OKI
PRINTING SOLUTIONS

C532dn

Maintenance Manual

122216B

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

PREFACE

This manual provides an overview of method for maintaining the C532dn/C542dn/ES5432/ES5442 series.
This manual is intended for maintenance staff. For more information about how to operate the C532dn/C542dn/ES5432/ES5442 series, please refer to User 's manual.

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

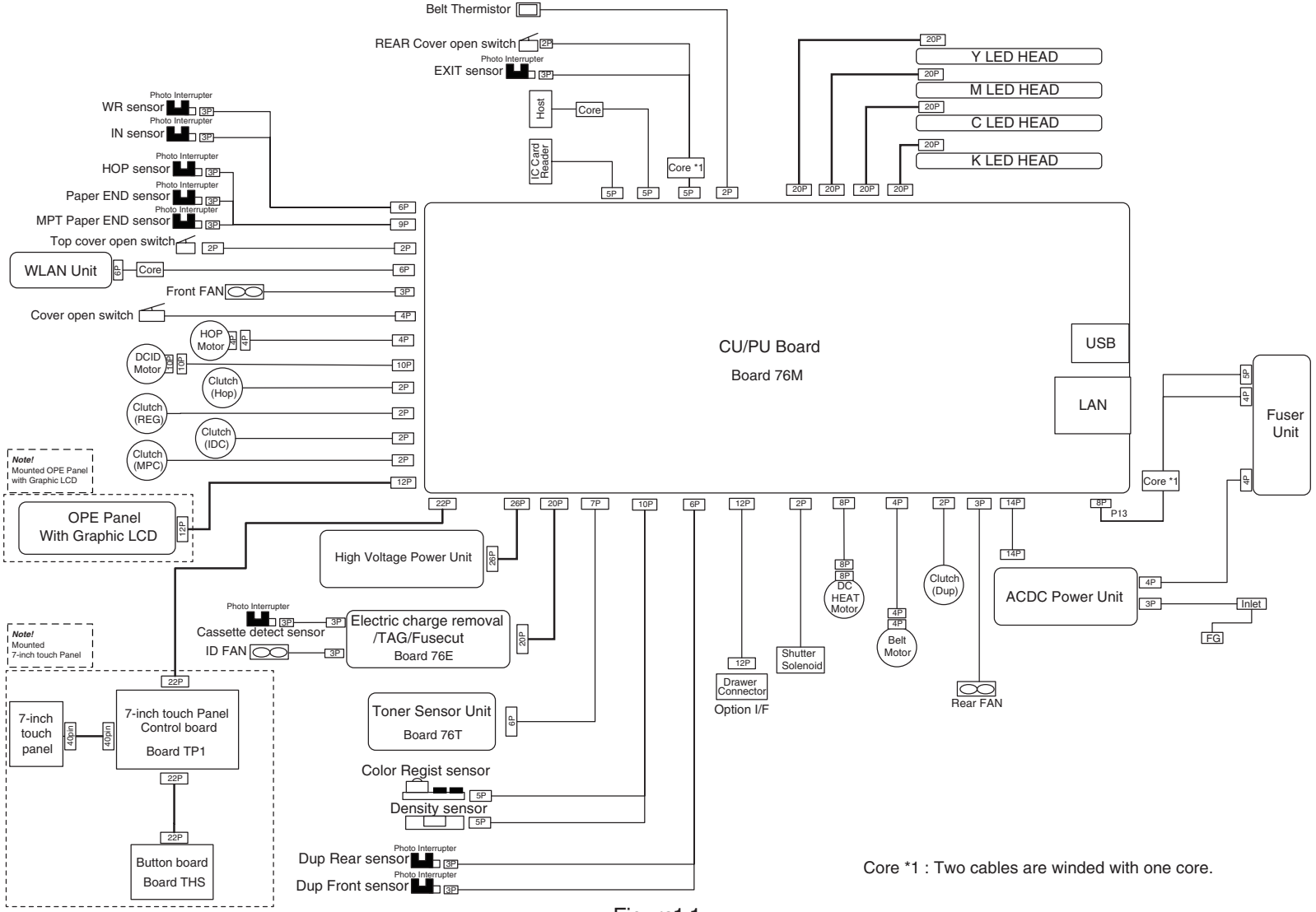
Index

1. CONFIGURATION

1.1 System configuration

System Configuration of the Printer Unit

As the diagram 1.1 shows, for the standard configuration printer is configured by controller unit and engine unit.



Core *1 : Two cables are winded with one core.

Figure1-1

1.2 Structure of Printer

The printer main unit includes the following hardware parts.

- Electrophotographic processing part
- Paper feeding part
- Controller
- Operational part
- Power supply unit

Note! • Fuser-Assy has to be replaced by Assy unit.

- It is forbidden to disassemble Fuser-Assy or reuse the disassembled Fuser-Assy.

The configuration of printer main unit is shown as Figure 1-2 and 1-3.

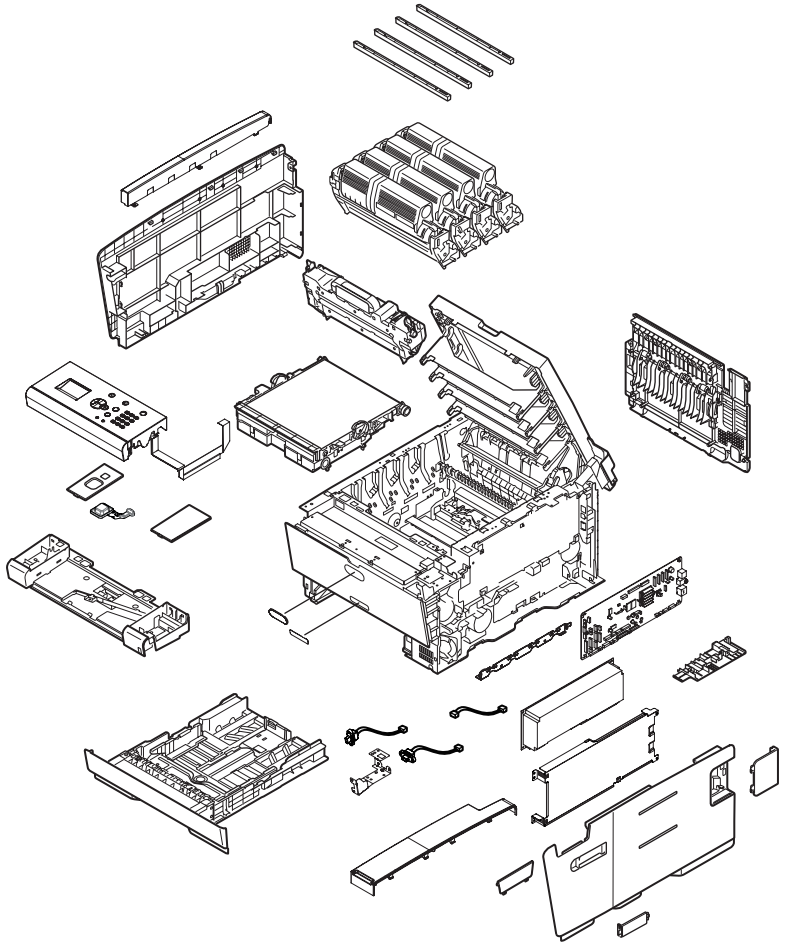


Figure1-2 (C532dn/ES5432)

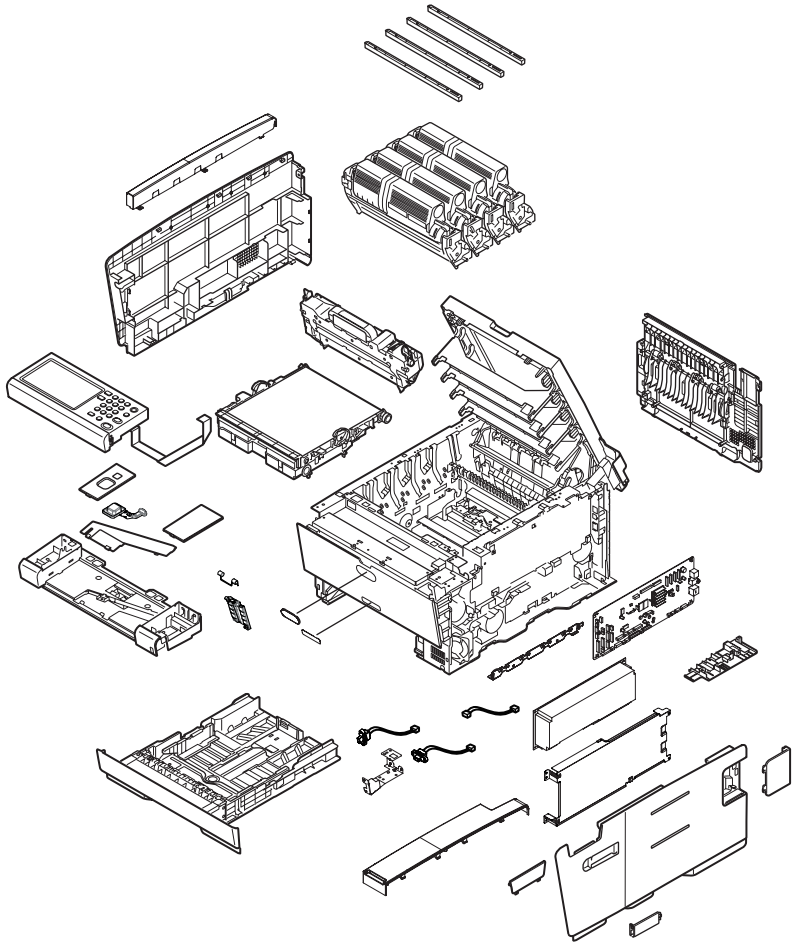


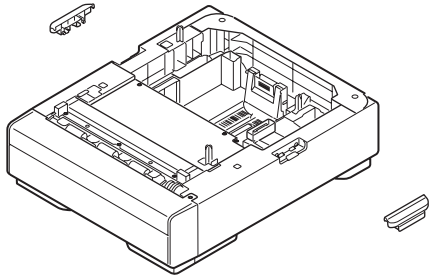
Figure1-3 (C542dn/ES5442)

1.3 Offer of Options

This product can be installed with the following option.

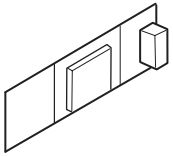
* Check the usable option unit at each setting locations, because those are different according to the sales location.

(1) Additionanl Tray Unit (max mountable number: 2)

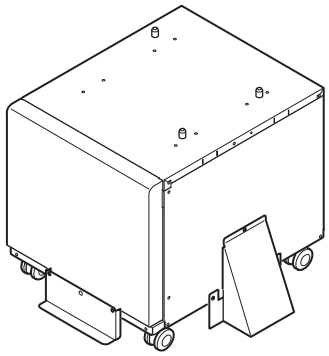


Model No.:N36501

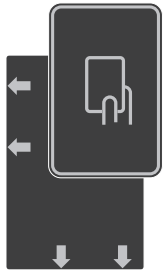
(2) Wireless LAN module



(3) Cabinet



(4) IC card reader locking kit



1.4 Specifications

Print specifications

item		C532dn/ES5432	C542dn/ES5442
Segment		DT	
Mono Print speed (simplex)	A4	30ppm	
	Letter	31ppm	
Color Print speed (simplex)	A4	30ppm	
	Letter	31ppm	
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 7.5 sec Mono 7.5 sec	
Warm-up time from power on		less than 27sec	less than 35sec
Recovery time from power save	Panel	less than 5 sec	
	Print	less than 28 sec	
Print Resolution	Head	1200dpi	
	Maximum Input dpi	1200dpi	
	Output dpi	1200x1200dpi 600x600dpi	
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, Host USB x 2 (Front)	
	Options	Wireless IEEE802.11a/b/g/n (user option)	

item		C532dn/ES5432	C542dn/ES5442
Printer Language		PCL6 (XL3.0 and PCL5c), PostScript 3 (Emulation), IBM-ProPrinter,EPSON-FX, IBM5577[for Japan only] XPS, PDF(V1.7)	
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	
	Japanese PCL Fonts	Heisei Gothic / Mincho P Heisei Gothic / P Heisei Mincho	
	Japanese PS Fonts	Heisei Gothic / Mincho	
	Japanese Barcode	Customer Barcode	
Paper Handling		See paper handling sheet for detail	
Acoustic noise	Operating	54dBA	
	Operating (Quiet mode)	52dBA	
	Standby	37dB	
	Power save mode	Inaudible	
Power consumption	Off mode	Less than 0.5W	
	Deep sleep mode	Less than 1.1W	
	Power save mode	Less than 14W	
	Idle	90W	
	Typical operation	670W	
	Peak	1250W	
Power Requirment		<Voltage> JPN : 100V AC +/-10% ODA, Taiwan : 110V-127VAC +/-10% OEL, ODA230, AOS : 220V-240VAC +/-10% <Frequency> 50/60Hz +/-2Hz	
Operating tempature		10 - 32 (C degree)	
Operating humidity		20 - 80 %	

item			C532dn/ES5432	C542dn/ES5442
Operation panel	Display	Type / Color	Mono Graphic panel	Color touch panel
		Size	2.4 inches (128×64 dot)	7 inches WVGA (800×480 px)
		Back Light	Yes	Yes
	LED		Power, Power save, Ready, Attention	Power, Power save, Start, Status, Data in memory
	Switches		Online, Cancel, Help, Menu(△ , ▽ ,Back,Enter), Numerical(0-9,*, Clear), Power save, Power	Home, Print, Status, Numerical(0-9,*,#), Clear, Start, Stop, Power save, Power
	Soft power switch		operation panel	operation panel
Buzzer			Yes	
Dimension (mm)	Width		427	
	Depth		571	
	Height		279	
Weight			23 kg	24 kg
Printer life			420,000 pages or 5 years	
Max. Monthly Printer duty			60,000 pages	
Recommended Duty Cycle			6,000 pages	
MTBF (2.3% duty)			60,000 pages	
MPBF			50,000 pages	
MTTR			less than 20 min.	

item			C532dn/ES5432	C542dn/ES5442
Toner life	Starter K	The print number of sheets using a print pattern appointed in ISO19798, but is not based on the ISO.	**C532dn/C542dn :** About 2,000 pages	
			ES5432/ES5442 : OEL/OSKR : About 6,000 pages (@ISO19798) Others : About 5,800 pages (@5%Duty)	
	Starter CMY		**C532dn/C542dn :** About 2,000 pages	
			ES5432/ES5442 : OEL/OSKR : About 5,000 pages (@ISO19798) Others : About 4,400 pages (@5%Duty)	
	Supplies K	(@ISO19798)	**C532dn/C542dn :** OEL : 1,500 pages ,7,000 pages Others : 3,500Pages, 7,000pages	
			ES5432/ES5442 : OEL/OSKR : 7,000 pages (@ISO19798) Others : 6,800Pages (@5%Duty)	
	Supplies CMY		**C532dn/C542dn :** OEL : 1,500 pages ,6,000 pages Others : 3,000pages, 6,000pages	
			ES5432/ES5442 : OEL/OSKR : 6,000 pages (@ISO19798) Others : 5,300Pages (@5%Duty)	
Image drum life at simplex (w/o power save)	Continuous		37,500 pages	
	3 pages per job		30,000 pages extention mode is available (ES model only)	
	1 page per job		17,800 pages	
Image drum life at duplex (w/o power save)	Continuous		10,500 pages	
	3 pages per job (6images per job)		9,800 pages	
	1 page per job (2images per job)		6,400 pages	
Transfer belt life			60,000 pages	
Fuser life			60,000 pages	
Waste toner box life			No	

item		C532dn/ES5432	C542dn/ES5442
Print Function	Quiet mode	Yes	
	Toner save mode	Yes	
	Override A4/Letter	Yes	
	AirPrint	Yes	
	Google Cloud Print	Yes	
	USB direct print	Yes (PDF, JPEG, TIFF, XPS)	
	Shared Print (stored)	Yes	
	Private Print (stored)	Yes	
	mono print w/o CMY toner	Yes	
	IC card reader	Yes	
Remote Firmware update		Yes	
Certification		Energy star (ver.2)	
Option	2nd tray	530 sheets (80gsm) 580 sheets (64gsm)	
	3rd tray	530 sheets (80gsm) 580 sheets (64gsm)	
	4th tray	No	
IC card reader for panel unlock & secure print		Yes	
Open-API support	Output Management	No	Yes
	Indexed Scan	No	
	Embedded Web Browser (EWB)	No	Yes
	WSD-Scan	No	
Wi-Fi Direct		No	
SoftAP		Yes	
Concurrent Connection of Wired & Wireless		Yes	
Manual format		HTML	
Auto sensing/feeding MP tray		Yes	
PDF/A		No	
Searchable PDF		No	
Citrix		Yes (XenApp 7.6)	
Print Fleet compatibility		Yes	
FDI		No	

item	C532dn/ES5432	C542dn/ES5442
2 Bin	No	
Finisher	No	
In-line stapler	No	
Off-line stapler	No	
LCF	No	

Paper handling

<Paper input>

			standard			option
			MPT	1st tray	Duplex	2nd/3rd tray
input capacity			100 sheets (80gsm) 110 sheets (64gsm)	250 sheets (80gsm) 280 sheets (64gsm)	-	530 sheets (80gsm) 580 sheets (64gsm)
size	A4		Yes	Yes	Yes	Yes
	A5		Yes	Yes	Yes	Yes
	A6		Yes	Yes	-	-
	B5		Yes	Yes	Yes	Yes
	B6		Yes	Yes	-	-
	B6 half		Yes	-	-	-
	Letter (8.5 x 11)		Yes	Yes	Yes	Yes
	Legal13		Yes	Yes	Yes	Yes
	Legal13.5		Yes	Yes	Yes	Yes
	Legal14		Yes	Yes	Yes	Yes
	Executive (7.25 × 10.5)		Yes	Yes	Yes	Yes
	Statement (5.5 x 8.5)		Yes	Yes	-	-
	8.5" SQ (8.5 × 8.5)		Yes	Yes	Yes	Yes
	Folio (210 × 330.2)		Yes	Yes	Yes	Yes
	China 16K (197 x 273)		Yes	Yes	Yes	Yes
	China 16K (195 x 270)		Yes	Yes	Yes	Yes
	China 16K (184 x 260)		Yes	Yes	Yes	Yes
	Index card (3" × 5")		Yes	-	-	-
	4" x 6"		Yes	-	-	-
	5" x 7"		Yes	-	-	-
	Custom Size		Yes	Yes	Yes	Yes
	Envelop	C5, DL, Com-9, Com-10, Monarch	Yes	-	-	-
minimum size		(inch)	2.5" x 3.5"	3.9" x 5.8"	5.8" x 8.3"	
		(mm)	64 x 90mm	100 x 148mm (Hagaki size)	148 x 210mm (A5)	
maximum size		(inch)	8.5" x 52"	8.5" x 14" (Legal14)		
		(mm)	216 x 1,321mm	216 x 356mm		
weight			16 - 58lb 64 - 220gsm	16 - 47lb, 64 - 176gsm		
max input capacity (80gsm)			1410 sheets			

<Paper output>

			Face up	Face down
Paper Output Capability			100 sheets (<80gsm) 10 sheets (Ultra-Heavy & Envelope)	NN/LL : 150 sheets (<80gsm) HH : 50 sheets (<80gsm)
size	A4		Yes	Yes
	A5		Yes	Yes
	A6		Yes	Yes
	B5		Yes	Yes
	B6		Yes	Yes
	B6 half		Yes	-
	Letter (8 x 11)		Yes	Yes
	Legal13		Yes	Yes
	Legal13.5		Yes	Yes
	Legal14		Yes	Yes
	Executive (7.25 × 10.5)		Yes	Yes
	Statement (5.5 x 8.5)		Yes	Yes
	8.5" SQ (8.5 × 8.5)		Yes	Yes
	Folio (210 × 330.2)		Yes	Yes
	China 16K(197x273)		Yes	Yes
	China 16K(195x270)		Yes	Yes
	China 16K(184x260)		Yes	Yes
	Custom Size		Yes	Yes (100×148mm to 216×356mm)
	others	Index card (3x5), 4" x 6", 5" x 7" Com-9, Com-10, Monarch, DL, C5, Banner up to 52"	Yes	-
weight			16 - 58lb, 64 - 220gsm	16 - 47lb, 64 - 176gsm

< Protocol >

Protocol	C532dn/C542dn/ES5432/ES5442
TCP/IPv4&v6	Yes
NetBEUI	No
NetBIOS over TCP	Yes
NetWare	No
EtherTalk	No
DHCP	Yes
DHCPv6	Yes
BOOTP	Yes
HTTP	Yes
HTTPS	Yes
DNS	Yes
DDNS	Yes
WINS	Yes
UPNP	Yes
Bonjour.	Yes
SMTP	Yes
POP3	Yes
SNMPv1&v3	Yes
SNTP	Yes
IPP	Yes
IPPS	Yes
WSD Print	Yes
WSD Scan	N/A
LLTD	Yes
IEEE802.1X	Yes
LPR	Yes
Port9100	Yes
Telnet	Yes
FTP	Yes
IPSec	Yes
Secure Protocol Server	N/A
LDAP	N/A
LDAPS	N/A
CIFS	N/A
FTP	N/A
FTPS	N/A
SMTP	N/A

Protocol	C532dn/C542dn/ES5432/ES5442
SMTPS	N/A
AirPrint	Yes
Google Cloud Print	Yes
WLAN 802.11a/b/g/n	Yes
WEP	Yes
WPA	Yes
WPA2	Yes
Personal	Yes
Enterprise	Yes

1.5 Interface specifications

1.5.1 USB Interface Specification

1.5.1.1 Outline of USB Interface

(1) Basic Specification

USB (Support Hi-Speed USB)

(2) Transmission Mode

Full Speed (12Mbps±0.05% max.)

Hi speed (480Mbps±0.05% max.)

(3) Power Control

Self power device

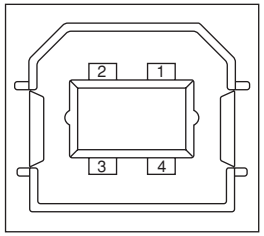
1.5.1.2 USB Interface Connector and Cable

(1) Connector

• Printer side: B receptacle (female)

Upstream port

Equivalent of UBB-4R-D14C-4D(LF)(SN) (Made by JST Mfg. Co.,Ltd)



Connector pin arrangement

• Cable side: B plug (male)

(2) Cable

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

(Shield cable should be used)

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

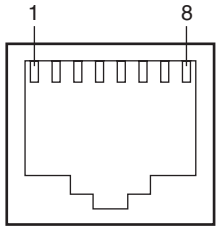
Basic Specification
Network Protocol
TCP/IP related

1.5.2.2 Network Interface Connector and Cable

(1) Connector

1000 Base-T/100 BASE-TX/10 BASE-T

(auto switch and simultaneous use are not available)



Connector pin arrangement

(2) Cable

Unshielded twisted pair cable with RJ-45 connectors (category 5e or later)

1.5.2.3 Network Interface Signal

Pin No.	Signal name	Functions
1	TRD+(0)	Transmit and receive Data 0 (+)
2	TRD-(0)	Transmit and receive Data 0 (-)
3	TRD+(1)	Transmit and receive Data 1 (+)
4	TRD+(2)	Transmit and receive Data 2 (+)
5	TRD-(2)	Transmit and receive Data 2 (-)
6	TRD-(1)	Transmit and receive Data 1 (-)
7	TRD+(3)	Transmit and receive Data 3 (+)
8	TRD-(3)	Transmit and receive Data 3 (-)

1.5.3 USB Host Interface

1.5.3.1 Outline of USB Host Interface

(1) Basic Specification

USB

(2) Transmission Mode

Hi Speed (480Mbps±0.05% max.)

(3) Supply Power

Max. 500mA

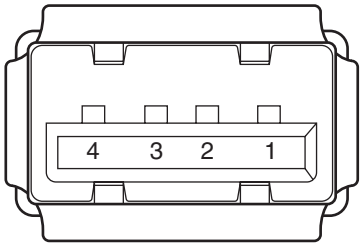
(4) Connection devices

USB memory

1.5.3.2 USB Host Interface Connector

USB A plug connector

Equivalent of UBA-4R-D14-4DLF (JST Mfg. Co.,Ltd)



Connector pin arrangement

1.5.3.3 USB Host Interface Signal

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

1.5.4 Wireless LAN Interface (User Install Option)

1.5.4.1 Outline of Wireless LAN

(1) Specification

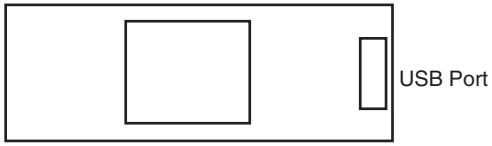
IEEE 802.11a/b/g/n (2.4GHz/5GHz)

(2) Power supply voltage

5V

(3) Printer side interfaces

USB



2. TROUBLESHOOTING PROCEDURES

2.1 Precautions prior to repair

(1) Confirm the basic check items indicated in the User's Manual.

(2) Through hearing from the user, obtain information, as far in detail as possible, on the situation concerning the fault.

(3) Inspect the printer in a condition close to the actual situation in which the fault occurred.

2.2 Items to be checked prior to taking action on abnormal images

(1) Check to see if the printer is operated in an adequate environment.

(2) Check to see if the consumables (toner, drum cartridges) are replaced properly.

(3) Check to see if the right paper is used. See the paper specifications.

(4) Check to see if the drum cartridges are installed properly.

2.3 Precautions when taking action on abnormal images

(1) Do not bring your hand or any object in contact with the surface of the OPC drum.

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

(3) Do not touch the fuser unit, which can be very hot.

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

2.4 Preparations for troubleshooting

(1) Display of LCD

The breakdown situation of this machine is display in LCD.

Do an appropriate trouble repair based on information displayed in LCD.

