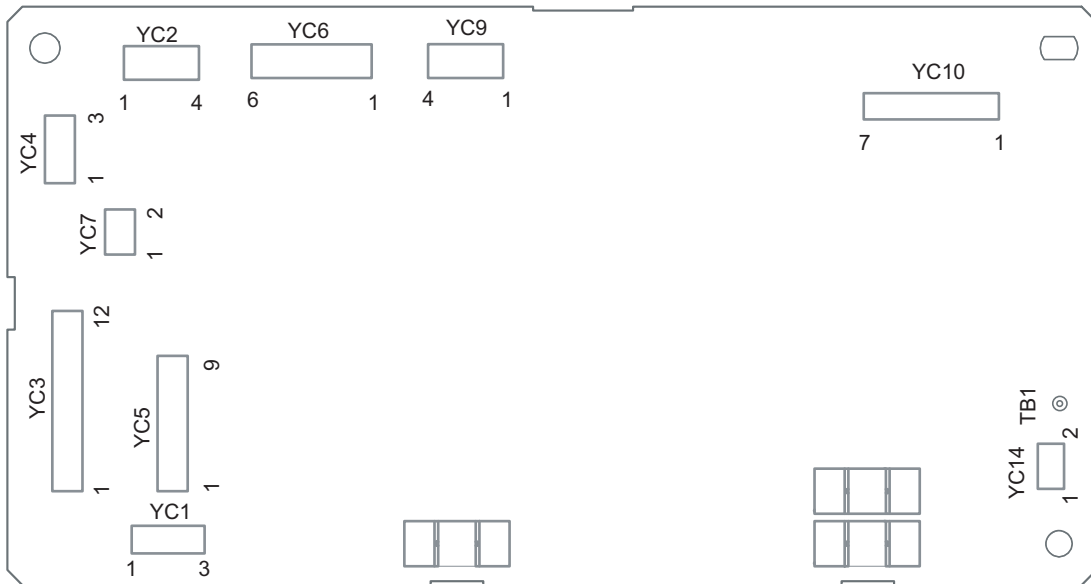
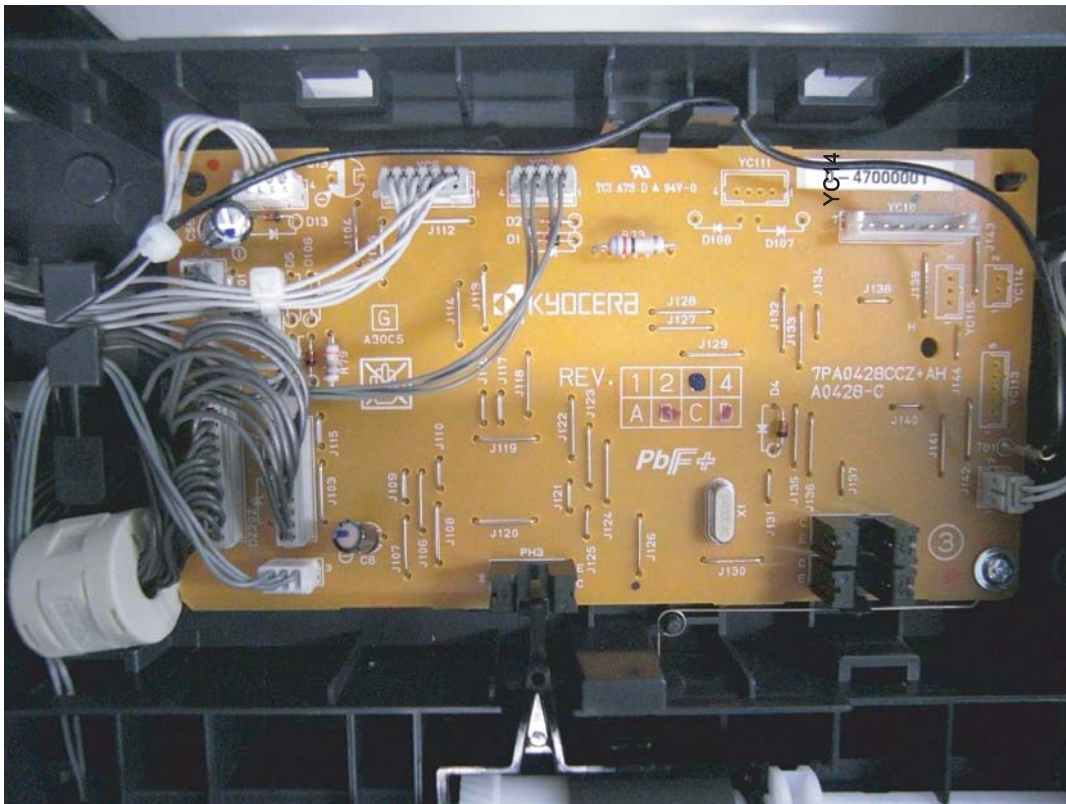
(7-3) Connector lists

Connector	Pin	Signal	I/O	Voltage	Description
YC1	1	GND	-	-	Ground
Connected to the main/engine PWB	2	PTSCL	O	DC0V/3.3V(pulse)	E2PROM communication clock signal
	3	+3.3V3	O	DC3.3V	DC3.3V power output
	4	PTSDA	I/O	DC0V/3.3V(pulse)	E2PROM communication data signal
	5	TNSENK	I	Analog	Toner sensor remaining level signal (C)
	6	TNSENK	I	Analog	Toner sensor remaining level signal (Y)
	7	TNSENK	I	Analog	Toner sensor remaining level signal (K)
	8	TNSENK	I	Analog	Toner sensor remaining level signal (M)
	9	DRMHEATDR	O	DC24V	DC24V power output
	10	DLP THERM	I	Analog	Developer thermistor
	11	ERASEDR	O	DC24V	Eraser (BK) ON signal
YC2	1	GND	-	-	Ground
Connected to the drum PWB K	2	PTSCL	O	DC0V/3.3V(pulse)	EEPROM clock signal
	3	ERASEK	O	DC0V/24V	CL-K: On/Off
	4	PTSDA	I/O	DC0V/3.3V(pulse)	EEPROM data signal
	5	N.C	-	-	-
	6	3.3V3	O	DC3.3V	DC3.3V power output
	7	DA0	O	DC3.3V	DC3.3V power output
	8	DA1	-	-	Ground
YC3	1	GND	-	-	Ground
Connected to the drum PWB M	2	PTSCL	O	DC0V/3.3V(pulse)	EEPROM clock signal
	3	ERASECOL	O	DC0V/24V	CL-M: On/Off
	4	PTSDA	I/O	DC0V/3.3V(pulse)	EEPROM data signal
	5	N.C	-	-	-
	6	3.3V3	O	DC3.3V	DC3.3V power output
	7	DA0	O	DC3.3V	DC3.3V power output
	8	DA1	-	-	Ground
YC4	1	GND	-	-	Ground
Connected to the drum PWB C	2	PTSCL	O	DC0V/3.3V(pulse)	EEPROM clock signal
	3	ERASECOL	O	DC0V/24V	CL-C: On/Off
	4	PTSDA	I/O	DC0V/3.3V(pulse)	EEPROM data signal
	5	N.C	-	-	-
	6	3.3V3	O	DC3.3V	DC3.3V power output
	7	DA0	-	-	Ground
	8	DA1	O	DC3.3V	DC3.3V power output

Connector	Pin	Signal	I/O	Voltage	Description
YC5	1	GND	-	-	Ground
Connected to the drum PWB Y	2	PTSCL	O	DC0V/3.3V(pulse)	EEPROM clock signal
	3	ERASECOL	O	DC0V/24V	CL-Y: On/Off
	4	PTSDA	I/O	DC0V/3.3V(pulse)	EEPROM data signal
	5	N.C	-	-	-
	6	3.3V3	O	DC3.3V	DC3.3V power output
	7	DA0	-	-	Ground
	8	DA1	-	-	Ground
YC6	1	GND	-	-	Ground
Connected the to developer PWB K	2	3.3V3	O	DC3.3V	DC3.3V power output
	3	TNSENK	I	Analog	TS-K detection signal
	4	PTSCL	O	DC0V/3.3V(pulse)	EEPROM clock signal
	5	DLPTH	I	Analog	Developer thermistor (K) output
	6	PTSDA	I/O	DC0V/3.3V(pulse)	EEPROM data signal
	7	DA0ERASEK	O	DC0V/3.3V	CL-K: On/Off
	8	DA1	-	-	Ground
YC7	1	GND	-	-	Ground
Connected to the developer PWB M	2	3.3V3	O	DC3.3V	DC3.3V power output
	3	TNSENK	I	Analog	TS-K detection signal
	4	PTSCL	O	DC0V/3.3V(pulse)	EEPROM clock signal
	5	DLPTH	I	Analog	Developer thermistor (M) output
	6	PTSDA	I/O	DC0V/3.3V(pulse)	EEPROM data signal
	7	DA0ERASEK	O	DC0V/3.3V	CL-K: On/Off
	8	DA1	O	DC3.3V	DC3.3V power output
YC8	1	GND	-	-	Ground
Connected to the developer PWB C	2	3.3V3	O	DC3.3V	DC3.3V power output
	3	TNSENK	I	Analog	TS-K detection signal
	4	PTSCL	O	DC0V/3.3V(pulse)	EEPROM clock signal
	5	DLPTH	I	Analog	Developer thermistor (C) output
	6	PTSDA	I/O	DC0V/3.3V(pulse)	EEPROM data signal
	7	DA0ERASEK	O	DC0V/3.3V	CL-K: On/Off
	8	DA1	-	-	Ground

