OKI
PRINTING SOLUTIONS

C612 / C712 / ES7412

Maintenance Manual

042319B

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The most up-to-date drivers and manuals are available from the web site:
http://www.okiprintingsolutions.com

PREFACE

This manual provides an overview of method for maintaining the C612 /C712.

This manual is intended for maintenance staff. For more information about how to operate the C612 /C712, please refer to User 's manual.

Note!
- Manual may be revised and updated at any time without notice.
- Unexpected mistakes may exist in the manual.
  OKI will not assume any responsibility whatsoever for damage to the equipmentrepaired/adjusted/changed by the user etc with this manual.
- The parts used for this printer may be damaged when handling inappropriately. We strongly recommend maintaining this machine by our registration maintenance staff.
- Please operate the machine after removing static electricity.

Index

1. Configuration

1.1 System configuration

Fig 1-1 and Fig1-2 represents the system configuration of the printer.

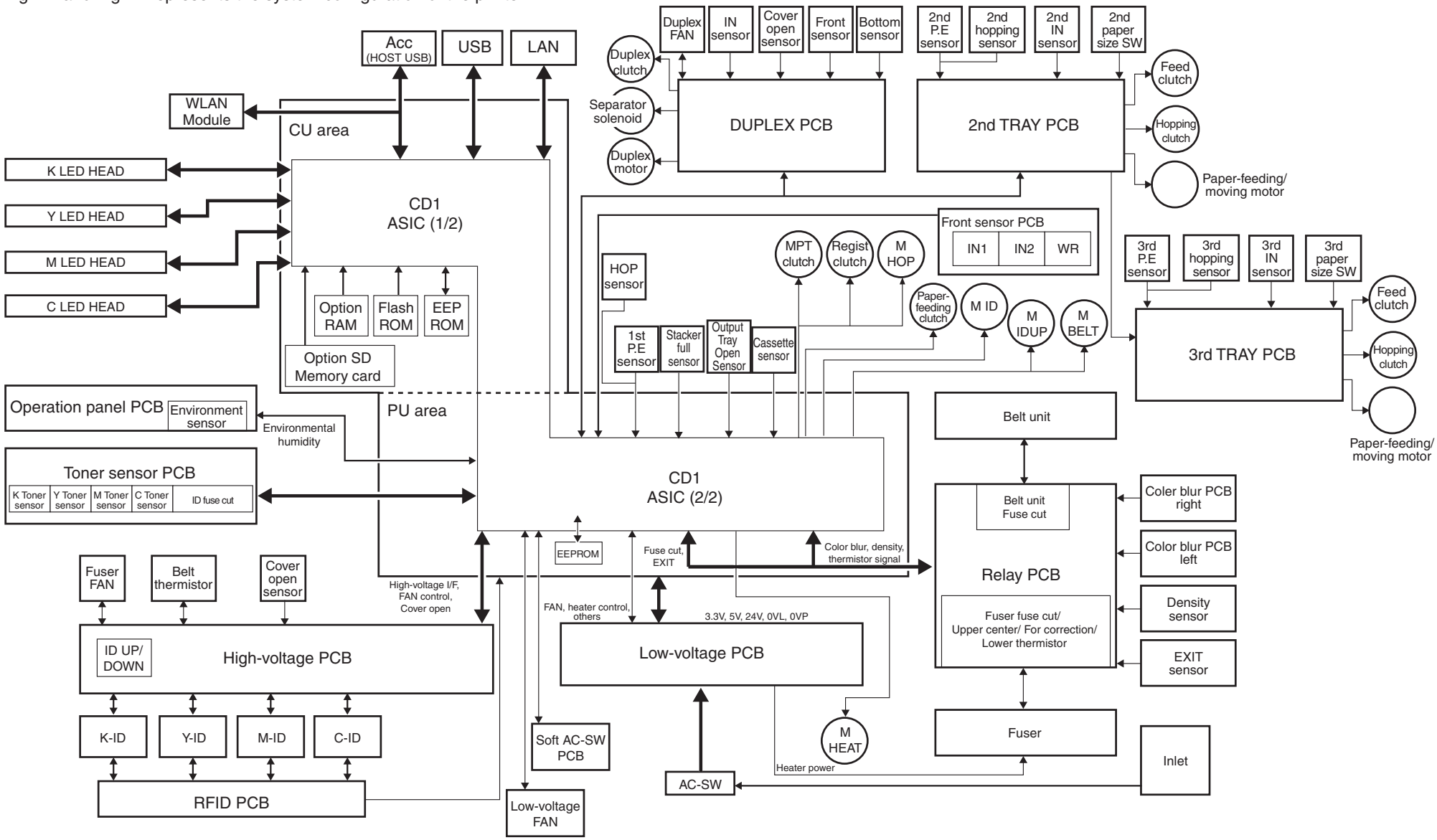


Fig1-1 C612 System Configuration

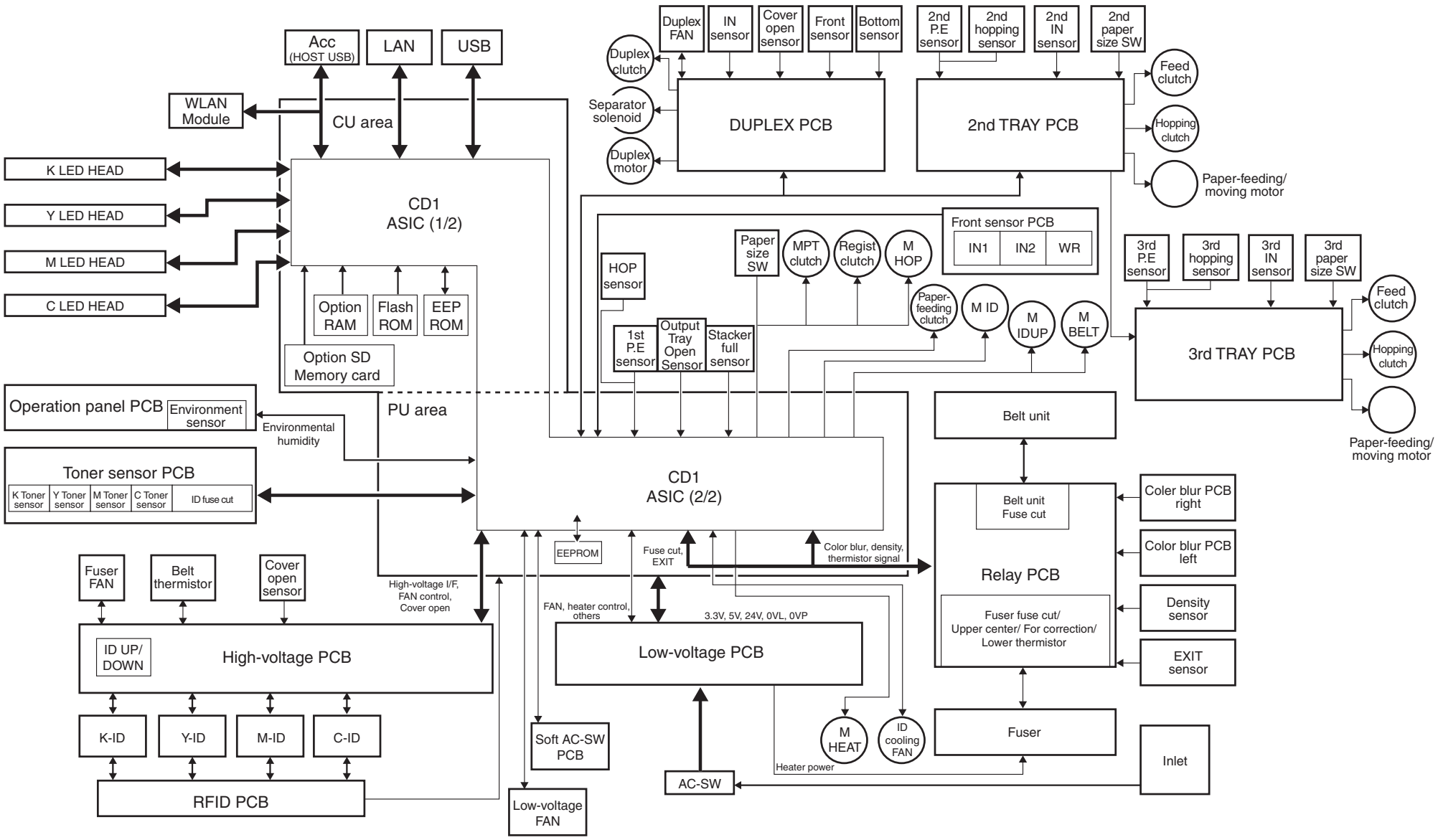


Fig1-2 C712 System Configuration

1.2 The Configuration of printer

The parts in the C612/C712 are shown as below.

- Electrophotography process mechanism
- Paper feed path
- Control part (CU part/ PU part)
- Operator panel
- Power part (High-voltage part/low-voltage part)

The Configuration of the printer is shown in Fig 1-3 and Fig 1-4.

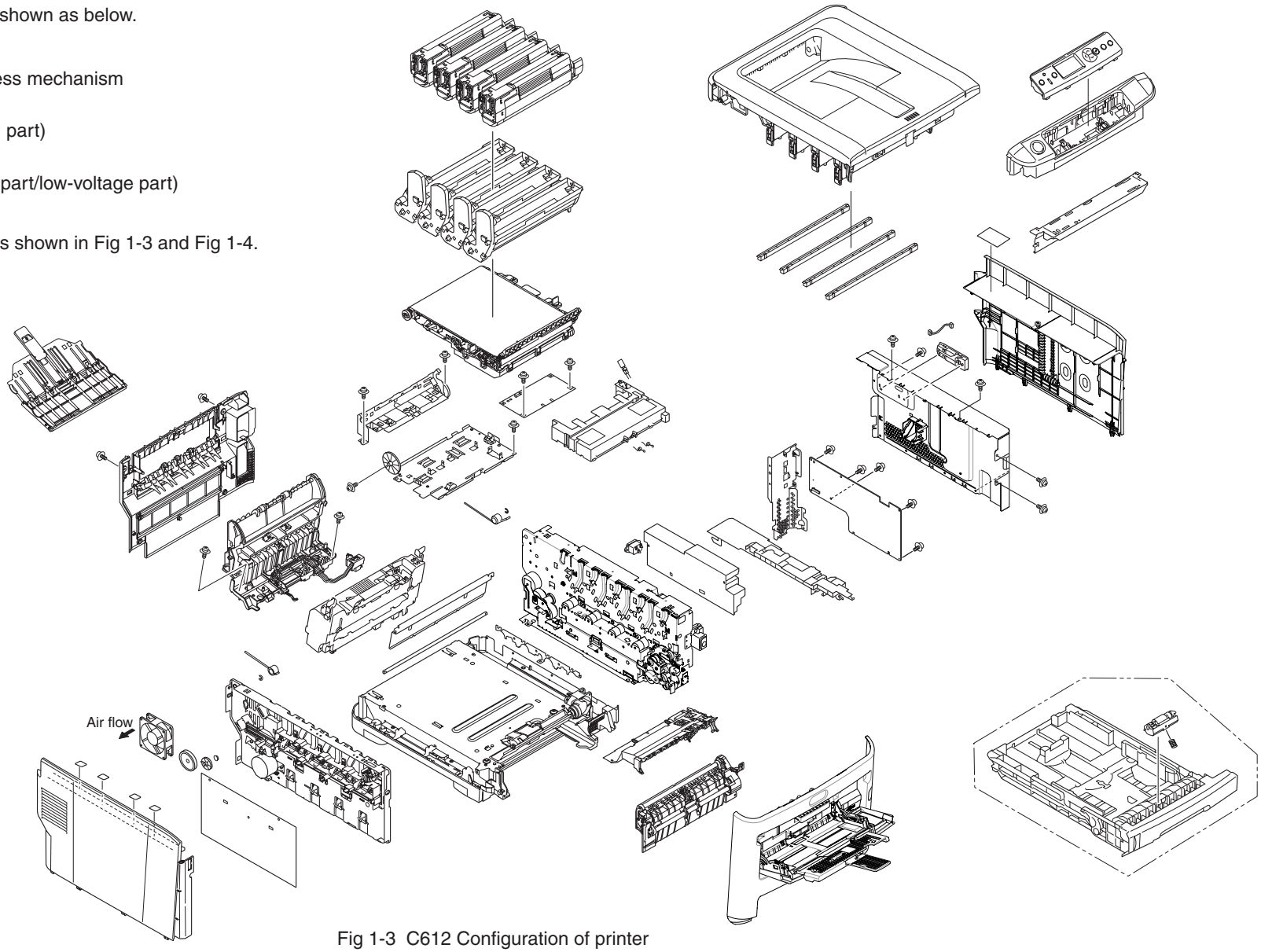


Fig 1-3 C612 Configuration of printer

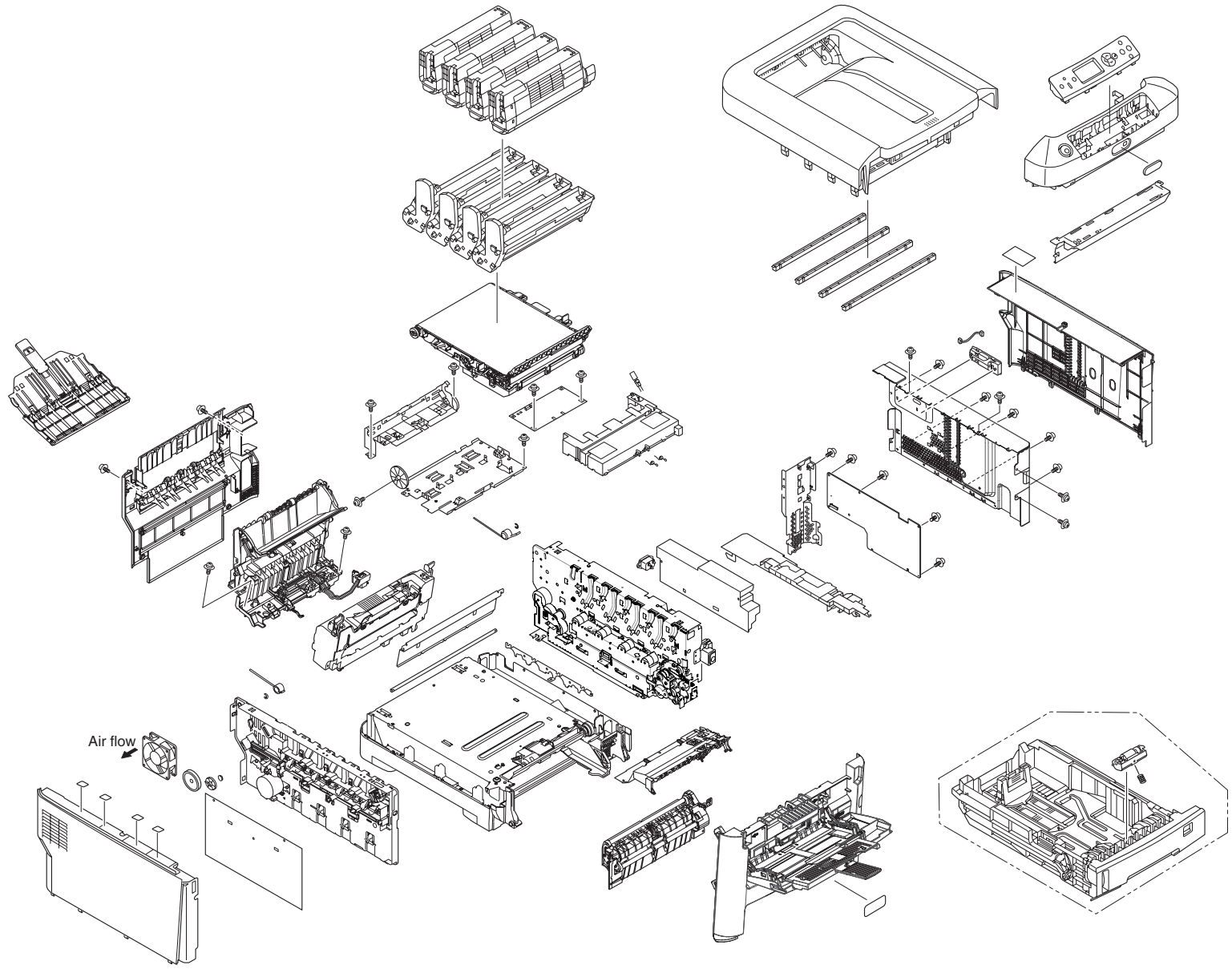


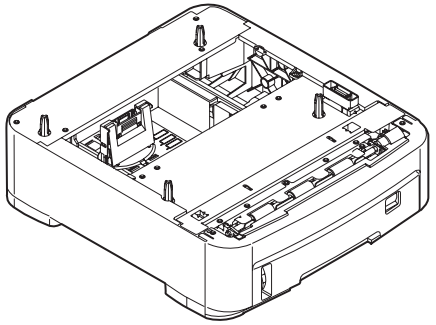
Fig 1-4 C712 Configuration of printer

1.3 Optional parts

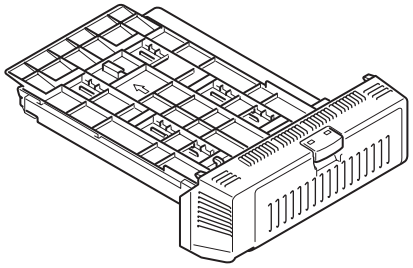
The optional parts for this printer are shown as below.

(1) Optional tray(second tray/ third tray)

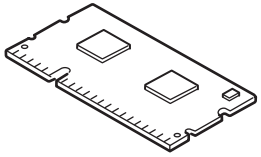
Note! Refer to the instruction sheet of each option units.



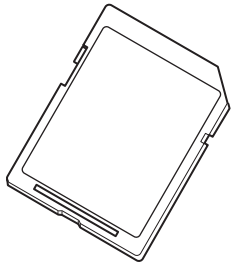
(2) Duplex Unit



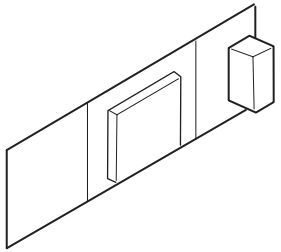
(3) Optional memory



(4) SD memory card



(5) Wireless LAN



1.4 Specifications

Division	Item	C612	C712
Dimension	Width	435mm	435mm
	Depth	536mm	536mm
	Height	340mm	389mm
	Weight	About 26kg	About 28kg
Width of print	Width of print	Letter size, vertical	
Print speed	Engine speed (A4)	34PPM(Color) 36PPM(Mono)	
Print start	First print time	8sec(mono), 9sec(color) (A4)	
	Warmup time	60sec	
	Low noise mode	Not applicable	
Resolution	LED head	600dpi	
	Maximum input resolution	600×1200dpi	
	Output resolution	True 600×1200dpi True 600×600dpi	
	Step	4 step 600×600dpi	
	Econo mode	Save toner by recreasing brightness	
CPU	Core	PowerPC464	
	I-cash, / D-cash	L1-I=32KB L1-D=32KB	
	Clock	532MHz	
	Bus width	32bit	
RAM	Resident	256MB	
ROM	Program+font	64MB	

Division	Item		C612	C712
Power consumption	Input power supply		(120V)110~127VAC±10%, (230V)220~240VAC±10%	
	Off	Hard SW	0W	
		Soft SW or Auto	Less than 0.5W	
	Power save mode		Less than 15W	
	Deep sleep mode		Less than 0.9W (less than 1W) at AC120V*1*2 Less than 1W (less than 1.2W) at AC230V*1*2 *1: The power consumption of the deep sleep mode when 1000BASE-T is chosen, or when wireless LAN is chosen becomes the same as the power save mode. *2: When network load shifts into an overload state, or when the packet for a monitor is received, the power consumption at the time of deep sleep is the same as the time of a power save for about 30 minutes.	
	Idle		100W (Average)	
	Usual operation		600W (It differs from operating environment)	
	Peak		1300W	
Operating environment (Temperature)	During operating		10˚C~32˚C, 17˚C~27˚C (Temperature requirement for full-color print)	
	During non-operating		0˚C~43˚C, power off	
	During keeping (for a year at most)		-10˚C~43˚C, with drum and toner	
	During transferring (for a month at most)		-29˚C~50˚C, with drum, without toner	
	During transferring (for a month at most)		-29˚C~50˚C, with drum, without toner	

Division	Item	C612	C712
Operating environment (Humidity)	During operating	20%~80%, 50%~70% (Humidity requirement for full-color print) The highest wet bulb temperature is 25℃	
	During non-operating	10%~90%, The highest wet bulb temperature is 26.8℃ , power off	
	During keeping	10%~90%, The highest wet bulb temperature is 35℃	
	During transferring	10%~90%, The highest wet bulb temperature is 40℃	
Operation life	Printer operation life	420,000 pieces A4 transvers direction, 5years	600,000 pieces A4 transvers direction, 5years
	Print duty (M=L/12, A=L/12/5)	Max 60,000 pages / month Average 6,000 pages/ month	
	MTBF (2.3% duty)	Not applicable	
	MPBF	50,000 pages	
	MTTR	Within 20 minutes	
	Toner operation life (ISO/IEC19798)	Mounting toner: 2,000 pages(black), 2,000 pages(color)	Mounting toner: 4,000 pages(black), 4,000 pages(color)
		Standard: 8,000 pages(black), 6,000 pages(color)	Standard: 11,000 pages(black), 11,500 pages(color)
	Image drum operation life	30,000 pages (when 3 pages /job) 18,000 pages (when 1 page/job) 40,000 pages (when continuously print) Drum count all reset	
	Transcribing belt operation life	60,000 pages (A4 transverse size, when 3 pages /job) count auto reset	
	Fuser operation life	60,000 pages (A4 size) count auto reset	

Division	Item	C612	C712
Operation sound	During operation	54dBA (ISO 7779 front) (without option unit)	
	During standby	37dB(ISO 7779 front)	
	Power save mode	Background level	
Paper handling	Paper stack capacity (1st tray)	Legal /Universal cassette 300 pieces (80g/m^2)	Legal /Universal cassette 530 pieces (80g/m^2)
	Paper stack capacity (optional tray)	Legal /Universal cassette 530 pieces (80g/m^2)	
	Paper stack capacity (Manual/auto)	Standard multipurpose tray or 100 pieces (80g/m^2), or 10 pieces of envelop	
	Paper rejection	250 pieces : facedown/ 100 pieces : faceup tray (<80g/m^2)	350 pieces : facedown/ 100 pieces : faceup tray (<80g/m^2)
	Duplex	Standard/ Option	
Paper size		A4, A5, B5, A6*, B6**, B6 Half**, letter, legal(13/13.5/14), Executive, Statement**, 8.5"SQ, Folio, 16K(184x260mm, 195x270mm, 197x273mm), post card**, return post card**, custom***, envelope , Index card 3x5in, Photo size 4x6 5x7in * : The paper of A6 cannot be used in tray 2/ 3 **: The post card, return post card and envelope can be used in MPT only ***: As for custom, the available size can be adjusted by using different tray. The length is up to 1321mm.	A4, A5, B5, A6*, B6**, B6 Half**, letter, legal(13/13.5/14), Executive, Statement**, 8.5"SQ, Folio, 16K(184x260mm, 195x270mm, 197x273mm), post card**, return post card**, custom***, envelope , Index card 3x5in, Photo size 4x6 5x7in * : The paper of A6 cannot be used in tray 1/ 2/ 3 **: The post card, return post card and envelope can be used in MPT only ***: As for custom, the available size can be adjusted by using different tray. The length is up to 1321mm.

Division	Item	C612	C712
Minimum paper size	Tray 1 Tray 2(option) Tray 3(option) MPT	A6 A5 A5 Index Card(3x5in)	A5 A5 A5 Index Card(3x5in)
Thickness of paper	Tray 1 Tray 2(option) Tray 3(option) MPT	64g/m^2~220g/m^2 64g/m^2~220g/m^2 64g/m^2~220g/m^2 64g/m^2~250g/m^2	
Control panel	LCD	Resolution 128×64 dot graphic panel Paper size is not displayed	
	LED (color)	2 (Green×1, dark umbar×1)	
	Switch	8	
Status switch/ sensor	Paper out	Have	
	Paper low	None	
	Toner low	Have (Y, M, C, K)	
	Cover open	Have	
	Temperature of fuser	Have	
	Paper size	Have (Manual setting)	
	Stacker full	Have	
Communication interface	Standard (On the PCB)	• Hi-Speed USB • Ethernet	• Hi-Speed USB • Ethernet
	Option	Wireless LAN	
	Input and output switch	Auto	
Emulation	Standard	PCL5c,PCL6(XL3.0)/XPS/IBM PPR Ⅲ XL/ EPSON FX/PostScript 3(Clone)	
	Emulation switch	Auto	

Division	Item	C612	C712
Font	Bitmap Typeface	Have	
	Scalable font	Have	
	Rasterizer	Have	
	Barcode	Have	
	OCR	Have	
	Japanese PCL font	Have	
	Japanese PS font	Have	
Option (can be removed)	RAM	256/512MB DIMM	
	SD memory card It is possible to be installed by user	16GB SD memory card	
	2nd tray mechanism	Universal (580 pieces)	
	3rd tray mechanism	Universal (580 pieces)	
	Double print unit	Standard/ Option	
	Wireless LAN	Option	
	Others	Not available	
Others	USB-IF logo	Have	
	Windows logo	Have	
	UPS operation	The operation with UPS(Uninterruptible Power Supplies) is not guaranteed. Please do not use the UPS.	

1.5 Specification of interface

1.5.1 Specification of USB interface

1.5.1.1 General of USB interface

(1) Spec.

USB (Support Hi speed USB)

(2) Transmission mode

Full speed (Maximum 12Mbps 0.25%)

High speed(Maximum 480Mbps 0.05%)

(3) Power control

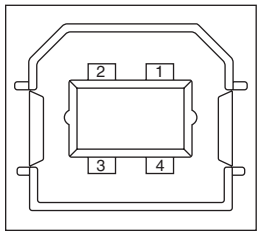
Self power device

1.5.1.2 Connector and cable of USB interface

(1) Connector

• Printer side: B Receptacle (female)
Up-stream port
(UBR24-4K5C00 (made by ACON)) Equivalent goods

Connector pins array



• Cable side: B plug(male)

(2) Cable

The length of the cable: the cable of less than 5m with USB 2.0 spec.

(Less than 2m is recommended)

(Please use the shielded wire for the cable.)

1.5.1.3 USB interface signal

	Signal name	Function
1	Vbus	Power (+5V)
2	D-	For data transmission
3	D+	For data transmission
4	GND	Signal Ground
Shell	Shield	

1.5.2 Specification of network interface

1.5.2.1 General of network interface

Spec.

Network Protocol

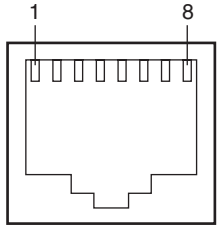
TCP/IP sepc.	Network layer	
		ARP, IP, ICMP, IPv6, IPSec
	Transfer layer	
		TCP, UDP
	Application layer	
		LPR, Port9100, FTP, HTTP, HTTPS, IPP, SNMPv1/v3, TELENET, DHCP/BOOTP, DNS, DDNS, WINS, UPmP, Bonjour, SNTP, SMTP, POP, Windows Rally (WSD Print, LLTD).
NBT:	NetBIOS over TCP	
IEEE802.1X:	EAP-TLS, PEAP	

1.5.2.2 Connector and cable of network interface

(1) Connector

1000 BASE-T / 100 BASE-TX / 10 BASE-T (automatically switched, not usable simultaneously)

Connector pins arrangement



(2) Cable

Non-shield twisted-pair cable with RJ-45 connector (Category 5e equivalent or more recommended)

1.5.2.3 Signal of network interface

Pin No.	Signal name	Function
1	TRD+(0)	Transmitting and receiving Data 0 (+)
2	TRD-(0)	Transmitting and receiving Data 0 (-)
3	TRD+(1)	Transmitting and receiving Data 1 (+)
4	TRD+(2)	Transmitting and receiving Data 2 (+)
5	TRD-(2)	Transmitting and receiving Data 2 (-)
6	TRD-(1)	Transmitting and receiving Data 1 (-)
7	TRD+(3)	Transmitting and receiving Data 3 (+)
8	TRD-(3)	Transmitting and receiving Data 3 (-)

1.5.3 Specification of ACC interface

1) Connector
   Printer side: USB A receptacle (female)
   Downstream port
   DUSB-ARA42-T11A (DDK product) or equivalent
   Cable side: USB A plug (male)

2) Cable

   A cable supplied with a card reader shall be used.

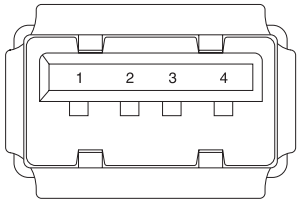
   (Do not place a hub between a card reader and the printer.)

   Or a USB memory is connected directly.

3) Interface signals

Contact No.	Signal Name	Function
1	VBUS	Power supply(+5V)
2	D-	For data transfer
3	D+	For data transfer
4	GND	Signal ground Shell
Shell	Shield	Shield

4) Conector pin arrengement



5) Connecting device
   ODC-authorized card reader/writer
   Maximum current supplied to the printer: 500mA

1.5.4 Wireless LAN Interface

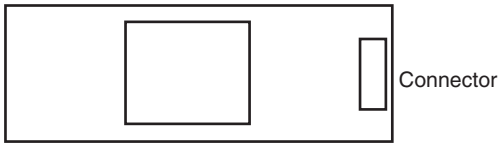
1.5.4.1 Outline of Wireless LAN

(1) Specification

IEEE 802.11 a/b/g/n conformity (2.4GHz / 5GHz)

(2) Power supply voltage

5V



2. Set up

2.1 Notes and precautions

⚠Warning

- Do not set it in any high-temperature locations or near any heat sources.
- Do not set it in a place where the chemical reaction may occur (laboratory etc.).
- Do not set it near any liquid that may ignite such as alcohol and thinner.
- Do not keep it out of reach of children.
- Do not place it on an unstable or uneven surface (unstable table and slanting place, etc.).
- Do not put it in direct sunshine. And do not put it in a moist or dusty place.
- Do not set it in wet or corrosive environment.
- Do not set it in a place where may cause vibration.
- If the printer is dropped down or the cover is damaged, please pull out the power plug from the outlet and contact the customer center.
  This may cause an electric shock, fire, injury.
- Please read this manual carefully before connecting the power supply cable, printer cable, ground cable.
  This may cause fire.
- Do not insert any foreign objects into the vent hole.
  This may cause an electric shock, fire, injury.
- Do not put a vessel(s) filled with water on the printer.
  This may cause an electric shock, fire.
- Do not touch the fuser unit when you open the cover of the printer.
  It is hot and could cause burns.
- Do not throw the toner cartridge, the image drum cartridge into the fire.
  It may cause burns due to dust explosion.
- Do not use inflammable sprays near the printer.
  It may cause fire because some parts in the printer may become very hot.
- If the cover becomes abnormally hot, smoke rises, it smells strange or it sounds abnormal, please pull out the power plug from the outlet and contact the customer center.
  It may cause fire.

⚠Warning

- If the liquid such as water enters the printer, please pull out the power plug from the outlet and contact the customer center.It may cause fire.
- If you drop the foreign objects such as clip in the printer, please pull out the power plug from the outlet and take the foreign objects out.
  This may cause an electric shock, fire, injury.
- Do not disassemble the printer unless following the correct procedure written in the manual.This may cause an electric shock, fire, injury.

⚠Caution

- Do not set it in a place where the vent hole of the printer is blocked.
- Do not set it directly on heavy wool or shag carpet.
- Do not place it in locations of poor ventilation such as enclosed areas.
- Give particular attention to adequate ventilation care when using it continuously in a narrow room for a long time.
- Do not place it close to strong magnetic fields and noise source.
- Do not place it next to the monitor and television.
- Hold tightly the both sides of the printer when you move the printer.
- Because the weight of the printer is approximately 33kg (in a state of packing), it needs more than two adults to lift it up.
- Do not come close to the paper exit part while printing.
  This may cause injury.

Please explain the safety precautions about installation and handling with showing the all precautions in user's manual to customer. Especially, the details about power supply cable and the ground cable must be explained completely.

2.2 Unpack method

⚠Warning	Personal injuries may occur.	⚠

Because the weight of the printer (without Duplex unit) is approximately 33kg (in a state of packing), it needs more than two adults to lift it up.

- Take out the gripe on each side as shown in the following figure, and lift the cardboard box up.

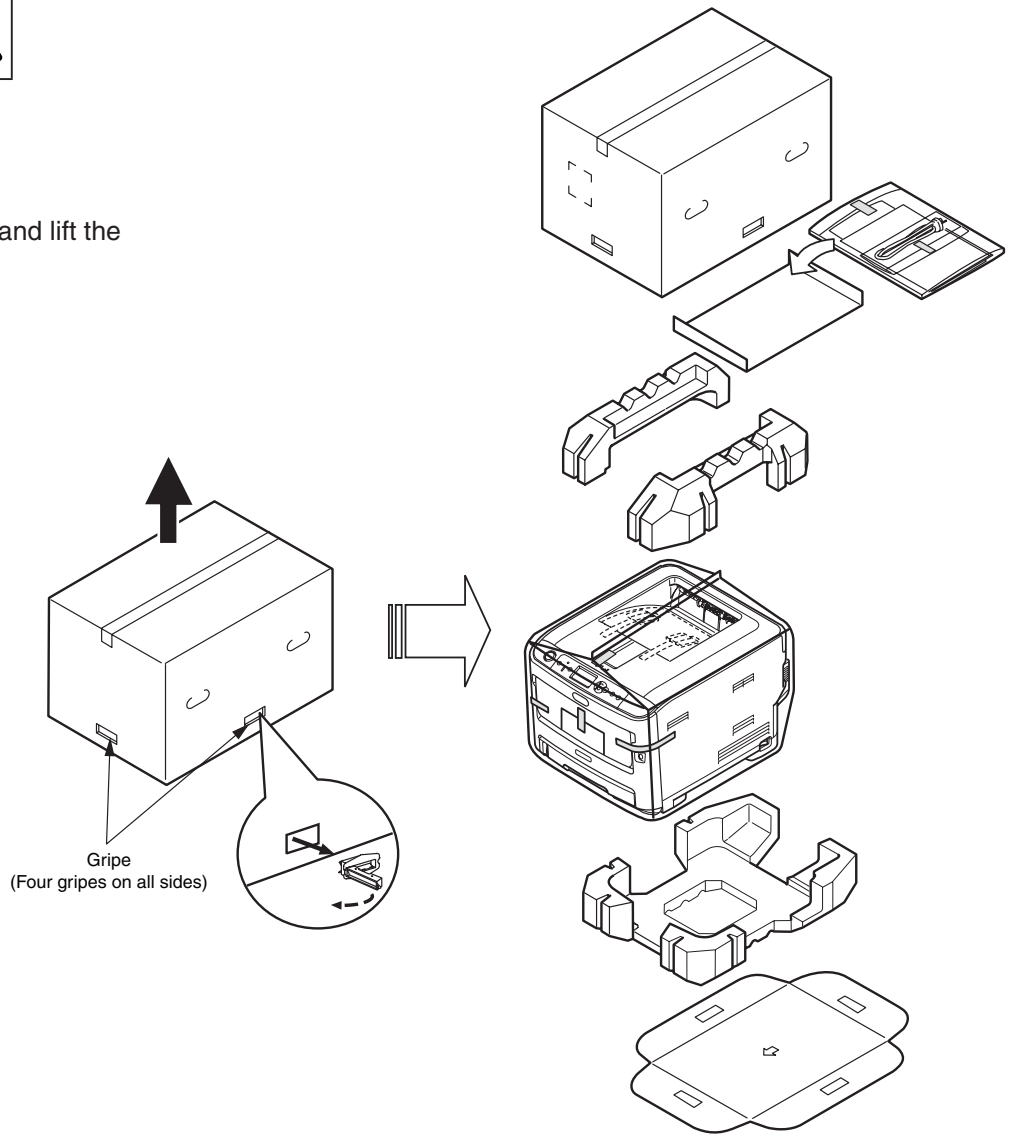


Fig2-1 C612 Unpack method

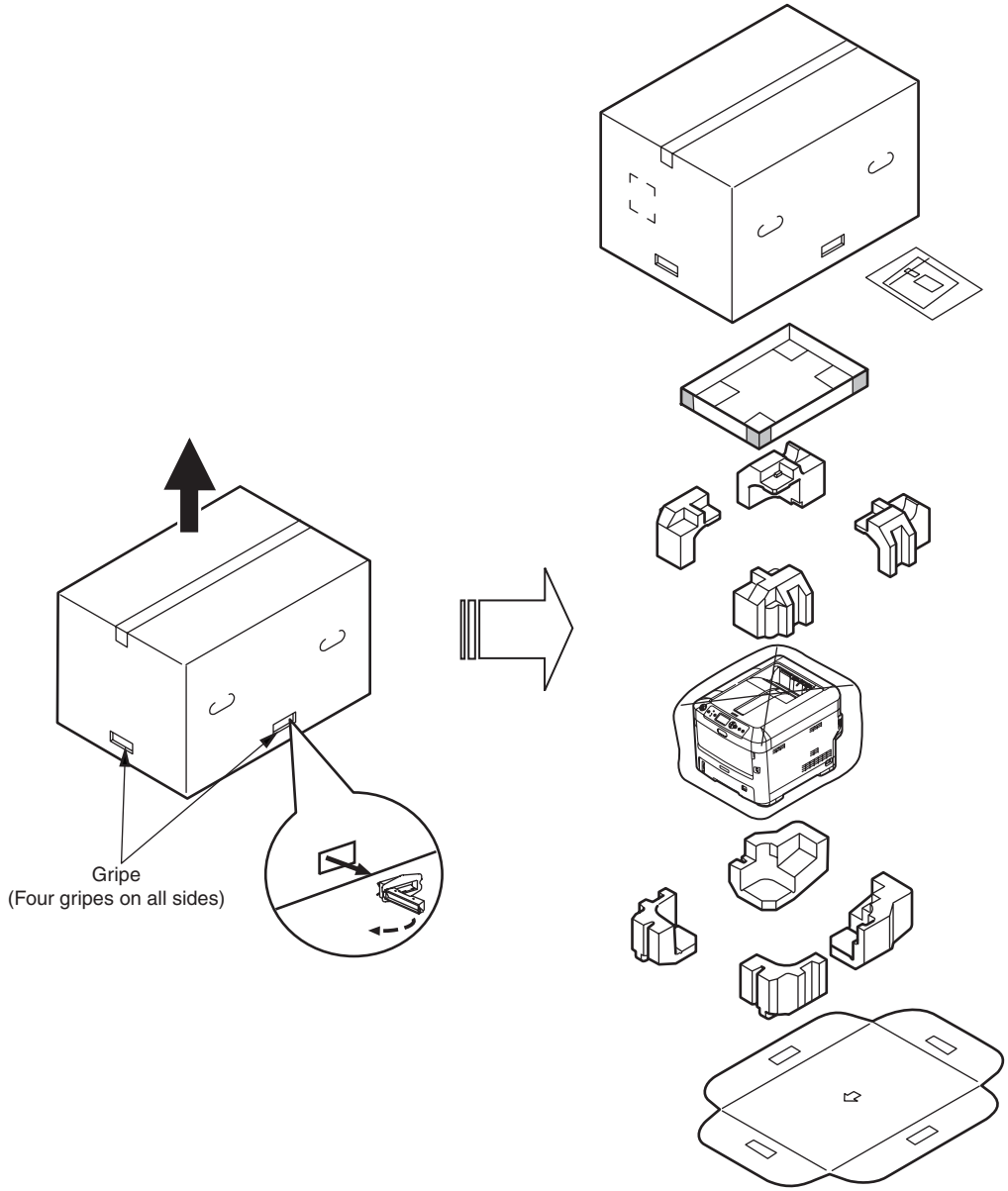


Fig2-2 C712 Unpack method

3. Component replacement

In this chapter, the procedures for replacement of part and assembly and unit are described.

The replacement procedure is described by removal of the parts. Please install the new parts with following the replacement procedure in reverse order.

The parts (such as ①, ②)shown in this manual are different from the parts used in the Disassembly for Maintenance figure (46406101TL) and RSPL (46406101TR).

3.1 Precautions on component replacement

(1) Remove the AC cord and the interface cable before replacing the parts.

(a) Remove the AC cord according to the following procedure.

① Turn off the printer, then the LED indicator goes out.

② Switch the main power switch of printer off “O”.

③ Disconnect the AC insertion plug of the AC power cord from the AC power source.

④ Disconnect the AC cord and the interface cable with the printer.

⚠Warning	Risk of Electric Shock	⚡

There is a risk of electric shock during replacement of the low voltage power supply.

Use insulating gloves or avoid direct contact with any conducting part of the power supply, and caution should be exercised during replacement.

The capacitor may take one minute to complete discharge after the AC cord is unplugged. Also, there is a possibility that the capacitor doesn’t discharge because of a breakage of the PCB, etc., so remember the possibility of electric shock to avoid electric shock.

(b) Reconnect the printer according to the following procedure.

① Connect the AC cord and the interface cable with the printer.

② Connect the AC power cord insertion plug to the AC power source outlet.

③ Switch the power switch of printer on “I”.

(2) Do not disassemble it if the printer works normally.

(3) Disassemble it as required. Do not remove the part that is not shown in the replacement procedure.

(4) Please use the specified maintenance tool.

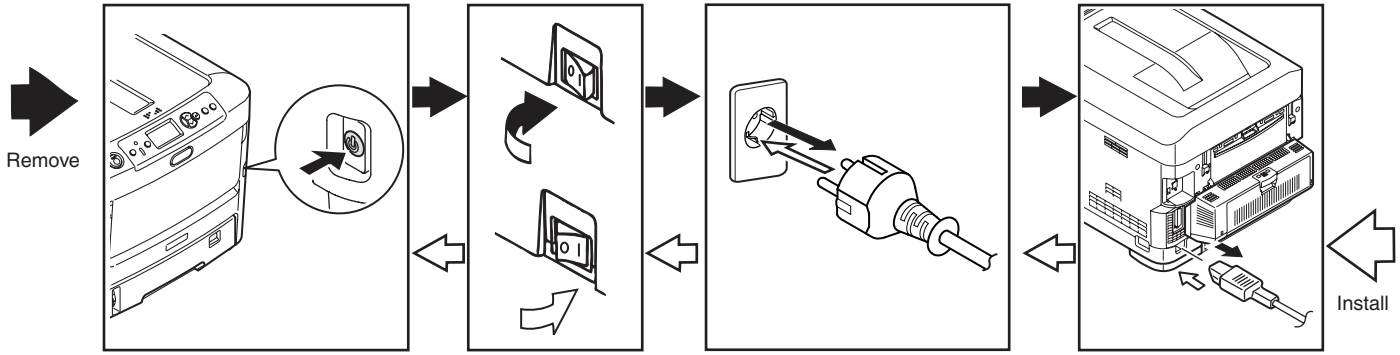
(5) Disassemble it according to the proper procedure. It may cause damage to the parts if disassemble it without following the proper procedure.

