OKI
PRINTING SOLUTIONS

C332

Maintenance Manual

042518B

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PREFACE

This manual explains the maintenance methods of C332.

This manual is prepared for the maintenance person. In regard to the handling methods of C332, please refer to the User's Manual.

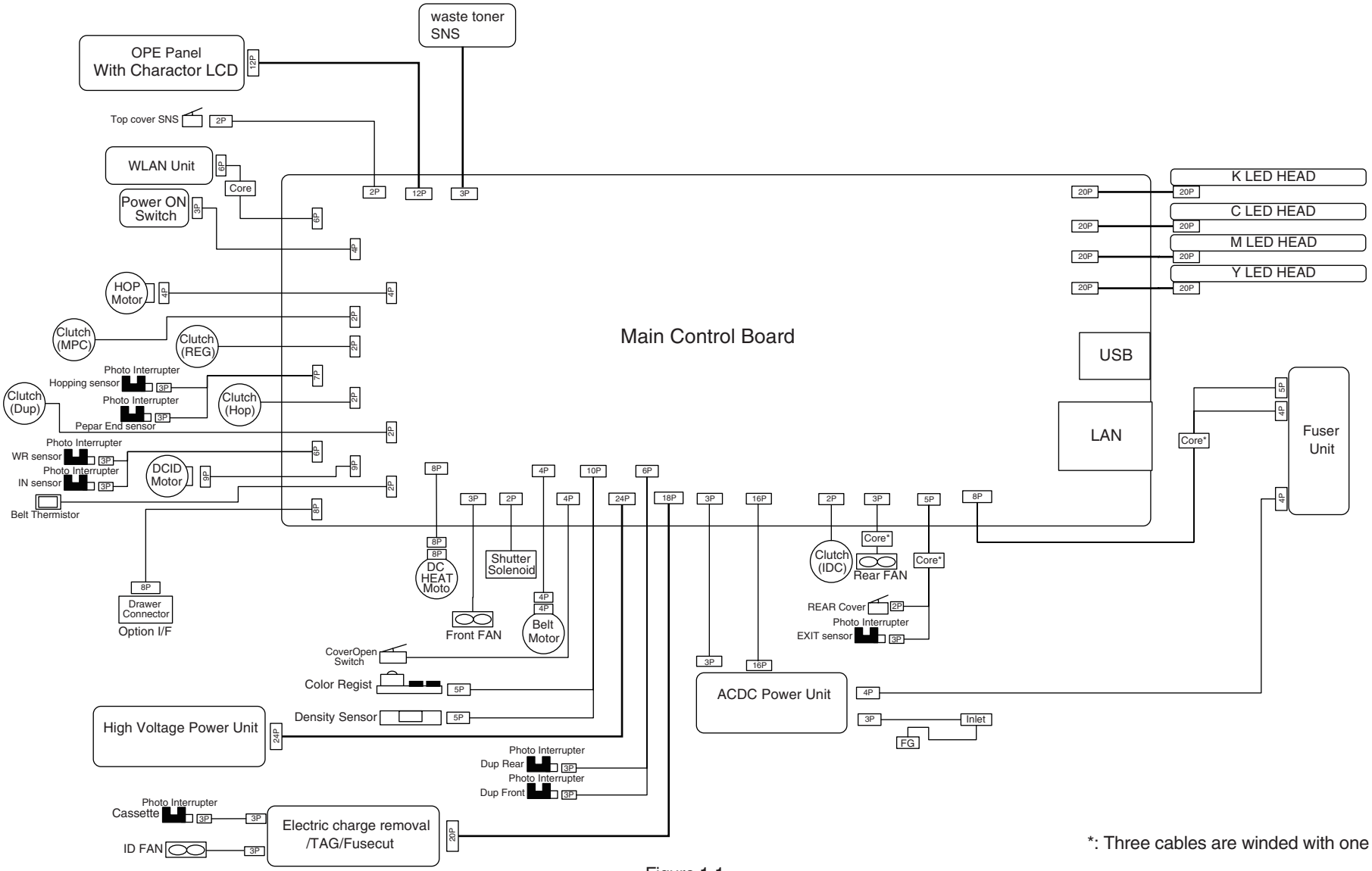
Note!
- Contents of this manual is subject to change without notice.
- While all reasonable efforts have been made to make this document as accurate and helpful as possible, we make no warranty of any kind, expressed or implied, as to the accuracy of the information contained herein. Oki Data assumes no responsibility to the damages caused or claimed to have been caused by the user as a result of repair, adjustment and/or change using this manual.
- Parts of this product are delicate and can be damaged unless properly handled. We strongly recommend the user to maintain the product at the hand of the registered maintenance person of our company.
- Before starting the maintenance work, please neutralize the static electricity.

CONTENTS

1. CONFIGURATION

1.1 System configuration

The system configuration of this product is shown in Figure 1-1.



*: Three cables are winded with one core.

Figure 1-1

1.2 Structure of Printer

The insides of C332 printer is composed of the following parts.

- Electronic photography process part
- Paper path
- Control part (CU part/PU part)
- Operation Panel
- Power supply parts (high voltage part/low voltage part)

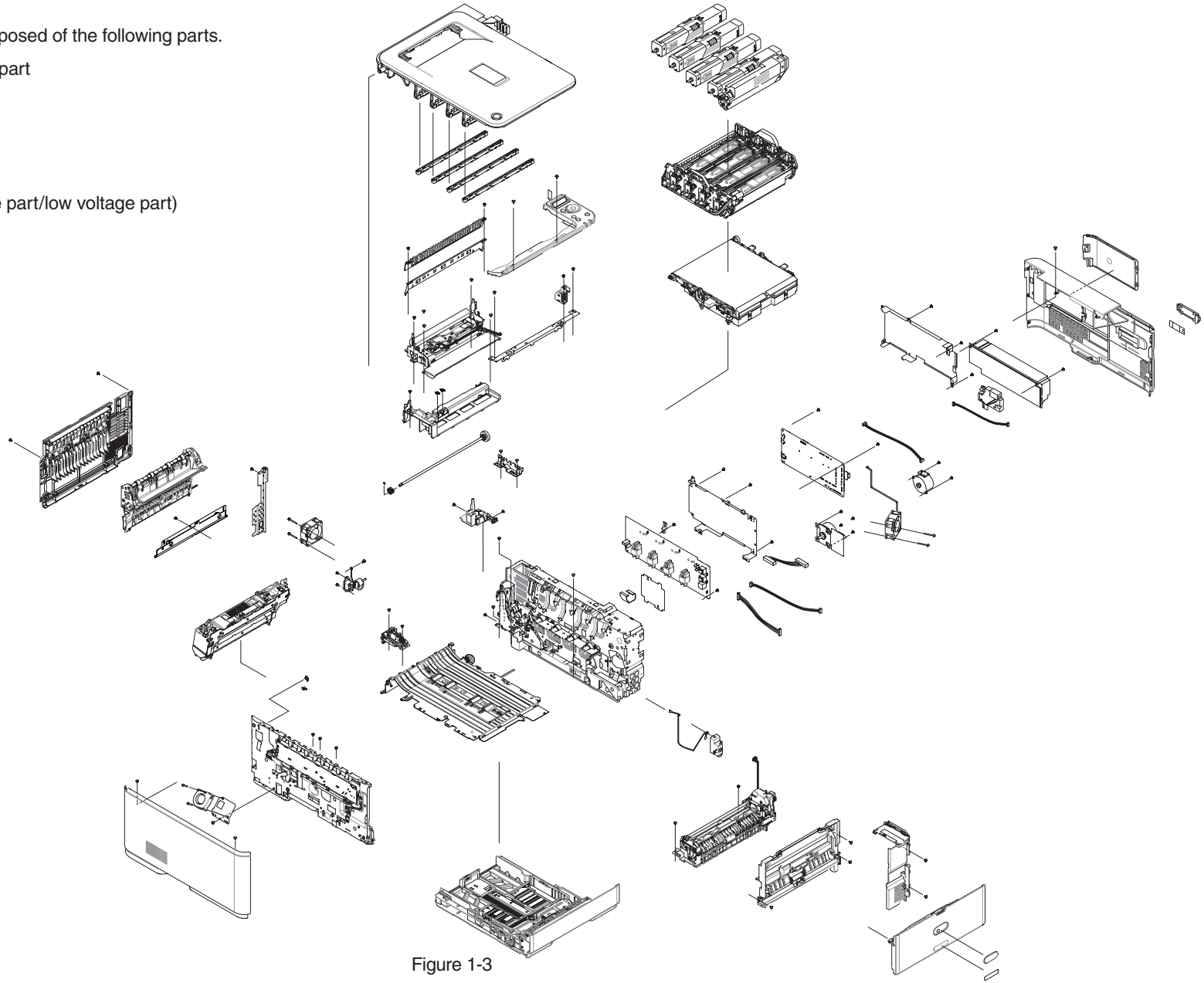
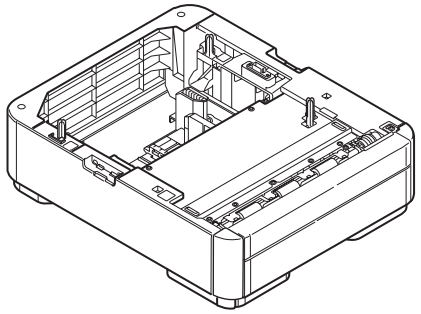


Figure 1-3

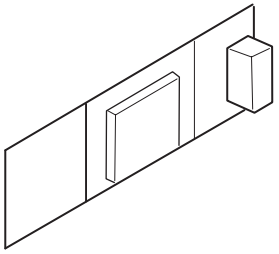
1.3 Offer of Options

This product can be installed with the following option.

(1) Second Tray Unit



(2) Wireless LAN module



1.4 Specifications

Print specifications

item		C332dn
Segment		DT
Mono Print speed (simplex)	A4	30ppm
	Letter	31ppm
Color Print speed (simplex)	A4	26ppm
	Letter	27ppm
Mono Print speed (duplex)	A4	16ppm
	Letter	16ppm
Color Print speed (duplex)	A4	14ppm
	Letter	14ppm
Print Width		A4/Letter
Time to First Print	Color	9 sec
	Mono	8.5 sec
Warm-up time from power on		less than 60 sec.
Recovery time from power save	Panel/Scan	less than 32 sec.
	Print	less than 32 sec.
Print Resolution	Head	600dpi
	Maximum Input dpi	600dpi
	Output dpi	600x600dpi 2bit 600x1200dpi 1bit 600x600dpi 1bit
CPU	Core	MF2
	Clock	667MHz
RAM	Resident	1GB
	Option	No
ROM		3.0GB (eMMC) Program + font area : 0.25GB Data storage area : 2.75GB
HDD/SD card (Data storage)		No
Connectivity	Standard	USB 2.0 Device, 10/100/1000 Bace Ethernet
	Options	Wireless IEEE802.11a/b/g/n
Printer Language		PCL6 (XL3.0 and PCL5c), PostScript 3 (Emulation), IBM-ProPrinter, EPSON-FX, XPS, PDF(V1.x)

item		C332dn
Fonts	Scalable Typefaces	87 PCL fonts, 80 PostScript fonts
	Bitmap Typefaces	4 PCL fonts (Line Printer, OCR-A/B, USPS ZIP Barcode)
	Barcode	10 types of one dimension with 26 variations: UPC-A, UPC-E, EAN/JAN-8, EAN/JAN-13, Interleaved2of5, Code39, Code 128, EAN/UCC-128, CODABAR, ZIP+4POSTNET 2 types of two dimensions : PDF417, Qrcode
Paper Handling		See paper handling table for detail
Acoustic noise	Operating	52dBA
	Operating (Quiet mode)	No
	Standby	37dBA
	Power save mode	Inaudible
Power consumption	Off mode	0.5W or less
	Deep sleep mode	1.1W or less
	Power save mode	14W or less
	Idle	90W
	Typical operation	540W
	Peak	1170W
Power Requirment		<Voltage> ODA, Taiwan : 120V AC +/-10% OEL, ODA230, AOS : 230V AC +/-10% <Frequency> 50/60Hz +/-2%
Operating tempature		10 - 32 (C degree)
Operating humidity		20 - 80 %

item			C332dn
Operation panel	Display	Type/Color	2 Line Character Panel
		Size	-
		Back Light	-
	LED		-
	Switches		-
	Soft power switch		-
Buzzer			No
Dimension (inch./mm)		Width	410mm
		Depth	504mm
		Height	242mm
Weight			22kg
Printer life			300,000 pages or 5 years
Max. Monthly Printer duty			45,000 pages
Recommended Duty Cycle			5,000 pages
MTBF (2.3% duty)			60,000 pages
MPBF			35,000 pages
MTTR			less than 20 min.
Toner life (@ ISO19798)		Starter K	1,000 pages
		Starter CMY	1,000 pages
		Supplies K	1,500 / 3,500 pages / 5,000 pages (*1)
		Supplies CMY	1,500 / 3,000 pages / 5,000 pages (*1)
Image drum life at simplex (w/o power save)		Continuous	K: 37,500 pages / CMY: 25,000 pages
		3 pages per job	K: 30,000 pages / CMY: 20,000 pages
		1 page per job	K: 17,800 pages / CMY: 11,900 pages
Image drum life at duplex (w/o power save)		Continuous	K: 11,500 pages / CMY: 7,000 pages
		3 pages per job (6 images per job)	K: 9,800 pages / CMY: 6,500 pages
		1 page per job (2 images per job)	K: 6,400 pages / CMY: 4,200 pages
Transfer belt life			60,000 pages
Fuser life			60,000 pages
Waste toner box life			No

item		C332dn
Print Function	Quiet mode	Yes
	Toner save mode	Yes
	Override A4/ Letter	Yes
	AirPrint	Yes
	Google Cloud Print	Yes
	USB direct print	No
	Public Print (stored)	No
	Private Print (stored)	No
	mono print w/o CMY toner	Yes
	IC card reader	No
Remote Firmware update		Yes
Certification		Energy star (ver.2)

*1: "5,000 pages" is applied to only ODA

Other specifications

item		C332dn
Option	2nd tray	530 sheets (80gsm) 580 sheets (64gsm)
	3rd tray	No
	4th tray	No
IC card reader for panel unlock & secure print		No
Open-API support	Output Management	Yes
	Indexed Scan	No
	Embedded Web Browser (EWB)	No
	WSD-Scan	Yes
Scan to Box Function Support		No
Wi-Fi Direct		No
SoftAP		Yes
Concurrent Connection of Wired & Wireless		Yes
Citrix		Yes (XenApp 7.6)
Print Fleet compatibility		TBD
Manual format		HTML
Auto sensing/feeding MPT tray		No
PDF/A		Yes
Searchable PDF		No
FDI		No
2 Bin		No
Finisher		No
In-line stapler		No
Off-line stapler		No
LCF		No

1.5 Interface specifications

1.5.1 USB Interface Specification

1.5.1.1 Outline of USB Interface

(1) Basic Specification

USB

(2) Transmission Mode

Hi speed (480Mbps±0.05% max.)

(3) Power Control

Self power device

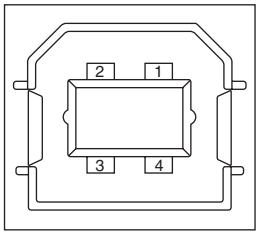
1.5.1.2 USB Interface Connector and Cable

(1) Connector

• Printer side: B receptacle

Upstream port

Equivalent of UBR24-4K5G00 (made by ACON)



Connector pin arrangement

• Cable side: B plug (off)

(2) Cable

Cable length : Specification Cable of USB2.0 spec. of less than 5m.(less than 2m is recommended)

1.5.1.3 USB Interface Signal

	Name of Single	Function
1	Vbus	Power Supply (+5V)(red)
2	D -	Data transmission (white)
3	D +	Data transmission (green)
4	GND	Single ground (black)
Shell	Shield	

1.5.2 Network Interface Specification

1.5.2.1 Outline of Network Interface

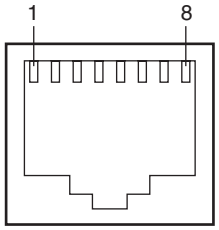
Table 1.5.2 Basic Specification of Network Interface

Protocol Family	Network Protocol	Application
TCP/IP	IPv4, IPv6, TCP, ICMP, UDP	LPR, RAW SNMPv1 DHCP/BOOTP HTTP

1.5.2.2 Network Interface Connector and Cable

(1) Connector

1000BASE-T/100BASE-TX/10BASE-T (automatic switch, no simultaneous use)



Connector pin arrangement

(2) Cable

Unshielded twist pair cable with RJ-45 connector (Category 5e is recommended.)

1.5.2.3 Network Interface Signal

(1) 100 BASE-TX / 10 BASE-T

Pin No.	Singles	Single Direction	Functions
1	TXD+	FROM PRINTER	Send Data +
2	TXD-	FROM PRINTER	Send Data -
3	RXD+	TO PRINTER	Received Data +
4	-	-	Unassigned
5	-	-	Unassigned
6	RXD-	TO PRINTER	Received Data -
7	-	-	Unassigned
8	-	-	Unassigned

(2) 1000 BASE-T

Pin No.	Singles	Single Direction	Functions
1	BI_DA+	Both direction	
2	BI_DA-	Both direction	
3	BI_DB+	Both direction	
4	BI_DC+	Both direction	
5	BI_DC-	Both direction	
6	BI_DB-	Both direction	
7	BI_DD+	Both direction	
8	BI_DD-	Both direction	

1.5.3 Wireless LAN Interface

1.5.3.1 Outline of Wireless LAN

(1) Specification

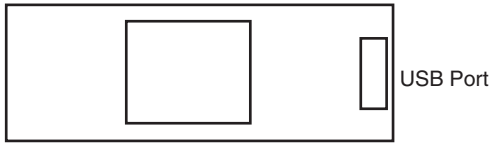
IEEE 802.11 a/b/g/n (2.4GHz / 5GHz)

(2) Power supply voltage

5V

(3) Printer side interfaces

USB



2. PRINTER INSTALLATION

2.1 Precautions and Prohibition

⚠ Warning

- Do not install the Printer in the vicinity of high temperature or fire.
- Do not install the Printer at the place where a chemical reaction may take place (laboratory, etc.).
- Do not install the Printer near flammable solution like alcohol, thinner, etc.
- Do not install the Printer at the place where a small child can reach.
- Do not install the Printer at an unstable place (unsteady frame, tilted place, etc.).
- Do not install the Printer at a highly humid or dusty place or under the direct sunshine.
- Do not install the Printer under the environment of sea breeze or caustic gas.
- Do not install the Printer at a highly vibrating place.
- When you drop the Printer or damage the cover, remove the power plug from the outlet and contact the Customers' Service Center.
  Electric shock, fire or injury may occur.
- Do not connect the power cord, printer cable and earth wire as otherwise directed by the Manual. A fire may break out.
- Do not insert a thing in the vent hole.
  Electric shock, fire or injury may occur.
- Do not place a cup with water on the Printer.
  Electric shock or fire may occur.
- Do not touch the fuser unit when you open the printer cover.
  Burn may occur.
- Do not throw the toner cartridge or image drum cartridge into fire.
  Burn may occur by the dust explosion.
- Do not use a highly flammable spray near the Printer.
  Fire may break out as there are high temperature parts inside the printer.
- When the cover becomes abnormally hot, a smoke arises or a strange odor comes out, remove the power plug from the outlet and contact the Customers' Service Center.
  Fire may break out.
- When liquid like water drops inside the Printer, remove the power plug from the outlet and contact the Customers' Service Center.
  Fire may break out.
- When a thing like a clip drops inside the Printer, remove the power plug from the outlet and take out that thing.
- Do not clean spilled toner with a vacuum cleaner.
  Fire may occur due to the sparks from electric contact.
- Do not operate or disassemble the Printer as otherwise directed in the Manual.
  Electric shock, fire or injury may occur.

⚠ Caution

- Do not install the Printer at the place where the vent hole is blocked.
- Do not install the Printer on the shaggy carpet.
- Do not install the Printer at the place with little draught or without ventilation like a room with no window.
- Install away from strong magnetic fields and sources of noise.
- Install the Printer away from the monitor TV
- When the Printer is to be moved, hold both ends of the printer.
- This Printer weighs about 29kg and should be lifted by 2 or more persons.
- When to switch the power on or while printing, do not come near the paper exit of the Printer.
  Injury may occur.

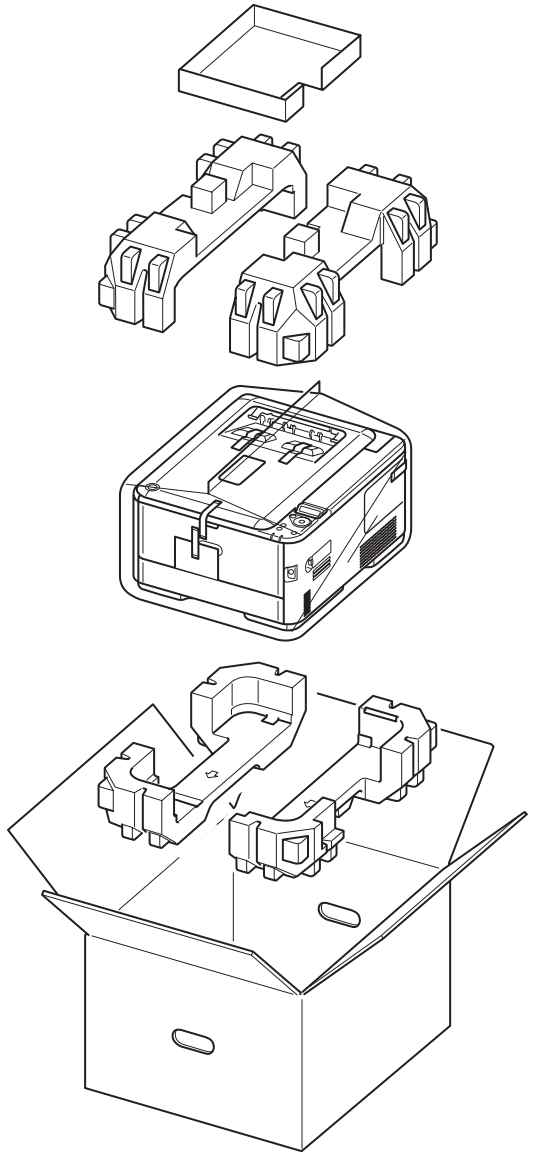
As regards the items of caution, explain to the customer showing the items of caution of the User's Manual. Particularly, explain fully about the power supply cord and earth cable.

2.2 Printer Unpacking Procedure

⚠ Warning	Personal injury may occur.	⚠

This Printer weighs about 25kg. So lift it up with 2 or more persons.

- Open the upper lid.
- Take out the accessory box.
- Remove the upper buffer material.
- Take out the equipment



3. REPLACEMENT OF PARTS

This chapter describes the procedures of the field replacement of parts, assemblies and units. The procedures are to detach them. Reverse the procedures to attach them.

The reference part numbers used in this manual (such as ① and ②) do not identical to the part numbers in the maintenance disassembly configuration diagram (46403101TL) and RSPL (46403101TR) for the manual.

3.1 Notes on replacement of parts

(1) Prior to replacing a part, unplug the AC cord and the interface cable.

(a) Be sure to use the following procedure to unplug the AC cord:

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

② Pull out the AC plug of the AC cord from the AC power source.

③ Unplug the AC cord and the interface cable.

⚠ Warning	Electric shock hazard.	⚡

Be sure to unplug the AC cable as some circuits keep working while the power cable is connected even after the power is turned off.

When replacing the low-voltage power supply and high-voltage power supply, due to potential electric shock, wear insulated gloves or be careful not to touch the conductors or terminals of the power supply directly.

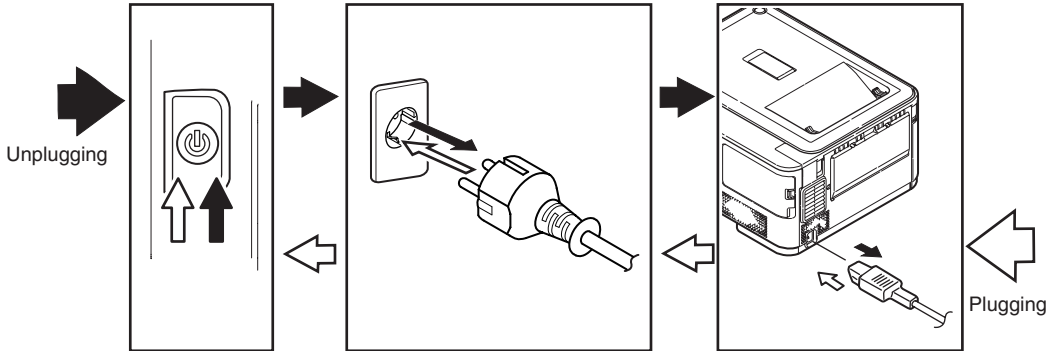
After the AC cord is unplugged, the capacitor may take about one minute to discharge completely, or could not discharge due to PCB breakdown. Use caution about electric shock.

(b) Be sure to use the following procedure to reconnect the printer:

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

② Turn on the printer.

③ Turn on the printer, then the LED indicator lights up.



(2) Do not disassemble the printer so long as it operates properly.

(3) Minimize disassembly. Do not detach the parts not shown in the part replacement procedure.

(4) Use the replacement tools specified.

(5) Conduct disassembly in the order instructed, or part damage may occur.

(6) Removed small parts, such as screws or collars, should be tentatively installed in their original positions.

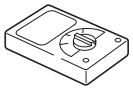
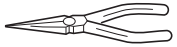
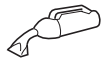
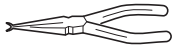
(7) Do not use static-prone gloves when handling integrated circuits (ICs) or circuit boards, including microprocessors, and ROM and RAM chips.

(8) Do not place printed-circuit boards (PCBs) directly on the printer or a floor.

Maintenance Tools:

Table 3-1-1 shows the tools necessary to replace printed-circuit boards and units:

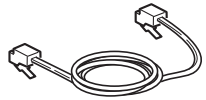
Table 3-1-1: Maintenance Tools

No.	Maintenance Tool		Quantity	Use	Remarks
1		Phillips screwdriver with magnetic tip, No. 2-200	1	3- to 5-mm screws	
2		Screwdriver No. 3-100	1		
3		Screwdriver No. 5-200	1		
4		Digital multimeter	1		
5		Pliers	1		
6		Handy vacuum cleaner (toner vacuum)	1		See note.
7		E-ring pliers	1	E-shaped ring removal	

Note! Use a toner vacuum. Using a general-purpose vacuum may cause fire.

Table 3-1-2 shows the tools necessary to use Maintenance Utility software.

Table 3-1-2: Maintenance Tools

No.	Maintenance Tool		Quantity	Use	Remarks
1		Notebook personal computer (with Maintenance Utility software installed)	1		See section 5.2 for Maintenance Utility.
2		USB cable	1		
3		Ethernet cable (crossover cable)	1		

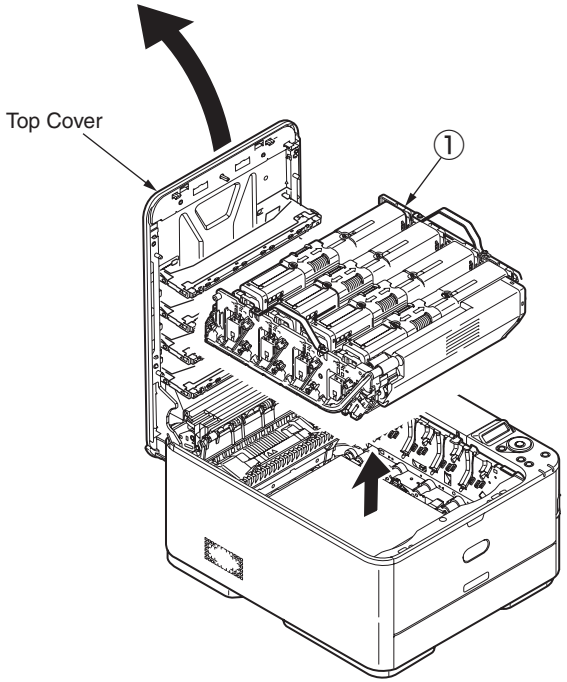
3.2 Part replacement procedure

This section describes the procedure for replacing the parts and assemblies shown in the disassembly diagrams below.

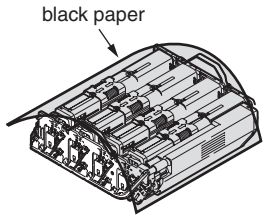
3.2.1 Belt unit

(1) Open the top cover.

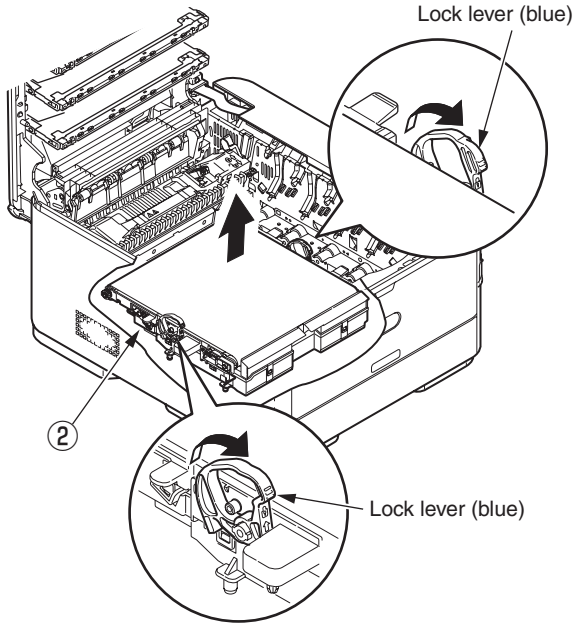
(2) Remove the image drum unit ① .



Note! Cover the removed image drum cartridges with a piece of black paper.