Connector	Pin	Signal	I/O	Voltage	Description
YC9	1	GND	-	-	Ground
Connected to the developer PWB Y	2	3.3V3	O	DC3.3V	DC3.3V power output
	3	TNSENK	I	Analog	TS-K detection signal
	4	PTSCL	O	DC0V/3.3V(pulse)	EEPROM clock signal
	5	DLPTH	I	Analog	Developer thermistor (Y) output
	6	PTSDA	I/O	DC0V/3.3V(pulse)	EEPROM data signal
	7	DA0ERASEK	O	DC0V/3.3V	CL-K: On/Off
	8	DA1	O	DC3.3V	DC3.3V power output
YC10	1	HEATDRK	O	DC0V/24V	Drum heater (K) drive signal: On/Off
Connected to the drum heater (K)*1	2	GND	-	-	Ground
YC11	1	HEATDRKM	O	DC0V/24V	Drum heater (M) drive signal: On/Off
Connected to the drum heater (M)*1	2	GND	-	-	Ground
YC12	1	HEATDRC	O	DC0V/24V	Drum heater (C) drive signal: On/Off
Connected to the drum heater (C)*1	2	GND	-	-	Ground
YC13	1	HEATDRY	O	DC0V/24V	Drum heater (Y) drive signal: On/Off
Connected to the drum heater (Y)*1	2	GND	-	-	Ground

*1: for 40 ppm models only

(8) PF main PWB (Optional Paper Feeder)**(8-1) Connector position****Figure 8-21****(8-2) PWB photograph****Figure 8-22**

(8-3) Connector lists

Connector	Pin	Signal	I/O	Voltage	Description
YC1 Connected to the PF conveying sensor	1	+3.3V	O	DC3.3V	DC3.3V power
	2	GND	-	-	Ground
	3	OUT	I	DC0V/3.3V	PFFS: On/Off
YC2 Connected to the cassette size detection switch	1	PAPSIZE0	I	DC0V/3.3V	PFCSSW: On/Off
	2	PAPSIZE1	I	DC0V/3.3V	PFCSSW: On/Off
	3	GND	-	-	Ground
	4	PAPSIZE2	I	DC0V/3.3V	PFCSSW: On/Off
YC3 Connected to the interface connector	1	GND	-	-	Ground
	2	OPCLK	I	DC0V/ 3.3V(pulse)	Serial communication clock signal
	3	OPRDYN	O	DC0V/3.3V	Ready signal
	4	OPSDI	O	DC0V/ 3.3V(pulse)	Serial communication data signal
	5	OPSDO	I	DC0V/ 3.3V(pulse)	Serial communication data signal
	6	+3.3V	I	DC0V/3.3V	DC3.3V power
	7	GND	-	-	Ground
	8	OPSEL0	I	DC0V/3.3V	Paper feeder select signal
	9	OPSEL1	I	DC0V/3.3V	Paper feeder select signal
	10	OPSEL2	I	DC0V/3.3V	Paper feeder select signal
	11	PAPSIZE	O	DC0V/3.3V	PFCSSW: On/Off
YC4 Connected to the interface connector	1	+24V	O	DC24V	DC24V power
	2	PAPSIZE	I	DC0V/3.3V	PFCSSW: On/Off
	3	GND	-	-	Ground
YC5 Connected to the interface connector	1	GND	-	-	Ground
	2	OPCLK	O	DC0V/ 3.3V(pulse)	Serial communication clock signal
	3	OPRDYN	I	DC0V/3.3V	Ready signal
	4	OPSDI	I	DC0V/ 3.3V(pulse)	Serial communication data signal
	5	OPSDO	O	DC0V/ 3.3V(pulse)	Serial communication data signal
	6	+3.3V	O	DC0V/3.3V	DC3.3V power
	7	OPSEL1	O	DC0V/3.3V	Paper feeder select signal
	8	OPSEL2	O	DC0V/3.3V	Paper feeder select signal
	9	OPSEL0	O	DC0V/3.3V	Paper feeder select signal

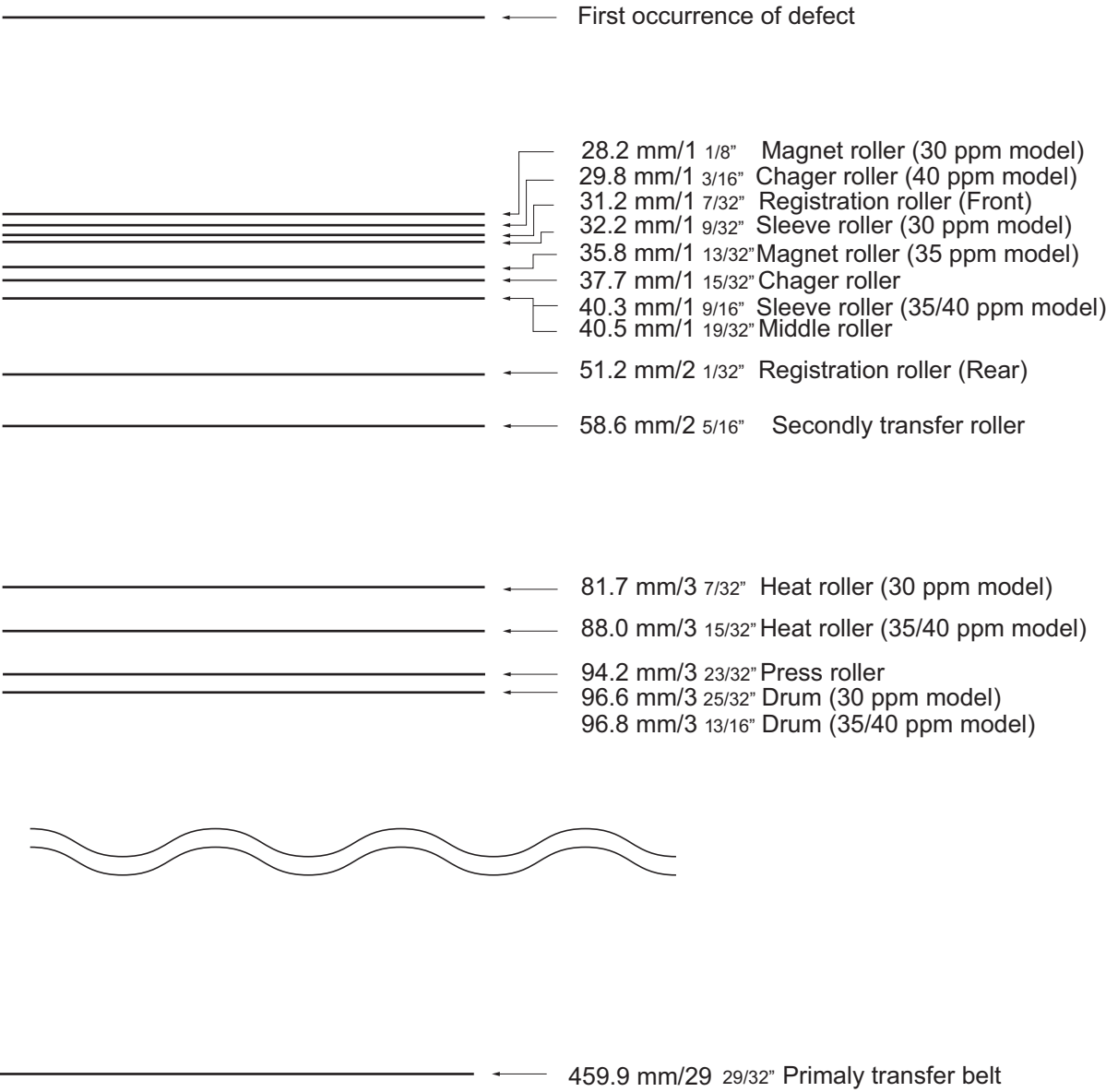
Connector	Pin	Signal	I/O	Voltage	Description
YC6	1	TMDIR	O	DC0V/3.3V	PFPFM control signal
Connected to the PF paper feed motor	2	TMLOCK	I	DC0V/3.3V	PFPFM Clock signal
	3	TMCLK	O	DC0V/ 3.3V(pulse)	PFPFM clock signal
	4	#TMDRY	O	DC0V/3.3V	PFPFM: On/Off
	5	GND	-	-	Ground
	6	+24V	O	DC24V	DC24V power
YC7	1	LMOT+	O	DC24V/0V/0V	PFLM: forward/-/Off
Connected to the PF lift motor	2	LMOT-	O	DC0V/24V/0V	PFLM: -/reverse/Off
YC9	1	TRANSCLN	O	DC0V/24V	PFPCCCL: On/Off
Connected to the PF paper feed clutch and PF conveying clutch	2	+24V	O	DC24V	DC24V power
	3	FEEDCLN	O	DC0V/24V	PFPFCL: On/Off
	4	+24V	O	DC24V	DC24V power
YC14	1	COV_SW	O	DC0V/3.3V	PFRCSW: On/Off
Connected to the PF rear cover switch	2	GND	O	-	Ground