(6) As the small parts such as the screws are lost easily, please fix them to the original position temporarily.

(7) Do not use gloves that may cause static electricity easily when handling IC and the circuit board such as microprocessor, ROM, and RAM.

(8) Do not put the PCB on the device and the floor directly.

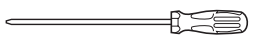
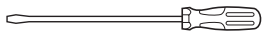
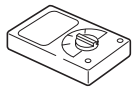
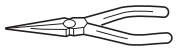
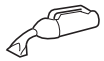
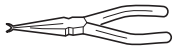
(9) Do not work for a long time with the printer with the top cover open, and an image drum unit installed in it.



[Maintenance tool]

The required tools for replacing the PCB and the unit are shown in Table 3-1.

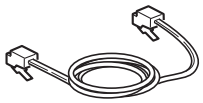
Table 3-1 Maintenance tools

No.	Maintenance tools		Amount	Purpose	Note
1		No. 2-200 ⊕ Magnetic driver	1	3 - 5mm Screw	
2		No. 3-100 Driver	1		
3		No. 5-200 Driver	1		
4		Digital multimeter	1		
5		Combination pliers	1		
6		Handy cleaner (the type corresponds to the toner)	1		Refer to the following note.
7		E Ring pliers	1	For E ring detaching	

Note! Use the specified cleaner corresponding to the toner. It may cause a fire when using a general-purpose cleaner.

The required tools for using the maintenance utility are shown in Table 3-2.

Table 3-2 required tools

No.	Maintenance tools		Amount	Purpose	Note
1		Notebook [Please install the maintenance utility.]	1		Refer to the 46470802TH for Maintenance Utility.
2		USB cable	1		
3		Ethernet cable (Cross cable)	1		

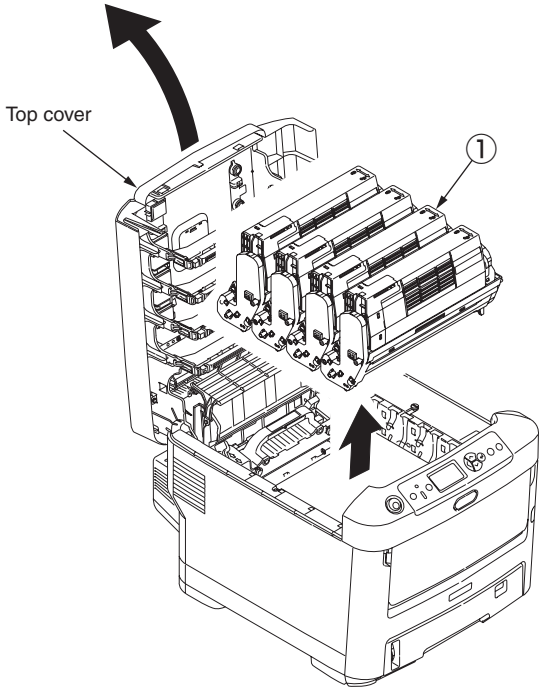
3.2 Method of component replacement

In this chapter, the replacement of parts and assemblies is described by the disassemble figures.

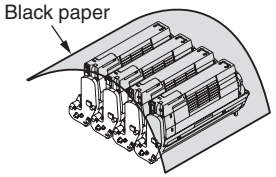
3.2.1 Belt unit

(1) Open the top cover.

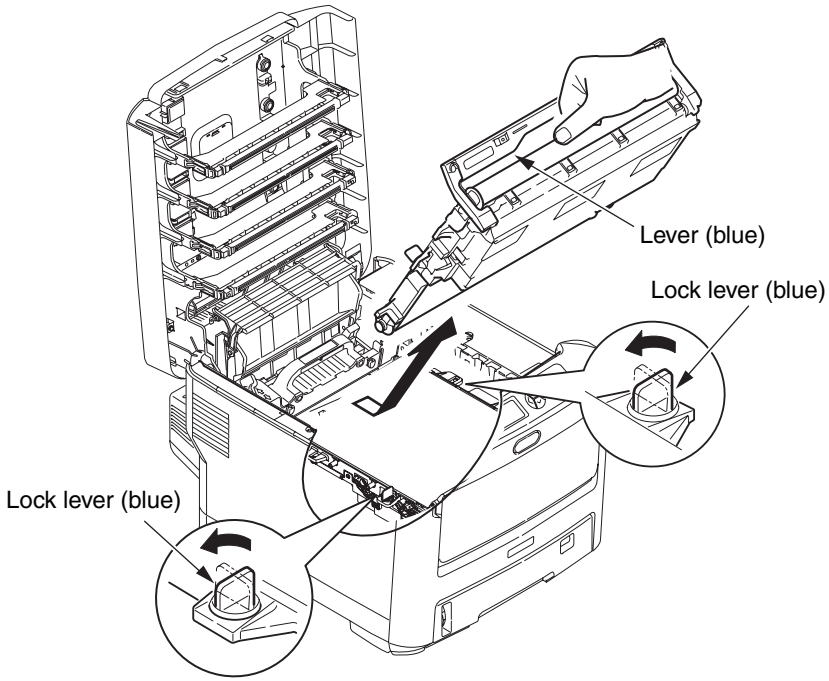
(2) Remove the ID unit ① .



Note! Cover the removed image drum cartridge with black paper.



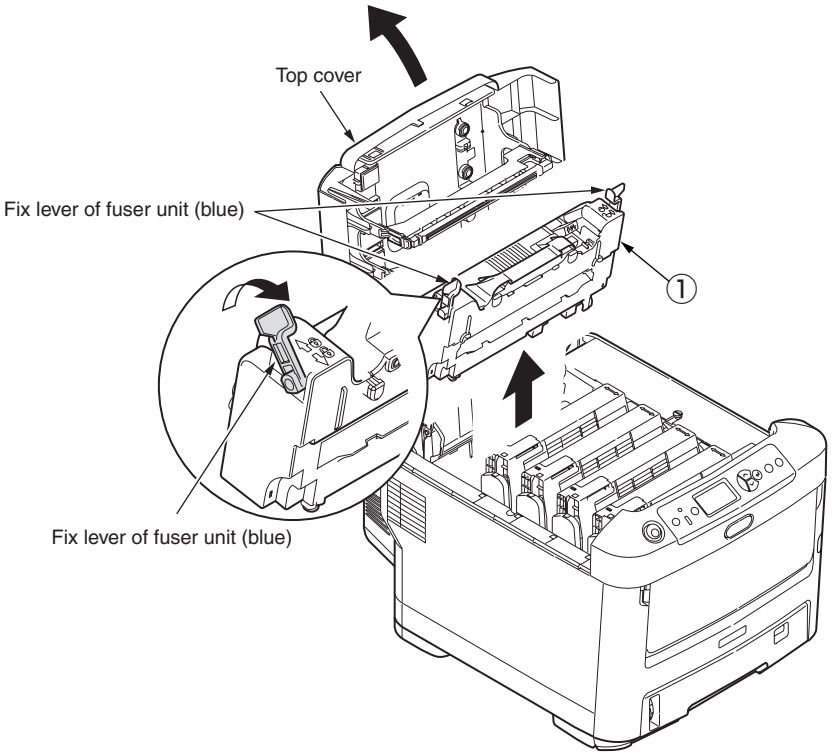
(3) Rotate the lock lever (blue, 2 places) of the belt unit ② in the direction of arrow , and hold the lever (blue) to remove the belt unit.



3.2.2 Fuser unit

(1) Open the top cover.

(2) Push up the fix lever of fuser unit in the direction of arrow, and remove the fuser unit ① .

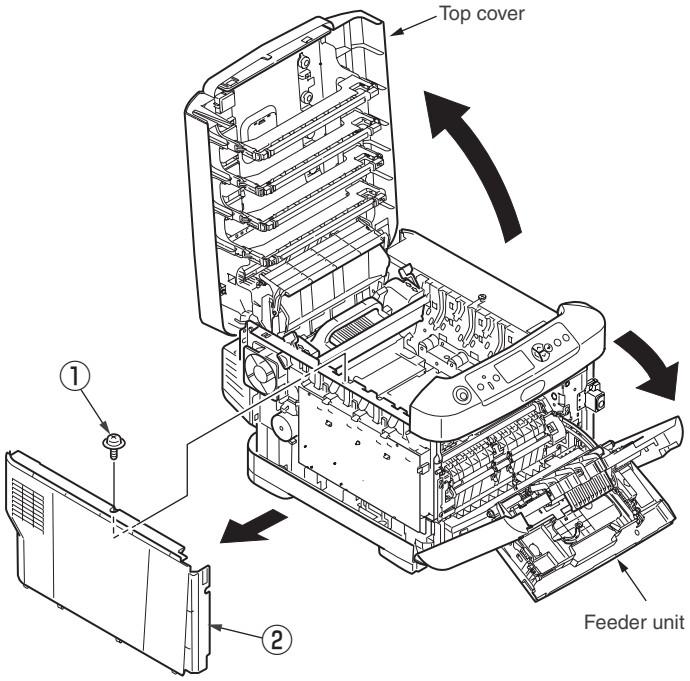


3.2.3.1 Left side cover (C712)

(1) Open the top cover.

(2) Open the feeder unit.

(3) Remove the screw ① (silver), and remove the left side cover ② .



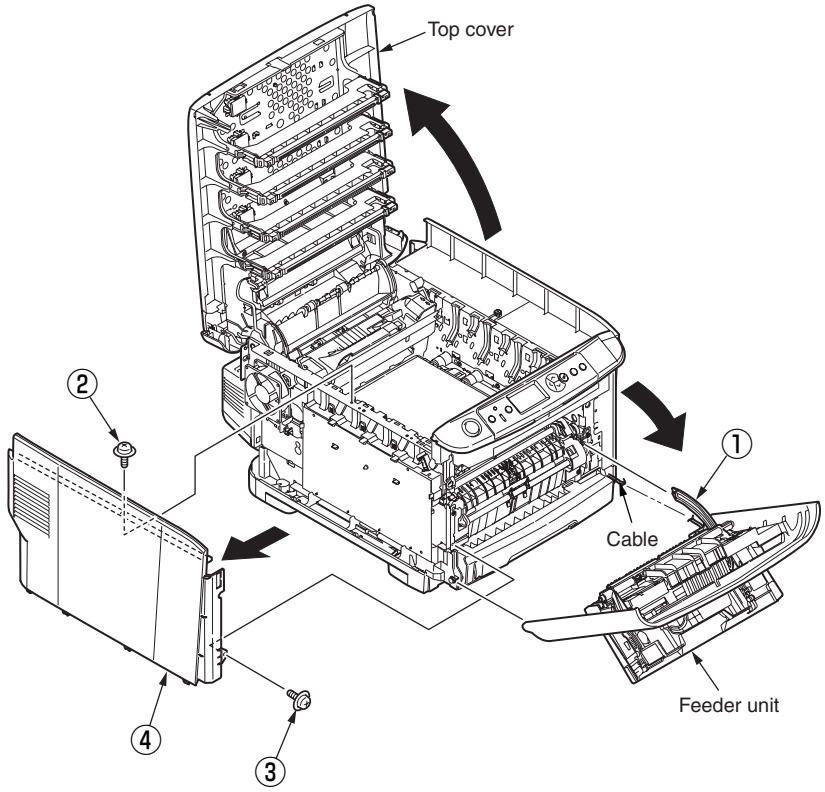
3.2.3.2 Left side cover (C612)

(1) Open the top cover.

(2) Open the feeder unit.

(3) Remove the claw ① , and remove the Feeder-Unit without disconnecting the cable.

(4) Remove the screw ② (silver, No:42920406), and screw ③ , and remove the left side cover ④ .

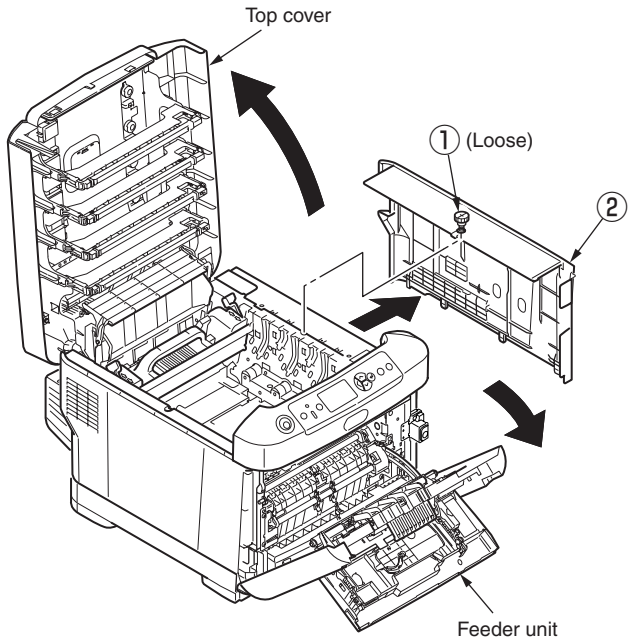


3.2.4 Right side cover

(1) Open the top cover.

(2) Open the feeder unit.

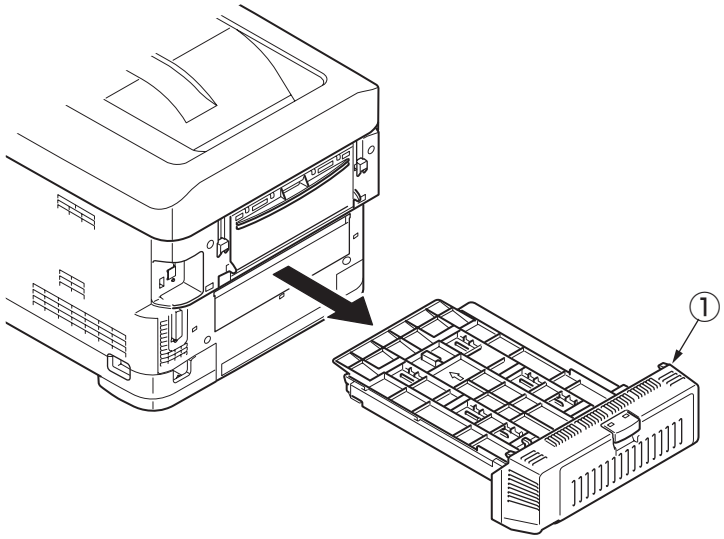
(3) Loose the screw (silver, No:41723901) ① and remove the right side cover ② .

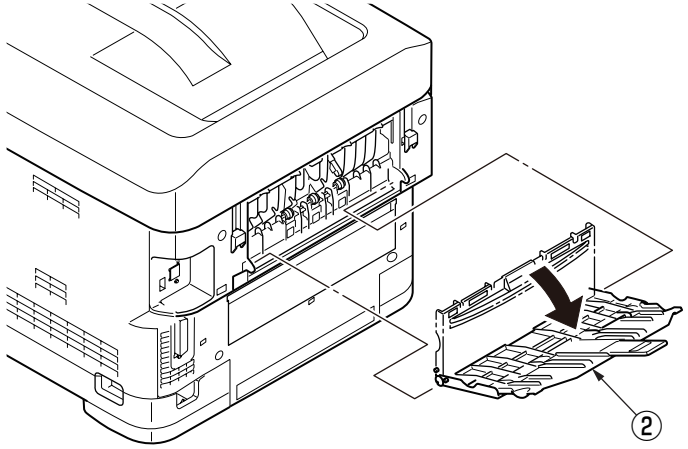


3.2.5 Faceup tray

(1) Draw out the Duplex unit ① .

(2) Open the faceup tray ② in the direction of arrow, and unlock the left and right pins while bending. Remove the faceup tray ② .





3.2.6 Rear cover

(1) Open the faceup tray.

(2) Remove the two screws ① (silver, No:42920406).

(3) As shown in fig 2, insert the minus driver into the hole A to disengage the claw A (2 place).

(4) Disengage the claw B (2 places) and pull the upper side of the rear cover ② in the direction of A.

(5) As shown in fig 3, push the lower side of the rear cover ② in the direction of B, and disengage the claw C (3 places) to remove the rear cover ② .

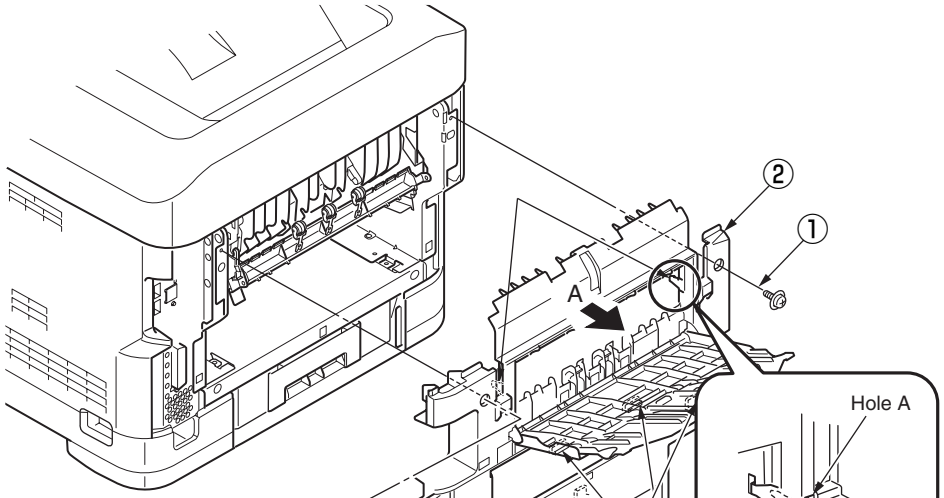


Figure (1)

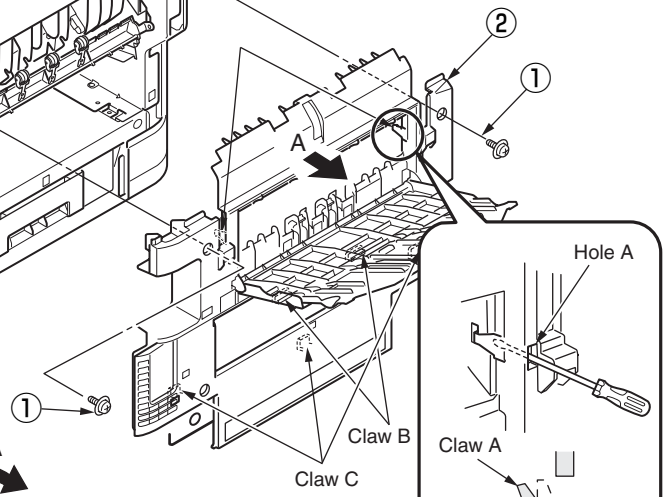


Figure (2)

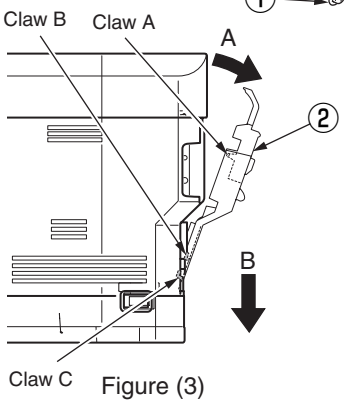


Figure (3)

3.2.7 LED Assy/ LED Assy spring

(1) Open the top cover

(2) After removing the cable, as shown in the below figure (A), push the LED assy ① tightly in the direction of arrow. Take the hook A out firstly, and then take the hook B out, at last remove the LED assy.

(At this time, the two springs ② is removed with LED Assy ① .)

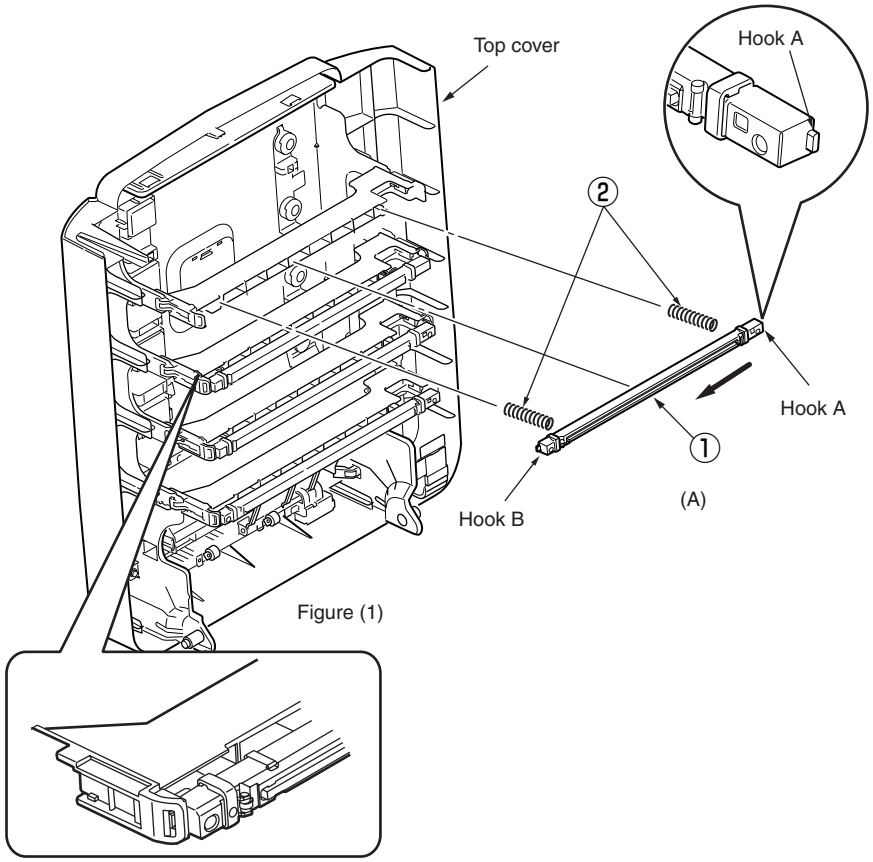


Figure (1)

3.2.8 Control PCB

(1) Open the top cover.

(2) Remove the right side cover. (See section 3.2.4)

(3) Remove the Rear cover. (See section 3.2.6)

(4) Remove the nine screws ① (silver, No:42920406), remove the connector and disengage the claw A and WLAN cable to take the plate-shield ② out.

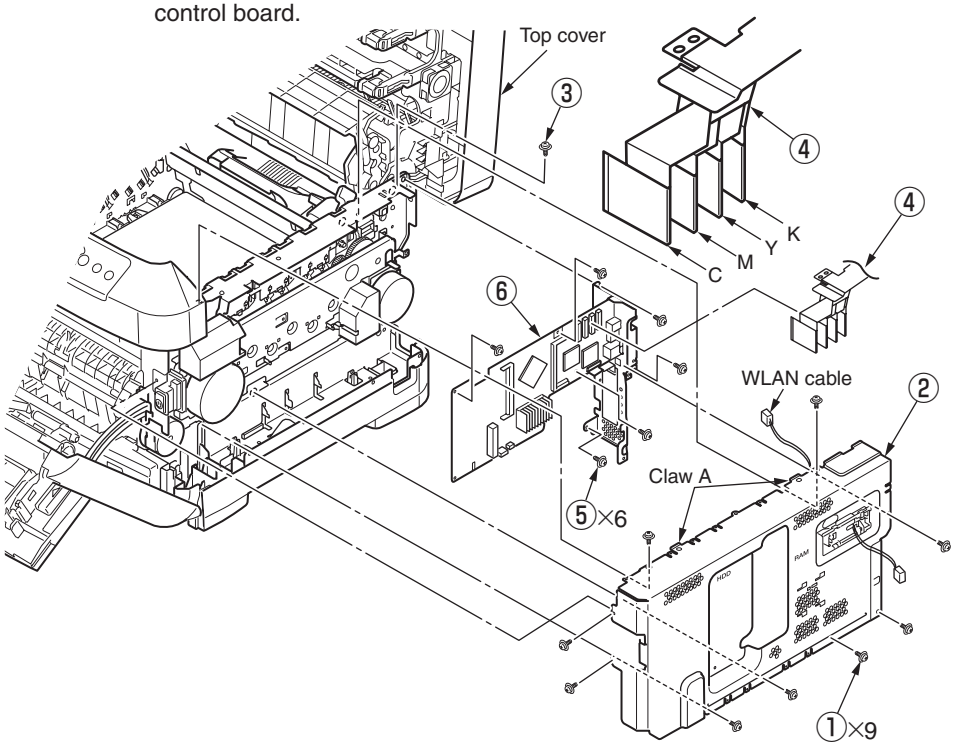
(5) Remove the screw ③ (silver, No:42920406) and disconnect the head cable ④ .

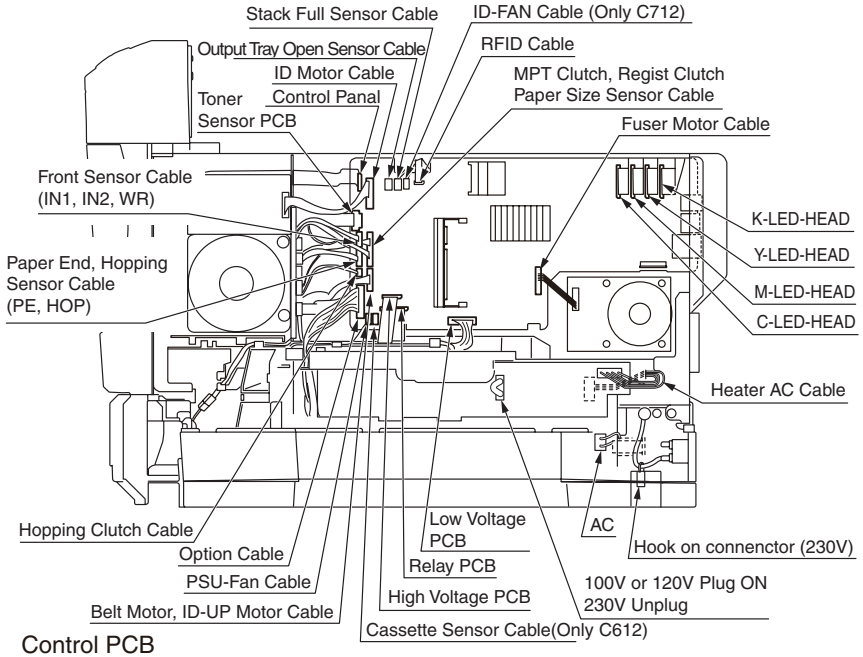
(6) Remove the six screws ⑤ (silver, No:42920406) and all cables, and take the control PCB ⑥ out.

Note! • To attach the head cable, insert the end of the film-FG inside the plate-side-R, preventing from touching the edge of the plate-side-R.

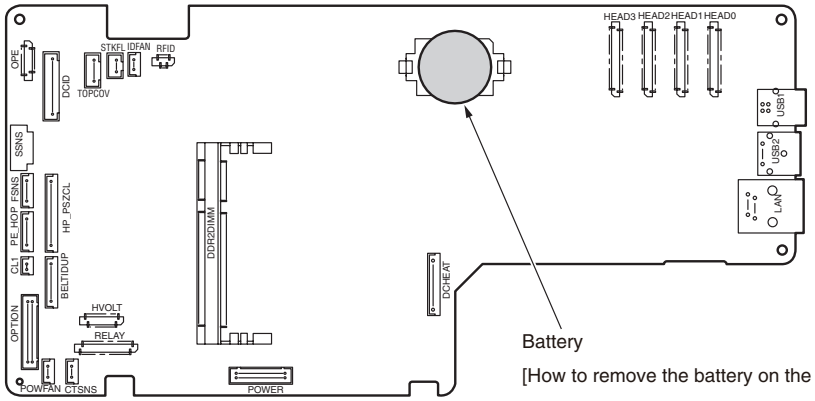
• To remove the plate-shield ② , open only the upper part side slowly, and pull out the wireless LAN cable. The wireless LAN cable is connected to the printer control board.

• To attach the plate-shield ② ,attach the wireless LAN cable to the printer control board.





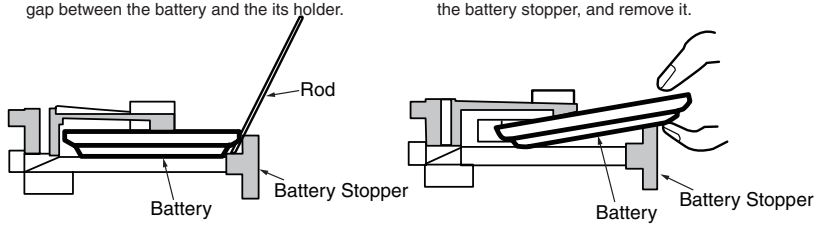
Control PCB



[How to remove the battery on the Control PCB]

(1) Insert finger, a needle or a rod in the gap between the battery and the its holder.

(2) Raise the battery up so that it is put on the battery stopper, and remove it.



3.2.9 Top cover Assy

(1) Remove the left side cover. (See section 3.2.3)

(2) Remove the right side cover. (See section 3.2.4)

(3) Remove the rear cover. (See section 3.2.6)

(4) Remove the plate shield and take the control PCB out. (See section 3.2.8)

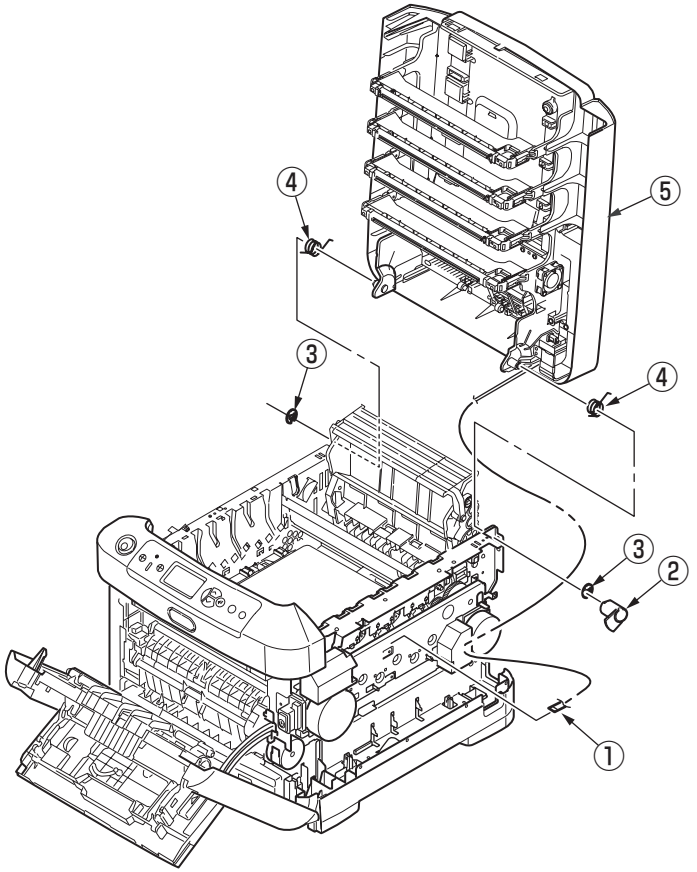
(5) Remove the connectors of the stack full sensor cable and ID-FAN cable, remove the connector and the hanging RFID cable ① .

(6) Remove the lever ② included in the right post of the rotary shaft of the Top cover Assy.

(7) Remove two E type stop rings ③ and two torsion springs ④ , and remove the top cover Assy ⑤ .

Notes! • Perform the following RFID circuit behavior check after replacement of the top cover assy:

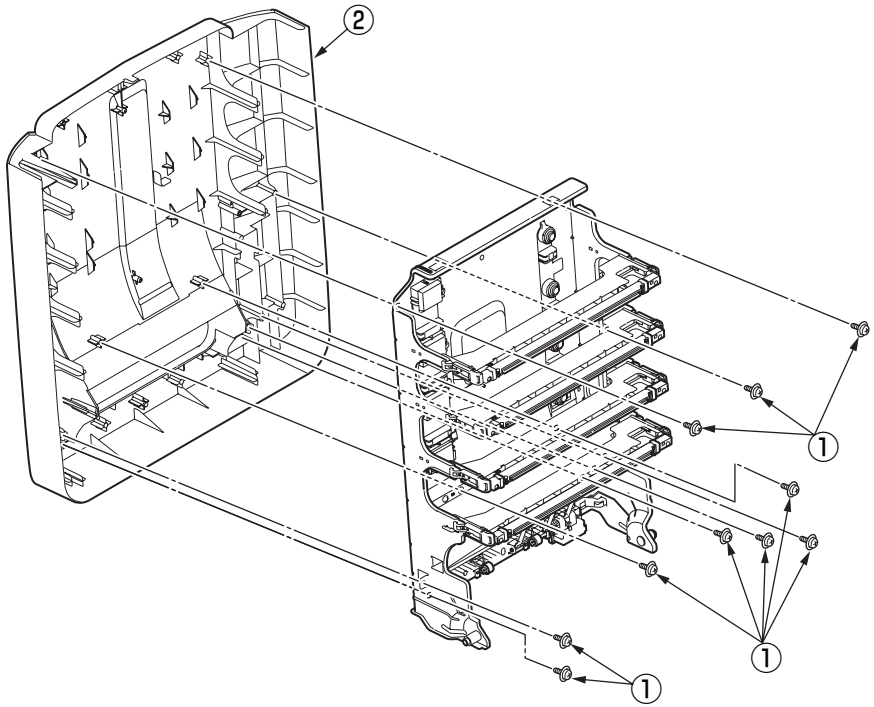
• By executing RFID COLOR for the switch scan test, check that the printer can display UID **H for each of cyan, magenta, yellow and black with nonempty consumable cyan, magenta, yellow and black toner cartridges installed in it. (Refer to the Printer(SFP) Maintenance Manual for common section (46470802TH) for the method of detailed Switch scan test.) The printer cannot detect the UID usage for a color with a starter toner cartridge installed for the color. Note the printer's starter cartridge for a color cannot be reinstalled in it once replaced with an empty consumable toner cartridge for the color.



3.2.10.1 Top cover (C712)

(1) Remove the top cover Assy. (See section 3.2.9)

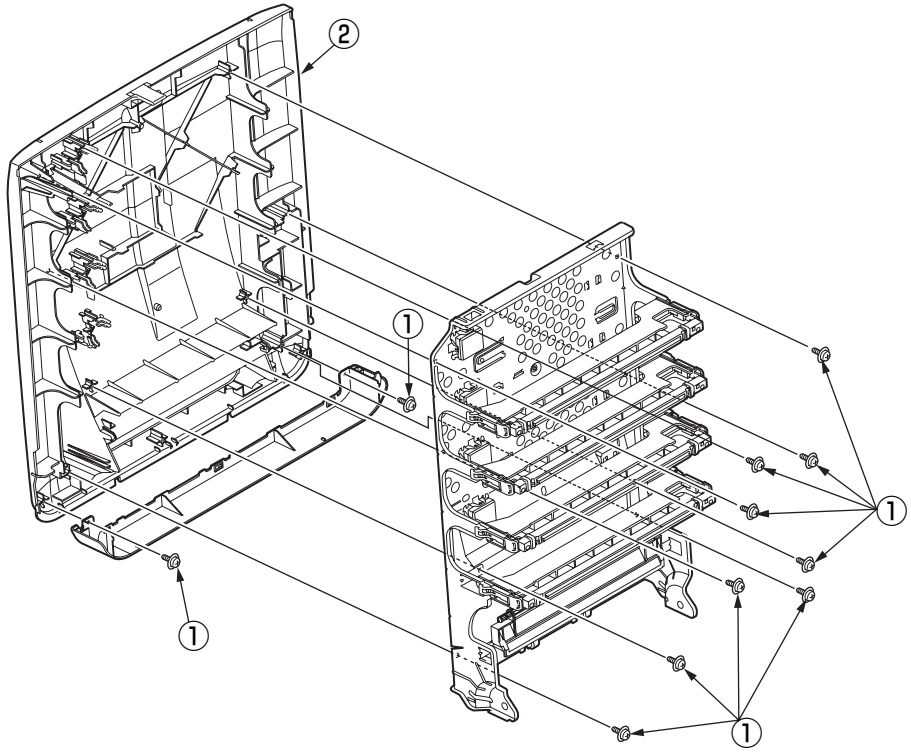
(2) Remove ten screws ① (Black, No:42932708), and remove the top cover ② .



3.2.10.2 Top cover (C612)

(1) Remove the top cover Assy. (See section 3.2.9)

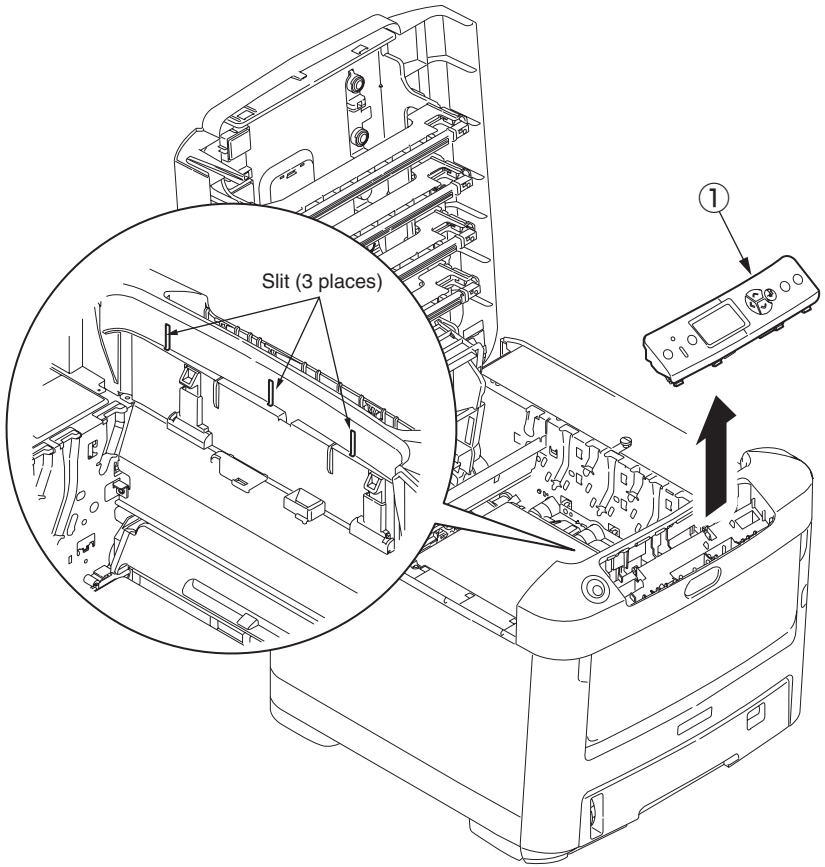
(2) Remove eleven screws ① (Black, No:42932708), and remove the top cover ② .



3.2.11 Control panel Assy

(1) Open the top cover.

(2) Insert the minus driver into the upper side of the slit (3 places) to disengage the claws on the control panel Assy ① , remove the connector and take the control panel Assy ① out.

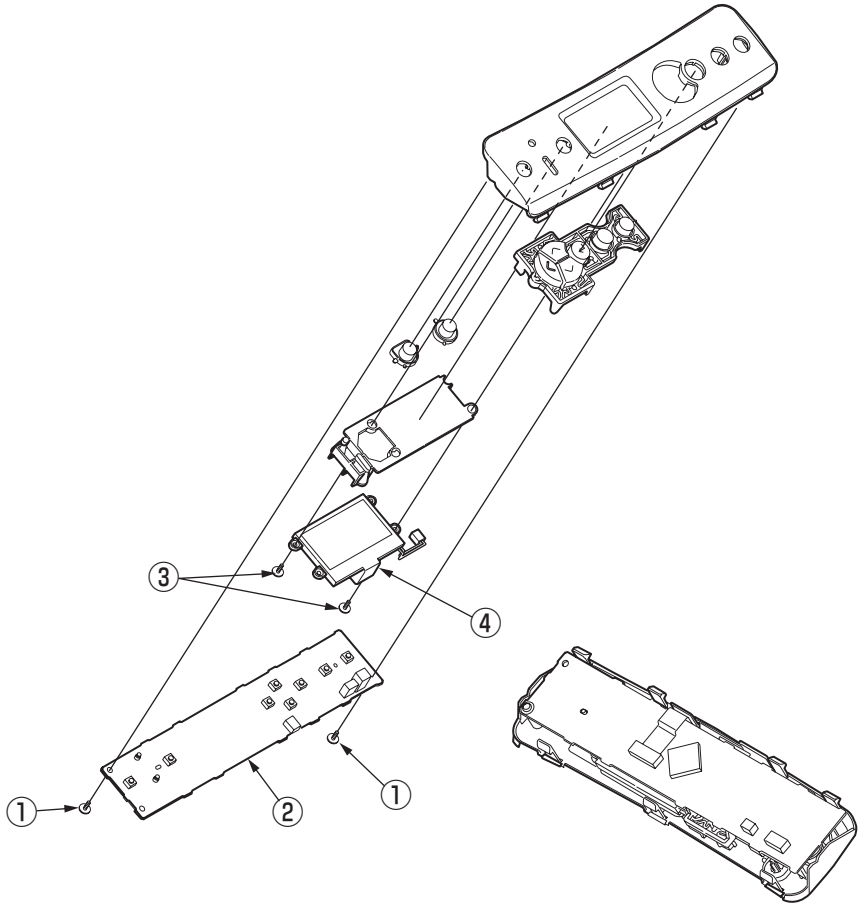


3.2.12 Board IBG/ LCD

(1) Remove the control panel Assy. (See section 3.2.11)

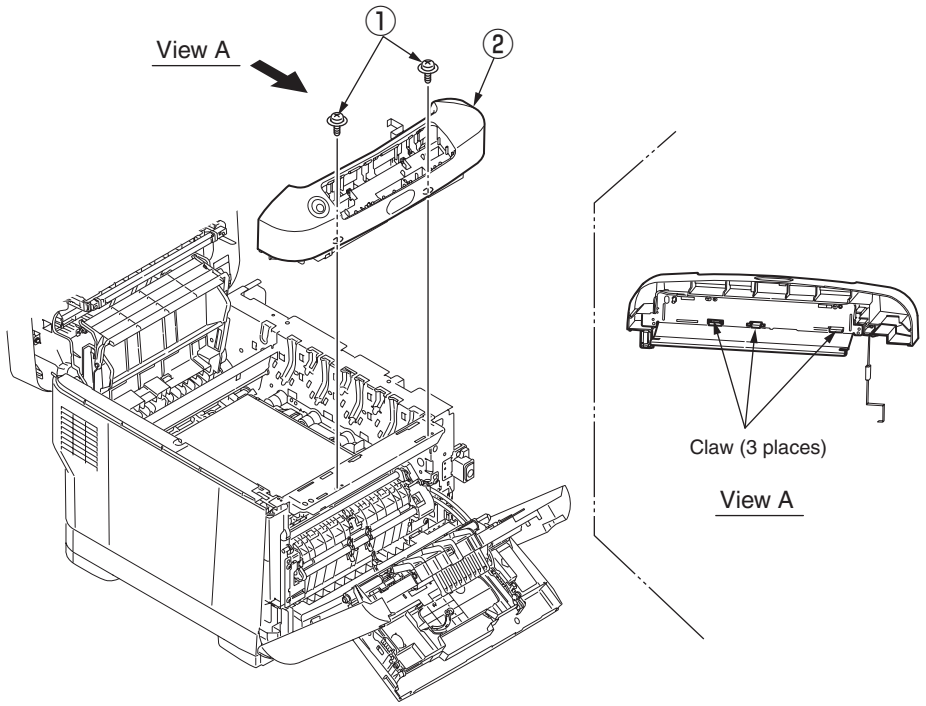
(2) Remove the screws (black, No:42932708) ① (2 places), remove the connector and cable of LCD ④ and remove the Board IBG ② .