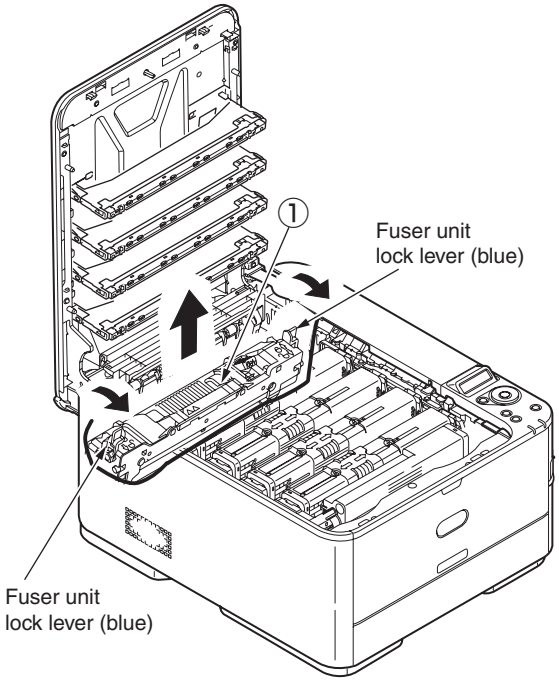
(3) Turn the (two blue) lock handles of the belt unit ② in the direction of the arrows and, holding the unit by the (blue) handle, detach the unit.



3.2.2 Fuser unit

(1) Open the top cover.

(2) Pull the (blue) fuser unit lock lever in the direction of the arrow and detach the fuser unit ① .

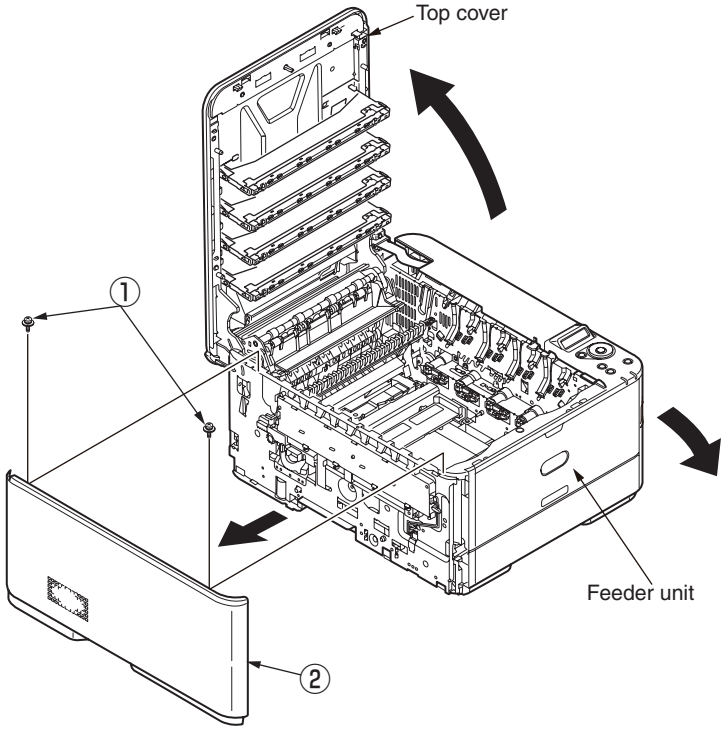


3.2.3 Left side cover

(1) Open the top cover.

(2) Remove the two (silver-colored) screws ① .

(3) Unlatch and detach the left side cover ② .



3.2.4 Right side cover

(1) Open the scanner and the top cover.

(2) Remove the cassette Assy.

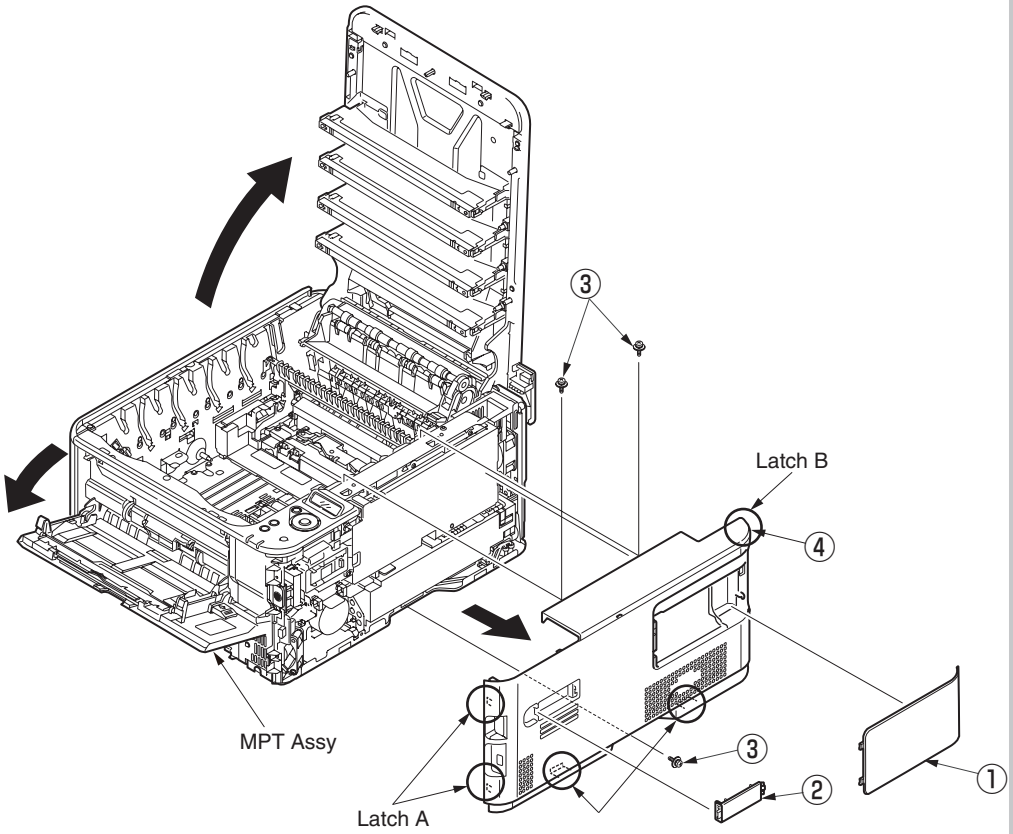
(3) Remove the interface cover ① .

(4) Remove the WLAN cover ② .

(5) Open the MPT Assy.

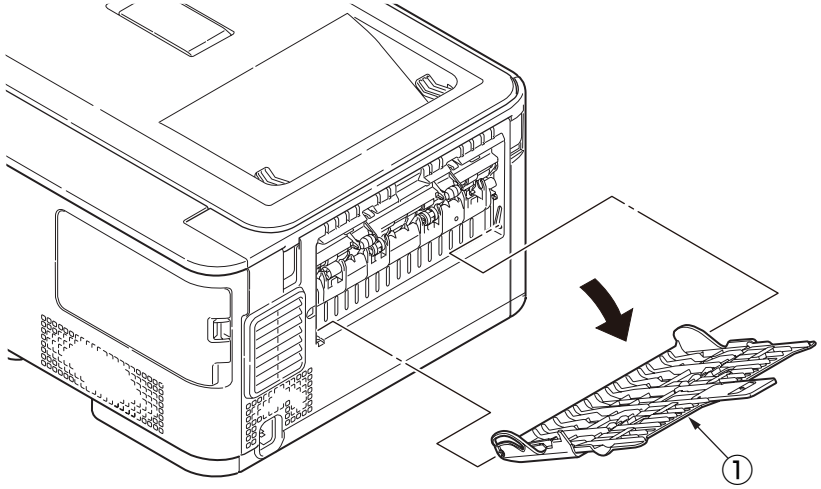
(6) Remove the three screws ③ .

(7) Disengage two claws A, five claws B and two claws C to detach the right side cover (R) ④ .



3.2.5 Face-up tray

(1) Open the face-up tray ① in the direction of the arrow and, warping it, disengage two portions to detach the face-up tray.



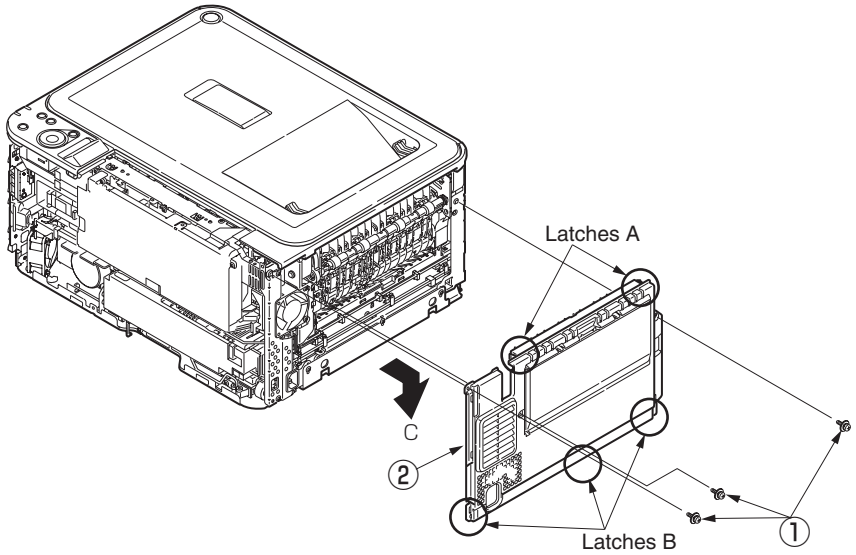
3.2.6 Rear cover

(1) Remove the left side cover and the right side cover.

(2) Remove the three (silver-colored) screws ① .

(3) Unlatch two latches A with a flat-blade screwdriver.

(4) Unlatch three latches B to slide the rear cover ② in the direction of the arrow C to detach it.

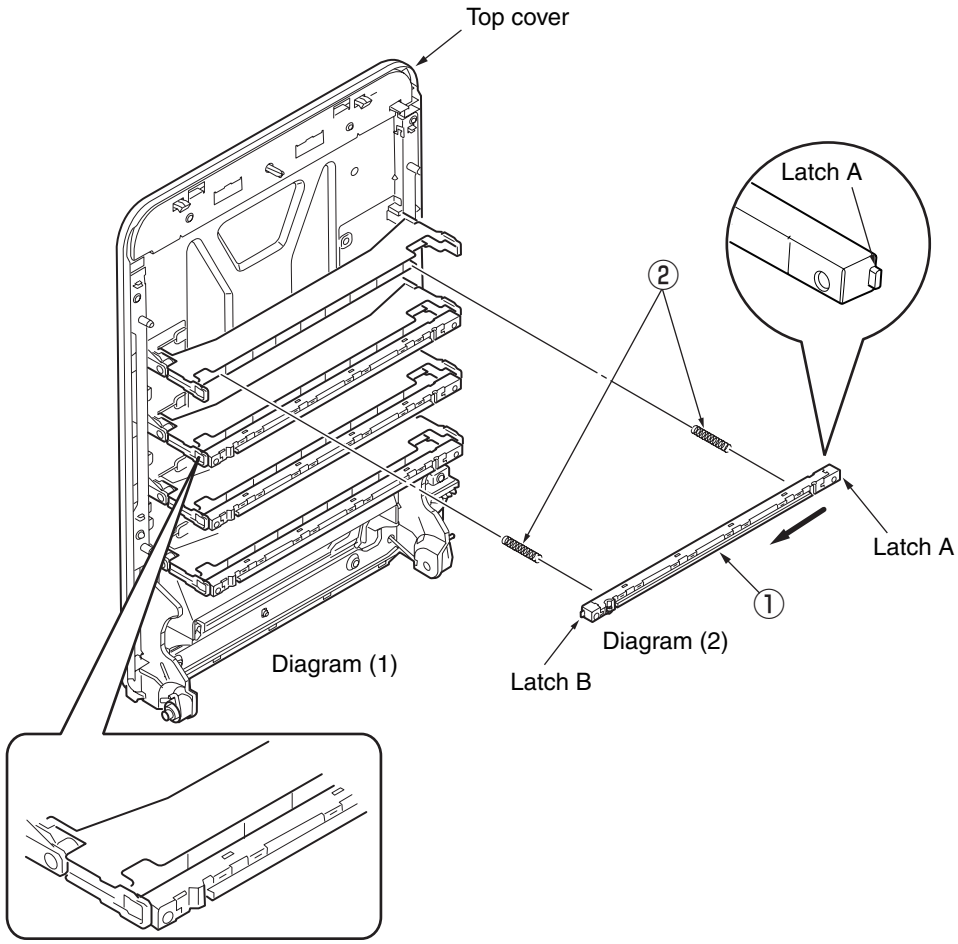


3.2.7 LED Assy and LED Assy springs

(1) Open the top cover.

(2) Remove the cables of the LED Assy. As shown in diagram (2), apply force in the direction of the arrow to unlatch the portion A and then the portion B to detach the LED Assy ① .

(3) Turning the LED Assy springs ② clockwise, detach it.

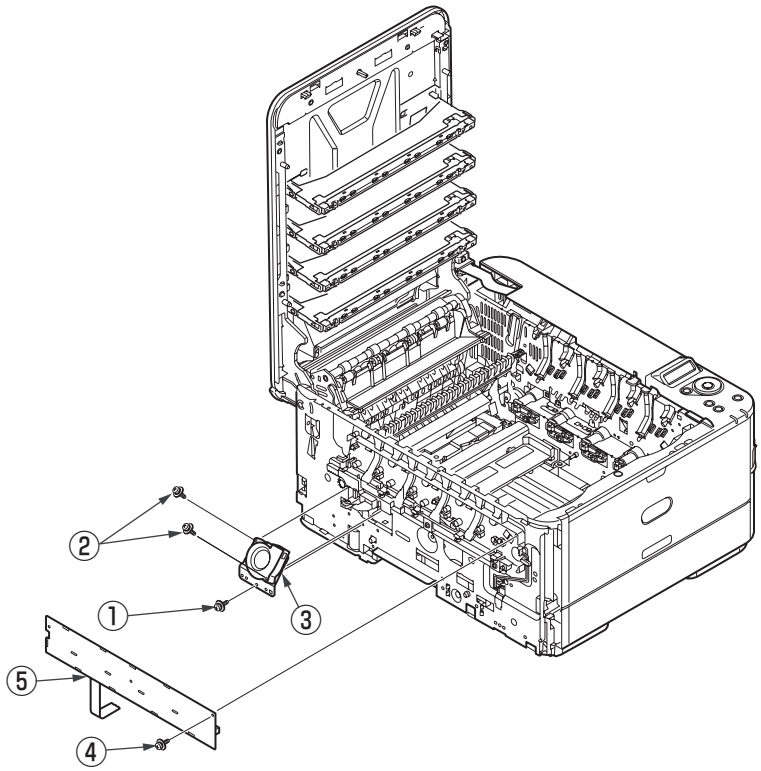


3.2.8 Image drum fan and ZHE board

(1) Remove the left side cover.

(2) Remove the (silver-colored) screw ① and the two (silver-colored) screws ② to detach the image drum fan ③ .

(3) Remove the (silver-colored) screw ④ and unlatch five portions to detach the ZHE board ⑤ .



3.2.9 CU/PU PCB and low-voltage power supply

⚠ Warning	Electric shock hazard	⚠

When replacing the low-voltage power supply, electric shock may occur. Wear insulated gloves, or be careful not to touch the conductors or terminals of the power supply directly. After the AC cord is unplugged, the capacitor may take about one minute to discharge completely or, due to PCB breakdown, could not discharge. Use caution about electric shock.

(1) Remove the right side cover. (See 3.2.4)

(2) Remove the six (silver-colored) screws ① and unlatch and remove the plate shield ② .

(3) Disconnect the WLAN cable ③ from the WLAN, and remove the Wireless-LAN board ④ .

(4) Remove the two (silver-colored) screws ⑤ and remove the Holder-WLAN ⑥ .

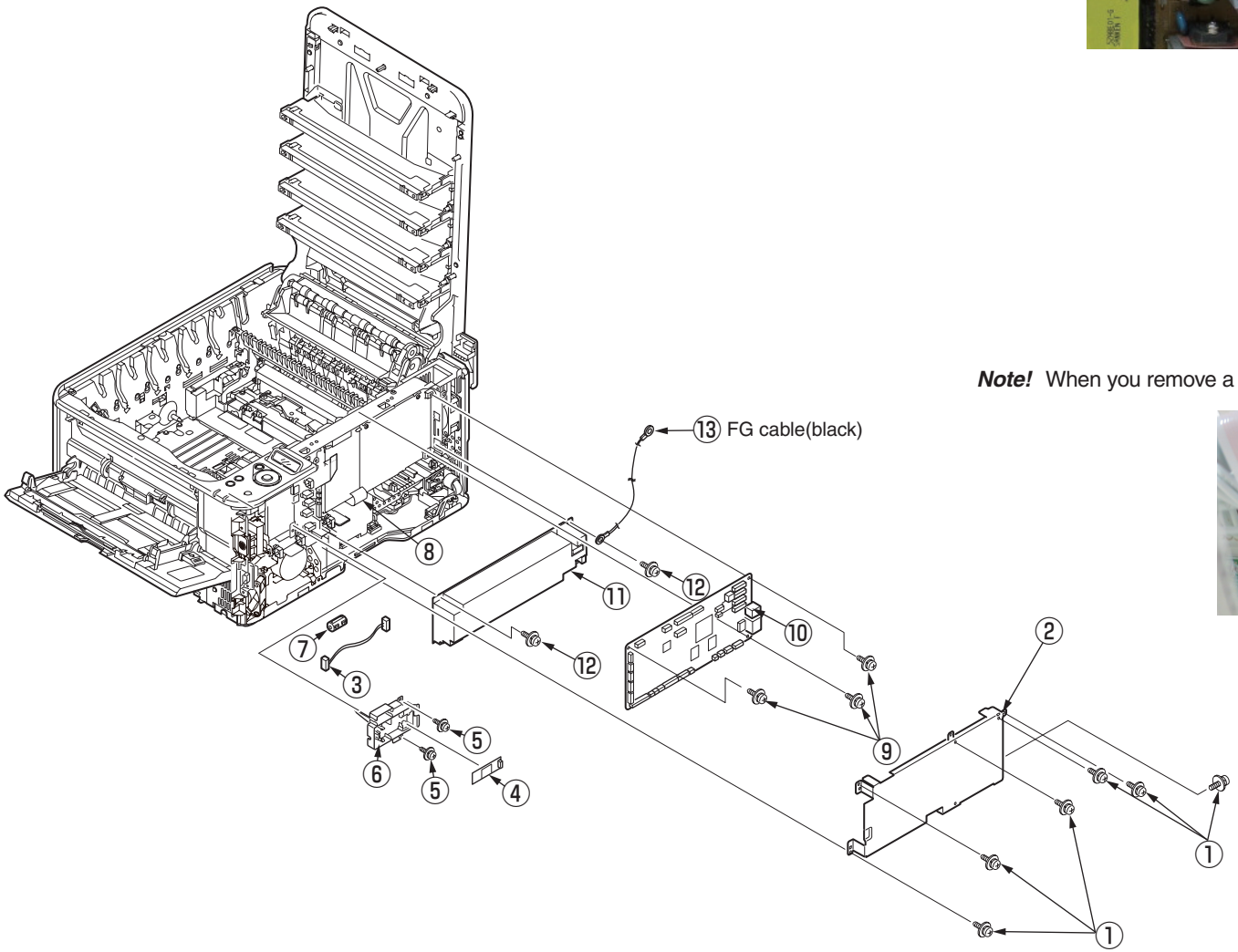
(5) Remove the WLAN cable ③ and core ⑦ from Holder-WLAN ⑥ .

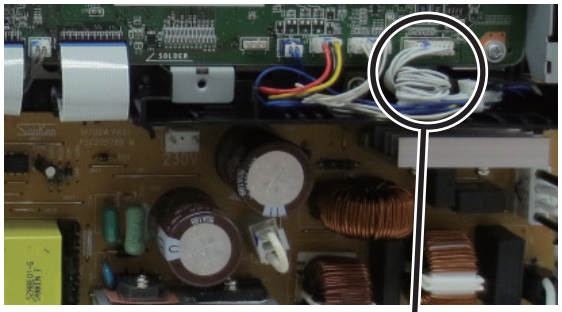
(6) Remove all the CU/PU board cables (⑧ etc.).

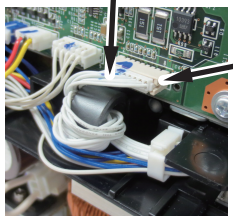
(7) Remove the three (silver-colored) screws ⑨ to detach the CU/PU board ⑩ .

(8) Remove all the low-voltage power supply ⑪ cables.

(9) Remove the two (silver-colored L=8mm) screws ⑫ , and detach the low-voltage power supply ⑪ , FG-cable ⑬ .

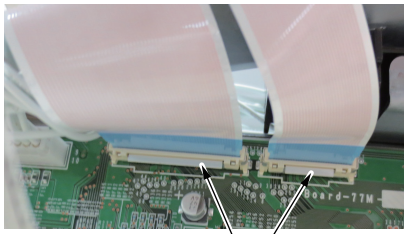






Exit cable wound one turn around core

Note! When you remove a FFC cable, refer to the figure of the below.



Push the section A.

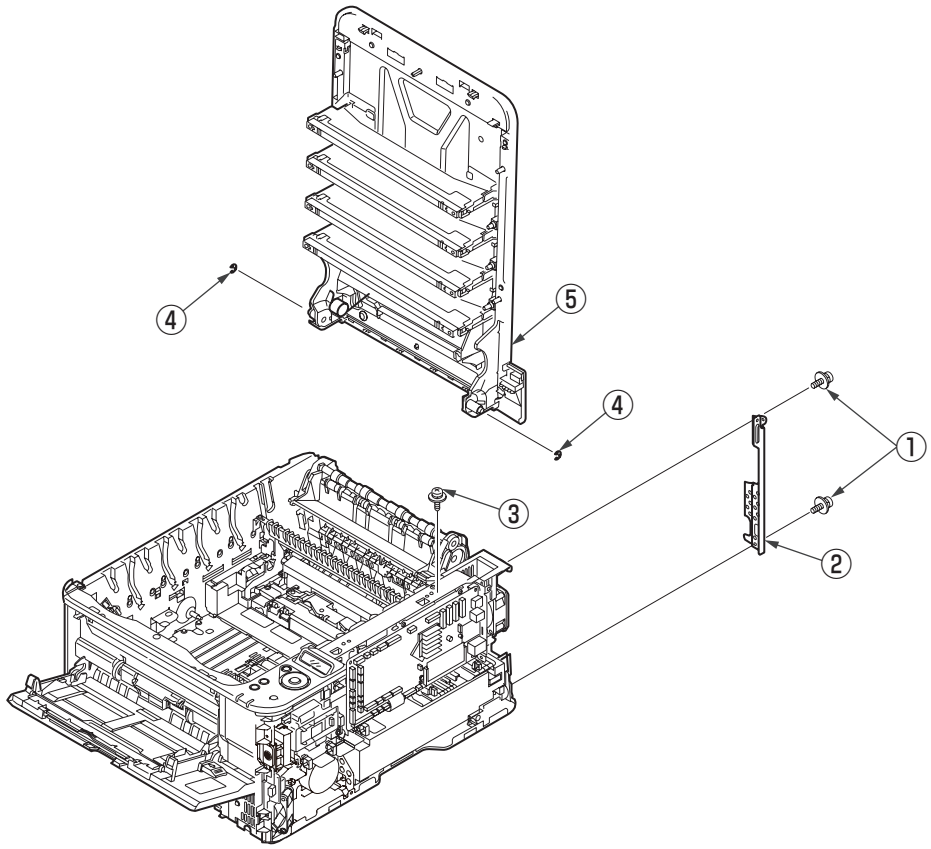
3.2.10 Top cover Assy

(1) Remove the left side cover, the right side cover and the rear cover.

(2) Remove the plate shield Assy and then the LED head cables from the CU/PU board.

(3) Remove the two screws ① to remove the plate-rear ② .

(4) Remove the (silver-colored) screw ③ and then the two E-shaped retainer rings ④ to detach the top cover ⑤ .



3.2.11 Top cover and LED head cable Assy

(1) Remove the LED Assy. and LED Assy springs. (See 3.2.7)

(2) Remove the Top cover Assy. (See 3.2.10)

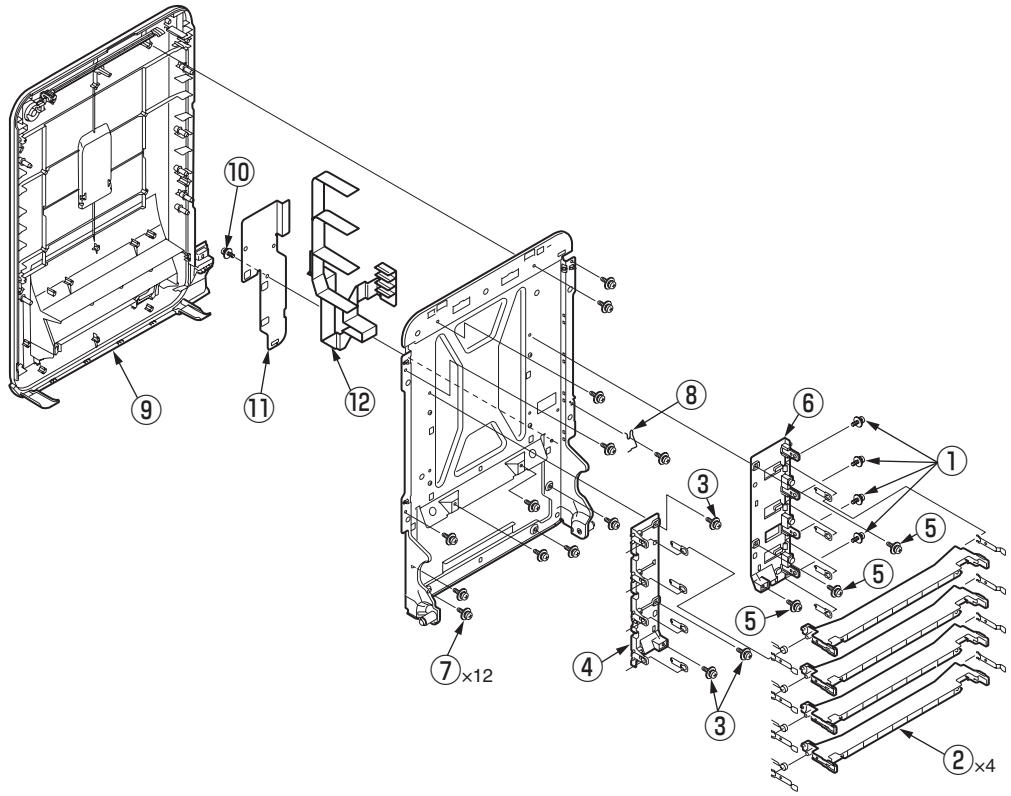
(3) Remove four screws (black) ① to detach four Head-holders ② .

(4) Remove three screws (black) ③ to detach a Frame-Head-L ④ .

(5) Remove three screws (black) ⑤ to detach a Frame-Head-R ⑥ .

(6) Remove the twenty (black) screws ⑦ to detach a Spring ⑧ and a top cover ⑨ .

(7) Remove a (silver-colored) screw ⑩ and a Film ⑪ to detach the LED head cable Assy ⑫.



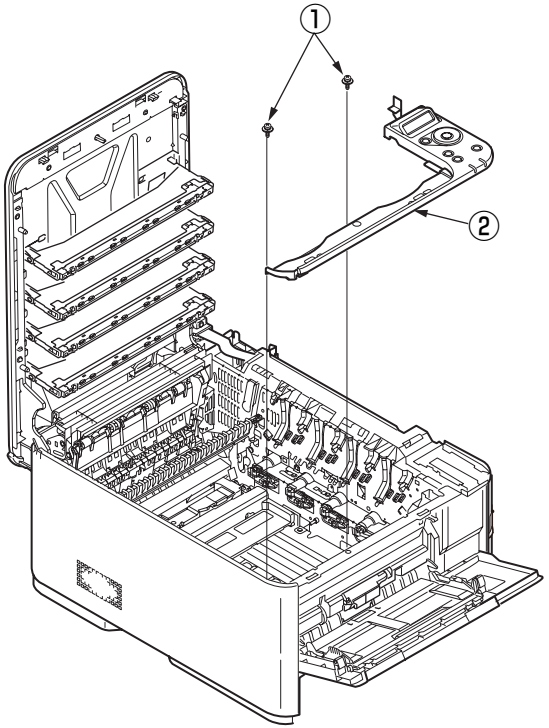
3.2.12 Operator panel Assy

(1) Remove the right side cover and plate shield Assy.

(2) Remove the cable of the operator panel Assy.

* CU/PU PCB OPE connector

(3) Remove the two screws ① to detach the operator panel Assy ② .



3.2.13 Board IBB and LCD

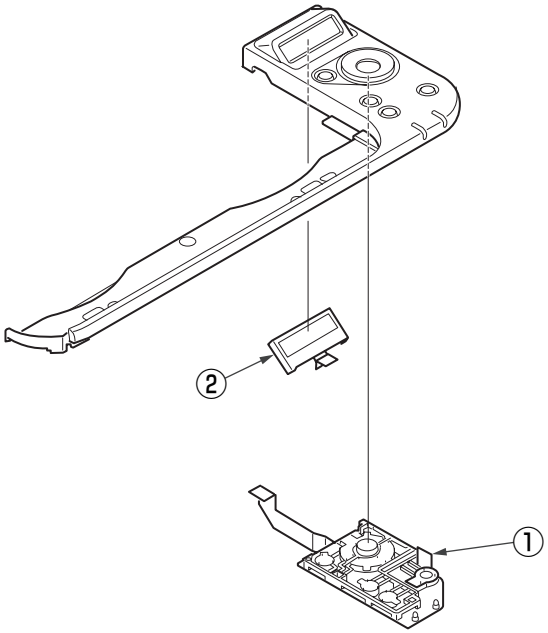
(1) Remove the operator panel Assy.

(2) Unlatch the three portions A.

(3) Detach the Board IBB ① .

(4) Unlatch the two portions B.

(5) Detach the LCD Assy ② .

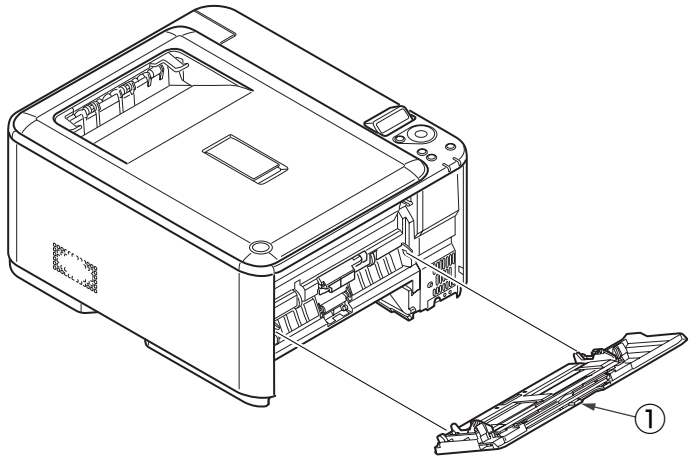


3.2.14 MPT Assy

(1) Remove the cassette Assy.