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9 Appendixes

9-1 Appendixes

(1) Repetitive defects gauge



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

(2) Firmware environment commands

The printer maintains a number of printing parameters in its memory. These 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 the firmware

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

Note: Before changing any FRPO parameters, 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 PC-PR201/65A

!R! FRPO P1, 11; EXIT;

FRPO parameters

Item	FRPO	Setting values	Factory setting
Default pattern resolution	B8	0: 300 dpi 1: 600 dpi	0
Copy count	C0	Number of copies to print:1-999	1
Page orientation	C1	0: Portrait 1: Landscape	0
Default font No.	C2	Middle two digits of power-up font	0
	C3	Last two digits of power-up font	0
	C5	First two digits of power-up font	0
PCL font switch	C8	0:HP compatibility mode (Characters higher than 127 are not printed.) 32:Conventional mode (Characters higher than 127 are printed. Supported symbol sets: ISO-60 Norway [00D], ISO-15 Italian [00I], ISO-11 Sweden [00S], ISO-6 ASCII [00U], ISO-4 U.K. [01E], ISO-69 France [01F], ISO-21 Germany [01G], ISO-17 Spain [02S], Symbol [19M])	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 (0 to 99).	6
Duplex binding	N4	0: Off 1: Long edge 2: Short edge	0
Sleep timer time-out time	N5	1 to 240 minutes [0: Off]	1
Ecoprint level	N6	0: Off 2: On	0

Item	FRPO	Setting values	Factory setting
Default emulation mode	P1	0 : Line printer 1 : IBM proprinter 2 : DIABLO 630 5 : Epson LQ-850 6 : PCL6 (except PCL XL) 8 : KC-GL 9 : KPD L 11 : PC-PR201 12 : IBM 5577 13 : VP-1000 14 : N5200 15 : FMPR-359F1	9(U.S.A) or 6(Euro and other)
Carriage-return action *	P2	0: Ignores 0x0d 1: Carriage-return 2: Carriage-return+linefeed	1
Linefeed action *	P3	0: Ignores 0x0d 1: Linefeed 2: Linefeed+carriage-return	1
Automatic emulation sensing (For KPD L3)	P4	0: AES disabled 1: AES enabled	1(U.S.A) or 0(Euro and other)
Automatic emulation switching trigger (For KPD L3)	P7	0: Page eject commands 1: None 2: Page eject and PRESCRIBE EXIT 3: PRESCRIBE EXIT 4: Formfeed (^L) 6: Page eject, PRESCRIBE EXIT and formfeed 10: Page eject commands; if AES fails, resolves to KPD L	11(U.S.A) or 10(Euro and other)
Command recognition character	P9	ASCII code of 33 to 126	82 (R)

Item	FRPO	Setting values	Factory setting
Default paper size	R2	0: Size of the default paper cassette (See R4.) 1: Monarch (3-7/8 × 7-1/2 inches) 2: Business (4-1/8 × 9-1/2 inches) 3: International DL (11 × 22 cm) 4: International C5 (16.2 × 22.9 cm) 5: Executive (7-1/4 × 10-1/2 inches) 6: US Letter (8-1/2 × 11 inches) 7: US Legal (8-1/2 × 14 inches) 8: A4 (21.0 × 29.7 cm) 9: JIS B5 (18.2 × 25.7 cm) 13: ISO A5 14: A6 (10.5 × 14.8 cm) 15: JIS B6 (12.8 × 18.2 cm) 16: Commercial #9 (3-7/8 × 8-7/8 inches) 17: Commercial #6 (3-5/8 × 6-1/2 inches) 18: ISO B5 (17.6 × 25 cm) 19: Custom (11.7 × 17.7 inches) 31: Hagaki (10 × 14.8 cm) 32: Ofuku-hagaki (14.8 × 20 cm) 33: Officio II 40: 16K 42: 216x340 50: Statement 51: Folio 52: Youkei 2 53: Youkei 4	0
Default cassette	R4	0: MP tray 1: Cassette 1 2: Cassette 2 3: Cassette 3 4: Cassette 4	1
MP tray paper size	R7	Same as the R2 values except: 0	6 (U.S.A) or 8 (Euro and other)
A4/letter equation	S4	0: Off 1: On	1
Host buffer size	S5	0: 10kB (x H8) 1: 100kB (x H8) 2: 1024kB (x H8)	1
RAM disk size	S6	1 to 1024 MB	400
RAM disk mode	S7	0: Off 1: On	1

Item	FRPO	Setting values	Factory setting
Wide A4	T6	0: Off 1: On	0
Line spacing	U0	Lines per inch (integer value)	6
Line spacing	U1	Lines per inch (fraction value)	0
Character spacing	U2	Characters per inch (integer value)	10
Character spacing	U3	Characters per inch (fraction value)	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 21: US ASCII (U7 = 50 SET) 77: HP Roman-8 (U7 = 52 SET)	41
Code set at power up in daisy-wheel emulation	U7	0: Same as the default emulation mode (P1) 1: IBM 6: IBM PC-8 50: US ASCII (U6 = 21 SET) 52: HP Roman-8 (U6 = 77 SET)	53
Font pitch for fixed pitch scalable font	U8	Integer value in cpi: 0 to 99	10
	U9	Fraction value in 1/100 cpi: 0 to 99	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	Fraction 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: Monochrome 1: Color (CMYK color)	1
Gloss mode	W6	0: Low (Normal Print) 1: High	0
Paper type for the MP tray	X0	1: Plain 1 2: Transparency 3: Preprinted 4: Label 5: Bond 6: Recycle 7: Vellum 8: Rough 9: Letterhead 10: Color 11: Prepunched 12: Envelope 13: Cardstock 14: Coated 16: Thick 17: High quality 21: Custom1 22: Custom2 23: Custom3 24: Custom4 25: Custom5 26: Custom6 27: Custom7 28: Custom8	1

Item	FRPO	Setting values	Factory setting
Paper type for paper cassettes 1	X1	1: Plain 3: Preprinted 5: Bond 6: Recycled 7: Vellum 8: Rough 9: Letterhead 10: Color 11: Prepunched 16: Thick 17: High quality 21: Custom1 22: Custom2 23: Custom3 24: Custom4 25: Custom5 26: Custom6 27: Custom7 28: Custom8	1
Paper type for paper cassettes 2 to 4	X2 X3 X4	1: Plain 3: Preprinted 4: Label 5: Bond 6: Recycled 7: Vellum 8: Rough 9: Letterhead 10: Color 11: Prepunched 12: Envelope 14: Coated 16: Thick 17: High quality 21: Custom1 22: Custom2 23: Custom3 24: Custom4 25: Custom5 26: Custom6 27: Custom7 28: Custom8	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

Item	FRPO	Setting values	Factory setting
Automatic continue timer	Y1	Number from 0 to 99 in increments of 5 seconds	6 (30 seconds)
Error message for device error	Y3	0 to 255	0
Duplex operation for specified paper type (Prepunched, Preprinted and Letterhead)	Y4	0: Off 1: On	0
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 image size.	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

(3) System Error (Fxxxx) Outline

The document is described for the outline of the factors of the Fxxx errors that are not described in the self-diagnosis error code list of Chapter 1-7. Please utilize it to refer for checking the factors.

Please utilize it as the measures when the system is not recovered after power off/on or it frequently occurs.

(Note) Please initially check the following when the error (Fxxx) is indicated.

- Check the DIMM (DDR memory) and neighboring parts
 - : Check the contact on the control PWB by releasing and reinserting the DIMM.
- If the error repeats after that, replace the DIMM.