(3) Remove the screws (black, No:42932708) ③ (2 places), and remove the LCD ④ .

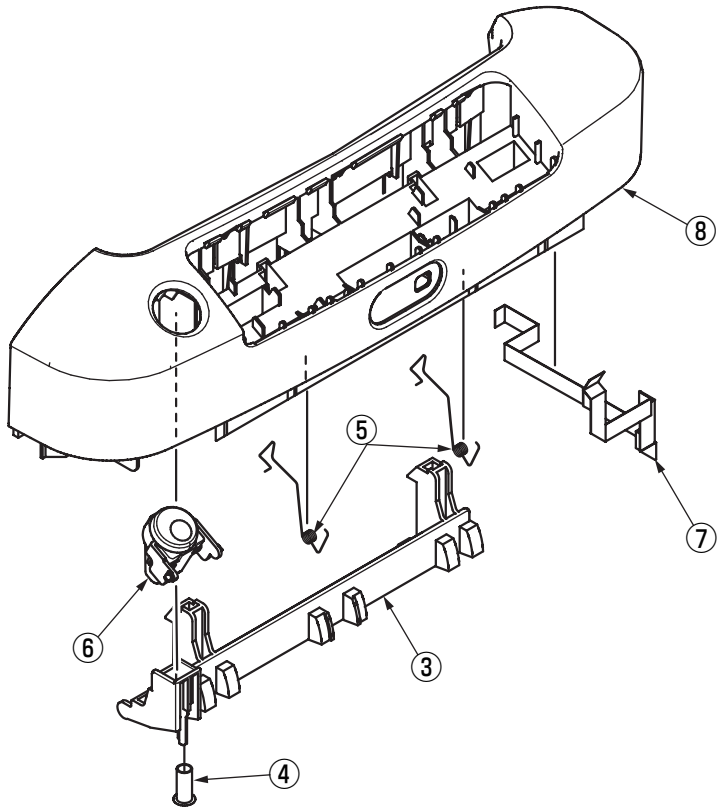


3.2.13.1 Frame panel Assy (C712)

(1) Open the top cover.
(2) Open the feeder unit.
(3) Remove the right side cover. (See section 3.2.4)
(4) Remove the plate shield. (See section 3.2.8 (4))
(5) Remove the connector of frame panel and remove the hanging cable.
(6) Remove the control panel Assy. (See section 3.2.11)
(7) Remove the two screws ① (silver, No:42920406), disengage the claws (3 places) on frame panel Assy, and remove the frame panel Assy ② .



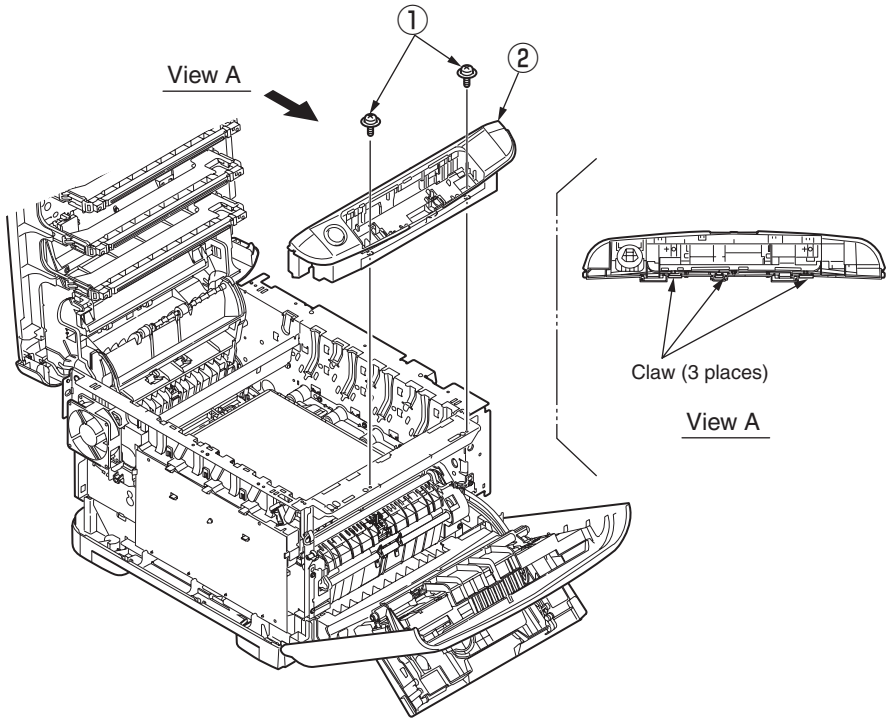
(8) Remove the lever lock ③ , compression spring ④ , torsion spring ⑤ , button switch ⑥ , cable Assy ⑦ from the frame panel ⑧ .



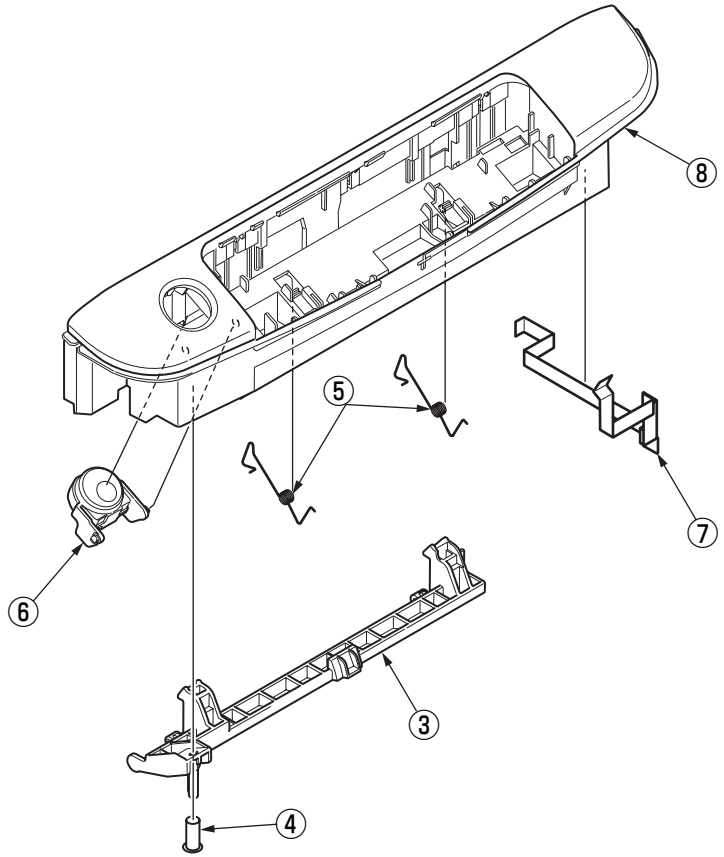
② Frame panel Assy

3.2.13.2 Frame panel Assy (C612)

(1) Open the top cover.
(2) Open the feeder unit.
(3) Remove the left side cover. (See section 3.2.3)
(4) Remove the right side cover. (See section 3.2.4)
(5) Remove the plate shield. (See section 3.2.8 (4))
(6) Remove the connector of frame panel and remove the hanging cable.
(7) Remove the control panel Assy. (See section 3.2.11)
(8) Remove the two screws ① (silver, No:42920406), disengage the claws (3 places) on frame panel Assy, and remove the frame panel Assy ② .



(9) Remove the lever lock ③ , compression spring ④ , torsion spring ⑤ , button switch ⑥ , cable Assy ⑦ from the frame panel ⑧ .



3.2.14 Low voltage power supply/Low voltage FAN/ Hopping motor/ Fuse motor

⚠Warning	Risk of Electric Shock	⚡

There is a risk of electric shock during replacement of the low voltage power supply.

Use insulating gloves or avoid direct contact with any conducting part of the power supply, and caution should be exercised during replacement.

The capacitor may take one minute to complete discharge after the AC cord is unplugged. Also, there is a possibility that the capacitor doesn't discharge because of a breakage of the PCB, etc., so remember the possibility of electric shock to avoid electric shock.

(1) Take the cassette Assy out.

(2) Remove the control PCB. (See section 3.2.8)

(3) Remove all cables from Guide cable PowerLow.

(4) Remove the fuse I/F connector from low voltage power supply, disengage the claws (2 places), and remove the Guide cable PowerLow ① .

(5) Remove the two screws ② (silver, No:42920406) and four connectors (CN1, CN2, CN3), and remove the low voltage power supply ③ .

At the same time, remove the screw ④ (black, No:42932708) and remove the AC inlet Assy ⑤ .

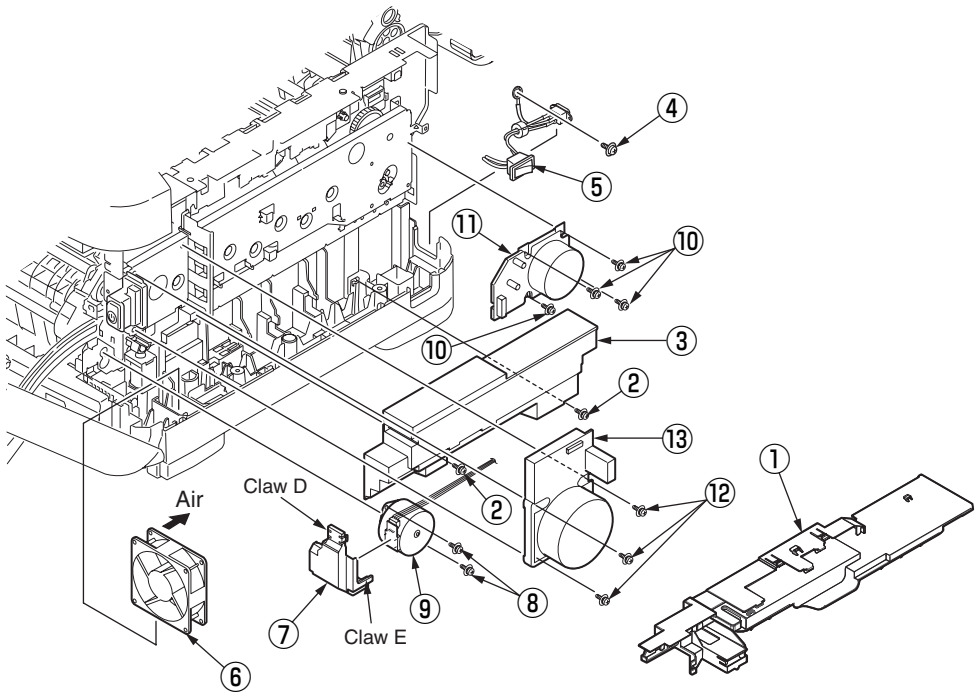
(6) Disengage the claw C and remove the low voltage FAN ⑥ .

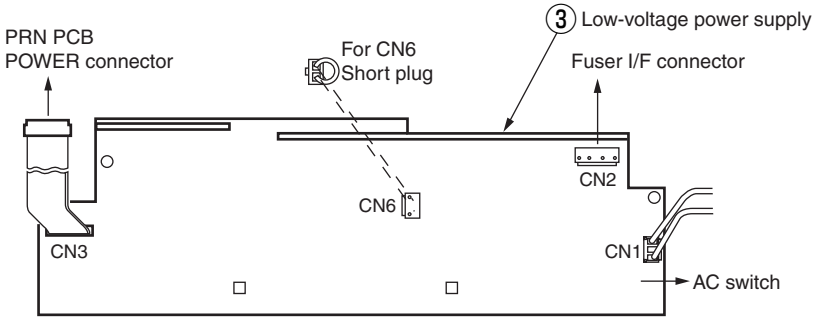
(7) Disengage the claw D (2 places) and claw E, and remove the motor cover ⑦ .

(8) Remove the four screws ⑩ (silver, No:42920406) and connector, and take the fuse motor ⑪ out.

(9) Remove the three screws ⑫ (silver, No:42920406) and connector, and take the ID motor ⑬ out.

Notes! • Be careful to install the low voltage FAN ⑥ in the proper direction.
• Please confirm the setting of AC input voltage when installing the low voltage power supply ③ .
100V: the short plug is mounted to the connector CN6
230V: the short plug is not mounted to the connector CN6
• Low-voltage power supply ③ and AC Inlet Assy ⑤ should be replaced together. (The pair of low-voltage power supply and AC Inlet Assy meets the safety standards.)





Note! CN6: A connector used to switch the AC input voltage setting
100V short plug is mounted/ 230V short plug is not mounted.

3.2.15 Guide eject Assy/ Color regist Assy/ Board-PRY

(1) Remove the left side cover, right side cover, rear cover, top cover Assy. (See section 3.2.3, 3.2.4, 3.2.6, 3.2.9)

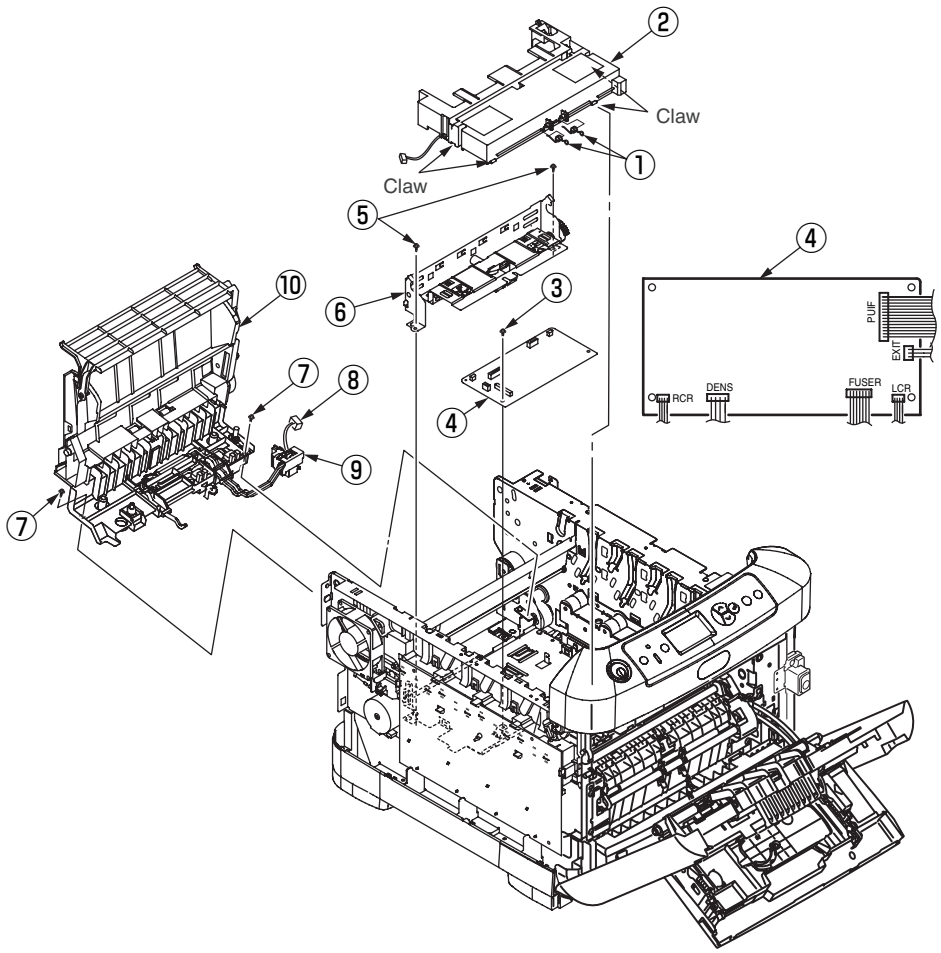
(2) Remove the control PCB and low-voltage power supply. (See section 3.2.8, 3.2.14(3))

(3) Remove the connector of belt thermistor, remove the two torsion springs ① , and disengage four claws (4 places) by minus driver, remove the cover driver ② .

(4) Remove the screws ③ (silver, No:42920406) and connectors (6 places), remove the Board PRY ④ .

(5) Remove the two screws ⑤ (silver, No:42920406) and remove the color regist Assy ⑥ .

(6) Remove the two screws ⑦ (silver, No:42920406), remove the cable ⑧ of fuse I/F connector from clamp, and slide the claw of cable guide ⑨ to disengage, remove the guide eject Assy ⑩ .



3.2.16 FAN(Fuser) / Belt motor / High-voltage board / Lever Assy.-InterLock / Cover open switch

(1) Remove the left side cover. (See section 3.2.3)

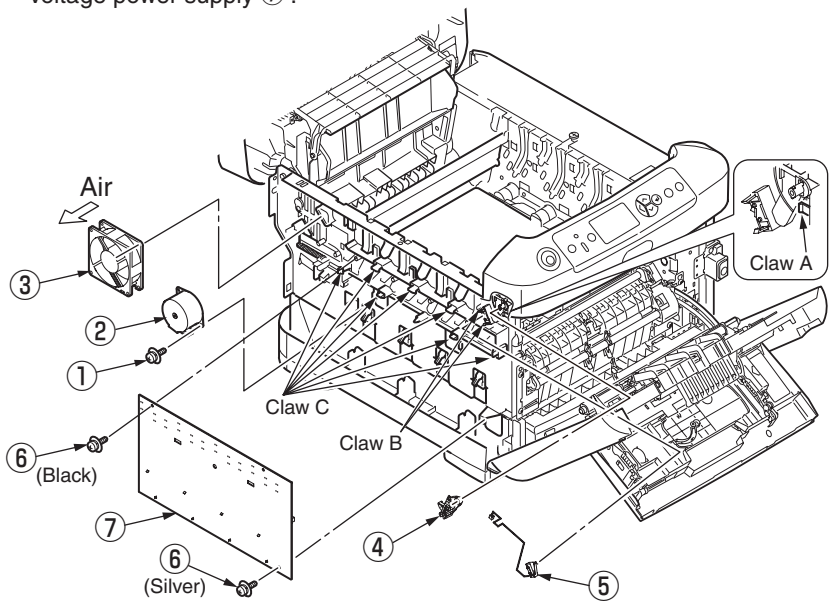
(2) Remove the screw ① (silver, No:42920406) and connector, and remove the belt motor ②.

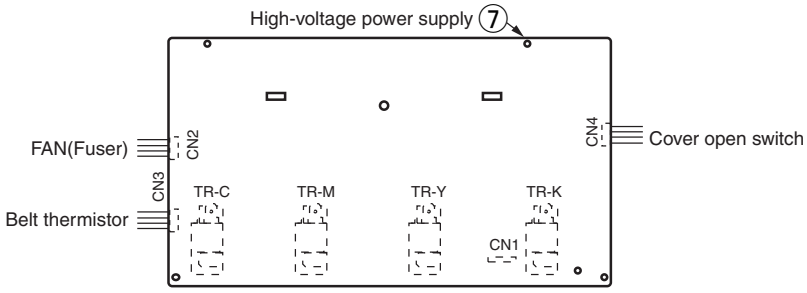
(3) Remove the connector, and rotate the FAN (Fuser) ③ clockwisely to remove.

(4) Push the claw A to the inside and rotate Lever Assy.-InterLock ④ counterclockwisely while pulling Lever Assy.-InterLock ④ to the near side to remove.

(5) Remove the connector and disengage the claw B (2 places), and remove the cover open switch ⑤ .

(6) Remove the 2 screws ⑥ (silver, No:42920406 and black, No:42932708) and connectors (2 places), and disengage the claw C (7 places). Remove the high-voltage power supply ⑦ .

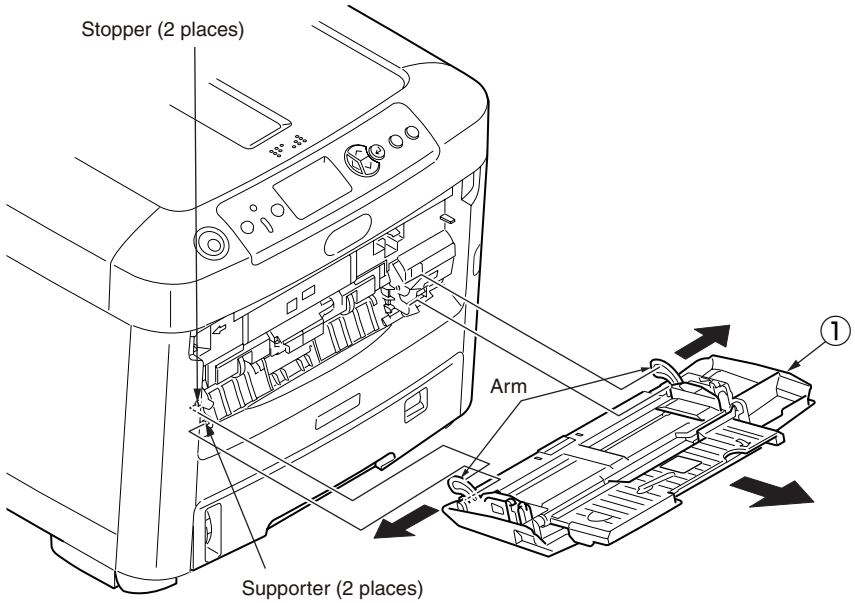




3.2.17 MPT Assy

(1) Open the MPT Assy ① .

(2) Remove the stoppers (2 places) while pushing the arms (2 places) on MPT Assy ① outside, pull the supporters (2 places) in the direction of the arrow and remove them, and remove the MPT Assy ① .



3.2.18.1 Cover Assy front/ Board-RSF/MPT hopping roller/ Frame Assy separator/ Feeder Assy regist (C712)

(1) Open the top cover.

(2) Remove the plate shield and remove the connector. (See section 3.2.8)

(3) Disengage the claws of stay L ① .

(4) Remove the motor cover. (See section 3.2.14)

(5) Remove the four screws ⑪ (silver, No:42920406) and remove the feeder unit ⑫ .

(6) Disengage the claw, and remove the cover sensor ⑬ .

(7) Remove the connector and remove the Board-RSF ⑭ .

(8) Remove the MPT Assy. (See section 3.2.17)

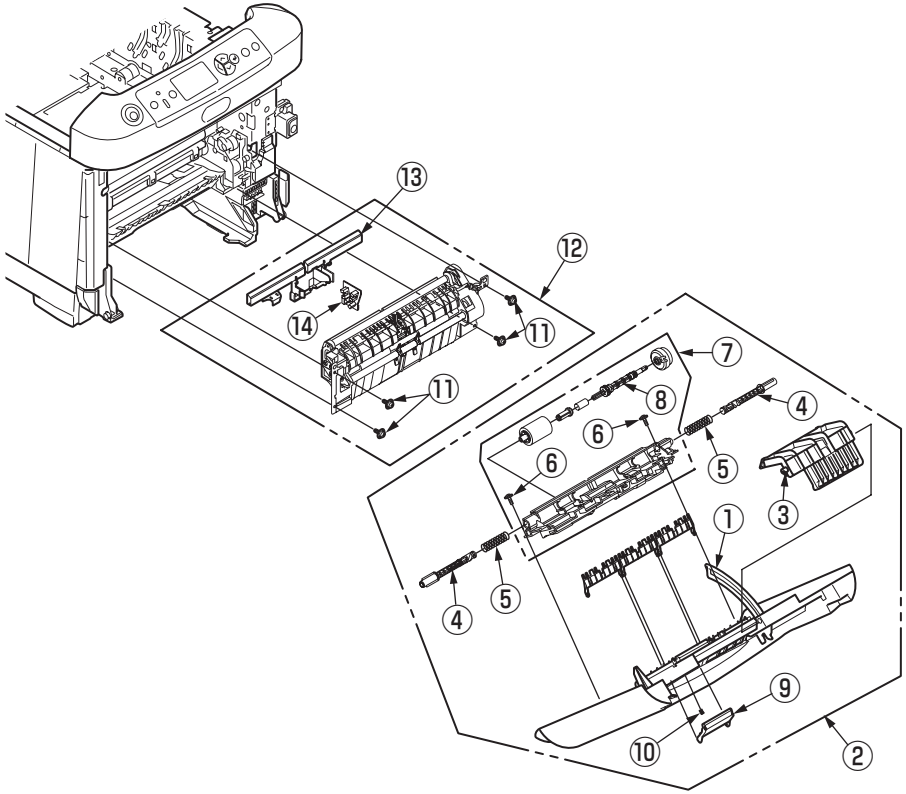
(9) Rotate until the claw of lever ③ is disengaged, and remove it.

(10) Remove the two screws ⑥ (black, No:42932708), and remove the guide Assy top ⑦ .

(11) Remove the two lock shafts ④ and two springs ⑤ .

(12) Remove the hopping roller shaft ⑧ .

(13) Remove the supporters (2 places), and remove the frame Assy separator ⑨ and spring ⑩ .



3.2.18.2 Cover Assy front/ Board-RSF/MPT hopping roller/ Frame Assy separator/ Feeder Assy regist (C612)

(1) Open the top cover.

(2) Remove the plate shield and remove the connector. (See section 3.2.8)

(3) Disengage the claws of stay L ① .

(4) Remove the motor cover. (See section 3.2.14)

(5) Remove the three screws ⑪ (silver, No:42920406) and screw ⑮ (silver, No:42920408).

(6) Remove the Left side cover ⑯ and remove the feeder unit ⑫ .

(7) Disengage the claw, and remove the cover sensor ⑬ .

(8) Remove the connector and remove the Board-RSF ⑭ .

(9) Remove the MPT Assy. (See section 3.2.17)

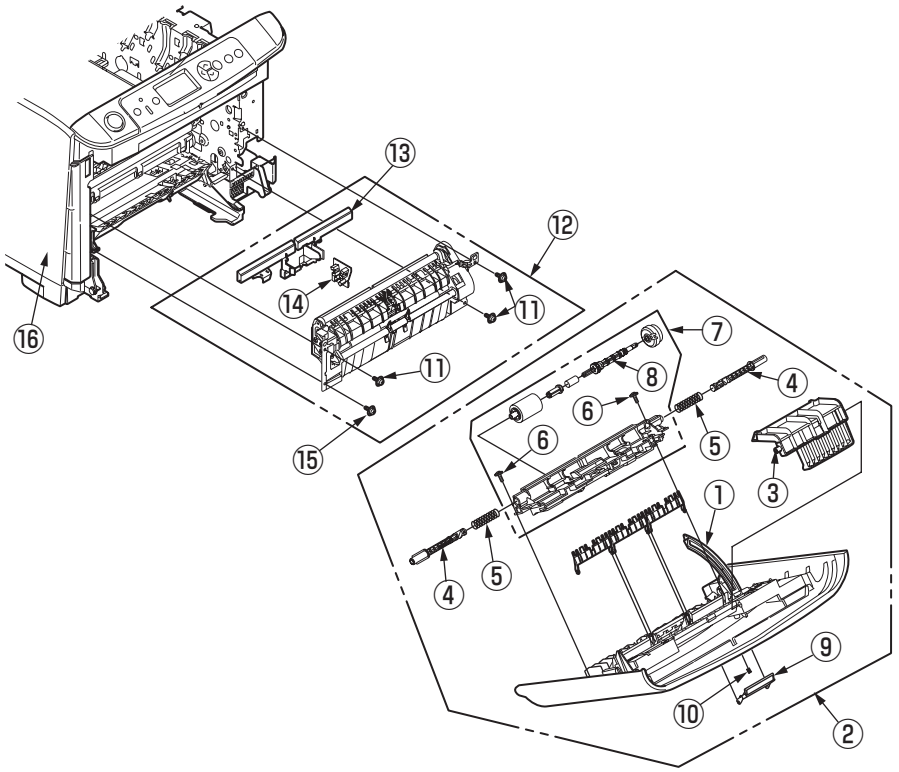
(10) Rotate until the claw of lever ③ is disengaged, and remove it.

(11) Remove the two screws ⑥ (black, No:42932708), and remove the guide Assy top ⑦ .

(12) Remove the two lock shafts ④ and two springs ⑤ .

(13) Remove the hopping roller shaft ⑧ .

(14) Remove the supporters (2 places), and remove the frame Assy separator ⑨ and spring ⑩ .



3.2.19 Board-PRZ/ Liftup motor/ Hopping motor/ Paper end sensor/ Hopping sensor

(1) Remove the left side cover, right side cover, rear cover, top cover unit, feeder Assy regist. (See section 3.2.3, 3.2.4, 3.2.6, 3.2.9, 3.2.18)

(2) Remove the control PCB. (See section 3.2.8)

(3) Remove the guide cable Power Low, low-voltage power supply, low-voltage FAN. (See section 3.2.14)

(4) Remove the cover driver, Board-PRY, color regist Assy, eject Assy. (See section 3.2.15)

(5) Remove the two screws ① (silver, No:42920406), and remove the plate driver ②.

(6) Remove the connector of 2ND tray and remove the hopping cover ③.

(7) Remove the FAN(Fuser). (See section 3.2.16)

(8) Remove the latches (2 places) and remove the gear ④, remove the E Ring (RE3-SK), remove the latch and remove the gear ⑤.

(9) Remove the ten screws ⑩ (silver, No:42920406), plate outer ⑪, E Ring (RE3-SK), remove the latch of gear ⑥ and remove the shaft ⑦.

(10) Remove the two screws ⑧ (silver, No:42920406) and remove the side plate R Assy ⑨.

(11) Remove the two gear idle IDs ⑫, two gear idle IDs ⑬, two gears ⑭, gear ⑮, two colors ⑯, one washer ⑰, gear ⑱, ⑲, ⑳, and ㉑.

(12) Remove the latches (2 places), and remove the guide Assy side R ㉒ while slide it up.

(13) Remove the latche (6 places), and remove the board-PRZ ㉓.

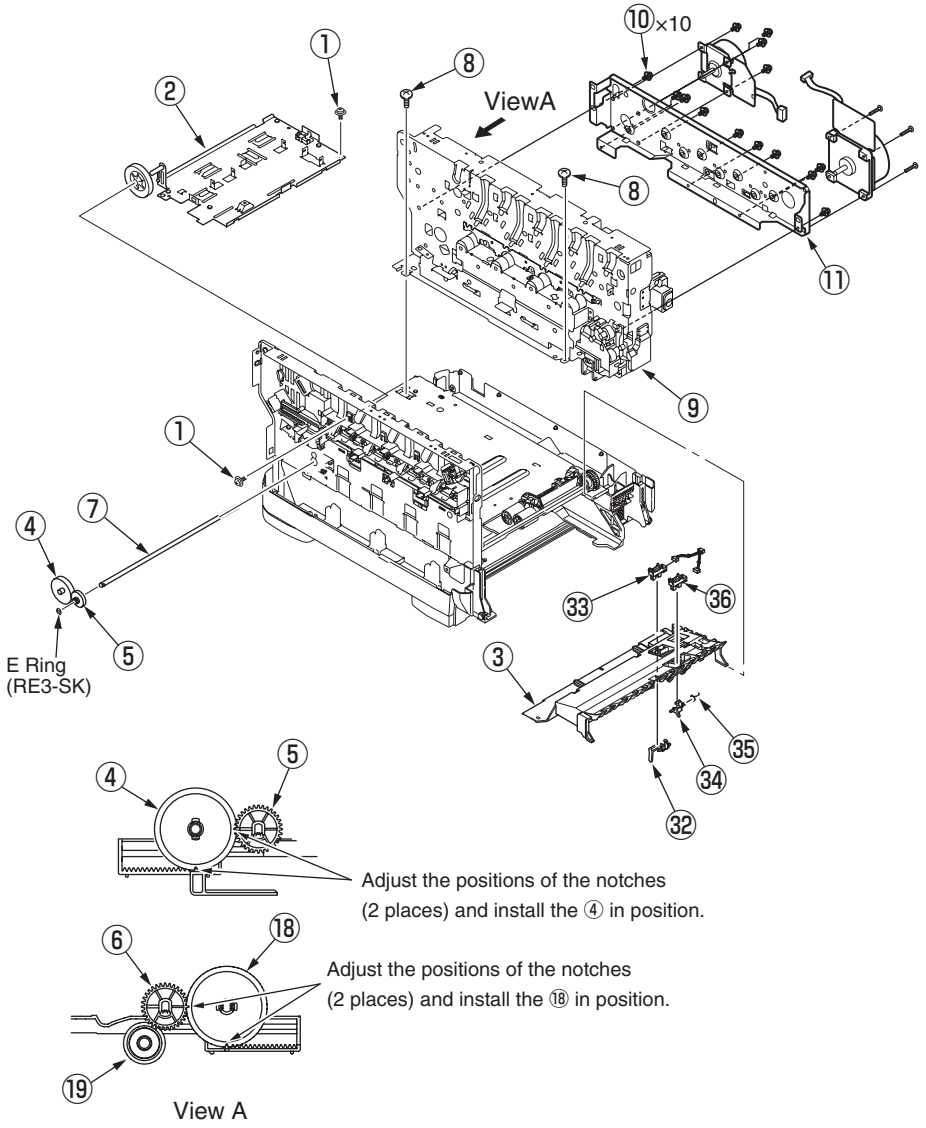
(14) Remove the screw ㉔ (silver, No:42920406), and remove the plate lockout ID ㉕ and four screws ㉖ (silver, No:42920406), remove the inner plate ㉗.

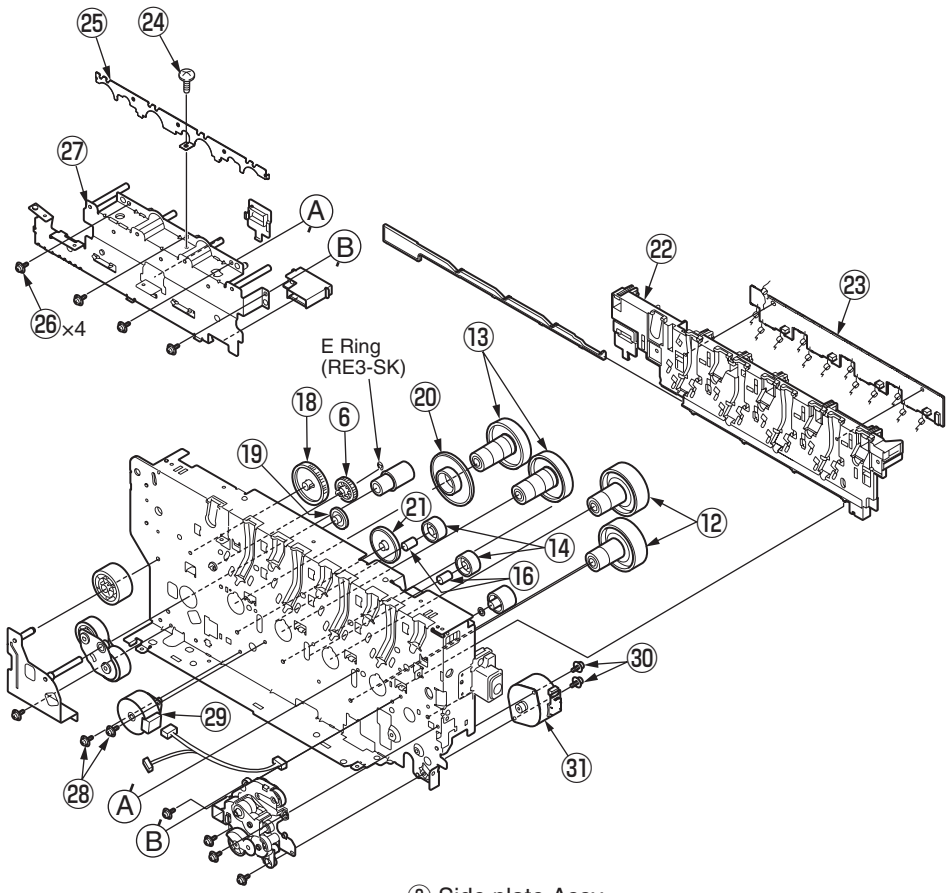
(15) Remove the two screws ㉘ (silver, No:42920406) and connector, and remove the liftup motor ㉙.

(16) Remove the screw ㉚ (silver, No:42920406) and remove the hopping motor ㉛.

(17) Remove the paper end sensor lever ㉜, remove the paper end sensor ㉝ and remove the connector.

(18) Remove the hopping sensor lever ㉞, the hopping sensor lever spring ㉟, remove the hopping sensor ㊱ and remove the connector.



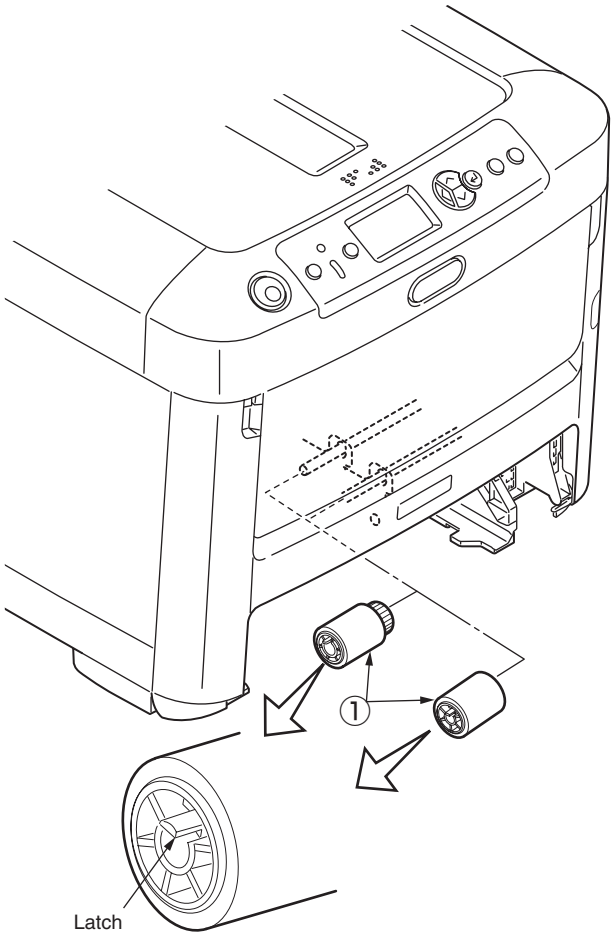


⑨ Side plate Assy

3.2.20 Feed roller

(1) Remove the cassette.

(2) Remove the latch and remove the feed roller (2 pieces) ① .



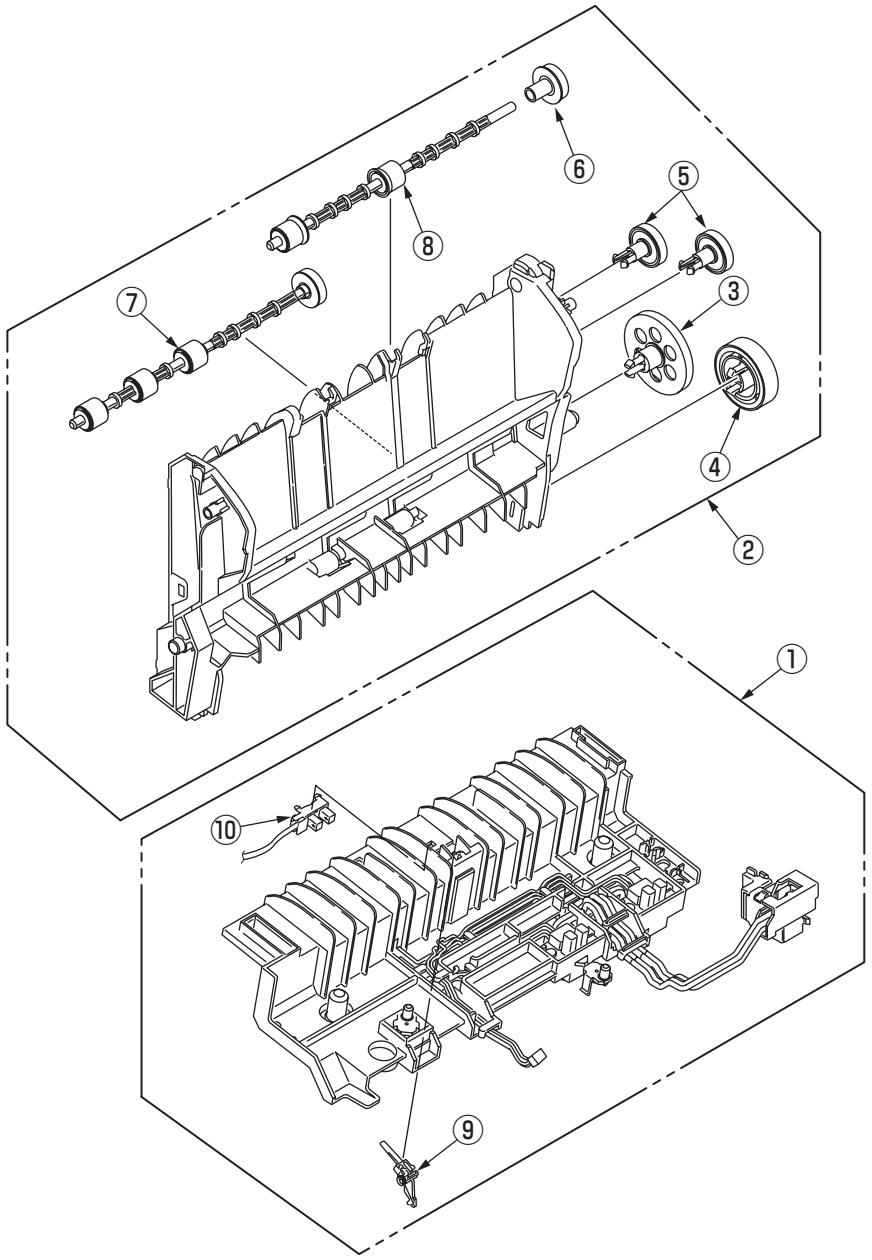
3.2.21.1 Shaft eject Assy (FU)/ Shaft eject Assy(FD)/ Eject sensor (C712)

(1) Remove the eject Assy. (See section 3.2.15)

(2) Disengage the claws (2 places), and disassemble the Assy into guide eject lower ① and guide eject upper ② .