2.5 Troubleshooting method

2.5.1 Preparing for troubleshooting

Note! • When replacing the CU/PU board, please read the content on the EEPROM chip of the old board and copy it to the new board. (Refer to the Printer(SFP) Maintenance Manual for common section (46470802TH) when exchange the CU/PU board)

2.5.1.(1) LCD Display Trouble

(1-1) LCD displays nothing

Check item	Checking method	Action in case of NG
(1-1-1) Checking connections		
Connection between the printer and AC power supplied	Check the connection between the printer and AC power supplied.	Connect the AC cable properly.
Cable assembly connecting low-voltage power supply unit to CU/PU board	Make sure the low-voltage power supply unit is connected to the POWER connector on the CU/PU board properly. Check whether the cable connector is half-connected or tilted.	Connect the cable properly.
	Check whether there is any fault in the cable assembly, e.g., missing wires.	Replace the cable with a good cable.
Connection between CU/PU board and TP1 board	Make sure the 20-pin FFC is connected to the OPE_TP1 connector on the CU/PU board properly. Check whether the cable connector is half-connected or tilted.	Connect the FFC cable properly.
	Check for broken wires using a tester. Check visually whether the sheath peels.	Replace the FFC cable with a good cable.
(1-1-2) Checking power supplies		
AC power supplied to CU/PU board	Check the supplied voltage of the connector on the CU/PU board. POWER connector 7pin: 5V 8pin: 0V 12,13,14pin: 24V 9,10,11pin: 0V	Replace the low-voltage power supply. Replace the POWER cable.
AC power supplied to TP1 board	**(C542)**Check the supplied voltage of the SUIF connector on the TP1 board. 1,2,3,6pin: 5V 4,5,20,21,22pin: 0V	Replace the CU/PU board or FFC cable.
	(C532) Check the supplied voltage of the CN502 connector on the 76P board. 1,3pin: 5V 8pin: 3.3V 2,4pin: 0V	
AC power supplied to LCD	**(C542)**Check the supplied voltage of the TFT connector on the TP1 board. 33,34pin: 3.3V 2pin: 5V 4,5,9,13,17,21,25,29,35,36pin: 0V	Replace the TP1 board or LCD.
	(C532) Check the supplied voltage of the CN501 connector on the 76P board. 7pin: 3.3V 8pin: 0V	Replace the 76P board or LCD.

Check item	Checking method	Action in case of NG
(1-1-3) Checking LSI operation		
I/F signal from CU/PU board to TP1 board	**(C542)**Check whether signals are output to the OPE_TP1 connector on the CU/PU board. 8,9pin: Transmission / Reception data 11pin: Reboot Signals should be always output under normal conditions.	Replace the CU/PU board.
	(C532) Check whether signals are output to the OPE_76P connector on the CU/PU board. 6pin: Reception data 8pin: Transmission data 7pin: Reset Signals should be always output under normal conditions.	

(1-2) Display of OKI logo

Check item	Checking method	Action in case of NG
(1-2-1) Operation panel display does not change.		
Operation panel display	OKI logo stays on.	Replace the CU/PU board.

(1-3) Error message display

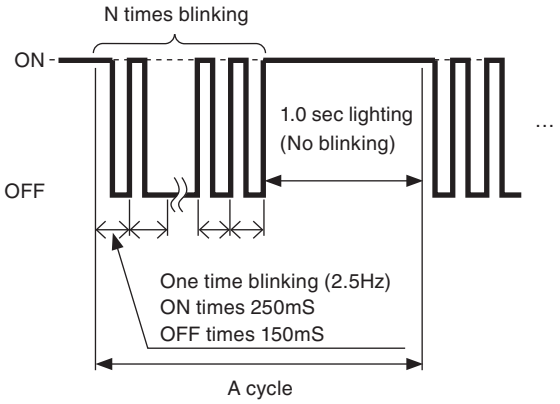
Check item	Checking method	Action in case of NG
(1-3-1) Error message		
Error message display	Check the detail of the error on the error message list.	Follow the instructions.

2.5.1.(2) Abnormal Printer operation after powered on

(2-1) No operation

Check item	Checking method	Action in case of NG
(2-1-1) Checking connections		
The same check of (1-1-1)		
(2-1-2) Confirmation of the power switch LED		
Power Switch LED	Confirm whether the LED is off. If the LED blinks rapidly, the number of blinking times in a cycle shows an error. The timing of blinking rapidly is shown in the below figure	Replace either of the low-voltage power supply unit, the CU/PU board, Power SW-board, the cables connected to the low-voltage power supply unit and CU/PU board or the cables connected to the CU/PU board and Power SW-board. In case of 2, 4, 8 or 10 times of LED blinking rapidly: Replace either of the low-voltage power supply unit, the CU/PU board, the cables connected to the low-voltage power supply unit and the CU/PU board. In case of 3, 6 or 9 times of LED blinking rapidly: Replace the CU/PU board.

Rapid blinking of the LED



Check item	Checking method	Action in case of NG
(2-1-3) Checking power supplies		
AC power supplied to printer	Check the supplied voltage of the AC power supplied.	To supplies the AC power.
AC power supplied to CU/PU board	Check the supplied voltage of the connector on the CU/PU board. POWER connector 7pin: 5V 12,13,14pin: 24V 8,9,10,11pin: 0V	Replace the low-voltage power supply. Replace the POWER cable.

(2-2) Abnormal sound

Check item	Checking method	Action in case of NG
(2-2-1) Checking for loss of synchronization of motor (driver failure)		
Operation of each motor	Check whether each motor operates properly using the self-diagnosis mode. Check by detection of a load. Noise that sounds like "pooh" is made when there is a fault.	Replace CU/PU board and SU board.
Condition of each motor cable	Check the wiring of each motor. Check for a short circuit by visual check and using a tester. Disconnect the motor cable from the PCB and check the resistance between the FG and each pin of the disconnected cable.	Replace the motor cable. Correct the wiring.
(2-2-2) Checking for loss of synchronization of motor (load by consumables)		
Operation of each motor	Check whether each motor operates properly using the self-diagnosis mode. Check by detection of a load. Noise that sounds like "pooh" is made when there is a fault.	Replace the consumable(s).
(2-2-3) Check for gear jumping (load by consumables)		
Operation of each motor	Check whether each motor operates properly using the self-diagnosis mode. Check by detection of a load. Noise that sounds like "batz batz" is made when there is a fault.	Replace the consumable(s).
Position of consumables	Check visually whether each consumable gear is in place and they engage with one another.	Replace or repair mechanical part(s).
(2-2-4) Checking cable wiring		
Cable wiring around cooling fans	Check whether a cable touches the blades of a fan as the cable is not properly laid. When it does, noise that sounds like "clack clack" is made.	Lay the cable properly.

(2-3) Abnormal odor

Check item	Checking method	Action in case of NG
(2-3-1) Locate the position with abnormal odor occurred.		
Fuser unit	Take out the fuser and confirm the odor.	Perform (2-3-2).
Low-voltage power supply unit	Take out the low-voltage power supply unit and confirm the odor.	Exchange low-voltage power supply unit
(2-3-2) Check the condition of fuser.		
Life count of fuser	Confirm the life count of the fuser by the maintenance utility.	It may have abnormal smell around a new printer.
Foreign confirmation of fuser	Confirm whether the fuser is jammed with foreign body such as paper inside.	Remove the foreign body.

(2-4) Slow starting time

Check item	Checking method	Action in case of NG
(2-4-1) Check a fuser unit		
Halogen lamp	Confirm the wattage of the halogen lamp mounted in the fuser.	Exchange for wattage parts of the rated voltage.

(3) Error number and jam location at paper jam

Name	Reference	Corresponding
Feed (front cover jam)	J5	IN2, WR
Transport (paper feed jam)	J6	IN1, IN2, WR, EXIT
Exit (paper reject jam)	J7	EXIT
Tray1 (paper feed jam)	J10	IN1
Paper size error (paper size error)	J12	IN1

Recovering Paper Jam

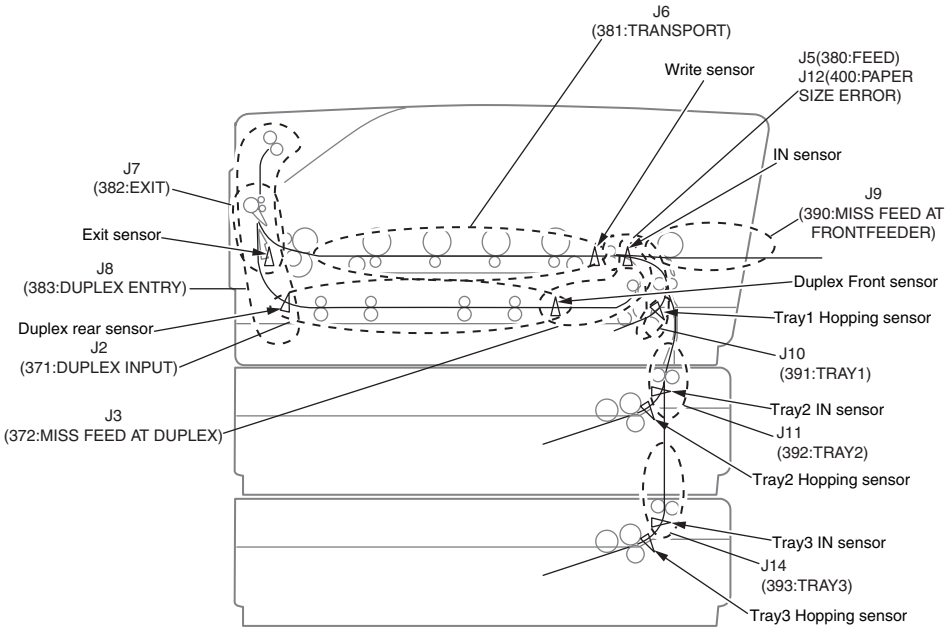
- **Refer to the User's Manual for method of Jam recovering.**

⚠ Warning

- If the machine has turned on, the fuser unit may be hot. This area is cleanly labelled. Do not touch

Note! • The image drum (the green tube) is very delicate. Handle it carefully.
• Do not expose the image drum to direct sunlight or very bright interior light (approximately more than 1500 lux). Even under the normal interior light, do not leave it for more than 5 minutes.

JAM occur position diagrammatical view



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

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

Check item	Checking method	Action in case of NG
(3-1-1) Check condition of the paper running path		
Paper running path of the front unit	Open the front cover check if paper is not jammed in the paper running path.	Remove the jammed paper.
(3-1-2) Check condition of the mechanical parts		
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 : 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	Checking method	Action in case of NG
(3-2-1) Check condition of the paper running path		
Paper running path of the front unit	Check if paper is jammed or not in the paper running path.	Remove the jammed paper.
(3-2-2) Check condition of the mechanical parts		
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 CU/PU board or the paper feed motor.
Paper feed motor driver	Pull out the CU/PU board HOP connector, and check the following at the side of the connector. Between 1pin – FG: Several MΩ Between 2pin – FG: Several MΩ Between 3pin – FG: Several MΩ Between 4pin – FG: Several MΩ	Replace the CU/PU board.
(3-2-4) Clutch operation check		
Feed clutch and regist clutch	Confirm that the feed clutch and regist clutch 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 clutch or regist clutch.

Check item	Checking method	Action in case of NG
(3-2-5) 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.	Connection state normally. Replace the cable.
	Pull out the CU/PU board HOP connector, and check the following at the side of the connector. Between 1pin – FG: Do not short-circuit Between 2pin – FG: Do not short-circuit Between 3pin – FG: Do not short-circuit Between 4pin – FG: Do not short-circuit	Replace the cable with the good cable that normalizes the connection condition.
Feed clutch cable cable and regist clutch cable	Check the connection condition of the cable. Check if the connector is connected in the half-way only or not, and check if the connector is inserted in a slanted angle or not. Check also that cables are assembled without any abnormality.	Connection state normally. Replace the clutch.
Feed clutch	Pull out the CU/PU board HOC connector, and check the following at the side of the connector. Between 1pin – FG: Do not short-circuit Between 1pin – 2pin: About 240Ω	Replace the clutch and properly assemble appropriate parts.
Regist clutch	Pull out the CU/PU board REC connector, and check the following at the side of the connector. Between 1pin – FG: Do not short-circuit Between 1pin – 2pin: About 240Ω	Replace the clutch and properly assemble appropriate parts.
Paper feed motor	Pull out the CU/PU board HOP connector, and check the following at the side of the connector. Between 1pin – 2pin: 3.4Ω or 5Ω Between 3pin – 4pin: 3.4Ω or 5Ω	Replace the Paper feed motor.

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

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

Check item	Checking method	Action in case of NG
(4-1-1) Check condition of the paper running path		
Paper running path of the front unit	Open the front cover check if paper is not jammed in the paper running path.	Remove the jammed paper.
(4-1-2) Check condition of the mechanical parts		
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 sensor or cable.
Hopping sensor, IN sensor and WR sensor output level check	Check the following signals by using the CU/PU board HPSNS and RGSNS connector: HPSNS 2pin: Hopping sensor RGSNS 5pin: IN sensor RGSNS 2pin: 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	Checking method	Action in case of NG
(4-2-1) Check condition of the paper running path		
Paper running path of the front unit	Check if paper is jammed or not in the paper running path.	Remove the jammed paper.
(4-2-2) Check condition of the mechanical parts		
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, and check the following at the side of the connector: Between 1pin – FG: Several MΩ Between 2pin – FG: Several MΩ Between 3pin – FG: Several MΩ Between 4pin – FG: Several MΩ	Replace the CU/PU board.
(4-2-4) Clutch operation check		
Feed clutch and regist clutch	Confirm that the feed clutch and regist clutch 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 clutch or regist clutch.
(4-2-5) 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.
	Pull out the CU/PU board HOP connector, and check the following at the side of the connector: Between 1pin – FG: Do not short-circuit Between 2pin – FG: Do not short-circuit Between 3pin – FG: Do not short-circuit Between 4pin – FG: Do not short-circuit	Replace the cable and properly assemble.
Feed clutch cable	Check the connection condition of the cable. Check if the connector is connected in the half-way only or not, and check if the connector is inserted in a slanted angle or not.	Normalizes the connection condition. Replace the clutch.
Feed clutch	Pull out the CU/PU board HOC connector, and check the following at the side of the connector. Between 1pin – FG: Do not short-circuit Between 1pin – 2pin: About 240Ω	Replace the clutch and properly assemble appropriate parts.
Regist clutch	Pull out the CU/PU board REC connector, and check the following at the side of the connector. Between 1pin – FG: Do not short-circuit Between 1pin – 2pin: About 240Ω	Replace the clutch and properly assemble appropriate parts.
Paper feed motor	Pull out the CU/PU board HOP connector, and check the following at the side of the connector. Between 1pin – 2pin: 3.4Ω or 5Ω Between 3pin – 4pin: 3.4Ω or 5Ω	Replace the Paper feed motor.

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

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

Check item	Checking method	Action in case of NG
(5-1-1) 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.
(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 Maintenance menu.	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 : RGSNS 5pin: IN sensor RGSNS 2pin: WR sensor Confirm that the above signal levels change when the sensor lever is operated.	Replace the sensor.

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

Check item	Checking method	Action in case of NG
(5-2-1) Check condition of the paper running path		
Paper running path of the multipurpose tray	Check if paper is jammed or not in the paper running path.	Remove the jammed paper.
Sheet Receive of the multipurpose tray	Confirm that the Sheet Receive has moved up normally. Confirm that the support spindle and spring of the Sheet Receive have been installed in the specified positions normally.	Correct installation of the above parts so that the Sheet Receive moves up to the specified position normally.
(5-2-2) Check condition of the mechanical parts		
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, and check the following at the side of the connector: Between 1pin – FG: Several MΩ Between 2pin – FG: Several MΩ Between 3pin – FG: Several MΩ Between 4pin – FG: Several MΩ	Replace the CU/PU board.

Check item	Checking method	Action in case of NG
(5-2-4) Clutch operation check		
MPT clutch and regist clutch	Confirm that the paper feed motor 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 MPT clutch or regist clutch.
(5-2-5) 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.
	Pull out the CU/PU board HOP connector, and check the following at the side of the connector: Between 1pin – FG: Do not short-circuit Between 2pin – FG: Do not short-circuit Between 3pin – FG: Do not short-circuit Between 4pin – FG: Do not short-circuit	Replace the cable with the good cable that normalizes the connection condition.
MPT clutch cable	Check the connection condition of the cable. Check if the connector is connected in the half-way only or not, and check if the connector is inserted in a slanted angle or not. Check also that cables are assembled without any abnormality.	Normalizes the connection condition. Replace the clutch.
MPT clutch	Pull out the CU/PU board MPC connector, and check the following at the side of the connector. Between 1pin – FG: Do not short-circuit Between 1pin – 2pin: About 240Ω	Replace the clutch and properly assemble appropriate parts.
Paper feed motor	Pull out the CU/PU board HOP connector, and check the following at the side of the connector. Between 1pin – 2pin: 3.4Ω or 5Ω Between 3pin – 4pin: 3.4Ω or 5Ω	Replace the Paper feed motor.

2.5.1. (6) Paper running jam (error code 381)

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

Check item	Checking method	Action in case of NG
(6-1-1) Check condition of the running path.		
Paper running path of the front unit	Check if paper is jammed or not in the paper running path.	Remove the jammed paper.
(6-1-2) Check condition of the mechanical parts		
Check the sensor lever of the WR sensor.	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the sensor lever with the good sensor lever.
(6-1-3) Check condition of electrical parts		
Check the detection condition of the sensor signal.	Confirm that the sensor signals are normally detected by using the SWITCH SCAN function of the maintenance menu.	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 ① : RGSNS 2pin: WR sensor Confirm that the above signal levels change when the sensor lever is operated.	Replace the sensor.

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

Check item	Checking method	Action in case of NG
(6-2-1) Check condition of the paper running path		
Paper running path on the belt.	Remove the ID unit and check if paper is jammed or not in the paper running path.	Remove the jammed paper.
(6-2-2) Check condition of the mechanical parts		
Check the sensor lever of the WR sensor.	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the sensor lever with the good sensor lever.
(6-2-3) Motor operation check		
Paper feed motor driver, belt motor driver and ID motor	Confirm that the paper feed motor, belt motor and ID motor work normally by using the Motor & Clutch Test of the self-diagnostic mode. Check if any load exists or not.	Replace the CU/PU board or the feed motor or the belt motor or the ID motor or the ID unit or the belt unit.
Paper feed motor driver, belt motor driver	Pull out the CU/PU board HOP connector, and check the following at the side of the connector: Between 1pin – FG: Several MΩ Between 2pin – FG: Several MΩ Between 3pin – FG: Several MΩ Between 4pin – FG: Several MΩ Pull out the CU/PU board BELT connector, and check the following at the side of the connector: Between 1pin – FG: Several MΩ Between 2pin – FG: Several MΩ Between 3pin – FG: Several MΩ Between 4pin – FG: Several MΩ	Replace the CU/PU board.

Check item	Checking method	Action in case of NG
(6-2-4) Check the system connection		
Feed motor drive cable, ID motor drive cable, belt motor drive cable, fuser drive cable	Check the connection condition of the CU/PU board HOP connector, DCID connector, DCHEAT connector, BELT connector 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.	Normalize the connection condition. Replace the cable with the normal cable.
	Pull out the CU/PU board HOP connector, and check the following at the side of the connector: Between 1pin – FG: Do not short-circuit Between 2pin – FG: Do not short-circuit Between 3pin – FG: Do not short-circuit Between 4pin – FG: Do not short-circuit Pull out the CU/PU board BELT connector, and check the following at the side of the connector: Between 1pin – FG: Do not short-circuit Between 2pin – FG: Do not short-circuit Between 3pin – FG: Do not short-circuit Between 4pin – FG: Do not short-circuit	Normalize the connection condition. Replace the cable with the normal cable.
MPT clutch cable	Check the connection condition of the cable. Check if the connector is connected in the half-way only or not, and check if the connector is inserted in a slanted angle or not. Check also that cables are assembled without any abnormality.	Normalizes the connection condition. Replace the clutch.
MPT clutch	Pull out the CU/PU board MPC connector, and check the following at the side of the connector. Between 1pin – FG: Do not short-circuit Between 1pin – 2pin: About 240Ω	Replace the clutch and properly assemble appropriate parts.
Paper feed motor	Pull out the CU/PU board HOP connector, and check the following at the side of the connector. Between 1pin – 2pin: 3.4Ω or 5Ω Between 3pin – 4pin: 3.4Ω or 5Ω Pull out the CU/PU board BELT connector, and check the following at the side of the connector. Between 1pin – 2pin: 3.4Ω or 5Ω Between 3pin – 4pin: 3.4Ω or 5Ω	Replace the Paper feed motor.

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

Check item	Checking method	Action in case of NG
(6-3-1) Motor operation check		
Paper feed motor, belt motor and ID motor	Confirm that the paper feed motor, belt motor and ID motor work normally by using the Motor & Clutch Test of the self-diagnostic mode. Check if any load exists or not.	Replace the CU/PU board or the feed motor or the belt motor or the ID motor or the ID unit or the belt unit.
Paper feed motor driver, belt motor driver	Pull out the CU/PU board HOP connector, and check the following at the side of the connector: Between 1pin – FG: Several MΩ Between 2pin – FG: Several MΩ Between 3pin – FG: Several MΩ Between 4pin – FG: Several MΩ Pull out the CU/PU board BELT connector, and check the following at the side of the connector: Between 1pin – FG: Several MΩ Between 2pin – FG: Several MΩ Between 3pin – FG: Several MΩ Between 4pin – FG: Several MΩ	Replace the CU/PU board

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

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

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

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

Check item	Checking method	Action in case of NG
(7-1-1) Check condition of the paper running path		
Paper running path of the paper eject 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 maintenance menu.	Replace the CU/PU board or the EXIT sensor or 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 : 2pin: 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 exit jam occurs after a paper is taken into printer.

Check item	Checking method	Action in case of NG
(7-2-1) Check condition of the paper running path		
Face Up Stacker Cover	Confirm that it is either fully opened or fully closed	Eliminate any in-between condition of the cover between the fully open position and fully closed position.
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 eject unit	Check that any mechanical load does not exist that hampers the smooth movement of paper in the paper running path of the paper eject unit, by the visual inspection. Check if the eject roller 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 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	Checking method	Action in case of NG
(7-3-1) Motor operation check		
Fuser motor	Confirm that the fuser motor works normally by using the Motor & Clutch Test of the self-diagnostic mode. Check if any load exists or not.	Replace the CU/PU board, the fuser motor or the fuser unit.

2.5.1. (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	Checking method	Action in case of NG
(8-1-1) Check condition of the paper running path		
Paper running path of the Duplex unit	Check if paper is jammed or not in the paper running path. Open the top cover and remove the ID unit and belt unit, and check if any paper remains in the paper reversing path or not.	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 defective sensor or connection cable.

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

Check item	Checking method	Action in case of NG
(8-2-1) Sensor lever operation check		
DUP-IN sensor lever	Open the top cover, remove the ID and the belt unit, and touch the DUP-IN sensor lever to check whether it moves smoothly.	Replace the DUP-IN sensor lever.
DUP-IN sensor	Confirm that the sensor signals are normally detected by using the SWITCH SCAN function of the self-diagnostic mode.	Replace the 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	Checking method	Action in case of NG
(8-3-1) Sensor lever operation check		
DUP-R sensor lever	Open the top cover, remove the ID and the belt unit, and touch the DUP-R sensor lever to check whether it moves smoothly.	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	Checking method	Action in case of NG
(8-4-1) Sensor lever operation check		
Dup-F sensor lever	Open the top cover, remove the ID 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	Checking method	Action in case of NG
(8-5-1) Clutch operation check		
Duplex clutch	Confirm that the Duplex clutch works normally by using the Motor & Clutch Test of the self-diagnostic mode. Confirm it by listening to the sound.	Replace the CU/PU board or the clutch.

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

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

Check item	Checking method	Action in case of NG
(9-1-1) Check paper feed condition		
Multifeed of papers	Open the top cover and check if multifeed of papers occurs or not.	If the multifeed occurs again after the jammed paper is removed, replace the roller 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.

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

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

Check item	Checking method	Action in case of NG
(10-1-1) Check the mechanical load during the Up movement		
Mechanical load during installation and removal of the ID unit	Check if abnormal heavy load is applied when removing the ID unit.	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.
(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	Checking method	Action in case of NG
(10-1-3) Sensor check		
Up/Down sensor lever (unified structure with the left link lever)	Check if shape and movement of the sensor levers have any abnormality or not.	Replace the left link lever.
Up/Down sensor	Confirm that the sensor signals are normally detected by using the SWITCH SCAN function of the self-diagnostic mode. Check if the SCAN state changes or not when the incoming light is interrupted/ passed by using a piece of paper or the like for the transparent type sensor.	Replace the high voltage board.

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

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

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

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

Check item	Checking method	Action in case of NG
(11-1-1) Thermistor is defective Note)		
Upper thermistor, lower thermistor, frame thermistor	Check the respective thermistors if they are shorted or opened internally. Check the resistance value at the connector pins in the bottom of the fuser unit. (Refer to section 6.1 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 175 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	Checking method	Action in case of NG
(11-2-1) Temperature increase of fuser unit		
Thermostat, halogen lamp	Heater of the fuser unit is controlled of its temperature. Check if the fuser unit gets hot or not by touching it with hands. If the fuser unit temperature does not increase and remains cold, check that the resistance between pin-1 and pin-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 6.1 Resistance value (fuser unit).)	Replace the fuser unit.

Check item	Checking method	Action in case of NG
(11-2-2) Temperature increase of fuser unit		
Installation position of the upper thermistor	Check if the upper thermistor is installed in the far position from the specified position or not causing detection of the lower temperature than the actual temperature of fuser unit. Remove the heater cover, and check warpage of sensor by visual inspection.	Replace the fuser unit.
Installation position of the lower thermistor	The lower thermister must be installed while contacting with the fuser unit. Check if the lower thermister is installed in the far position from the specified position or not causing detection of the lower temperature than the actual temperature of fuser unit.	Replace the fuser unit.
(11-2-3) AC power input to the halogen lamp		
AC power voltage from the low voltage power supply	Check if the AC voltage for heater is normally supplied or not. Power supply CN2 connector, 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 CU/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 pin-2 and pin-4.	Replace the CU/PU board.

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

(12-1) The rear fan and front fan does not rotate immediately after the power is turned on.

Check item	Checking method	Action in case of NG
(12-1-1) Cable connection condition and wiring condition		
Cable connection condition and wiring condition of the rear fan and front 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	Checking method	Action in case of NG
(12-2-1) 24V power supply		
CU/PU board fuses, F2, F4 and F8	Check if the fuses F2, F4 and F8 are not open-circuit or not.	Replace the CU/PU board
24V power supplied to the CU/PU board	Check the power supply voltages at the POWER connector of the CU/PU board. Pins 12, 13 and 14: 24V Pins 9, 10 and 11: 0VP	Replace the low voltage power supply.

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

(13-1) Print speed decreases.

Check item	Checking method	Action in case of NG
(13-1-1) 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.

2.5.1. (14) Option unit cannot be recognized.

(14-1) Option tray unit cannot be recognized.

Check item	Checking method	Action in case of NG
(14-1-1) Option try board		
Option tray unit	Check if the option tray unit in use is of correspond to the Printer.	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 (GOH-13)	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.
	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 (GOH-13)	Check the control signals that are output from the 2ND connector of the CU/PU board. Pin 9: TXD (PU -> 2nd) Pin 10: RXD (2nd -> PU)	Replace the CU/PU board.

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

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

Check item	Checking method	Action in case of NG
(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 if each fuse F14, F15, F16 is open or not.	Replace the CU/PU board.