(2) Open the MPT Assy ① .

(3) Pull the MPT Assy in the direction of the arrow and release the two supports to detach the MPT Assy.



3.2.15 Front FAN, Hopping motor, Rear FAN, Holder Assy.-Switch, Image Drum motor and cover-open switch

(1) Remove the left side cover, the right side cover, the rear cover, the MPT Assy, the plate-rear, the plate shield Assy, low voltage power supply, cover front Assy and the WLAN-holder.

(2) Remove the two (silver-colored) screws ① to detach the hopping motor ② .

(3) Remove the two (silver-colored) screws ③ to detach the rear FAN ④ .

(4) Remove the two (silver-colored) screws ⑤ to detach the plate support ⑥ .

(5) Disconnect the CONN Cord ⑦ from the PU/CU PCB and the Holder Assy.-Switch ⑧ with the CONN Cord ⑦ from the side R of the main body.

(6) Disconnect the CONN Cord ⑦ from the Holder Assy.-Switch ⑧ .

(7) Remove the (silver-colored) screw ⑨ to detach the Host USB-Assy ⑩ .

(8) Remove the two (silver-colored) screws ⑪ to detach the USB-Cable ⑫ .

(9) Remove the two (silver-colored) screws ⑬ and unlatch the Frame-MPT-side ⑭ to remove it.

(10) Remove the two (silver-colored) screws ⑮ to detach the Front FAN ⑯ .

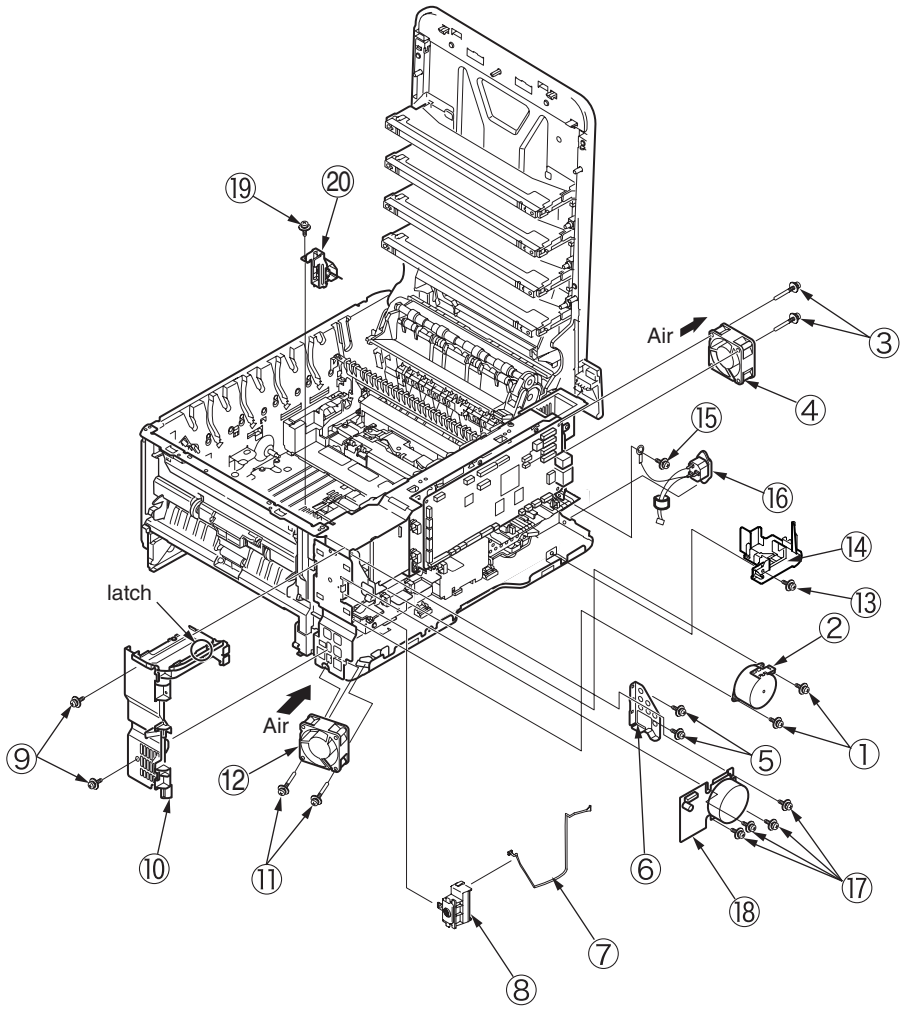
(11) Remove the (silver-colored) screw ⑰ and the FG-screw ⑱ to detach the Frame-AC ⑲ and the AC inlet ⑳ .

(12) Remove the four (silver-colored) screws ㉑ to detach the image drum motor ㉒ .

(13) Remove the screw ㉓ to detach the cover-open switch ㉔ .

Note!

- Note the air flow direction of these FANs for to assemble.
- When removing or assembling the FANs, do not press impeller of there.
  In case of the impeller unfastened by mistake, do not reuse it and install the new FANs.



3.2.16 High-voltage power supply board

⚠ Warning	Electric shock hazard	⚡

When replacing the high-voltage power supply, electric shock may occur. Wear insulated gloves, or be careful not to touch the conductors or terminals of the power supply directly.

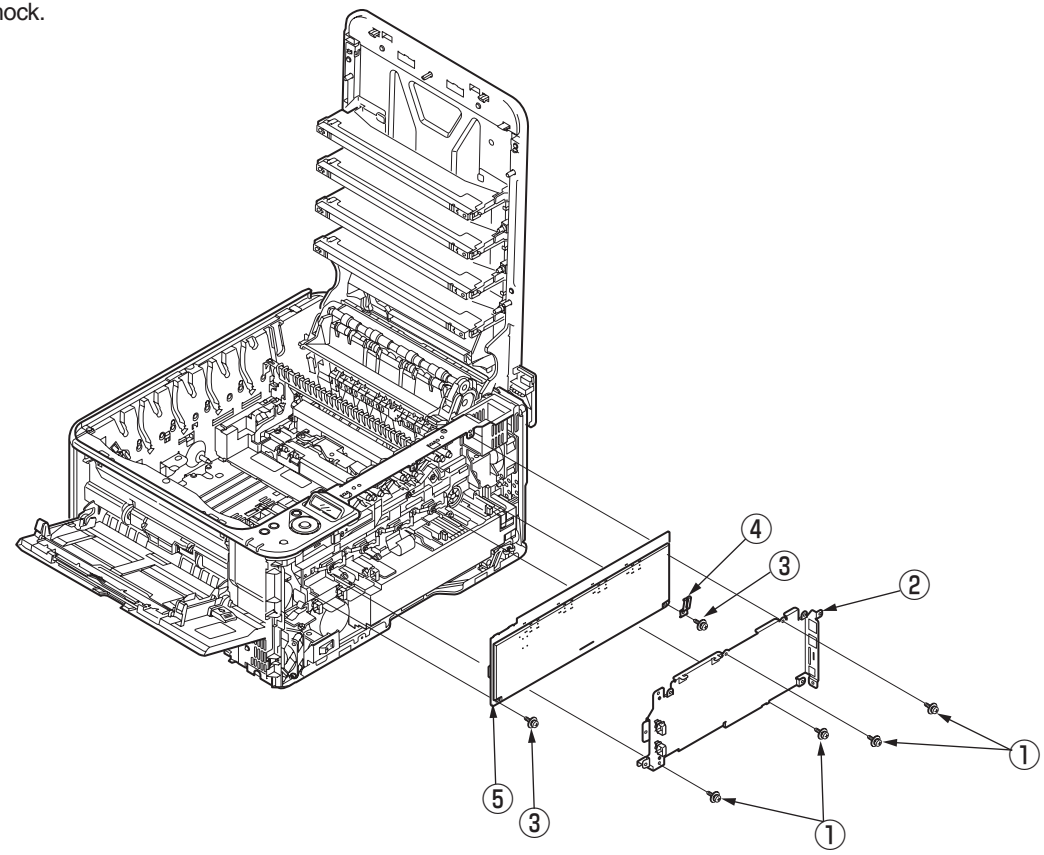
After the AC cord is unplugged, the capacitor may take about one minute to discharge completely or, due to PCB breakdown, could not discharge. Use caution about electric shock.

(1) Remove the right side cover and the CU/PU board.

(2) Remove the four (silver-colored) screws ① to remove the plate board ② .

(3) Remove the two (silver-colored) screws ③ to remove the plate-FG ④ .

(4) Unlatch the four portions to detach the high-voltage power supply board ⑤ .



3.2.17 Guide-ejection Assy, fuser connector Assy and color-registration Assy

(1) Remove the left side cover, the right side cover, the rear cover, the top cover Assy, and the ID fan Assy.

(2) Remove the CU/PU board and the low-voltage power supply.

(3) Detach the guide-ejection Assy ① .

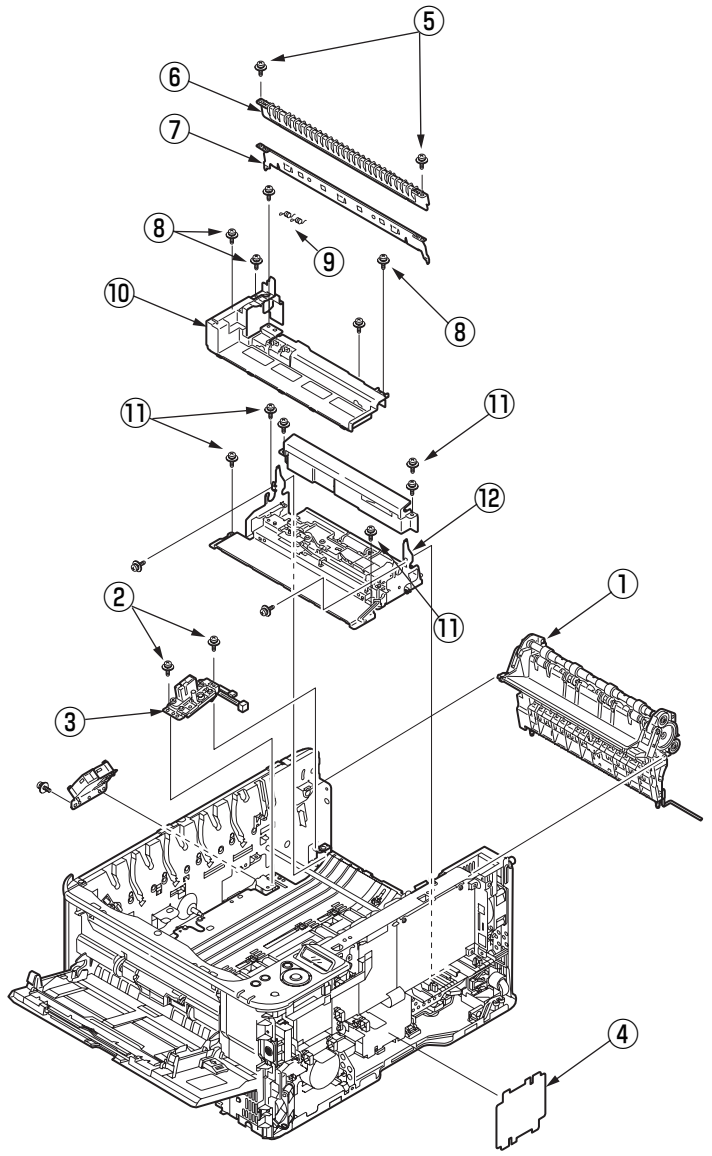
(4) Remove the two (silver-colored) screws ② to detach the fuser connector Assy ③ .

(5) Remove the film-power board ④ .

(6) Remove the two (silver-colored) screws ⑤ to remove the cover-beam ⑥ and the plate-beam ⑦ .

(7) Remove the three (silver-colored) screws ⑧ to remove the two torsion springs ⑨ and then the cover-code ⑩ .

(8) Remove the four (silver-colored) screws ⑪ to detach the color-registration Assy ⑫ .



3.2.18 Frame-MPT Assy. and feeder Assy.

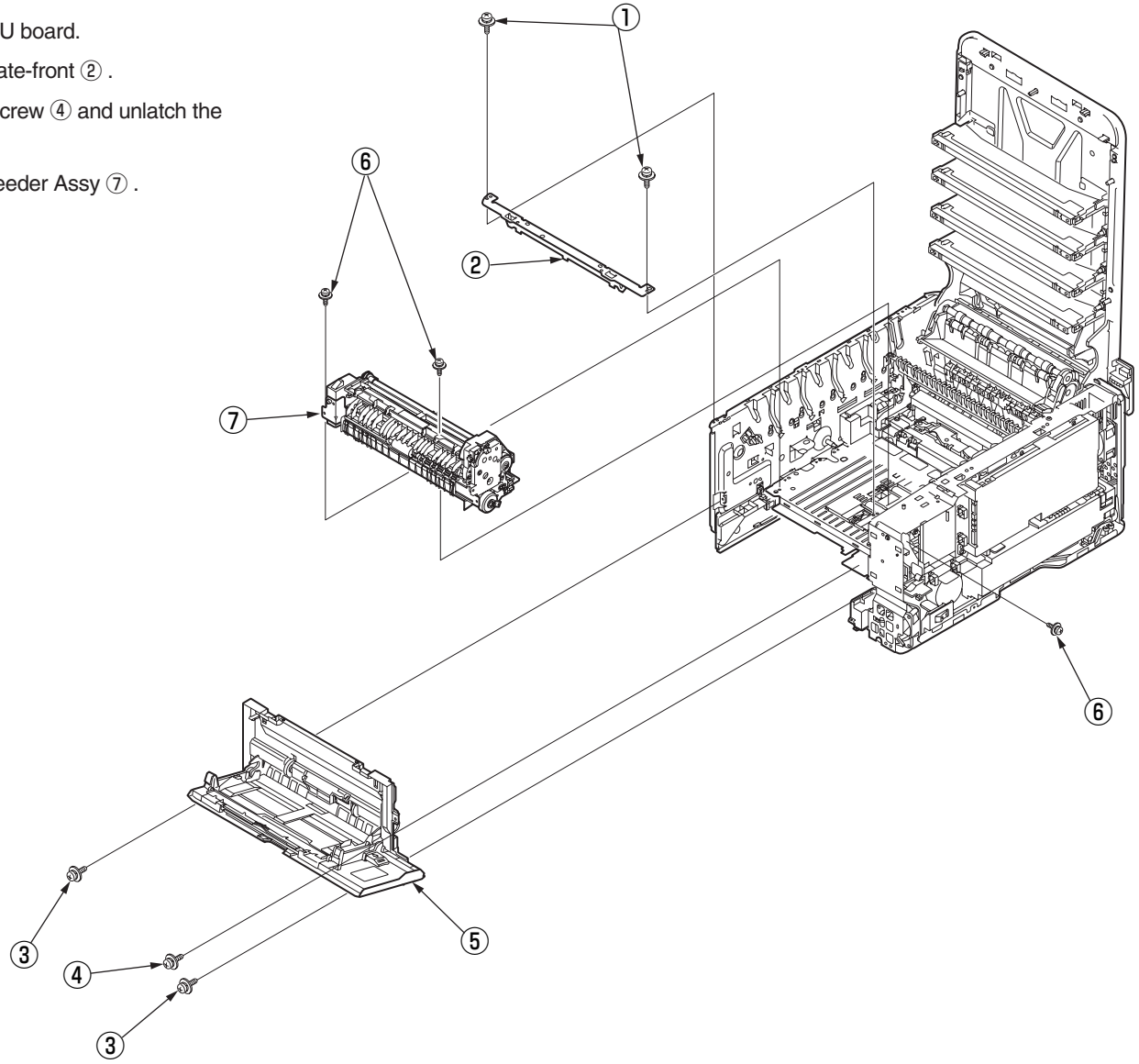
(1) Remove the left side cover, the right side cover, the rear cover, the hopping motor, the plate shield Assy, the operator panel Assy, the cover-open switch and the frame-MPT-side.

(2) Remove the RGSNS, HPSNS and MPC cables of the CU/PU board.

(3) Remove the two (silver-colored) screws ① to remove the plate-front ② .

(4) Remove the two (silver-colored) screws ③ and the (black) screw ④ and unlatch the two portions to detach the frame-MPT Assy ⑤ .

(5) Remove the three (silver-colored) screws ⑥ to detach the feeder Assy ⑦ .



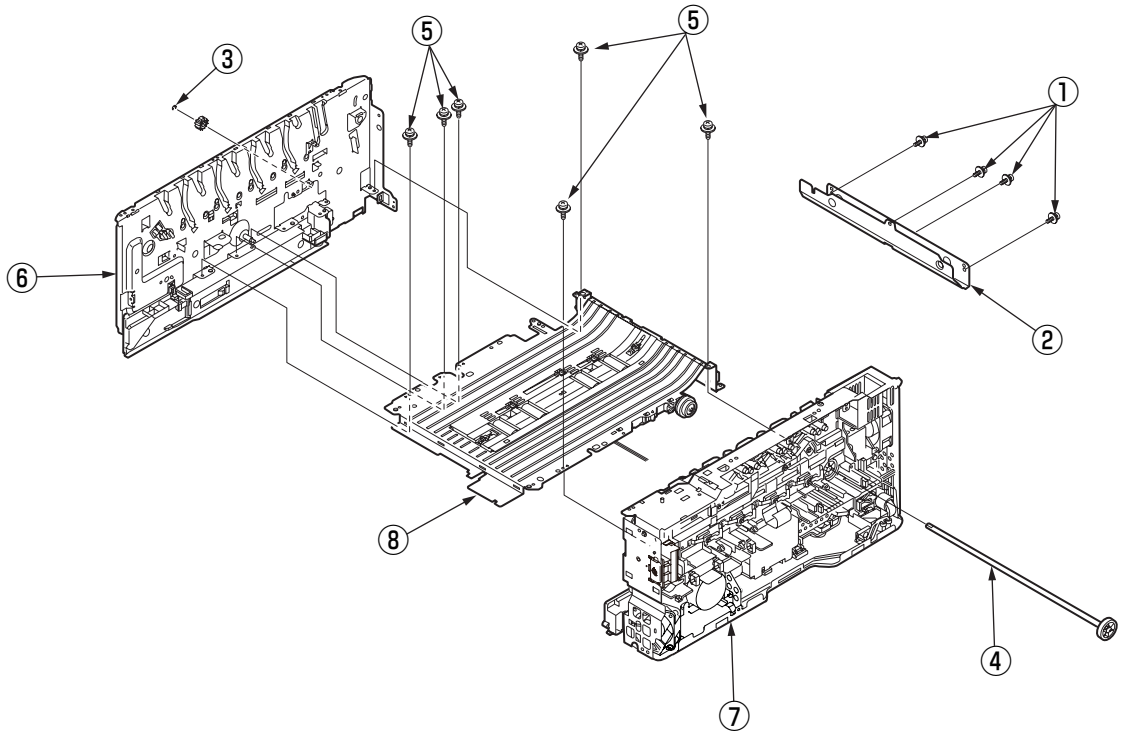
3.2.19 Side-L Assy, side-R Assy and base Assy

(1) Remove the left side cover, the right side cover, the rear cover, the top cover Assy, the operator panel Assy, the feeder Assy, the guide-ejection Assy and the registration Assy.

(2) Remove the four (silver-colored) screws ① to remove the plate-bottom ② .

(3) Remove the E-shaped retainer ring ③ and then the shaft ④ .

(4) Remove the six (silver-colored) screws ⑤ to detach the side-L Assy ⑥ , the side-R Assy ⑦ and the base Assy ⑧ .



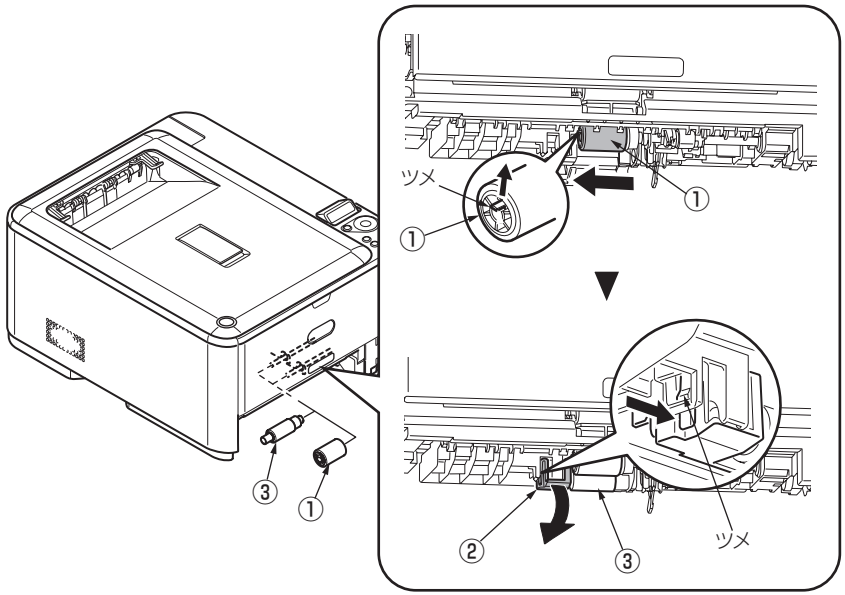
3.2.20 Feed rollers

(1) Remove the cassette.

(2) Lift the tab of the front paper feed roller ① outward, slide the front paper feed roller ① to the left and remove it.

(3) Press the tab on the black cover ② attached to the left side of the rear paper feed roller ③ and open the black cover ② downward.

(4) Remove the rear paper feed roller ③ .



3.3 Locations to lubricate

This section shows the locations to lubricate. The other locations must not be lubricated. Lubrication is not required during assembly or disassembly, except that, after lubricant is wiped off locations, the appropriate lubricant specified must be applied to the locations.

Each number circled, accompanied with the number and name of a drawing indicates that the lubrication work with the number is specified in the drawing.

Lubrication work

(1) Lubricant notations and names

EM-30L: Molykote EM-30L (part number 44498501)

HP-300: Molykote HP-300

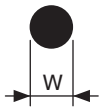
PM: Pan motor oil 10W-40 or ZOA 10W-30

GE-334C: FLOIL GE-334C (part number 41823301)

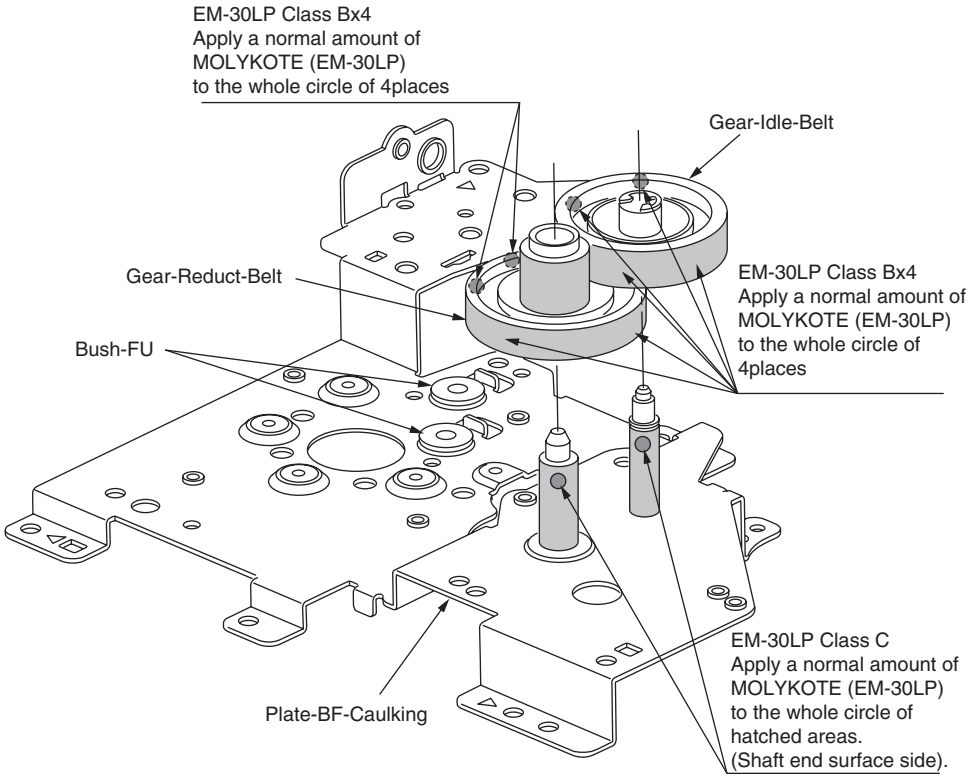
SF-133: HANARL SF-133

(2) Grease boundary samples

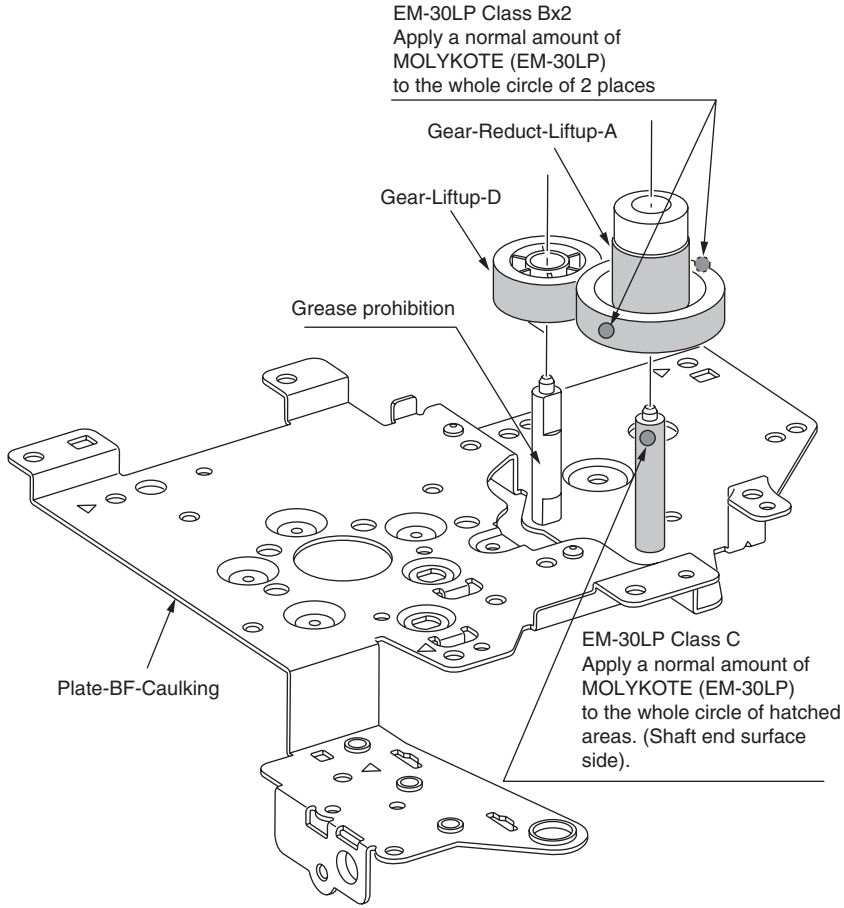
Class	S	A	B	C	D	E	F
Amount applied (cc)	0.0005	0.0003	0.005	0.01	0.03	0.05	0.1
W (mm)	1.24	2.25	2.67	3.37	4.86	5.76	7.26
Sample							



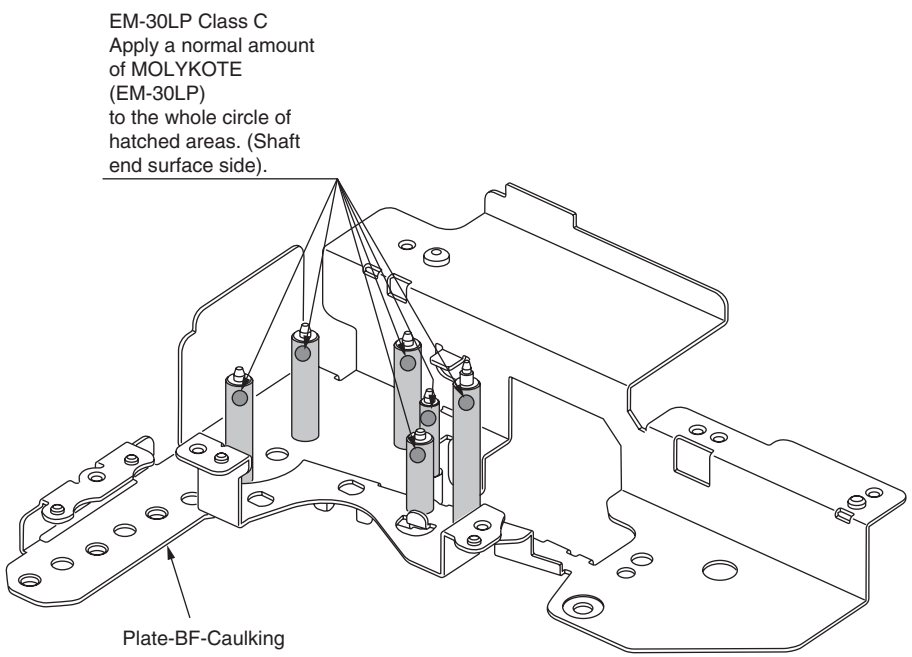
① -1 44452301PA Side-R Assy.