(3) Remove the gear idle eject ③ , ④ , ⑤ , ⑥ and remove the shaft Assy eject (FU) ⑦ and shaft Assy eject (FD) ⑧ .

(4) Remove the lever eject sensor ⑨ and eject sensor ⑩ .



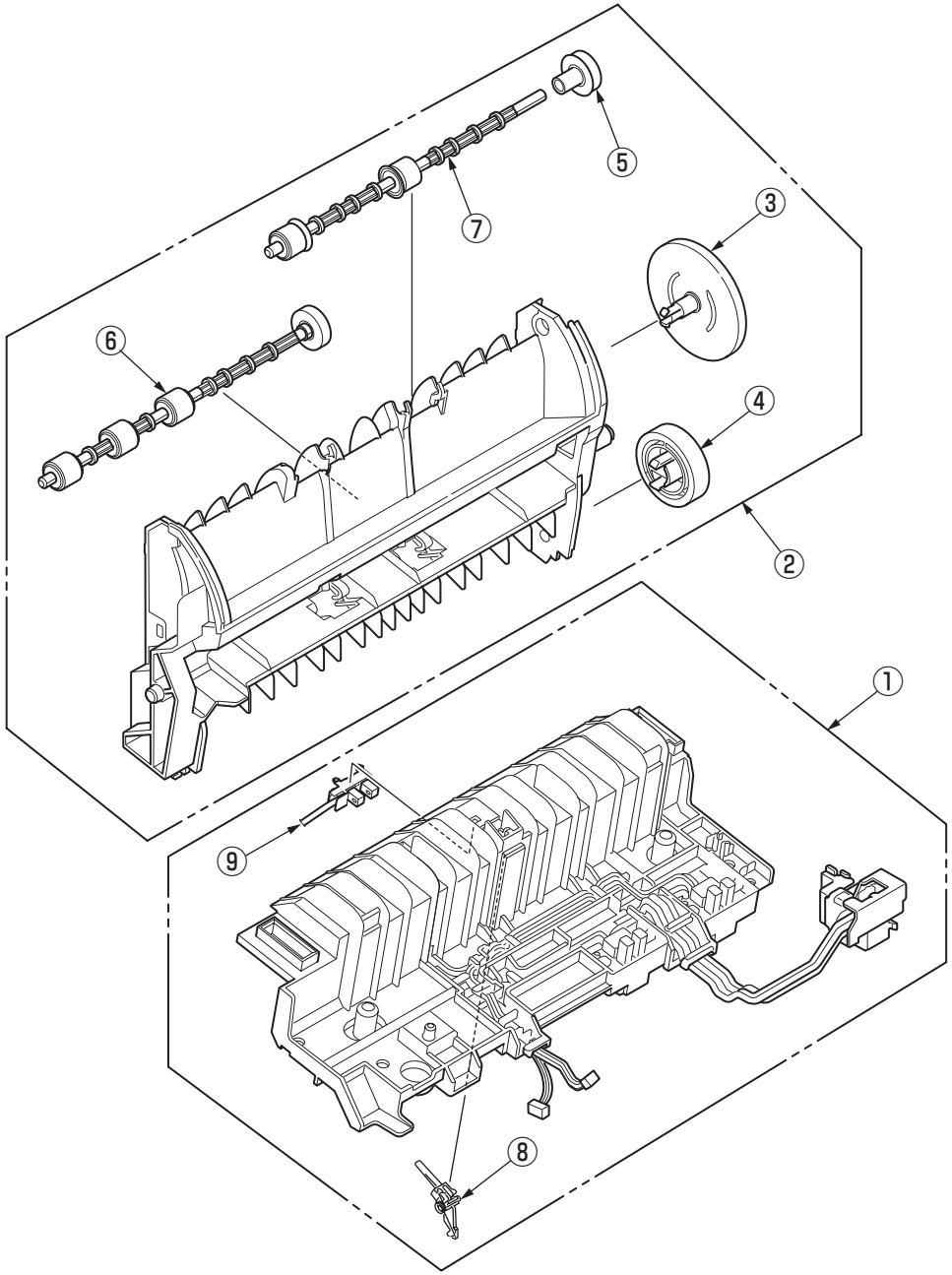
3.2.21.2Shaft eject Assy (FU)/ Shaft eject Assy(FD)/ Eject sensor (C612)

(1) Remove the eject Assy. (See section 3.2.15)

(2) Disengage the claws (2 places), and disassemble the Assy into guide eject lower ① and guide eject upper ② .

(3) Remove the gear idle eject ③ , ④ , ⑤ and remove the shaft Assy eject (FU) ⑥ and shaft Assy eject (FD) ⑦ .

(4) Remove the lever eject sensor ⑧ and eject sensor ⑨ .



3.3 Oiling spots

This chapter shows the oiling spots. Do not oil the other spots that are not shown here.

It is not necessary to inject the machine-oil during disassembling. However, please add the specified oil when you wipe the oil off.

Oiling operation

(1) Oil type and name

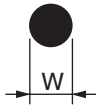
EM-30L: MOLYKOTE

HP-300: MOLYKOTE

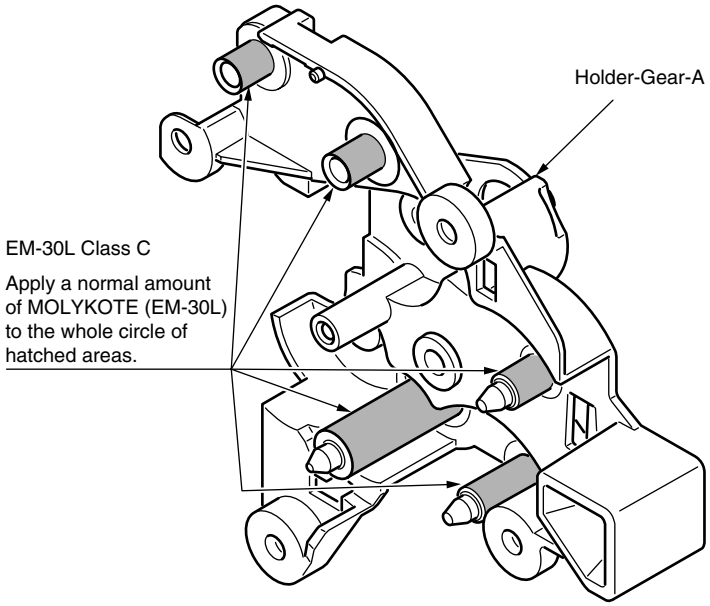
PM: Pan motor oil 10W-40 or ZOA 10W-30

(2) Grease limit sample

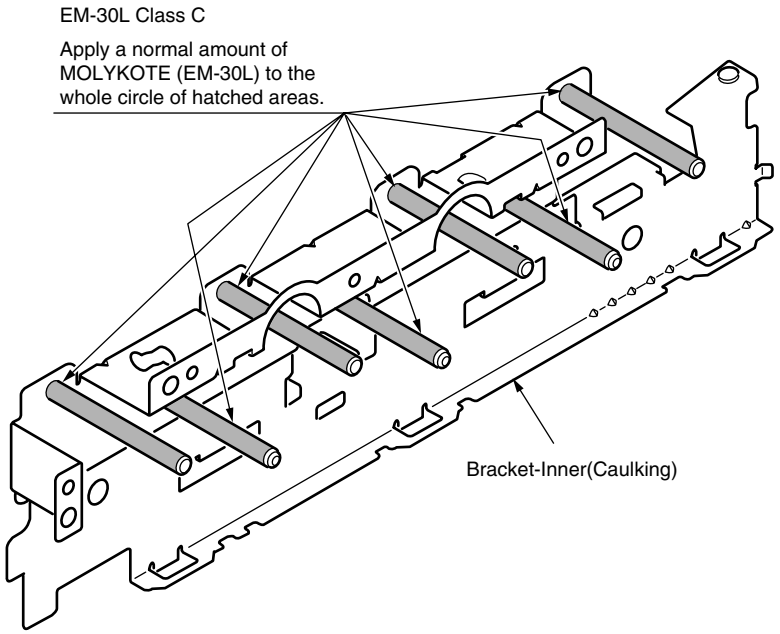
Class	S	A	B	C	D	E	F
Amount of grease (cc)	0.0005	0.003	0.005	0.01	0.03	0.05	0.1
W(mm)	1.24	2.25	2.67	3.37	4.86	5.76	7.26
Sample	•	●	●	●	●	●	●



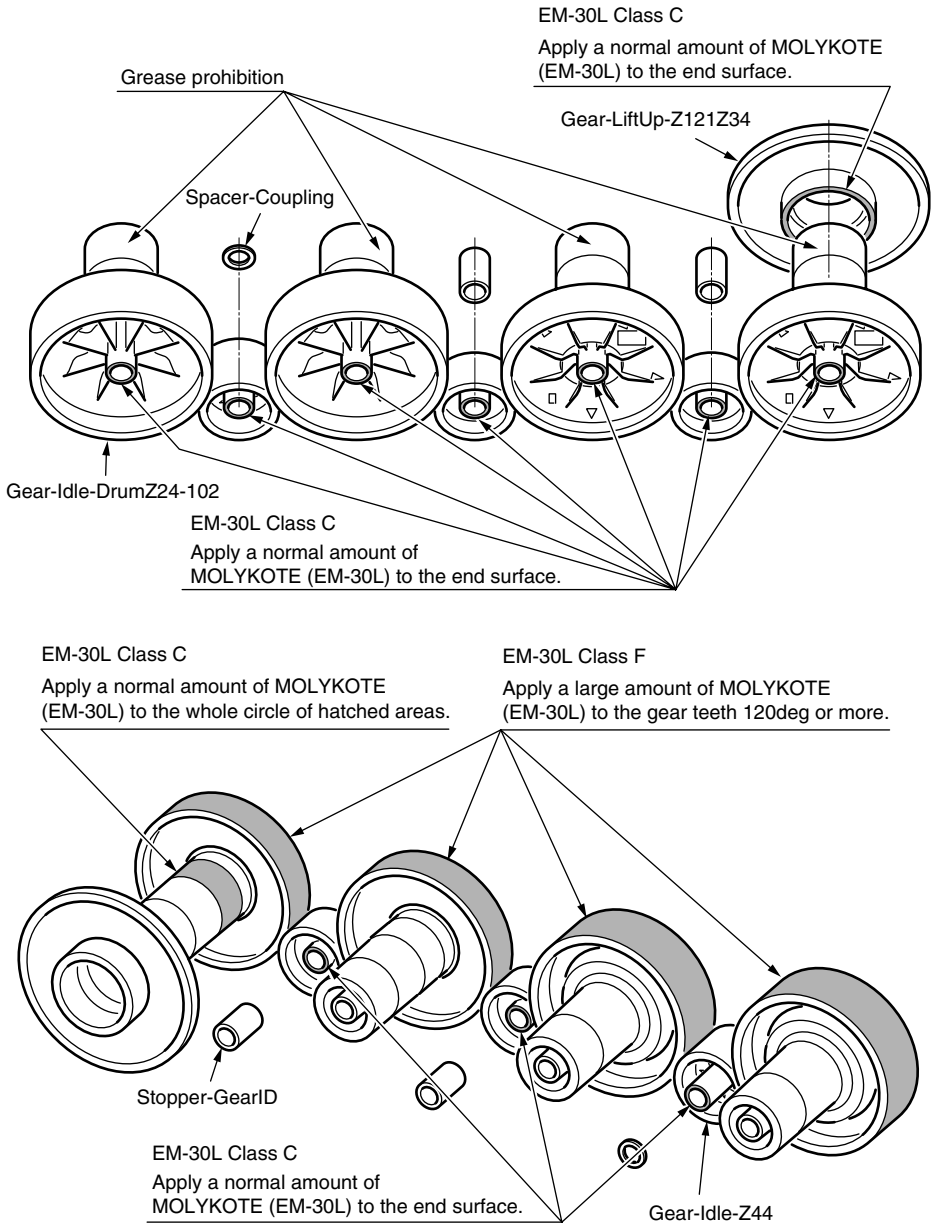
① 44259301PA Gear Assy.-HP



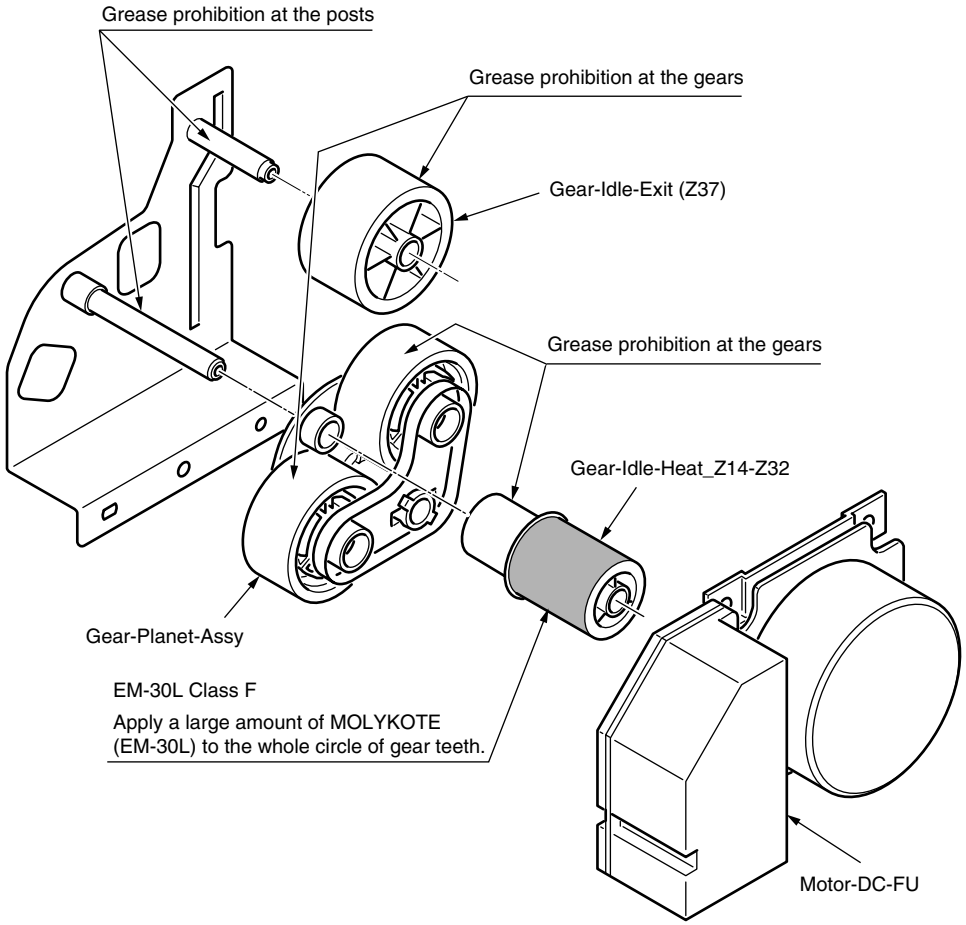
②-1 44259101PA Plate-Assy.-Side R



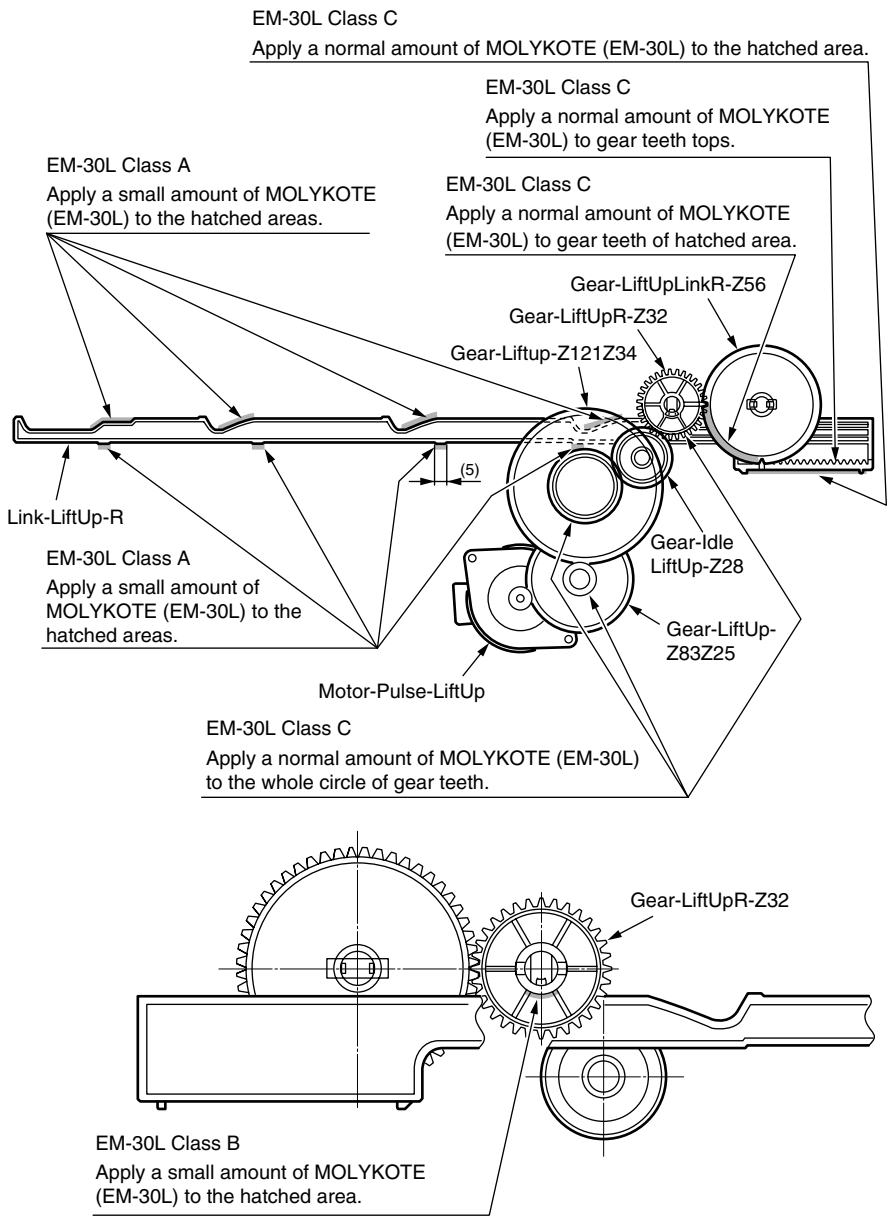
② -2 44259101PA Plate-Assy.-Side R



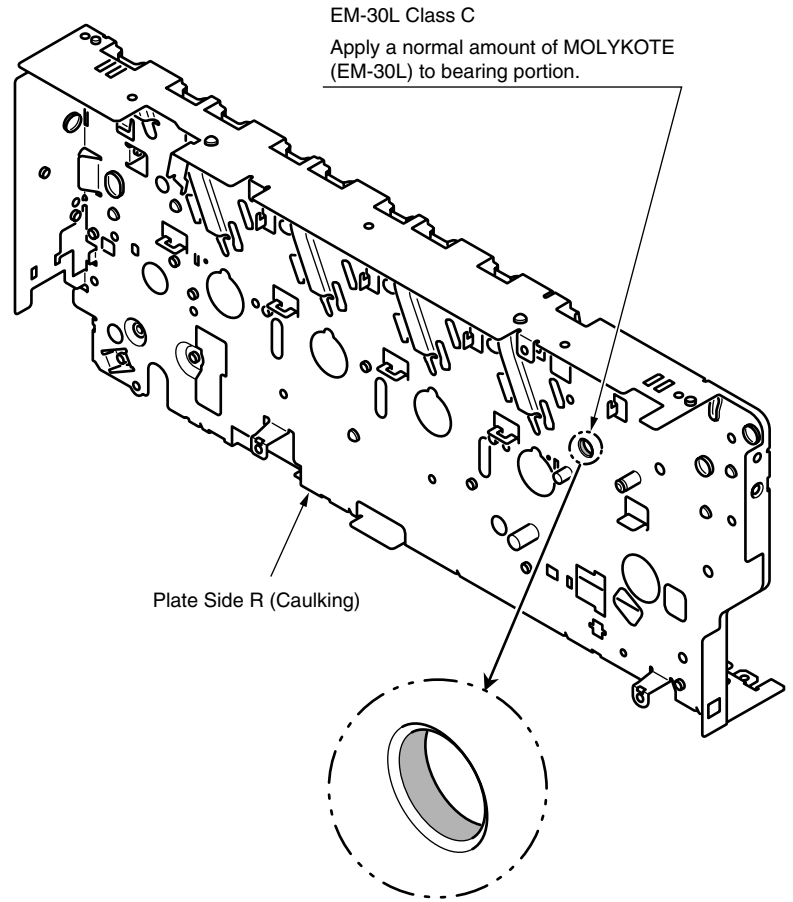
② -3 44259101PA Plate-Assy.-Side R



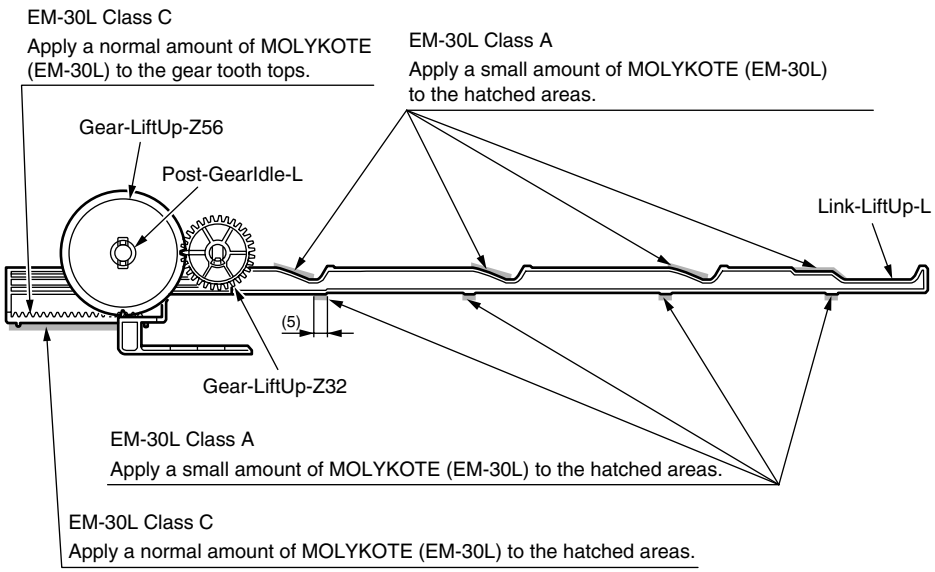
② -4 44259101PA Plate-Assy.-Side R

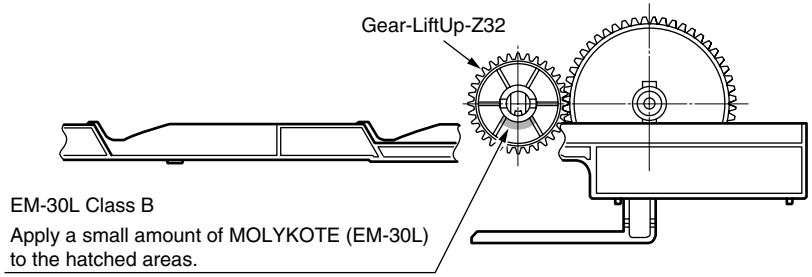


② -5 44259101PA Plate-Assy.-Side R

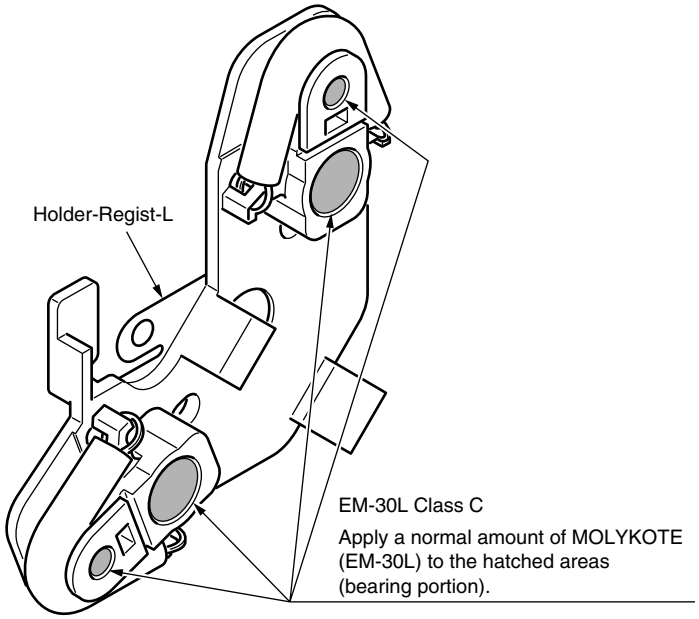


③ 43074904PA Plate-Assy.-Side-L

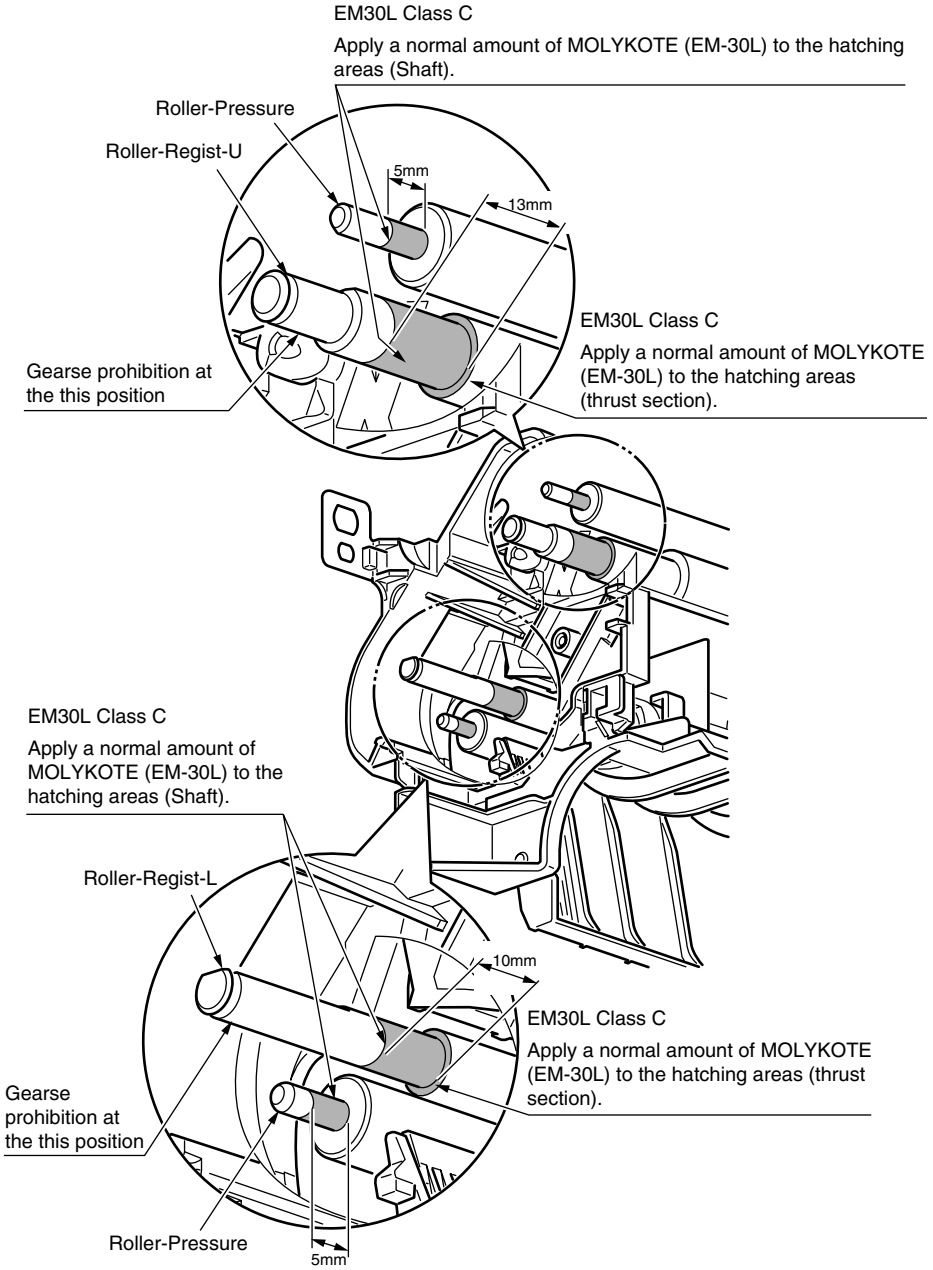




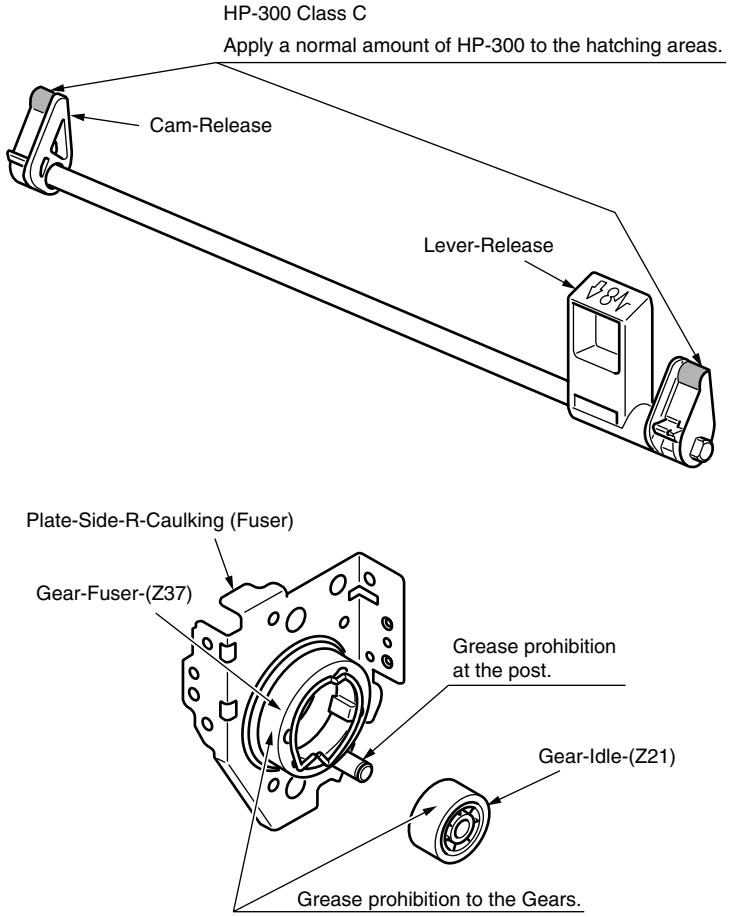
④ 42071401PA Holder Assy.-Regist-L



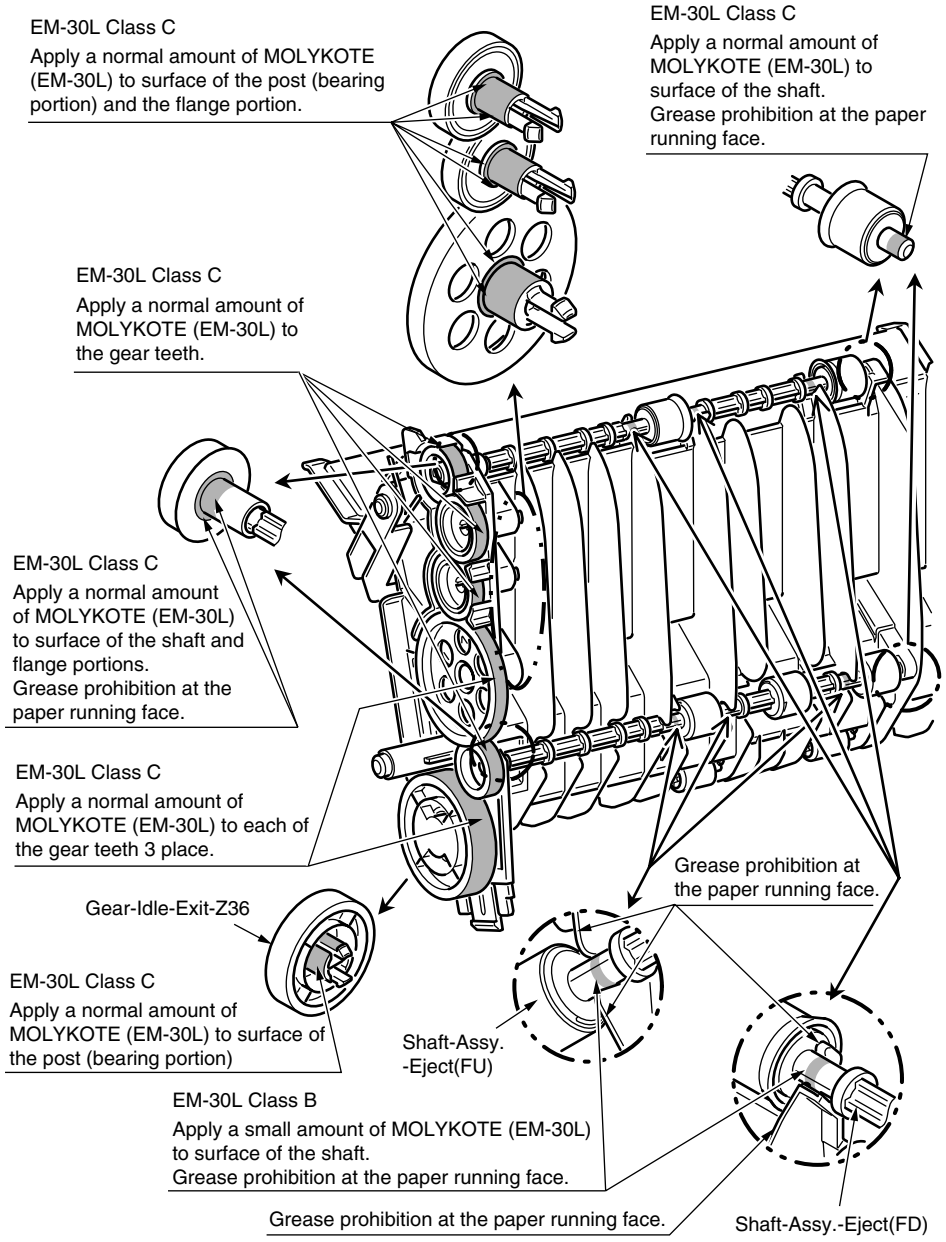
⑤ 44261901PA Feeder Assy.-Regist



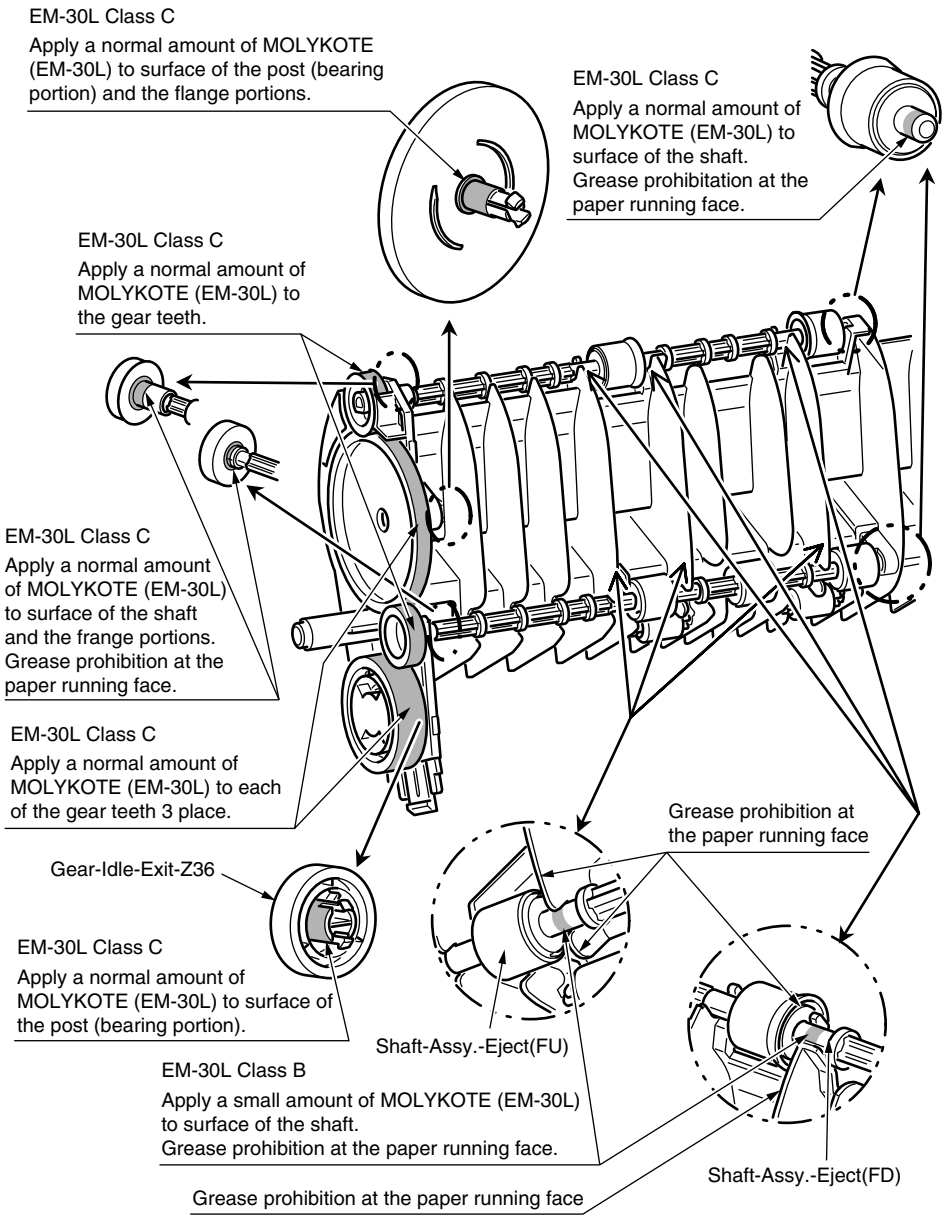
⑥ 44286901PA Fuser-Assy



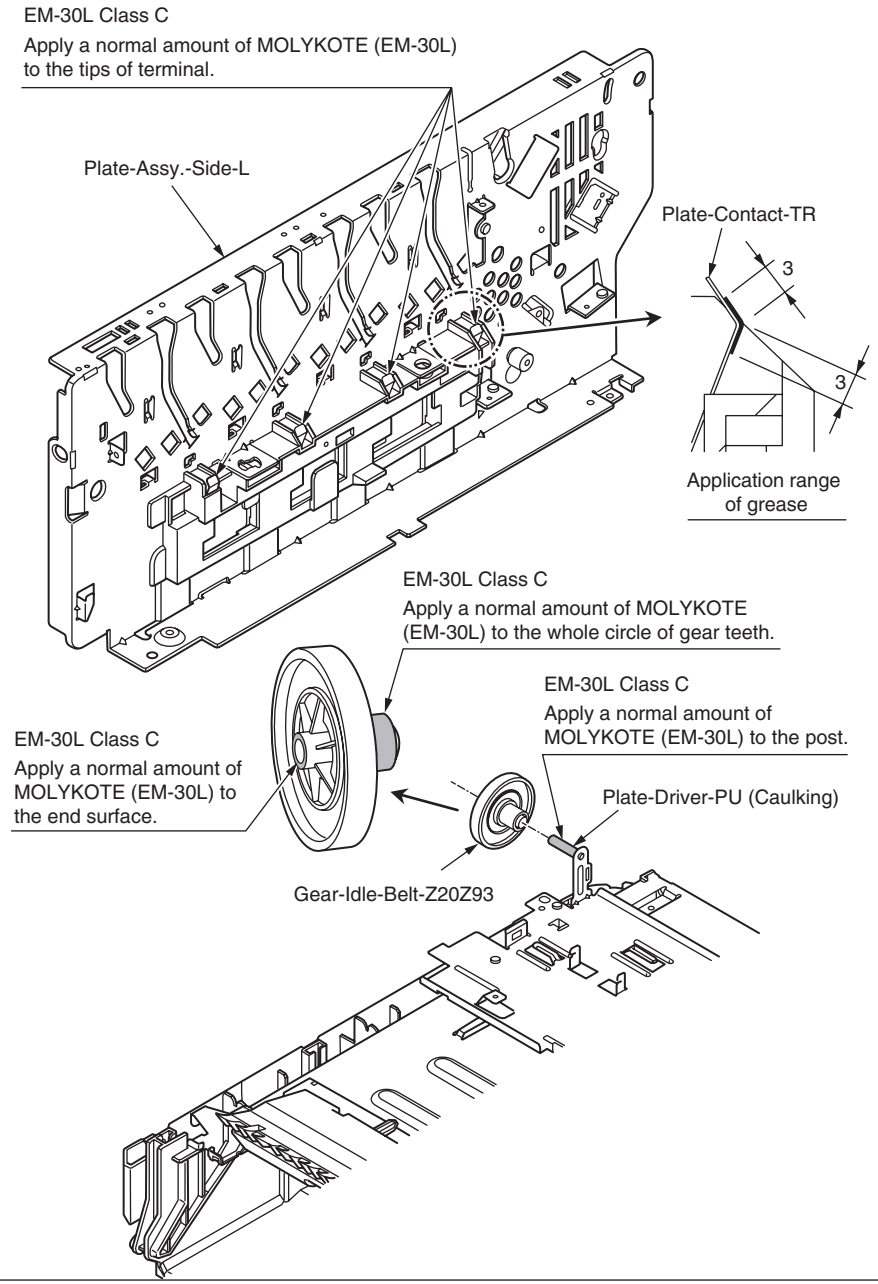
⑦ 1.44263501PA Guide-Assy. -Eject-U (C712)