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

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

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

(16-2) Error caused by the toner sensor

Check item	Checking method	Action in case of NG
(16-2-1) Toner sensor condition		
Toner sensor	Is the receptor of the toner sensor stained?	Wipe off the stain from the toner sensor.
Toner sensor	Confirm that the toner sensor works normally by using the SWITCH SCAN function of the self-diagnostic mode. Place a white paper in front of the toner sensor, and check if the SCAN state changes or not.	Replace the toner sensor board (76T), CU/PU board, or cable 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 5.4.3 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 "H". 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, "L" is displayed on the Operator Panel.
5. If the Operator Panel display toggles between "L" <-> "H" 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 (76T) 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 (76T).

(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 "L" <-> "H" 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	Checking method	Action in case of NG
(16-3-1) Mechanical load applied to the ID unit		
ID unit	Check if a heavy mechanical load is being applied to the ID unit due to breakage of the waster toner spiral, or not. Check if a heavy mechanical load is being applied to the ID unit by the waster toner box, or not.	Replace the toner or ID unit.
(16-3-2) Motor operating condition		
ID motor	Confirm that the respective ID motors work normally or not by using the Motor & Clutch Test of the self-diagnostic mode. Check if any extra load exists or not.	Replace the CU/PU board or the ID motor.

2.5.1. (17) Fuse cut error (error codes 153 to 155)

(17-1) Fuse cut error

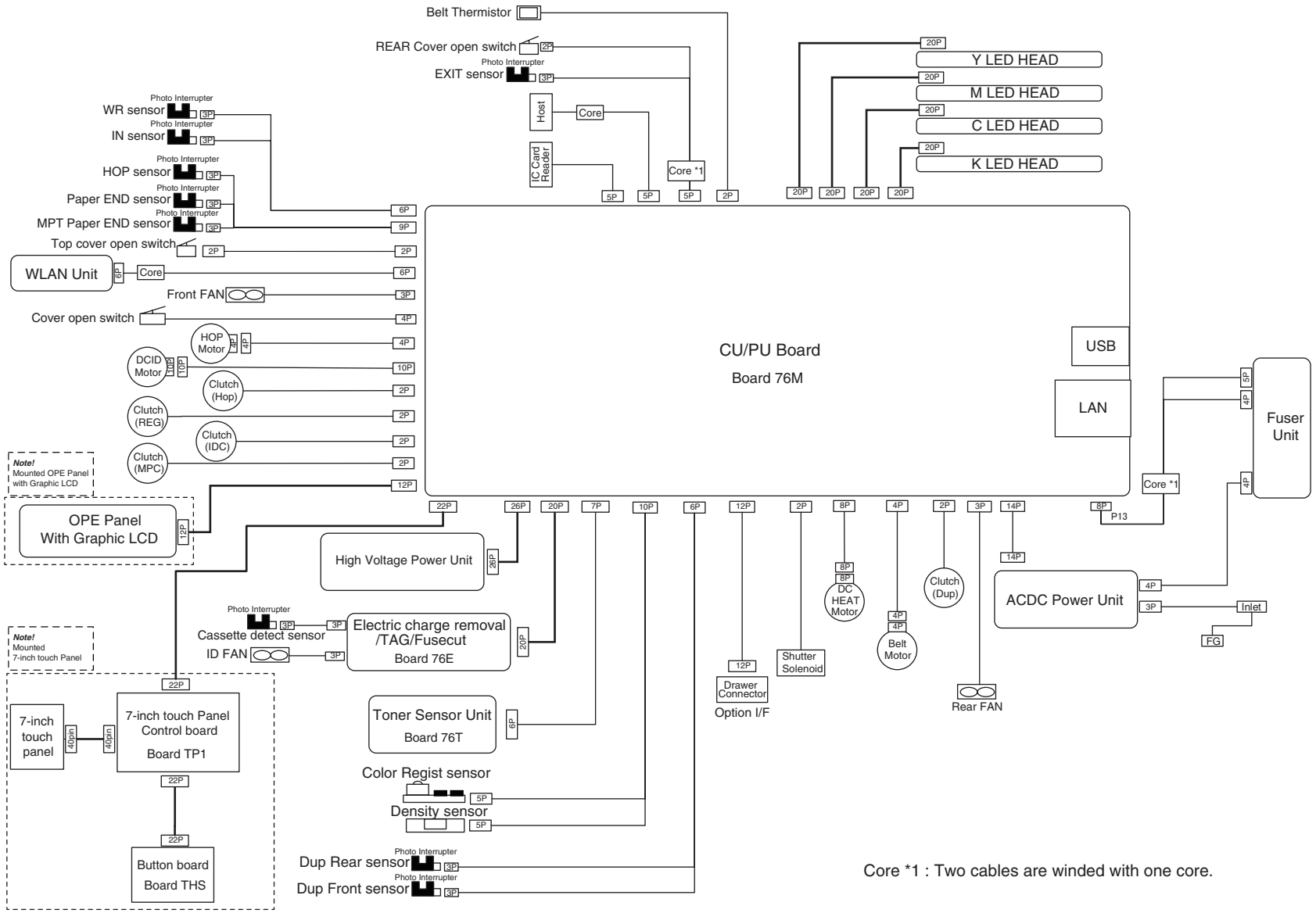
Check item	Checking method	Action in case of NG
(17-1-1) Check the system connection		
Connecting the CU/PU board and the toner sensor board	Check if the 20-conductor FFC is connected to SSNS connector of the CU/PU board and the CN1 connector of the 76E board is connected normally. Check if the connector is connected in the half-way only or not, and check if the connector is inserted in a slanted angle or not.	Connect the FFC normally.
	Check if any peeling-off of sheath has occurred or not throughout the cable.	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.

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

(18-1) Humidity sensor error

Check item	Checking method	Action in case of NG
(18-1-1) Check the system connection		
Connection to the CU/PU board and to the toner sensor board	Check if the 20-conductor FFC is connected to the SSNS connector of the CU/PU board normally. Check if the 20-conductor FFC is connected to the CN1 connector of the 76E board normally. Check if the connector is connected in the half-way only or not, and check if the connector is inserted in a slanted angle or not.	Re-connect the cable normally.
	Check if any peeling-off of sheath has occurred or not throughout the cable.	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.

2.5.1. (19) Wiring diagram



Core *1 : Two cables are winded with one core.

Wiring diagram (Printer section)

2.5.2 Troubleshooting the abnormal images

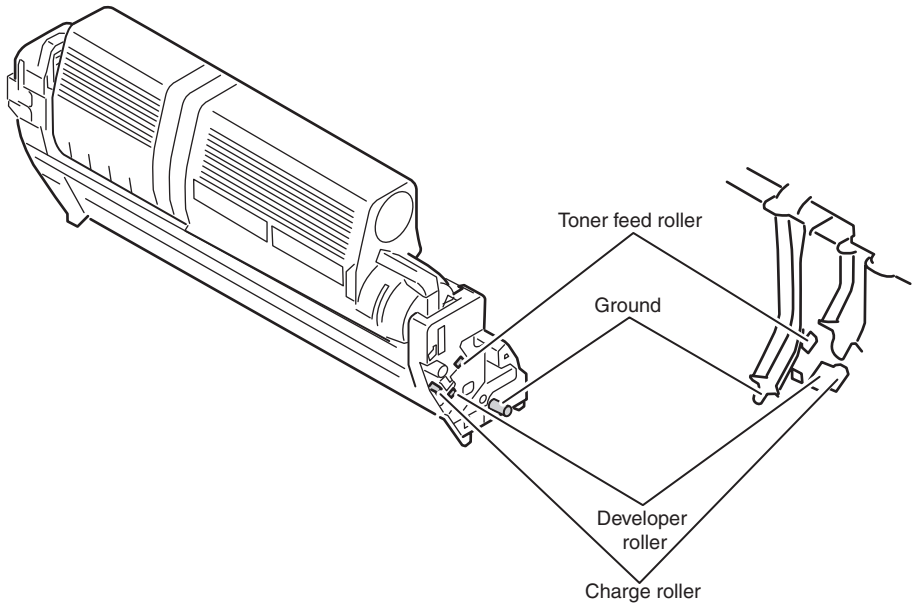
- **Refer to the Printer(SFP) Maintenance Manual for common section (46470802TH) for troubleshooting the abnormal images.**

Information 1 : Periodic abnormalities

(1) Periodic abnormality occurs in vertical direction

Check item		Check work	Actions to be taken at NG
(1-1) Cycle			
	Image drum	Check that the cycle is 94.3 mm.	Replace the ID unit
	Developing roller	Check that the cycle is 34 mm.	Replace the ID unit
	Toner feed roller	Check that the cycle is 45.3 mm.	Replace the ID unit
	Charge roller	Check that the cycle is 29.8 mm.	Replace the ID unit
	Fuser belt	Check that the cycle is 142.6 mm.	Replace the fuser unit.
	BU Roller of fuser	Check that the cycle is 113.1 mm.	Replace the fuser unit.
	Transfer roller	Check that the cycle is 50.3 mm.	Replace the belt unit.

Information 2 : ID contact positions



2.6 Fuse Checking

If any of the following errors occurs, check the corresponding fuse on the CU/PU control board or or Scanner board aor high voltage power supply board. (Refer to following Table)

Fuse Name		Error Description	Insert Point	Resistance
CU/PU board (76M board)	F5	• Service Call 121 • Not detect optiontray • The operator panel backlight blackout	High-voltage board Option Tray OP panel Supply to F12	1Ω or less
	F12	• Don't use the USBHost • Service Call 160 to 163	USBHost TNRSNS	
	F6	Don't use the wireless LAN	USB WLAN	
	F9	• Scanner • Home position error • ADF sensor error • Lamp error (CIS error)	Printer	
	F10	• Service Call 121 • Service Call 990	EPU TAG	
	F501	• Service Call 123 • Service Call 124	SSNS	
	F502	No display on the operator panel	OP power supply (Touch Panel)	
	F15	Service Call 131 to 134	Head control	
	F14,F16	Service Call 131 to 134	HEAD LED	
	F4	Hopping JAM Service Call 128	Hopping motor, clutch Front FAN Option Tray	
	F2	Service Call 121	High voltage power supply	
	F8	• Service Call 128 • Service Call 150 to 155	Exit FAN, ID clutch, Fuse cut	
	F13	Do not start the Printer	Printer	
	F503	7 "TP representation reception LED does not turn on	OPE-LED	

Fuse Name		Error Description	Insert Point	Resistance
High voltage power supply board (76C board)	F501	Service Call 121	High voltage power board 24V	1Ω or less

3. MAINTENANCE MENUS

The Printer can be adjusted by using Maintenance Utility, or button operation on its operator panel.
On the panel, maintenance menus are provided in addition to general menus. Select the menu intended for each adjustment purpose.

3.1 Self-diagnostic mode

3.1.1 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 3-1 for the position of switches for this apparatus.

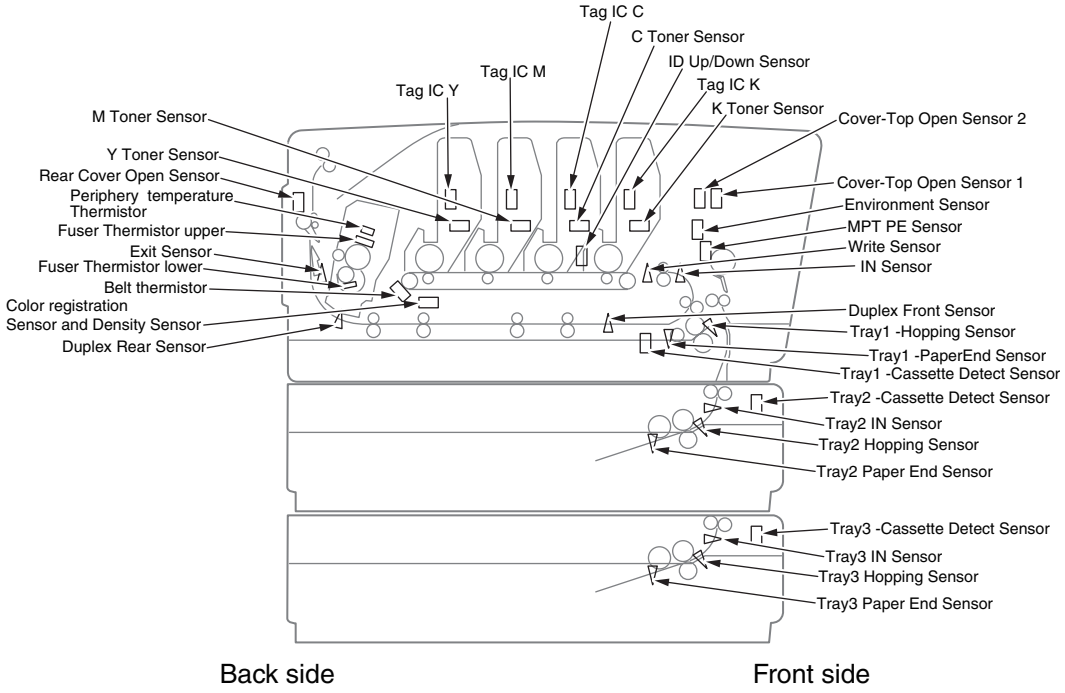


Figure 3-1

3.1.2 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 3-2 for the position of switches for this apparatus.

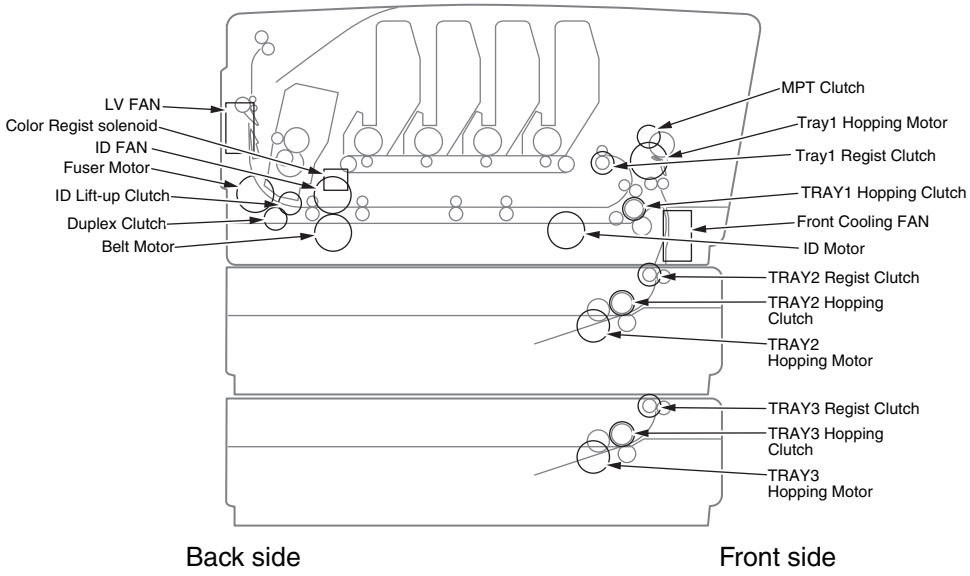


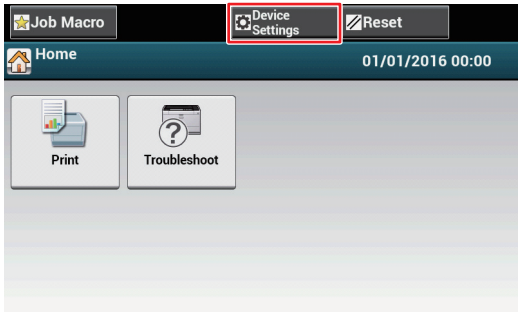
Figure 3-2

3.2 Adjusting the touch position of the touch panel

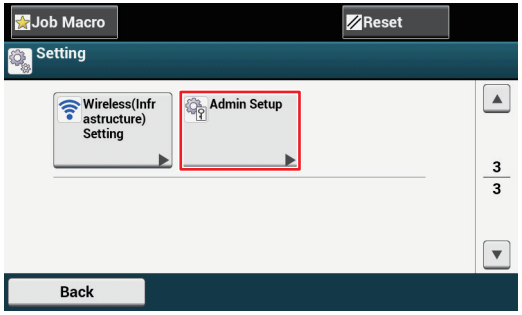
If the response of the touched position is slightly shifted or the response is slow, the detection of the position may not be working correctly.

Follow the procedure below to adjust the touch panel.

1. Press [Device Settings] on the touch panel.

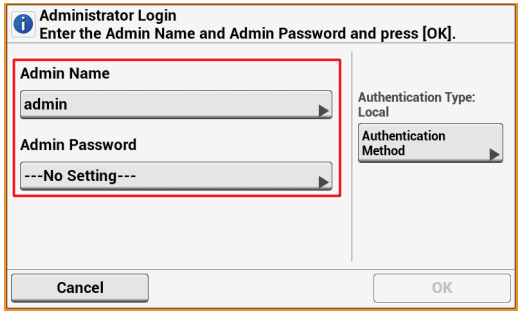


2. Press Top or Down several times, and then press [Admin Setup].

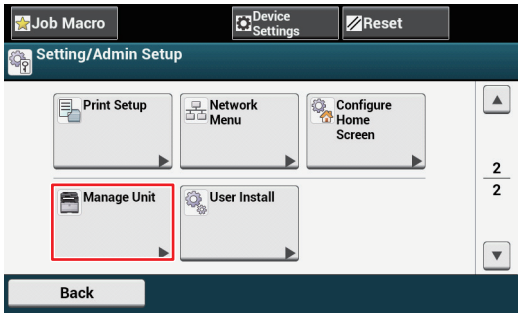


3. Input the admin name and password, and press [OK].

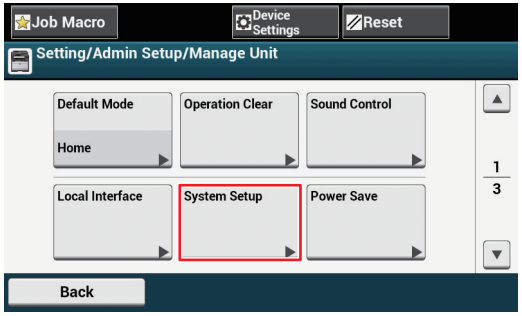
The default admin name is "admin" and the default admin password is "999999".



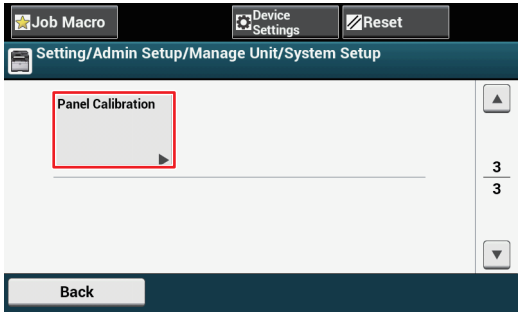
4. Press Top or Down several times, and then press [Manage Unit].



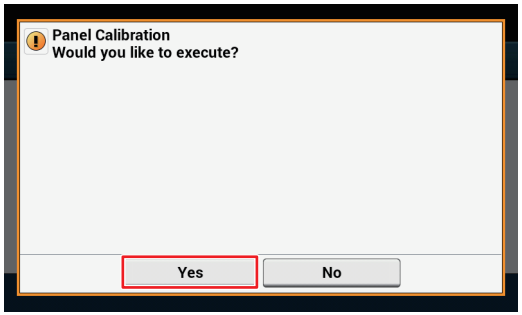
5. Press [System Setup].



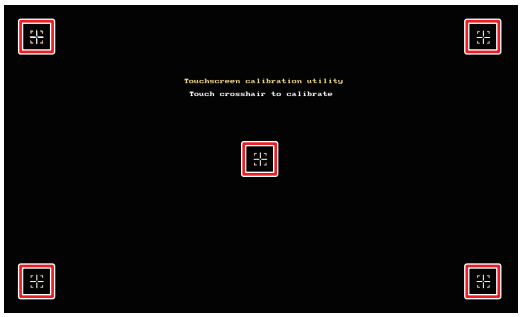
6. Press Top or Down several times, and then press [Panel Calibration].



7. Press "Yes" in the "Panel Calibration / Would you like to execute?" screen.



8. Touch the cross marks displayed in the "Touchscreen Calibration Utility/Touch crosshair to calibrate" screen in order.(5 positions in total)



The touch panel is adjusted.

4. 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 (46356101TL) and RSPL (46356101TR) for the manual.

4.1 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 [Hold down the power switch for about a second.].

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	⚠

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.

(b) Always use the following procedure to reconnect the printer:

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

② Insert the AC plug into the AC power source.

③ Turn on the printer [Hold down the power switch for about a second to turn on the power.].

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

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

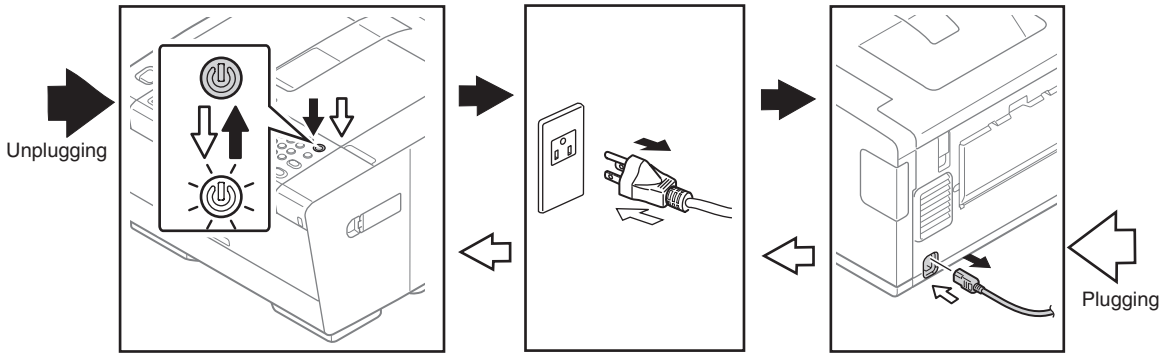
(4) Use the replacement tools specified.

(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), including microprocessors, and ROM and RAM chips, or circuit boards.

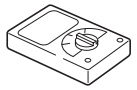
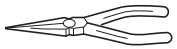
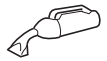
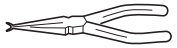
(8) Do not place printed-circuit boards (PCBs) directly on the printer or a floor.



Maintenance Tools:

Table 4-1-1 shows the tools necessary to replace printed-circuit boards and units:

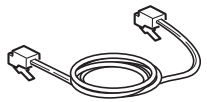
Table 4-1-1: Maintenance Tools

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	

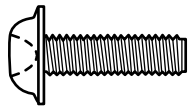
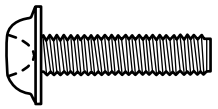
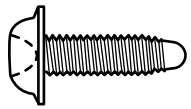
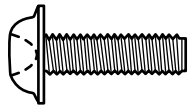
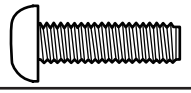
Note! Use a toner vacuum. Using a general-purpose vacuum may cause fire.

Table 4-1-2 shows the tools necessary to use Maintenance Utility software.

Table 4-1-2: Maintenance Tools

No.	Maintenance Tool		Quantity	Use	Remarks
1		Notebook personal computer (with Maintenance Utility software installed)	1		See 46470802TH for Maintenance Utility.
2		USB cable	1		
3		Ethernet cable (crossover cable)	1		

Screws in use:

Shape	Designation
	Screw (silver) (6mm)
	Screw (silver/8mm)
	Round-head screw (black)
	Screw (black)
	Screw (silver)

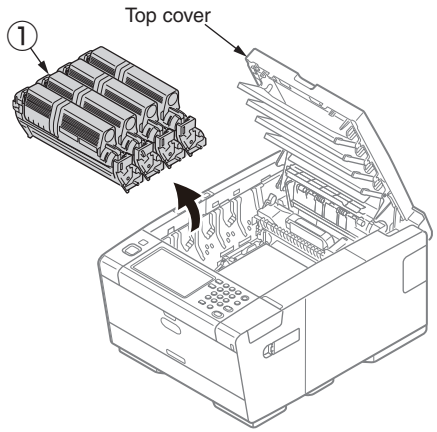
4.2 Part replacement procedure

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

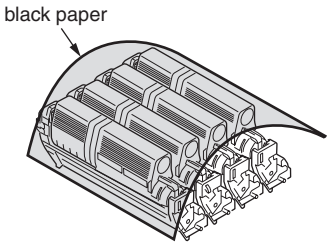
4.2.1 Belt unit

(1) Open the top cover.

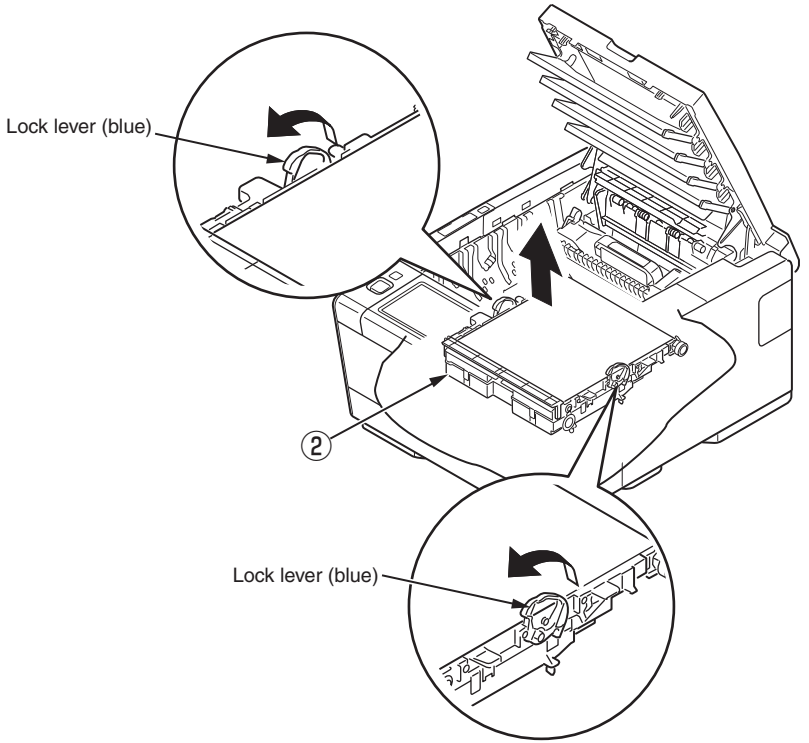
(2) Remove the image drum unit ① .



Note! Cover the removed ID units with a piece of black paper.