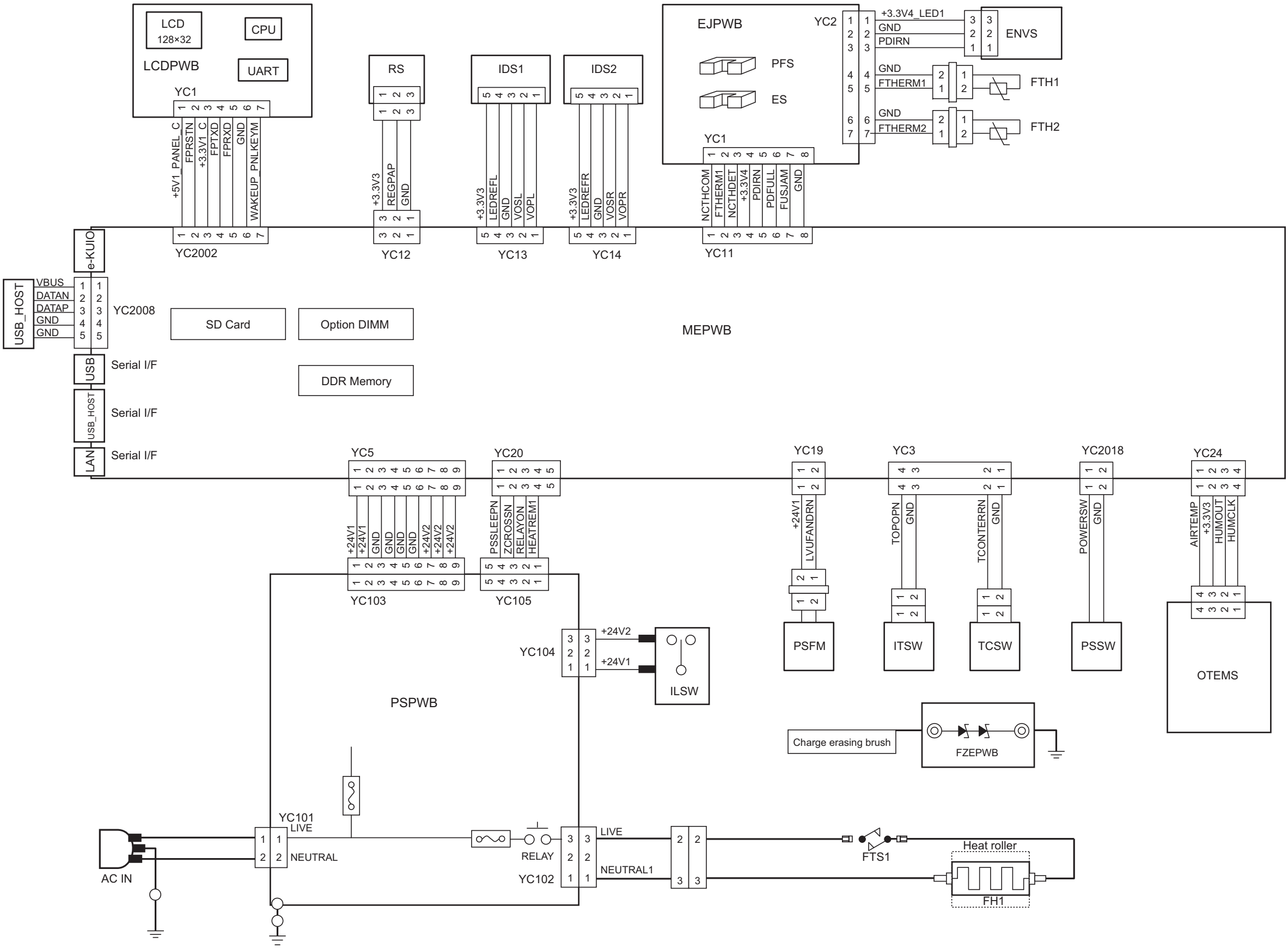
No.	Content	Check procedure & check point	Remark (Common)	P6130cdn, P6030cdn, P7040cdn (Printer)
—	Lock-up at Welcome display (KYOCERA or (KYOCERA TASKalfa/ Ecosys) (The display unchanges after a certain time (Note)) (Note) 60 s	1. Check the wire or connector between Operation panel PWB and Main/engine PWB and correct it if necessary. (Reconnect the connector or replace the wire) Check the operation after that. 2. Replace the operation panel PWB and check function. 3. Replace the main/engine PWB and check function. 4. Retrieve the USBLOG and contact the Service Administrative Division.		[Operation panel PWB - Main/Engine PWB] Operation panel PWB: YC1 Main/Engine PWB: YC2002
F000	F000 appears in a certain time (Note) after the Welcome display continues Operation panel- Main board communication error (Note) 60 s	1. Check the wire or connector between Operation panel PWB and Main/engine PWB and correct it if necessary. (Reconnect the connector or replace the wire) Check the operation after that. 2. Replace the operation panel PWB and check function. 3. Replace the main/engine PWB and check function. 4. Retrieve the USBLOG and contact the Service Administrative Division.		[Operation panel PWB - Main/Engine PWB] Operation panel PWB: YC1 Main/Engine PWB: YC2002
F15X	An error is detected at the authentication device control section	1. Check the wire or connector between the authentication device and Main/engine PWB and correct it if necessary. (Reconnect the connector or replace the wire) Check the operation after that. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	Authentication device: Card Reader, etc.	No remarks
F17X	An error is detected at the print data control section	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.		No remarks
F18X	An error is detected at the Video control section	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.		No remarks

No.	Content	Check procedure & check point	Remark (Common)	P6130cdn, P6030cdn, P7040cdn (Printer)
F1DX	An error is detected at the Image memory management section	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.		No remarks
F21X	An error is detected at the Image processing section	1. Check contact of the DIMM by releasing and reinserting, and check the function. Replace DIMM if available, and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.		[Check the DIMM contact] Main/Engine PWB: YS2000
F22X				A certain section of the DIMM might have some problem. The occurrence frequency differs depending on the access frequency to the bit with the problem. If the DIMM has no sensitiveness, ASIC might have problem.
F23X				
F24X	An error is detected at the System management section	1. Check contact of the DIMM by releasing and reinserting, and check the function. Replace DIMM if available, and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	F248 error is printer process error. If it repeats with a certain print data, retrieve the capture data and USBLOG.	[Check the DIMM contact] Main/Engine PWB: YS2000 A certain section of the DIMM might have some problem. The occurrence frequency differs depending on the access frequency to the bit with the problem. If the DIMM has no sensitiveness, ASIC might have problem.
F26X	An error is detected at the System management section	1. Replace the main/engine PWB and check function. 2. Retrieve the USBLOG and contact the Service Administrative Division.		No remarks
F35X	An error is detected at the Print control section	1. Replace the main/engine PWB and check function. 2. Retrieve the USBLOG and contact the Service Administrative Division.		No remarks
F38X	An error is detected at the Authentication/permit management section	1. Replace the main/engine PWB and check function. 2. Retrieve the USBLOG and contact the Service Administrative Division.		No remarks
F3AX	An error is detected at the Entity control section	1. Replace the main/engine PWB and check function. 2. Retrieve the USBLOG and contact the Service Administrative Division.		No remarks
F3BX				
F3CX				
F3DX				
F3EX				
F3FX				
F40X				
F41X				
F42X				
F43X				
F44X				
F45X				