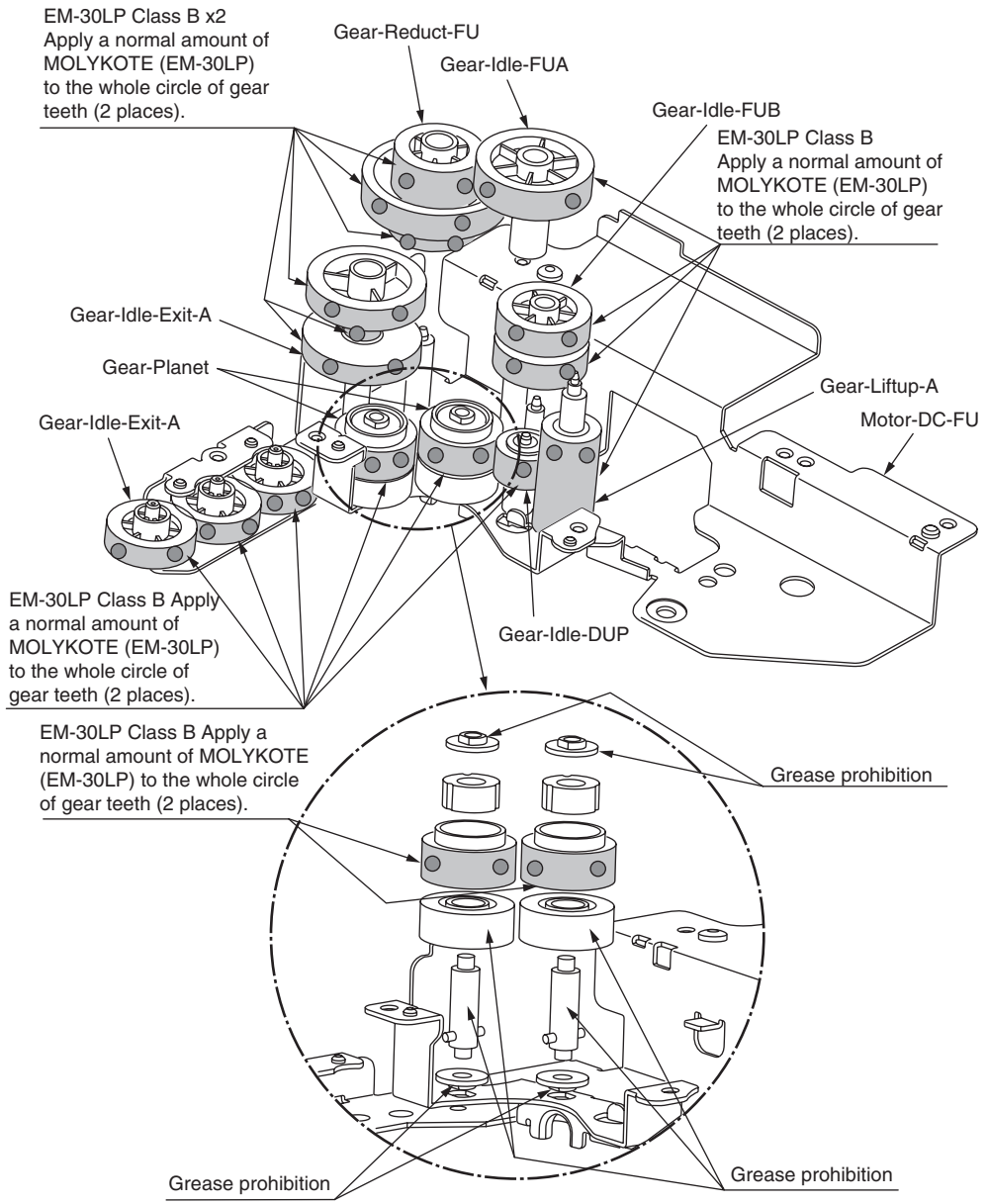
① -2 44452301PA Side-R Assy.



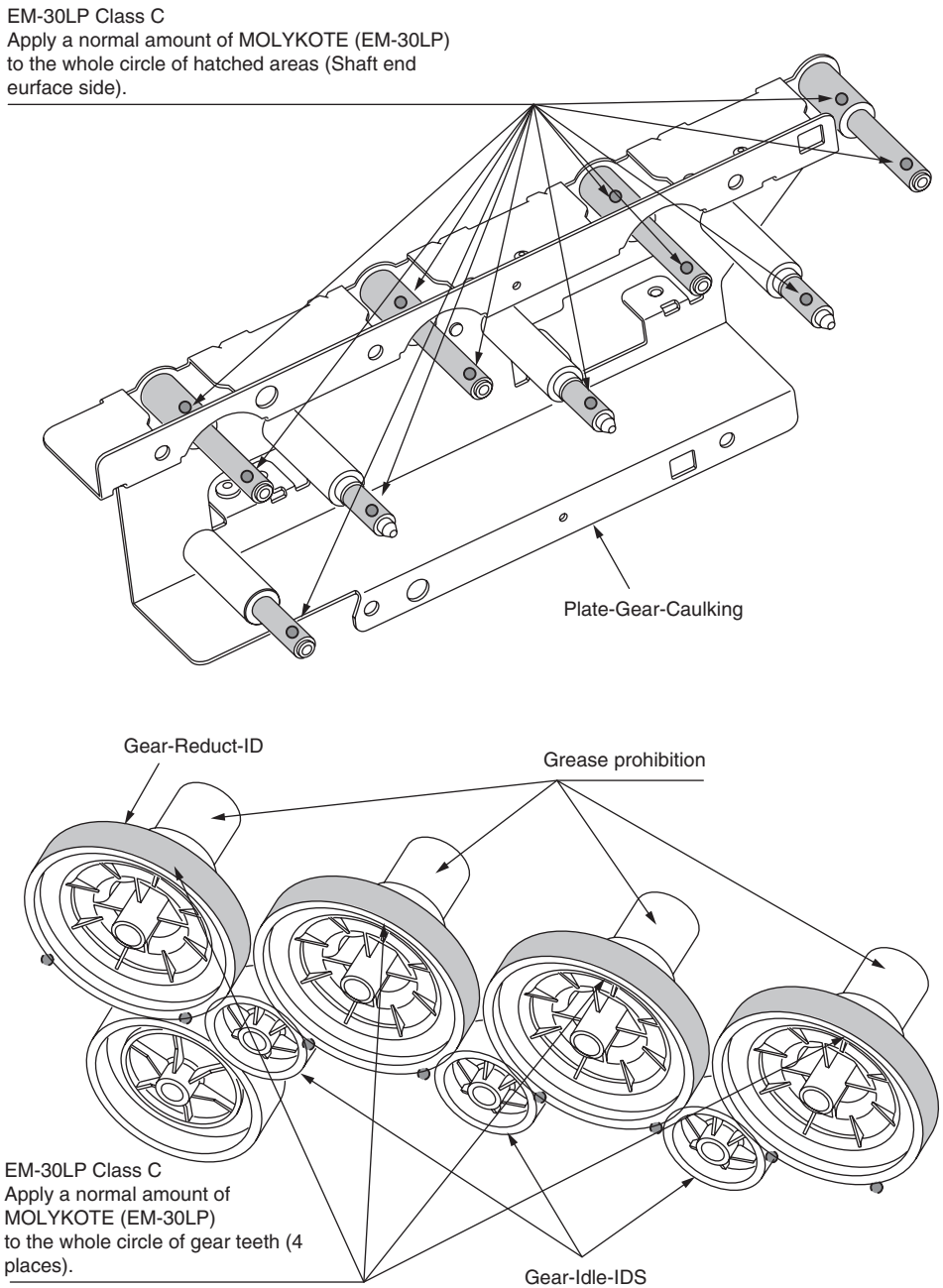
① -3 44452301PA Side-R Assy.



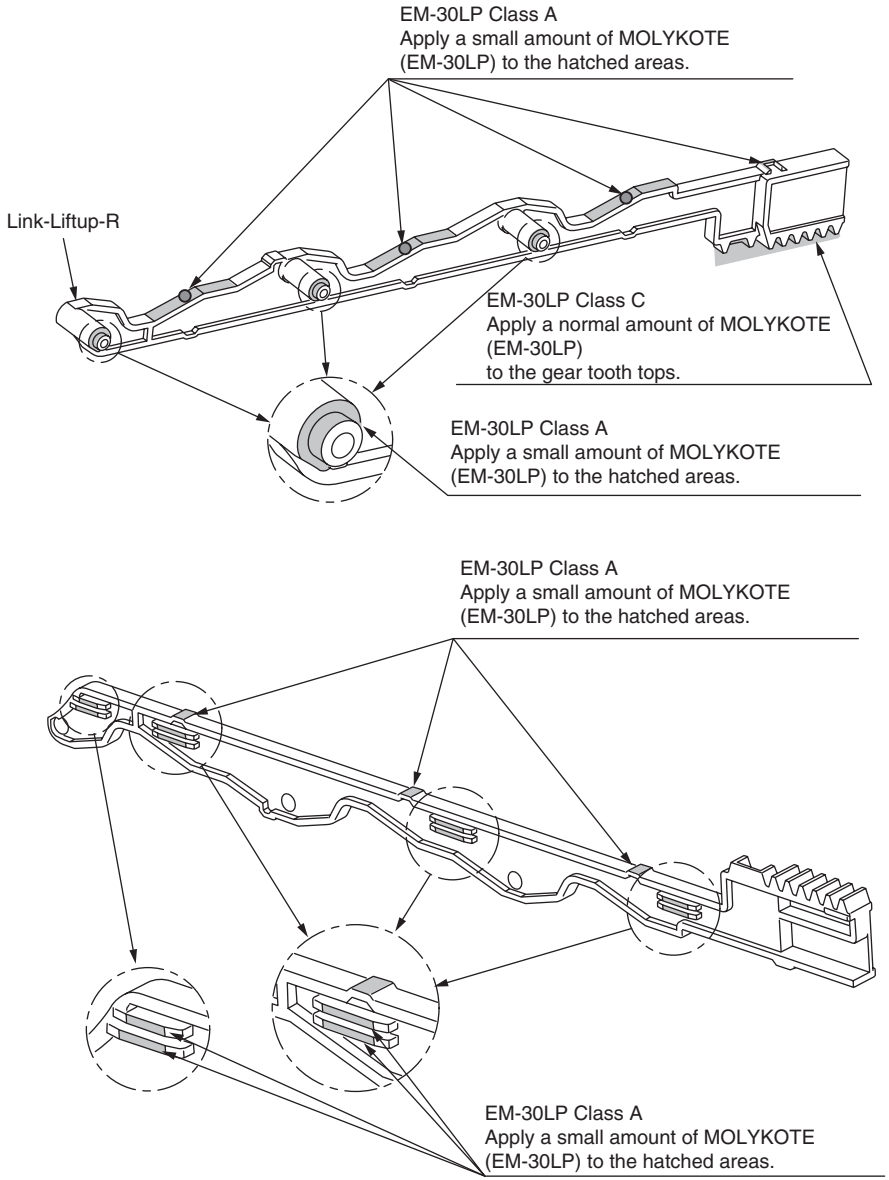
① -4 44452301PA Side-R Assy.



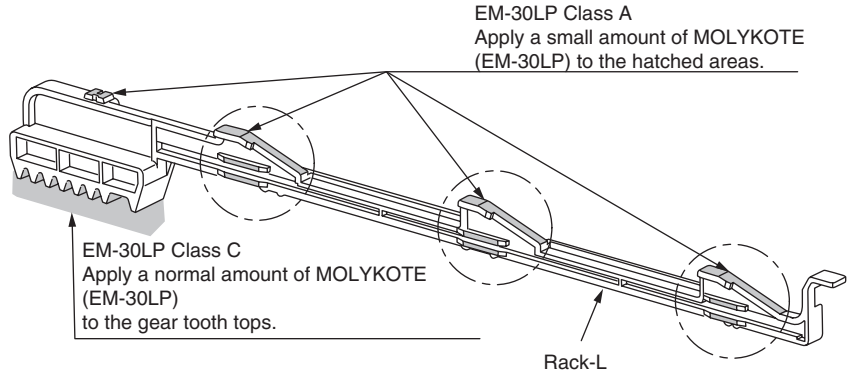
① -5 44452301PA Side-R Assy.

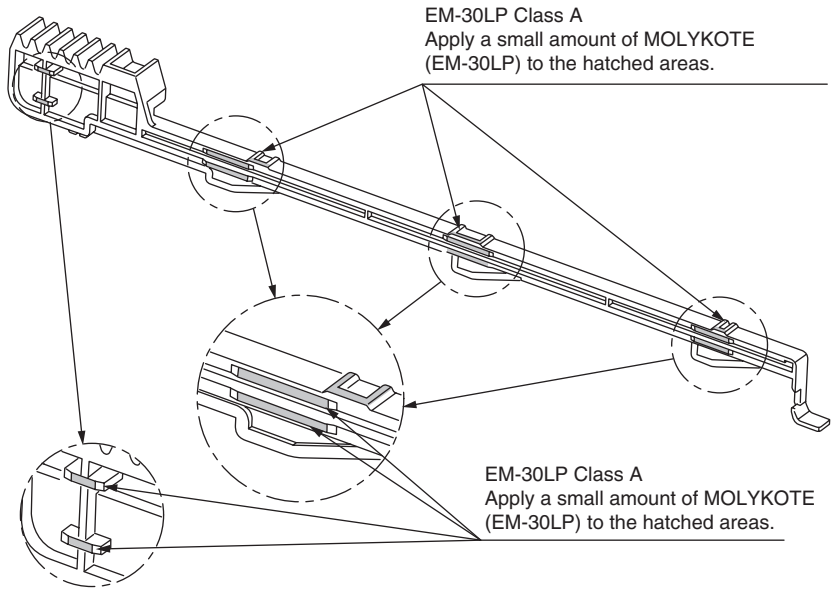


① -6 44452301PA Side-R Assy.

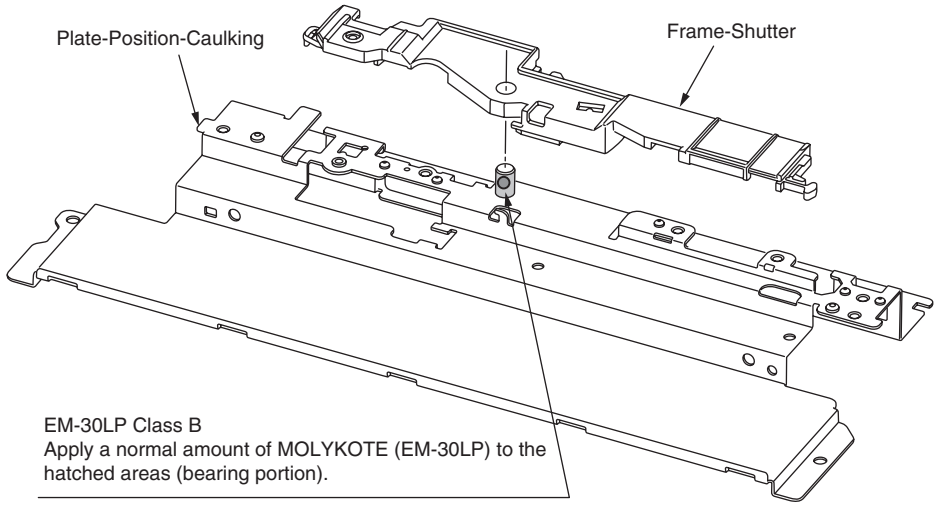


② 44452401PA Side-L Assy.