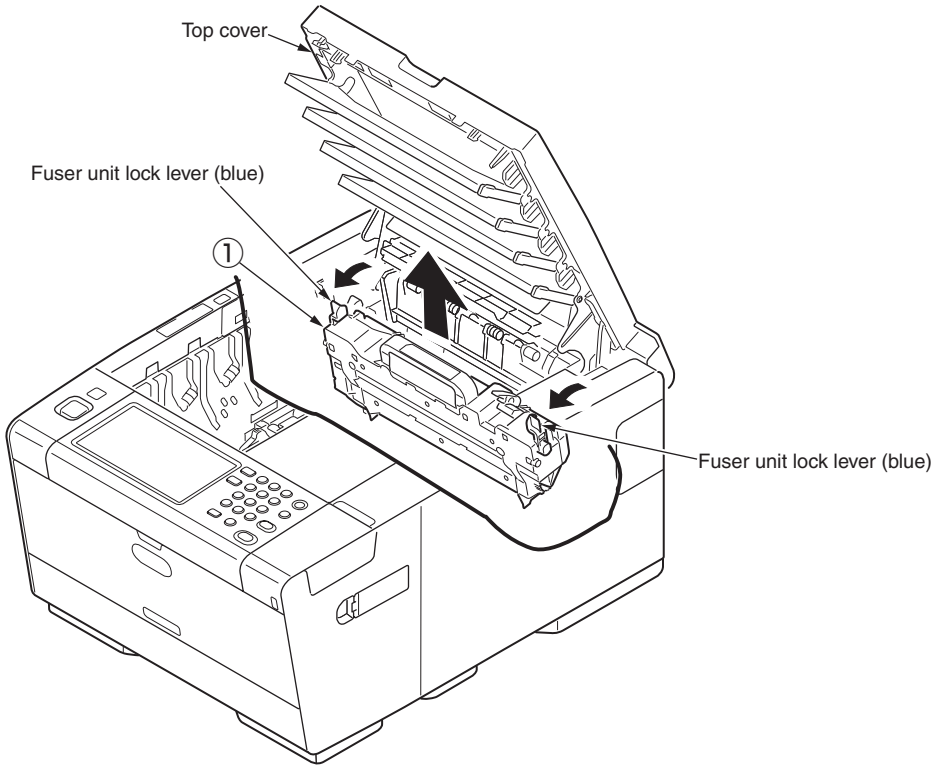
(3) Turn the two lock levers (blue) of the belt unit ② in the direction of the arrows and, put your finger in the lock levers (blue), detach the unit.



4.2.2 Fuser unit

(1) Open the top cover.

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

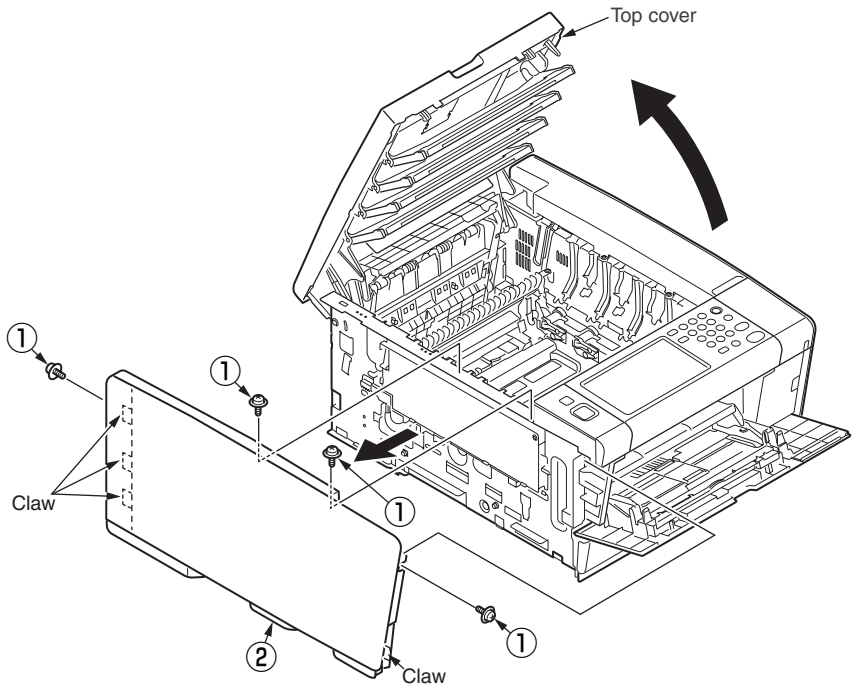


4.2.3 Left side cover / Left side cover(sub)

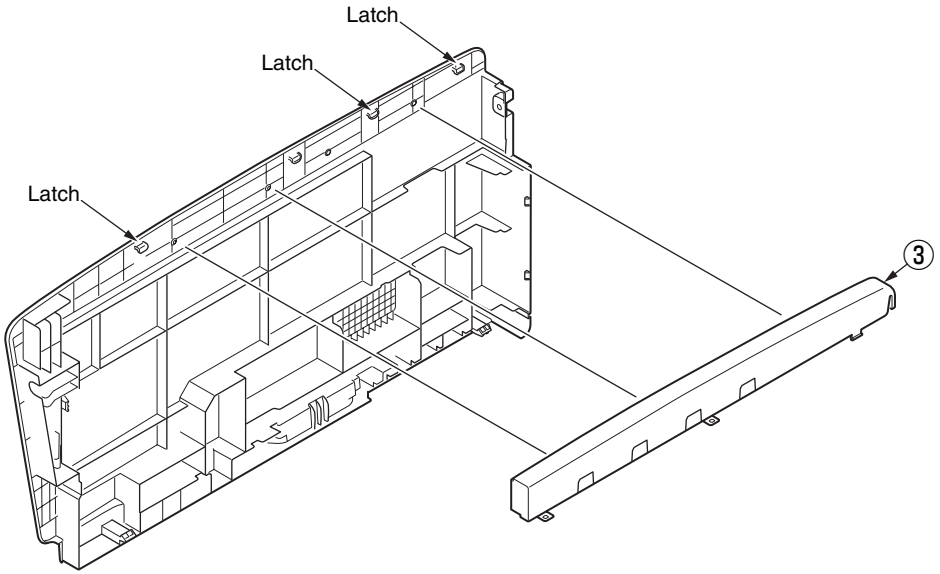
(1) Open the top cover.

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

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



(4) Unlatch and detach the left side cover(sub) ③ .



4.2.4 Right side cover / Right side cover(sub)

(1) Open the top cover.

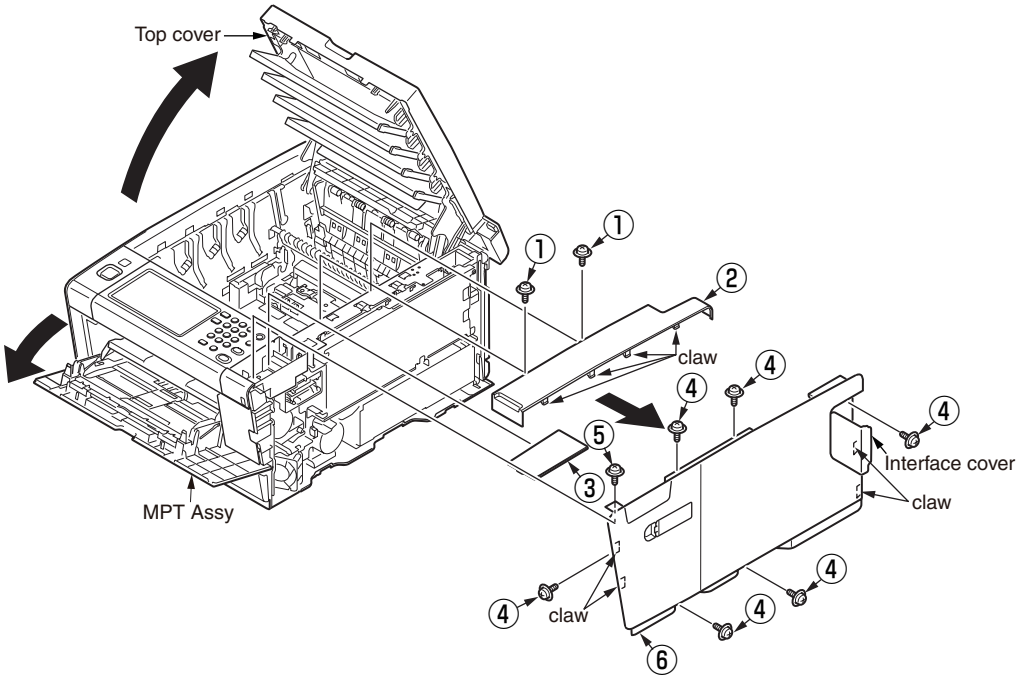
(2) Remove the two screws (black) ① and unlatch and remove the right side cover (sub) ② .

(3) Open the interface cover.

(4) Open the MPT assembly.

(5) Remove the cover IC card ③ .

(6) Remove the six screws (silver) ④ and remove the screw (black) ⑤ and detach the right side cover ⑥ .



4.2.5 CU/PU board 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 4.2.4)

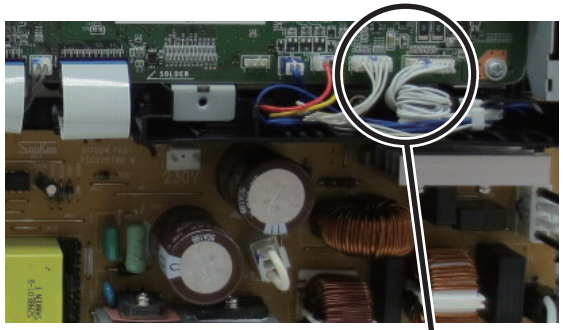
(2) Remove the five screws (silver) ① and remove the plate shield (CU) ② .

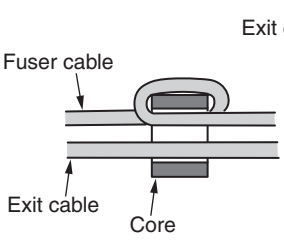
(3) Remove all the CU/PU board cables.

(4) Remove the three screws (silver) ③ , the screw (black) ④ and the screw (silver) ⑤ to detach the CU/PU board ⑥ .

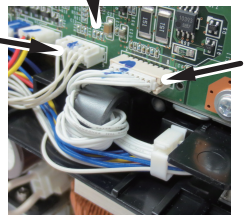
(5) Remove all the low-voltage power supply cables.

(6) Remove the three screws (silver) ⑦ and remove the screw (black) ⑧ and detach the claw and low-voltage power supply board ⑨ .

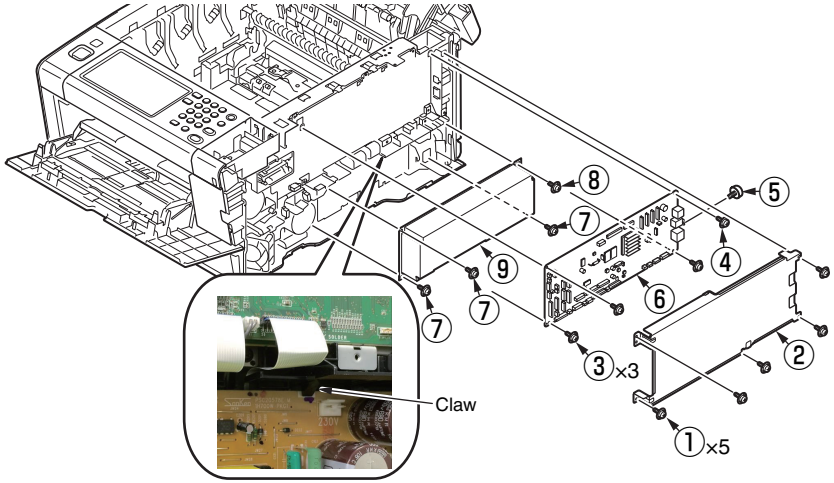


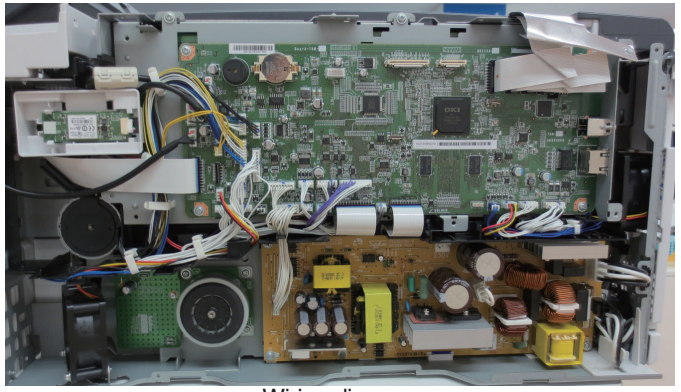


Cross section



·The Fuser cable wound one turn around the core
·Thread the Exit cable through the core

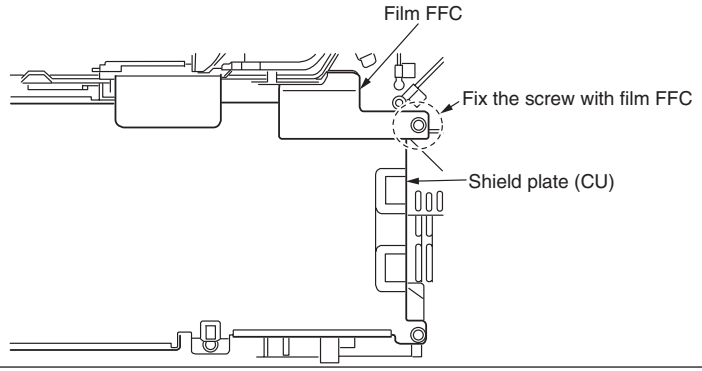




Wiring diagram

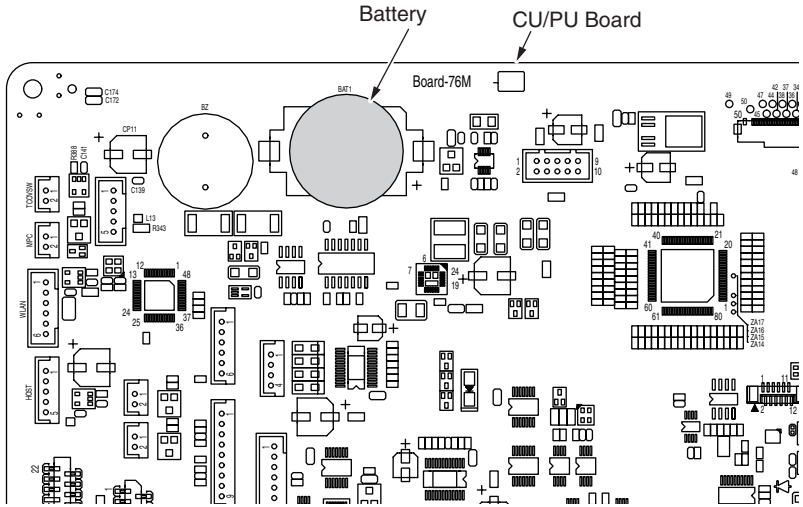
Notes in assembling :

Fix the screw with film FFC when attach the shield plate (CU).



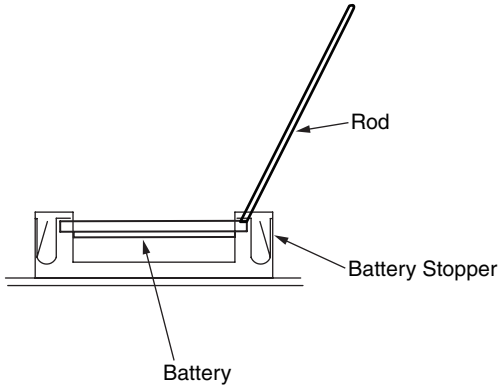
4.2.5.1 How to remove Battery (CU/PU Board)

(1) The position of the battery is shown in the below picture.

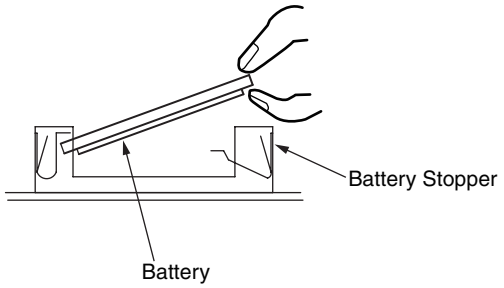


(2) How to remove the battery.

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

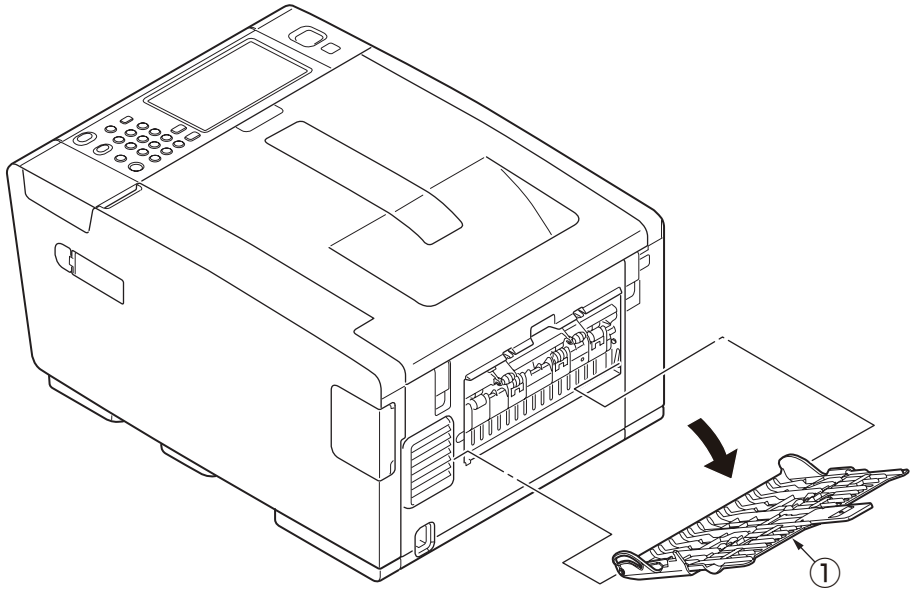


Raise the battery up so that it is put on the battery stopper, and remove it.



4.2.6 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.



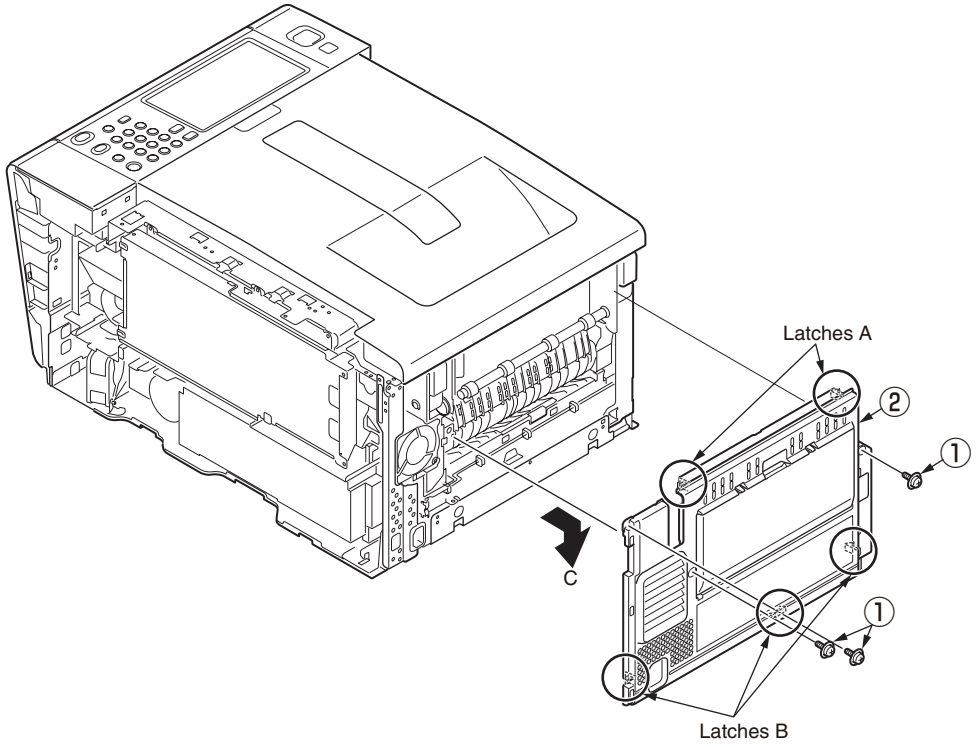
4.2.7 Rear cover

(1) Remove the left side cover and the right side cover. (See 4.2.3, 4.2.4)

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

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

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

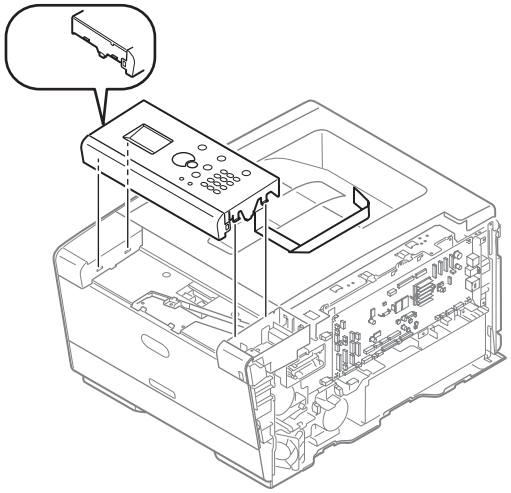


4.2.8.1 OP Panel Assy (C532/ES5432)

(1) Remove the right side cover and shield plate (CU). (See.4.2.4, 4.2.5)

(2) Remove the FFC cable for OP Panel on the CU/PU board.

(3) Remove the four claws and remove the OP Panel Assy ① .



Notes in assembling :

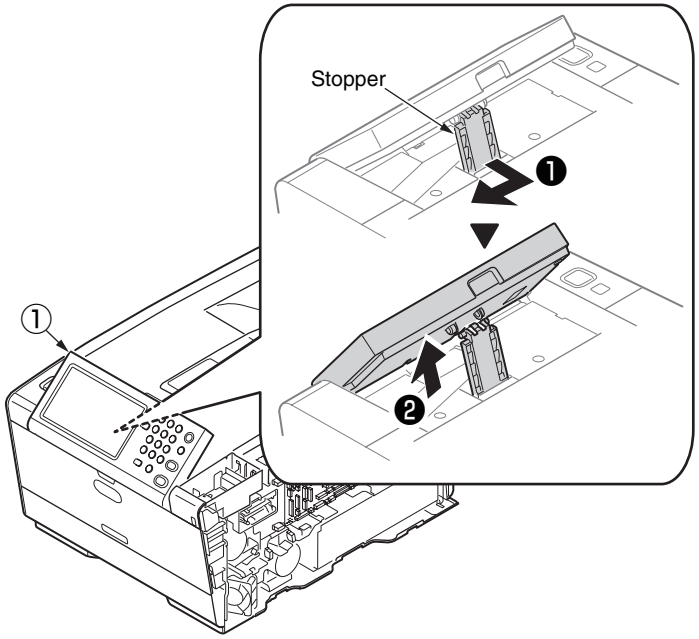
When attached OP panel Assy, wire the FFC cable as follows.

4.2.8.2 OP Panel Assy (C542/ES5442)

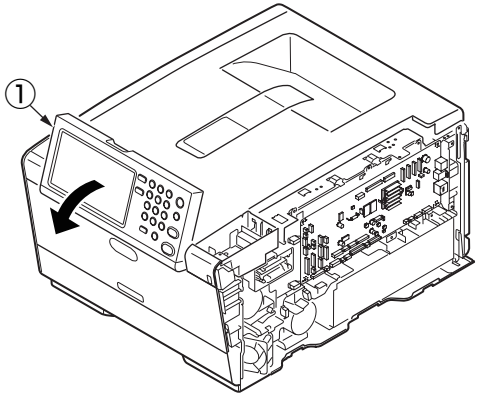
(1) Remove the left side cover and Plate-shield. (See.4.2.4, 4.2.5)

(2) Remove the FFC cable for OP Panel on the CU/PU board.

(3) Move the OP Panel Assy ① and push the stopper in the direction of the arrow.

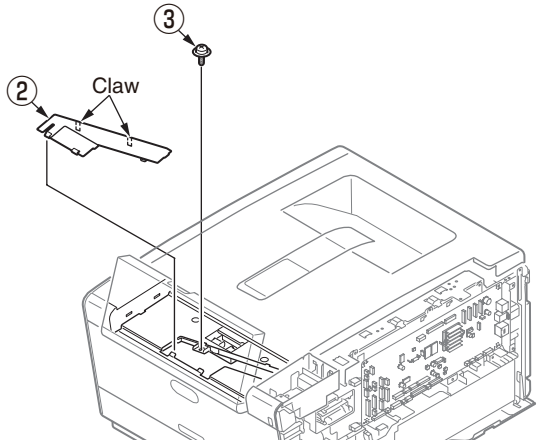


(4) Move the OP Panel Assy ① in the direction of the arrow.

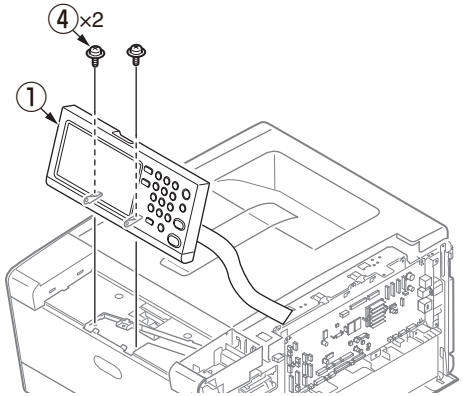


(5) Remove the two claws and remove the cover cable OP ② .

(6) Remove the screw ③ and FFC cable.

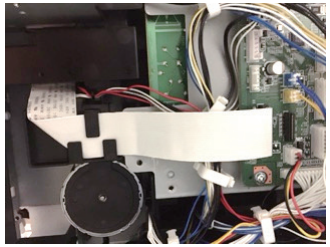


(7) Remove the two screws ④ and remove the OP Panel Assy ① .



Notes in assembling :

When attached OP panel Assy, wire the FFC cable as follows.



4.2.9.1 Frame-OP-panel / OPE board (C532dn/ES5432)

(1) Remove the FFC cable ① .