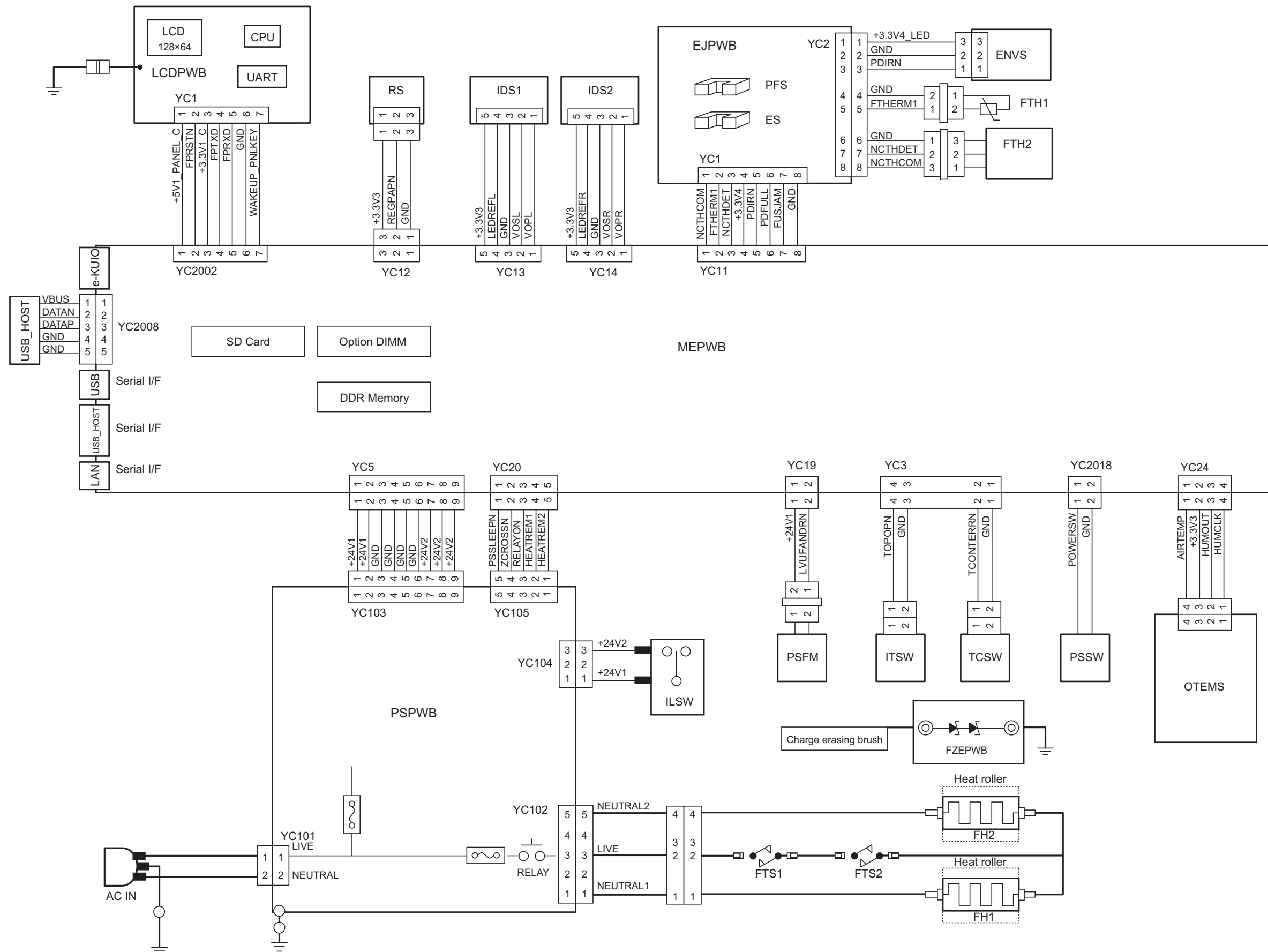
No.	Content	Check procedure & check point	Remark (Common)	P6130cdn, P6030cdn, P7040cdn (Printer)
F46X	An error is detected at the Print image process section	1. Replace the main/engine PWB and check function. 2. Retrieve the USBLOG and contact the Service Administrative Division. (or retrieve the print capture data by case)	F46F error is printer process error. If it repeats with a certain print data, retrieve the capture data and USBLOG.	No remarks
F47X F48X F49X	An error is detected at the Image edit process control section	1. Replace the main/engine PWB and check function. 2. Retrieve the USBLOG and contact the Service Administrative Division.		No remarks
F4DX	An error is detected at the Entity control section	1. Replace the main/engine PWB and check function. 2. Retrieve the USBLOG and contact the Service Administrative Division.		No remarks
F4FX	An error is detected at the Job control section	1. Replace the main/engine PWB and check function. 2. Retrieve the USBLOG and contact the Service Administrative Division.	The USB log is necessary for analysis. Please cooperate in retrieving it	No remarks
F51X F52X F53X F55X F56X F57X	An error is detected at the Job control section	1. Replace the main/engine PWB and check function. 2. Retrieve the USBLOG and contact the Service Administrative Division.	The USB log is necessary for analysis. Please cooperate in retrieving it	No remarks
F5FX	Abnormality detected at service section	1. Replace the main/engine PWB and check function. 2. Retrieve the USBLOG and contact the Service Administrative Division.	The USB log is necessary for analysis. Please cooperate in retrieving it	No remarks
F61X	An error is detected at the Report compiling section	1. Replace the main/engine PWB and check function. 2. Retrieve the USBLOG and contact the Service Administrative Division.		The error disappears if turning the power off and on.
F62X	An error is detected at service section	1. Replace the main/engine PWB and check function. 2. Retrieve the USBLOG and contact the Service Administrative Division.	The USB log is necessary for analysis. Please cooperate in retrieving it	The USB log is necessary for analysis. Please cooperate in retrieving it
F63X	An error is detected at the Device control section	1. Replace the main/engine PWB and check function. 2. Retrieve the USBLOG and contact the Service Administrative Division.		No remarks
F68X	An error is detected at the Storage device control section	1. Replace the main/engine PWB and check function. 2. Retrieve the USBLOG and contact the Service Administrative Division.		No remarks

(4) Wiring diagram

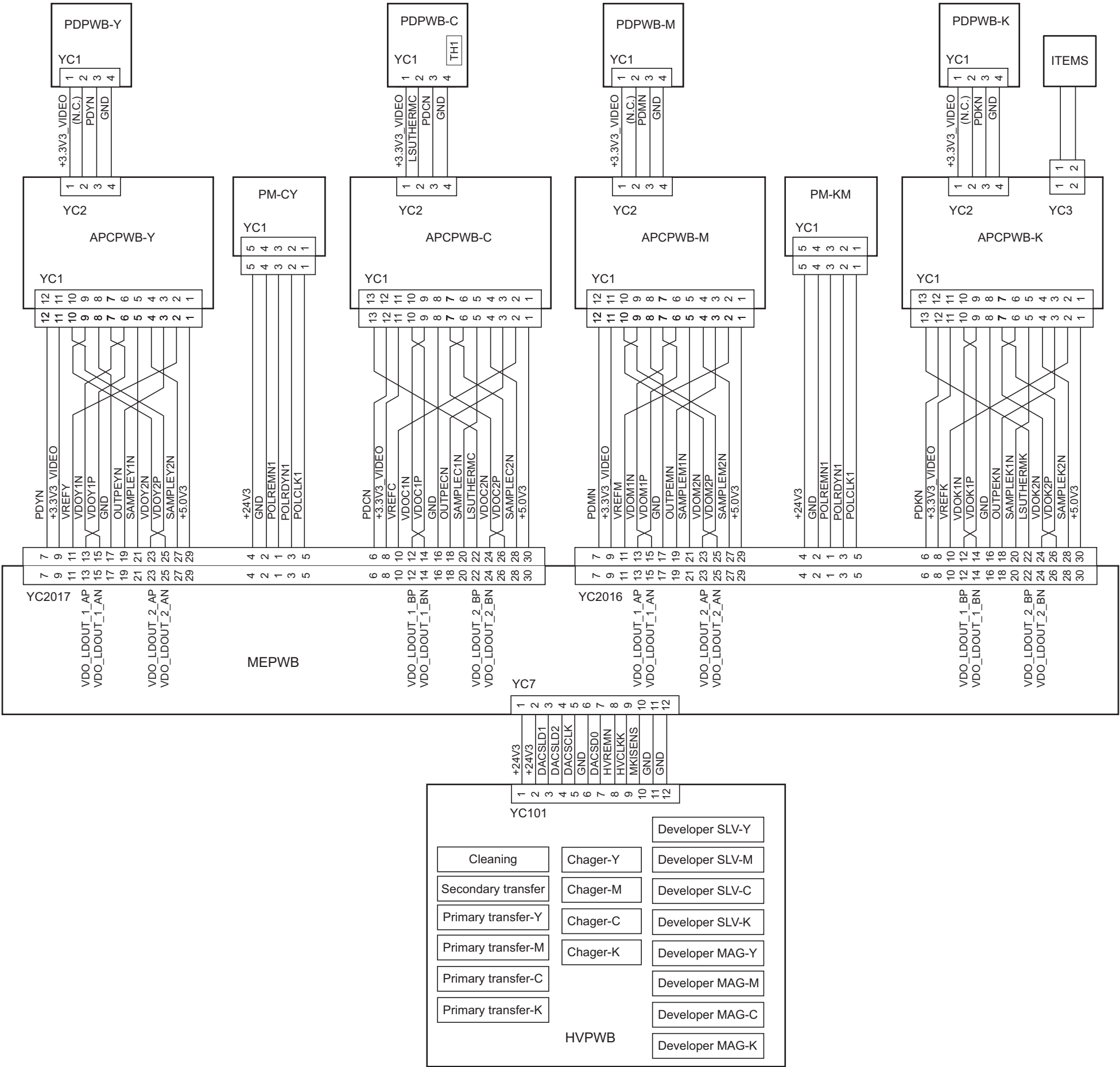
No.1 (30 ppm model)



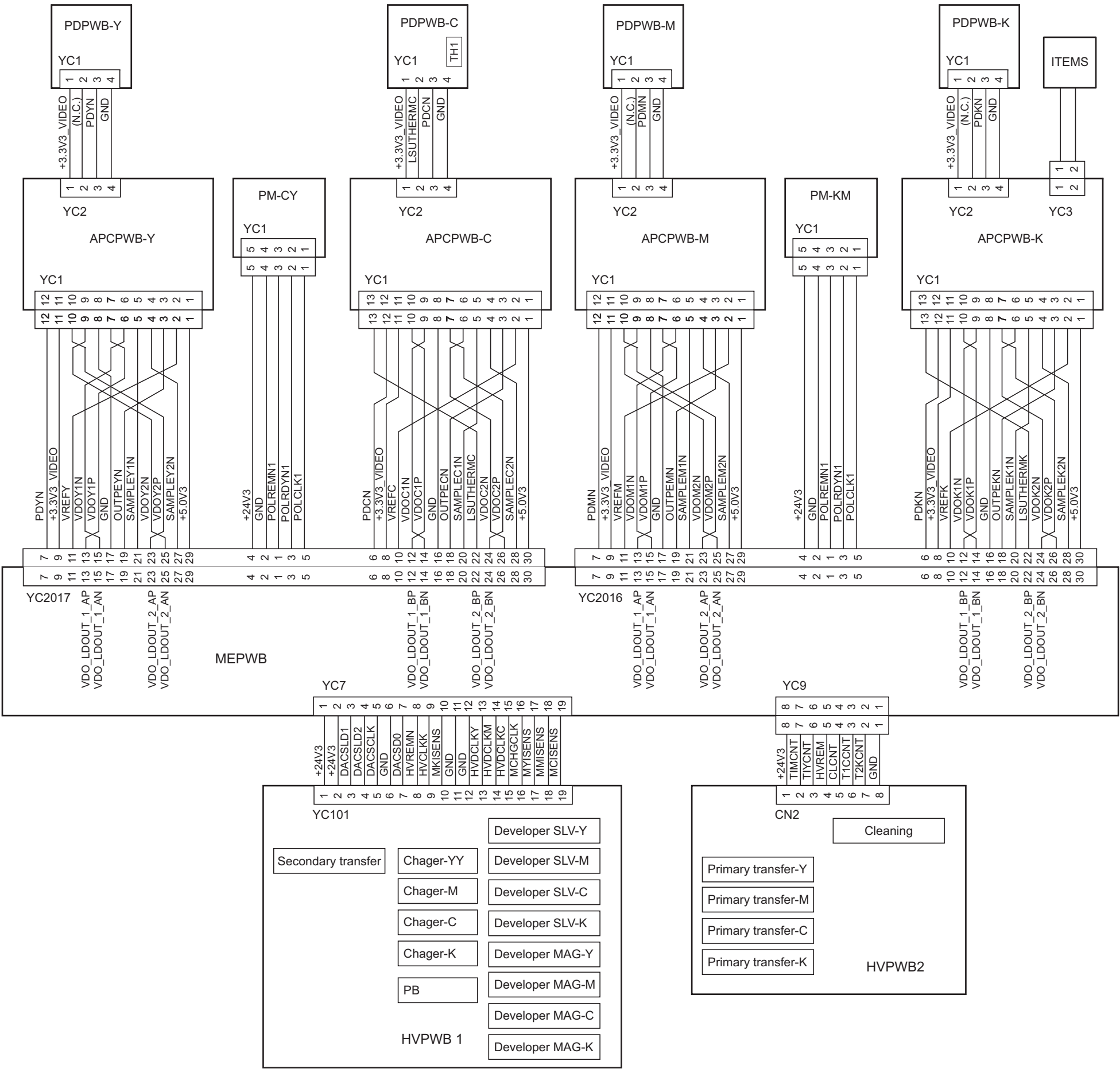
No.1 (35/40 ppm model)