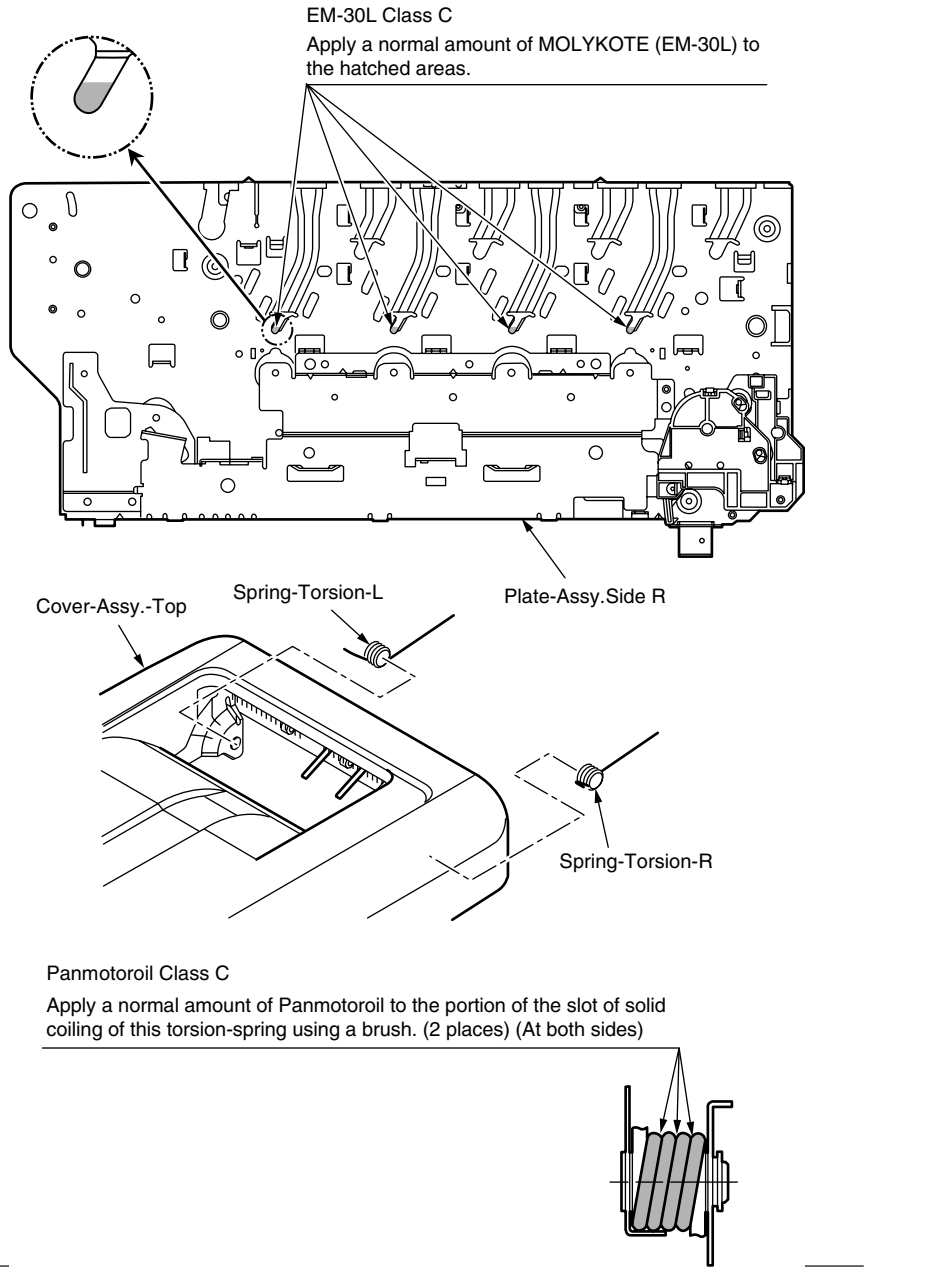
⑦ 2.44259801PA Guide-Assy. -Eject-U (C612)



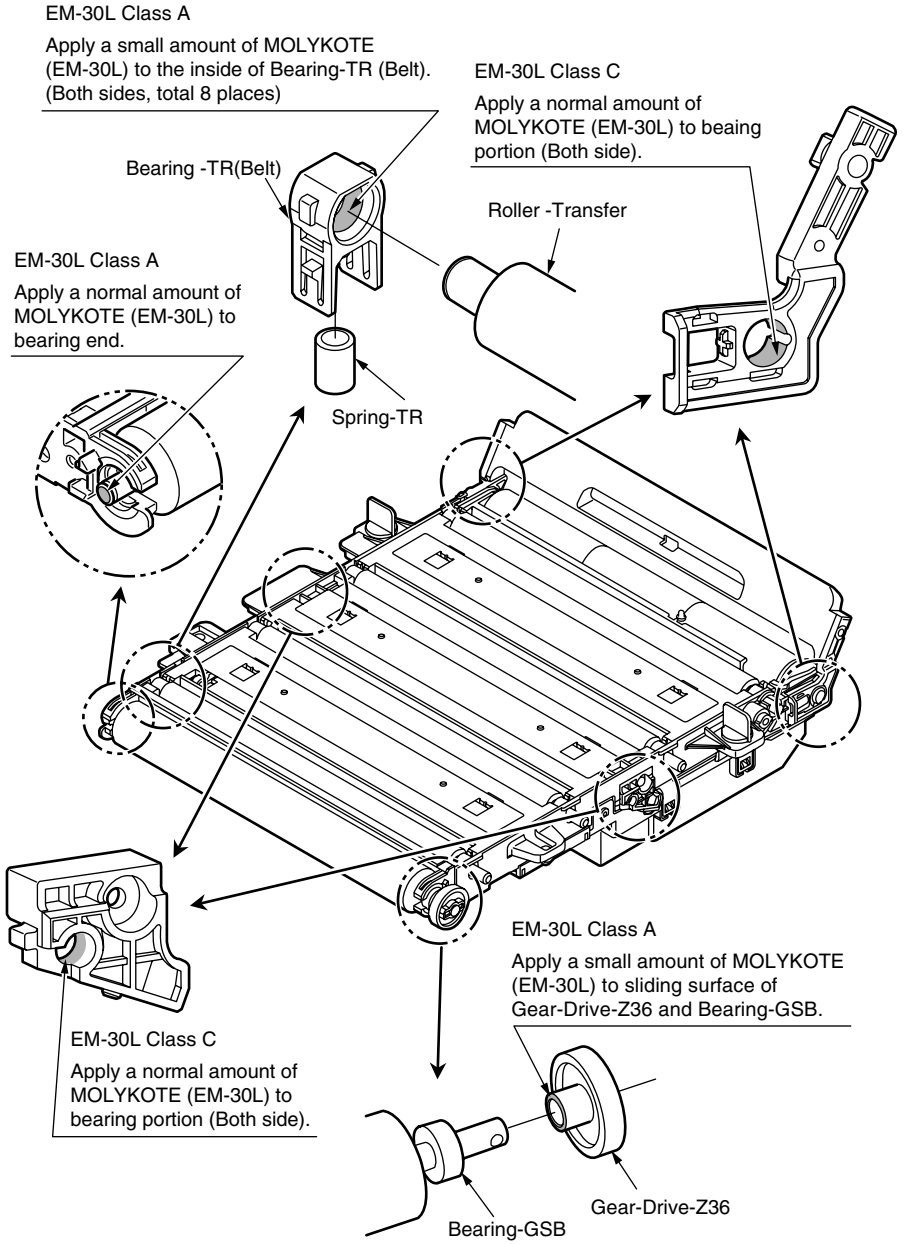
⑧-1 44257901PA Printer Unit-PX757 (C712) / 44257801PA Printer Unit-PX755 (C612)



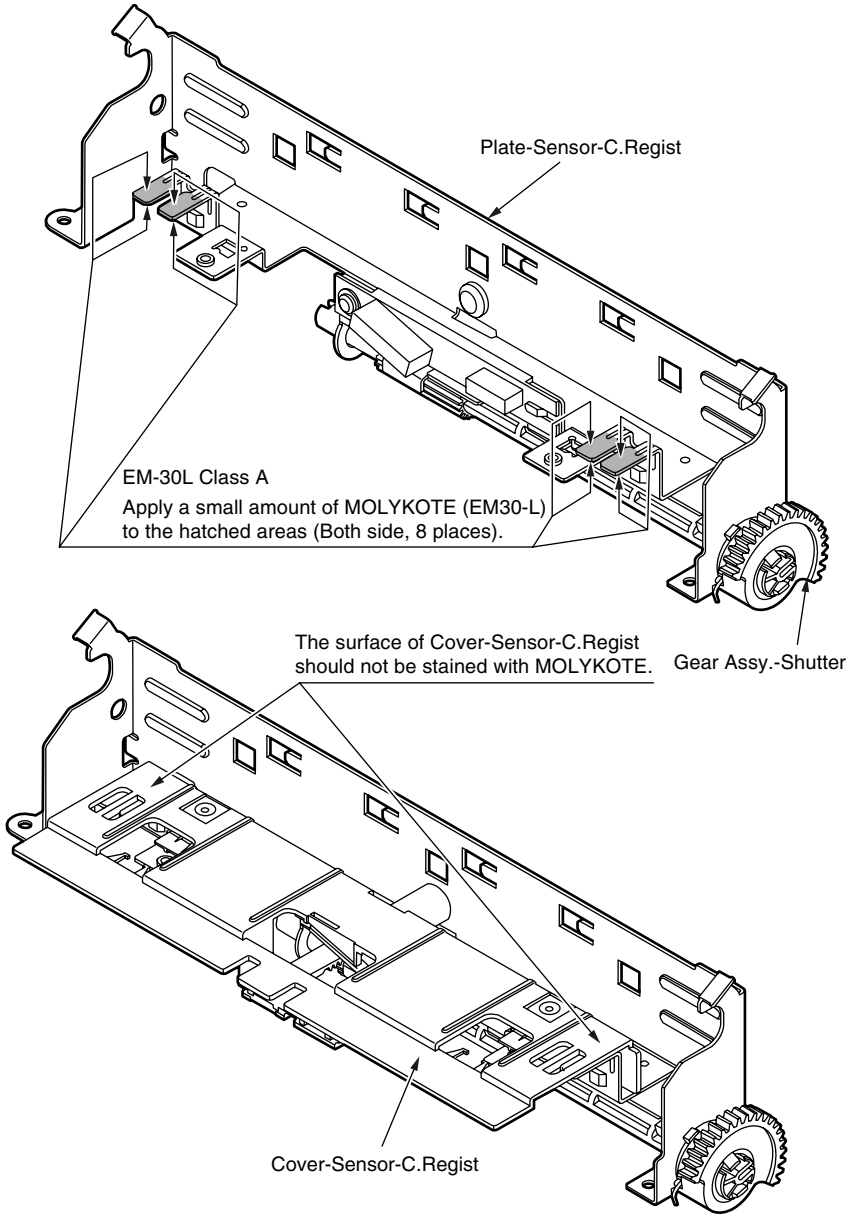
⑧-2 44257901PA Printer Unit-PX757 (C712) / 44257801PA Printer Unit-PX755 (C612)



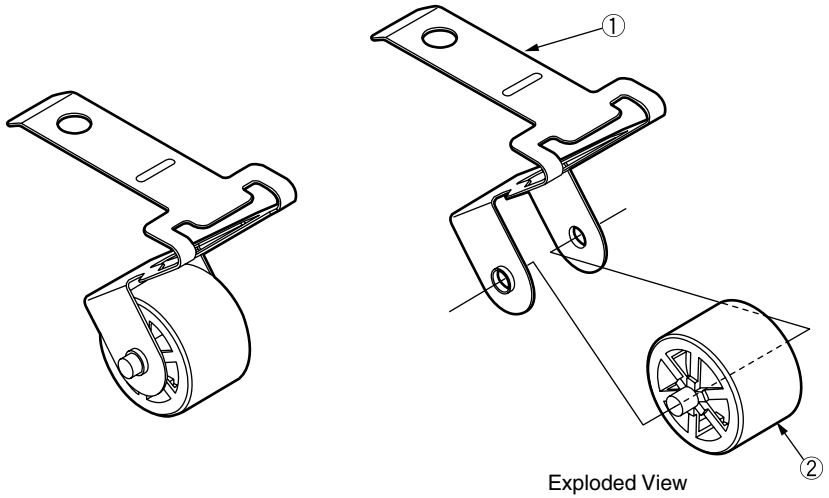
⑨ 44342001PA Belt-Assy



⑩ 43917501PA Sensor Assy. -Color Regist



⑪ 43081301PA Roller-Assy. -Idle(FD)

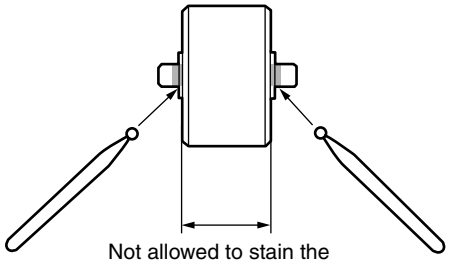


Exploded View

Method of amount grease

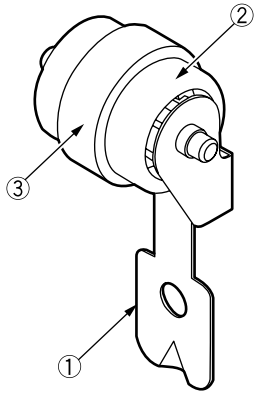
EM-30L Class S

Before ② assemble to ① , apply a minimum amount of MOLYKOTE (EM-30L) to the sliding portions of ① and ② (the hatched areas).



Not allowed to stain the area with grease.

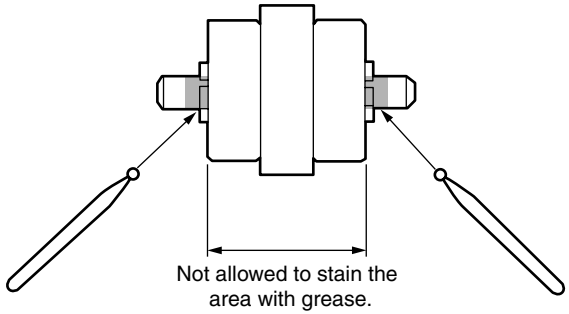
⑫ 43301601PA Roller-Assy. -BIAS(FU)C



Method of amount grease

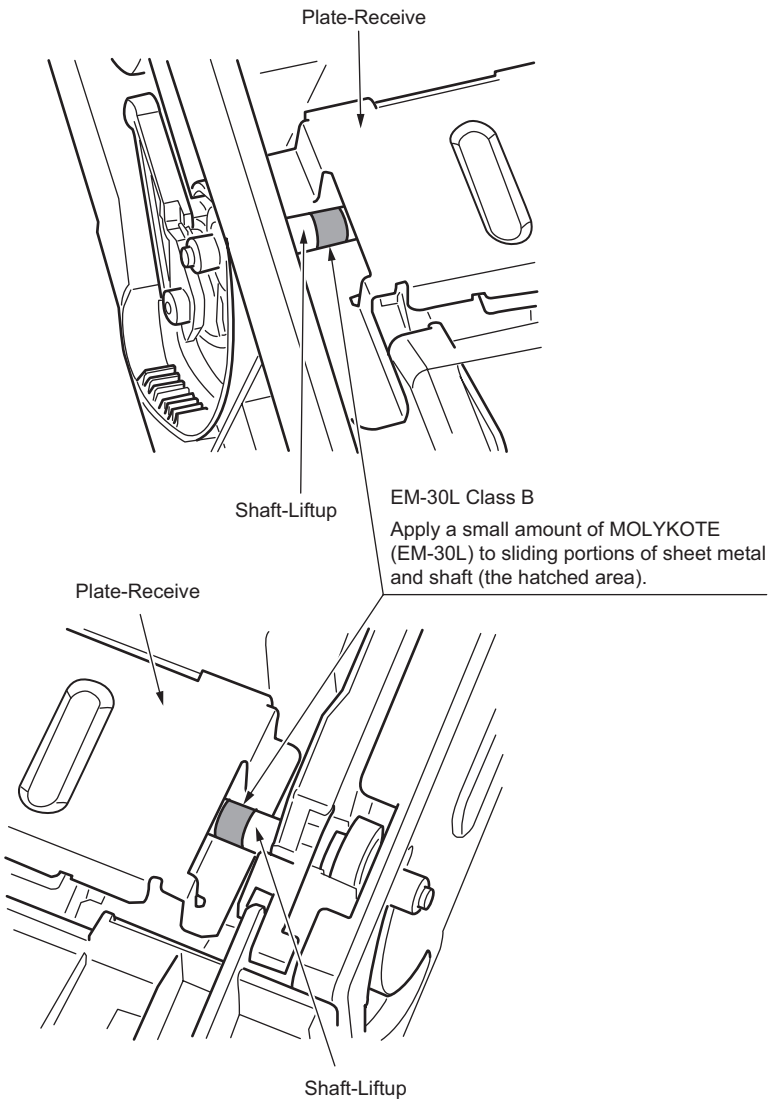
EM-30L Class S

After ③assemble to ② , apply a minimum amount of MOLYKOTE (EM-30L) to the sliding portions of ① and ② (the hatched areas).

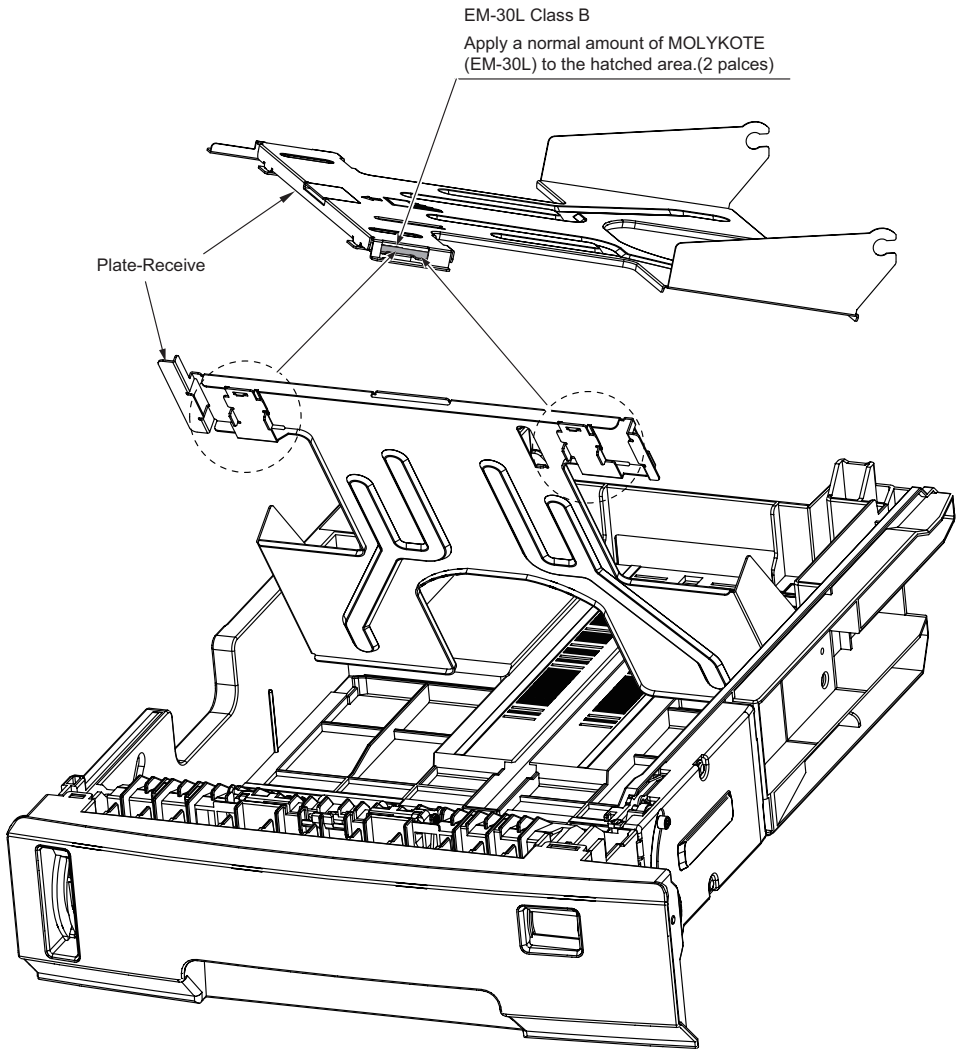


Not allowed to stain the area with grease.

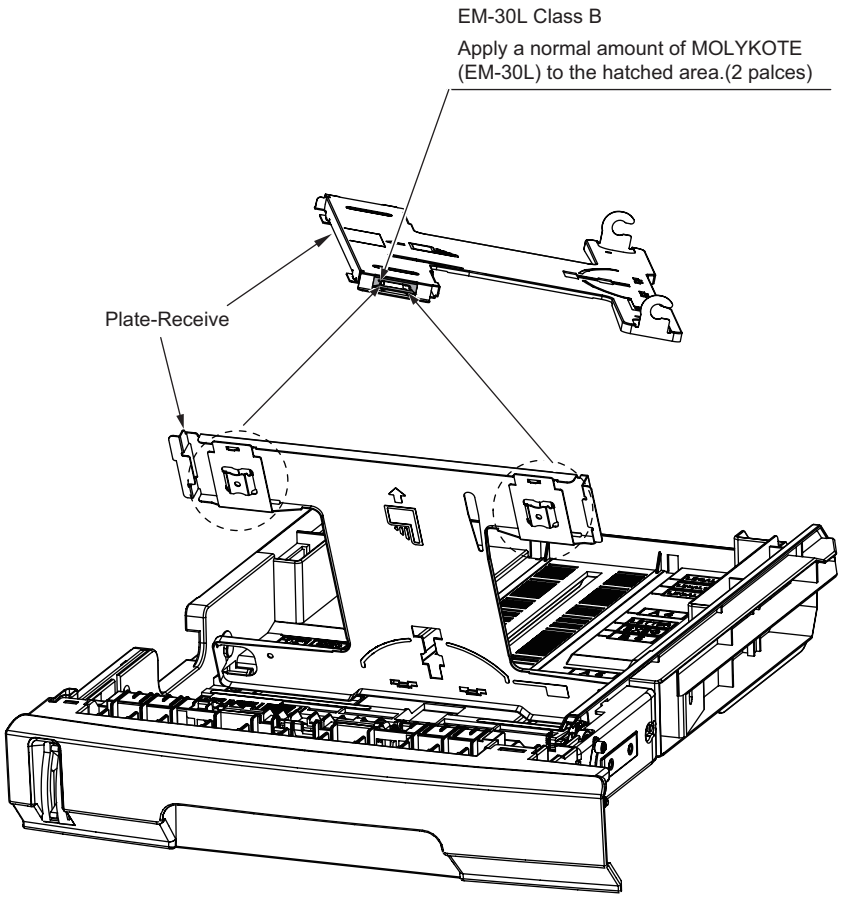
⑬-1 43894903PA Cassette-Assy-PX757 (C712) / 44258901PA Cassette-Assy-PX755 (C612)



⑬-2 1.43894903PA Cassette-Assy-PX757 (C712)



⑬-2 2.44258901PA Cassette-Assy-PX755 (C612)



4. Maintenance Menu

Adjustment of this printer can be performed from the Maintenance Utilities by entering the corresponding menu from the keyboard of the operator panel.

This printer contains the maintenance menu in addition to the normal operation menus. Select an appropriate menu in accordance with the objective of adjustment.

4.1 Self-diagnostic mode

4.1.1 Switch scan test

Refer to the Printer(SFP) Maintenance Manual for common section (46470802TH) for the method of detailed Switch scan test.
See the following Figure 4-1 for the position of switches for this apparatus.

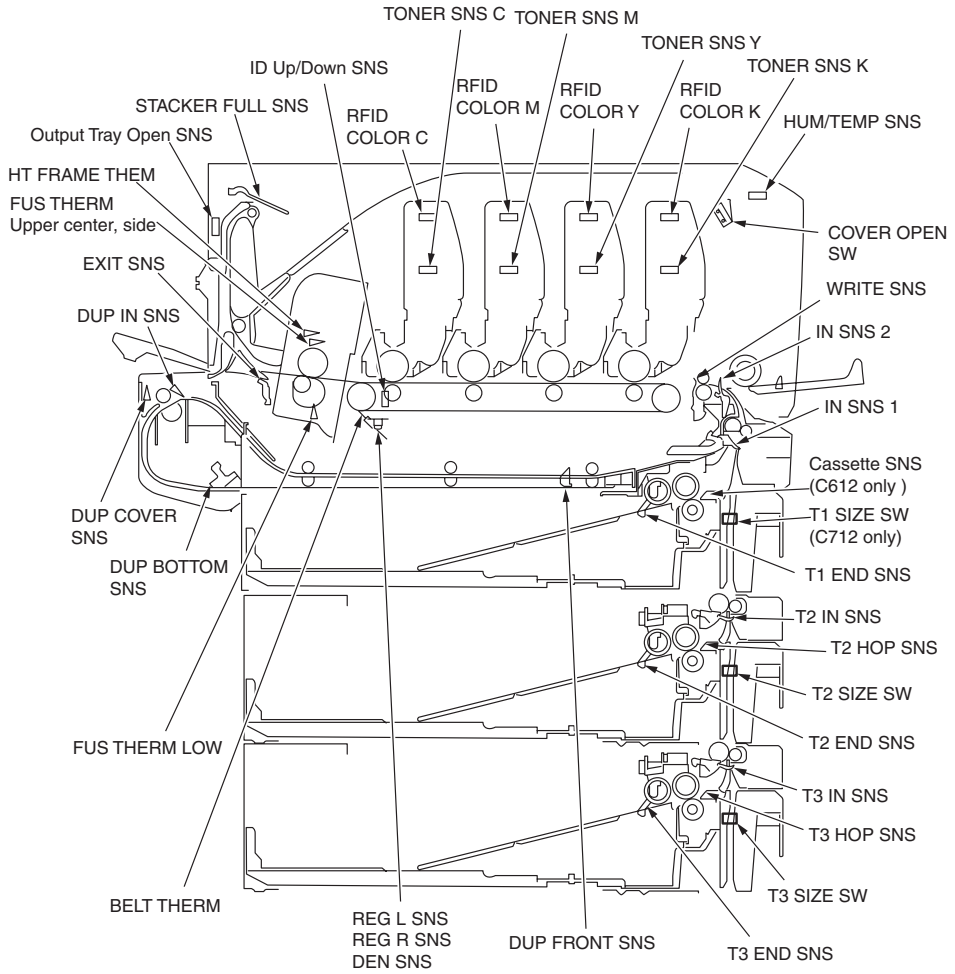


Figure 4-1

4.1.2 Motor and clutch test

Refer to the Printer(SFP) Maintenance Manual for common section (46470802TH) for the method of detailed Motor and clutch test.

See the following Figure 4-2 for the position of switches for this apparatus.

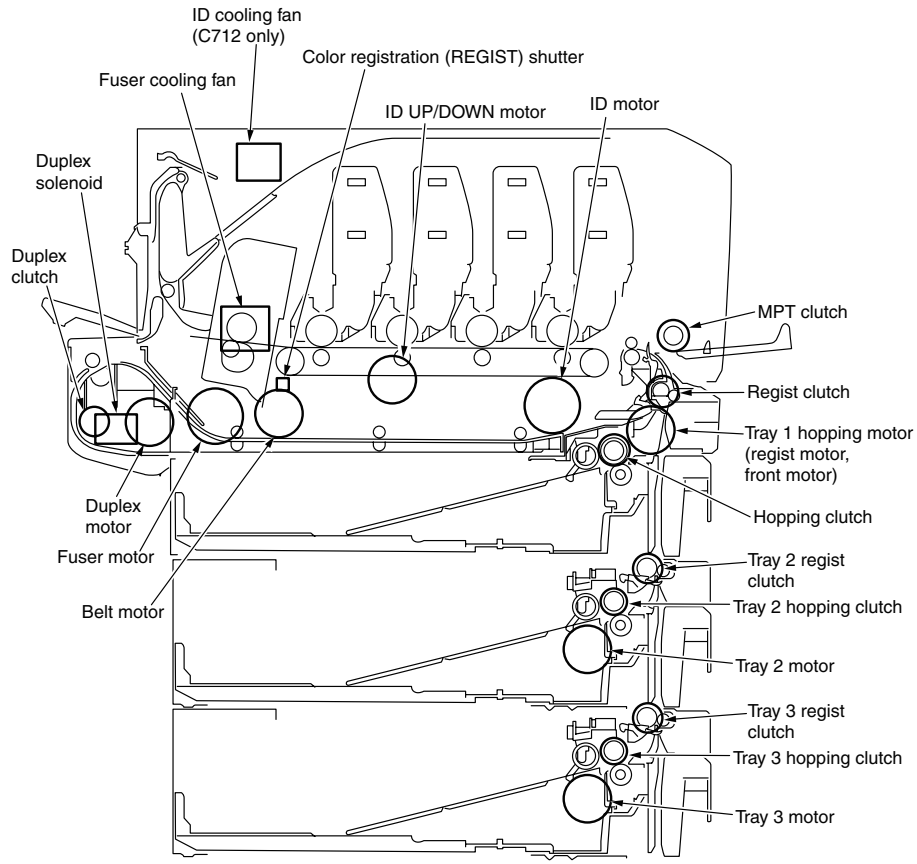


Figure 4-2

5. Periodic Maintenance

5.1 Cleaning

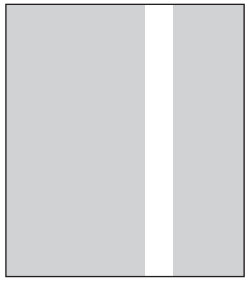
Clean inside and outside of the printer with clean dry cleaning cloth and small vacuum cleaner (hand cleaner) as required.

Note! Be careful not to touch the image drum terminals, the LED lens array and the LED head connectors.

5.2 How to clean the LED lens array

If the white banding, white stripe (white drop-out, light printing) in the vertical direction occurs on the print surface, clean the LED lens array.

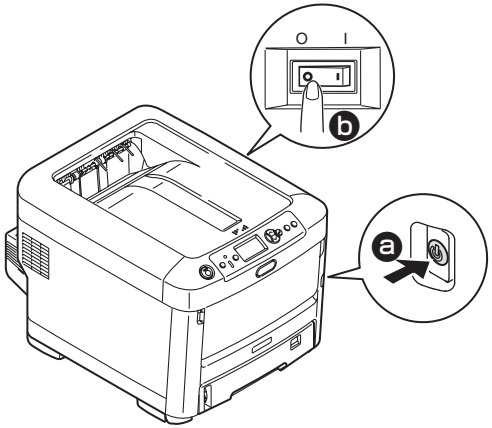
White banding, white stripe
(white drop-out, light printing)



Perform cleaning of the LED head.

If any light print or white banding is recognized or if print character becomes blurred, clean the LED head as descried below.

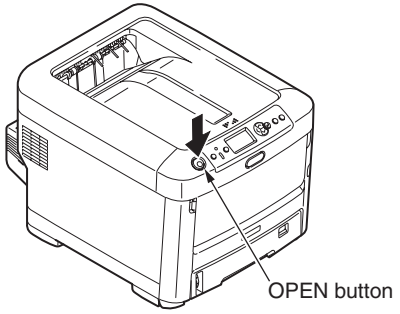
(1) Turn off the power of the printer.



(2) Press down the OPEN button to open the top cover.

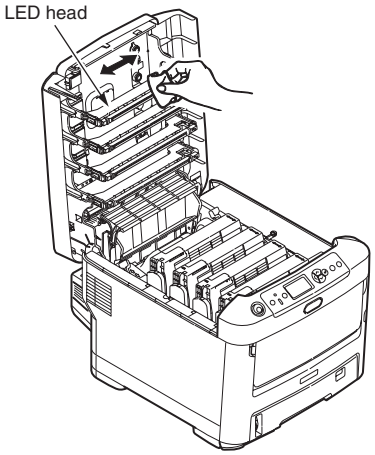
⚠Caution	Personal injuries may occur.	

The fuser unit gets very hot. Do not touch the fuser unit.

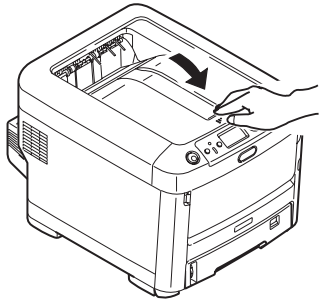


(3) Wipe the lens surface (at the four positions) of the LED head with soft tissue paper gently and lightly.

Note! Do not use the solvents such as methyl alcohol or thinner for cleaning the LED head lens because they can damage the LED head.



(4) Close the top cover.



5.3 How to clean the pickup roller

If the vertical banding in the vertical direction occurs on the print surface, clean the pickup roller.

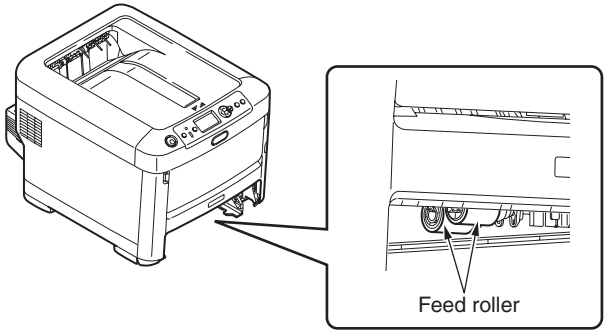
Note! Be sure to use a soft cloth or the like for cleaning the pickup roller. Otherwise, the roller surface can be damaged.

Perform cleaning of the feed roller and the separation roller.

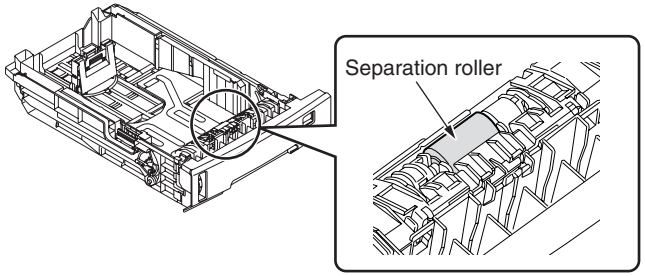
Perform this cleaning when the error code [Open Cassette/Paper Jam/Tray1/Please see HELP for details] occurs frequently.

(1) Draw out the paper tray.

(2) Clean the 2 feed rollers with a clean cloth stringently wrung out of clean water.



(3) Clean the separation roller of the paper tray with a clean cloth wrung out stringently of clean water.



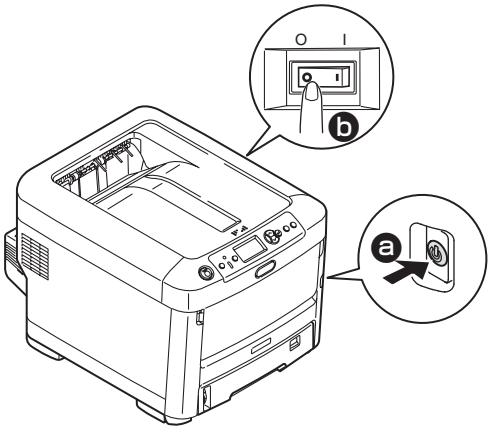
Note!
- Clean the second tray (option) in the same manner when the error code [Open Cassette/Paper Jam/Tray2/Please see HELP for details] occurs frequently.
- Clean the feeder roller of the multi-purpose tray in the same manner when the error code [Open Cover/Paper Jam/Front Cover/Please see HELP for details] occurs frequently.

5.4 How to clean inside of printer

Clean inside of the printer.

Toner can adhere to the metal shaft located in between the fuser and the cyan image drum cartridge depending on the print patter. Perform cleaning of inside of the printer if toner has adhered to the metal shaft.

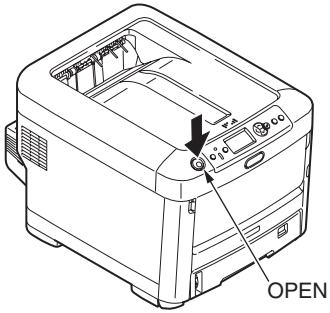
(1) Turn off the power of the printer.



(2) Press down the OPEN to open the top cover.

⚠Caution	Personal injuries may occur.	

The fuser unit gets very hot. Do not touch the fuser unit.

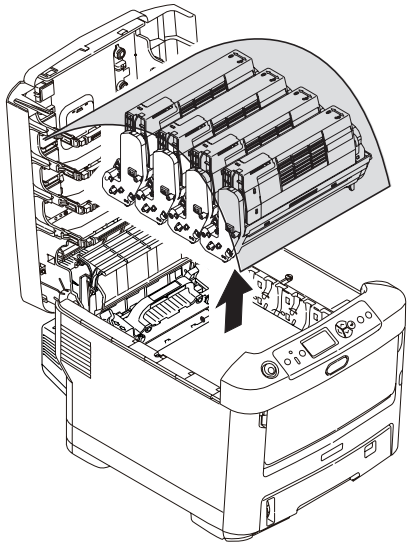


(3) Remove the image drum cartridge.

1. Remove the four image drum cartridges and place them on a flat workbench.
2. Cover the removed image drum cartridge with a black paper.

Note!

- The image drum (green tubular portion) is highly inherently-brittle. Be very careful when handling it.
- Be very careful not to expose the image drum to direct sun light or intense light (light of approx. 1500 lux or more). Do not leave it under the normal illumination even indoor for 5 minutes or longer.)



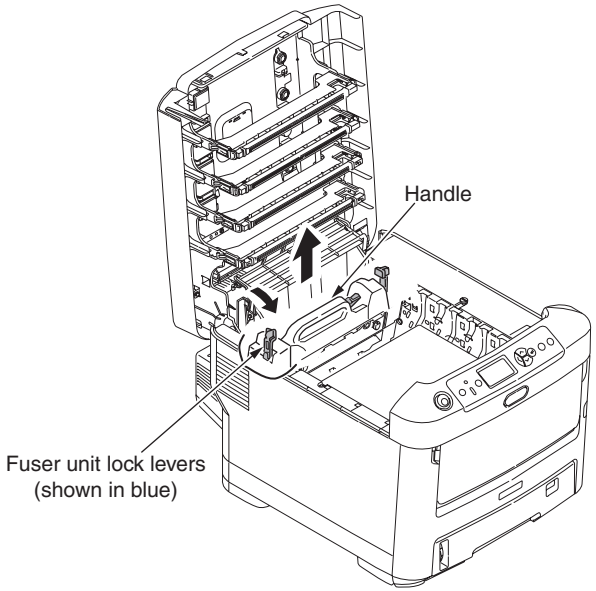
(4) Remove the fuser unit.

⚠Caution	Personal injuries may occur.	

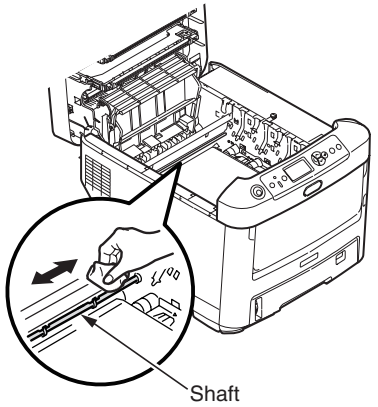
The fuser unit gets very hot. Be very careful not to touch the fuser unit with your hands.

If it got hot, stop the work and wait until it cools down. After it has cooled down, start the following steps.

1. Raise the fuser unit lock levers (two levers shown in blue) in the direction shown by the arrow.
2. Hold the handle of the fuser unit and remove it.



(5) Clean the metal shaft with soft clean cloth or soft tissue paper.

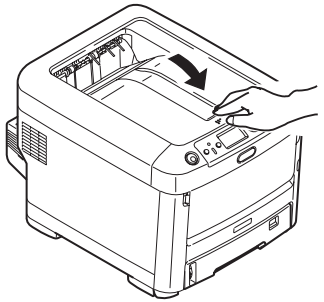


(6) Install the fuser unit.

For the detailed procedure, refer to the User's Manual – Setup Guide "Replacing fuser unit".

(7) Return the four image drum cartridges to the printer gently and carefully.

(8) Close the top cover.



6. Troubleshooting Procedures

6.1 Important notes to start the repair work

(1) Confirm the basic check/inspection points described in User's Manual.

(2) Get the information/status from customers at the time when the trouble has occurred as much in details as possible.

(3) Create the status close to the user's status when the trouble has occurred, and inspect a printer in that status.

6.2 Confirmation items before taking corrective action against abnormalities

(1) Is the usage environment of a printer normal?

(2) Are the consumable items (toner, drum cartridge) replaced normally?

(3) Is the print media (paper) normal? Refer to Specifications – Paper in User's Manual.

(4) Is the drum cartridge installed normally?

6.3 Precautions when taking corrective action against abnormality

(1) Do not touch the OPC drum surface with your hand or any foreign materials.

(2) Do not expose the OPC drum to the direct sunlight.

(3) The fuser unit will be hot. Do not touch.

(4) Do not expose the image drum to any light for 5 minutes or longer under the normal room temperature.

6.4 Preparation for troubleshooting

(1) Display on the Operator Panel

Error status of this printer is displayed on the LCD (Liquid crystal display) of the Operator Panel.

Take appropriate troubleshooting action in accordance with the message displayed on the LCD.

6.5 Troubleshooting method

Refer to the Printer(SFP) Maintenance Manual for common section (46470802TH) for the method of detailed troubleshooting.

6.5.1 Preparation for troubleshooting

Note! When replacing the CU/PU board, read the EEPROM chip contents of the old board first, and copy them to the new board upon completion of the replacement. (Refer to the Printer(SFP) Maintenance Manual for common section (46470802TH) when replacing the engine control board.)

6.5.1. (1) LCD display error

Memo For the numbers from ① through ㉓ after name of the respective connectors, refer to section 6.5.1 (20) "Wiring diagram".

(1-1) LCD does not display anything.