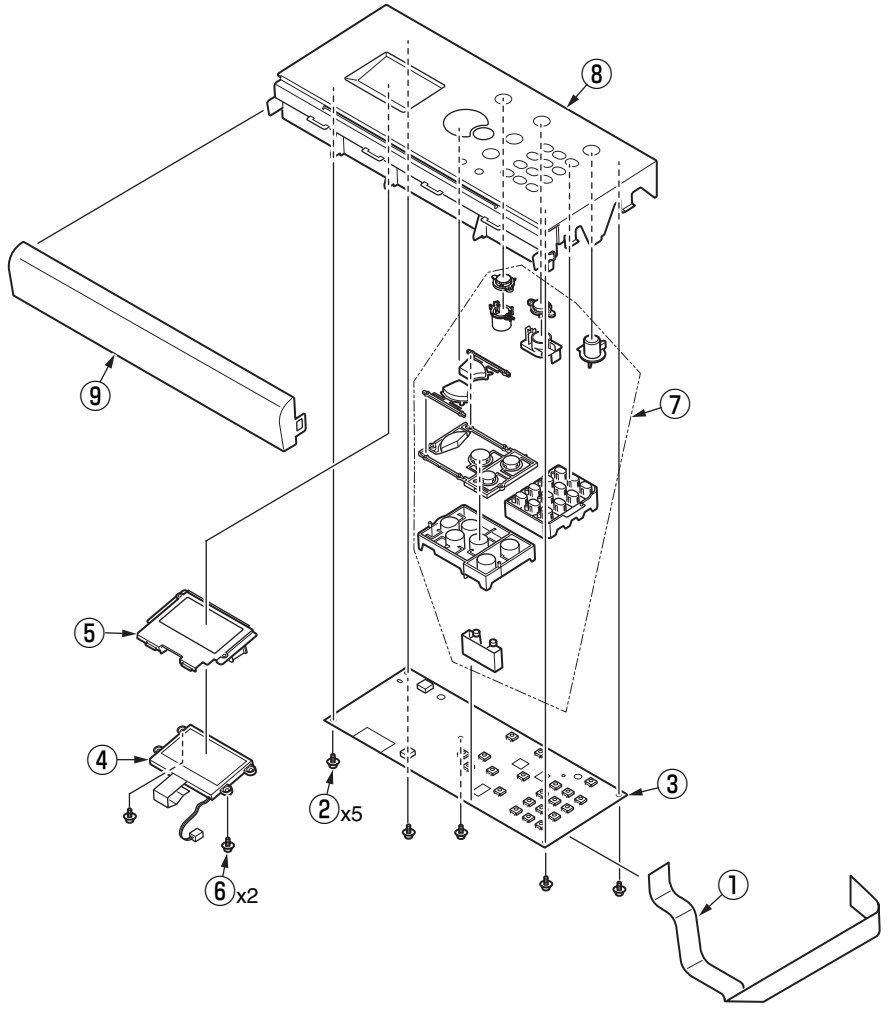
(2) Remove the five screws ② .

(3) Reverse the board ③ and remove the LCD cable ④ .

(4) Remove the two screws ⑥ from the holder-LCD ⑤ and remove the LCD ④ .

(5) Remove the button ⑦ .

(6) Remove the cover-OP (front) ⑨ from the cover-OP-Top ⑧ .



4.2.9.2 Frame-OP-panel / OPE board (C542dn/ES5442)

(1) Remove the eight claws and remove the Cover-Sheet ① and Sheet-OP ② .

(2) Remove the two claws and remove the Cover-OP(front) ③ .

(3) Remove the four claws and remove the Cover-Bottom ④ .

(4) Remove the four screws ⑤ and remove the Plate-Hinge ⑥ .

(5) Remove the four screw ⑦ and Plate-Shield(OP) ⑧ .

(6) Remove the FFC Cable ⑨ from the Board ⑩ .

(7) Remove the three claws and remove the Board ⑩ and remove the Button-Assy ⑪ .

(8) Pull the portion A in the arrow direction and take the FFC- cable ⑨ off from the Board ⑩ .

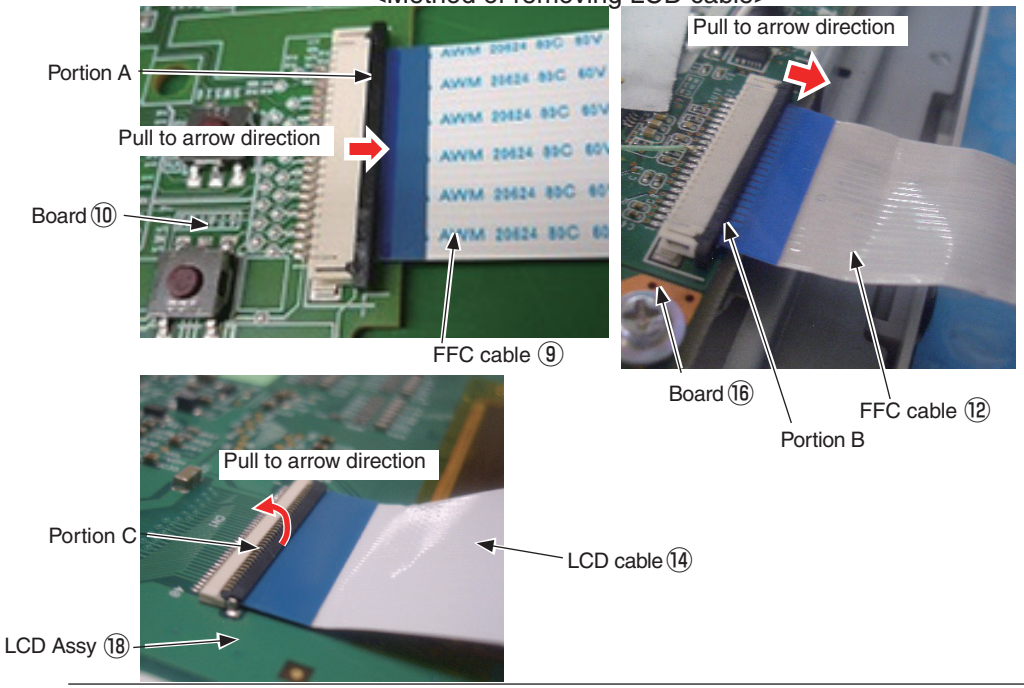
(9) Pull the portion B in the arrow direction and take the FFC- cable ⑫ off.

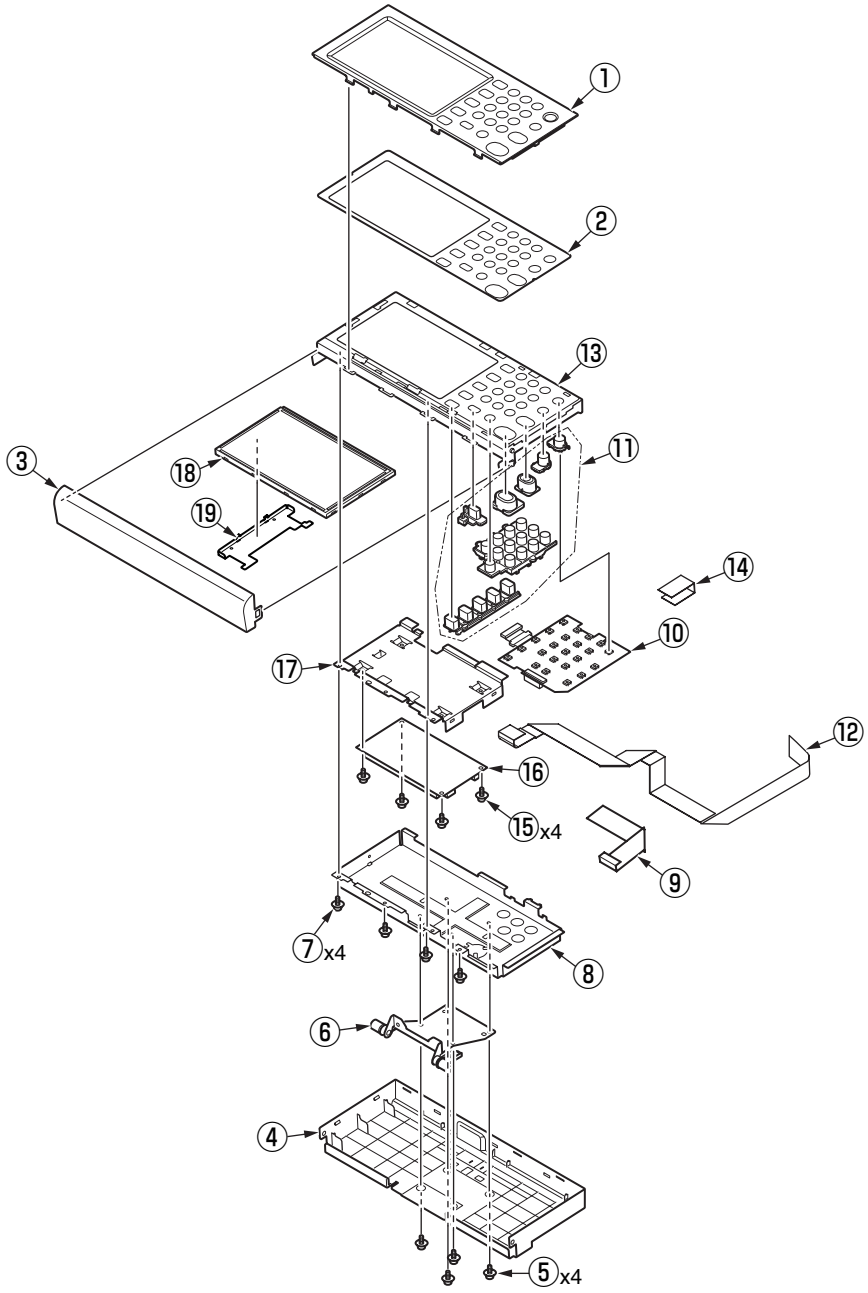
(10) Lift the portion C and remove the LCD - cable ⑭ .

(11) Remove the four screws ⑮ and remove the Board ⑯ .

(12) Remove the Plate-Shield (LCD) ⑰ and remove the LCD-Assy ⑱ and plate-shield (OP) ⑲ .

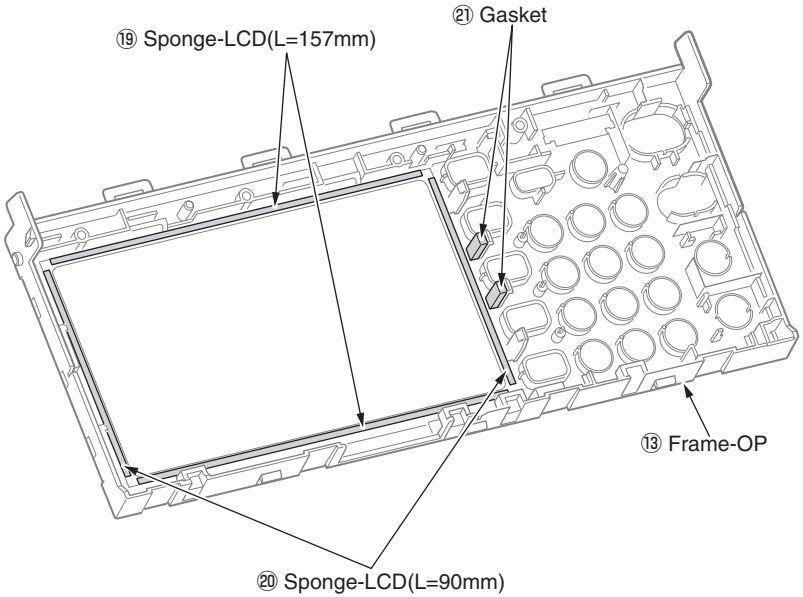
<Method of removing LCD cable>





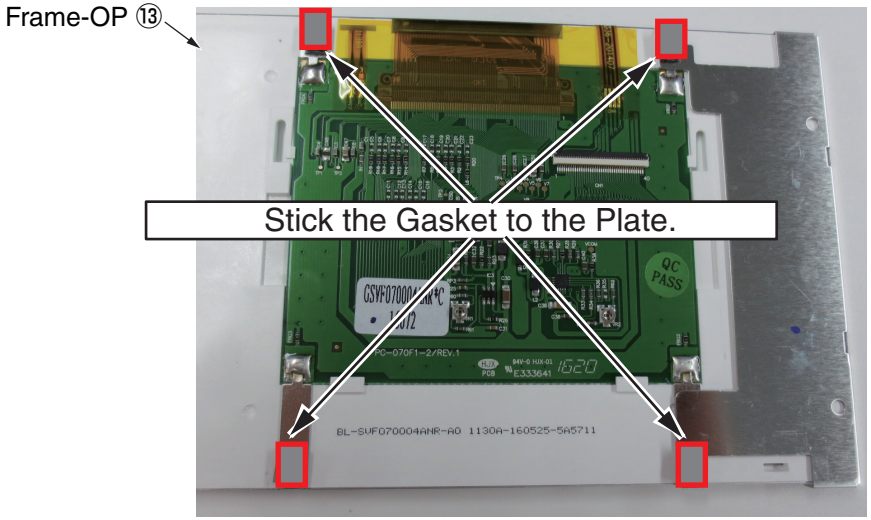
Notes in changing the Frame-OP ⑬ :

Stick Gaskets and Sponges to inside of the Frame-OP ⑬ at indicated positions in following figure.



Notes in changing the LCD-Assy ⑱ :

Stick Gaskets to back side of the LCD-Assy ⑱ at indicated positions in following figure.



Notes in changing the OP Panel Assy, OPE board and LCD :

Carry out the “Adjusting the touch position of the touch panel” after exchange OP panel Assy, OPE board, LCD.

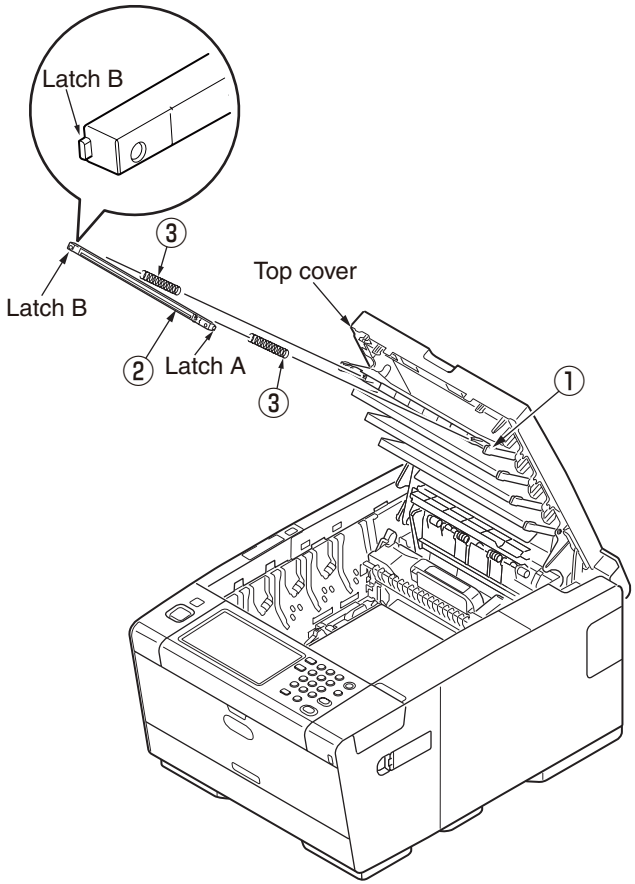
(Refer to 3.3 Adjusting the touch position of the touch panel)

4.2.10 LED assembly. and LED assembly springs

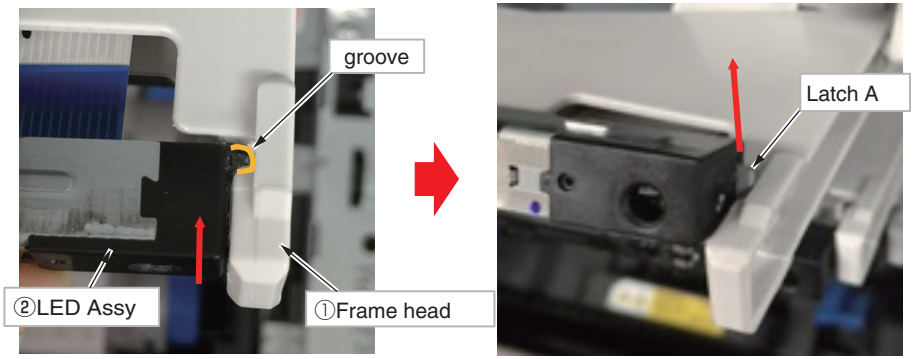
(1) Open the top cover.

(2) Remove the cable from the LED assembly. Remove the portion A through the groove of the frame head ① . and then unlatch the portion B to detach the LED assembly ② .

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

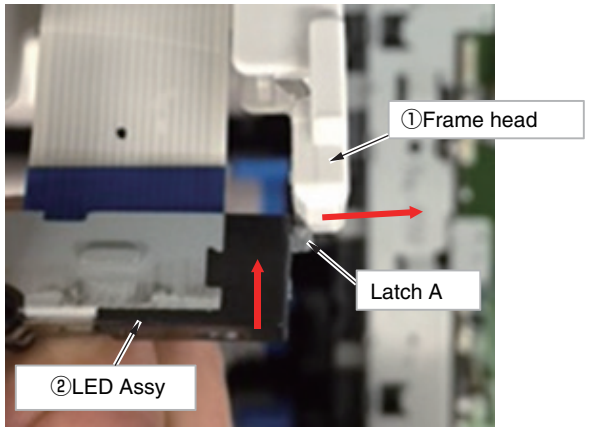


● When remove the LED Assy



● When attach the LED Assy

Note! When attach LED assembly, put the cable in the LED assembly, attach the springs and hook the portion B latch to the Frame head ① ,warp the tip of Frame head ① and put in the portion A latch.

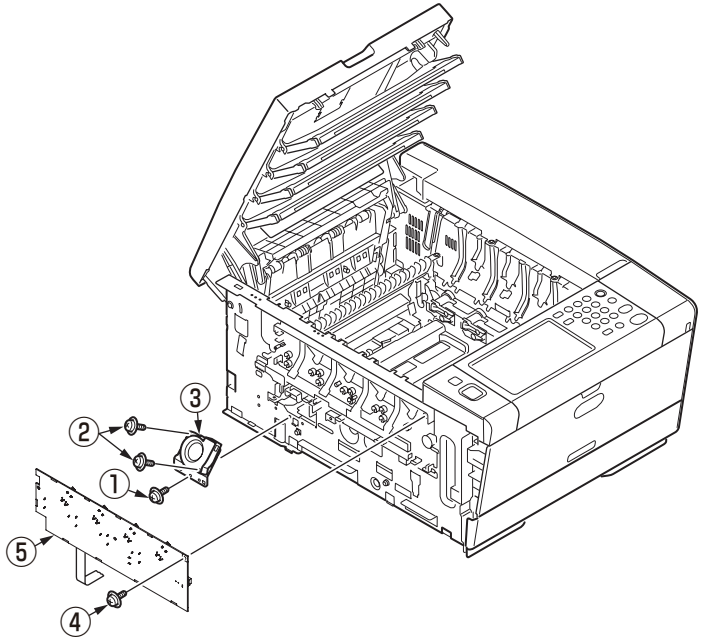


4.2.11 Image drum fan and 76E board

(1) Remove the left side cover. (See 4.2.3)

(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 76E board ⑤.



4.2.12 Top cover assembly

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

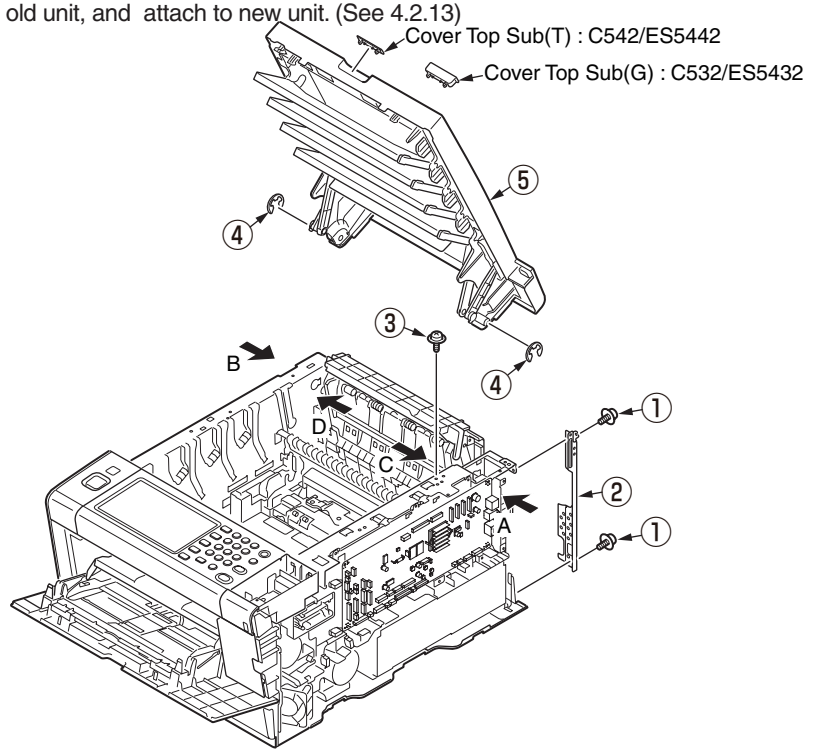
(2) Remove the LED head cables from the CU/PU board.

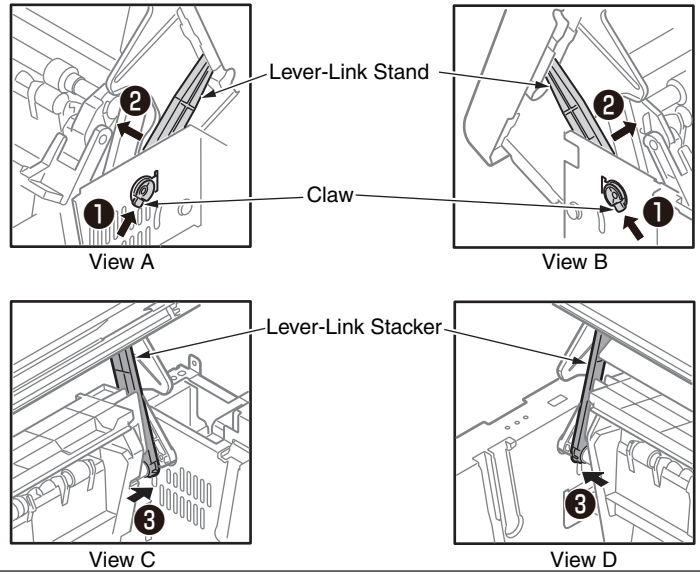
(3) Remove the two screws ① to remove the rear plate ② .

(4) Remove the Lever-Links stand (white) of right and left in the arrow ❷ direction while push the claw in the arrow ❶ direction. Remove the Lever-Links stacker (black) of right and left in the arrow ❸ direction.

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

Note! If you replace the top cover assembly, take off the cover top sub(G/T) from old unit, and attach to new unit. (See 4.2.13)





Notes in assembling :

When attach the top cover assembly, assemble according to the following procedure

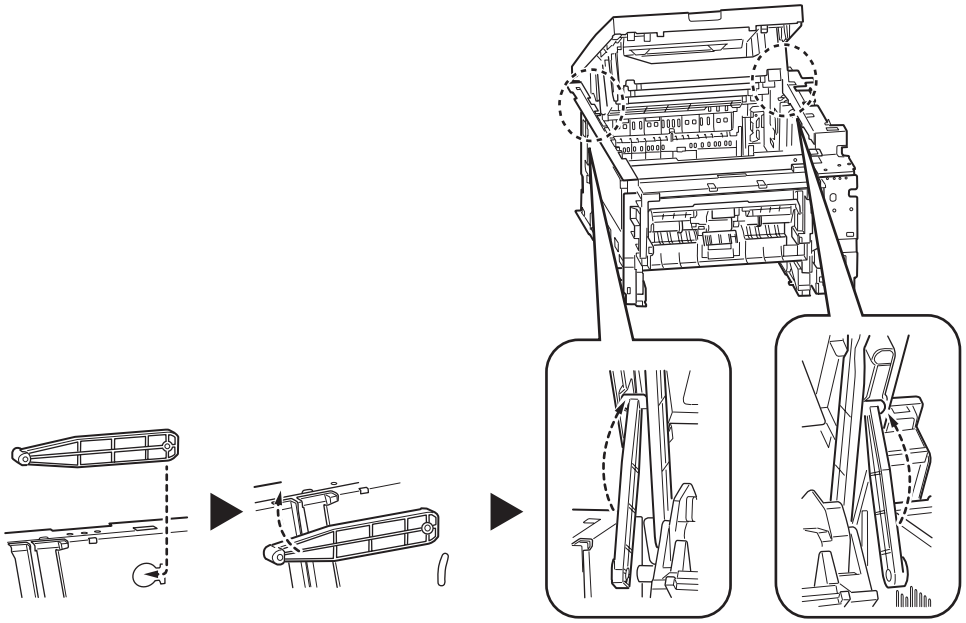
(1) Take off the two Lever-Links stand (white) form the top cover assembly.

(2) Attach the top cover assemble to the main unit.

(3) Attach the Lever-Links stand (white) to the main unit.

(4) While closing the top cover, fit the Lever-Links stand (white) of right and left into the top cover assembly.

(5) Attach the Lever-Links stacker (black) to the main unit.



4.2.13 Top cover / LED head cable assembly / Cover Top Sub(G/T)

(1) Demount the top cover assembly.

(2) Remove the two (black) screws ① and round-head screw (black) ② to detach the Lever-Link ③ .

(3) Remove the two (black) screws ④ and round-head screw (black) ⑤ to detach the Lever-Link ⑥ .

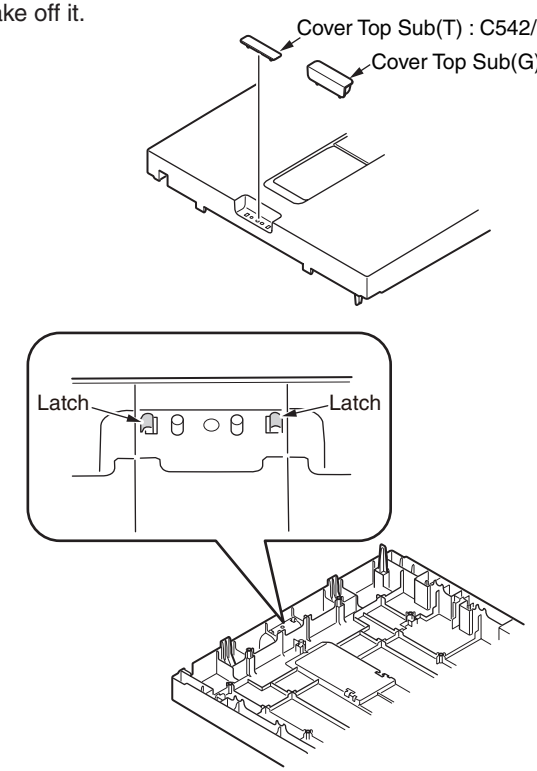
(4) Remove the screw(black) ⑦ and unlatch six positions and remove the cover top sub ⑧ .