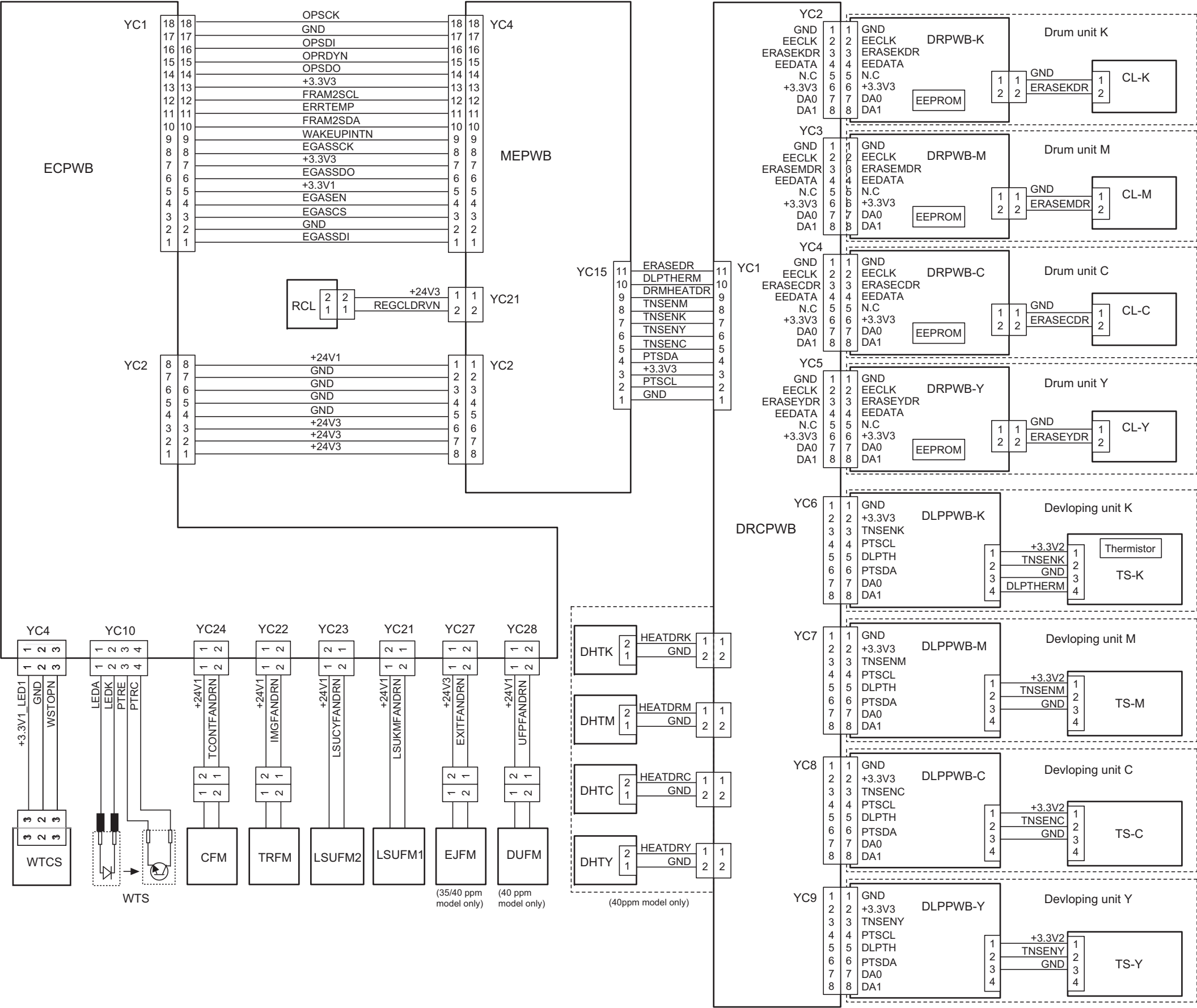
No.2 (30/35 ppm model)



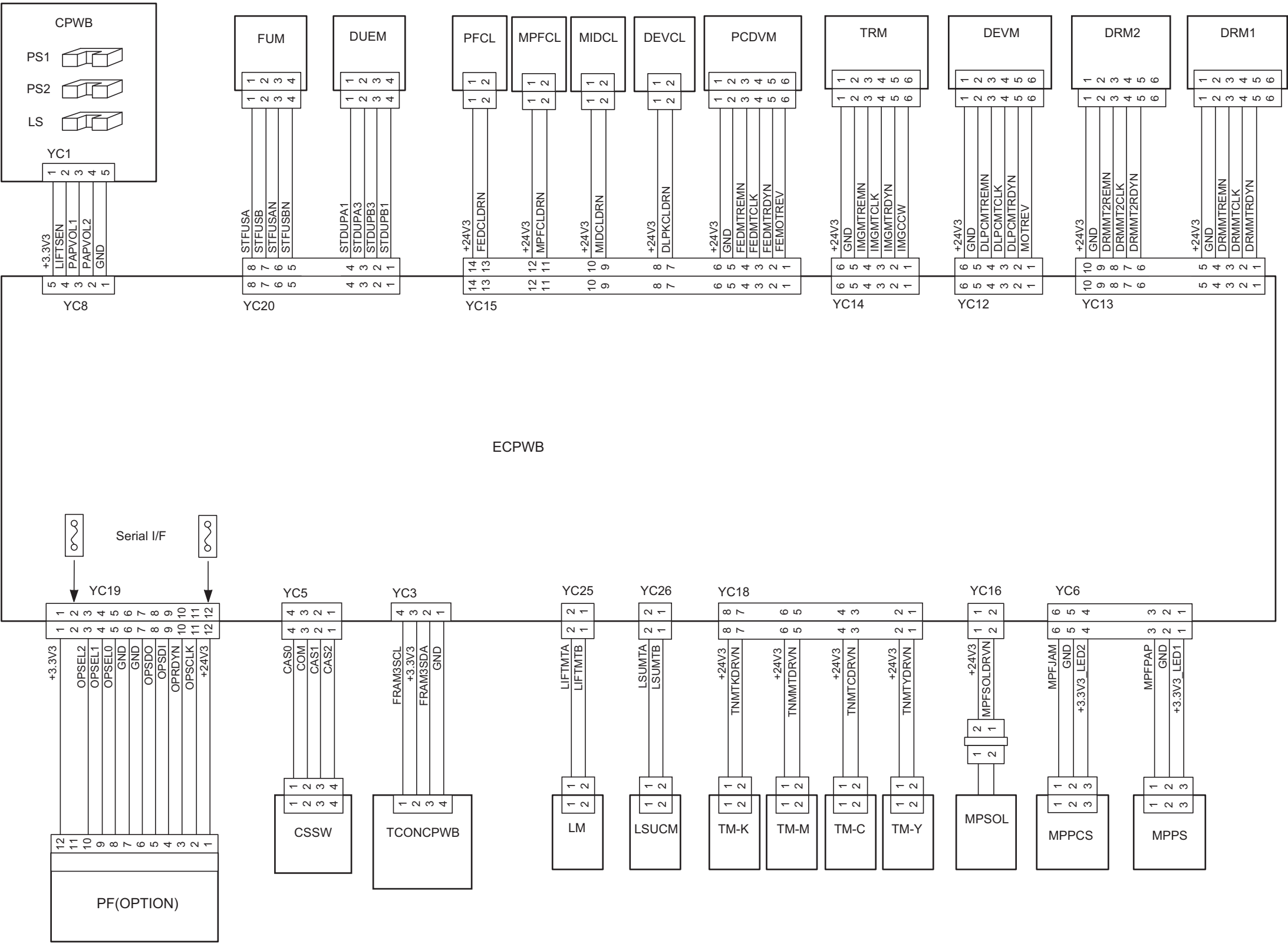
No.2 (40 ppm model)