Check item	Check work	Action to be taken at NG
(1-1-1) Check the fuse.		
F3,F5 (fuse) of the CU/PU board	Check if F3,F5 has blown out or not.	Replace CU/PU board.
(1-1-2) Check the system connection		
Connection between the low voltage power supply unit and the CU/PU board.	Check if the cable from the low voltage power supply to the POWER connector ⑦ of the CU/PU board is normally connected or not. Check if the connector is connected only in the half-way or not, and check if the connector is inserted in slanted angle or not.	Re-connect the cable normally.
Cable assembly connecting the low voltage power supply unit and the CU/PU board.	Check if the cable is half-open circuit. Check if sheath of the cable has not peeled off or not. Check if the cable assembly is defective such as internal wires are disconnected or not.	Replace the cable with the normal cable. ***Note!***
Connection between the CU/PU board and Operator Panel	Check if the 11-conductor FFC is connected to the OPE connector ⑭ of the CU/PU board normally or not. Check if the 11-conductor FFC is connected to the OPE connector ⑰ of the CU/PU board normally or not. Check if the connector is connected in the half-way only or not, and check if the connector is inserted in a slanted angle or not.	Re-connect the cable normally.
FFC connecting the CU/PU board and the Operator Panel board	Check if the cable has open circuit or not with VOM. Check if sheath of the cable has not peeled off or not by visual inspection.	Replace the FFC with the normal FFC.
(1-1-3) Check the peripherals of the power supplies		
Primary AC power source that is connected to the printer.	Check the supplied voltage of the AC power source.	Supply the AC power.
Voltage setting of the lower voltage power supply unit (100V system/230V system)	Measure the AC voltage supplied. Check the power voltage setting of the equipment in use. (Check the shorting plug that is used for selection of the voltage power supplies.) Shorting plug is Used/Not used = 100V system/ 230V system.	Set the low voltage power supply setting.
5V power that is supplied to the CU/PU board.	Check for the 5V power supply at pin-1, 2, 3 of the POWER connector ⑦ of the CU/PU board.	Replace the low voltage power supply.
3.3V power that is supplied to the Operator Panel.	Check for the 3.3V power supply at pin-11 of the CN connector ⑰ of the Operator Panel board.	Replace the CU/PU board.
(1-1-4) Check that power supply circuit has no short-circuit.		
5V power and 24V power that are supplied to the CU/PU board.	Check that power supply circuit has no short-circuit at the POWER connector no. 10 of the CU/PU board. The follow voltage must appear respectively. pins-7, 8 and 9: 24V pin-1, 2 and 3: 5V pin-4, 5 and 6: 0VL pins-10, 11 and 12: 0VP If any voltage does not appear and short-circuit is detected, locate the source of the short-circuit as follows: Disconnect the cables that are connected to the CU/PU board one cable after another until location of the short-circuit is found out.	Replace the part causing short-circuit.

Check item	Check work	Action to be taken at NG
(1-1-5) LSI operation check		
I/F signal supplied from the CU/PU board to the Operator Panel board.	Check if the signal is output to the OPE connector ⑭ of the CU/PU board or not. Pin-2: Send data (Sending data from the CU/PU board) Pin-5: CLR If it is normal, the signal is output always.	Replace the CU/PU board.
I/F signal supplied from the CU/PU board to the Operator Panel board.	Check if the signal is output to the OPE connector ⑭ of the CU/PU board or not. Pin-3: Send data (Sending data from the CU/PU board) If it is normal, the signal is output always.	Replace the Operator Panel board.

(1-2) PLEASE WAIT

(If the message is left attended, the error number changes to "COMMUNICATION ERROR".)

Check item	Check work	Action to be taken at NG
(1-2-3) Implement version upgrade of the PU firmware		
Version upgrade of the PU firmware	When the PU firmware version upgrade is completed, this display appears. Check the PU firmware version number by using the menu print or the maintenance function.	If the message reappears after the power is re-started again, implement the confirmations of sections (1-3-1).

(1-3) Error messages related to Operator Panel are displayed.

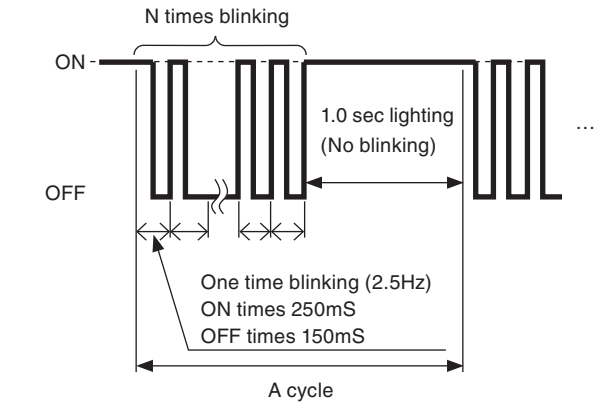
Check item	Check work	Action to be taken at NG
(1-3-1) Error message		
Error message	Check the error contents by referring to the Error Message List.	Follow the instruction.

(1-4) "RAM check in progress" or "Initializing" display is kept appearing.

Check item	Check work	Action to be taken at NG
(1-4-1) Operator Panel display freezes.		
Operator Panel display	"RAM check in progress" or "Initializing" display is kept appearing.	Replace the ROM DIMM of CU, or replace the CU/PU board. Remove the optional RAM and SD Memory card. Then perform the check. If the check result shows NG, replace the CU/PU board.

6.5.1. (2) Abnormal operations of printer after the power is turned on

(2-1) Any operation does not start at all.

Check item	Check work	Action to be taken at NG
(2-1-1) Check the peripherals of the power supplies		
Primary AC power source that is connected to the printer.	Check the supplied voltage of the AC power source.	Supply the AC power.
Voltage setting of the lower voltage power supply unit (100V system/230V system)	Measure the AC voltage supplied. Check the power voltage setting of the equipment in use. (Check the shorting plug that is used for selection of the voltage power supplies. [CN6]) Shorting plug is Used/Not used = 100V system/230V system.	Set the low voltage power supply setting.
5V power and 24V power that are supplied to the CU/PU board.	Check the power supply voltages at the POWER connector ⑦ of the CU/PU board. The follow voltage must appear respectively. Pins-7, 8 and 9: 24V Pin-1, 2 and 3: 5V Pin-4, 5 and 6: 0VL Pins-10, 11 and 12: 0VP	Replace the low voltage power supply.
(2-1-2) Confirmation of the power switch LED		
Power Switch LED	Confirm whether the LED is off. If the LED blinks rapidly, the number of blinking times in a cycle shows an error. The timing of blinking rapidly is shown in the below figure	Replace either of the low-voltage power supply unit, the CU/PU board, Power SW-board, the cables connected to the low-voltage power supply unit and CU/PU board or the cables connected to the CU/PU board and Power SW-board.In case of 2, 4, 8 or 10 times of LED blinking rapidly: Replace either of the low-voltage power supply unit, the CU/PU board, the cables connected to the low-voltage power supply unit and the CU/PU board. In case of 3, 6 or 9 times of LED blinking rapidly: Replace the CU/PU board.
Rapid blinking of the LED  		
(2-1-3) Check the system connection		
Connection condition of Operator Panel	Check contents of (1-1). Any operation of a printer will not start until the Operator Panel is detected and is started of its operation.	Follow the contents of (1-1).

(2-2) Abnormal sound is heard.

Check item	Check work	Action to be taken at NG
(2-2-1) Check loss of synchronization of motor (Driver error)		
Operating conditions of the respective motors	Check if operations of the respective motors are normal or not by using the self-diagnostic mode. Check if any load exists or not. "Buzzer" sound when an error occurs.	Replace the CU/PU board.
Condition of the motor cable	Check for normal wiring conditions of the respective motors. Perform the visual check and measure resistance at open circuit with VOM as follows. Remove the motor cable at the board end. Measure resistance between the respective pins of the removed cable and FG with VOM.	Replace the motor cable. Re-connect the cable for normal conditions.
(2-2-2) Check loss of synchronization of motor (Abnormal load of the consumable item)		
Operating conditions of the respective motors	Check if operations of the respective motors are normal or not by using the self-diagnostic mode. Check if any load exists or not. "Buzzer" sound when an error occurs.	Replace the corresponding consumable item.
(2-2-3) Check the jumping phenomena of gear tooth. (Abnormal load of the consumable item)		
Operating conditions of the respective motors	Check if operations of the respective motors are normal or not by using the self-diagnostic mode. Check if any load exists or not. "Buzz buzz" sound is generated when an error occurs.	Replace the corresponding consumable item.
Installation condition of each consumable item	Check by visual inspection if the respective consumable items are installed in their normal positions in which gears of the consumable items engage accurately or not.	Replace an appropriate mechanical part as required, or adjust or repair
(2-2-4) Check the wiring conditions of cables		
Wiring conditions of the cables in the vicinity of the respective cooling fans	Check if the cable contacts with the fan blade because wiring conditions of the cables near fan is poor or not. "Clap, clap" sound is generated when an error occurs.	Correct the wiring conditions of the cable.
(2-2-5) Check installation condition of mechanical parts		
Check the installation conditions of the partition plate under the CU/PU boards.	Remove the CU/PU board, and inspect the installation conditions of the partition plate by visual inspection.	If they are not hooked on the normal specified positions, correct them.

(2-3) Bad odors are generated.

Check item	Check work	Action to be taken at NG
(2-3-1) Locating the exact position of generating bad odor		
Fuser unit	Remove the fuser unit and check the odor.	Implement section (2-3-2).
Low voltage power supply unit	Remove the low voltage power supply unit and check the odor.	Replace the low voltage power supply unit
(2-3-2) Check conditions of the fuser unit		
Life count of fuser unit	Check the life count of the fuser unit by using the self-diagnostic mode.	The fuser close to the new fuser unit smells some odors.
Check that no foreign material exists in fuser unit.	Check that no foreign materials such as paper are stuck inside of the fuser unit.	Remove the foreign material.

(2-4) Rise-up time is slow.

Check item	Check work	Action to be taken at NG
(2-4-1) Check the fuser unit		
Halogen lamp	Check that 120V or 230V is shown on the label on the rear of the fuser unit. (120V:ODA,230V:ODA/OEL)	Replace the fuser unit.
(2-4-2) Check the optional parts Note:		
Add-on memory	Install the optional parts (add-on memory) again and re-check the operations.	Replace the optional part.
SD Memory card	Install the optional part (SD Memory card) again and re-check the operations.	Replace the optional part.

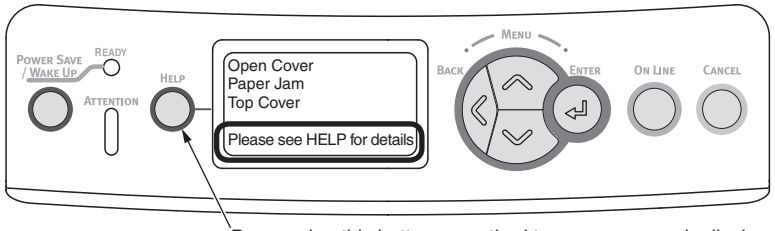
Note! If any troubles such as printer does not start up normally occurs, remove the CU options (RAM, SD Memory card) and check if the trouble symptom changes or not.

(3) Paper Jams

When paper jams occur or paper remains in the printer, "Paper Jam", or "Paper Remain" is displayed on the operation panel.

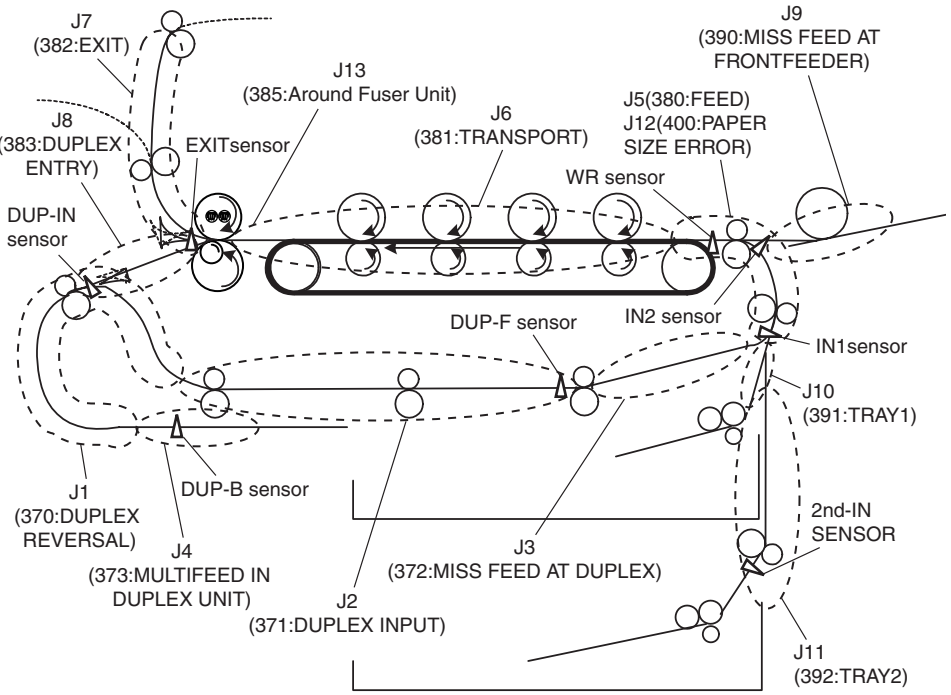
By pressing the Help button, a method to remove the paper is displayed, remove the paper in the printer according to [Handling].

In addition, A method to remove paper is also described in the reference page at the right table.



Message to be displayed	Reference page
Open Cassette Paper Jam [Tray Name]	Page 6-10
Open Cassette Paper Remain [Tray Name]	
Open Cover Paper Jam Front Cover	Page 6-11
Open Cover Paper Remain Front Cover	
Open Cover Paper Jam Top Cover	Page 6-12
Open Cover Paper Remain Top Cover	
Check Duplex Unit Paper Jam	Page 6-14
Check Duplex Unit Paper Remain	

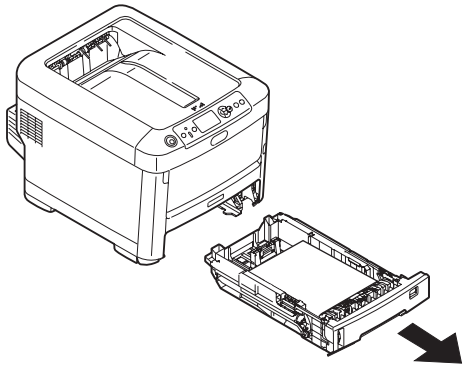
JAM location of occurrence outline chart



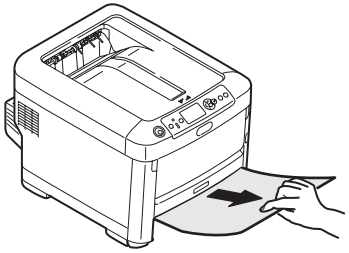
Open Cassette Paper Remain [Tray Name]	Open Cassette Paper Jam [Tray Name]

When the above messages are displayed.
Tray1 is applied here as an example.

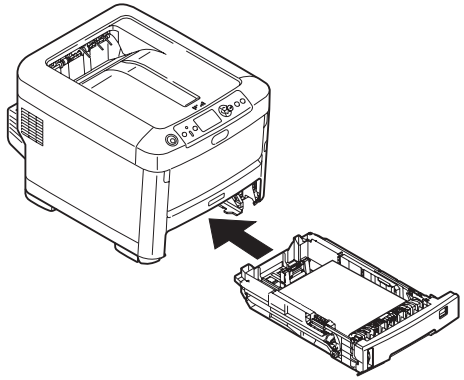
(1) Pull the displayed tray.



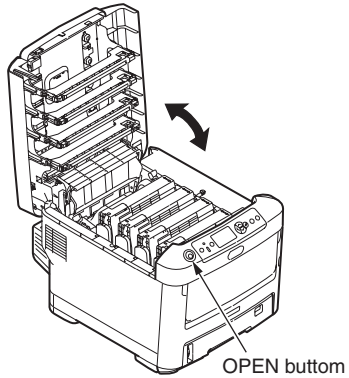
(2) Remove paper.



(3) Return the tray to the printer.



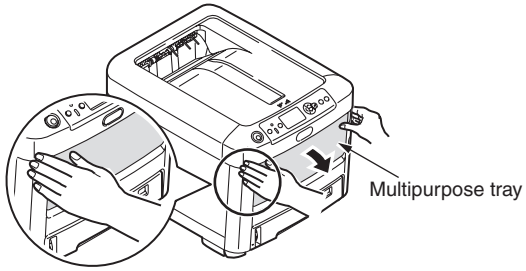
(4) Open and close the top cover.



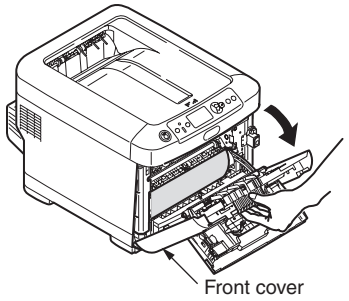
Open Cover Paper Remain Front Cover	Open Cover Paper Jam Front Cover

When the above messages are displayed.

(1) Open the multipurpose tray.

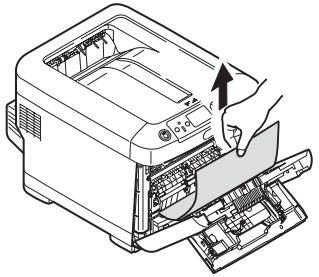


(2) Push up the center handle (blue), to open the front cover.

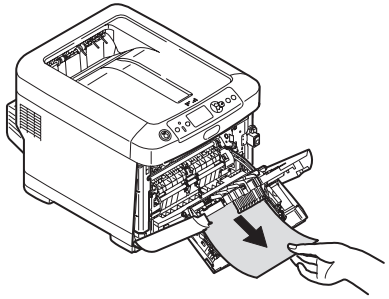


(3) Slowly pull out the jammed paper.

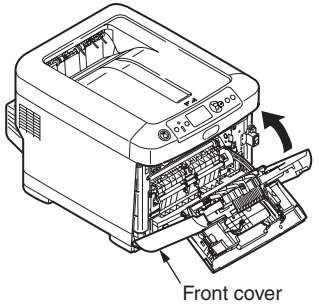
① If you see the top edge of paper



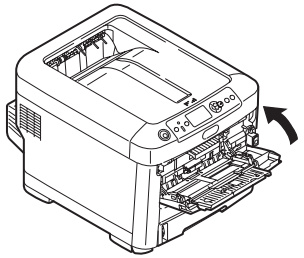
② If you do not see the top edge of paper



(4) Close the front cover.



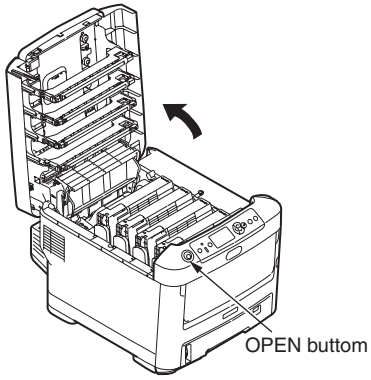
(5) Close the multipurpose tray.



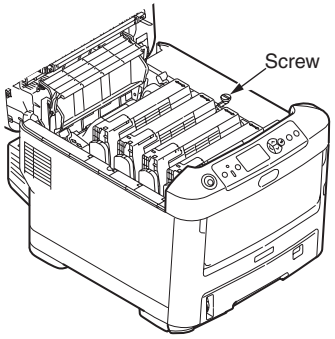
Open Cover Paper Remain Top Cover	Open Cover Paper Jam Top Cover

When the above messages are displayed.

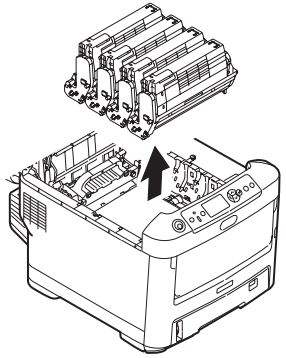
(1) Open the top cover.



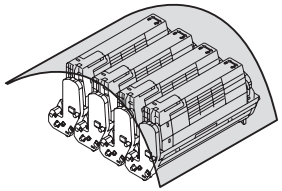
(2) Touch the screw with a hand to discharge static.



(3) 2Uninstall the four image drum cartridges and put them on a flat table.

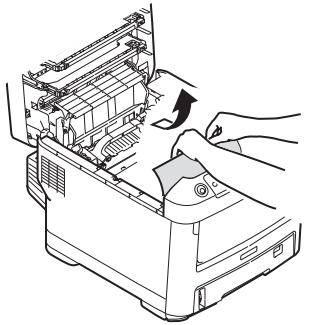


(4) Cover the uninstalled image drum cartridges with black paper.



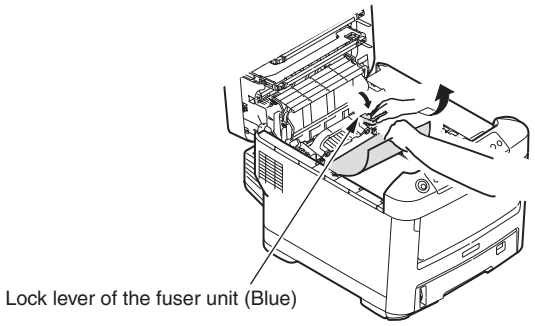
(5) (a) If you see the top edge of paper

Pull up the jammed paper slowly.



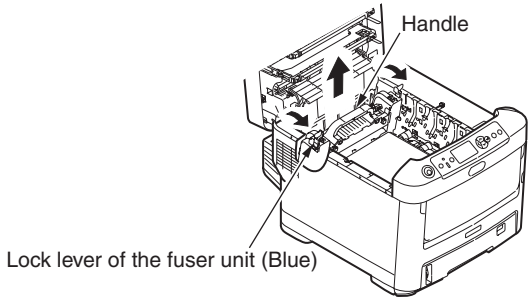
(b) If you do not see the top edge of paper

Pull up the jammed paper slowly while pushing the jam release lever of the fuser unit.

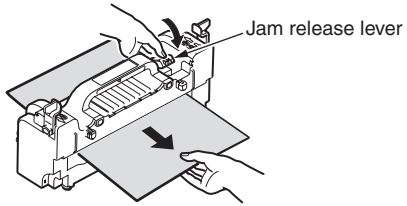


(c) If paper is jammed in the fuser unit

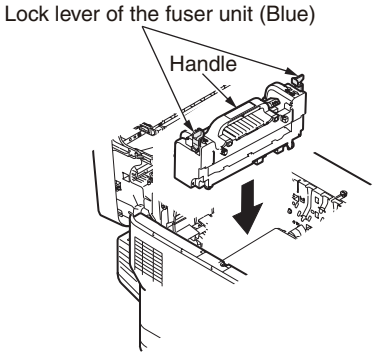
Pull the lock levers (2 levers) of the fuser unit to remove the fuser unit.



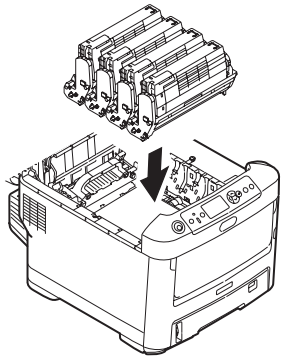
Pull the jammed paper to the front side while pressing the jam release lever.



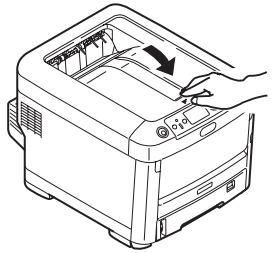
Set the fuser unit in the printer body and fold backward the lock lever (2 levers).



(6) Set four image drums in the printer.



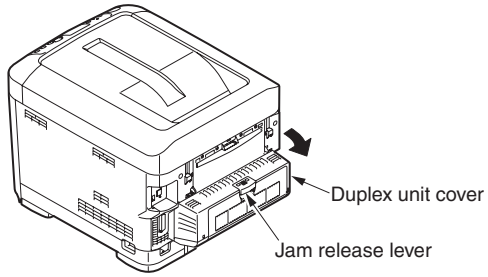
(7) Close the top cover.



Check Duplex Unit Paper Remain	Check Duplex Unit Paper Jam

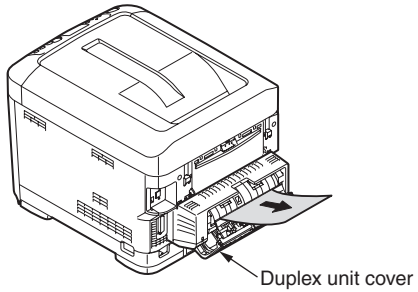
When the above messages are displayed.

(1) Hold and press down the jam release lever of the Duplex unit to open the Duplex unit cover.

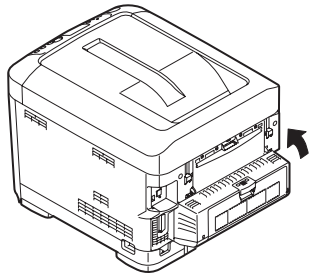


(2) Release jammed paper.

If you do not see the paper, by closing the Duplex unit cover, the paper is automatically outputted.



(3) Close the Duplex unit cover.



6.5.1. (3) Paper feed jam (error code 391: 1st tray)

(3-1) Jam occurs immediately after the power is turned on. (1st tray)

Check item	Check work	Action to be taken at NG
(3-1-1) Check condition of the paper running path		
Paper running path of the front unit	Open the front cover check if paper is not jammed in the paper running path.	Remove the jammed paper.
(3-1-2) Check condition of the mechanical parts		
Check the sensor levers of the paper entrance sensor 1 and the paper entrance sensor 2.	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the sensor lever with the good sensor lever.
(3-1-3) Check condition of electrical parts		
Check the detection condition of the sensor signal.	Confirm that the sensor signals are normally detected by using the Maintenance Menu SWITCH SCAN function.	Replace either the CU/PU board or the front sensor board (RSF PCB) or connection cable.
Check output signal level of the paper entrance sensor 1 and that of the paper entrance sensor 2.	Check for the following signals at the FSNS connector ⑬ of the CU/PU board. Pin-4: Paper entrance sensor 1 Pin-3: Paper entrance sensor 2 Confirm that the above signal levels change when the sensor lever is operated.	Replace the front sensor board (RSF PCB)
Check the power voltages supplied to the front sensor board (RSF PCB)	Check the 5V power at the FSNS connector ⑬ of the front sensor board (RSF PCB). Pin-1: 5V power supply Pin-5: 0VL	Replace the connection cable.

(3-2) Jam occurs immediately after the paper feed is started. (1st tray)

Check item	Check work	Action to be taken at NG
(3-2-1) Check condition of the paper running path		
Paper running path of the front unit	Check if paper is jammed or not in the paper running path.	Remove the jammed paper.
(3-2-2) Check condition of the mechanical parts		
Check the sensor levers of the paper entrance sensor 1 and the paper entrance sensor 2.	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the sensor with the good sensor lever.
Check the separator assemblies of the feed roller, the pickup roller and the tray.	Check if any foreign materials such as paper dust on the surface of the feed roller or of the pickup roller or not.	Remove the foreign material.
	Check if the feed roller or the pickup roller has worn out or not.	Replace the separator assemblies of the feed roller, pickup roller and tray.
(3-2-3) Motor operation check		
Paper feed motor	Confirm that the paper feed motor works normally by using the Motor & Clutch Test of the self-diagnostic mode.	Replace the CU/PU board or the paper feed motor.
Paper feed motor driver	Remove the HP_PSZCL connector ⑨ of the CU/PU board and check the followings at the connector side. Several MΩ between pin-1 – FG. Several MΩ between pin-2 – FG. Several MΩ between pin-3 – FG. Several MΩ between pin-4 – FG.	Replace the CU/PU board.

Check item	Check work	Action to be taken at NG
(3-2-4) Check the system connection		
Paper feed motor drive cable	Check the connection condition of the cable. Check if the connector is connected in the half-way only or not, and check if the connector is inserted in a slanted angle or not. Check also that cables are assembled without any abnormality.	Replace the cable with the good cable that normalizes the connection condition.
Paper feed motor drive cable	Check that any cable is not pinched during assembling of the printer. Remove the HP_PSZCL connector ⑨ of the CU/PU board and check the followings at the cable side. Short circuit between pin-1 – FG Short circuit between pin-2 – FG Short circuit between pin-3 – FG Short circuit between pin-4 – FG	Replace the cable with the good cable that normalizes the connection condition.
Paper feed motor	Remove the HP_PSZCL connector ⑨ of the CU/PU board and check that approx. 3.4Ω can be measured between pin-1 -pin-2 at the cable end, and that approx. 5Ω can be measured between pin-3 -pin-4 respectively.	Replace the paper feed motor.
(3-2-5) Solenoid operation check		
Paper feed clutch	Confirm that the paper feed clutch or regist clutch works normally by using the Motor & Clutch Test of the self-diagnostic mode. Remove the metal plate from the right side of a printer so that the clutch becomes visible. Then, check operation of the clutch.	Replace the CU/PU board, or replace the paper feed clutch or regist clutch.

Check item	Check work	Action to be taken at NG
(3-2-6) Check the system connection		
Paper feed clutch cable	Check the connection condition of the cable. Check if the connector is connected in the half-way only or not, and check if the connector is inserted in a slanted angle or not. Check also that cables are assembled without any abnormality.	Replace the cable with the good cable that normalizes the connection condition.
Paper feed clutch cable	Check that any cable is not pinched during assembling of the printer. Remove the CL1 connector ⑪ of the CU/PU board and check the followings at the cable side. Short circuit between pin-1 – FG Remove the CL1 connector ⑪ of the CU/PU board and check that approx. 240Ω can be measured between pin-1 and pin-2.	Replace the solenoid and re-assemble the printer correctly.

6.5.1. (4) Feed jam (error code 380)

(4-1) Jam occurs immediately after the power is turned on.

Check item	Check work	Action to be taken at NG
(4-1-1) Check condition of the paper running path		
Paper running path of the front unit	Open the front cover check if paper is not jammed in the paper running path.	Remove the jammed paper.
(4-1-2) Check condition of the mechanical parts		
Check the sensor levers of the paper entrance sensor 1, that of the paper entrance sensor 2 and that of the WR sensor.	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the sensor with the good sensor lever.
(4-1-3) Check condition of electrical parts		
Check the detection condition of the sensor signal.	Confirm that the sensor signals are normally detected by using the Maintenance Menu SWITCH SCAN function.	Replace either the CU/PU board or the front sensor board (RSF PCB) or connection cable.
Check the output signal levels of the paper entrance sensor 1, that of the paper entrance sensor 2 and that of the WR sensor.	Check for the following signals at the FSNS connector ⑬ of the CU/PU board. Pin-4: Paper entrance sensor 1 Pin-3: Paper entrance sensor 2 Pin-2: WR sensor Confirm that the above signal levels change when the sensor lever is operated.	Replace the front sensor board (RSF PCB)
Check the power voltages supplied to the front sensor board (RSF PCB)	Check the 5V power at the FSNS connector ⑬ of the front sensor board (RSF PCB). Pin-1: 5V power supply Pin-5: 0VL	Replace the connection cable.

(4-2) Jam occurs immediately after the paper feed is started.

Check item	Check work	Action to be taken at NG
(4-2-1) Check condition of the paper running path		
Paper running path of the front unit	Check if paper is jammed or not in the paper running path.	Remove the jammed paper.
(4-2-2) Check condition of the mechanical parts		
Check the sensor levers of the paper entrance sensor 1, that of the paper entrance sensor 2 and that of the WR sensor.	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the sensor with the good sensor lever.
(4-2-3) Motor operation check		
Paper feed motor	Confirm that the paper feed motor works normally by using the Motor & Clutch Test of the self-diagnostic mode.	Replace the CU/PU board, or replace the paper feed motor.
Paper feed motor driver	Remove the HP_PSZCL connector ⑨ of the CU/PU board and check the followings at the connector side. Several MΩ between pin-1 – FG Several MΩ between pin-2 – FG Several MΩ between pin-3 – FG Several MΩ between pin-4 – FG	Replace the CU/PU board.

Check item	Check work	Action to be taken at NG
(4-2-4) Check the system connection		
Paper feed motor drive cable	Check the connection condition of the cable. Check if the connector is connected in the half-way only or not, and check if the connector is inserted in a slanted angle or not. Check also that cables are assembled without any abnormality.	Replace the cable with the good cable that normalizes the connection condition.
Paper feed motor drive cable	Check that any cable is not pinched during assembling of the printer. Remove the HP_PSZCL connector ⑨ of the CU/PU board and check the followings at the cable side. Short circuit between pin-1 – FG Short circuit between pin-2 – FG Short circuit between pin-3 – FG Short circuit between pin-4 – FG	Replace the cable with the good cable that normalizes the connection condition.
Paper feed motor	Remove the HP_PSZCL connector ⑨ of the CU/PU board and check that approx. 3.4Ω can be measured between pin-1 -pin-2 at the cable end, and that approx. 5Ω can be measured between pin-3 -pin-4 respectively.	Replace the paper feed motor.

6.5.1. (5) Paper feed jam (error code 390: Multipurpose tray)

(5-1) Jam occurs immediately after the power is turned on. (Multipurpose tray)

Check item	Check work	Action to be taken at NG
(5-1-1) Check condition of the paper running path		
Paper running path of the multipurpose tray	Check if paper is jammed or not in the paper running path.	Remove the jammed paper.
(5-1-2) Check condition of the mechanical parts		
Check the sensor levers of the paper entrance sensor 2 and the WR sensor.	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the sensor with the good sensor lever.
(5-1-3) Check condition of electrical parts		
Check the detection condition of the sensor signal.	Confirm that the sensor signals are normally detected by using the SWITCH SCAN function of the self-diagnostic mode.	Replace either the CU/PU board or the front sensor board (RSF PCB) or connection cable.
Check the sensor output signal level of the paper entrance sensor 2 and the WR sensor.	Check for the following signals at the FSNS connector ⑬ of the CU/PU board. Pin-2: WR sensor Pin-3: Paper entrance sensor 2 Confirm that the above signal levels change when the sensor lever is operated.	Replace the front sensor board (RSF PCB)
Check the power voltages supplied to the front sensor board (RSF PCB)	Check the 5V power at the CN connector ⑱ of the front sensor board (RSF PCB). Pin-1: 5V power supply Pin-5: 0VL	Replace the connection cable.

(5-2) Jam occurs immediately after paper feed is started. (Multipurpose tray)

Check item	Check work	Action to be taken at NG
(5-2-1) Check condition of the paper running path		
Paper running path of the multipurpose tray	Check if paper is jammed or not in the paper running path.	Remove the jammed paper.
Sheet Receive of the multipurpose tray	Confirm that the Sheet Receive has moved up normally. Confirm that the support spindle and spring of the Sheet Receive have been installed in the specified positions normally.	Correct installation of the above parts so that the Sheet Receive moves up to the specified position normally.
(5-2-2) Check condition of the mechanical parts		
Check the sensor levers of the paper entrance sensor 2 and the WR sensor.	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the sensor with the good sensor lever.
Planetary gear for paper feed control	Rotate the paper feed motor (FRONT MOTOR) using the Motor & Clutch Test of the self-diagnostic mode, and confirm that both of the two planetary gears rotate at the bottom position. (The planetary gear box can be located because it is the white molded block that is located on the right side when the front cover is opened.)	Replace the planetary gear box
Front cover	Confirm that the locks in the right and left of the front cover are locked normally.	Replace the font cover assembly
Check the feed roller and the pickup roller.	Check if any foreign materials such as paper dust on the surface of the feed roller or of the pickup roller or not.	Remove the foreign material.
	Check if the feed roller has worn out or not.	Replace the feed roller.
(5-2-3) Motor operation check		
Paper feed motor	Confirm that the paper feed motor works normally by using the Motor & Clutch Test of the self-diagnostic mode.	Replace the CU/PU board, or replace the paper feed motor.
Paper feed motor driver	Remove the HP_PSZCL connector ⑨ of the CU/PU board and check the followings at the connector side. Several MΩ between pin-1 – FG Several MΩ between pin-2 – FG Several MΩ between pin-3 – FG Several MΩ between pin-4 – FG	Replace the CU/PU board.
(5-2-4) Check the system connection		
Paper feed motor drive cable	Check the connection condition of the cable. Check if the connector is connected in the half-way only or not, and check if the connector is inserted in a slanted angle or not. Check also that cables are assembled without any abnormality.	Replace the cable with the good cable that normalizes the connection condition.
Paper feed motor drive cable	Check that any cable is not pinched during assembling of the printer. Remove the HP_PSZCL connector ⑨ of the CU/PU board and check the followings at the cable side. Short circuit between pin-1 – FG Short circuit between pin-2 – FG Short circuit between pin-3 – FG Short circuit between pin-4 – FG	Replace the cable with the good cable that normalizes the connection condition.
Paper feed motor	Remove the HP_PSZCL connector ⑨ of the CU/PU board and check that approx. 3.4Ω can be measured between pin-1 -pin-2, and that approx. 5Ω can be measured between pin-3 -pin-4 respectively.	Replace the paper feed motor.

6.5.1. (6) Paper running jam (error code 381:)

(6-1) Jam occurs immediately after the power is turned on.

Check item	Check work	Action to be taken at NG
(6-1-1) Check condition of the running path.		
Paper running path of the front unit	Check if paper is jammed or not in the paper running path.	Remove the jammed paper.
(6-1-2) Check condition of the mechanical parts		
Check the sensor lever of the WR sensor.	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the sensor lever with the good sensor lever.
(6-1-3) Check condition of electrical parts		
Check the detection condition of the sensor signal.	Confirm that the sensor signals are normally detected by using the SWITCH SCAN function of the self-diagnostic mode.	Replace either the CU/PU board or the front sensor board (RSF PCB) or connection cable.
Check the sensor lever of the WR sensor.	Check for the following signals at the FSNS connector ⑬ of the CU/PU board. Pin-2: WR sensor Confirm that the above signal levels change when the sensor lever is operated.	Replace the front sensor board (RSF PCB)
Check the power voltages supplied to the front sensor board (RSF PCB)	Check the 5V power at the CN connector ⑱ of the front sensor board (RSF PCB). Pin-1: 5V power supply Pin-5: 0VL	Replace the connection cable.

(6-2) Jam occurs immediately after a paper is taken into printer.

Check item	Check work	Action to be taken at NG
(6-2-1) Check condition of the paper running path		
Paper running path on the belt.	Remove the ID unit and check if paper is jammed or not in the paper running path.	Remove the jammed paper.
(6-2-2) Check condition of the mechanical parts		
Check the sensor lever of the WR sensor.	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the sensor lever with the good sensor lever.
(6-2-3) Motor operation check		
Paper feed motor driver, belt motor driver and ID motor	Confirm that the paper feed motor, belt motor and ID motor work normally by using the Motor & Clutch Test of the self-diagnostic mode. Check if any load exists or not.	Replace the CU/PU board, or replace the defective motor among paper feed motor, belt motor and ID motor, or replace the ID unit or belt unit.
Paper feed motor, belt motor	Remove the BELT ID UP connector ② of the CU/PU board and check the followings at the connector side. Several MΩ between pin-5 – FG Several MΩ between pin-6 – FG Several MΩ between pin-7 – FG Several MΩ between pin-8 – FG Remove the HP_PSZCL connector ⑨ of the CU/PU board and check the followings at the connector side. Several MΩ between pin-1 – FG Several MΩ between pin-2 – FG Several MΩ between pin-3 – FG Several MΩ between pin-4 – FG	Replace either paper feed motor, belt motor or CU/PU board.

Check item	Check work	Action to be taken at NG
(6-2-4) Check the system connection		
Paper feed motor drive cable, ID motor drive cable, belt motor drive cable, ID Up motor drive cable, fuser motor drive cable	Check the connection condition of the cables. CU/PU board HP_PSZCL connector ⑨ , DC ID connector ① , DCHEAT connector ③ , BELT ID UP connector ② , RELAY connector ⑥ . Check if the connector is connected in the half-way only or not, and check if the connector is inserted in a slanted angle or not. Check also that cables are assembled without any abnormality.	Normalize the connection condition. Replace the cable with the normal cable.
Paper feed motor drive cable, ID motor drive cable, belt motor drive cable, ID Up motor drive cable	Check that any cable is not pinched during assembling of the printer. Remove the BELT ID UP connector ② of the CU/PU board and check the followings at the connector side. Short circuit between pin-1 – FG Short circuit between pin-2 – FG Short circuit between pin-3 – FG Short circuit between pin-4 – FG Short circuit between pin-5 – FG Short circuit between pin-6 – FG Short circuit between pin-7 – FG Short circuit between pin-8 – FG Remove the HP_PSZCL connector ⑨ of the CU/PU board and check the followings at the cable side. Short circuit between pin-1 – FG Short circuit between pin-2 – FG Short circuit between pin-3 – FG Short circuit between pin-4 – FG	Replace the cable with the good cable that normalizes the connection condition.
Paper feed motor, belt motor, ID Up motor	Remove the respective connectors from the board, and confirm that the following resistance exists between the corresponding pins, at the cable side. CU/PU board HP_PSZCL connector ⑨ Between pin-1 - pin-2 Approx. 3.4Ω or approx. 5Ω. Between pin-3 - pin-4 Approx. 3.4Ω or approx. 5Ω. CU/PU board BELT ID UP connector ② Between pin-1 - pin-2 Approx. 6.1Ω or approx. 8.5Ω. Between pin-3 - pin-4 Approx. 6.1Ω or approx. 8.5Ω. Between pin-5 - pin-6 Approx. 3.4Ω or approx. 5Ω. Between pin-7 - pin-8 Approx. 3.4Ω or approx. 5Ω.	Replace paper feed motor, belt motor, ID Up motor.

(6-3) Jam occurs in the middle of paper running path.

Check item	Check work	Action to be taken at NG
(6-3-1) Motor operation check		
Paper feed motor driver, belt motor driver and ID motor	Confirm that the paper feed motor, belt motor and ID motor work normally by using the Motor & Clutch Test of the self-diagnostic mode. Check if any load exists or not.	Replace the CU/PU board, or replace the defective motor among paper feed motor, belt motor and ID motor, or replace the ID unit or belt unit.
Paper feed motor, belt motor	Remove the BELT ID UP connector ② of the CU/PU board and check the followings at the connector side. Several MΩ between pin-5 – FG Several MΩ between pin-6 – FG Several MΩ between pin-7 – FG Several MΩ between pin-8 – FG Remove the HP_PSZCL connector ⑨ of the CU/PU board and check the followings at the connector side. Several MΩ between pin-1 – FG Several MΩ between pin-2 – FG Several MΩ between pin-3 – FG Several MΩ between pin-4 – FG	Replace either paper feed motor, belt motor or CU/PU board.