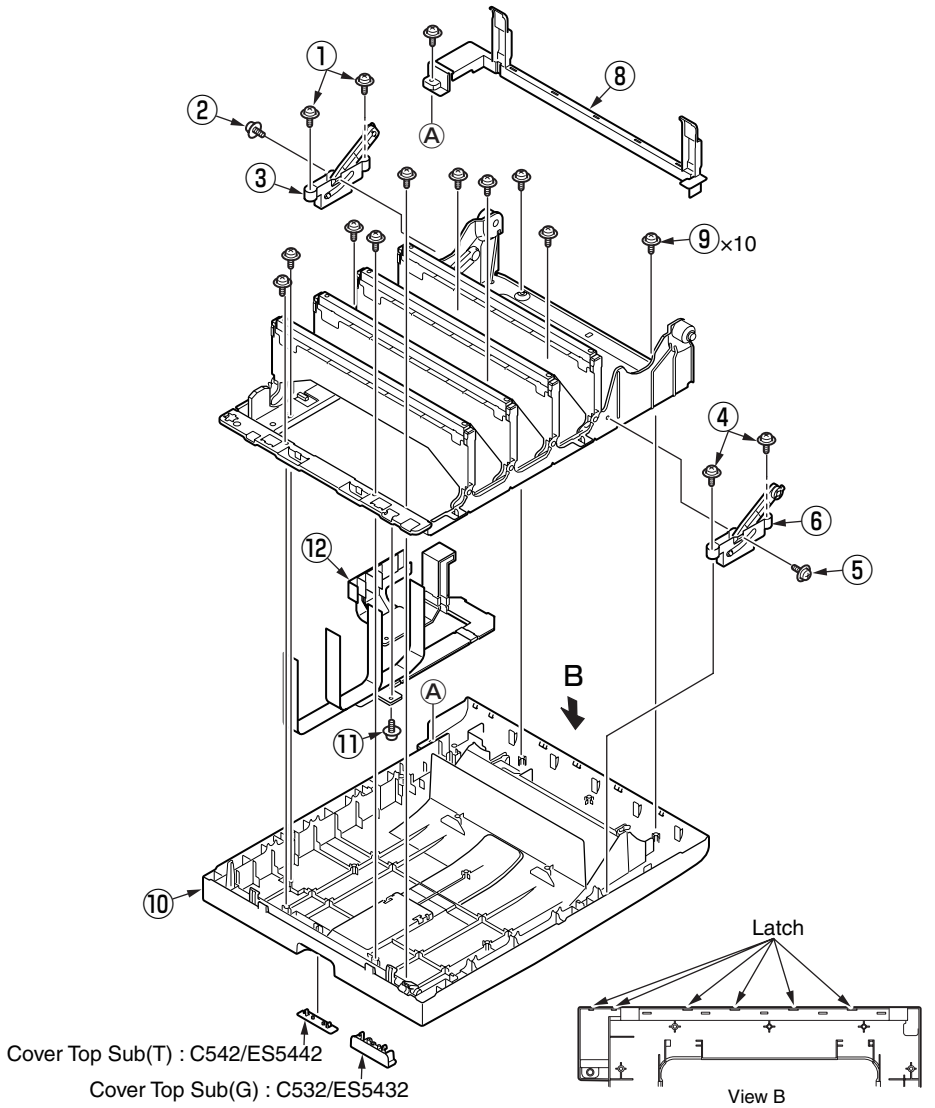
(5) Remove the ten (black) screws ⑨ to detach the top cover ⑩ .

(6) Remove the round-head screw (black) ⑪ to detach the LED head cable assembly ⑫ .

How to remove the Cover Top sub (G/T) :

After remove the top cover from the top cover assemble, unlatch cover-top sub(G/T), and take off it.



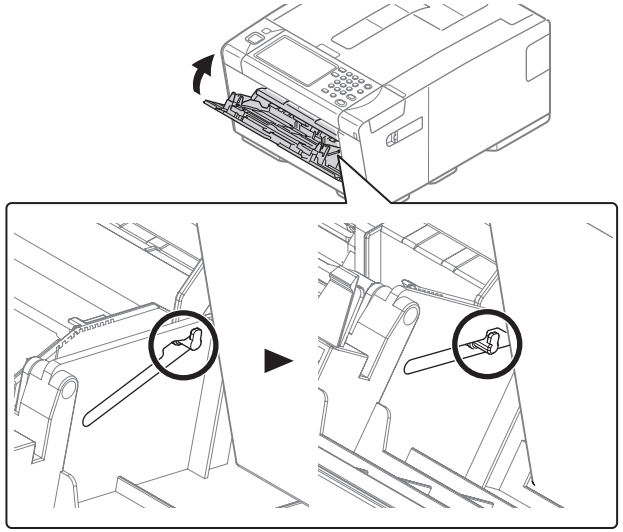


4.2.14 MPT assembly

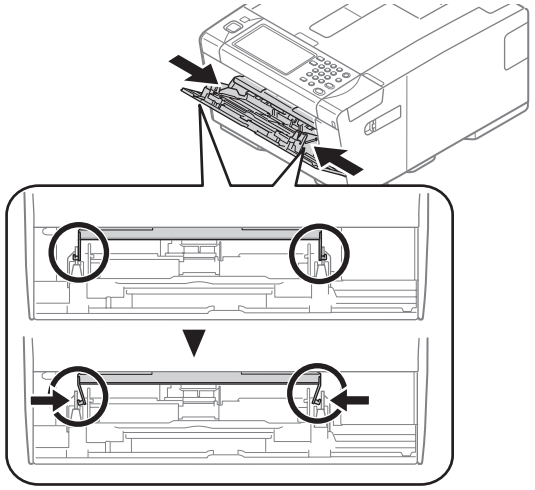
(1) Remove the cassette assembly.

(2) Open the MPT assembly ① .

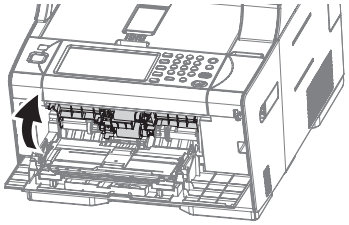
(3) To the position that the arm can separate from the lock of right and left, to close MPT lightly.



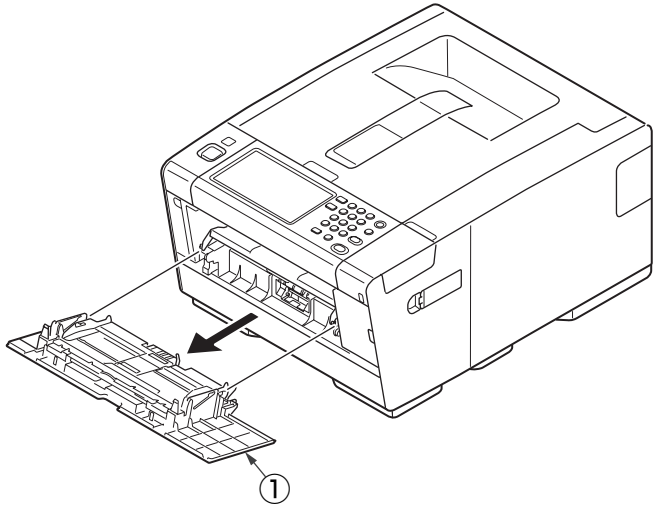
(4) Push the arm of right and left inward and unlock the claw of the roller guide.



(5) Open the paper-set cover until reached to the main body.



(6) Pull the direction of the arrow and remove the MPT assembly ① to unlatch two tabs.



4.2.15 Belt motor / Fuser motor / Gear Assy.-CL35Z25

(1) Remove the right side cover, left side cover, shield plate (CU), low voltage power supply board and rear cover. (See.4.2.3, 4.2.4, 4.2.5, 4.2.7)

(2) Remove the two screws (silver) ① and remove the rear plate ② .

(3) Remove the screw (silver) ③ and remove the screw (FG) ④ and remove the AC inlet ⑤ and core holder (AC) ⑥ .

(4) Remove the film power board ⑦ .

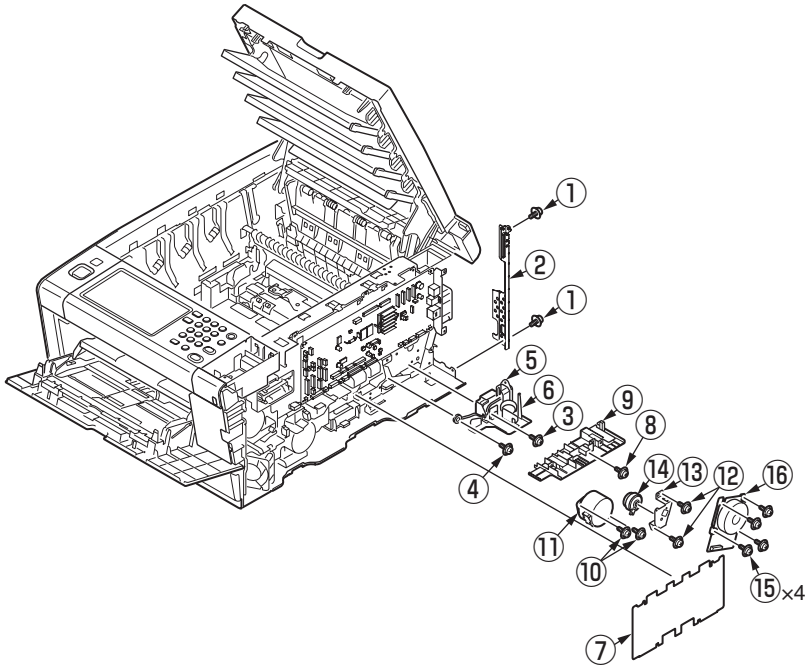
(5) Remove the screw (silver) ⑧ and remove the cable guide ⑨ .

(6) Remove the two screws (silver) ⑩ and remove the belt motor ⑪ .

(7) Remove the two screws (silver) ⑫ and remove the clutch plate ⑬ .

(8) Remove the gear Assy Assy.-CL35Z25 ⑭ .

(9) Remove the four screws (silver) ⑮ and remove the fuser motor ⑯ .



4.2.16 Front fan, hopping motor, rear fan, image drum motor

(1) Remove the right side cover, the left side cover, the rear cover, the rear plate, the shield plate (CU) and MPT Assy. (See 4.2.14, 4.2.15)

(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 .

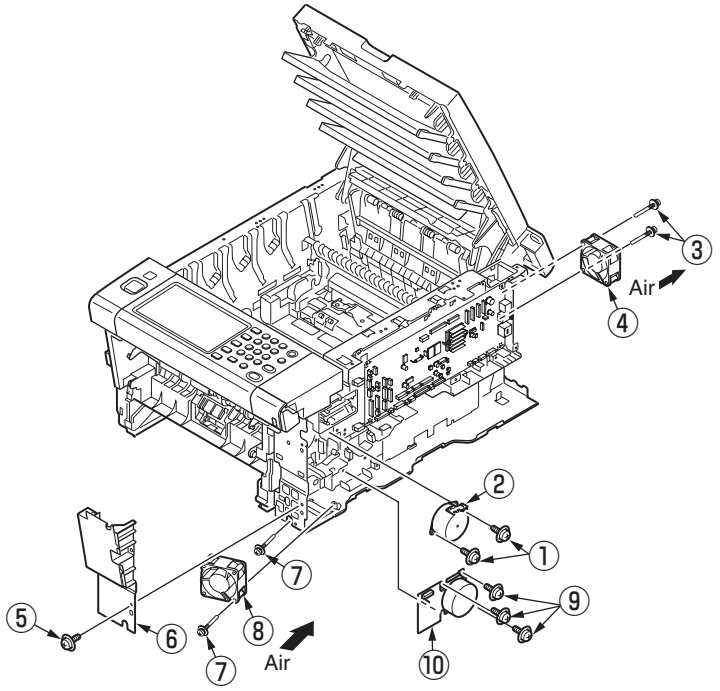
(4) Remove the (silver-colored) screw ⑤ and unlatch the frame-MPT-side ⑥ to remove it.

(5) Remove the two (silver-colored) screws ⑦ to detach the front fan ⑧ .

(6) Remove the three (silver-colored) screws ⑨ to detach the image drum motor ⑩ .

Note!

- Observe the orientation to attach the fan ④ , ⑧ .
- While removing or installing FAN ④ , ⑧ do not press impeller of the FAN.
  In case of the impeller unfastened by mistake, do not reuse it and install a new FAN.



4.2.17 High-voltage power supply board

(1) Remove the right side cover, shield plate(CU), CU/PU board, cable guide and the low voltage power supply. (See 4.2.5)

(2) Remove the screw (black) ① to remove the holder WLAN ② .

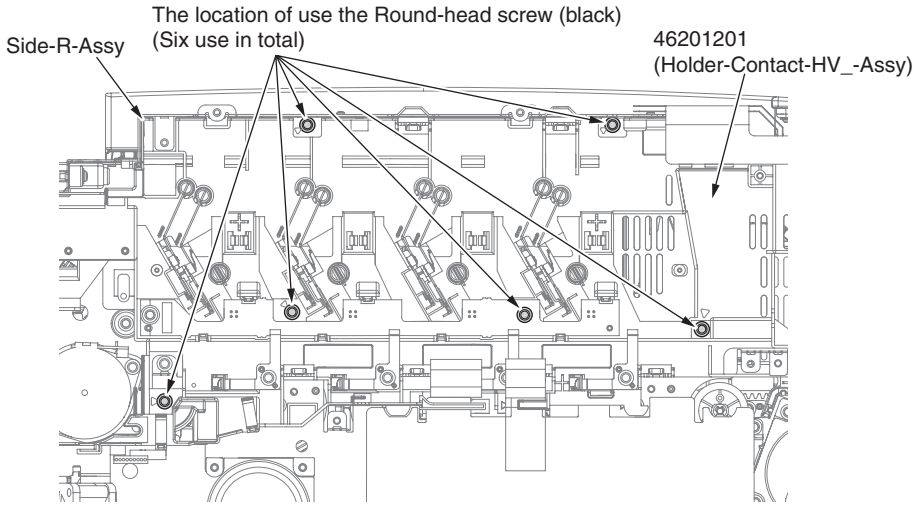
(3) Remove the five screws (silver) ③ to remove the plate board (A) ④ .

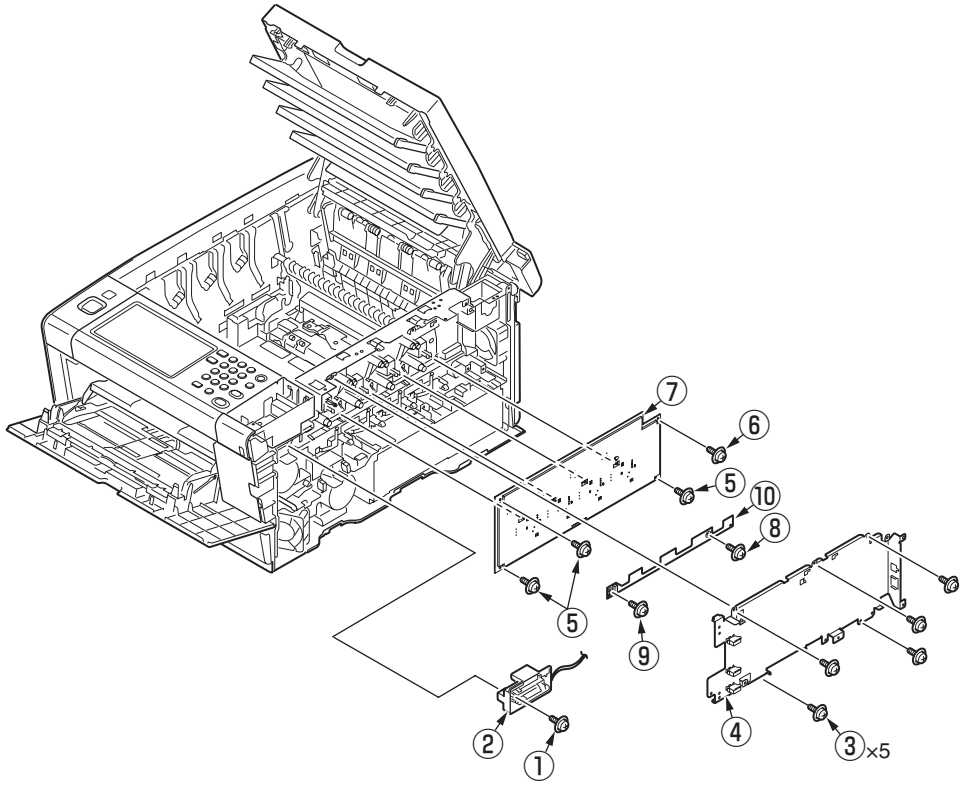
(4) Remove the three screws (silver) ⑤ and remove the screw (black) ⑥ .

(5) Unlatch the claws to detach the high-voltage power supply board ⑦ .

(6) Remove the screw ⑧ (Round-head screw (black)) and screw (black) ⑨ to remove the toner low board ⑩ .

*** The following figure is location of use the Round-head screw (black)**





4.2.18 Guide-ejection assembly, fuser connector assembly and color-registration assembly

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

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

(3) Detach the guide-ejection assembly ① .

(4) Remove the ID FAN. (See 4.2.11)

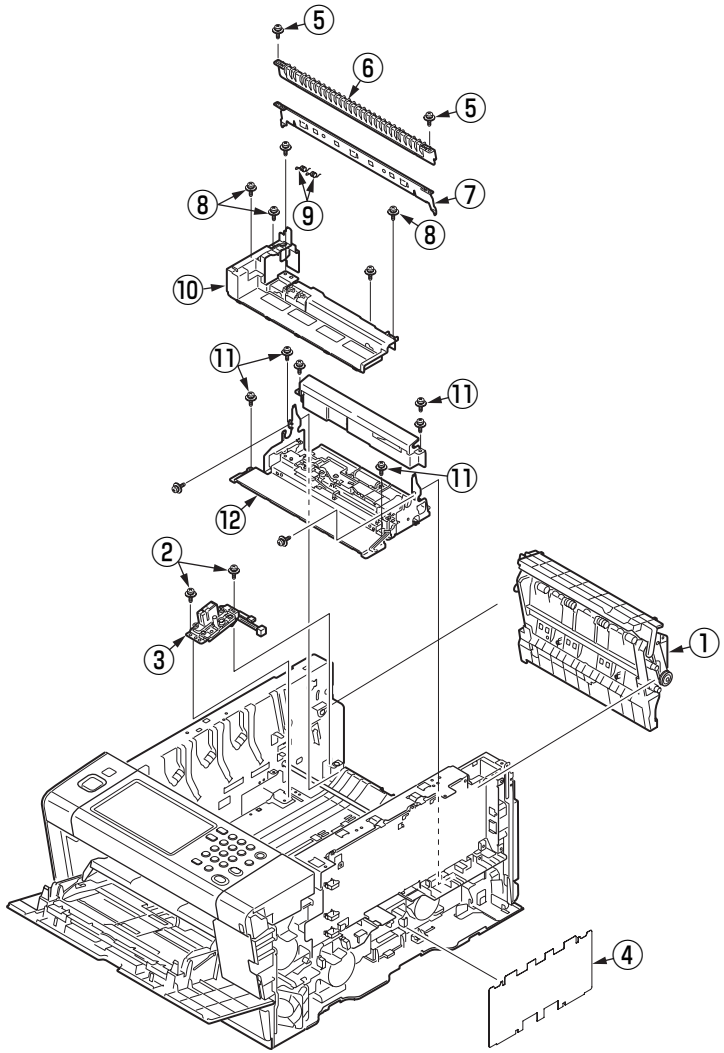
(5) Remove the two (silver-colored) screws ② to detach the fuser connector assembly ③ .

(6) Remove the film-power board ④ .

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

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

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



4.2.19 Frame-MPT assembly and feeder assembly

(1) Remove the cassette, left side cover, the right side cover, the hopping motor, the plate shield (CU) and the operator panel assembly.

(2) Remove the clutch, sensor cables and USB connector of the CU/PU board.

(3) Remove the screw(silver) ① and unlatch the frame-MPT-side ② to remove it.

(4) Remove the cover OP (sub) ③ and lever lock ④ , spring ⑤ and cover IC card ⑥ .

(5) Remove the screw (silver) ⑦ to remove the switch Assy-interlock ⑧ .

(6) Remove the four screws (silver) ⑨ and remove the frame front ⑩ .

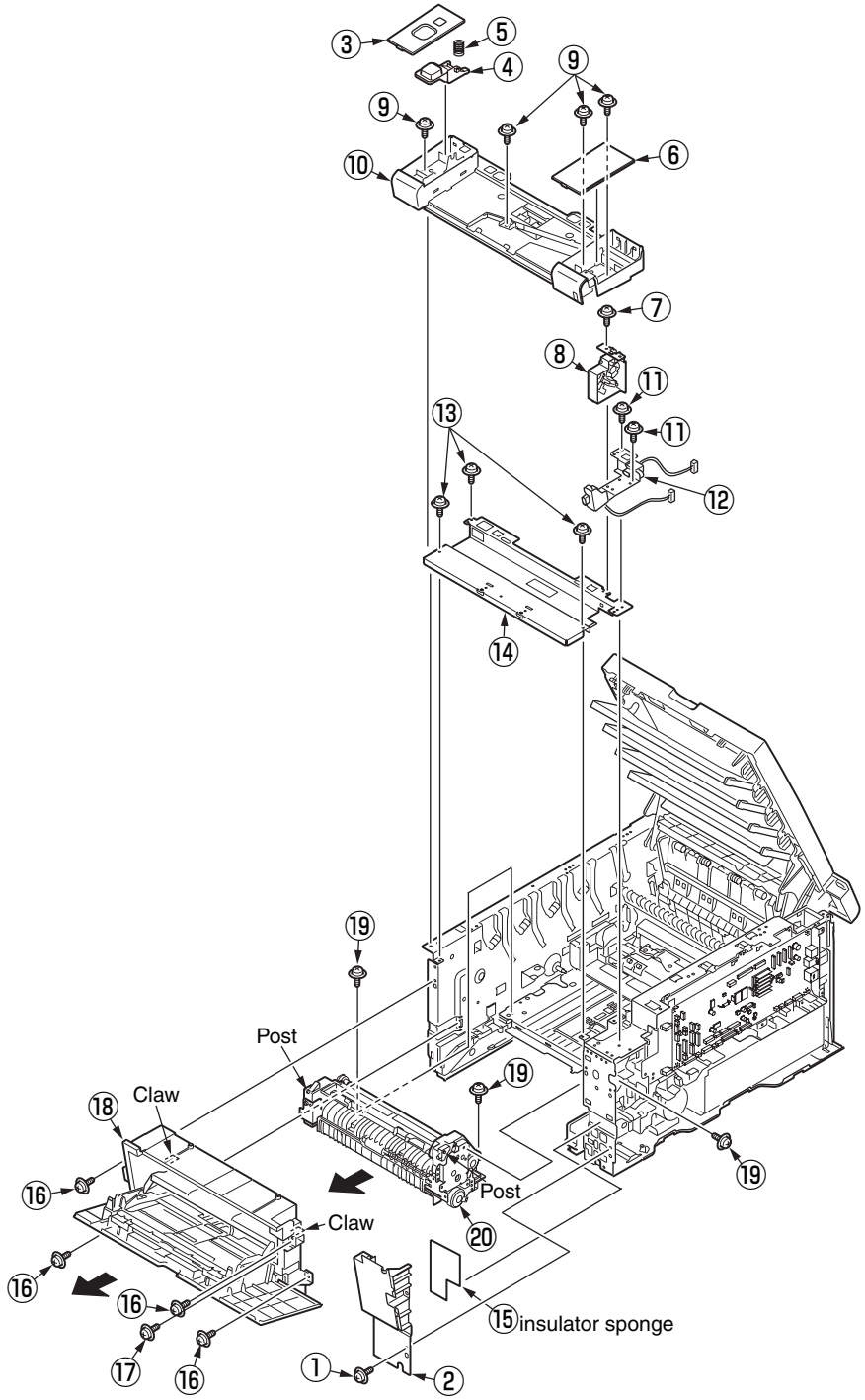
(7) Remove two screws (silver) ⑪ and remove plate USB ⑫ .

(8) Remove three screws (silver) ⑬ and remove plate front ⑭ .

(9) If the insulator sponge ⑮ is attached on the main unit, remove it. And remove the four screws (silver) ⑯ and screw (black) ⑰ and unlatch the two portions to detach the frame-MPT assembly ⑱ .

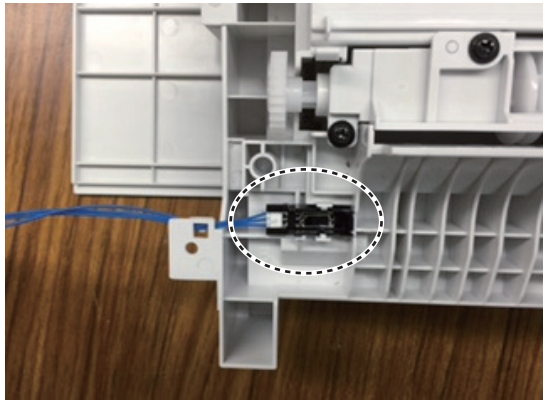
(10) Remove the cable from the sensor of frame-MPT assembly.

(11) Remove the three screws (silver) ⑲ and two posts to detach the feeder assembly ⑳ to arrow direction.



Notes in assembling :

Connect the cable to the sensor of MPT-Assy before attaching MPT-Assy.

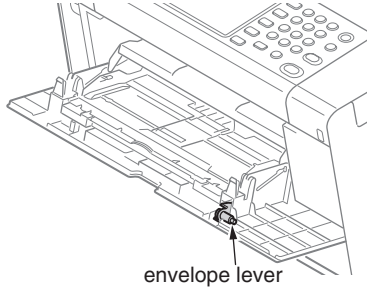


Notes in changing the Plate front, Plate USB :

Attach the next part after fixing the screw of the place with the " △ " mark when assembling the Plate front, Plate USB.

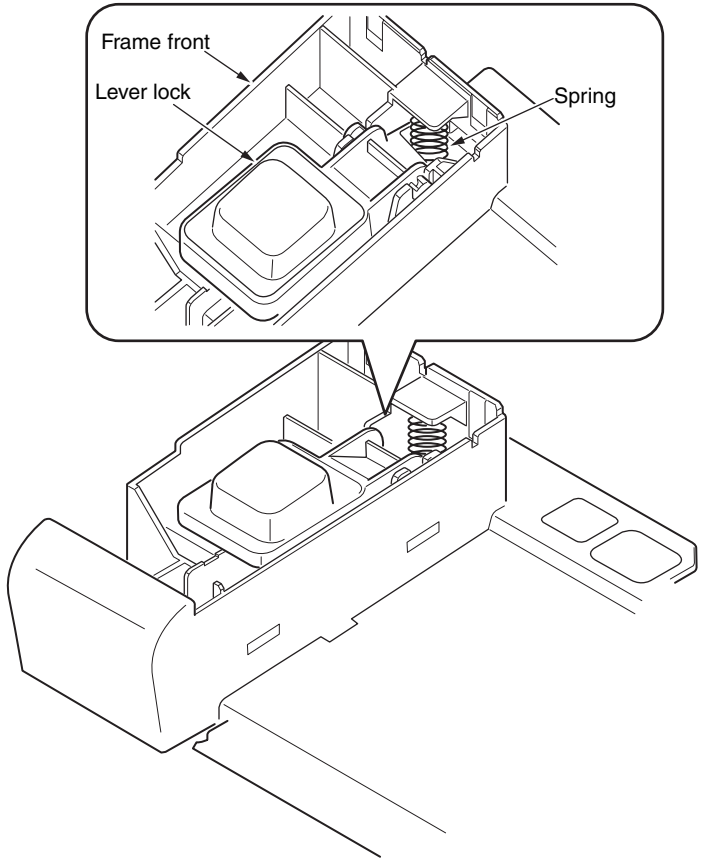
Notes in changing the Frame-MPT Assy :

When changed Frame-MPT Assy, remove the black envelope lever which original MPT Assy had in new MPT Assy.