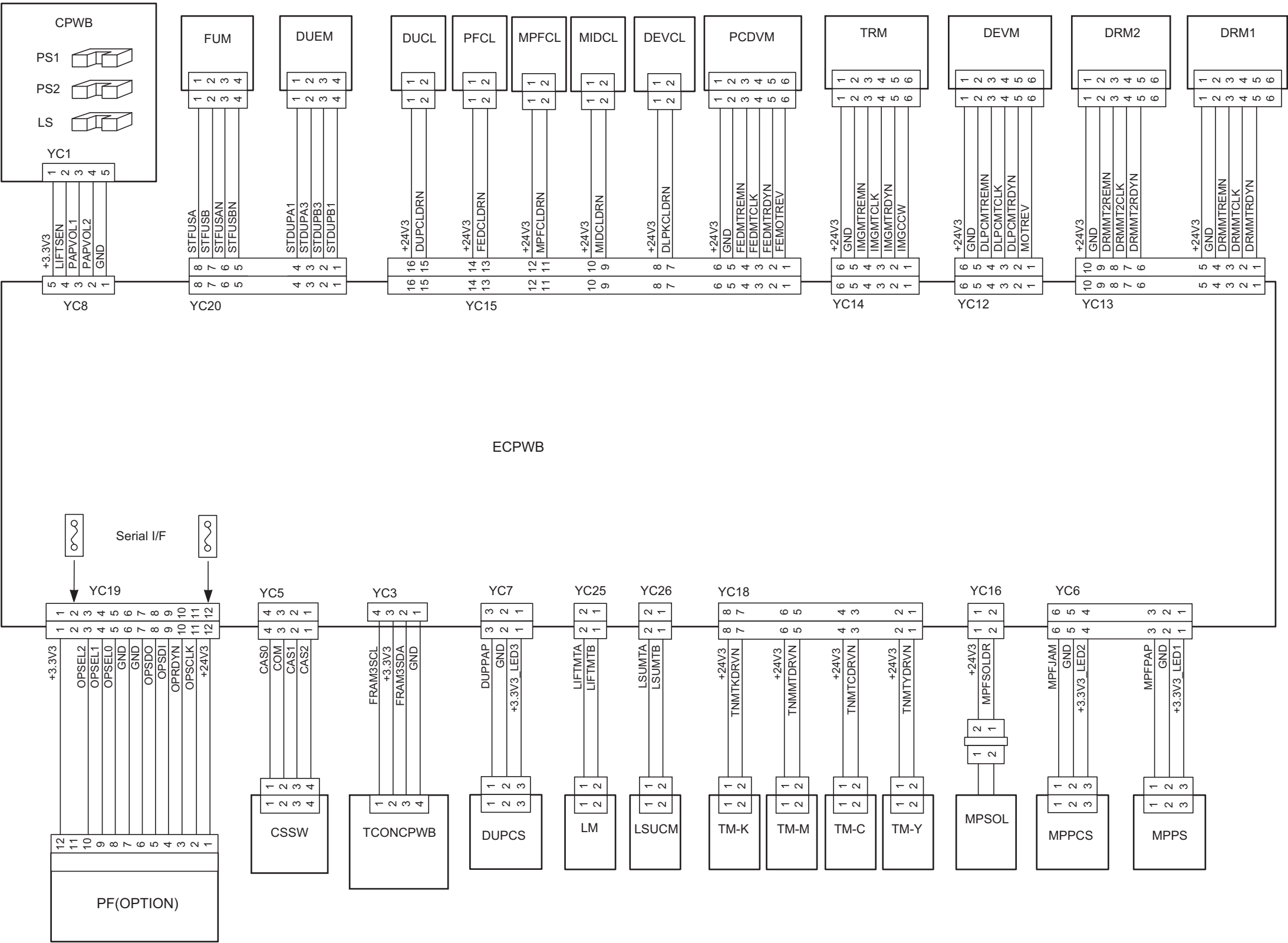
No.3



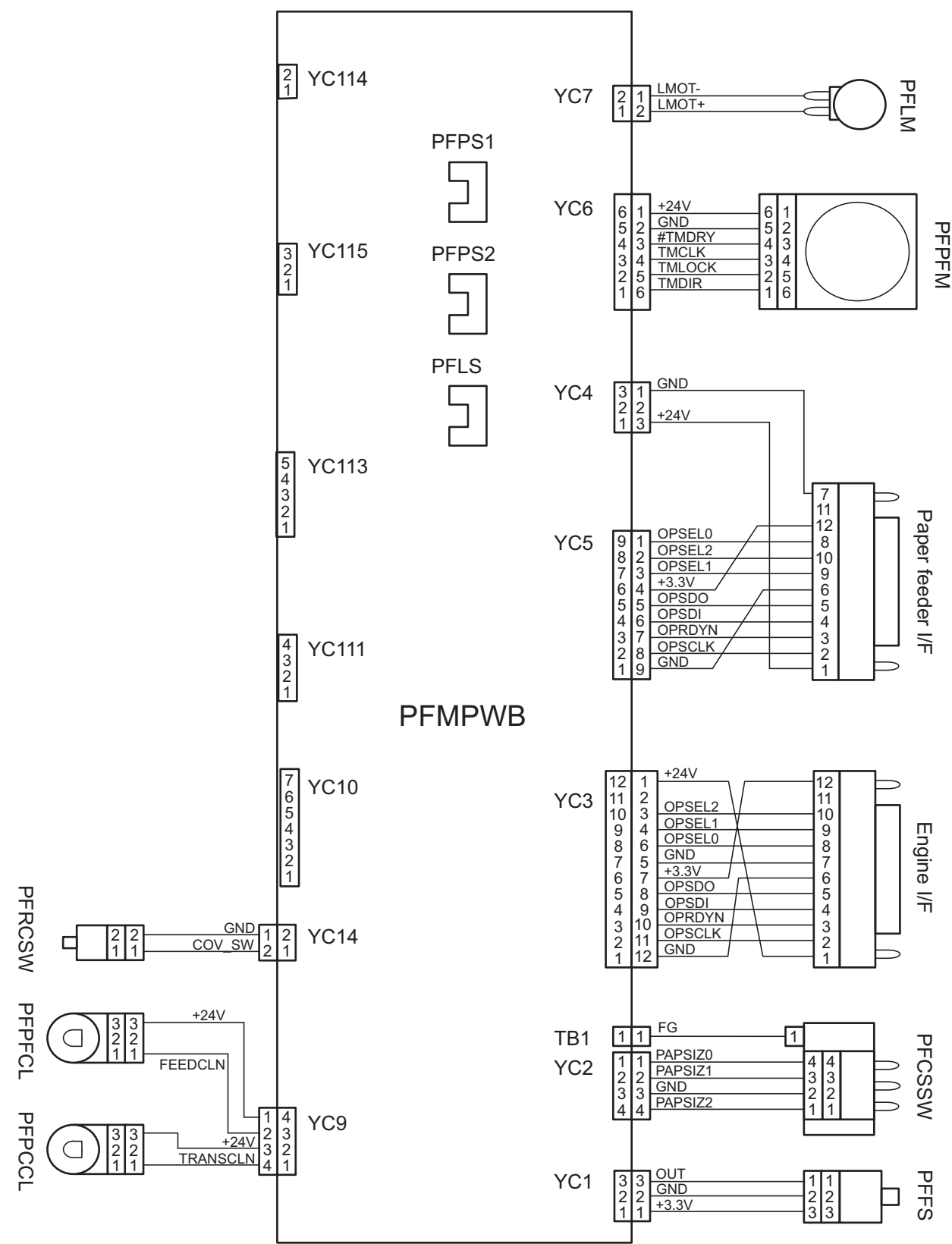
No.4 (30 ppm model)



No.4 (35/40 ppm model)



Paper Feeder (Option)



PF-5100 (Paper Feeder)