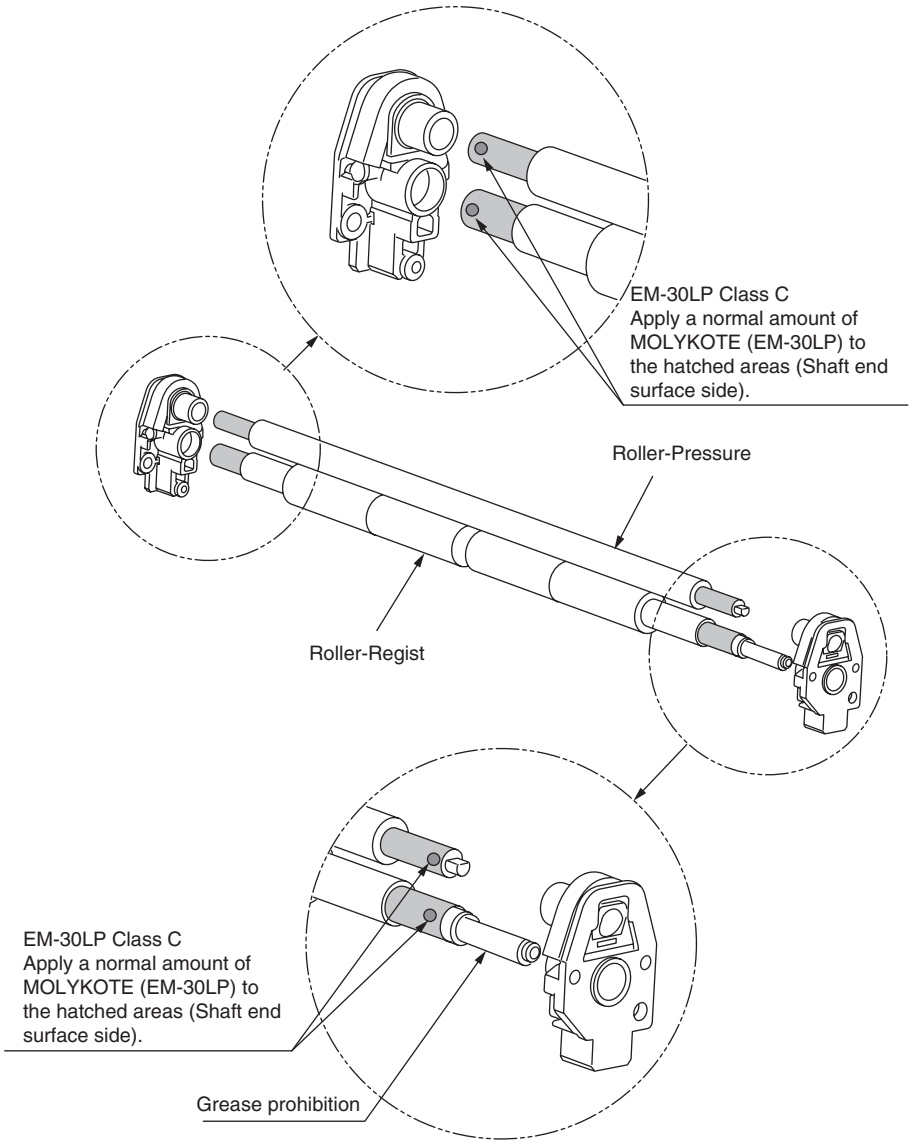




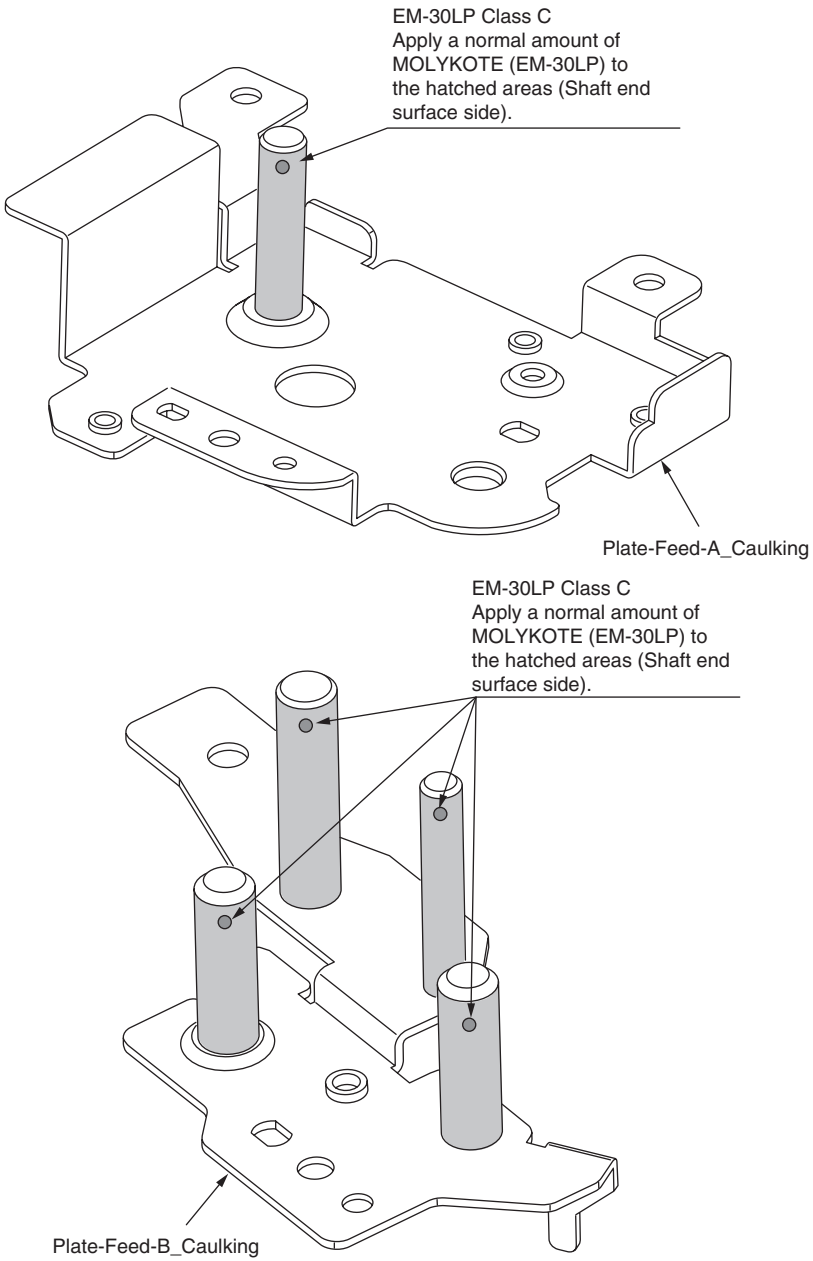
③ 44452601PA Sensor Assy.-Regist



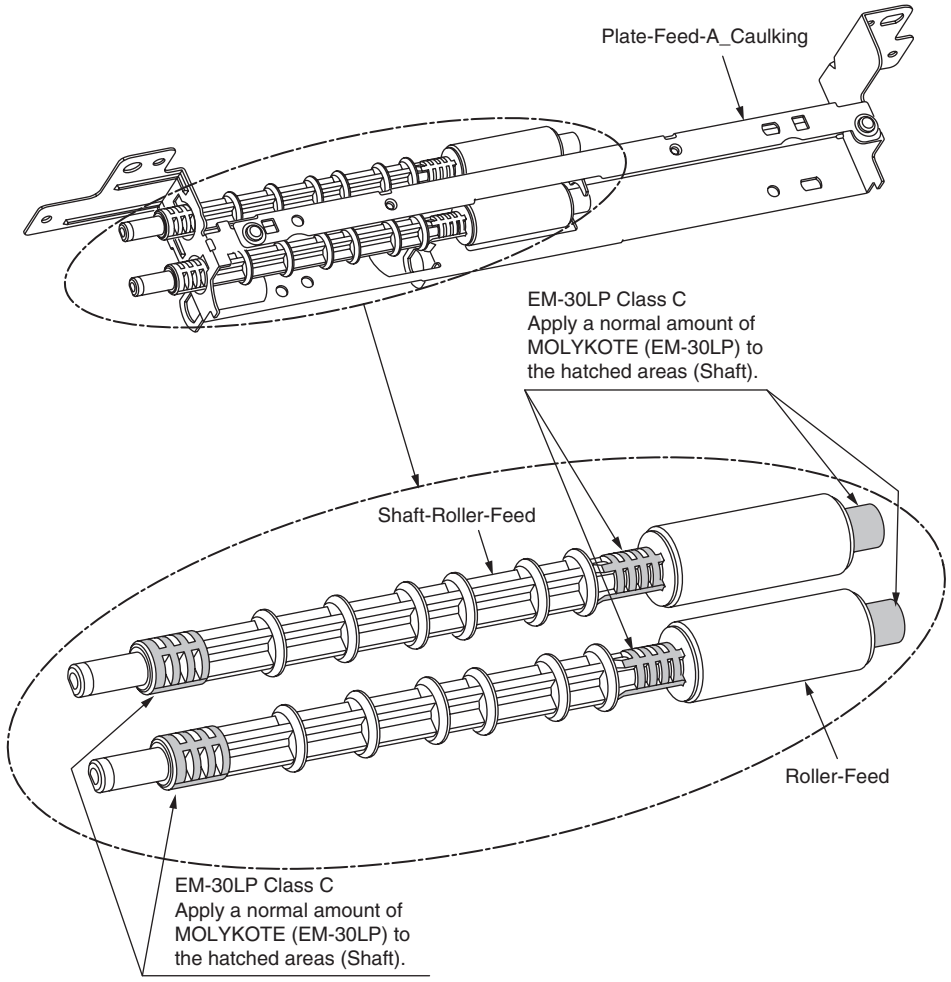
④ -1 44452701PA Front Assy.-Reg/Hop



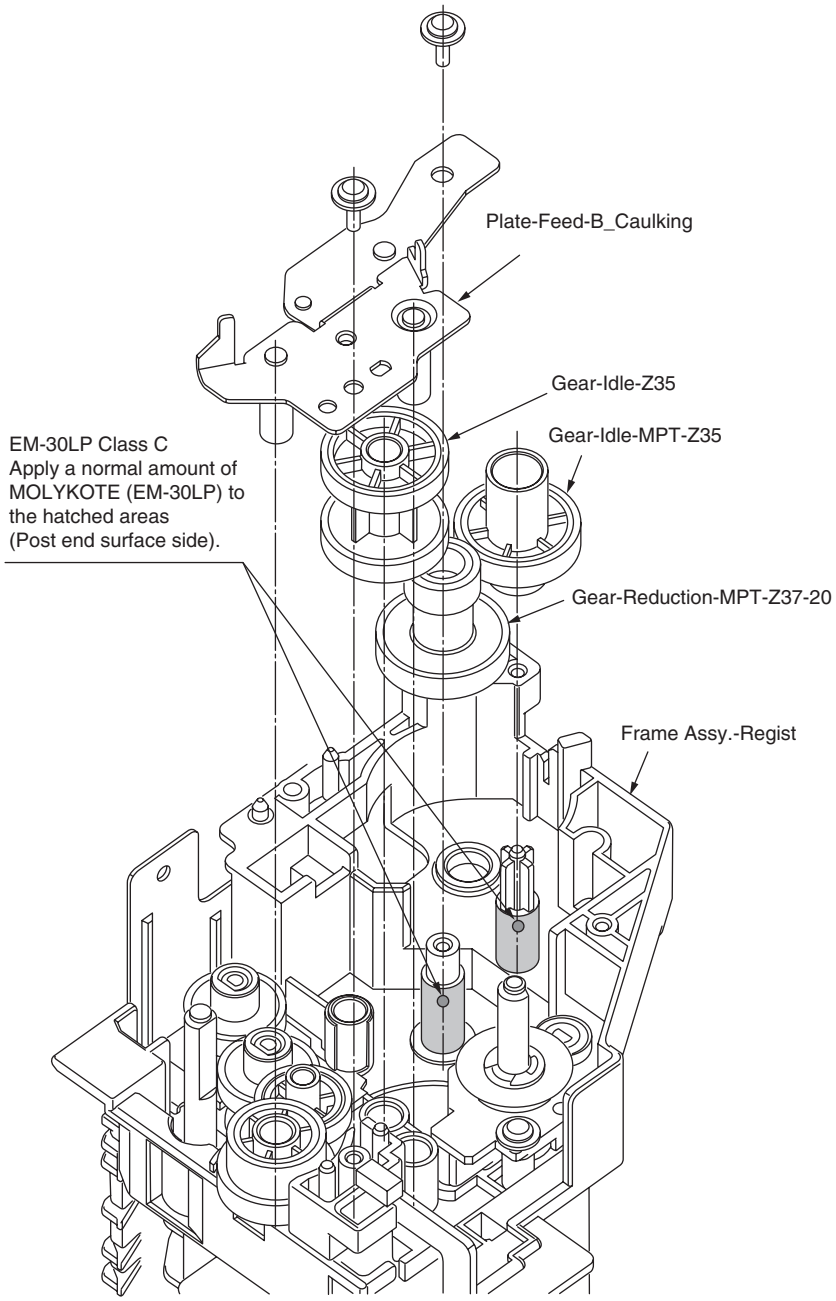
④ -2 44452701PA Front Assy.-Reg/Hop



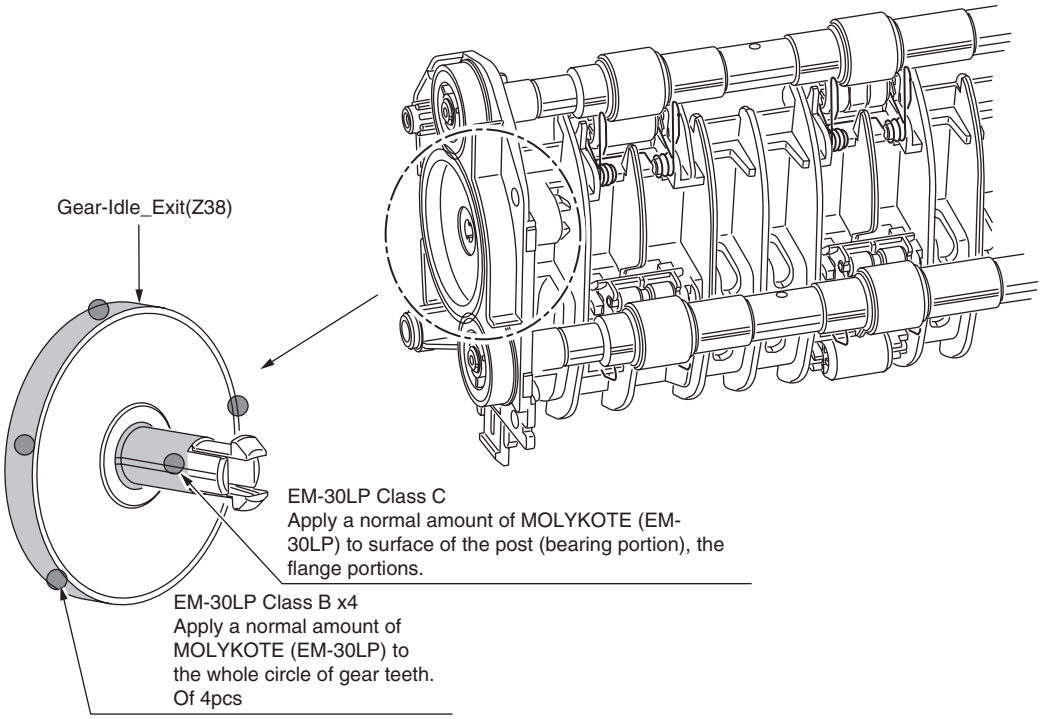
④ -3 44452701PA Front Assy.-Reg/Hop



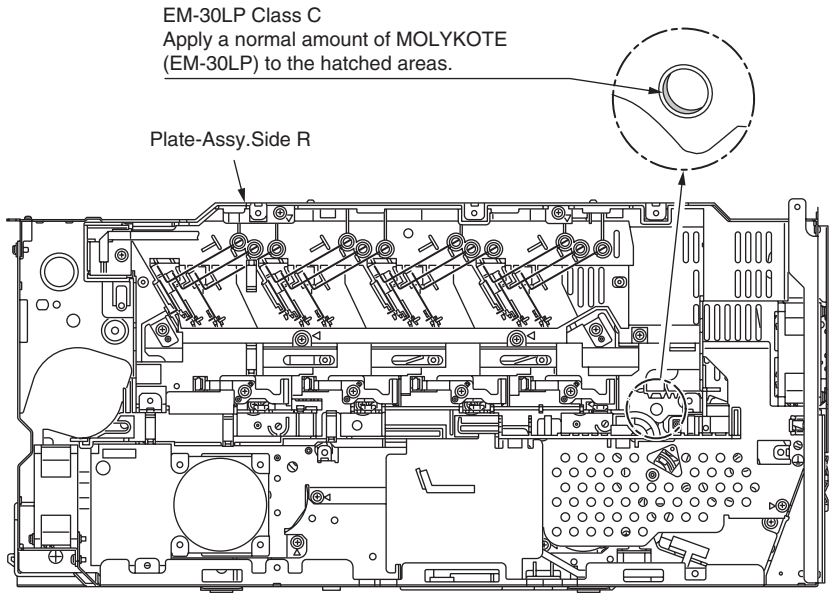
④ -4 44452701PA Front Assy.-Reg/Hop



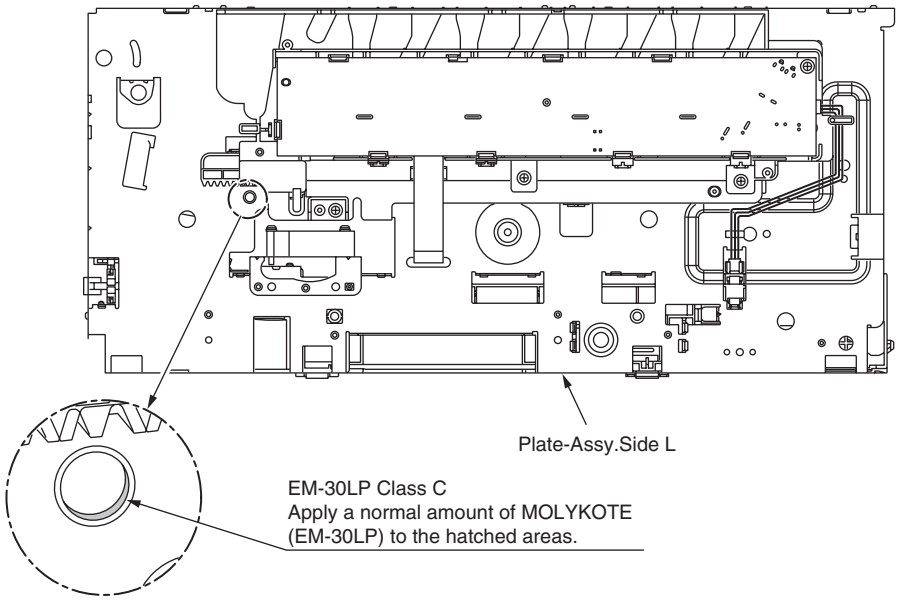
⑤ 44364101PA Eject Assy



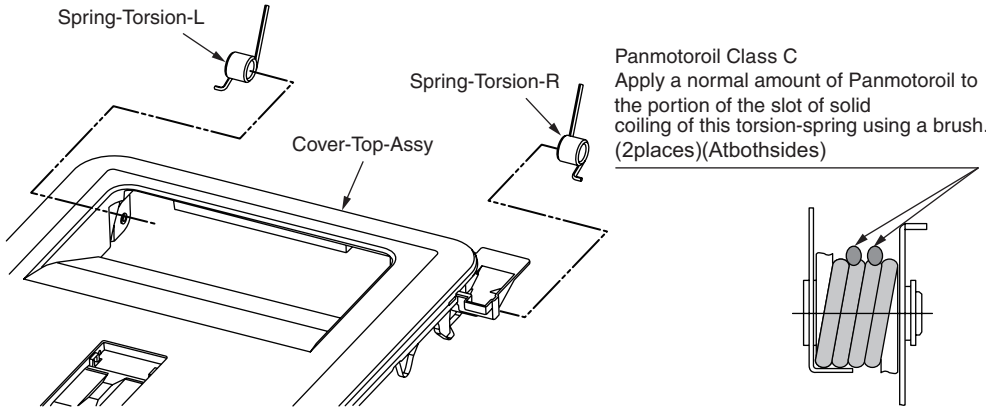
⑥ -1 44453001PA Printer Unit-PX750



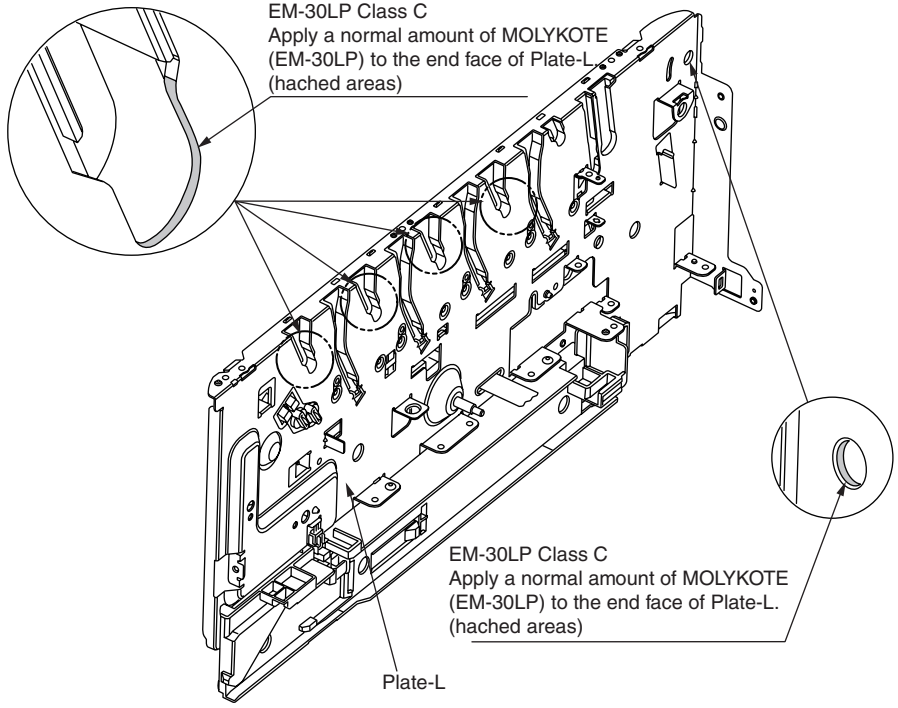
⑥ -2 44453001PA Printer Unit-PX750



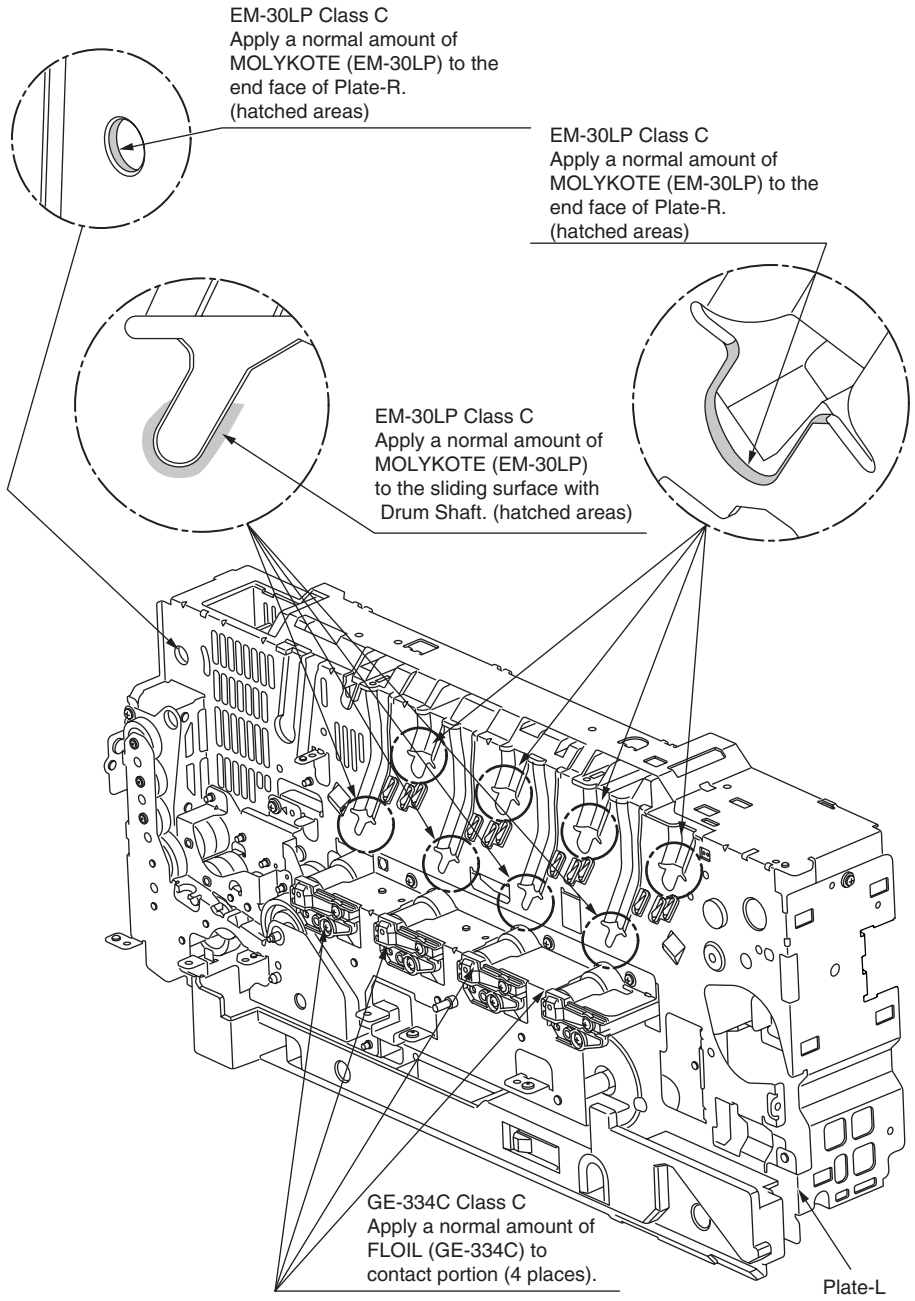
⑥ -3 44453001PA Printer Unit-PX750



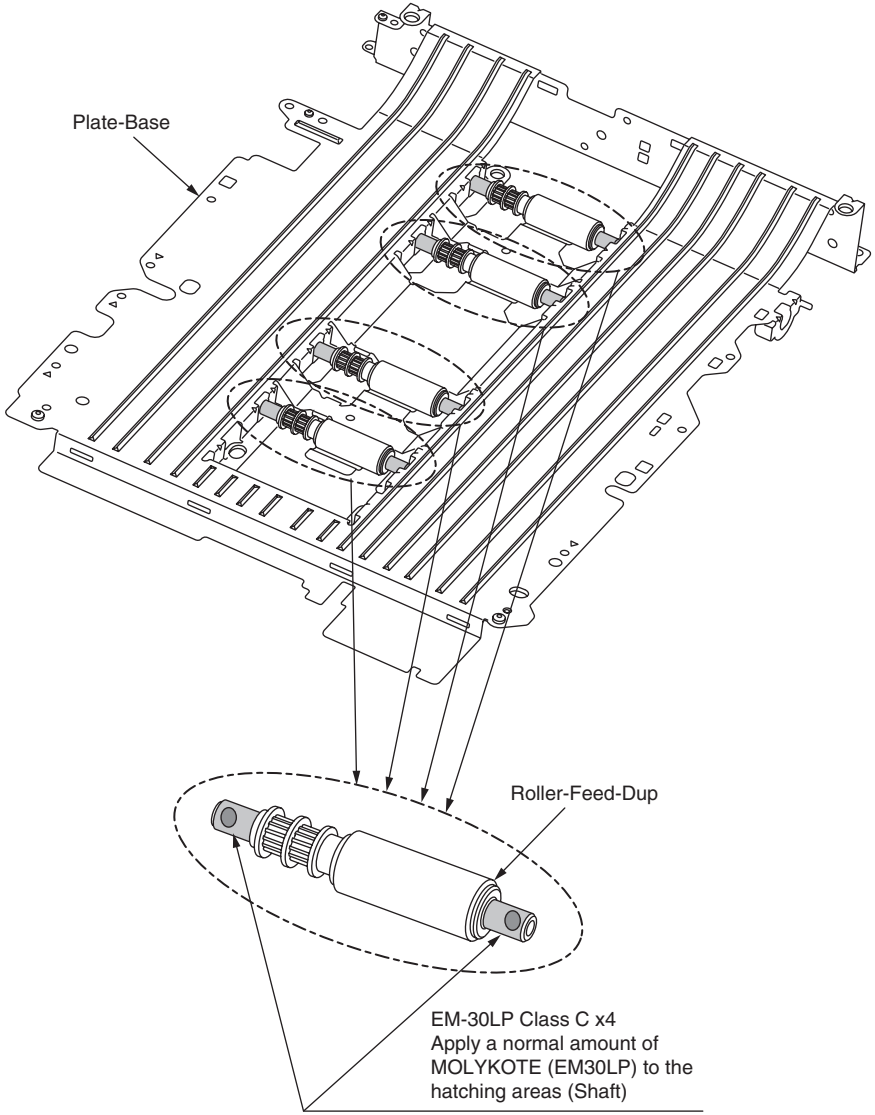
⑥ -4 44453001PA Printer Unit-PX750



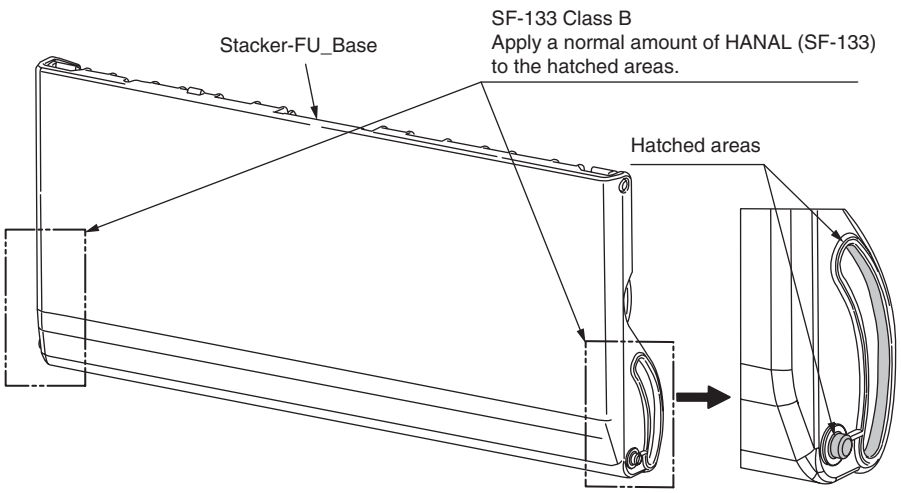
⑥ -5 44453001PA Printer Unit-PX750



⑦ 44452501PA Base-Assy

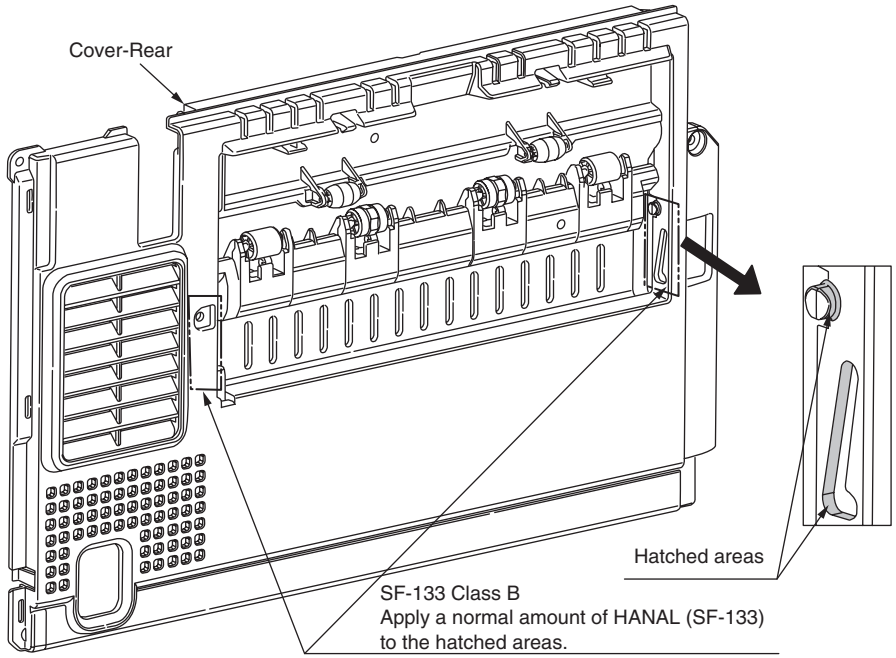


⑧ -1 44453701PA Cover-Assy.-Rear



Leave it for about 3 minutes (drying time) after painting HANAL SF-133, and then assemble the Cover-Assy.-Stacker.

⑧ -2 44453701PA Cover-Assy.-Rear



4. MAINTENANCE MENUS

C332 can be adjusted by using Maintenance Utility, or button operation on its operator panel.

The printer has maintenance menus in addition to general menus. The menus intended for adjustment purposes should be selected.

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.

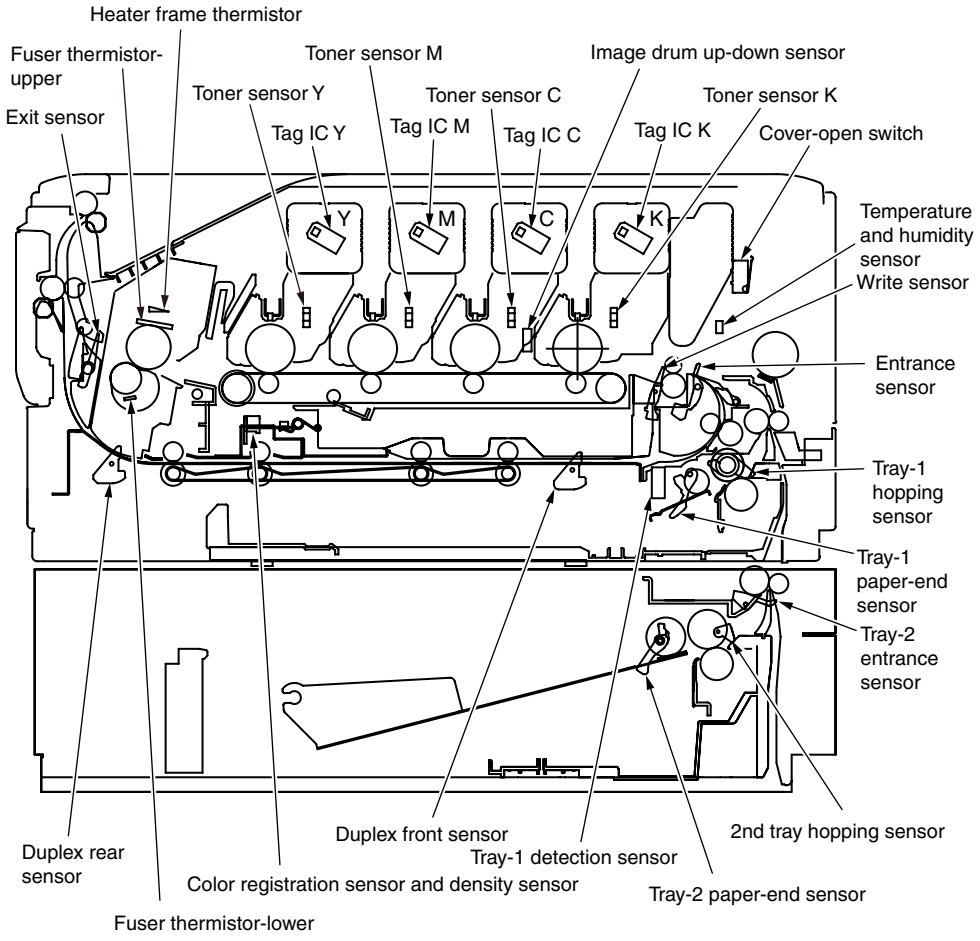


Figure 4-1

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.

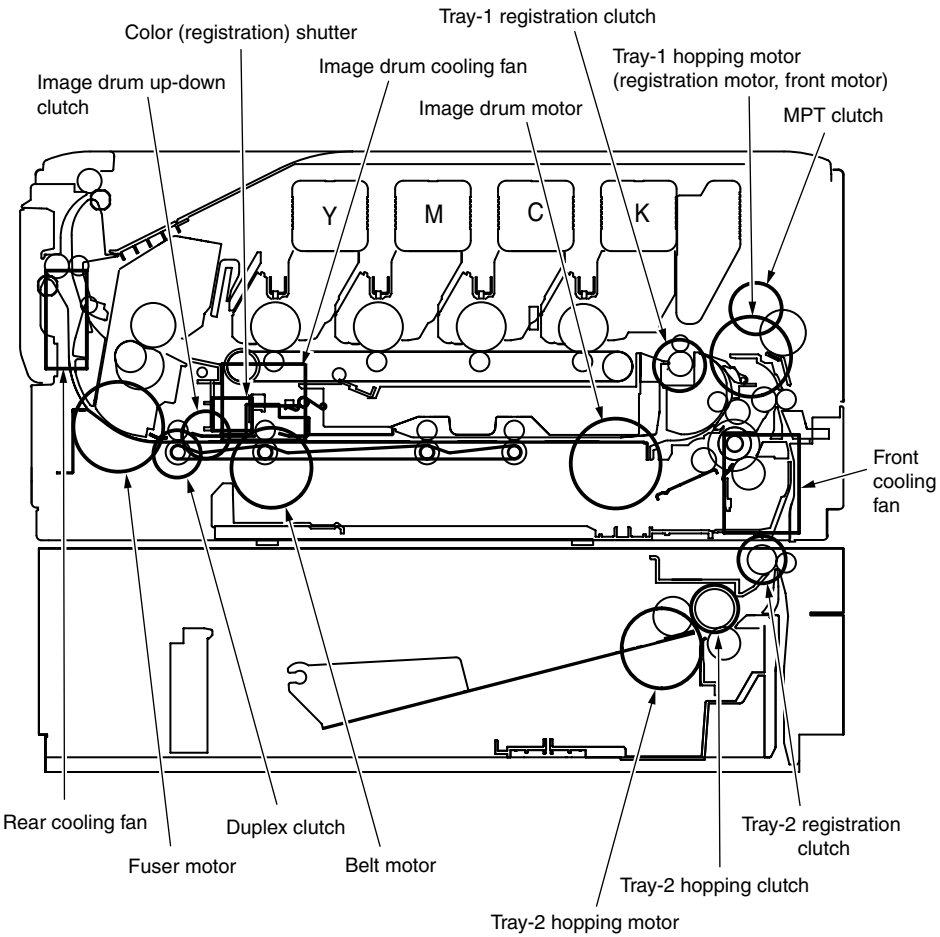


Figure 4-2

5. PERIODIC MAINTENANCE

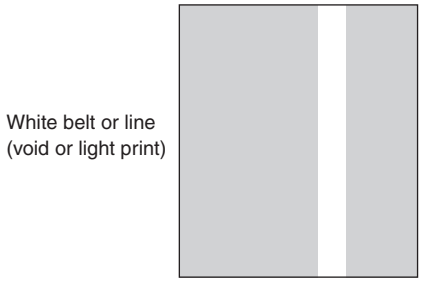
5.1 Cleaning

The inside and outside of C332 should be cleaned with a waste cloth and a handy vacuum cleaner when necessary.

Note! Do not directly touch the image drum terminals, LED lens array and LED head connectors.

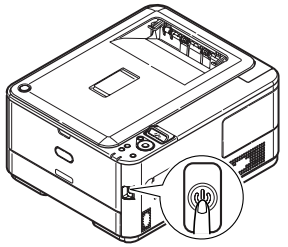
5.2 LED lens array cleaning

The LED lens array should be cleaned when a printed surface contains a vertical white belt or line (void or light print).



LED head cleaning

The LED heads should be cleaned when a printed output contains a faded image, a white line or spread ink of text.

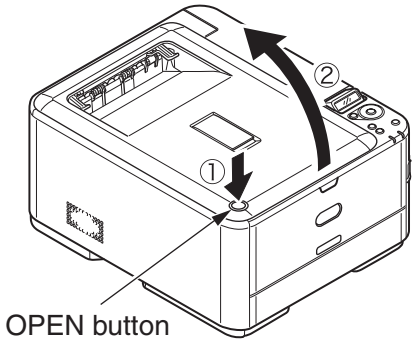


(1) Turn off the printer.

(2) Press the OPEN button and open the top cover.

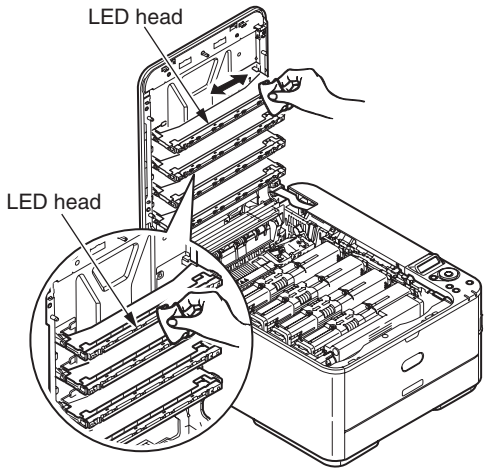
⚠Caution	Burn injury hazard	

The fuser unit is hot. Do not touch it.

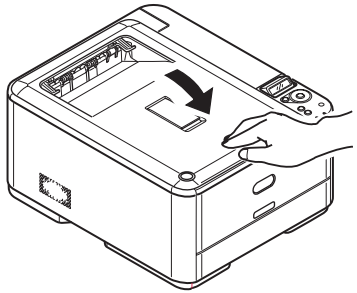


(3) Lightly wipe the (four) LED head lens surfaces with soft tissue paper.

Note! Solvents, such as methyl alcohol or thinner, damage the LED heads. Do not use them.



(4) Close the top cover.



5.3 Pick-up roller cleaning

The pick-up rollers should be cleaned when a printed surface contains a vertical line.

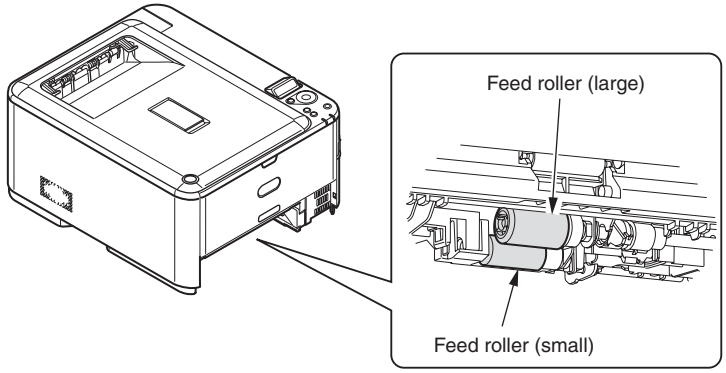
Note! Use a soft cloth for cleaning so as not to damage the roller surfaces.

Feed roller and separator roller cleaning

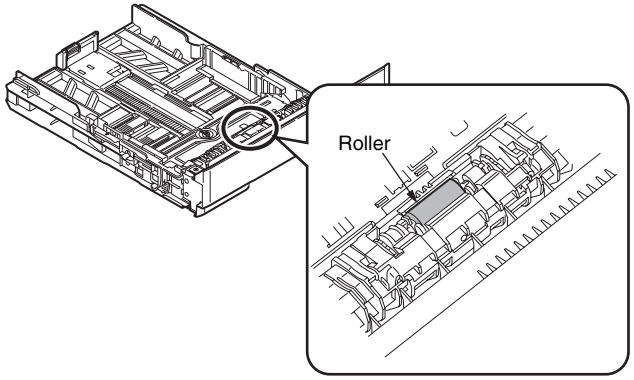
The feed rollers and the separator roller should be cleaned when 391: PAPER JAM frequently occurs.

(1) Pull out the paper cassette.

(2) Wipe the (large and small) feed rollers with a cloth tightly wrung out with water.



(3) Wipe the separator roller of the paper cassette with a cloth tightly wrung out with water.



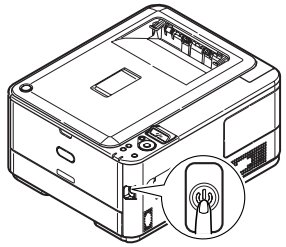
Note!
- Clean the (option) tray 2 in the same way when 392: PAPER JAM frequently occurs.
- Clean the feed roller of the multi-purpose tray in the same way when 390: PAPER JAM frequently occurs.

5.4 Pinter internal cleaning

Toner may adhere to the metal shaft between the fuser and the cyan image drum cartridge depending on print patterns. The inside of C332 should be cleaned when there is a toner adherent on the metal shaft.

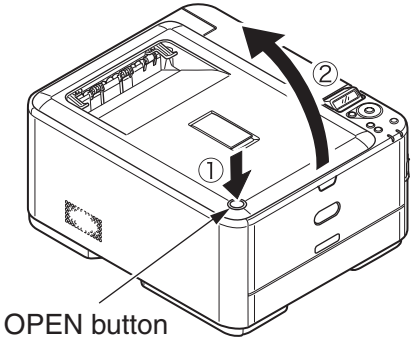
(1) Turn off the printer.

(2) Press the OPEN button and open the top cover.



⚠Caution	Burn injury hazard	

The fuser unit is hot. Do not touch it.