Notes in changing the Lever lock, Spring :

Assemble a lever lock and the frame front first, and insert a spring between the lever lock and the frame front when assembling the Lever lock and the Spring.



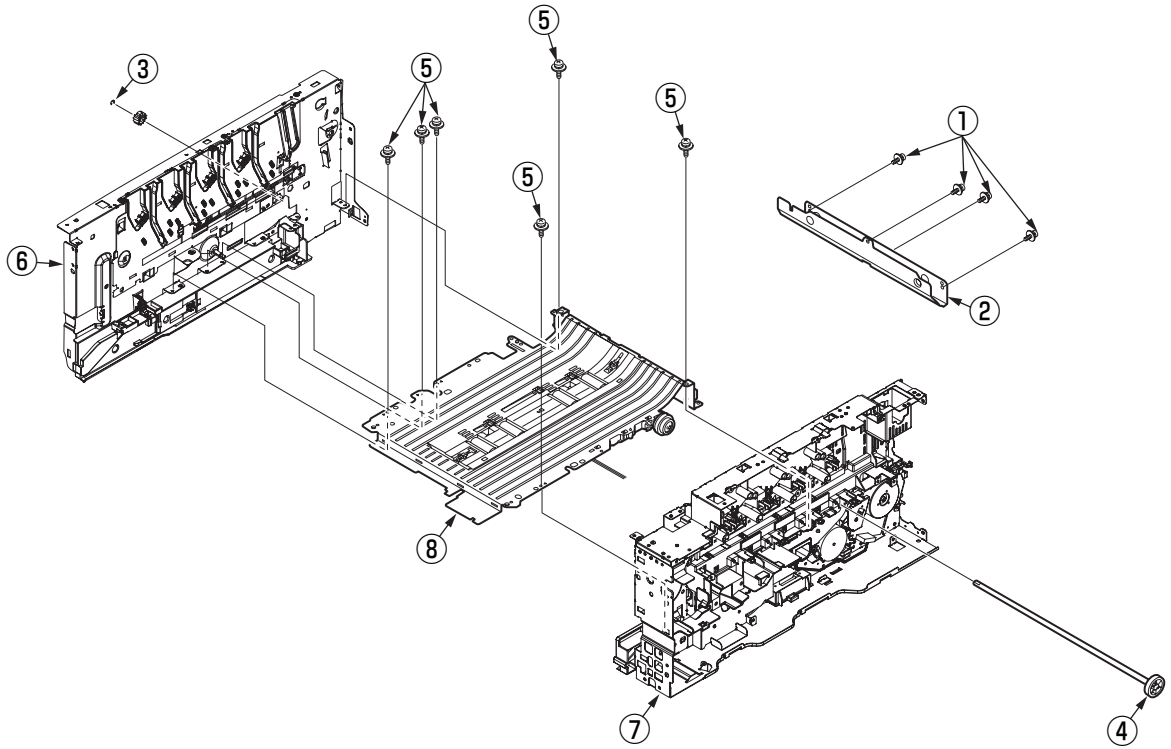
4.2.20 Side-L assembly, side-R assembly and base assembly

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

(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 .

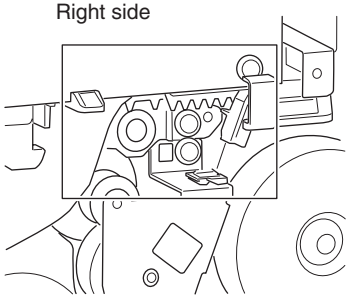
(4) Remove the six (silver-colored) screws ⑤ to detach the side-L assembly ⑥ , the side-R assembly ⑦ and the base assembly ⑧ .



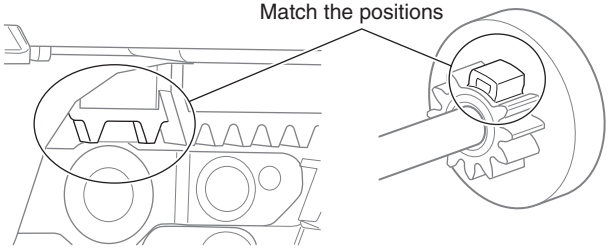
Notes in assembling:

Match phase of Shaft-Liftup-Assy.

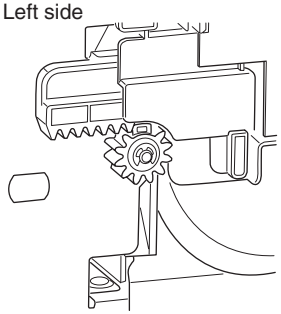
Right side



Match the positions



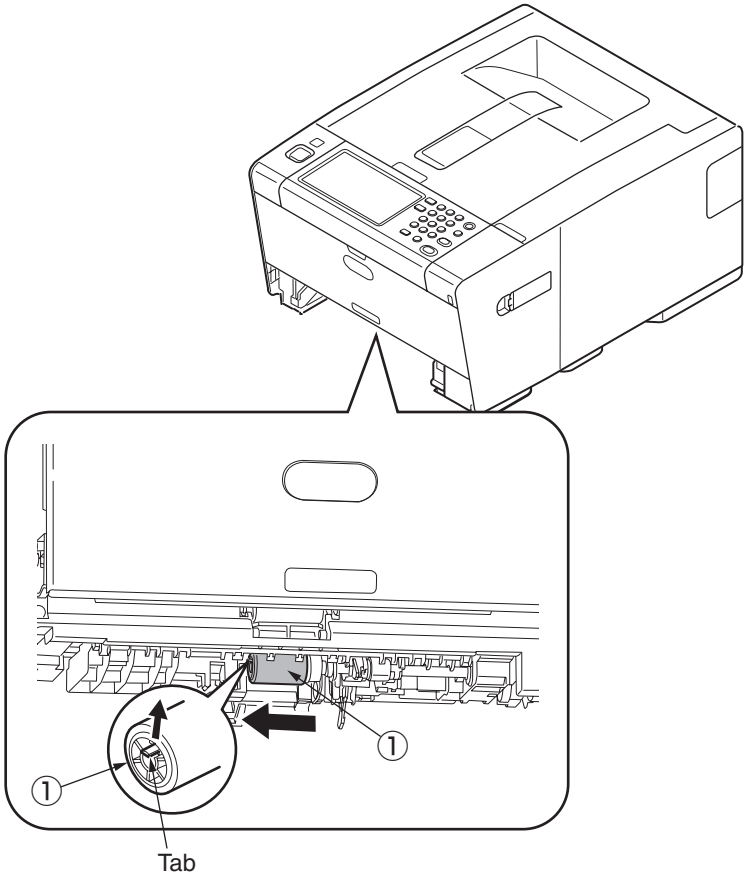
Left side



4.2.21 Feed rollers

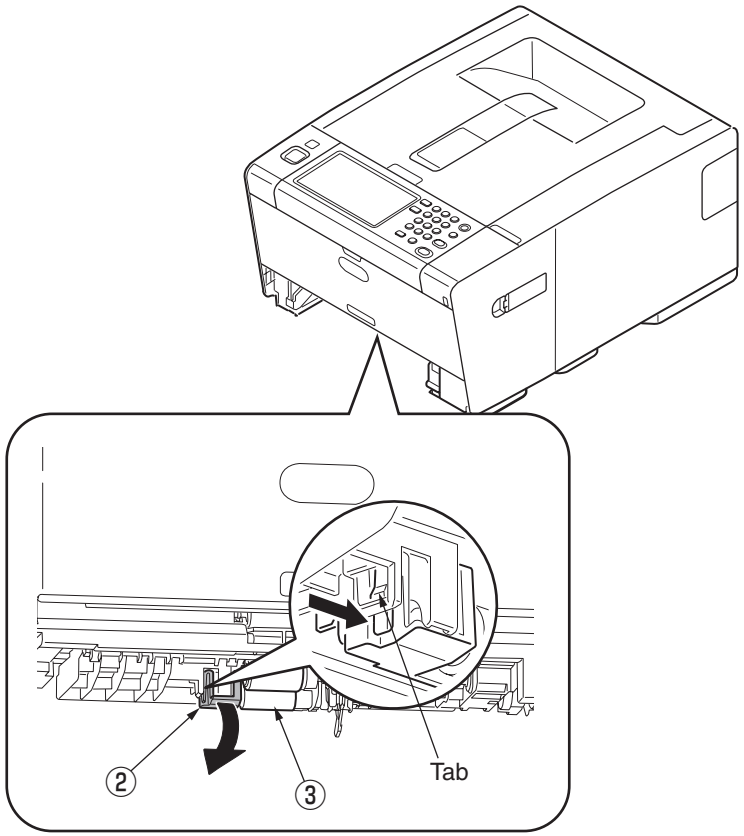
(1) Remove the cassette.

(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.

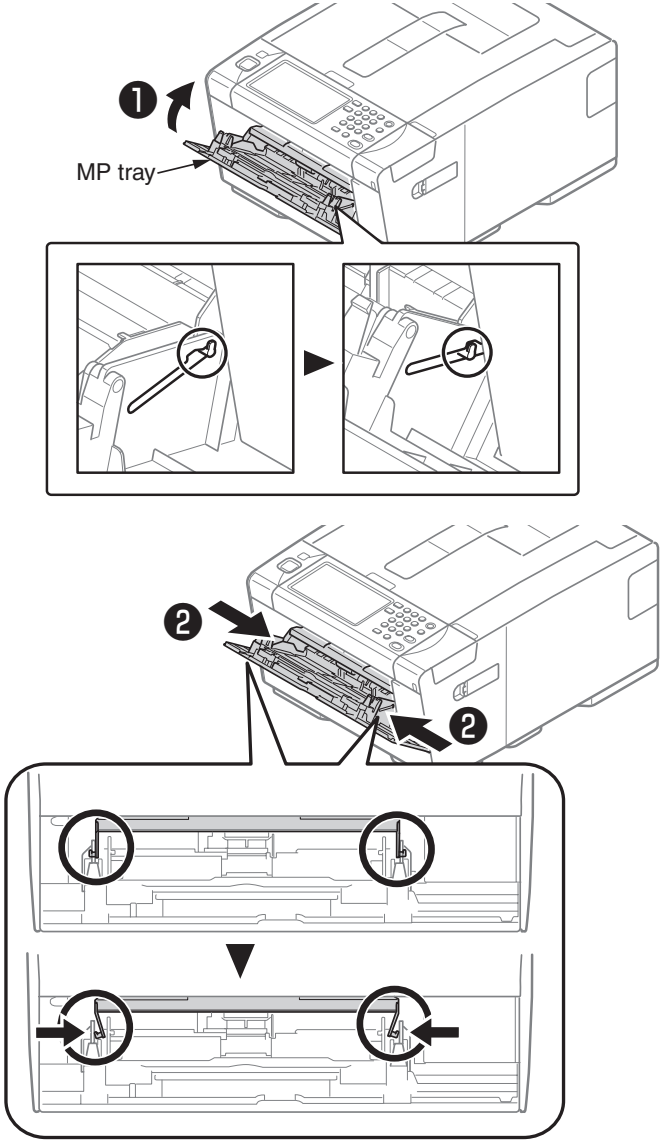
(4) Remove the rear paper feed roller ③ .



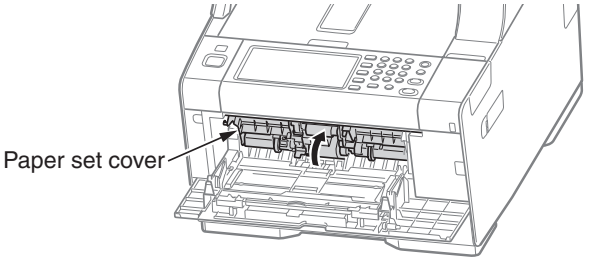
4.2.22 MPT feed roller

(1) Open the MP tray.

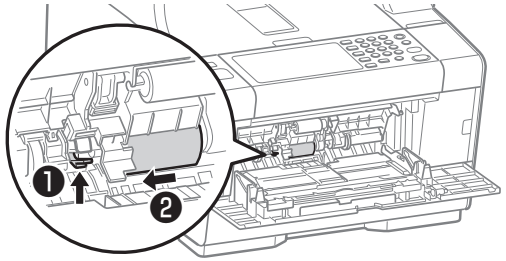
(2) Push the arm of right and left inward while lifting MP tray lightly and take off the claw.



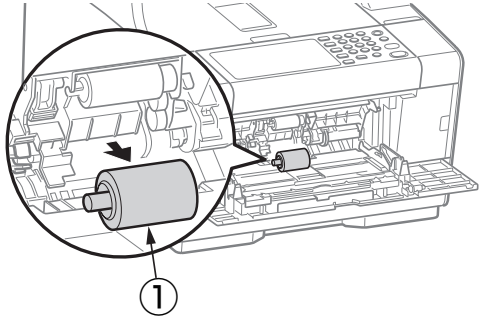
(3) Open the paper-set cover until reached to the main body.



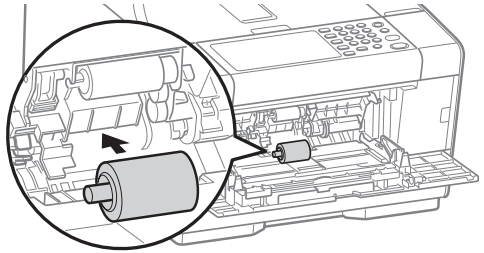
(4) Push the claw of the separator roller cover to the top and slide a paper feed roller to the left.



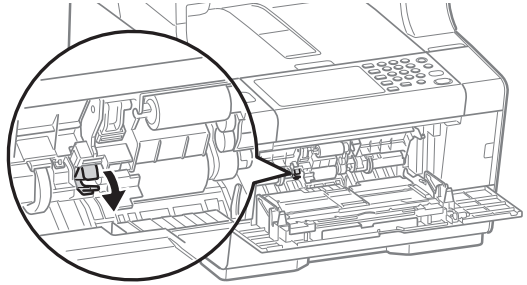
(5) Push the center of the MP tray and remove paper feed roller ① .



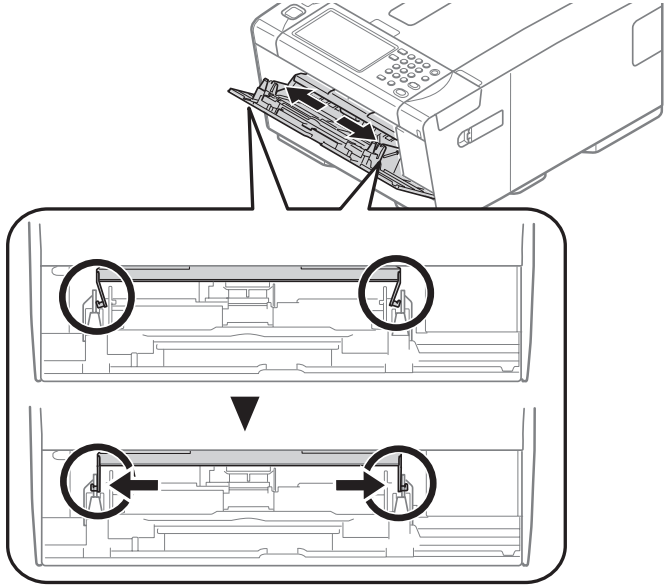
(6) Set the new paper feed roller with pushing the center of the MP tray.



(7) Close the separator roller cover.



(8) Lift MP tray lightly with pushing the arm of right and left of the MP tray inward and hook the claw.



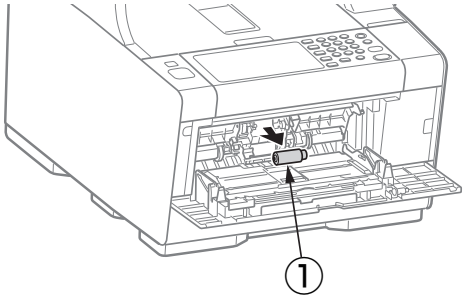
4.2.23 MPT pickup roller

(1) Open the MP tray.

(2) Push the arm of right and left inward while lifting MP tray lightly and take off the claw.

(3) Open the paper-set cover until reached to the main body. (See 4.2.22)

(4) Remove the pickup roller ① .



4.3 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-30LP: Molykote EM-30LP (part number 44498501)

HP-300: Molykote HP-300 (part number YC4083-6258)

PM: Pan motor oil 10W-40 or ZOA 10W-30 (part number YC4044-5338)

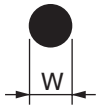
GE-334C: FLOIL GE-334C (part number 41823301)

SF-133: HANARL SF-133 (part number 42983201)

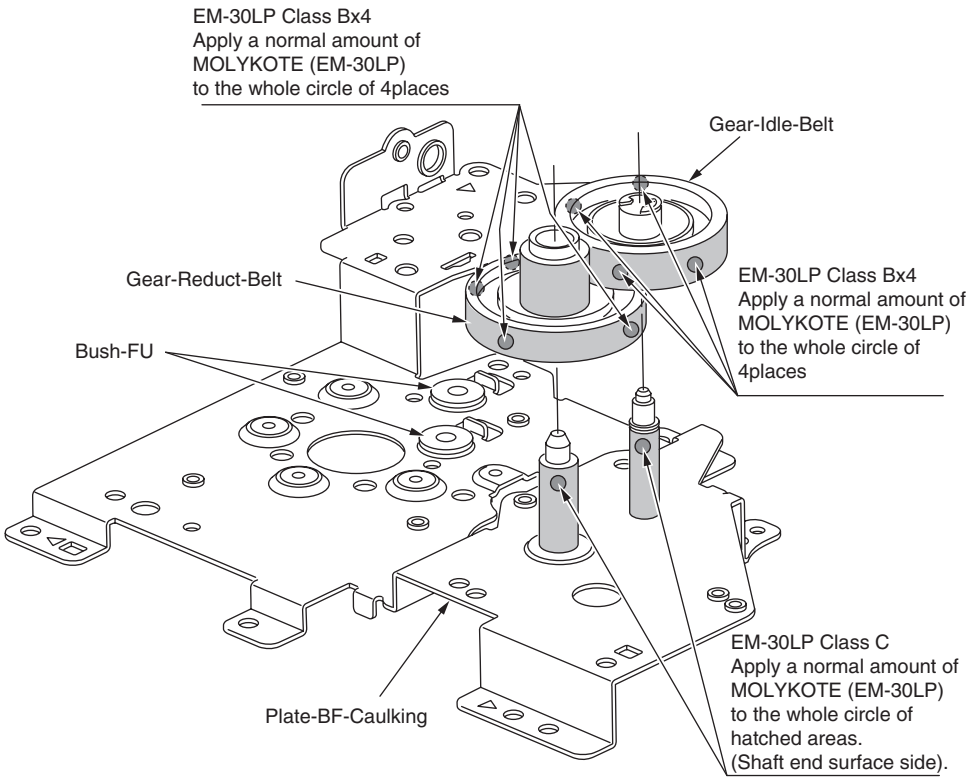
Tetra: C-9310 or C-5005

(2) Grease boundary samples

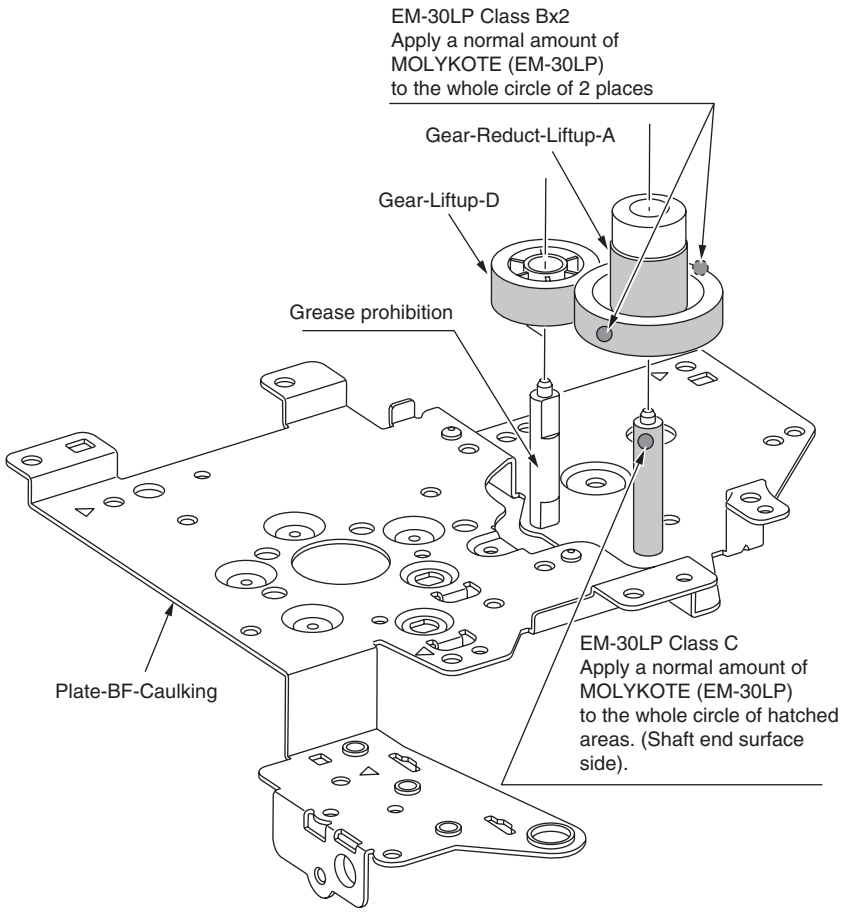
Class	S	A	B	C	D	E	F
Amount applied (cc)	0.0005	0.003	0.005	0.01	0.03	0.05	0.1
W(mm)	1.24	2.25	2.67	3.37	4.86	5.76	7.26
Sample	•	●	●	●	●	●	●



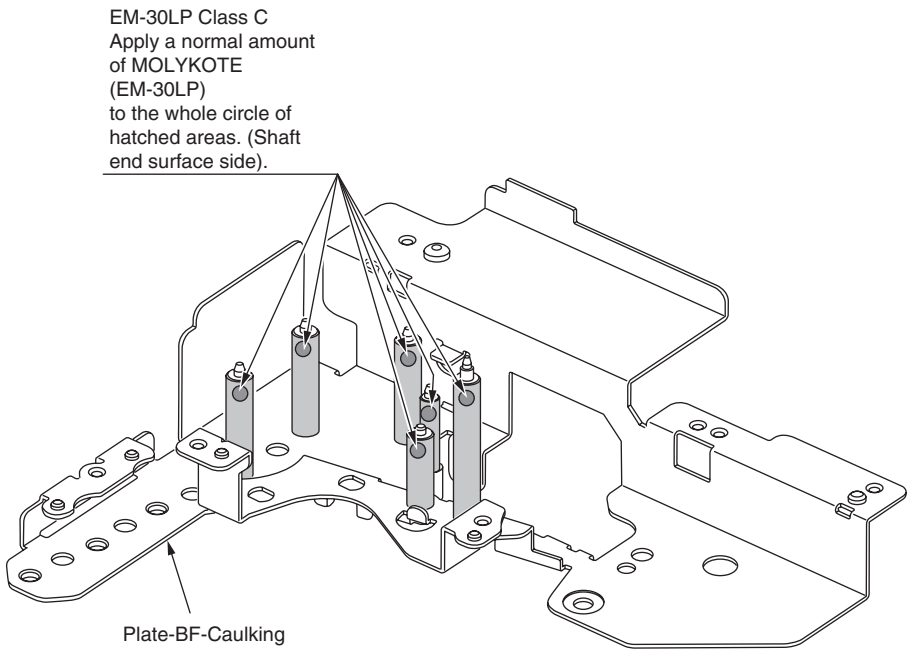
① -1 Side-R Assy.



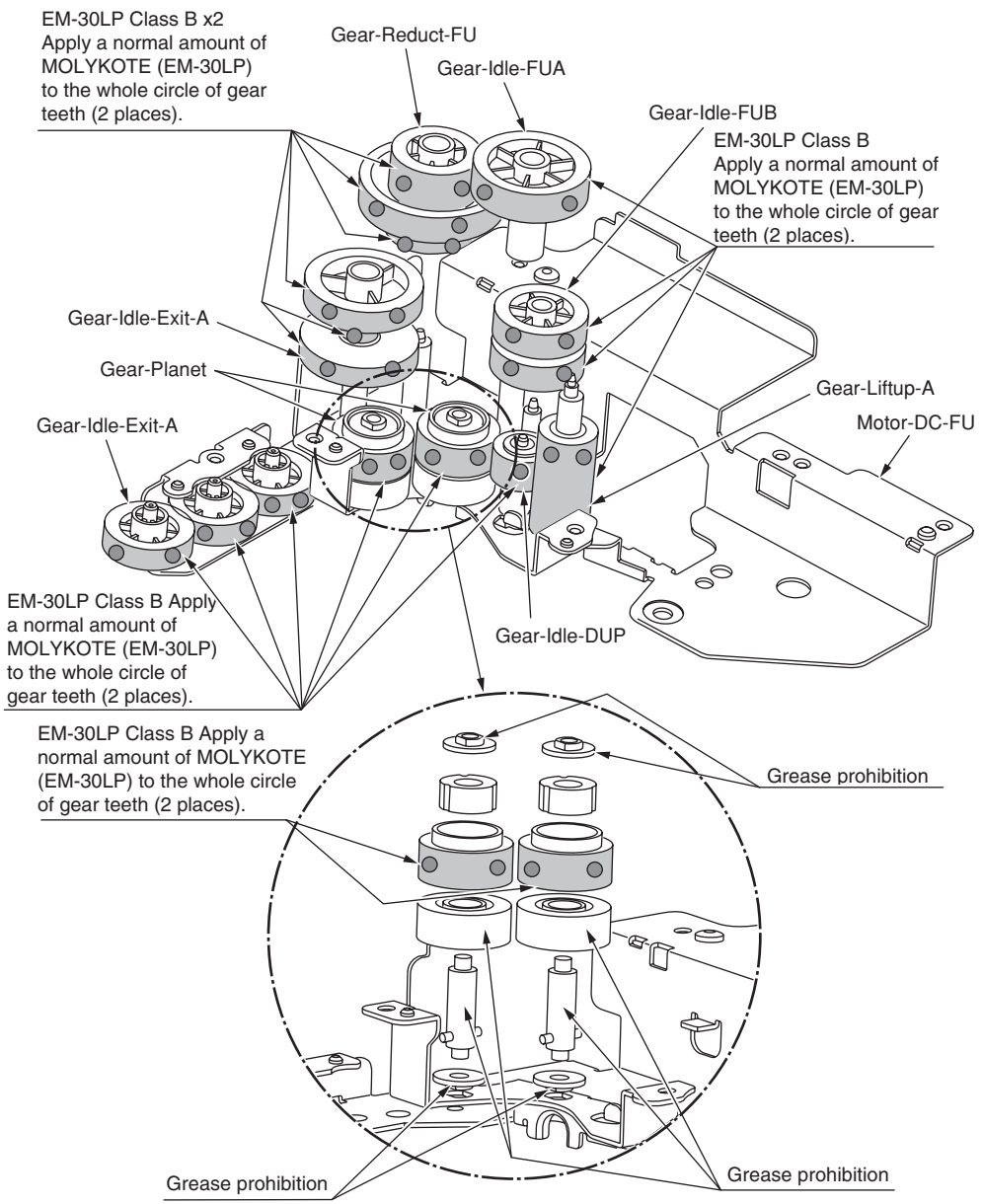
① -2 Side-R Assy.