Installation Guide

PF-5100



Installation Guide
Installationsanleitung
Guide d'installation

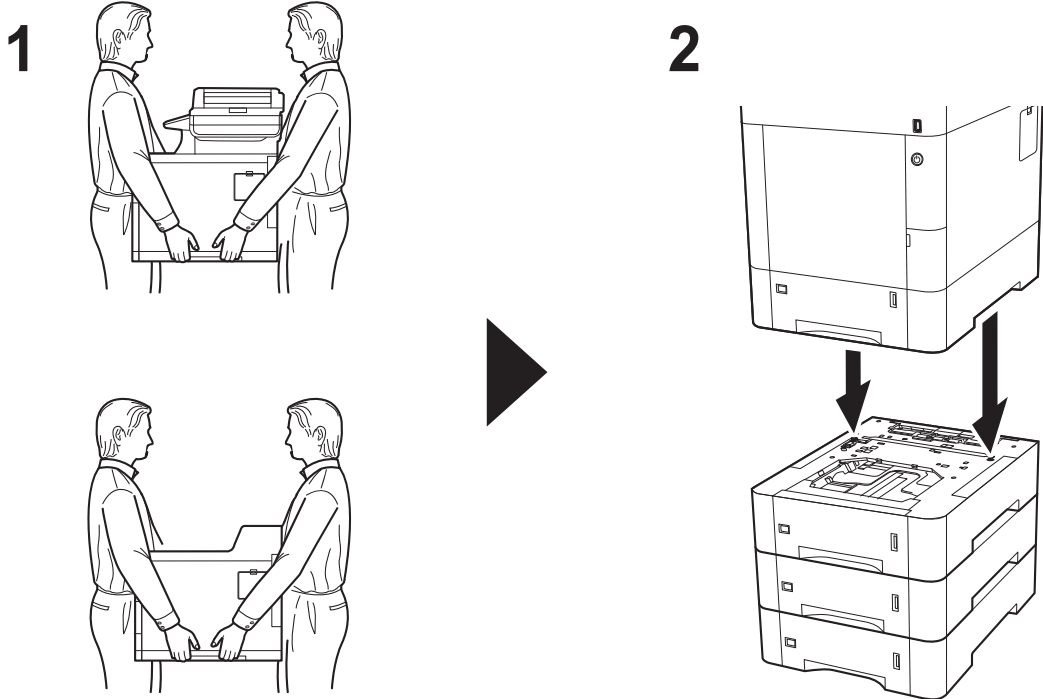
Guida all'installazione
Guía de instalación
Руководство по установке

安裝手冊
설치안내서
インストールガイド

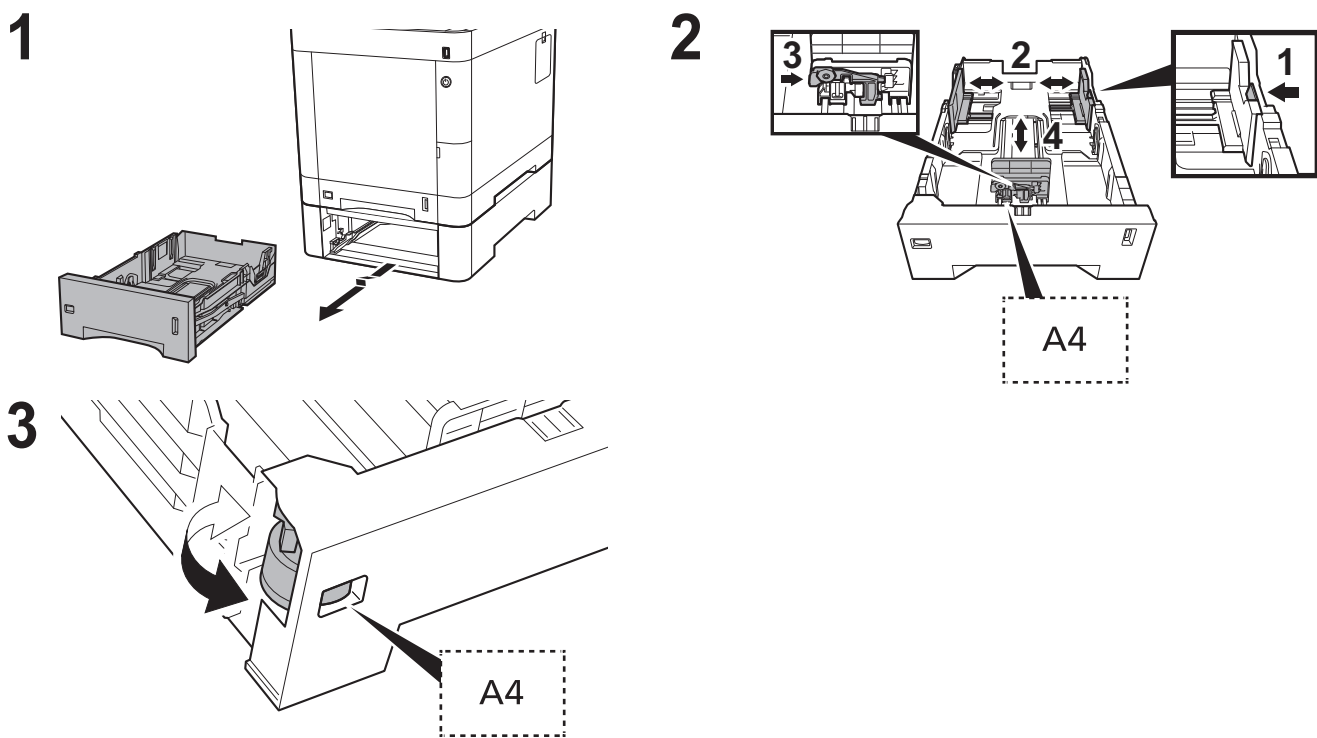
For U.S.A.:
To install the optional paper feeder unit, contact your service representative.
This unit is for use only with Models ECOSYS M6035cdn, ECOSYS M6535cdn, ECOSYS M6030cdn, ECOSYS M6530cdn, ECOSYS P6035cdn, ECOSYS P7040cdn and ECOSYS P6130cdn.

For Canada:
CAN ICES-3B/NMB-3B

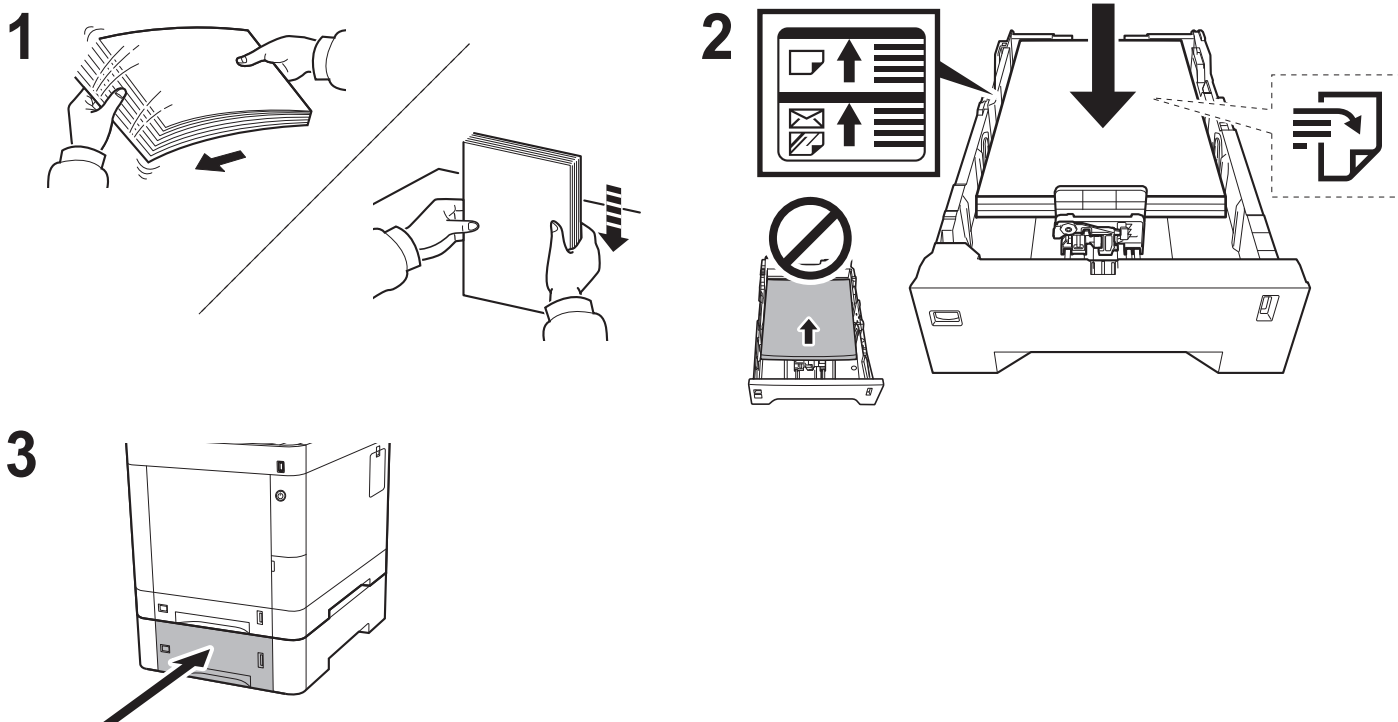
Installation of PF-5100 安裝PF-5100
Installation von PF-5100 PF-5100설치
Installation de PF-5100 PF-5100의設置
Installazione di PF-5100
Instalación de PF-5100
Установка PF-5100



Adjustment of paper size
Justage des Papierformats
Ajustement de format papier
Registrazione del formato carta
Ajuste del tamaño del papel
Регулировка размера бумаги
調整紙張尺寸
용지 크기의 조정
用紙サイズの調整



Loading paper
Ladenpapier
Papier de chargement
Carta da caricamento
Papel del cargamento
Загрузка бумаги
裝入紙張
용지 적재
用紙のセット



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