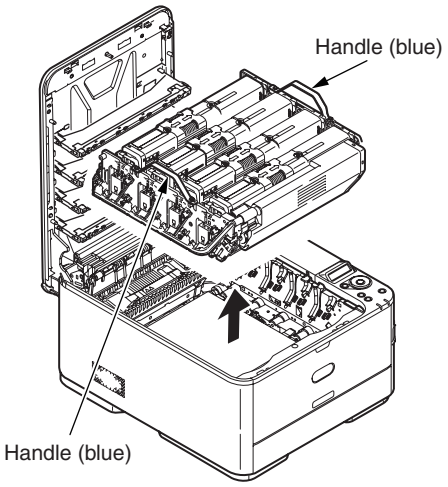
(3) Take out the image drum cartridges:

1. Take out the (four) image drum cartridges, and place them on a flat table.

2. Cover the image drum cartridges with black paper.

Note! • The image drums (the green tubes) are delicate. Handle them carefully.

• Do not expose the image drum cartridges to direct sunlight or very bright interior light (approximately 1,500 lux or more). Do not leave them for five minutes of more even under the normal interior light.

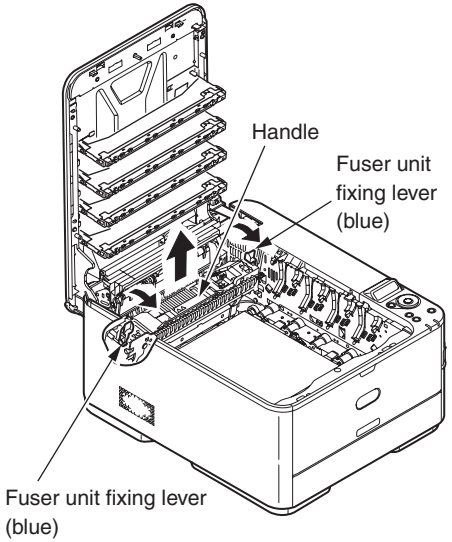


(4) Take out the fuser unit.

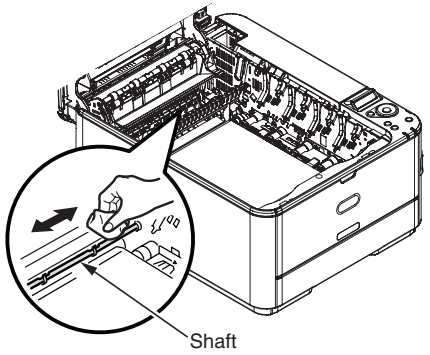
⚠Caution	Burn injury hazard	

The fuser unit is hot. Do not touch it with extreme caution. When it is hot to touch, wait for it to cool, then perform operations.

1. Raise the (two blue) fuser unit fixing levers in the direction of the arrows.
2. Hold the fuser unit by its handle and take out it.



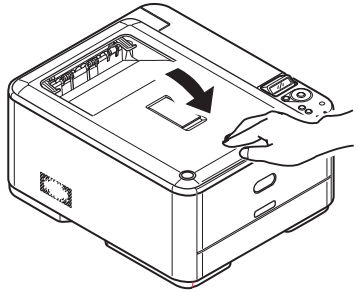
(5) Wipe the metal shaft with a soft cloth or tissue paper.



(6) Reinstall the fuser unit. For details, refer to the fuser unit replacement section of the user's manual.

(7) Gently put the (four) image drum cartridges back into the printer.

(8) Close the top cover.



6. TROUBLESHOOTING

6.1 Before troubleshooting

(1) Check the basic check items described in the C332 user's manual.

(2) Obtain information as in much detail as possible from customers about in what situations troubles occurred.

(3) Perform checking under situations close to those where troubles occurred.

6.2 Points to check before dealing with image troubles

(1) Operating environment is proper.

(2) Consumables (the toner and image drum cartridges) have been replaced properly.

(3) There are no problems with paper. Refer to applicable paper specifications.

(4) The image drum cartridges are installed properly.

6.3 Precautions for dealing with image troubles

(1) Do not touch, or allow foreign matter to touch, the surfaces of the OPC drums.

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

(3) The fuser unit is hot. Do not touch it.

(4) Do not expose the image drums to light for five minutes or more at room temperature.

6.4 Preparation for troubleshooting

(1) Operator panel display

C332 displays its trouble status on its operator panel LCD (liquid crystal display). Perform proper troubleshooting according to messages 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 trouble

Memo For the numbers 1 to 15 each after the connector names, see 6.5.1 (19) Connection diagram.

(1-1) LCD displays nothing

Check item	Check operation	Actions for NG results
(1-1-1) Fuse check		
CU/PU board fuse	Check F5 (C531/C331/C321) or F7 (C511/C301) is not cut.	Replace the CU/PU board.
(1-1-2) Connection-line chec		
Connection of low-voltage power unit and CU/PU board	Check the cord from the low-voltage power supply to the CU/PU board POWER connector is properly connected. Check for half connection or skew insertion.	Re-insert the cord properly.
Cord assembly connecting low-voltage power unit and CU/PU board	Check for breakdown. Check for sheathing removal. Check for defectiveness of cord assembly, such as wire removal.	Replace cords with proper ones.
Connection between CU/PU board and operator panel board	Check that 12-pin FFC is properly connected to the CU/PU board OPE connector 17. Check that 12-pin FFC is properly connected to the operator panel board CN1 connector. Check for half connection or skew insertion.	Re-insert the cord properly.
FFC connecting CU/PU board and operator panel board	Check for breakdown with a tester. Visually check for sheathing removal.	Replace the FFC with a proper one.
(1-1-3) Power supply periphery check		
AC power supplied to printer	Check the AC power supply voltage.	Supply AC power.
5V power supplied to CU/PU board	Check the 5V power supply by using the pins 1, 2 and 3 of the CU/PU board POWER connector 10.	Replace the low voltage power supply.
3.3V power supply to operator panel board	Check 3.3V power supply by using the pin 7 of the CU/PU board CN1 connector 19.	Replace the CU/PU board.
(1-1-4) Power supply short-circuit check		
5V and 24V power supplied to CU/PU board	Check short circuiting by using the CU/PU board POWER connector 10. When the following is found, separate short-circuited points as described below. Pins 7, 8 and 9: 24V Pins 1, 2 and 3: 5V Pins 4, 5 and 6: 0VL Pins 10, 11 and 12: 0VP. Locate short circuits by pulling out the cords connected to the CU/PU board one by one	Replace short-circuited parts.
(1-1-5) LSI operation check		
Interface signals from CU/PU board to operator panel board	Check that signals are output to the CU/PU board OPE_IBB connector. Pin 6: Transmission data (CY/PU board transmission) Pin 8: CLR Signals are always output when the above is proper.	Replace the CU/PU board.
Interface signals from operator board to CU/PU board	Check that signals are output to the CU/PU board OPE_IBB connector. Pin 5: Reception data (CU/PU board reception) Signals are always output when the above is proper.	Replace the operator panel board.

(1-2) PLEASE WAIT

(The display changes to COMMUNICATION ERROR when printer is left unaccessed)

Check item	Check operation	Actions for NG results
(1-2-1) Operator panel display does not change		
Operator panel display	The display COMMUNICATION ERROR persists.	Replace the CU/PU board.

(1-3) Error message display related to operator panel

Check item	Check operation	Actions for NG results
(1-3-1) Error message		
Error message	Check detail in the error messages list.	Follow instructions.

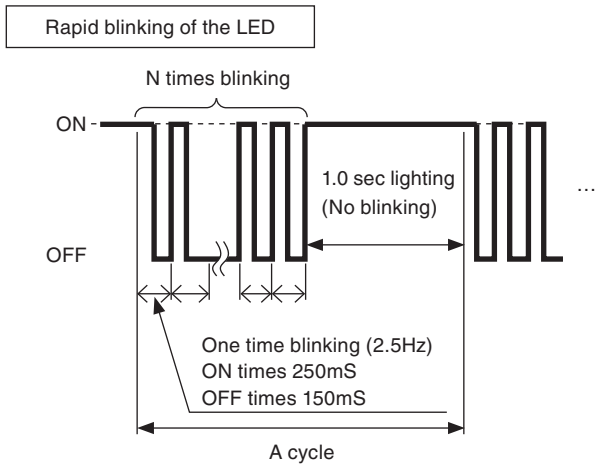
(1-4) RAM CHECK or INITIALIZING persists

Check item	Check operation	Actions for NG results
(1-4-1) Operator panel display freezes		
Operator panel display	RAM CHECK or INITIALIZING persists.	Remove an option RAM and SD card and perform checking. Replace the CU/PU board to address a NG result.

6.5.1.(2) Problem operation after printer is turned on

(2-1) No operations start

Check item	Check operation	Actions for NG results
(2-1-1) Power supply periphery check		
AC power supplied to printer	Check the AC power supply voltage.	Supply AC power.
5V and 24V power supplied to CU/PU board	Check the power supply by using the CU/PU board POWER connector 10. Pins 7, 8 and 9: 24V Pins 1, 2 and 3: 5V Pins 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 cycleshows an error. The timing of blinking rapidly is shown in the below figure	Replace either of the power supply unit, the CU board, SW-Assy (Front), the cables connected to the CU board and power supply unit or the cables connected to the CU board and SW-assy.In case of 2, 4, 8 or 10 times of LED blinking rapidly: Replace either of the power supply unit, the CU board, the cables connected to the power supply unit and the CU board. In case of 3, 6 or 9 times of LED blinking rapidly: Replace the CU board.



Check item	Check operation	Actions for NG results
(2-1-3) Connection-line check		
Operator panel connection	Check the same as (1-1). The printer does not operate unless the operator panel is detected and operated.	Follow (1-1).

(2-2) Abnormal sound is heard

Check item	Check operation	Actions for NG results
(2-2-1) Motor step losing check (driver problem)		
Each motor's operation	By using the self-diagnostic mode, check each motor for proper operation by whether the motor is loaded or not. The motor beeps when improper.	Replace the CU/PU board.
Motor cords	Check the wiring for each motor as follows: Visually check for, or check for with a tester, short circuiting. Remove the motor cord from the board side, and the resistance between each pin on the side of the cord and the frame ground.	Replace the motor cord. Re-assemble parts properly.
(2-2-2) Motor step losing check (consumable load problem)		
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) Gear tooth disengagement check (consumable load problem)		
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) Cord routing check		
Check the installation conditions of the partition plate under the CU and PU boards.	Remove the CU and 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 odor is generated

Check item	Check operation	Actions for NG results
(2-3-1) Bad odor locating		
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) Fuser unit check		
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) Startup time of printer is long

Check item	Check operation	Actions for NG results
(2-4-1) Fuser unit check		
Halogen lamp	Check that 100V is shown on the label on the rear of the fuser unit.	Replace the fuser unit.

(3) Paper jam error numbers and locations

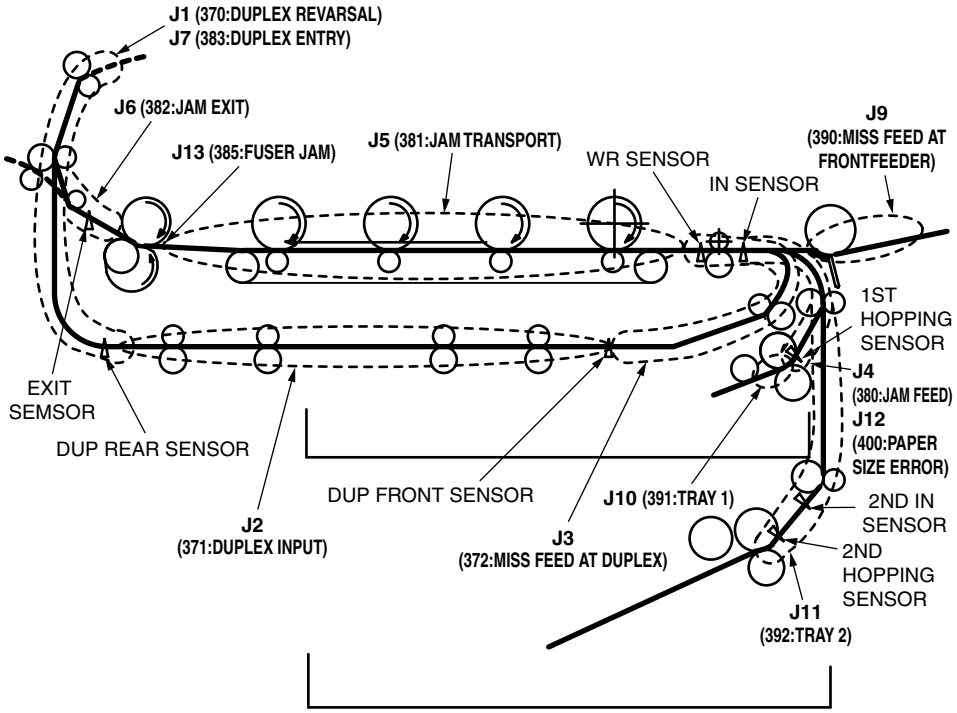
The printer displays an error code and PAPER JAM or FACE-UP STACKER ERROR on the second row of the operator panel when jammed with paper inside of it.

Check messages on the operator panel and, following the procedures on the appropriate pages, remove jammed paper. Clean the feed rollers and the inside of the printer when the printer is frequently jammed with paper.

Refer to the paper removal methods on the reference pages shown in the following table:

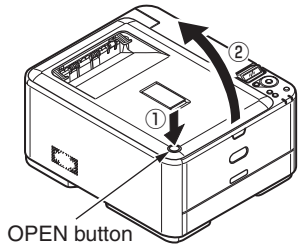
Error code	Operator panel display
370	CHECK UNDER BELT 370:PAPER JAM
371	CHECK UNDER BELT 371:PAPER JAM
372	CHECK UNDER BELT 372:PAPER JAM
380	OPEN TOP COVER 380:PAPER JAM
381	OPEN TOP COVER 381:PAPER JAM
382	OPEN TOP COVER 382:PAPER JAM
385	OPEN TOP COVER 385:PAPER JAM
389	OPEN TOP COVER 389:PAPER JAM
390	CHECK MP TRAY 390:PAPER JAM
391	OPEN TOP COVER 391:PAPER JAM
392	OPEN TOP COVER 392:PAPER JAM
409	OPEN TOP COVER 409:FACE UP STACKER ERROR

Paper jam locations

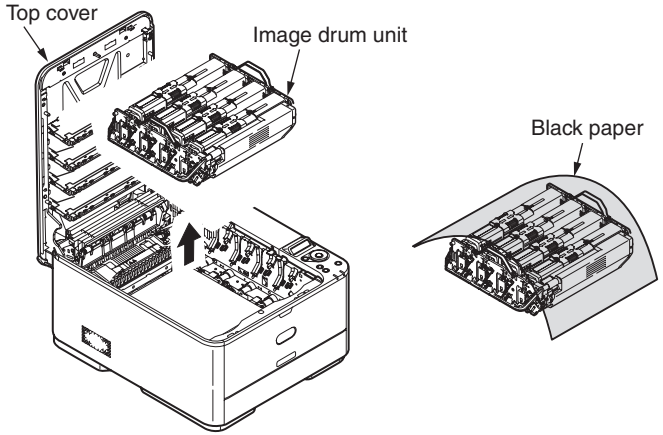


Error code: 370, 371 or 372

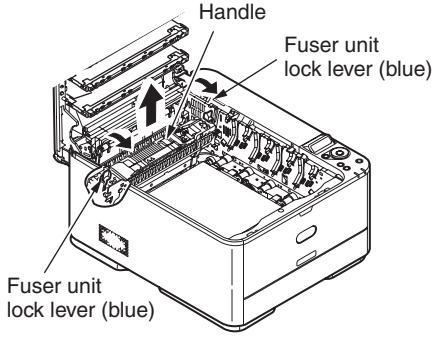
(1) Press the OPEN button and open the top cover.



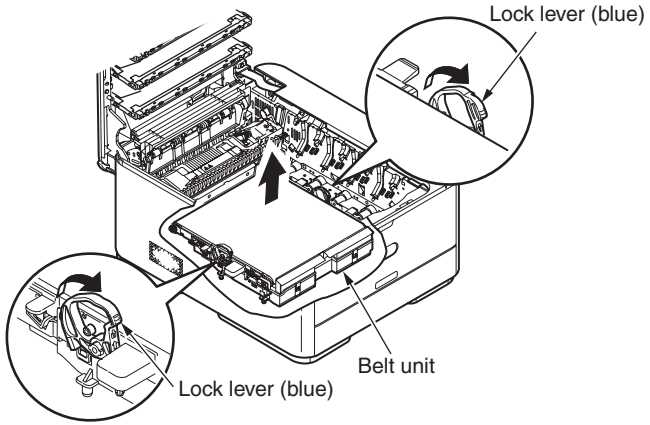
(2) Take out the image drum unit, place it on a flat surface, and cover it with black paper.



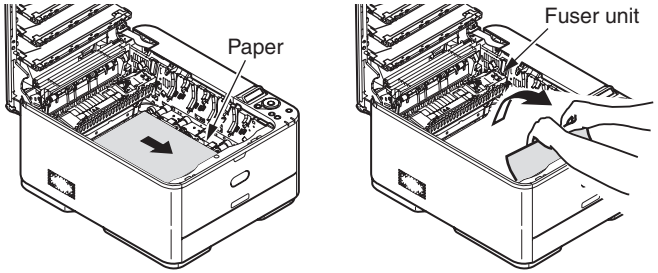
(3) Move the fuser unit lock levers to the direction of the arrow to unlock the fuser unit, and then remove the fuser unit.



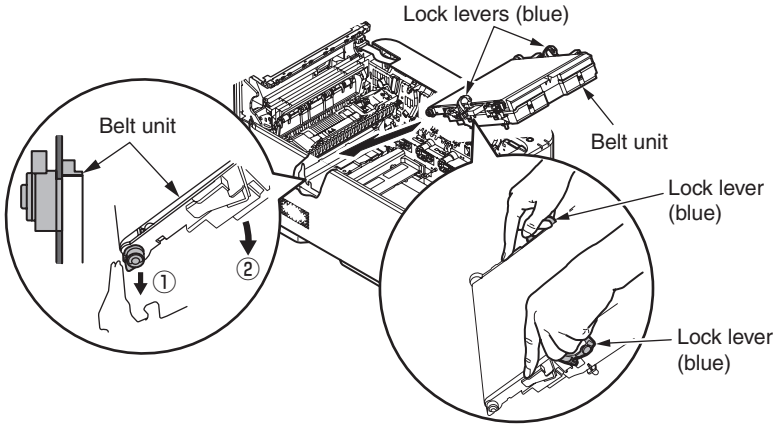
(4) Place a finger behind the belt unit lock levers (blue) and raise and remove it.



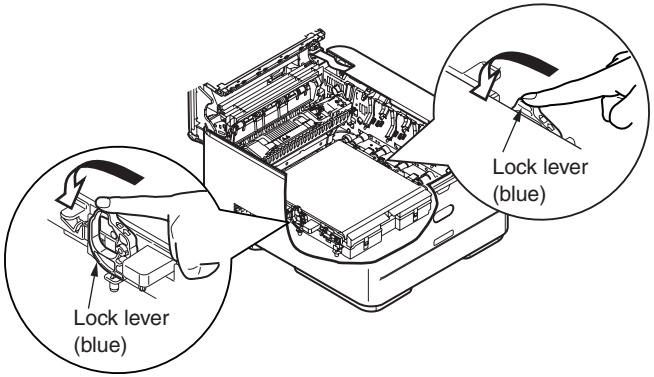
(5) Remove jammed paper in the direction of the arrow.



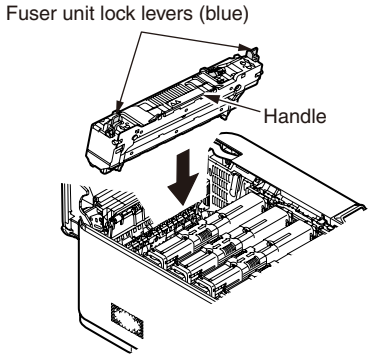
(6) Hold the belt unit by the lock lever (blue) on each side of it, and install the belt unit



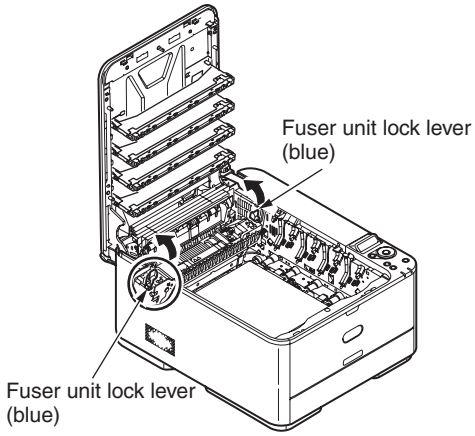
(7) Turn the lock levers inwards to lock the belt unit.



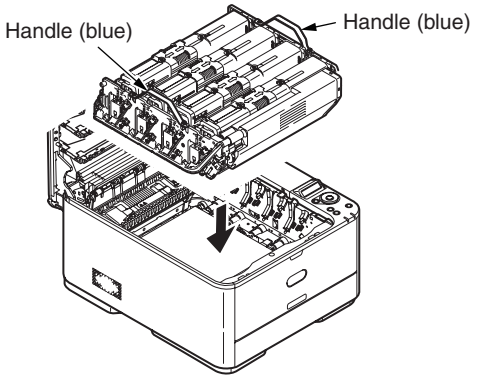
(8) Put the fuser unit back into position.



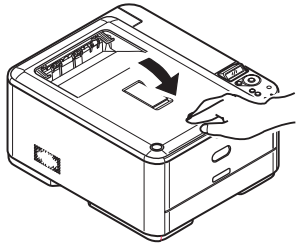
(9) Turn the lock levers inwards to lock the fuser unit.



(10) Install the image drum unit in the printer so as to situate the K toner cartridge toward the front of the printer.

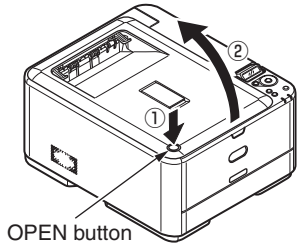


(11) Close the top cover.

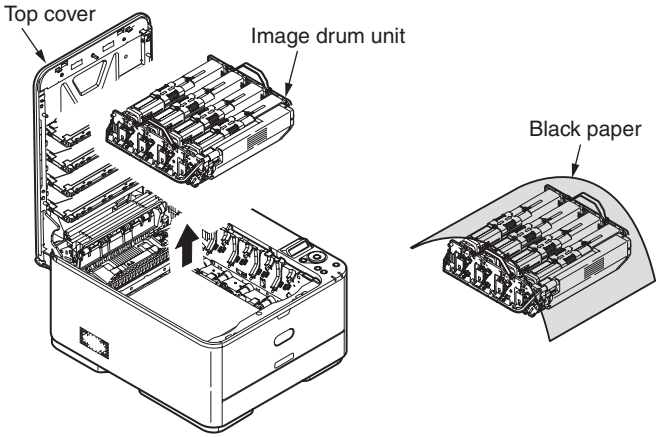


Error code: 380, 381, 382, 385 or 389

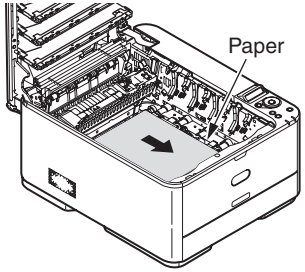
(1) Press the OPEN button and open the top cover.



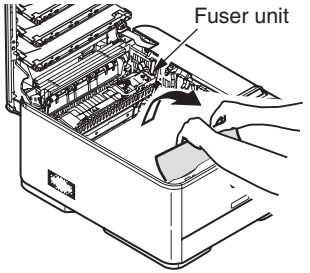
(2) Take out the image drum unit, place it on a flat surface, and cover it with black paper.



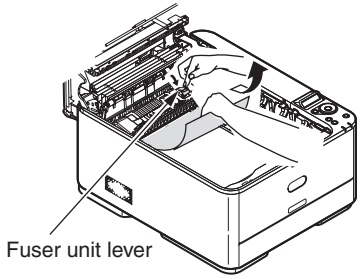
(3) Remove any jammed paper in the direction of the arrow.



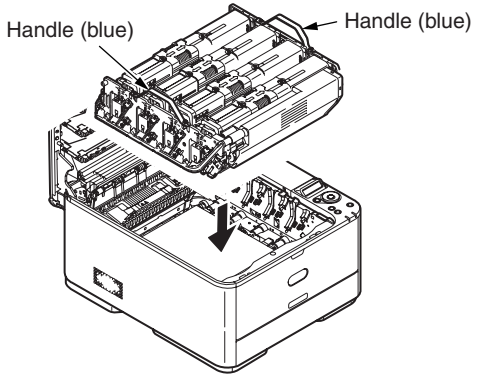
Remove in the direction of the arrow any paper jammed the inside front of the printer.



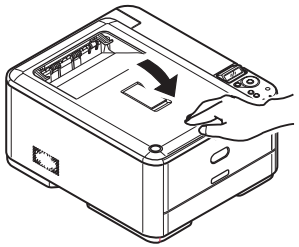
Pull out toward the front of the printer any paper jammed at the fuser unit, with the fuser unit lever (blue) left turned in the direction of the arrow.



(4) Install the image drum unit in the printer so as to situate the K toner cartridge toward the front of the printer.

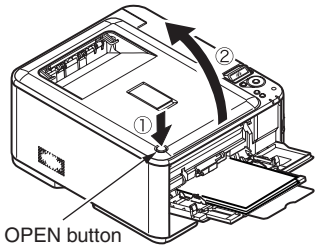


(5) Close the top cover.

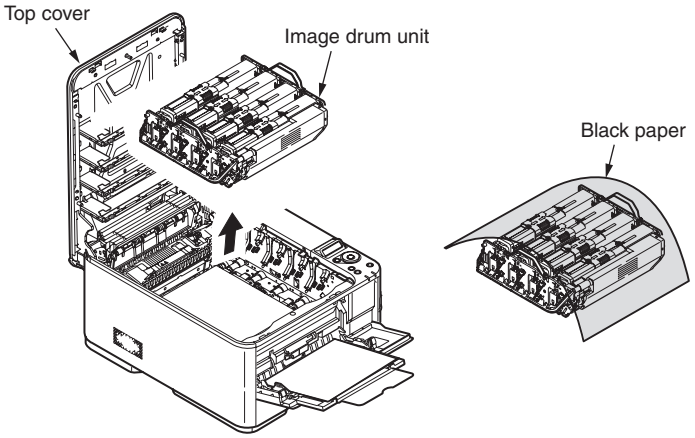


Error code: 390

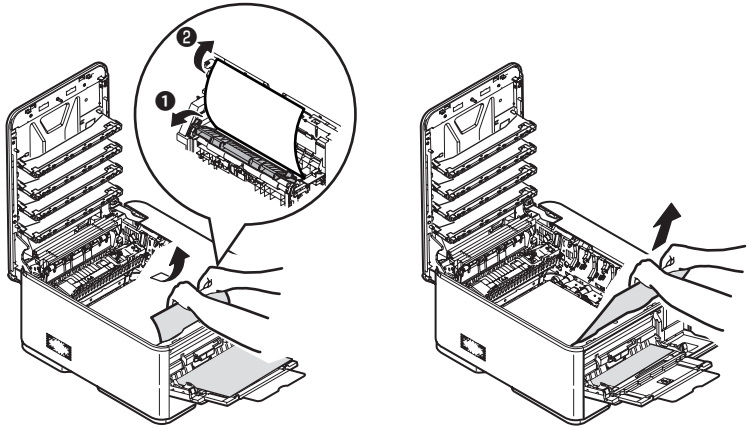
(1) Press the OPEN button and open the top cover.



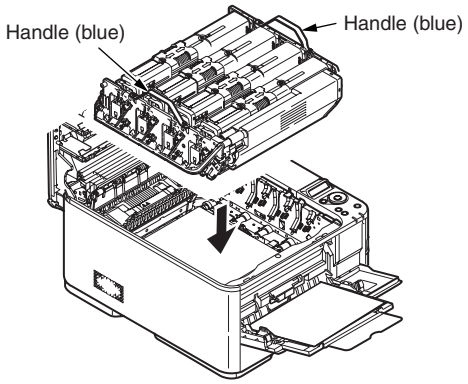
(2) Take out the image drum unit, place it on a flat surface, and cover it with black paper.



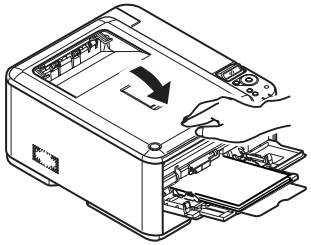
(3) Open the inside transparent cover of the printer and remove jammed paper.



(4) Install the image drum unit in the printer so as to situate the K toner cartridge toward the front of the printer.

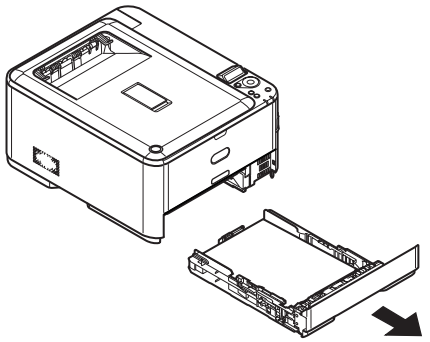


(5) Close the top cover.

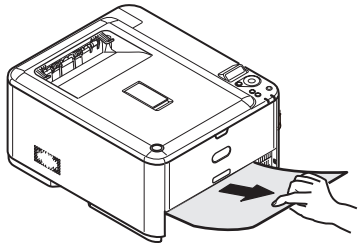


Error code: 391

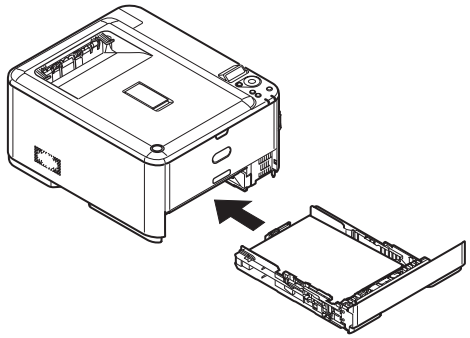
(1) Pull the tray 1 out of the printer.



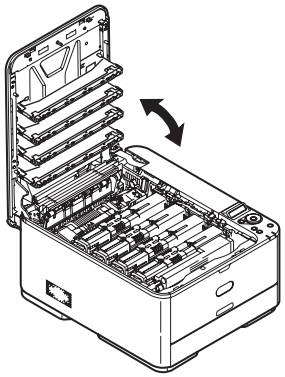
(2) Remove paper.



(3) Insert the tray 1 back into the printer.