(6-4) Jam occurs immediately after paper has reached the fuser.

Check item	Check work	Action to be taken at NG
(6-4-1) Motor operation check		
Fuser motor	Confirm that the fuser motor works normally by using the Motor & Clutch Test of the self-diagnostic mode. Check if any load exists or not.	Replace the CU/PU board. Replace the fuser motor. Replace the fuser unit.
(6-4-2) Temperature control of the roller rotation speed		
Heat roller detected temperature	Check the detected temperature of the heat roller using the self-diagnostic mode. Is abnormally high temperature or abnormally temperature detected?	Replace fuser unit, or relay board (PRY PCB) or the CU/PU board.
(6-4-3) Check the installation condition of fuser unit		
Fuser unit	Check that the fuser unit is installed normally. (Is it pushed in down to the bottom-most point?)	Install the fuser unit correctly in a printer.

6.5.1. (7) Paper unloading jam (error code 382)

(7-1) Paper unloading jam occurs immediately after the power is turned on.

Check item	Check work	Action to be taken at NG
(7-1-1) Check condition of the paper running path		
Paper running path of the paper unloading unit	Check if paper is jammed or not in the paper running path.	Remove the jammed paper.
(7-1-2) Check condition of the mechanical parts		
Check the sensor lever of the paper exit sensor.	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the sensor lever with the good sensor lever.
(7-1-3) Check condition of electrical parts		
Check the detection condition of the sensor signal.	Confirm that the sensor signals are normally detected by using the SWITCH SCAN function of the self-diagnostic mode.	Replace the CU/PU board or EXIT sensor or its cable or its connection cable.
Check the output signal level of the EXIT sensor.	Check for the following signals at the RELAY connector ⑥ of the CU/PU board. Pin-9: EXIT sensor Confirm that the above signal levels change when the sensor lever is operated.	Replace the EXIT sensor.
Check the power voltages supplied to the relay board.	Check the 5V power voltage at the EXIT connector ㉒ of the relay board. Pin-1: 5V power supply Pin-3: 0VL	Replace the connection cable.

Check item	Check work	Action to be taken at NG
(7-1-4) Check the system connection		
Signal cable for relay board, EXIT sensor cable	Check that FFC is normally inserted at the RELAY connector ⑥ of the CU/PU board and at the PU IF connector ⑳ . Check that the relay board and the EXIT sensor are normally connected.	Normalize the connection condition.
Signal cable for relay board, EXIT sensor cable	Confirm that the cables are not pinched, sheathes are not peeled off, and they are assembled normally.	Replace the connecting cable and normalize the assembled condition.

(7-2) Paper unloading jam occurs after a paper is taken into printer.

Check item	Check work	Action to be taken at NG
(7-2-1) Check condition of the paper running path		
Face Up Stacker Cover	Confirm that it is either fully opened or fully closed	Eliminate any in-between condition of the cover between the fully open position and fully closed position.
Duplex pull-in gate	Confirm that the Duplex pull-in gate works normally by using the Motor & Clutch Test of the self-diagnostic mode. Is it set to the paper unloading side normally?	Replace the Duplex pull-in gate or the Duplex solenoid
Rear panel	Check that the installation condition of the rear panel hampers smooth movement of a paper in the paper running path, or not.	Remove the rear panel and re-install it.
Paper running path of unloading unit	Check that any mechanical load does not exist that hampers the smooth movement of paper in the paper running path of the paper unloading unit, by the visual inspection. Check if the paper unloading motor becomes difficult to rotate or not.	Correct the portion that becomes mechanical load.

Check item	Check work	Action to be taken at NG
(7-2-2) Check condition of the mechanical parts		
Sensor lever of the paper exit sensor	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the sensor lever with the good sensor lever.
(7-2-3) Motor operation check		
Fuser motor	Confirm that the fuser motor works normally by using the Motor & Clutch Test of the self-diagnostic mode. Check if any load exists or not.	Replace the CU/PU board or fuser motor or fuser unit.
(7-2-4) Check the system connection		
Fuser motor drive cable	Check the connection condition of the cables. CU/PU board DCHEAT connector ③ , Check if the connector is connected in the half-way only or not, and check if the connector is inserted in a slanted angle or not. Check also that cables are assembled without any abnormality.	Replace the cable with the good cable that normalizes the connection condition.
Fuser motor		Replace the fuser motor.

(7-3) Paper unloading jam occurs in the middle of paper running path.

Check item	Check work	Action to be taken at NG
(7-3-1) Motor operation check		
Fuser motor	Confirm that the fuser motor works normally by using the Motor & Clutch Test of the self-diagnostic mode. Check if any load exists or not.	Replace the CU/PU board or fuser motor or fuser unit.

6.5.1. (8) Two-sided printing jam (error code: 370, 371, 372, 373, 383)

(8-1) Two-sided printing jam occurs immediately after the power is turned on.

Check item	Check work	Action to be taken at NG
(8-1-1) Check condition of the paper running path		
Paper running path of the Duplex unit	Check if paper is jammed or not in the paper running path. Open the front cover and check if any paper remains in the Duplex feeder or not. Open the rear cover and check if any paper remains in the paper reversing path or not. Remove the Duplex unit. Check if any paper exists in the Duplex insertion slot or not. Open the cover of the Duplex paper running path and check if any paper remains inside of the Duplex unit.	Remove the jammed paper.
(8-1-2) Check condition of the mechanical parts		
Check the sensor levers of the respective sensors of the Duplex unit.	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the sensor lever with the good sensor lever.
(8-1-3) Check condition of electrical parts		
Check the detection condition of the sensor signal.	Confirm that the sensor signals are normally detected by using the SWITCH SCAN function of the self-diagnostic mode. For all sensors except the Dup-IN sensor, check the detection condition of the respective sensor in the two status: One is the status in which paper remains inside the Duplex unit. The other is the status in which paper is removed from the Duplex unit.	Replace the Duplex board (V7Y PCB), or replace the defective sensor or connection cable.

(8-2) Two-sided printing jam occurs during taking in the paper into Duplex unit.

Check item	Check work	Action to be taken at NG
(8-2-1) Solenoid operation check		
Duplex solenoid	Confirm that the Duplex solenoid works normally by using the Motor & Clutch Test of the self-diagnostic mode.	Replace the V7Y board or solenoid.
Separator DUP (Paper unloading/ DUP paper taking-in switching gate located immediately after the fuser unit)	Check visually movement of the gate by using the Motor & Clutch Test of the self-diagnostic mode. (EXIT SOLENOID) Check if movement is unsmooth or not, if amount of open/close is abnormal or not.	Replace the separator DUP.
ON/OFF timing of the Duplex solenoid	While the cover is in the opened state, perform the test print and confirm if the timing to open the separator DUP is correct or not.	Replace the WR sensor lever or solenoid.
(8-2-2) Sensor lever operation check		
Dup-IN sensor lever	Open the rear cover. Touch the Dup-IN sensor lever to check if its movement is unsmooth or not.	Replace the Dup-IN sensor lever
DUP-IN sensor	Confirm that the sensor signals are normally detected by using the SWITCH SCAN function of the self-diagnostic mode.	Replace the Duplex board (V7Y PCB), or replace the defective sensor or connection cable.
(8-2-3) Check condition of the paper running path		
Paper inverting transport path	Check that any foreign materials such as paper chip or blue do not exist that hampers the smooth movement of paper in the paper inverting transport path.	Remove the foreign material.

Check item	Check work	Action to be taken at NG
(8-2-4) Motor operation check		
Duplex motor	Confirm that the Duplex solenoid works normally by using the Motor & Clutch Test of the self-diagnostic mode. Open the rear cover and check rotation of the roller.	Replace the V7Y board or motor.
Duplex pull-in/ reversing roller and its pinch roller	Check if the pull-in/reversing roller of the Duplex unit contacts or not with the pinch roller of the cover side when the Duplex rear cover is closed. (Does the pinch roller rotate when the roller is rotating?)	Replace the rear cover.

(8-3) Two-sided printing jam occurs in the process of reversing paper.

Check item	Check work	Action to be taken at NG
(8-3-1) Sensor lever operation check		
Dup-IN sensor lever	Open the rear cover. Touch the Dup-IN sensor lever to check if its movement is unsmooth or not.	Replace the Dup-IN sensor lever
DUP-IN sensor	Confirm that the sensor signals are normally detected by using the SWITCH SCAN function of the self-diagnostic mode.	Replace the Duplex board (V7Y PCB), or replace the defective sensor or connection cable.
(8-3-2) Motor operation check		
Duplex motor	Check if the paper reversing operation is started or not by visual inspection when viewing through slit of the rear cover. If the paper reversing operation is not started, check if movement of the planetary gear inside the Duplex unit is unsmooth or not.	Replace the planetary gear.

(8-4) Two-sided printing jam occurs during transporting paper inside the Duplex unit.

Check item	Check work	Action to be taken at NG
(8-4-1) Sensor lever operation check		
Dup-R, Dup-F sensor lever	Remove the Duplex unit and check movement of the sensor lever.	Replace the sensor lever.
(8-4-2) Sensor check		
Check the detection condition of the sensor signal	Confirm that the sensor signals are normally detected by using the SWITCH SCAN function of the self-diagnostic mode. For all sensors except the Dup-IN sensor, check the detection condition of the respective sensor in the two status: One is the status in which paper remains inside the Duplex unit. The other is the status in which paper is removed from the Duplex unit.	Replace the Duplex board (V7Y PCB), or replace the defective sensor or connection cable.

(8-5) Paper is not supplied from the Duplex unit to the regist roller.

Check item	Check work	Action to be taken at NG
(8-5-1) Clutch operation check		
Duplex clutch	Confirm that the Duplex clutch works normally by using the Motor & Clutch Test of the self-diagnostic mode. Confirm it by listening to the sound.	Replace the V7Y board or clutch.

6.5.1. (9) Paper size error (error code 400)

(9-1) Jam occurs when paper end is located near the IN1 sensor.

Check item		Check work	Action to be taken at NG
(9-1-1) Check paper feed condition			
	Multifeed of papers	Open the front cover and check if multifeed of papers occurs or not.	If the multifeed occurs again after the jammed paper is removed, replace the flap of the tray in use.
	Paper size	Does the paper size specified for print match the paper size of paper stuck in the tray.	Change the specified paper size or size of paper inside the tray.
	Paper entrance sensor 1	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the sensor lever with the good sensor lever.

6.5.1. (10) ID unit Up/Down error (Service call 140 to 143)

(10-1) Error occurs during the Up movement of the ID unit

Check item		Check work	Action to be taken at NG
(10-1-1) Check the mechanical load during the Up movement			
	Mechanical load during installation and removal of the ID unit	Check if abnormal heavy load is applied when removing the ID unit.	IReplace the ID unit, or replace the right/left side plate.
	Greasing to the right and left Up/Down link levers	Check if the slant surface of the link lever is coated by grease or not.	Apply grease.
	Assembled condition of the right and left Up/Down link levers	Check if any part exists or not in the vicinity of link lever, that hampers movement of the link lever.	Assemble them correctly.
(10-1-2) Up/Down mechanism			
	Assembled condition of the peripheral mechanism of the link lever	Is the mechanism assembled so that the link lever is connected to the planetary driving gear?	Assemble them correctly.
	Right and left link levers	Check if the link lever is set in the correct position that enables the specified engagement of gears. (Check if the link lever is set in the wrong position that results in the wrong engagement of gears by several teeth.)	Assemble them correctly.

Check item	Check work	Action to be taken at NG
(10-1-3) Sensor check		
Up/Down sensor lever (unified structure with the left link lever)	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the left link lever.
Up/Down sensor	Confirm that the sensor signals are normally detected by using the SWITCH SCAN function of the self-diagnostic mode. Check if the SCAN state changes or not when the incoming light is interrupted/passed by using a piece of paper or the like for the transparent type sensor.	Replace the high voltage board.

(10-2) Error occurs during the Down movement of the ID unit

Check item	Check work	Action to be taken at NG
(10-2-1) Check the mechanical load during the Down movement		
Mechanical load during installation and removal of the ID unit	Check if abnormal heavy load is applied when removing the ID unit.	Replace the ID unit, or replace the right/left side plate.
Greasing to the right and left Up/Down link levers	Check if the slant surface of the link lever is coated by grease or not.	Apply grease.
Assembled condition of the right and left Up/Down link levers	Check if any part exists or not in the vicinity of link lever, that hampers movement of the link lever.	Assemble them correctly.

6.5.1. (11) Fuser unit error (error 170 to 177)

(11-1) Error occurs immediately after the power is turned on.

Check item	Check work	Action to be taken at NG
(11-1-1) Thermistor is defective Note)		
Upper thermistor, lower thermistor, frame thermistor	Check the respective thermistors if they are shorted or opened internally. Check the resistance value at the connector pins in the bottom of the fuser unit. (Refer to section 7.1 Resistance check (fuser unit).)	Replace the fuser unit.
Installed condition of fuser unit.	Check if the fuser nit is pressed in until the connector in the bottom of the fuser unit is surely connected.	Re-set the fuser unit.

Note! Service calls 171 error and 171 error can occur when the printer temperature is below 0℃. Turn on the power again after the printer temperature has increased.

(11-2) Error occurs approx. 1 minute after the power is turned on.

Check item	Check work	Action to be taken at NG
(11-2-1) Temperature increase of fuser unit		
Thermostat, halogen lamp	Heater of the fuser unit is controlled of its temperature. Check if the fuser unit gets hot or not by touching it with hands. If the fuser unit temperature does not increase and remains cold, check that the resistance between pin-1 and pin-6 of connector A, and that in between pin-1 and pin-6 of connector B of the two connectors is in the range of several ohms to several ten ohms respectively. (Refer to section 7.1 Resistance value (fuser unit).)	Replace the fuser unit.

Check item	Check work	Action to be taken at NG
(11-2-2) Temperature increase of fuser unit		
Installation position of the upper thermistor	Check if the upper thermistor is installed in the far position from the specified position or not causing detection of the lower temperature than the actual temperature of fuser unit. Remove the heater cover, and check warpage of sensor by visual inspection.	Replace the fuser unit.
Installation position of the lower thermistor	The lower thermister must be installed while contacting with the fuser unit. Check if the lower thermister is installed in the far position from the specified position or not causing detection of the lower temperature than the actual temperature of fuser unit.	Replace the fuser unit.
(11-2-3) AC power input to the halogen lamp		
AC power voltage from the low voltage power supply	Check if the AC voltage for heater is normally supplied or not. Power supply CN2 connector ㉓ , between pin-1 and pin-2, and between pin-3 and pin-4.	Replace the low voltage power supply.
Heater ON signal that is output from PU to the low voltage power supply	Check that the heater ON signal goes active at the warming up timing, or not. "L" active while ON. Power connector ⑦ of the CU/PU board, between pin-14 and pin-15.	Replace the CU/PU board.

6.5.1. (12) Motor fan error (error code 122, 127, 128, 918, 051)

(12-1) The low voltage power supply fan does not rotate immediately after the power is turned on.

Check item	Check work	Action to be taken at NG
(12-1-1) Cable connection condition and wiring condition		
Cable connection condition and wiring condition of the low voltage power supply fan and those of the fuser fan	Check if the connectors are connected normally or not. Check if extra length of the cables does not touch the fan blade or not.	Correct the connection condition of the connectors. Correct the cable wiring route. Replace the fan.

(12-2) Duplex fan does not rotate during the Duplex printing.

Check item	Check work	Action to be taken at NG
(12-1-2) Cable connection condition and wiring condition		
Cable connection condition and wiring condition of the Duplex fan	Check if the connectors are connected normally or not. Check if extra length of the cables does not touch the fan blade or not.	Correct the connection condition of the connectors. Correct the cable wiring route. Replace the fan. Replace the fan.
24V fuse F501 of the Duplex board (V7Y PCB)	Check if the fuse F501 has blown out or not.	Replace the Duplex board (V7Y PCB).
24V power supplied to the Duplex board (V7Y PCB).	Check if the fuse F4 of the CU/PU board has blown out or not.	Replace the CU/PU board.

(12-3) All fans of the printer do not rotate.

Check item	Check work	Action to be taken at NG
(12-3-1) 24V power supply		
CU/PU board fuses F1	Check if the fuse F1 is not open-circuit or not.	Replace the CU/PU board.
24V power that is supplied to the CU/PU board.	Check the power supply voltages at the POWER connector ⑦ of the CU/PU board. The follow voltage must appear respectively. Pins-7, 8 and 9: 24V Pins-10, 11 and 12: 0VP	Replace the low voltage power supply.

6.5.1. (13) Print speed is slow. (Performance is low.)

(13-1) Print speed decreases.

Check item	Check work	Action to be taken at NG
(13-1-2) Media Weight setting		
Media Weight that is specified for the print	Check if the wrong Media Weight has been specified or not.	Correct the Media Weight.

6.5.1. (14) Option unit cannot be recognized.

(14-1) Duplex unit cannot be recognized.

Check item	Check work	Action to be taken at NG
(14-1-1) Duplex board		
Duplex unit	Check if the Duplex unit of C612/C712 specification is being used or not.	Replace the Duplex unit.
(14-1-2) Check the system connection		
Check the system connection from the CU/PU board to the Duplex board (V7Y PCB).	Check that the cable between the CU/PU board option connector ⑩ to the Duplex board is normally connected.	Correct the connections.
Square connector connecting the Duplex unit to the printer.	Check if any foreign material exists in the connecting portion of the square connector.	Remove the foreign material.
Square connector connecting the Duplex unit to the printer.	Is the terminals of the square connector damaged?	Replace the connector.
(14-1-3) Check the control signals.		
Check the control signal that is output from the CU/PU board to the Duplex board (V7Y PCB).	Check the control signal that is output from the CU/PU board option connector ⑩ . Pin-6: TXD (PU → DUP) Pin-4: RXD (DUP → PU)	Replace the CU/PU board.

(14-2) Option try unit cannot be recognized.

Check item	Check work	Action to be taken at NG
(14-2-1) Option try board		
Option try unit	Check if the option try unit of C612/C712 specification is being used or not.	Replace the option tray unit.
(14-2-2) Check the system connection		
Check the system connection from the CU/PU board to the option tray board (V7Y PCB).	Check that the cable between the CU/PU board option connector ⑩ to the option tray board is normally connected.	Correct the connections.
Square connector connecting the option tray unit to the printer.	Check if any foreign material exists in the connecting portion of the square connector.	Remove the foreign material.
Square connector connecting the option tray unit to the printer.	Is the terminals of the square connector damaged?	Replace the connector.
(14-2-3) Check the control signals.		
Check the control signal that is output from the CU/PU board to the option tray board (V7Y PCB).	Check the control signal that is output from the CU/PU board option connector ⑩ . Pin-5: TXD (PU → 2nd) Pin-3: RXD (2nd → PU)	Replace the CU/PU board.

6.5.1. (15) LED head cannot be recognized. (error code 131, 132, 133, 134)

(15-1) Service call 131 to 134 (LED HEAD Missing)

Check item	Check work	Action to be taken at NG
(15-1-1) Check the system connection		
Connecting condition at the CU/PU board connector and at the head connector.	Check the connecting condition of the FFC by the visual inspection.	Correct the connection to the normal connecting condition.
Head FFC	Remove the head FFC from the printer. Check if any open-circuit or peeling-off of sheath has occurred or not throughout the cable.	Replace the head FFC or the CU/PU board.
Conduction of the fuse on the CU/PU board.	Check if the fuses F12 and F13 for 5V are open-circuit or not. F12:C,M SC133:C, SC134:K F13:Y,K SC131:Y, SC132:M Check if the fuses F11 for 3.3V is open-circuit or not. ***Note)*** 5V is not supplied to CP8:C/M, CP9:Y/K, when the top-cover is opened.	Replace the LED HEAD, when the service call occurs, even if it replaces the CU/PU board.

6.5.1. (16) Toner cartridge cannot be recognized. (error code 540, 541, 542, 543)

(16-1) Error caused by the consumable items.

Check item	Check work	Action to be taken at NG
(16-1-1) Consumable items installation condition		
ID unit and toner cartridge	Check that the ID unit is installed in the normal position. Check that the lock lever of the toner cartridge is locked.	Correct the installation to the normal installation condition.

(16-2) Error caused by the toner sensor

Check item	Check work	Action to be taken at NG
(16-2-1) Toner sensor condition		
Toner sensor	Is the receptor of the toner sensor stained?	Wipe off the stain from the toner sensor.
Toner sensor	Confirm that the toner sensor works normally by using the SWITCH SCAN function of the self-diagnostic mode. Place a white paper in front of the toner sensor, and check if the SCAN state changes or not.	Replace the toner sensor board, or the CU/PU board, or the FFC between the toner sensor board and the CU/PU board.
Connection cable	Check that the cable between the PRZ board to the CU/PU board is normally connected.	Correct the connection to the normal connecting condition. Replace the PRZ board.

When it is not settled by the above, to replace the CU/PU board.

Note! Toner sensor operation check method using the SWITCH SCAN function of the self-diagnostic mode.

(1) How to check operation of the toner sensor at the printer side.

1. Status change of the toner sensor can be checked from the Operator Panel using the self-diagnostic mode. First, switch the display to the Operator Panel display. For the method of switching the display to the Operator Panel display, refer to section 5.3.2.3 Switch Scan Test
2. Remove the ID unit and the toner cartridge (TC) from a printer. There is a window inside a printer opposing the ID side when viewed from the front of a printer. The toner sensor is located inside the window.
3. Place a white paper 3 mm away from the sensor window. The white paper should be placed in the manner of opposing the toner sensor.
4. When light is reflected by a white paper so that incident light falls on the toner sensor, the Operator Panel display shows "L". When the paper is moved so that any light is not reflected by the paper so that the incident light does not reach the toner sensor, "H" is displayed on the Operator Panel.
5. If the Operator Panel display toggles between "H" <-> "L" as a paper is flipped in front of the toner sensor, it indicates that the toner sensor and the related system of the printer are working normally.

Action to be taken at NG

- Clean surface of the toner sensor to remove the stains due to residual toner and paper dust.
- Check the connection condition of the FFC cable at the PU main board (PU) and at the toner sensor board (PRZ).
- Perform the operation check again. If the situation is not improved and remains unchanged, replace the PU main board (PU) or the toner sensor board (PRZ).

(2) How to check operation of the toner sensor at the toner cartridge (TC) side

1. To the position where the toner sensor is confirmed to be operating normally in the printer itself by the above paragraph (1), install the TC and the ID unit to check operations by observing display on the Operator Panel.
2. If the ID unit works normally, the display on the Operator Panel will toggle between "H" <-> "L" in synchronism with movement of the silver reflector plate that is located on the side of the ID.

Action to be taken at NG

- Check operation condition of the respective ID motors by using the Motor & Clutch Test of the self-diagnostic mode.
- Clean surface of the silver reflector plate on the side of ID to remove stains. (Stain due to toner or paper dust)
- Replace the TC of different color and the ID unit as a pair.

  If a satisfactory operation is attained by using the a pair of TC of different color and the ID unit, replace the TC or replace the ID unit.

(16-3) Error caused by the defective mechanism

Check item	Check work	Action to be taken at NG
(16-3-1) Mechanical load applied to the ID unit		
ID unit	Check if a heavy mechanical load is being applied to the ID unit due to breakage of the waster toner belt, or not.	Replace the ID unit.
(16-3-2) Motor operating condition		
ID motor	Confirm that the respective ID motors work normally or not by using the Motor & Clutch Test of the self-diagnostic mode. Check if any extra load exists or not.	Replace the CU/PU board or the ID motor.

6.5.1. (17) Fuse cut error (error codes 150 to 155)

(17-1) Fuse cut error

Check item	Check work	Action to be taken at NG
(17-1-1) Check the system connection		
FFC connecting the CU/PU board and the toner sensor board (PRZ PCB)	Check if the connector is connected in the half-way only or not, and is inserted in a slanted angle or not at the SSNS connector ⑮ of the CU/PU board, and at the SSNS connector ⑯ of the toner sensor board (PRZ PCB). Check if FFC has open-circuit of sheath of the FFC has not peeled off or not.	Connect the FFC normally. Alternately, replace the FFC.
(17-1-2) Fuse cut circuit		
CU/PU board	Upon completion of the system connection check, turn off the power once and back on. The, check if the error occurs or not.	Replace the CU/PU board.

6.5.1. (18) Humidity sensor error (error code 123)

(18-1) Humidity sensor error

Check item	Check work	Action to be taken at NG
(18-1-1) Check the system connection		
Connection between the CU/PU board and Operator Panel	Check if the 11-conductor FFC is connected to the OPE connector ⑭ of the CU/PU board normally or not. Check if the 11-conductor FFC is connected to the CN1 connector ⑰ of the Operator Panel board normally or not. Check if the connector is connected in the half-way only or not, and check if the connector is inserted in a slanted angle or not.	Re-connect the cable normally.
FFC connecting the CU/PU board and the Operator Panel board	Check for open-circuit with VOM. Check that peeling off of sheath does not occur in any cables by visual inspection.	Replace the FFC with the normal FFC.
(18-1-2) Environment condition		
Sharp change of environment condition	Is the environment condition changed sharply from a low temperature environment to a high environment condition within a short time? (Example is such a case that a printer is moved from storage condition of a cold area in winter to an office environment.)	Leave a printer for around one hour in the new environment to get used to the new environment. After that, turn on the power again. Before turn on the power, touch the metal panel of the controller panel and the metal plate inside a printer to feel temperature increase inside a printer with human hands. After confirmation that the printer temperature has increased close to the room temperature, turn on the power again.

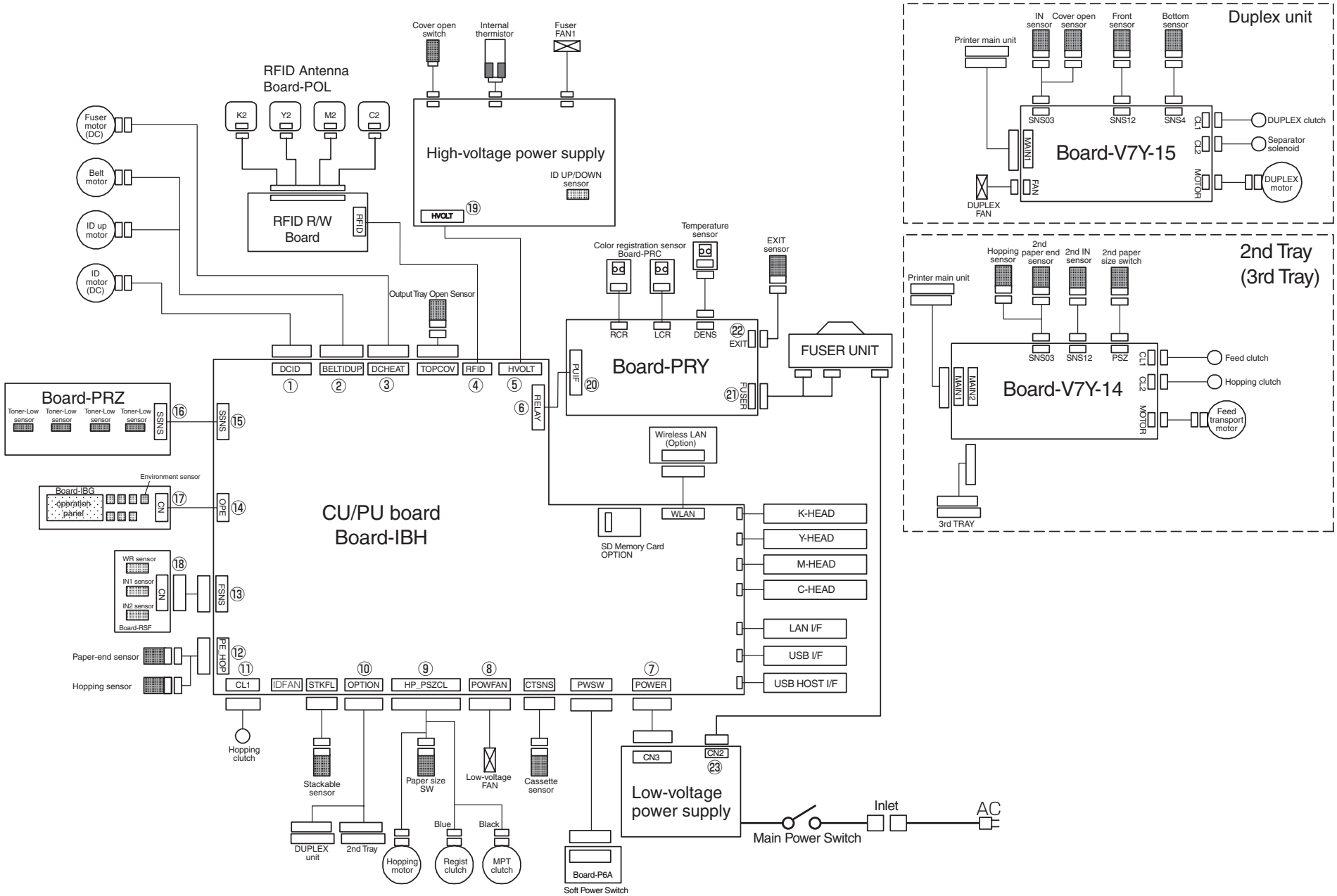
6.5.1. (19) Output Tray opening cannot be detected.

(19-1) Even if the Output Tray is opened at the time of on-line, the printer cannot react.

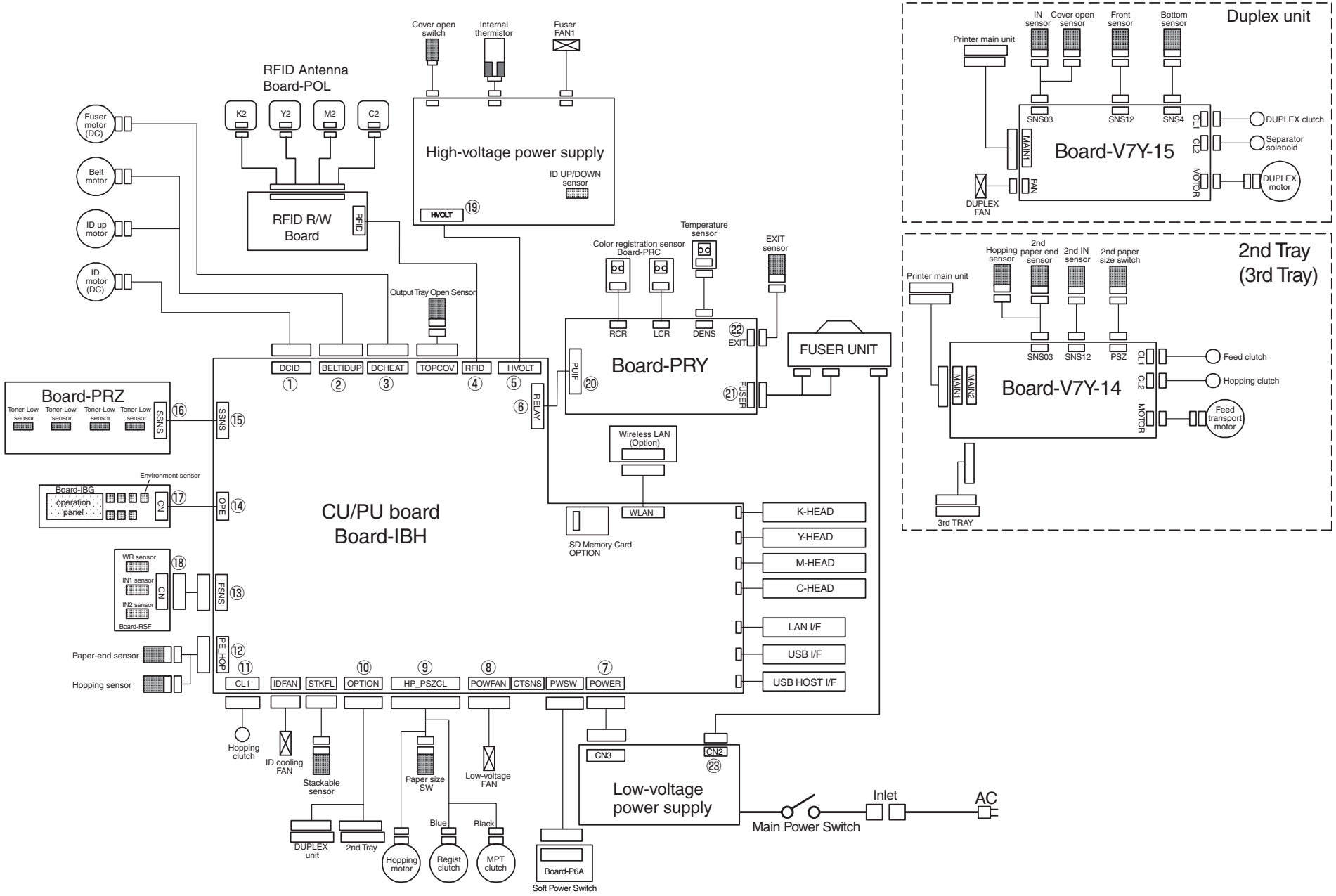
A printer is not activated even if Output Tray is opened at the time of sleep and off-mode.

Check item	Check work	Action to be taken at NG
(19-1-1) Check the system connection		
Connecting condition from the CU/PU board to Output Tray Open sensor	Check the cable is connected to TOPCOV connector. Check the cable is connected to Tray Open sensor.	Correct the connections.
(19-1-2) Check the control signals		
Check the control signal that is output from the CU/PU board. TOPCOV connector 2pin:Output Tray Open signal 3pin:0V	TOPCOV connector 2pin:top cover open About 3.3V:Close About 0V:Open	(1)Replace the cable (2)Replace the sensor In cases where it does not repair by (1) and (2), (3) Replace the CU/PU board (4) Although the signal is right, in cases where Top Cover opening cannot be detected, replace a CU/PU board.

6.5.1. (20) Wiring diagram (C612)



Wiring diagram (C712)



6.5.2 Image Problem Troubleshooting

- **Refer to the Printer(SFP) Maintenance Manual for common section (46470802TH) for troubleshooting the abnormal images.**

Information 1 : Periodic abnormalities

(1) Print quality problems appear vertically and periodically.

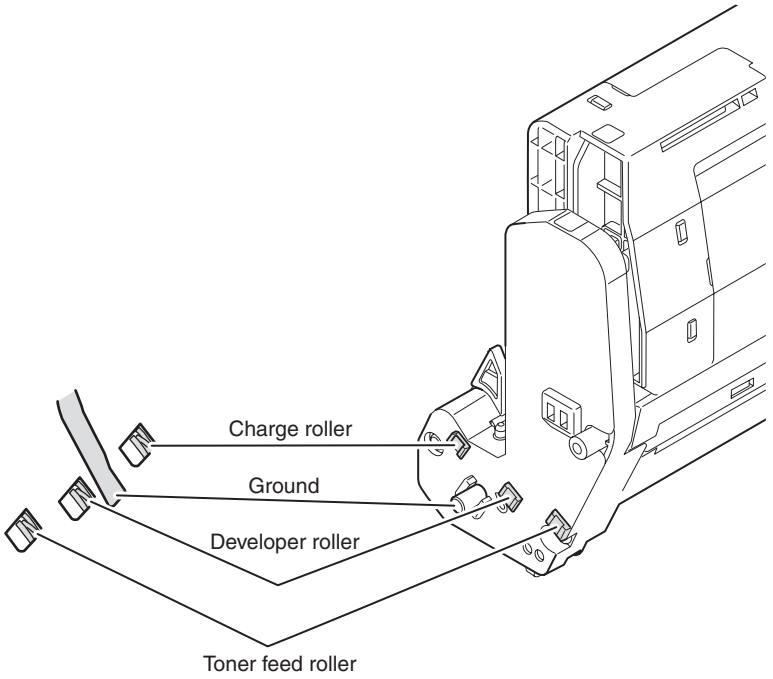
Check item		Check work	Action to be taken at NG
(5-1-1) Cycle			
	Image drum	Check that the cycle is 94.3 mm.	Replace the ID unit*1
	Developing roller	Check that the cycle is 39.7 mm.	Replace the ID unit
	Toner feed roller	Check that the cycle is 58.4 mm.	Replace the ID unit
	Charge roller	Check that the cycle is 37.7 mm.	Replace the ID unit
	Roller on top of fuser	Check that the cycle is 90.5mm.	Replace the fuser unit*2
	Fuser belt	Check that the cycle is 96.3 mm.	Replace the fuser unit*2
	Transfer roller	Check that the cycle is 50.3 mm.	Replace the belt unit*3

*1:If stains could see on the Image drum, wipe the Image drum with a soft cloth lightly.
If stains could not wipe with a dry cloth, dust a few toner on the cloth.
Do not use the cloth moistened with water or alcohol.
It is possible that damage to Image drum. Confirm the printing quality after cleaning.If occur abnormal images, change to new image drum.

*2:If stains could see on the Fuser rollers and belt, wipe the rollers and belt with a soft cloth lightly when Fuser unit is cool.Confirm the printing quality after cleaning.If occur abnormal images, change to new Fuser Unit.

*3:If stains could see on the Transfer belt, wipe the Transfer belt with a soft cloth lightly.Confirm the printing quality after cleaning.If occur abnormal images, change to new Belt unit.

Information 2 : ID contact positions



6.6 Fuse check

If the following error is issued, check the corresponding fuse of the CU/PU control board and high voltage power supply board.

(Refer to Table 6-1)

Table 6-1 Fuse error

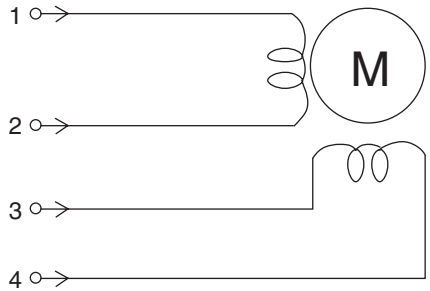
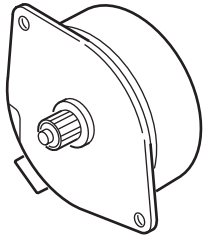
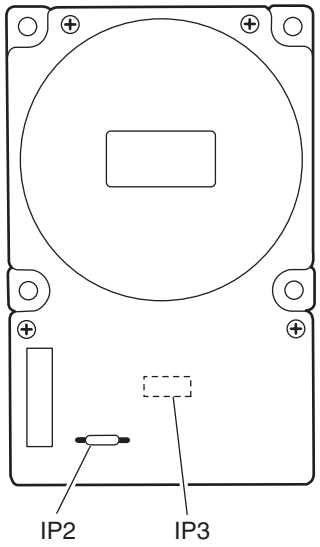
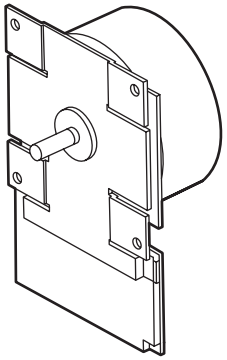
Fuse Name		Error Description	Insert Point	Resistance
CU/PU board (PU area)	F4	Service call 918 (However, if the Duplex unit is not installed, it is the 2nd/3rd hopping error.)	Duplex, 2nd/3rd 24V	Less than 1 ohm
	F3, F5	Power supply shut-down (Not displayed on operator panel)	CU/PU F3 3.3V, F5 5V	
	F6	ID UP/DOWN error. Service call 142	Belt motor, ID UP/DOWN motor, Hopping clutch 24V	
	F1	Cover open	High voltage power supply board, Power supply fan, fuser fan 24V	
	F9	Service call 122	Feed clutch, MPT clutch, Fuse cut, feed motor, ID cooling fan 24V	
High voltage power supply board	IP901	Cover open	High voltage 24V	
	IP902	Service call 121	High voltage 5V	
CU/PU board (CU area)	F12	• Service call 132, 133 error • C,M are not printed. (132 : M, 133 : C)	LED HEAD C,M 5V	
	F13	• Service call 131, 134 error • K,Y are not printed. (131 : Y, 134 : K)	LED HEAD K,Y 5V	
	F11	Service call 131 to 134 error	LED HEAD 3.3V	
	F10	Host USB error WLAN error	HOST USB, WLAN 5V	

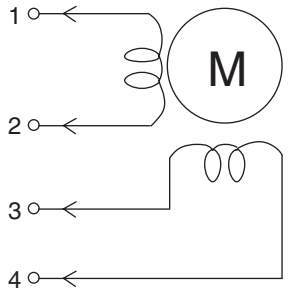
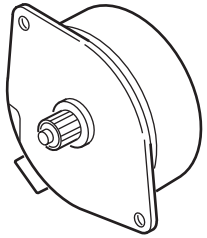
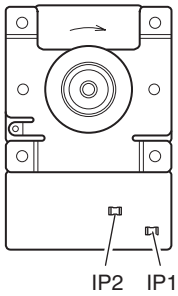
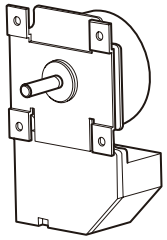
6.7 Paper cassette switches versus Paper size correspondence table

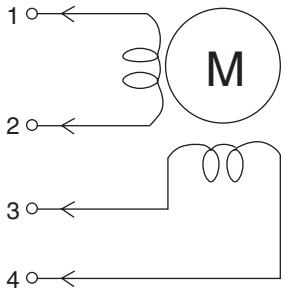
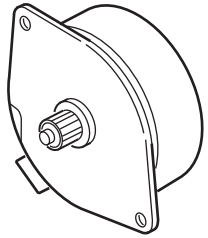
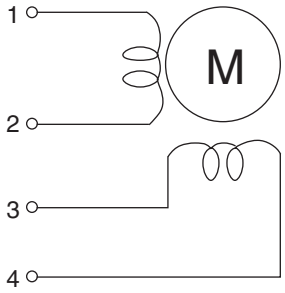
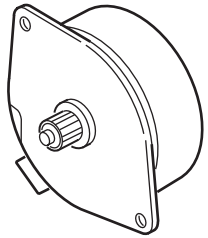
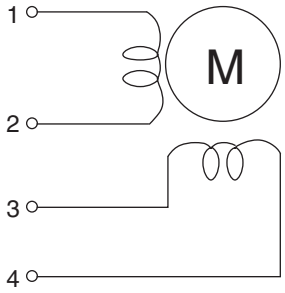
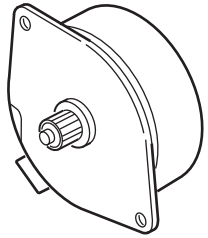
Dial display size	Bit No.			
TRAY1~3	1	2	3	4
Cassette: none	H	H	H	H
Legal 14"	H	L	H	L
Legal 13.5"	H	L	H	H
Legal 13"	L	L	L	H
Letter	L	L	L	L
Executive	L	L	H	L
Blank	L	L	L	L
Blank	H	H	L	L
A4	L	H	L	L
B5	L	H	H	L
A5	H	H	H	L
Not used	L	L	H	H
Not used	L	H	L	H
Not used	H	H	L	H
Not used	H	L	L	H
Not used	L	H	H	H
Not used	H	L	L	L
* When switch is pressed: Low				

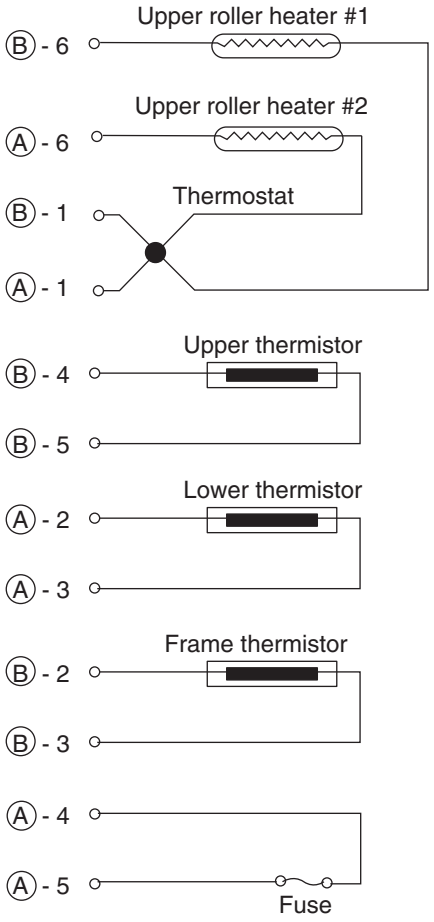
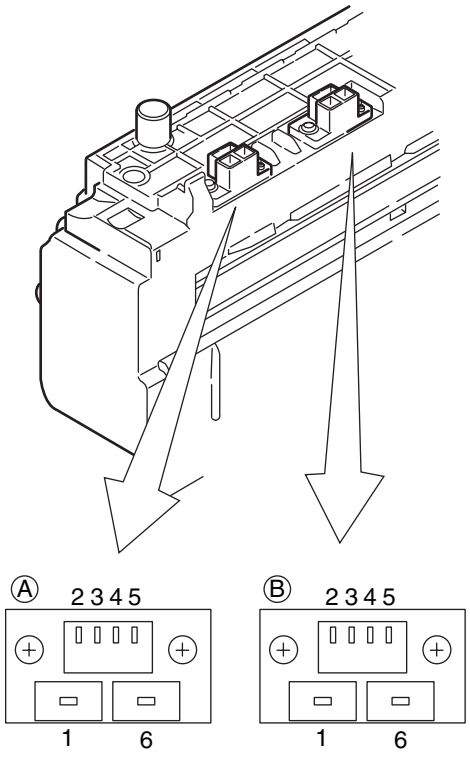
7. Connection diagrams

7.1 Resistance value check

Unit	Electrical circuit diagram, connection	Part outside view	Resistance value
Transport belt motor			Between pin-1 and pin-2: 3.4Ω Between pin-3 and pin-4: 3.4Ω
ID motor			Across both ends of IP2 and IP3: 1Ω or less

Unit	Electrical circuit diagram, connection	Part outside view	Resistance value
ID up/down motor			Between pin-1 and pin-2: 6.1Ω Between pin-3 and pin-4: 6.1Ω
Fuser unit motor			Across both ends of IP1 and IP2: 1Ω or less

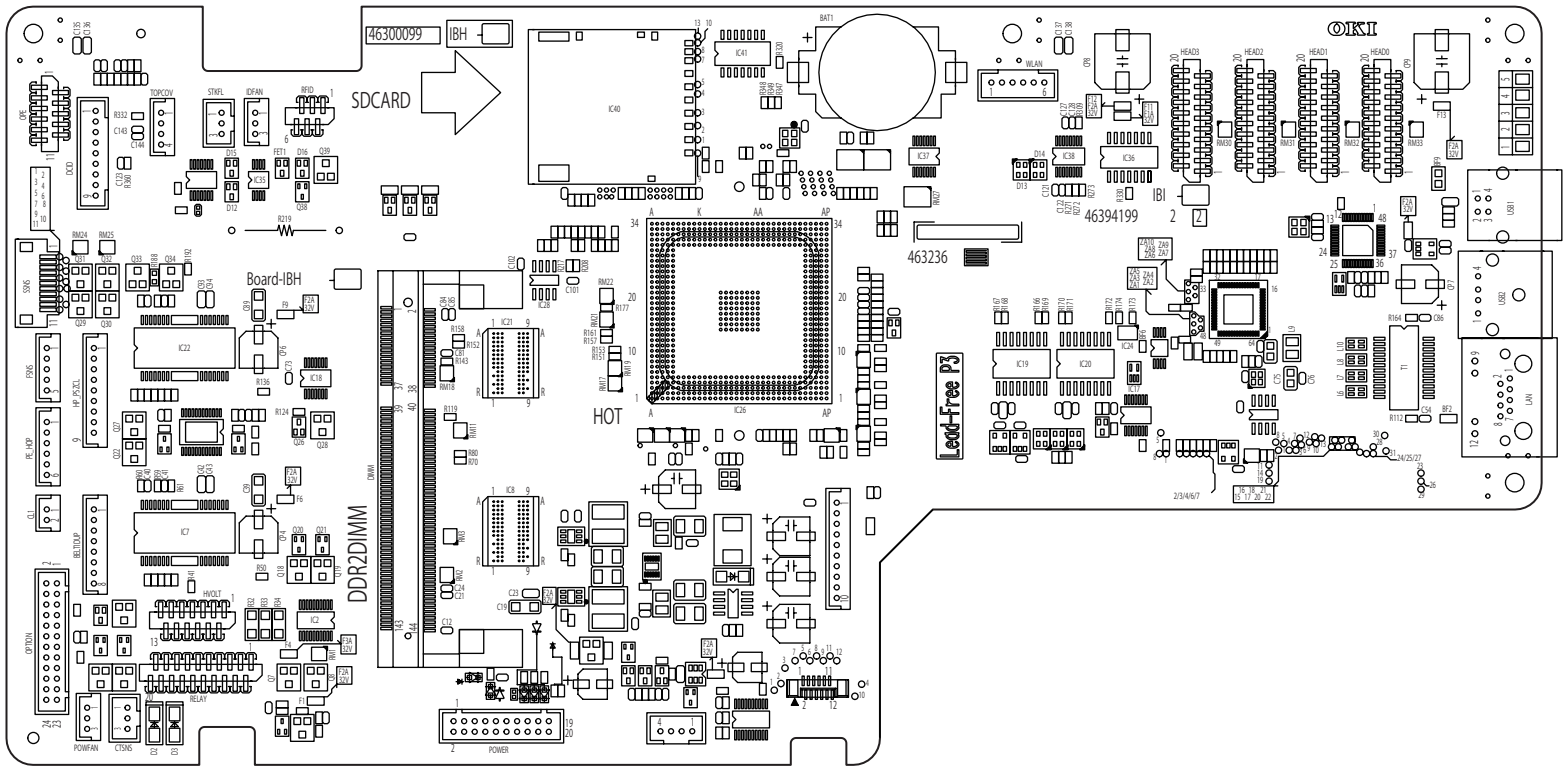
Unit	Electrical circuit diagram, connection	Part outside view	Resistance value
Feed motor			Between pin-1 and pin-2: 3.4Ω Between pin-3 and pin-4: 3.4Ω
Both-sided print motor			Between pin-1 and pin-2: 3.2Ω Between pin-3 and pin-4: 3.2Ω
2nd / 3rd tray feed motor			Between pin-1 and pin-2: 3.4Ω Between pin-3 and pin-4: 3.4Ω

Unit	Electrical circuit diagram, connection	Part outside view	Resistance value
Fuser unit			Between pins Ⓐ-1 and Ⓐ-6: Several ohms to several ten ohms Between pins Ⓑ-1 and Ⓑ-6: Several ohms to several ten ohms Between pins Ⓑ-4 and Ⓑ-5: Approx. 590kΩ to 5338kΩ (0 to 93°C) Between pins Ⓐ-2 and Ⓐ-3: Approx. 104.5kΩ to 806.5kΩ (0 to 43°C) Between pins Ⓑ-2 and Ⓑ-3: Approx. 104.5kΩ to 806.5kΩ (0 to 43°C) Between pins Ⓐ-4 and Ⓐ-5: Open

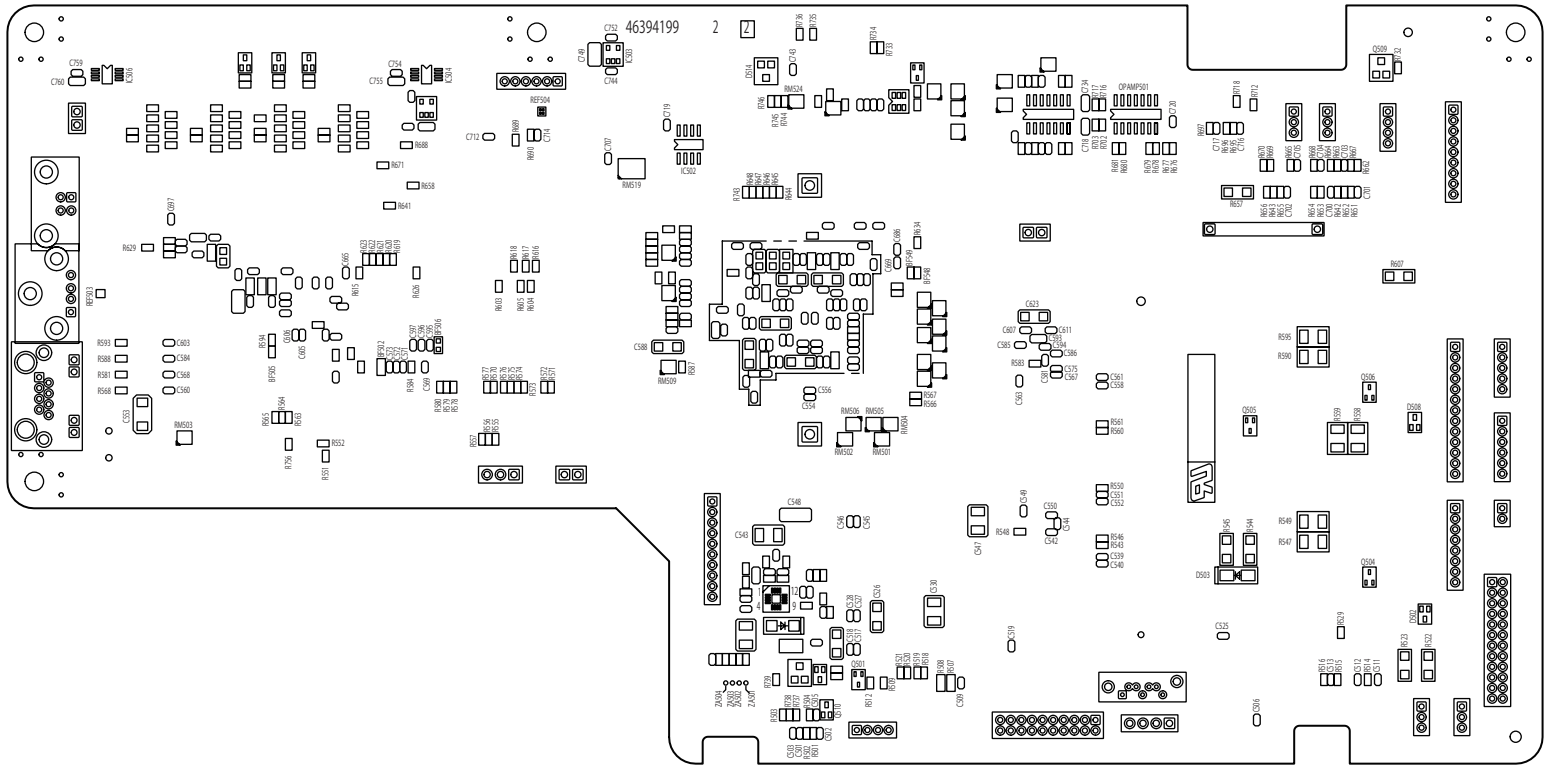
7.2 Parts location

(1) CU/PU PCB

Component side

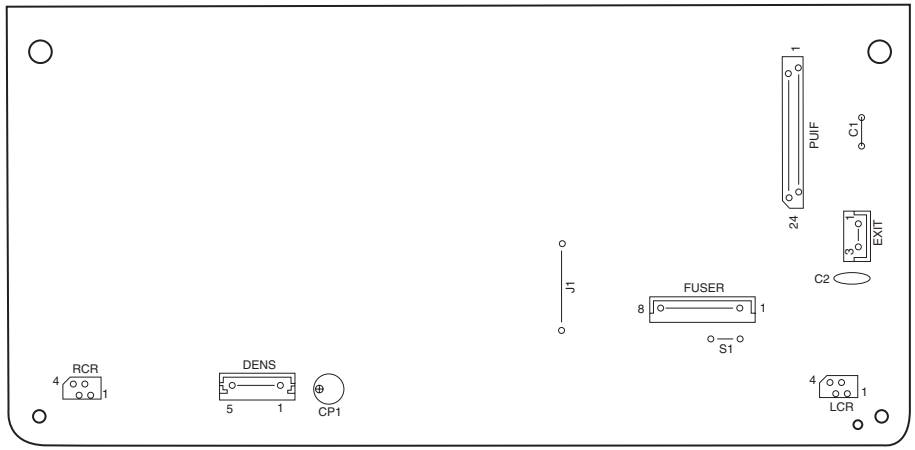


Soldering side

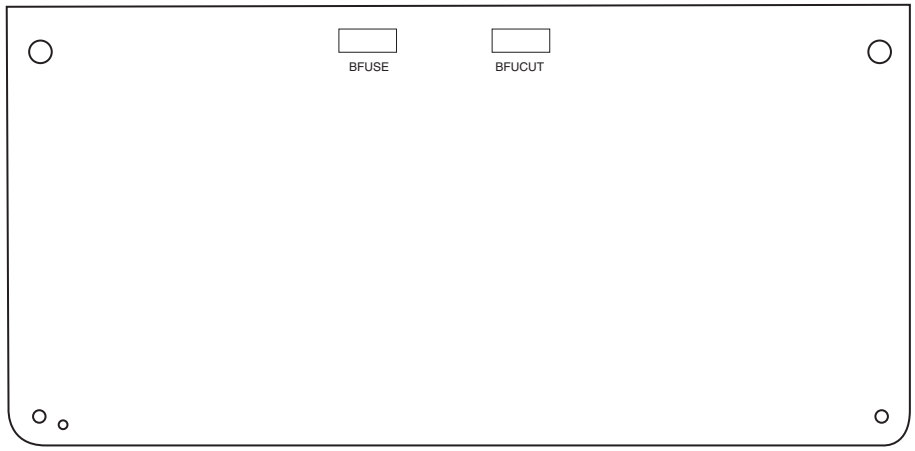


(2) Rellay PCB

Component side

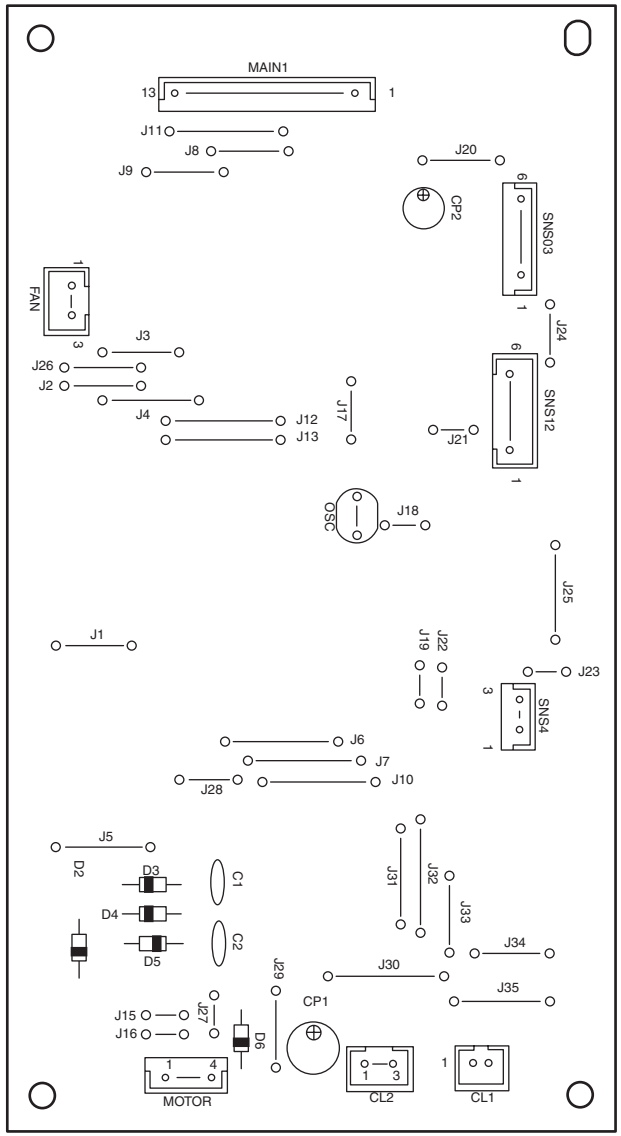


Soldering side

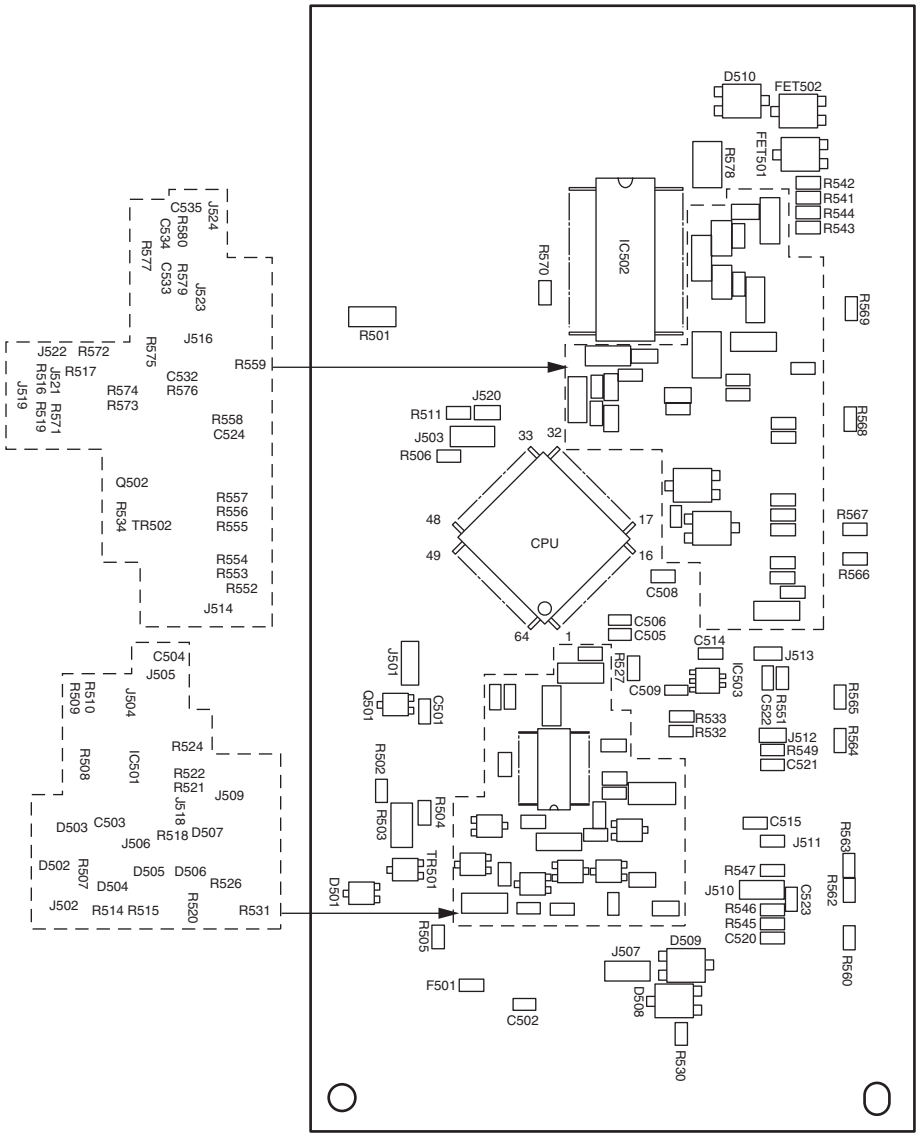


(3) Both-sided Printing Control PCB

Component side

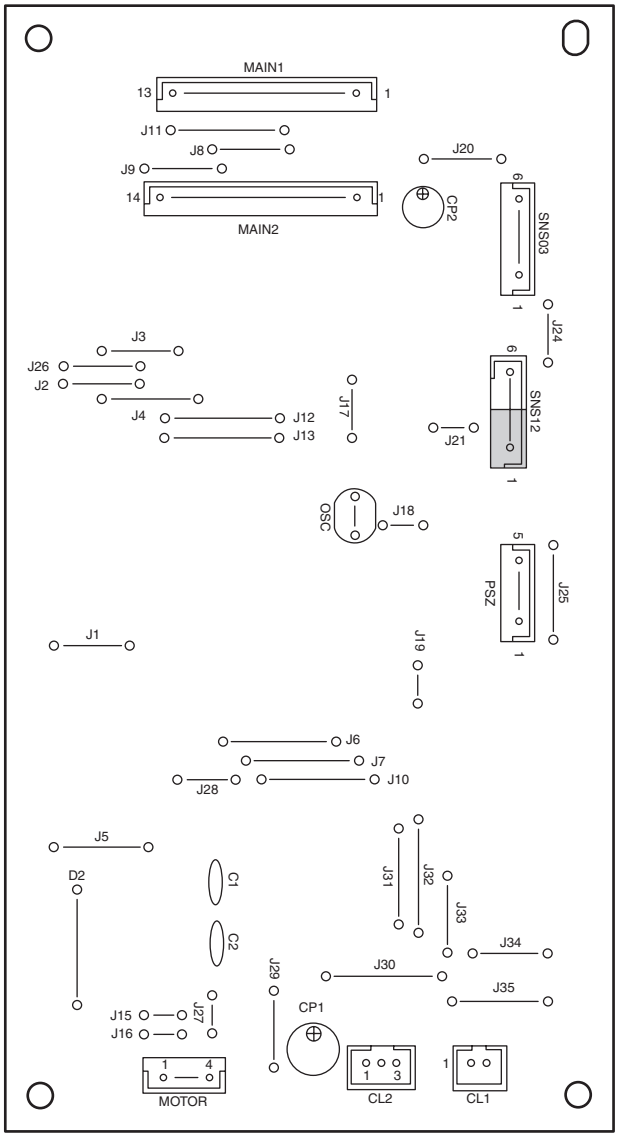


Soldering side

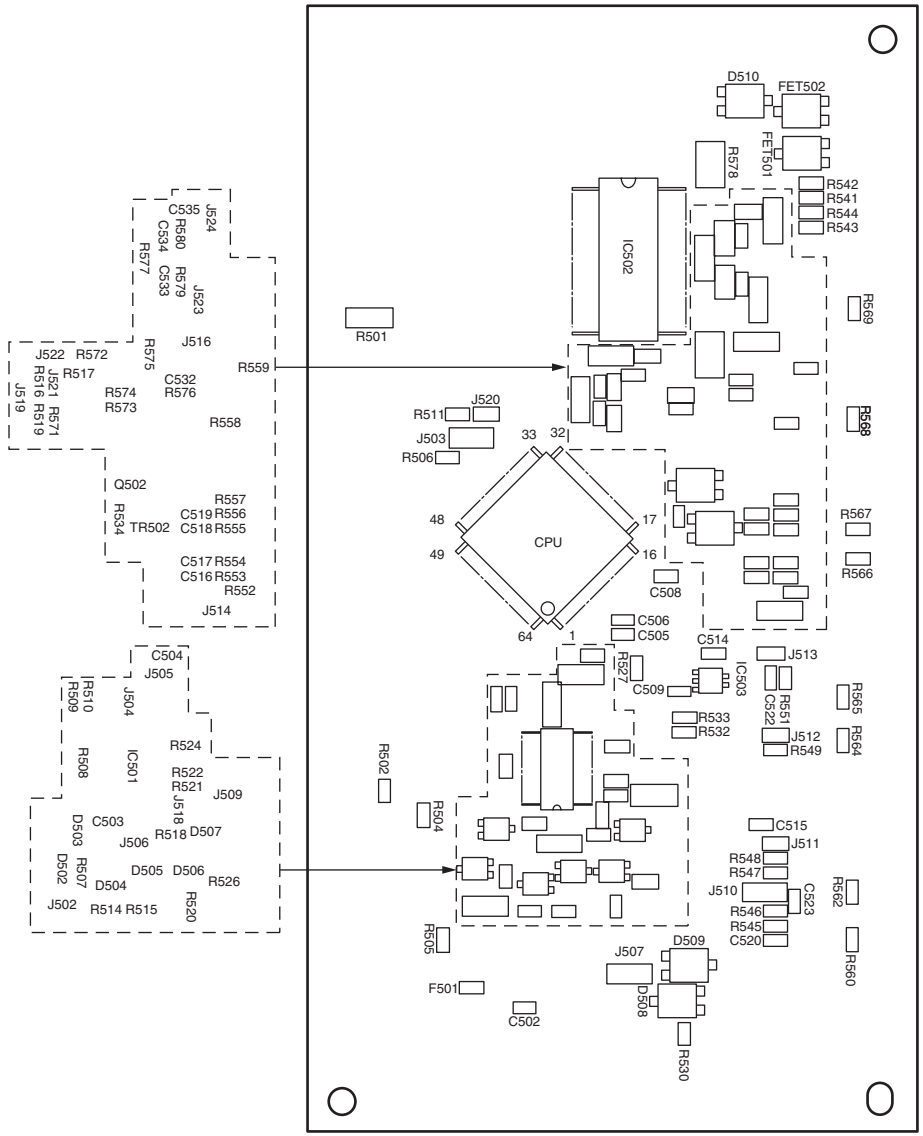


(4) Second Tray Control PCB

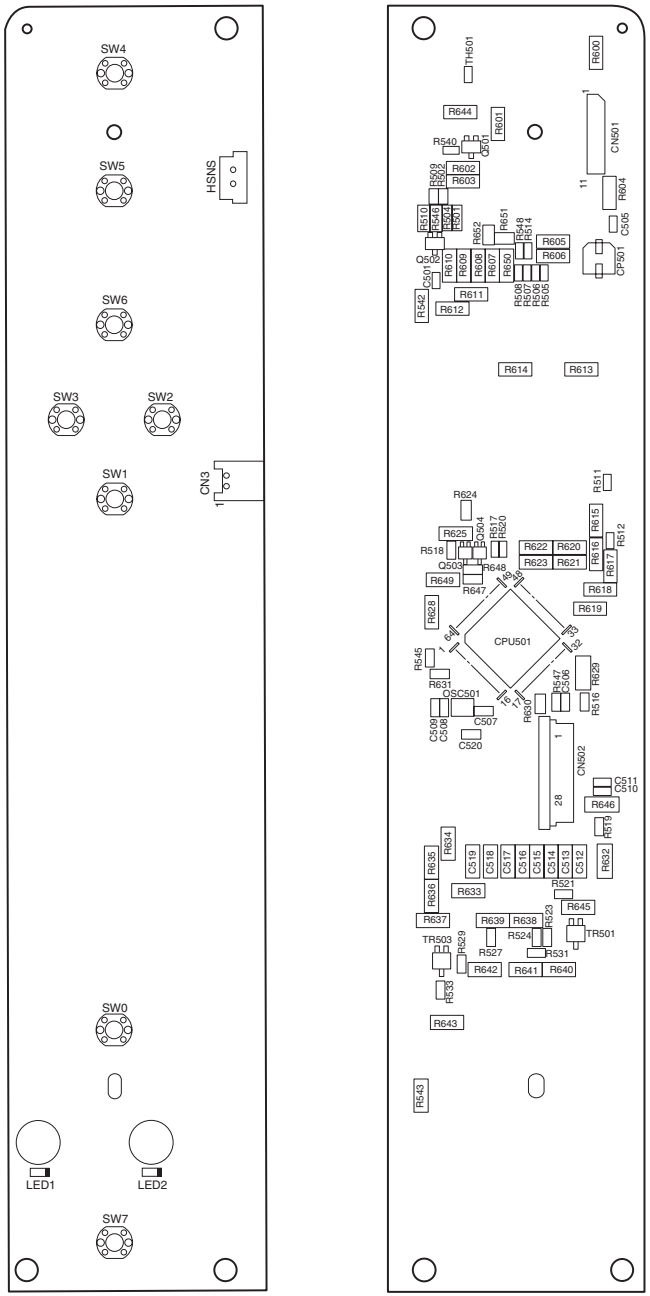
Component side



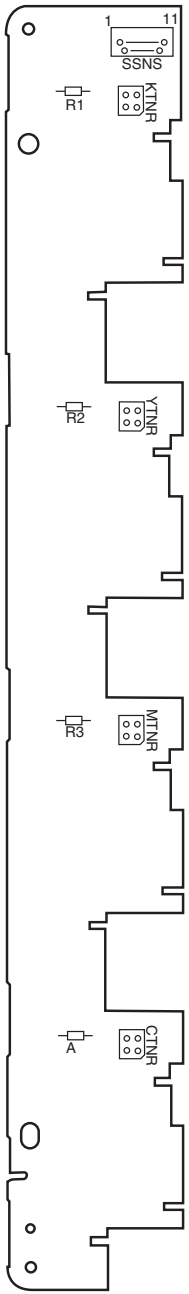
Soldering side



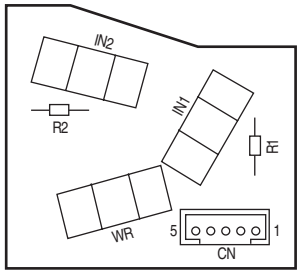
(5) Control Panel PCB



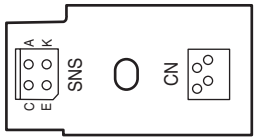
(6) Toner Low Sensor PCB



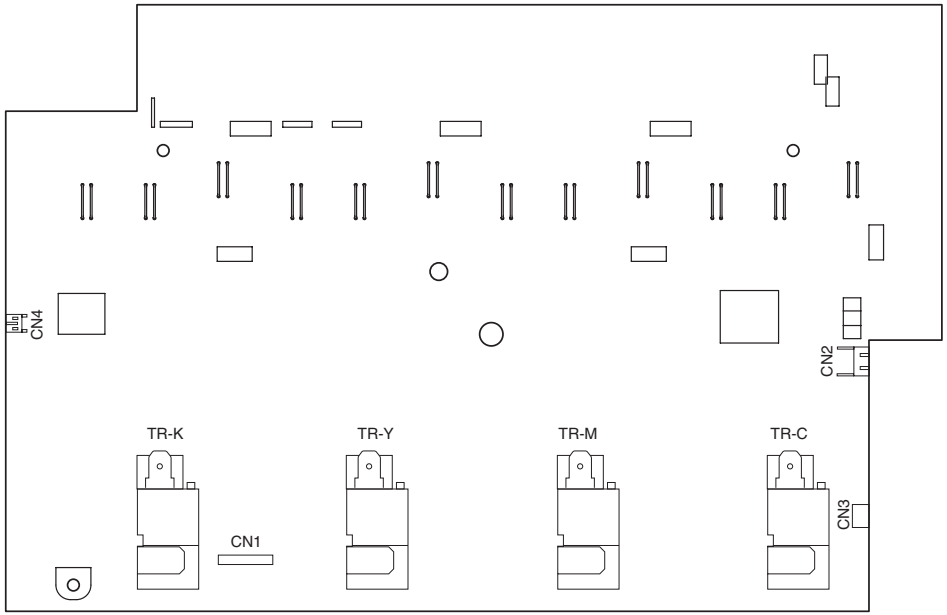
(7) Entrance Sensor PCB



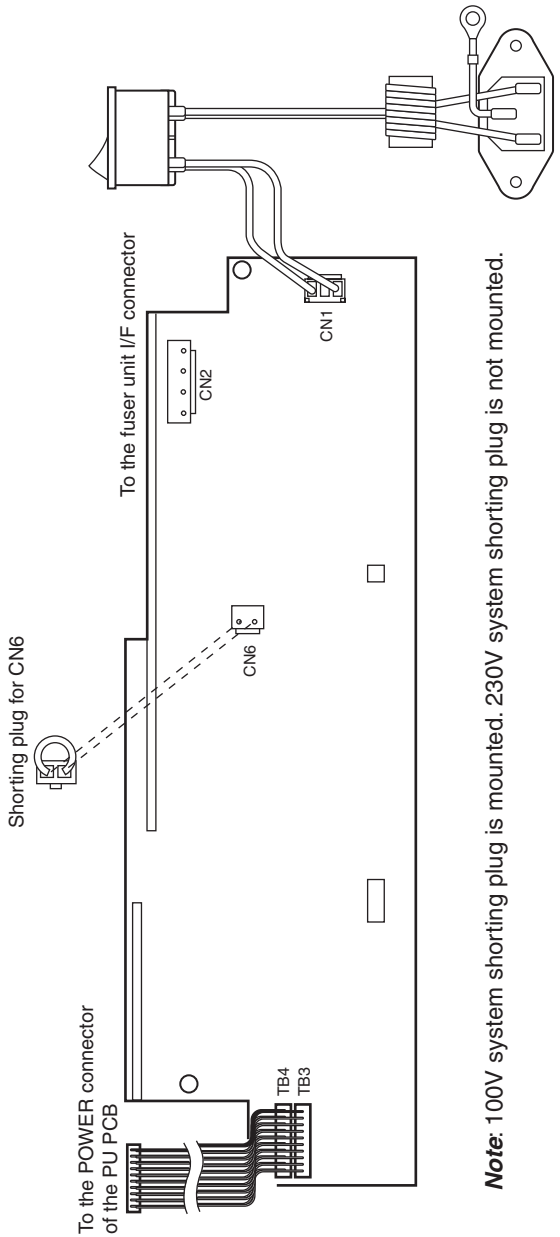
(8) Color Adjustment Sensor PCB



(9) High-Voltage Power Supply PCB

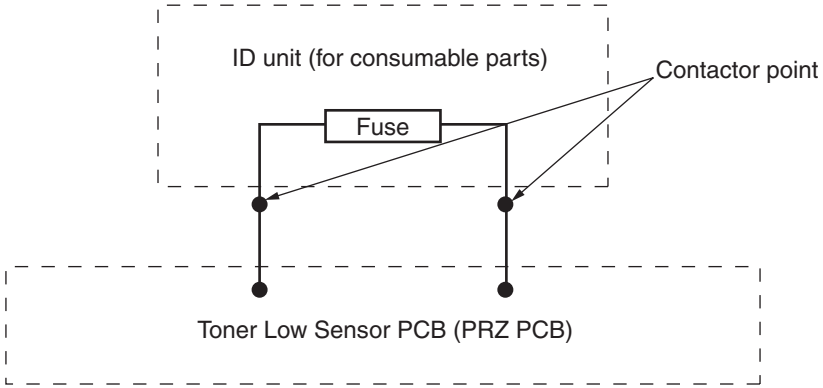


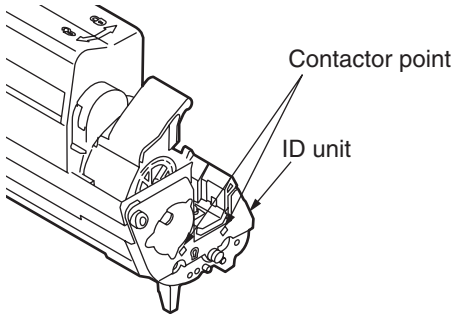
(10) Low-Voltage Power Supply PCB



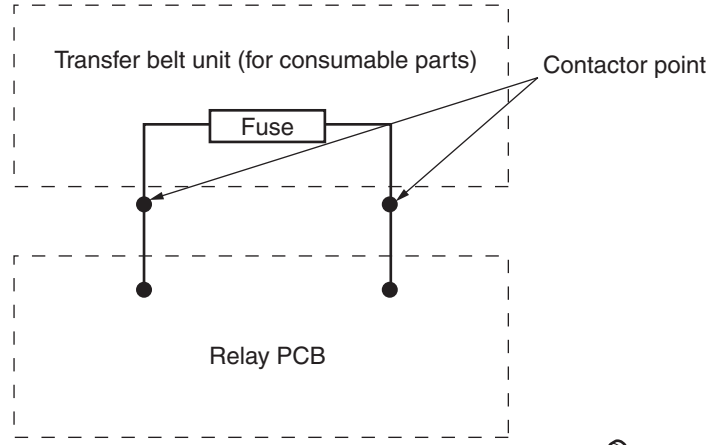
Note: 100V system shorting plug is mounted. 230V system shorting plug is not mounted.

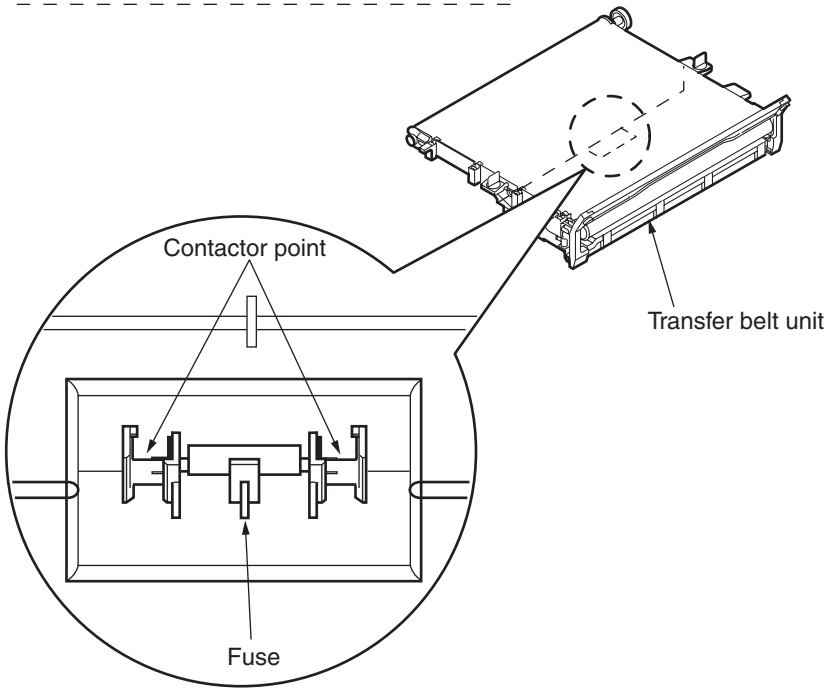
(11) ID unit





(12) Transfer belt unit

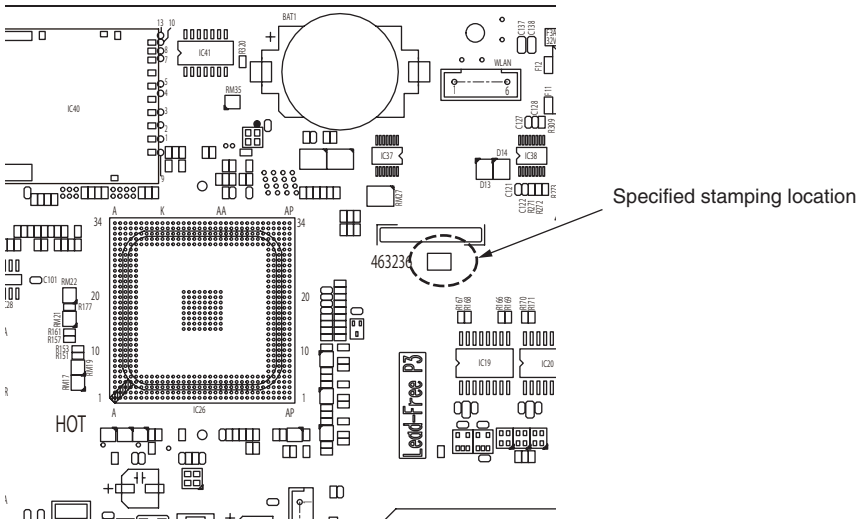




7.3 PCB Maintenance Indication

7.3.1 PCB Maintenance Indication Stamp

The specified article numbers are stamped in the PCB Maintenance Indication column on the CU/PU PCB(IBH) in accordance with the table shown below.



Article number	Seal	Board IBI(YU) Series No.	Use
46323601	1	IBH-1(46300001)	C612 ODA
46323602	2	IBH-1(46300001)	C612 OEL
46323603	3	IBH-1(46300001)	C612 AOS1
46323605	5	IBH-1(46300001)	ES6412 AOS1
46323606	6	IBH-1(46300001)	C612 KOR
46323607	7	IBH-1(46300001)	ES6412 KOR-ES
46323608	8	IBH-1(46300001)	ES6412 OEL
46323609	9	IBH-1(46300001)	C612 ODSP
46323610	10	IBH-1(46300001)	ES6412 ODSP
46323611	11	IBH-1(46300001)	C712 OEL
46323612	12	IBH-1(46300001)	C712 AOS1
46323614	14	IBH-1(46300001)	ES7412 AOS1
46323615	15	IBH-1(46300001)	C712 KOR
46323616	16	IBH-1(46300001)	C712 CHN
46323617	17	IBH-1(46300001)	ES7412 KOR
46323618	18	IBH-1(46300001)	ES7412 OEL
46323619	19	IBH-1(46300001)	C712 ODA
46323620	20	IBH-1(46300001)	ES7412 ODA
46323621	21	IBH-1(46300001)	C712 ODA Argentina
46323622	22	IBH-1(46300001)	C712 ODSP
46323623	23	IBH-1(46300001)	C712 ODB