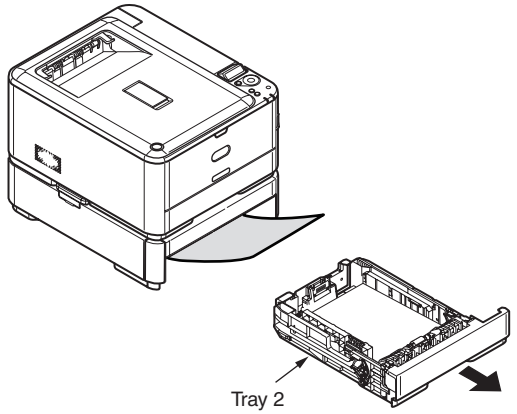


(4) Press the OPEN button and open and close the top cover.

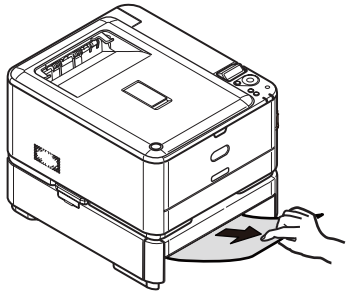


Error code: 392

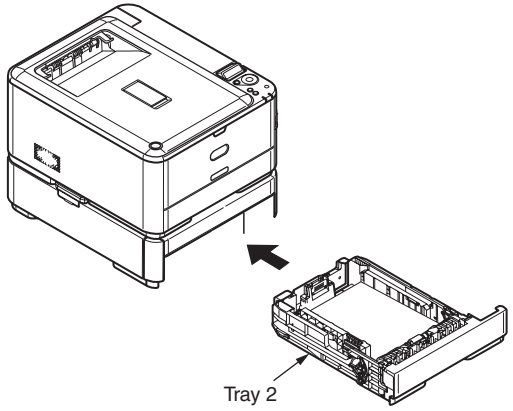
(1) Pull the tray 2 out of the printer.



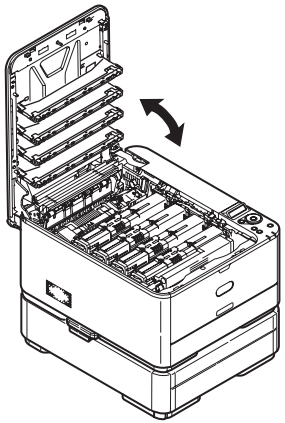
(2) Remove paper.



(3) Insert the tray 2 back into the printer.

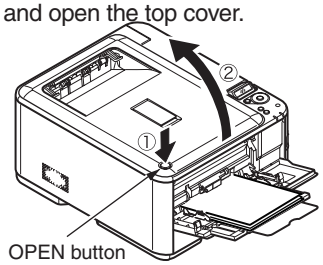


(4) Press the OPEN button and open and close the top cover.

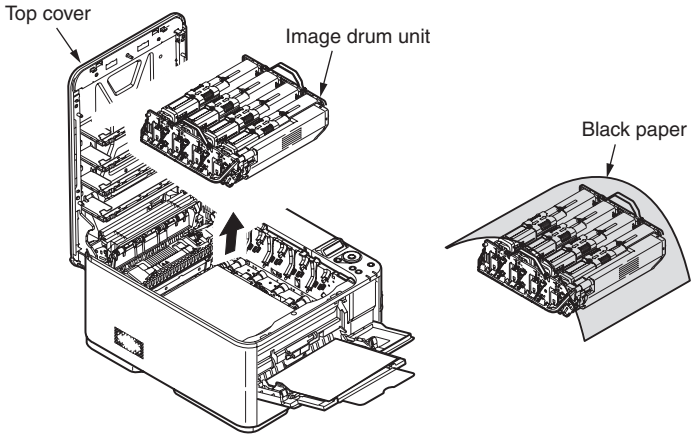


Error code: 409

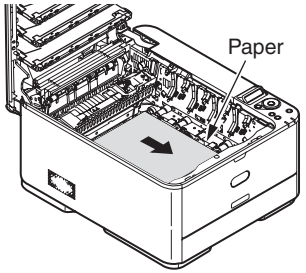
(1) Press the OPEN button and open the top cover.



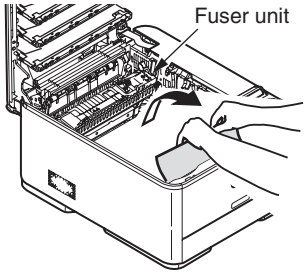
(2) Take out the image drum unit, place it on a flat surface, and cover it with black paper.



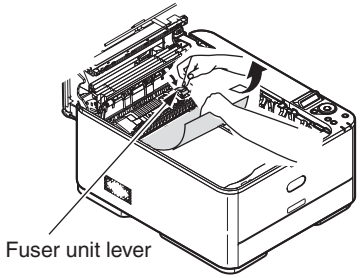
(3) Remove any jammed paper in the direction of the arrow.



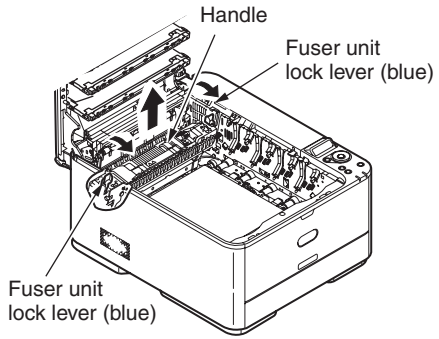
Remove in the direction of the arrow any paper jammed the inside front of the printer.



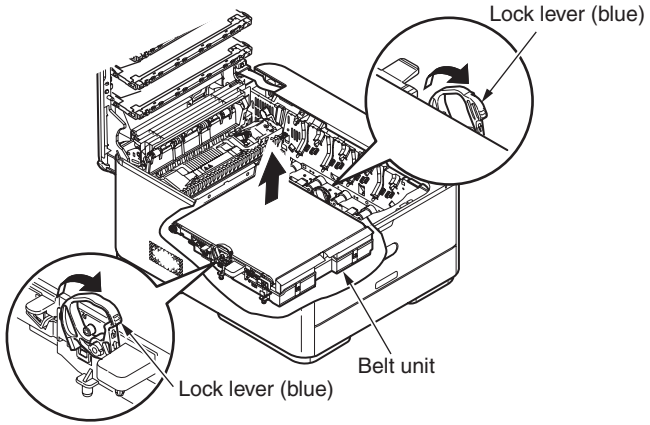
Pull out toward the front of the printer any paper jammed at the fuser unit, with the fuser unit lever (blue) left turned in the direction of the arrow.



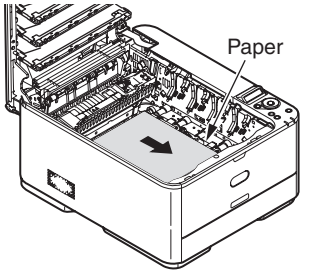
(4) Move the fuser unit lock levers to the direction of the arrow to unlock the fuser unit, and then remove the fuser unit.



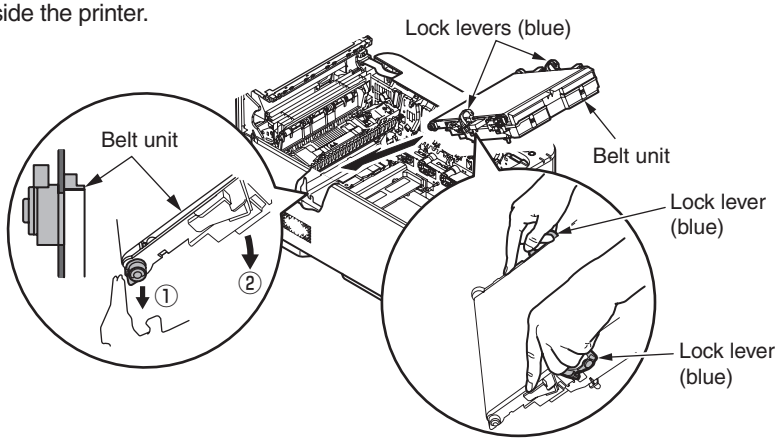
(5) Place a finger behind the belt unit lock levers (blue) and raise and remove it.



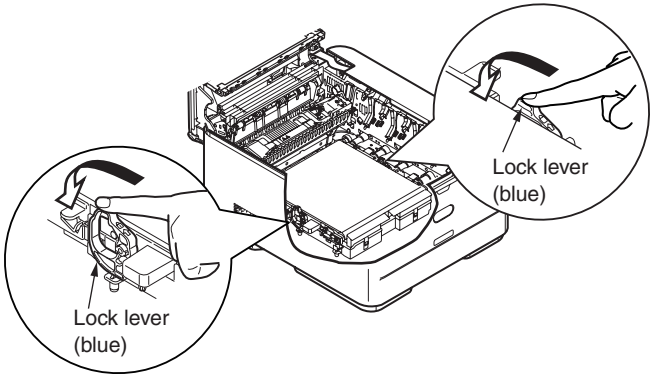
(6) Remove jammed paper in the direction of the arrow.



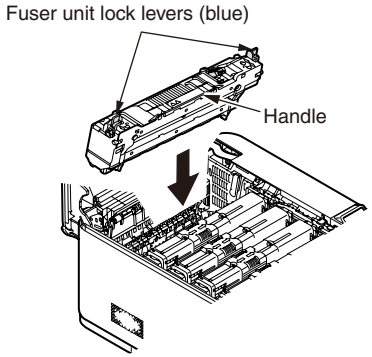
(7) Hold the belt unit by the lock lever (blue) on each side of it, and install the belt unit inside the printer.



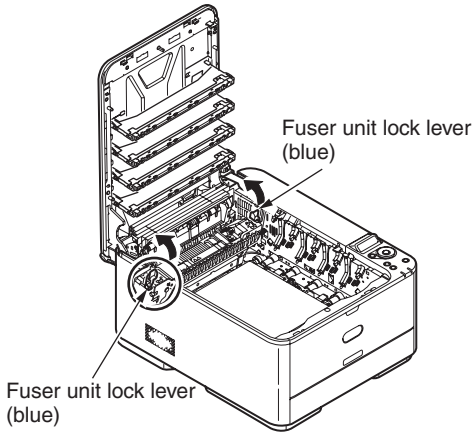
(8) Turn the lock levers inwards to lock the belt unit.



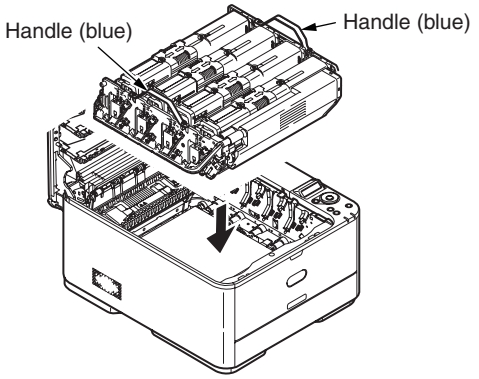
(9) Put the fuser unit back into position.



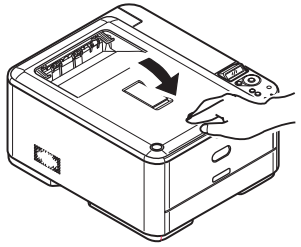
(10) Turn the lock levers inwards to lock the fuser unit.



(11) Install the image drum unit in the printer so as to situate the K toner cartridge toward the front of the printer.



(12) Close the top 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 operation	Actions for NG results
(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		
Hopping sensor and IN sensor lever check	Check the sensor lever shapes and operations for any problem.	Replace the sensor lever(s) with proper one(s).
(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 the CU/PU board, or appropriate sensor(s) or connection cord(s)
Hopping sensor and IN sensor output level check	Check the following signals by using the CU/PU board HPSNS and RGSNS connector 16: HPSNS pin 2: Hopping sensor RGSNS pin 5: IN sensor Check that the above signal levels are changed by operating the levers of the sensors.	Replace the CU/PU board.

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

Check item	Check operation	Actions for NG results
(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		
Hopping sensor and IN sensor lever check	Check the sensor lever shapes and operations for any problem.	Replace the sensor lever(s) with proper one(s).
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 PU board or the paper feed motor.
Paper feed motor driver	Pull out the CU/PU board HOPSIZE connector 1, and check the following at the side of the connector. 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 operation	Actions for NG results
(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. Pull out the CU/PU board HOPSIZE connector 1, and check the following at the side of the connector. 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 HOPSIZE connector of the 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		
Feed clutch	Confirm that the paper feed solenoid works normally by using the Motor & Clutch Test of the self-diagnostic mode. Pull out the cassette for the rollers to be seen, and check operation.	Replace the CU/PU board or the feed solenoid.
(3-2-6) Check the system connection		
Feed clutch cord	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.
Cord for feed clutch	Check that any cable is not pinched during assembling of the printer. Pull out the CU/PU board HOC connector 14, and check the following at the side of the cord.	Replace the clutch and properly assemble appropriate parts.

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

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

Check item	Check operation	Actions for NG results
(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		
Hopping sensor, IN sensor and WR sensor lever check	Check the sensor lever shapes and operations for any problem.	Replace the sensor lever(s) with proper one(s).
(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 the CU/PU board or appropriate connection cords.
Hopping sensor, IN sensor and WR sensor output level check	Check the following signals by using the CU/PU board HPSNS and RGSNS connector 16: HPSNS pin 2: Hopping sensor RGSNS pin 5: IN sensor RGSNS pin 2: WR sensor Confirm that the above signal levels change when the sensor lever is operated.	Replace the appropriate sensor(s).

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

Check item	Check operation	Actions for NG results
(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		
Hopping sensor, IN sensor and WR sensor lever check	Check the sensor lever shapes and operations for any problem	Replace the sensor lever(s) with proper one(s).
(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 the feed motor.
Paper feed motor driver	Pull out the CU/PU board HOP connector 1, and check the following at the side of the connector: 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.
(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. Pull out the CU/PU board HOP connector 1, and check the following at side of the cord: 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	Pull out the CU/PU board HOP connector 1, and check whether there is a resistance of approximately 3.4Ω or 5Ω between the pins 1 and 2, and between the pins 3 and 4, at the cord side.	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 operation	Actions for NG results
(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		
IN sensor and WR sensor lever check	Check the sensor lever shapes and operations for any problem	Replace the sensor lever(s) with proper one(s)
(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 the CU/PU board, or appropriate sensor(s) or connection cord(s).
In sensor and WR sensor output level check	Check the following signals by using the CU/PU board RGSNS connector 16: Pin 2: WR sensor Pin 5: IN sensor Confirm that the above signal levels change when the sensor lever is operated.	Replace the connection cable.

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

Check item	Check operation	Actions for NG results
(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		
IN sensor and WR sensor lever check	Check the sensor lever shapes and operations for any problem	Replace the sensor lever(s) with proper one(s).
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 the feed motor.
Paper feed motor driver	Pull out the CU/PU board HOP connector 1, and check the following at the side of the connector: 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. Pull out the CU/PU board HOP connector 1, and check the following at side of the cord: 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	Pull out the CU/PU board HOP connector 1, and check whether there is a resistance of approximately 3.4Ω or 5Ω between the pins 1 and 2 and between the pins 3 and 4.	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 operation	Actions for NG results
(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 the CU/PU board, or appropriate sensor(s) or connection cord(s).
Check the sensor lever of the WR sensor.	Check the following signal by using the CU/PU board RGSNS connector 16:	Replace the sensor.

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

Check item	Check operation	Actions for NG results
(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.	Feed motor driving cord, image drum motor driving cord, belt motor, fuser driving cord
Paper feed motor, belt motor	Pull out the CU/PU board BELT connector 1, and check the following at the side of the connector: Several MΩ between Pin 1 and frame ground Several MΩ between Pin 2 and frame ground Several MΩ between Pin 3 and frame ground Several MΩ between Pin 4 and frame ground Pull out the CU/PU board HOP connector 3, and check the following at the side of the connector: 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 operation	Actions for NG results
(6-2-4) Check the system connection		
Feed motor driving cord, image drum motor driving cord, belt motor, fuser driving cord	Check the connection condition of the cables. CU/PU board HOP connector 12, DC ID connector ② , DCHEAT connector ④ , BELT 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.	Normalize the connection condition. Replace the cable with the normal cable.
Feed motor driving cord, image drum motor driving cord, belt motor driving cord	Check that any cable is not pinched during assembling of the printer. Pull out the CU/PU board BELT connector 3, and check the following at the sides of the cords: Short circuit between pin-1 – FG Short circuit between pin-2 – FG Short circuit between pin-3 – FG Short circuit between pin-4 – FG Pull out the CU/PU board HOP connector, and check the following at the side of the cords: 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.
Feed motor, belt 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 HOP connector 1 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 connector 3 Between pin-1-pin-2 Approx. 6.1Ω or approx. 3.5Ω. Between pin-3-pin-4 Approx. 6.1Ω or approx. 3.5Ω. 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 operation	Actions for NG results
(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; the feed motor, the belt motor and the image drum motor; or the image drum unit and the belt unit.
Paper feed motor, belt motor	Pull out the CU/PU board BELT connector 1, and check the following at the side of the connector: Several MΩ between Pin 1 and frame ground Several MΩ between Pin 2 and frame ground Several MΩ between Pin 3 and frame ground Several MΩ between Pin 4 and frame ground Pull out the CU/PU board HOP connector 3, and check the following at the side of the connector: 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

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

Check item	Check operation	Actions for NG results
(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 the fuser unit and the PU/CU 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 operation	Actions for NG results
(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		
EXIT sensor lever check	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 the EXIT sensor and its cord or connection cord.
Check the output signal level of the EXIT sensor.	Check the following signal by using the CU/PU board EXIT connector 8: Pin-9: EXIT sensor Confirm that the above signal levels change when the sensor lever is operated.	Replace the EXIT sensor.
(7-1-4) Check the system connection		
EXIT sensor cord	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 operation	Actions for NG results
(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.
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.
(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, the fuser motor or the fuser unit.
(7-2-4) Check the system connection		
Fuser motor drive cable	Check the connection condition of the cables. Visually check whether the CU/PU board DCHEAT connector 4 is connected half or inserted skewed or its cord assembly is improper.	Replace the cable with the good cable that normalizes the connection condition.

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

Check item	Check operation	Actions for NG results
(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, the fuser motor or the 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 operation	Actions for NG results
(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. Check sensor detection with paper in the duplex unit, and with it removed from the duplex unit.	Replace the Duplex board, 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 operation	Actions for NG results
(8-2-1) Sensor lever operation check		
DUP-R sensor lever	Open the top cover, remove the image drums and the belt unit, and touch the DUP-R sensor lever to check whether it moves smoothly.	Replace the DUP-R 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 CU/PU board, or appropriate sensor(s) or connection cord(s).
(8-2-2) 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.
(8-2-3) Motor operation check		
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 operation	Actions for NG results
(8-3-1) Sensor lever operation check		
DUP-R sensor lever	Open the rear cover. Touch the Dup-IN sensor lever to check if its movement is unsmooth or not.	Replace the DUP-R sensor lever
DUP-R sensor	Confirm that the sensor signals are normally detected by using the SWITCH SCAN function of the self-diagnostic mode.	Replace the CU/PU board, the sensor or its connection cord.
(8-3-2) Motor operation check		
Fuser motor	Visually check whether paper started being reversed. When no paper reversing operation has performed, check whether the planet gear at the lower right side of the fuser moves smoothly.	Replace the planetary gear.

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

Check item	Check operation	Actions for NG results
(8-4-1) Sensor lever operation check		
Dup-R, Dup-F sensor lever	Open the top cover, remove the image drums and the belt unit and check the operation of the DUP-F 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. Check sensor detection with paper in the duplex unit, and with it removed from the duplex unit.	Replace the CU/PU board, appropriate sensor(s) or connection cord(s).

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

Check item	Check operation	Actions for NG results
(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 CU/PU board or the 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 operation	Actions for NG results
(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.
Hopping sensor	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the sensor lever with the good sensor lever.

6.5.1. (10) ID unit Up/Down error (Service call 142)

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

Check item	Check operation	Actions for NG results
(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 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 operation	Actions for NG results
(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 operation	Actions for NG results
(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 operation	Actions for NG results
(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 8.1 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 operation	Actions for NG results
(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-2, and that in between pin-3 and pin-4 of the two connectors is in the range of several ohms to several ten ohms respectively. (Refer to section 8.1 Resistance value (fuser unit).)	Replace the fuser unit.

Check item	Check operation	Actions for NG results
(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, 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. CU/PU board POWER connector-10 pins 14 and 15	Replace the CU/PU board.

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

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

Check item	Check operation	Actions for NG results
(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) All fans of the printer do not rotate.

Check item	Check operation	Actions for NG results
(12-2-1) 24V power supply		
CU/PU board fuses, F5, F6	Check if the fuses F5 and F6 are not open-circuit or not.	24V power supplied to the CU/PU board
24V power supplied to the CU/PU board	Check the power supply voltages at the POWER connector of the PU/CU board. Pins 7, 8 and 9: 24V Pins 4, 5 and 6: 0VL 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 operation	Actions for NG results
(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) Option try unit cannot be recognized.

Check item	Check operation	Actions for NG results
(14-1-1) Option try board		
Option tray unit	Check if the option tray unit in use is of target apparatus specification.	Replace it with an appropriate option tray unit.
(14-1-2) Check the system connection		
Connection between the CU/PU board and the option tray board (V7Y PCB)	Check that the cord between the 2nd connector of the CU/PU board and the option tray board is properly connected.	Correct the connections.
Square connector connecting the option tray unit with the main unit	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 with the main unit	Is the terminals of the square connector damaged?	Replace the connector.
(14-1-3) Check the control signals.		
Control signal that is output from the CU/PU board to the option tray board (GOG-1 PCB)	Check the control signals that are output from the 2nd connector of the CU/PU board. Pin 6: TXD (PU -> 2nd) Pin 5: 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 operation	Actions for NG results
(15-1-1) Check the system connection		
Connecting condition of the CU/PU board connector and 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 CU/PU board.
Conduction of the fuse on the CU/PU board	Check that measurements taken at both ends of each capacitor CP6 (See section 6.6.)	Replace 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 operation	Actions for NG results
(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 operation	Actions for NG results
(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, CU/PU board, or FFC that is located between the toner sensor board and 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 state between the CU/PU board and the toner sensor board (ZHE) that are connected with the FFC cable.
- Check it once again, and if no change has found in the state, replace the CU/PU board or the toner sensor board (ZHE).

(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 operation	Actions for NG results
(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. Check if a heavy mechanical load is being applied to the ID unit by the waster toner box, or not.	Replace the K toner.
(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 153 to 155)

(17-1) Fuse cut error

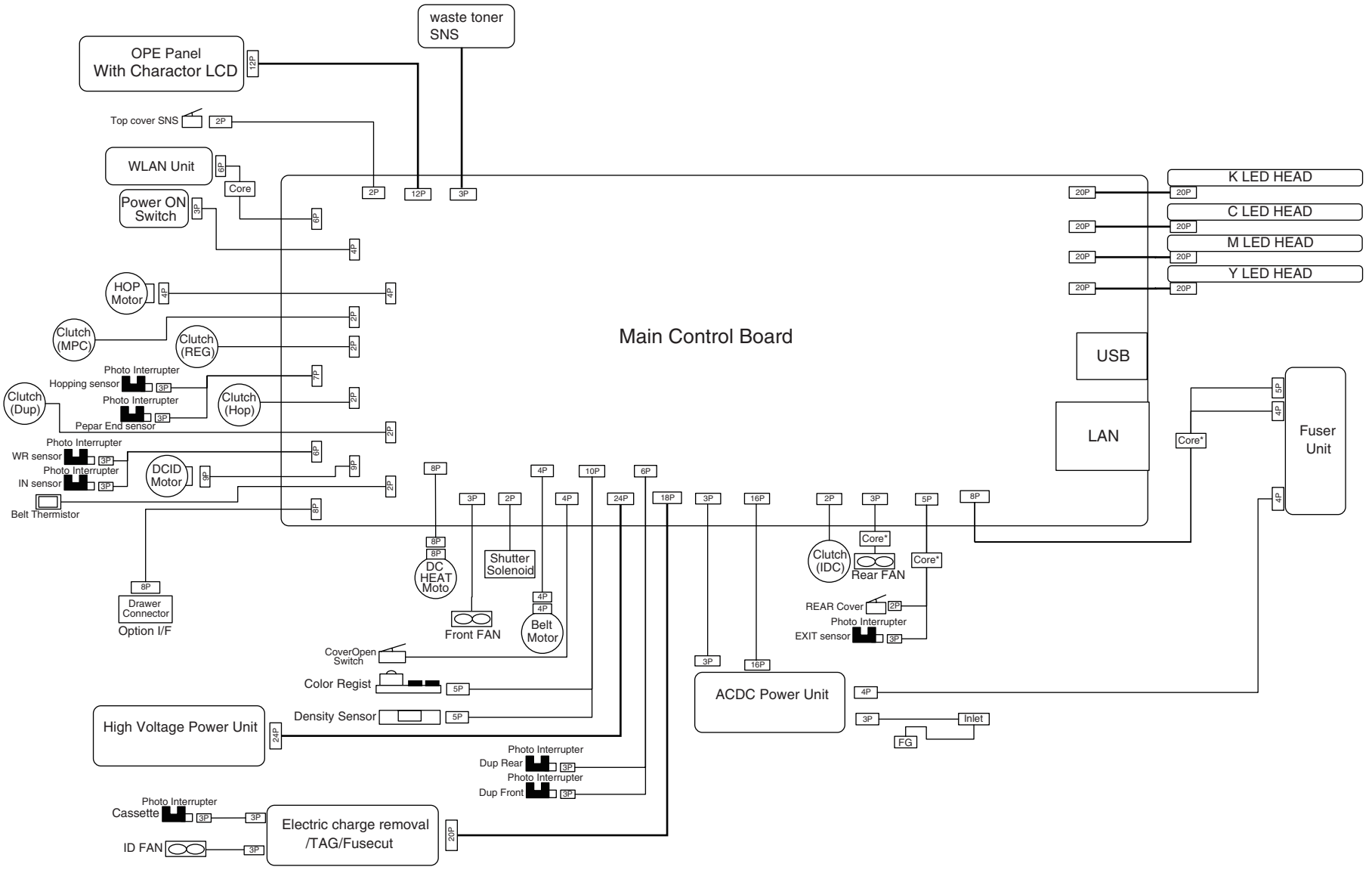
Check item	Check operation	Actions for NG results
(17-1-1) Check the system connection		
FFC connecting the CU/PU board and the toner sensor board (ZHE PCB)	Check if the SSNS connector of the CU/PU board or the SSNS connector of the toner sensor board (ZHE PCB) is connected halfway or inserted in a slanted angle.	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 operation	Actions for NG results
(18-1-1) Check the system connection		
Connection to the CU/PU board and to the toner sensor board	Check if the 16-conductor FFC is connected to the SSNS connector ⑰ of the CU/PU board normally. Check if the 16-conductor FFC is connected to the SSNS connector ⑲ of the toner sensor board normally.	Re-connect the cable normally.
FFC connecting the CU/PU board and the toner sensor 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) Connection diagram



*: Three cables are winded with one core.

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

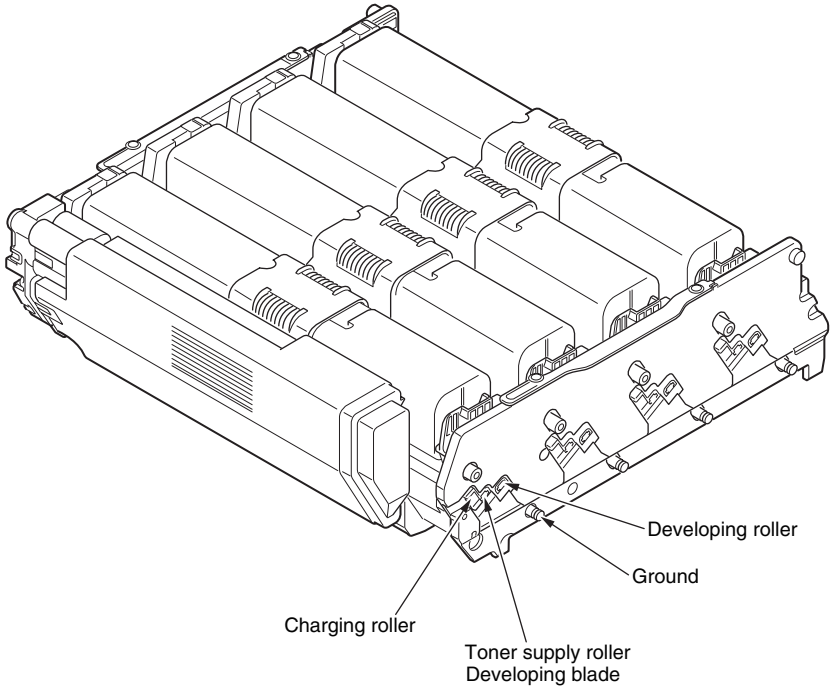
Check item	Check operation	Actions for NG results
(5-1-1) Cycle		
Image drum	Check if the cycle is 94.3 mm.	Replace any applicable ID unit.
Developing roller	Check if the cycle is 30.2 mm.	Replace any applicable ID unit.
Toner supply roller	Check if the cycle is 43.1 mm.	Replace any applicable ID unit.
Charging roller	Check if the cycle is 29.9 mm.	Replace any applicable ID unit.
Roller above the fuser	Check if the cycle is 85.4 mm.	Replace any applicable fuser unit.
Fuser belt	Check if the cycle is 94.2 mm.	Replace any applicable fuser unit.
Transfer roller	Check if the cycle is 37.7 mm.	Replace the belt unit.

*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



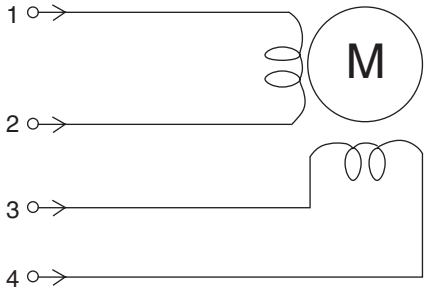
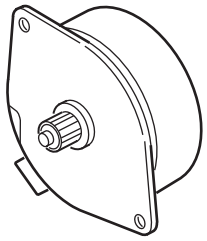
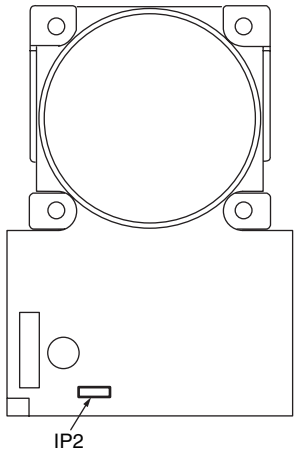
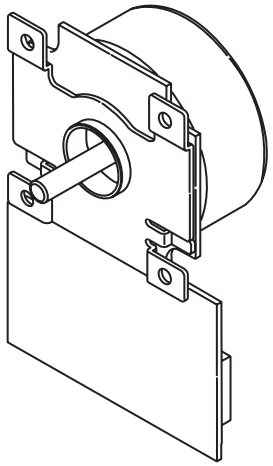
6.6 Fuse check

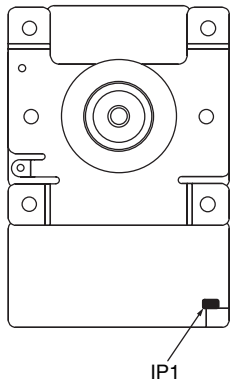
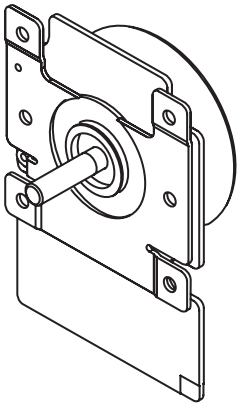
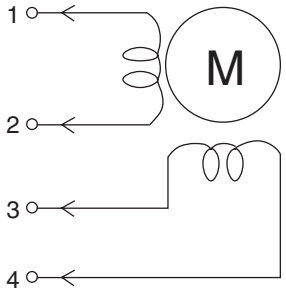
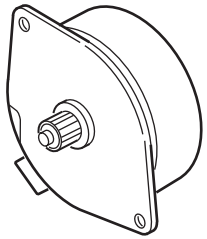
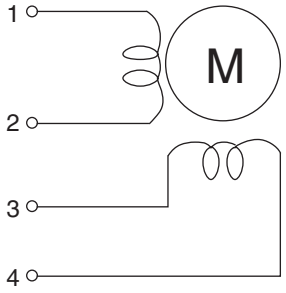
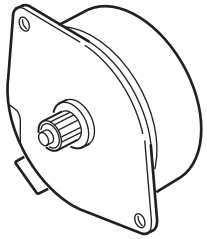
If any of the following errors occurs, check relevant fuses on the CU control board, the PU control board and the high-voltage power supply board.

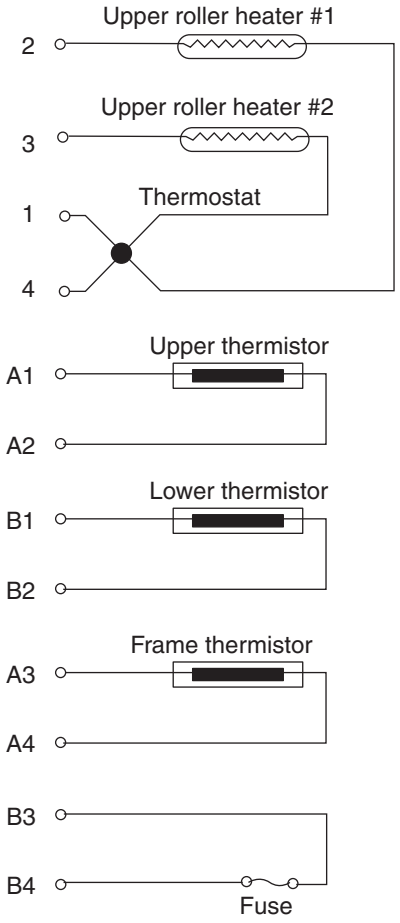
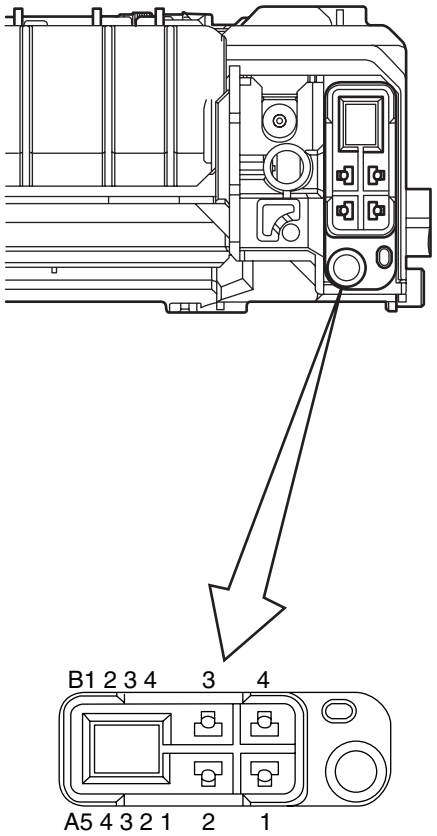
Fuse Name		Error Description	Insert Point	Resistance
CU/PU board (77M board)	F2	• Service Call 121 • Not detect optiontray • The operator panel backlight blackout	High-voltage board Option Tray OP panel Supply to F4,F14	1Ω or less
	F11	Don't use the wireless LAN	USB WLAN	
	F4	Service Call 160 to 163	SSNS	
	F9	• Service Call 231 • Service Call 990	EPU Waste toner sensor TAG Supply to F3,F7,F12	
	F3	• Service Call 123 • Service Call 124	SSNS	
	F7	No display on the operator panel	OP power supply	
	F12	Service Call 131 to 134	Head control	
	F16, F17	Service Call 131 to 134	HEAD LED	
	F6	Hopping JAM Service Call 128	Hopping motor, clutch Front FAN Option Tray	
	F5	Service Call 121, 128	High voltage power supply, Exit FAN	
	F1	Service Call 150 to 155	ID clutch, Fuse cut	
High voltage power supply board (ORZ board)	F501	Service Call 121	High voltage power board 24V	1Ω or less

7. CONNECTION DIAGRAMS

7.1 Resistance value checking

Unit	Circuit diagram and composition	Part drawing	Resistance value
Transport belt motor			Between pins 1 and 2: 3.4 Ω Between pins 3 and 4: 3.4 Ω
ID motor			Both ends of IP2: 1 Ω or less

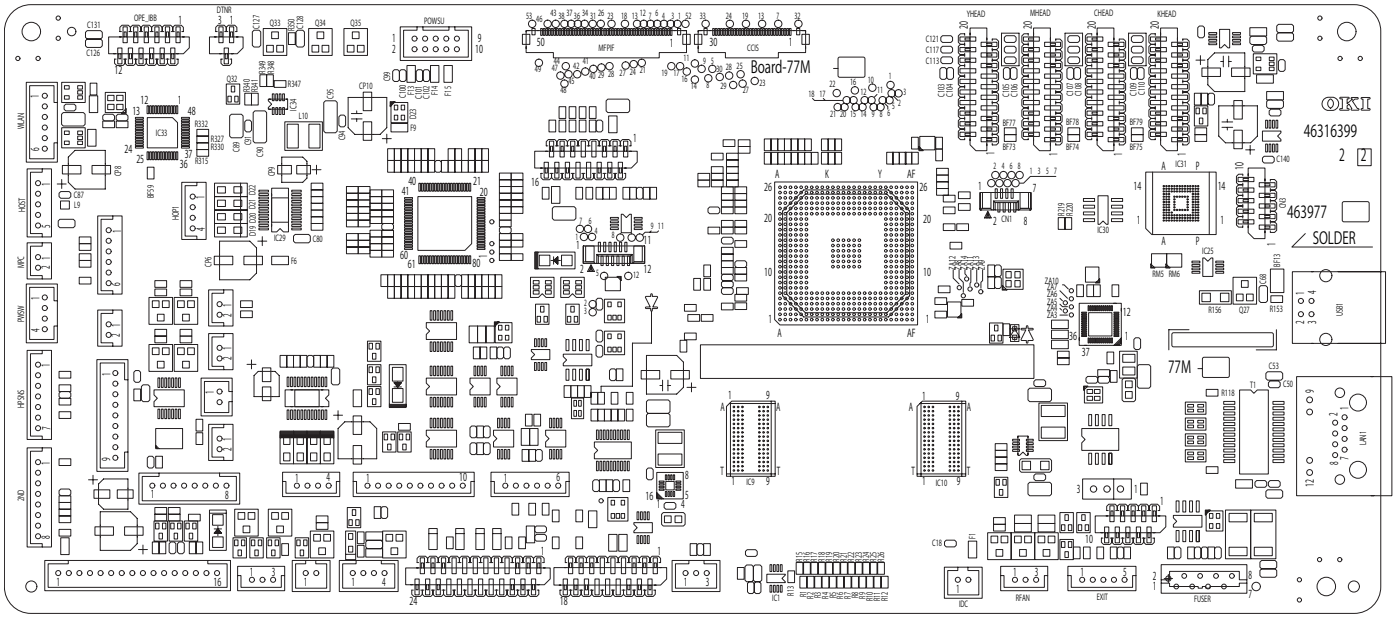
Unit	Circuit diagram and composition	Part drawing	Resistance value
Fuser motor			Both ends of IP1: 1 Ω or less
Feed motor			Between pins 1 and 2: 3.4 Ω Between pins 3 and 4: 3.4 Ω
2nd feed motor			Between pins 1 and 2: 3.4 Ω Between pins 3 and 4: 3.4 Ω

Unit	Circuit diagram and composition	Part drawing	Resistance value
Fuser unit			Between pins 1 and 2: Several ohms to several tens of ohms Between pins 3 and 4: Several ohms to several tens of ohms Between pins A1 and A2: Approx. 590 kΩ to 5338 kΩ (0 to 93°C) Between pins B1 and B2: Approx. 104.5 kΩ to 806.5 kΩ (0 to 43°C) Between pins A3 and A4: Approx. 104.5 kΩ to 806.5 kΩ (0 to 43°C) Between pins B3 and B4: Open A5 blank NC

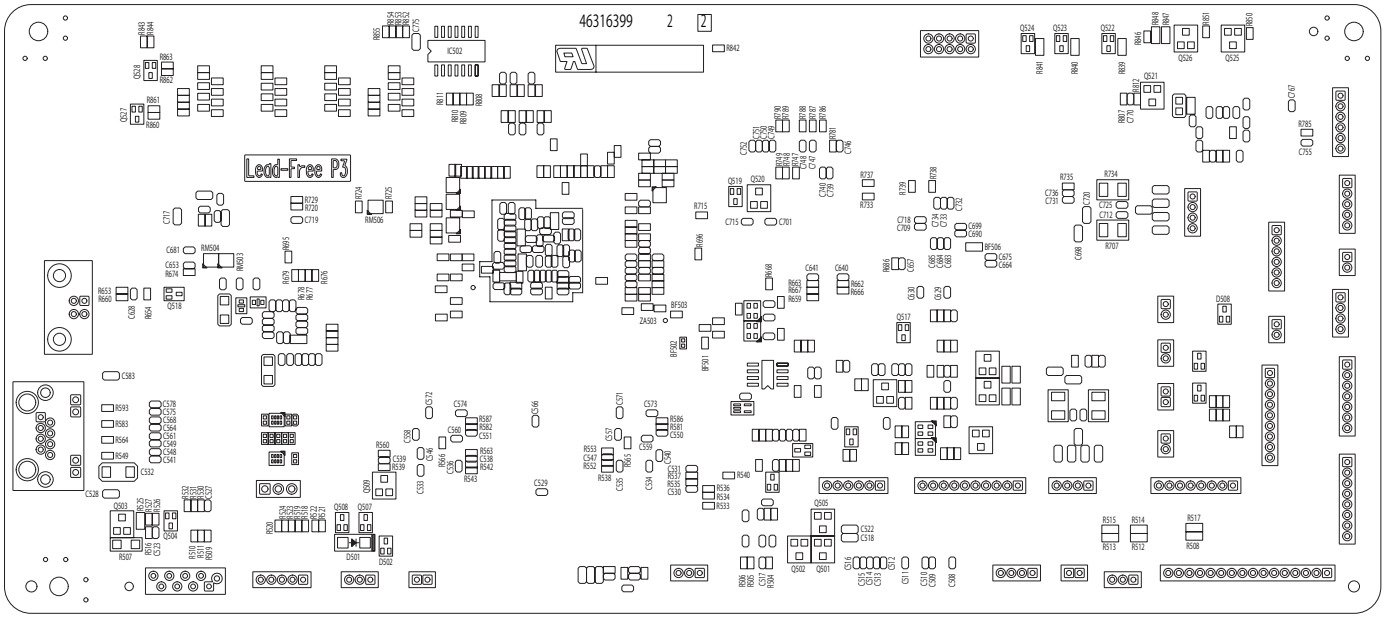
7.2 Layout of parts

(1) Print engine controller PCB (CU/PU PCB)

Component side

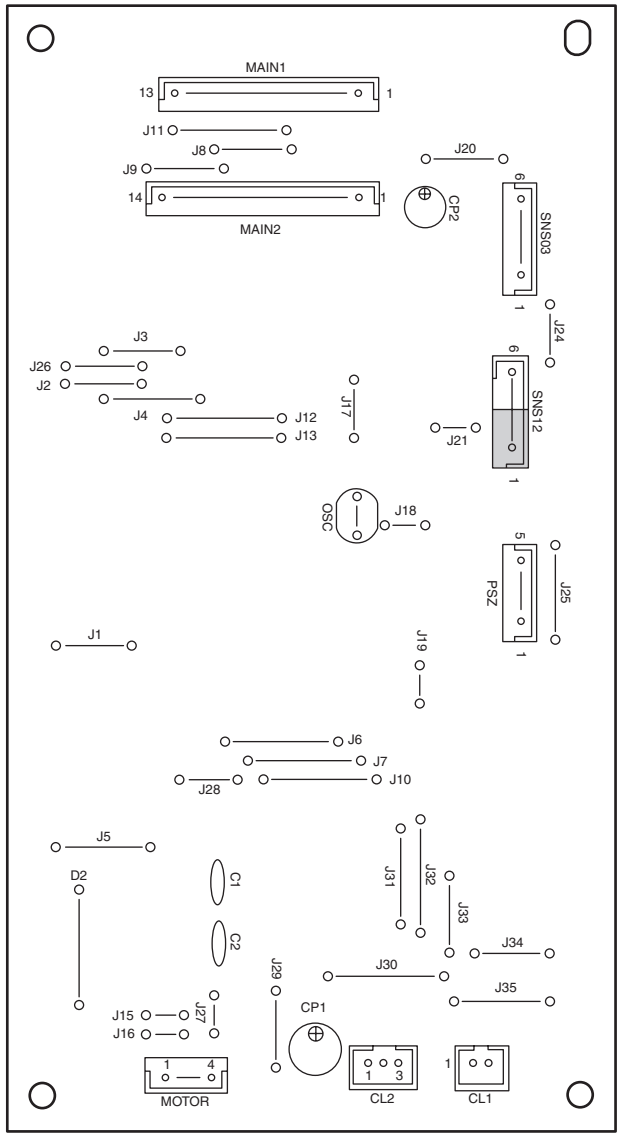


Soldering side

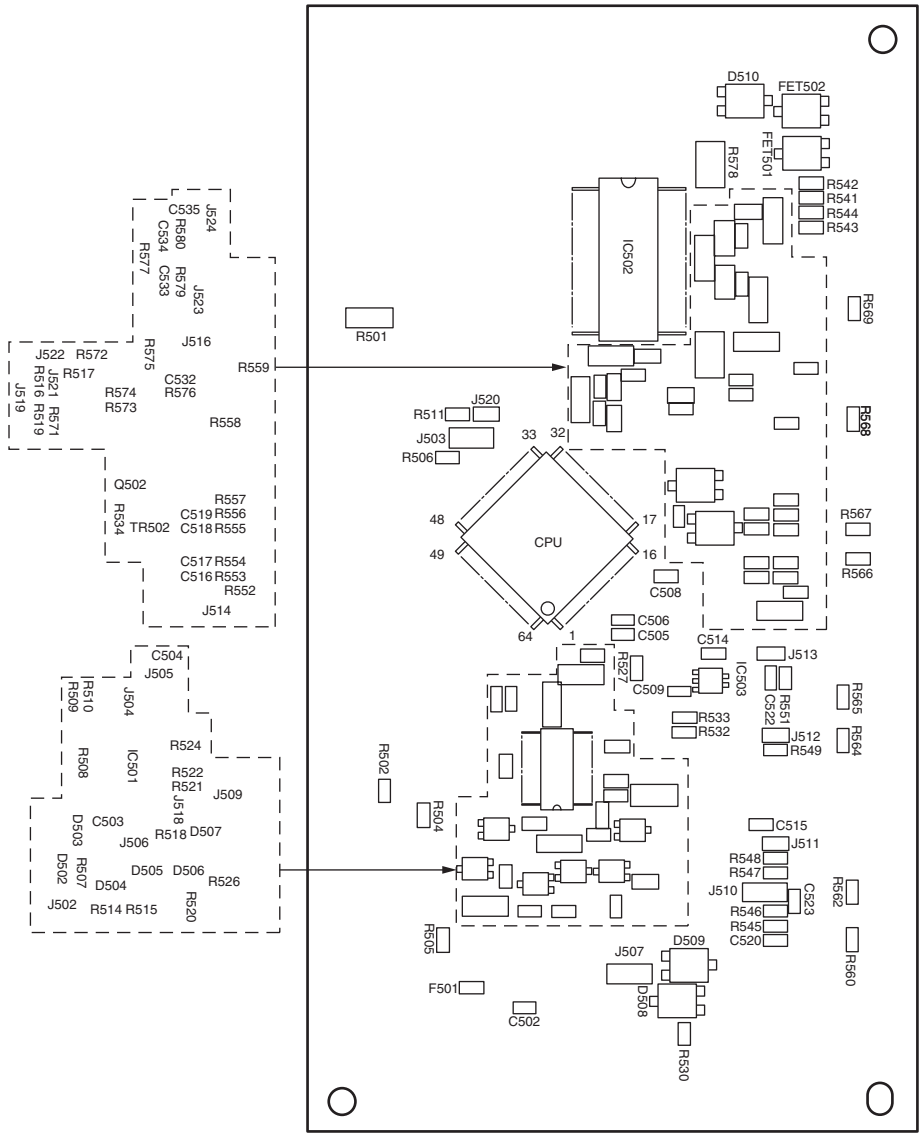


(2) Second tray control PCB

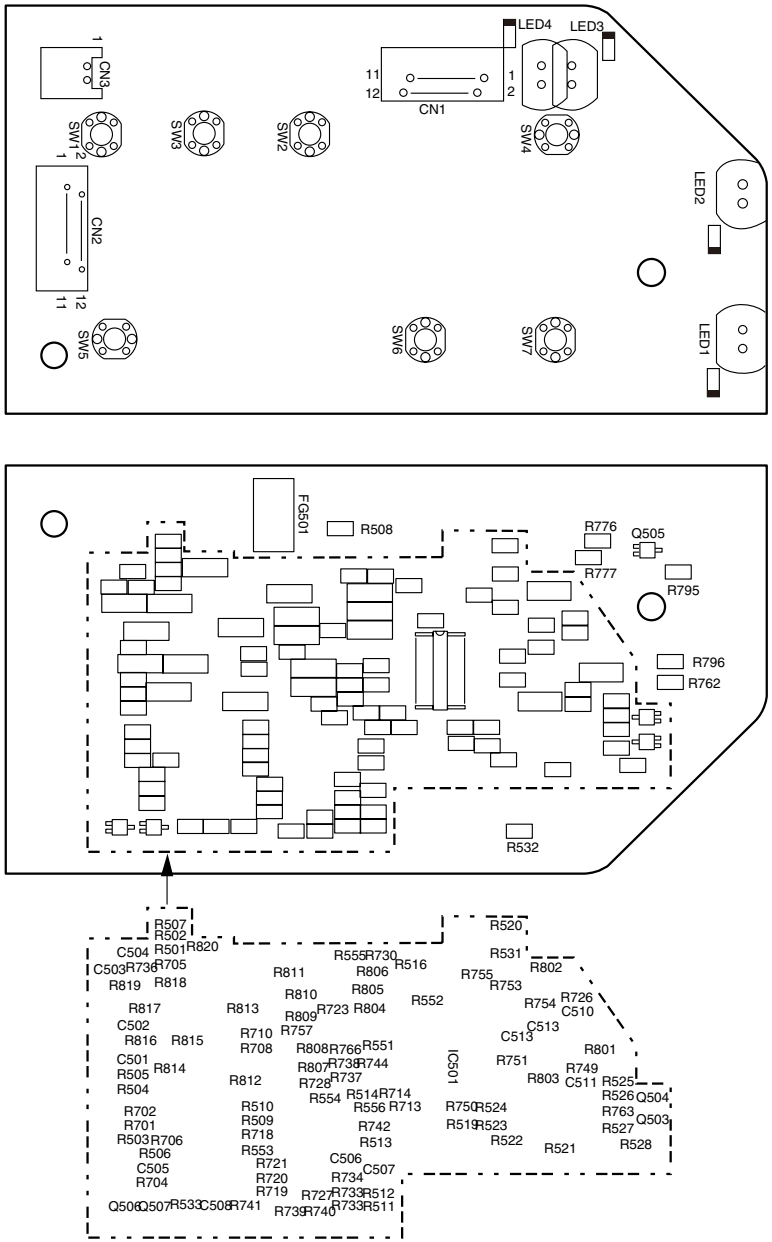
Component side



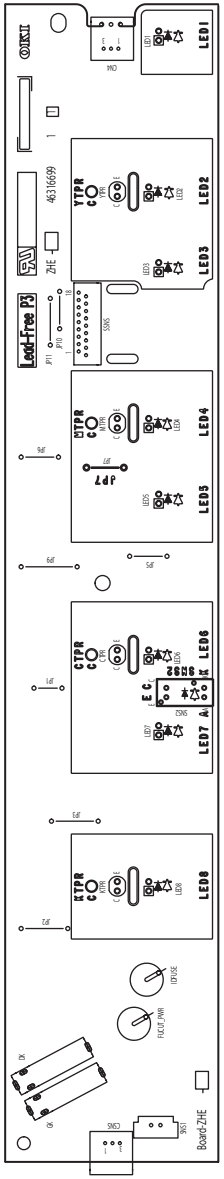
Soldering side

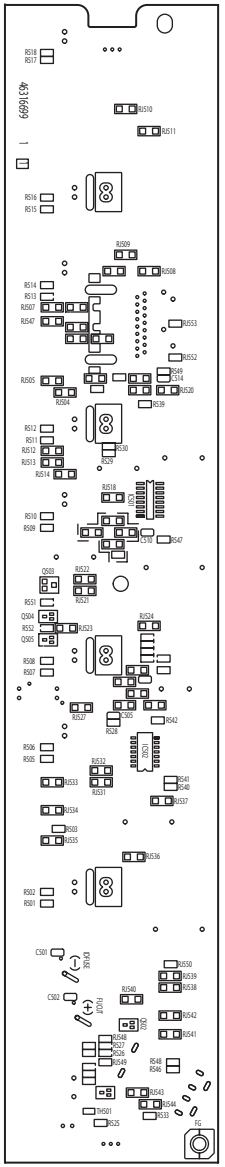


(3) Control panel PCB

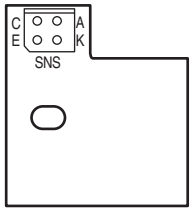


(4) Toner sensor PCB

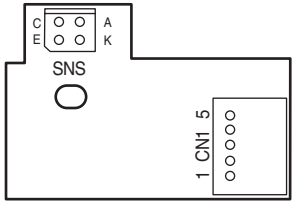




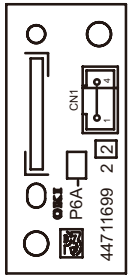
(5) Waste toner sensor PCB

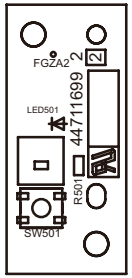


(6) Color adjustment sensor PCB

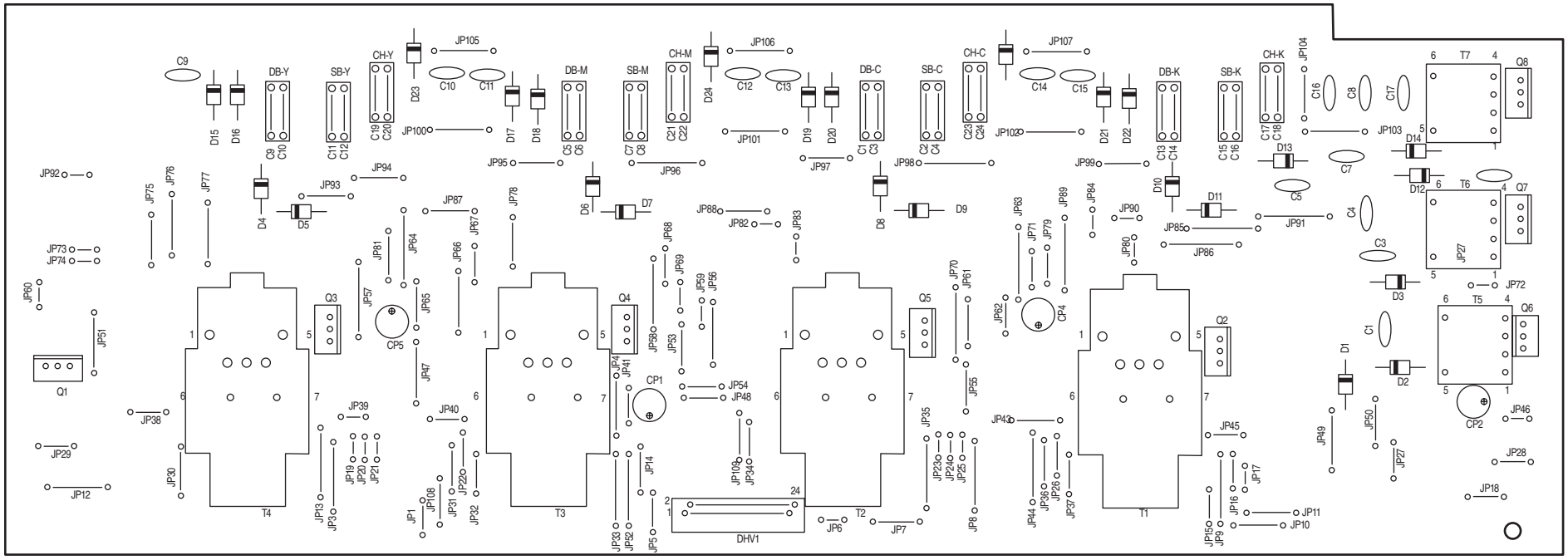


(7) Soft Power SW

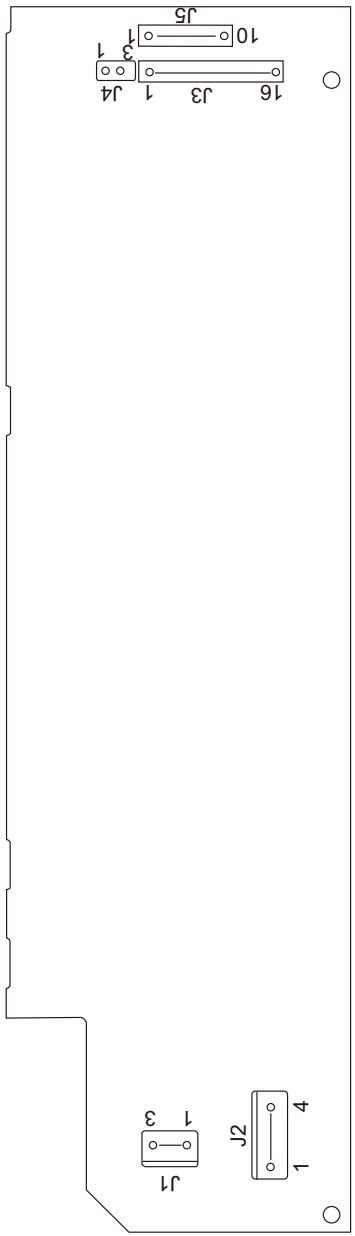




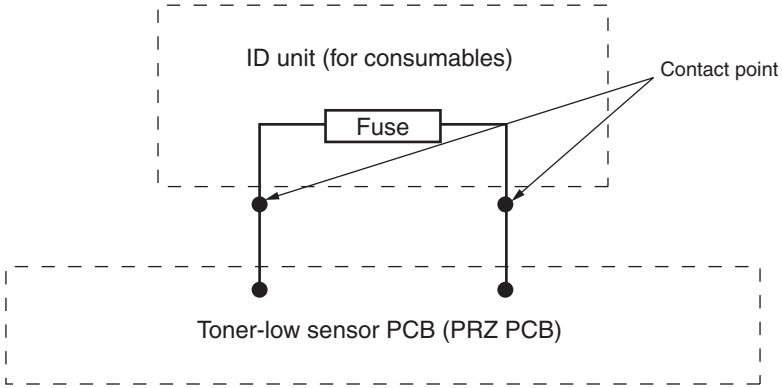
(8) High-voltage power supply PCB

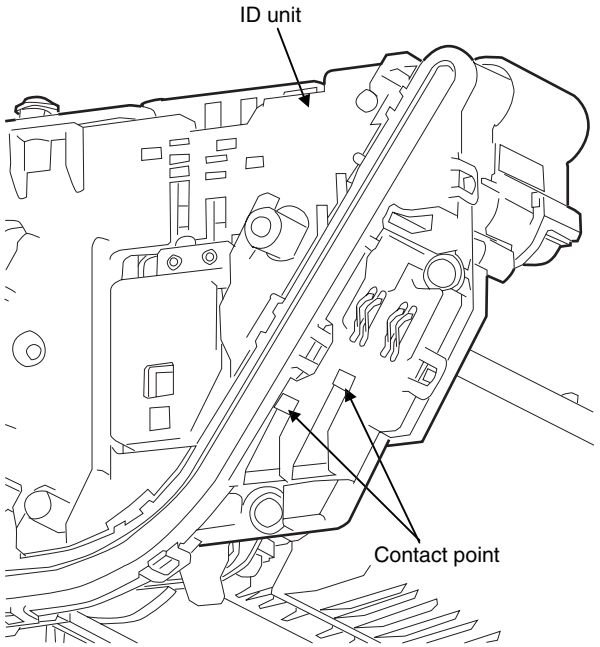


(9) Low-voltage power supply PCB



(10) ID unit





(11) Transfer belt unit