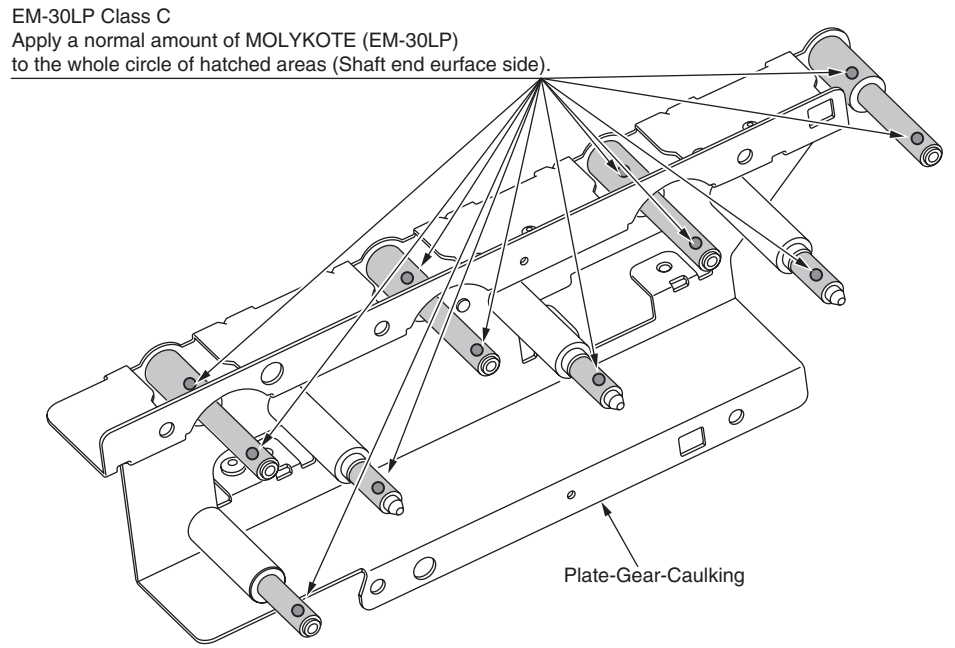
① -3 Side-R Assy.

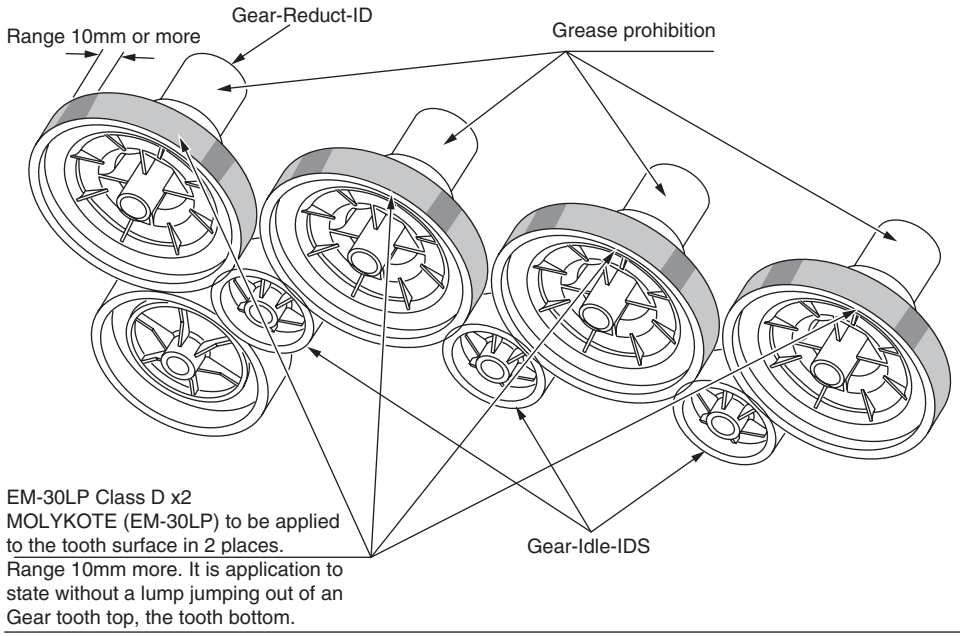


① -4 Side-R Assy.

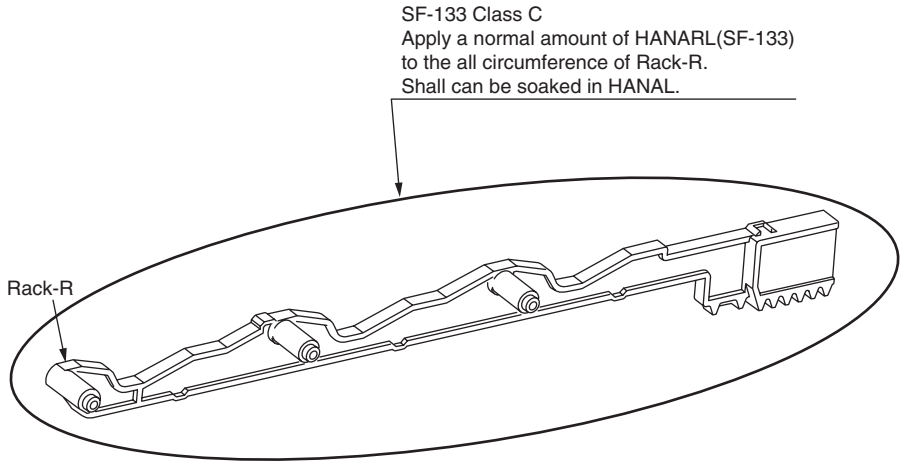


① -5 44452301PA Side-R Assy.

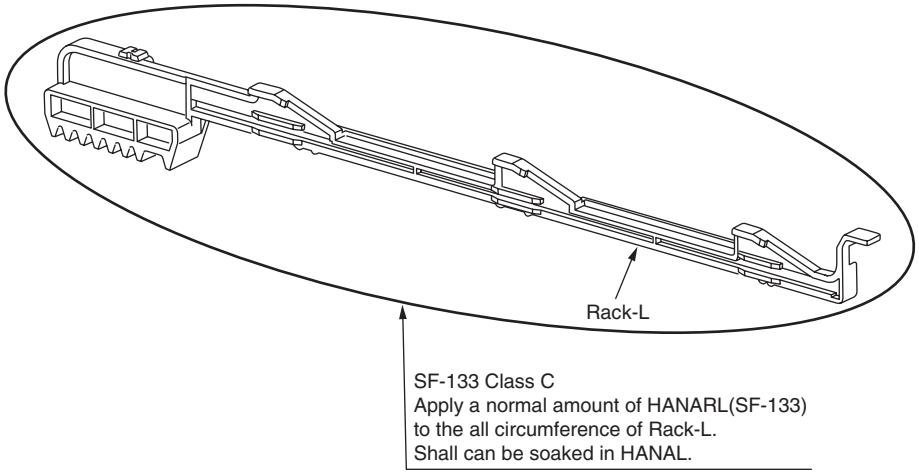




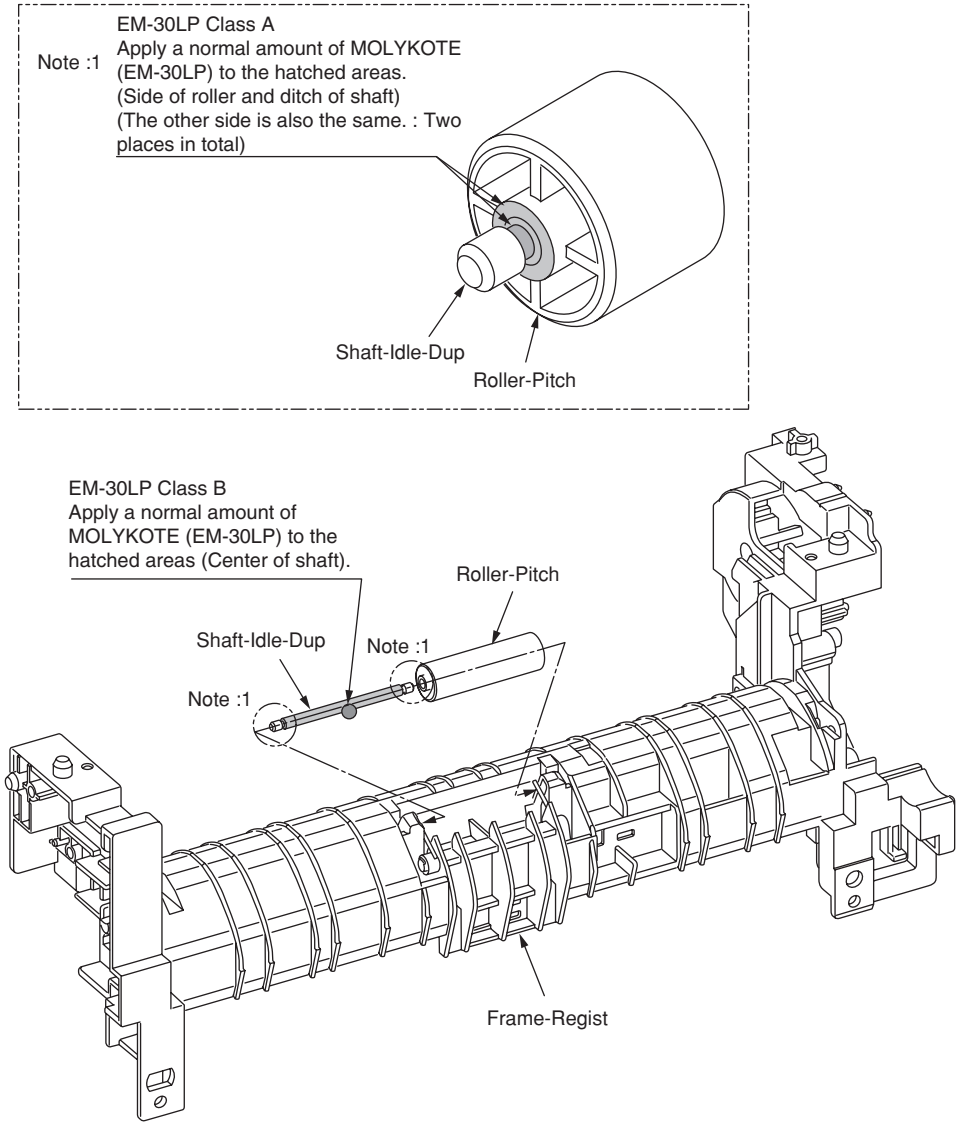
① -6 44452301PA Side-R Assy.



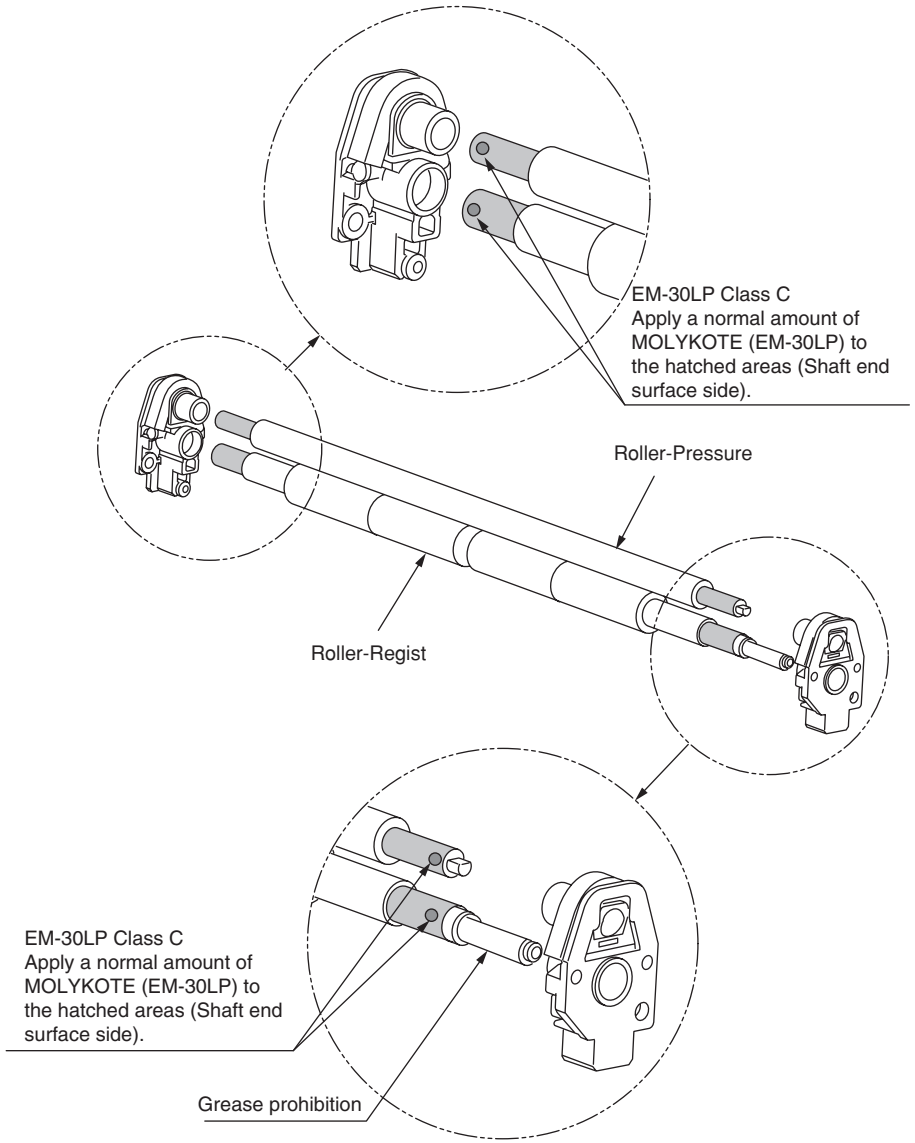
② Side-L Assy.



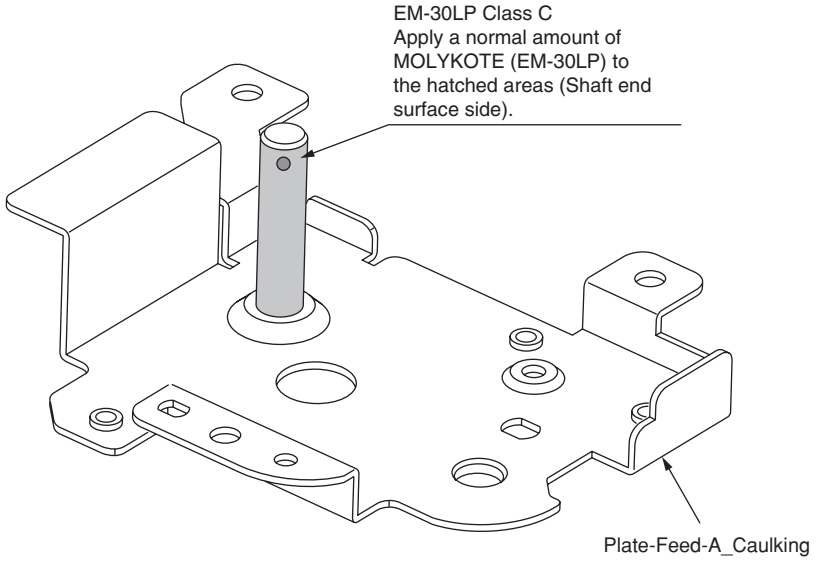
③ -1 Front Assy.-Reg/Hop



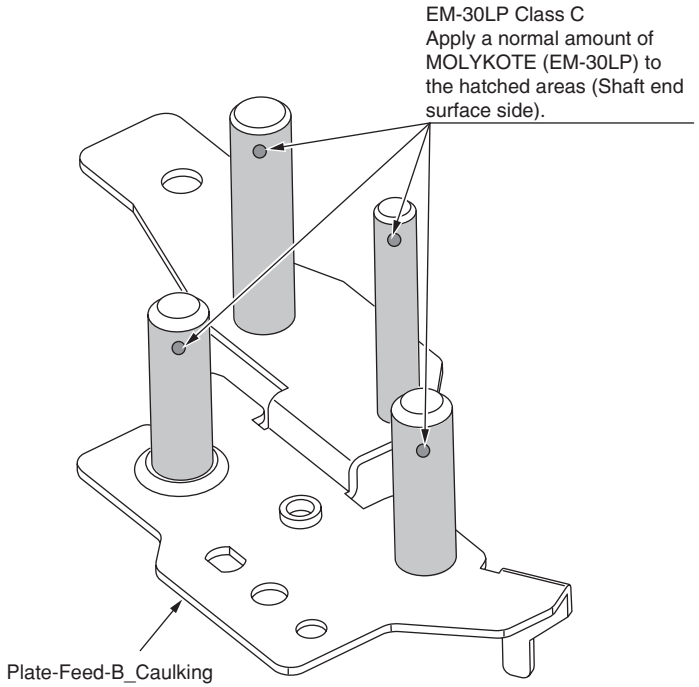
③ -2 Front Assy.-Reg/Hop



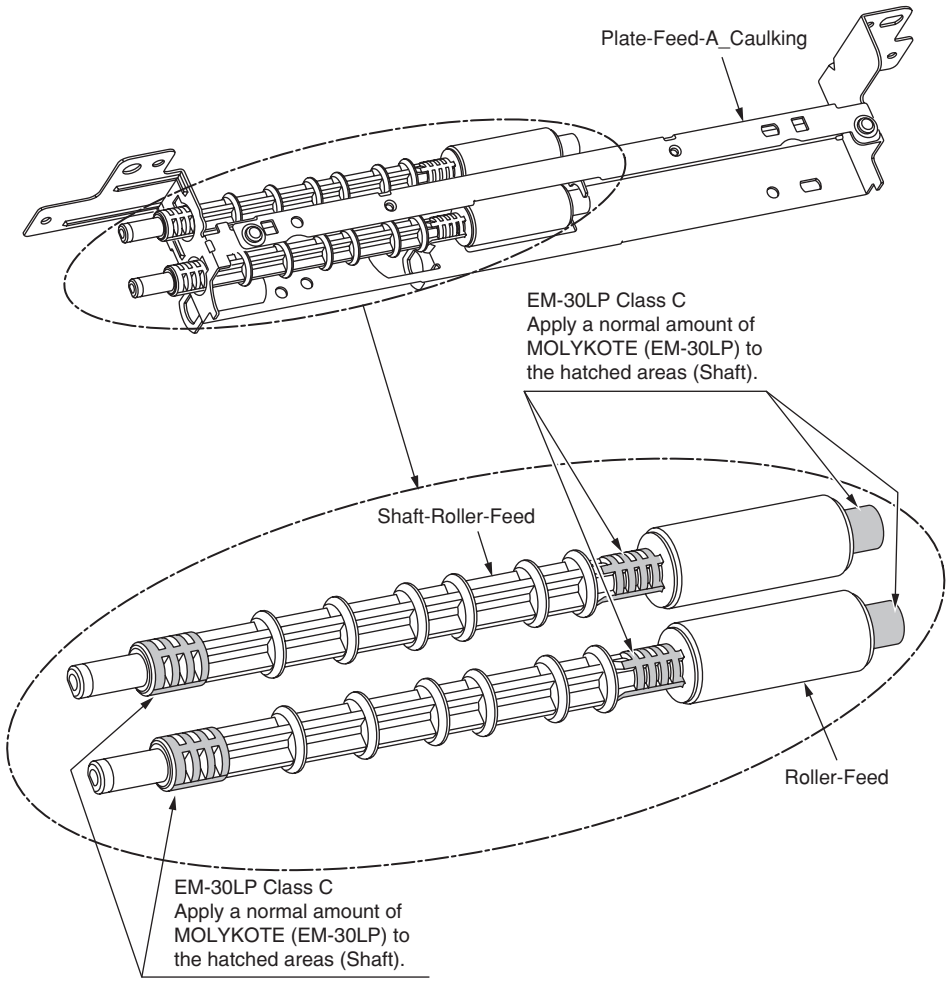
③ -3 Front Assy.-Reg/Hop



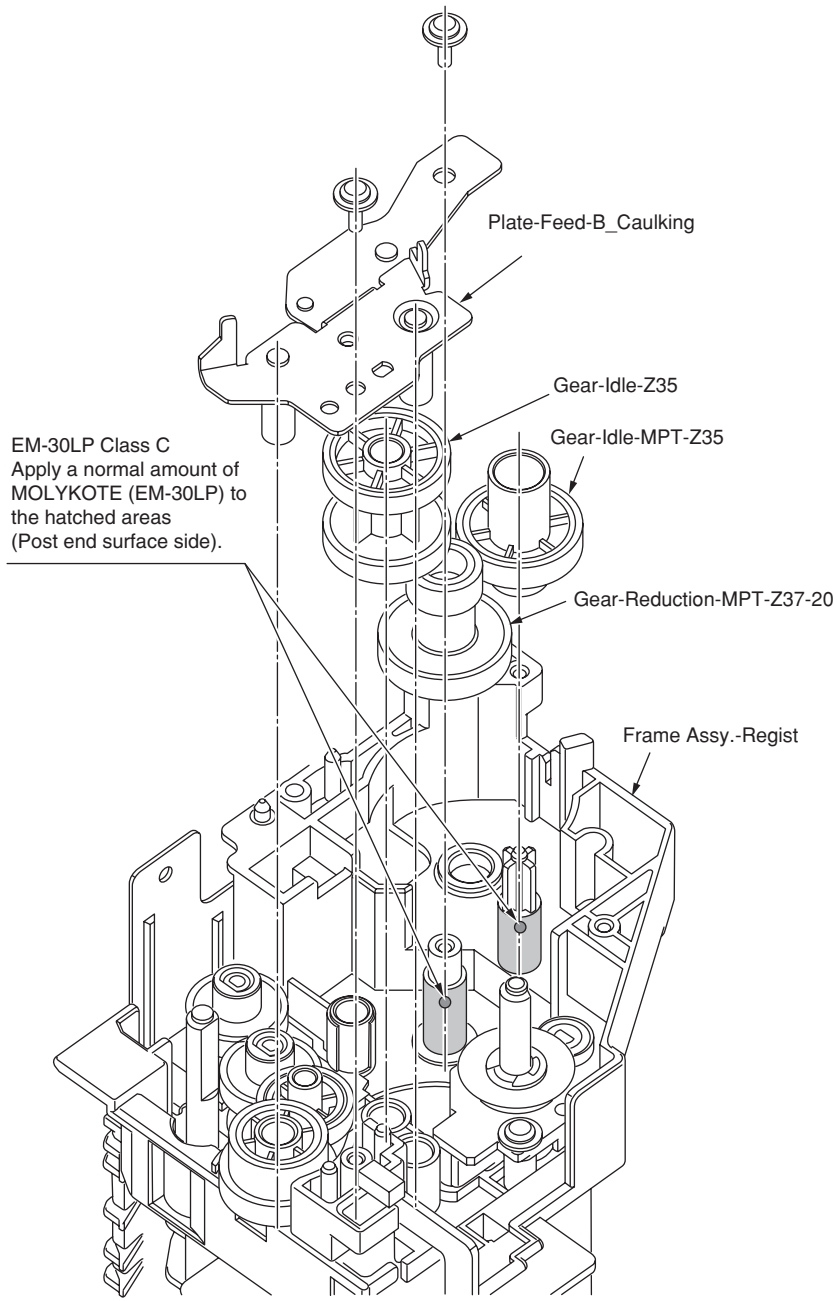
③ -4 Front Assy.-Reg/Hop



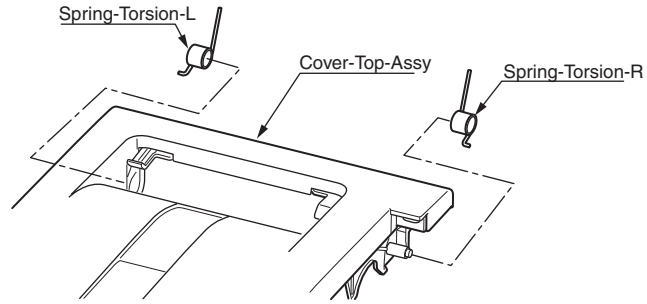
③ -5 Front Assy.-Reg/Hop



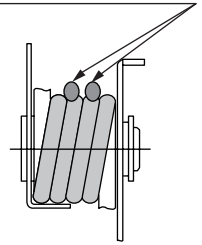
③ -6 Front Assy.-Reg/Hop



④ -1 Printer Unit-PX760

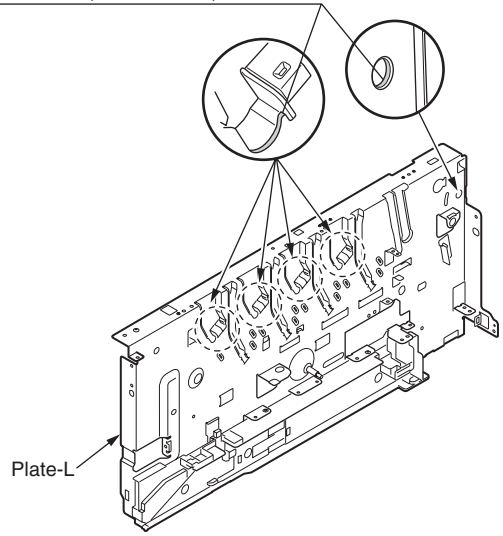


Panmotoroil Class C
Apply a normal amount of Panmotoroil to the portion of the slot of solid coiling of this torsion-spring using a brush.
(2 places)(At both sides)



④ -2 Printer Unit-PX760

EM-30LP Class C
Apply a normal amount of MOLYKOTE (EM-30LP) to the end face of Plate-L.(hatched areas)

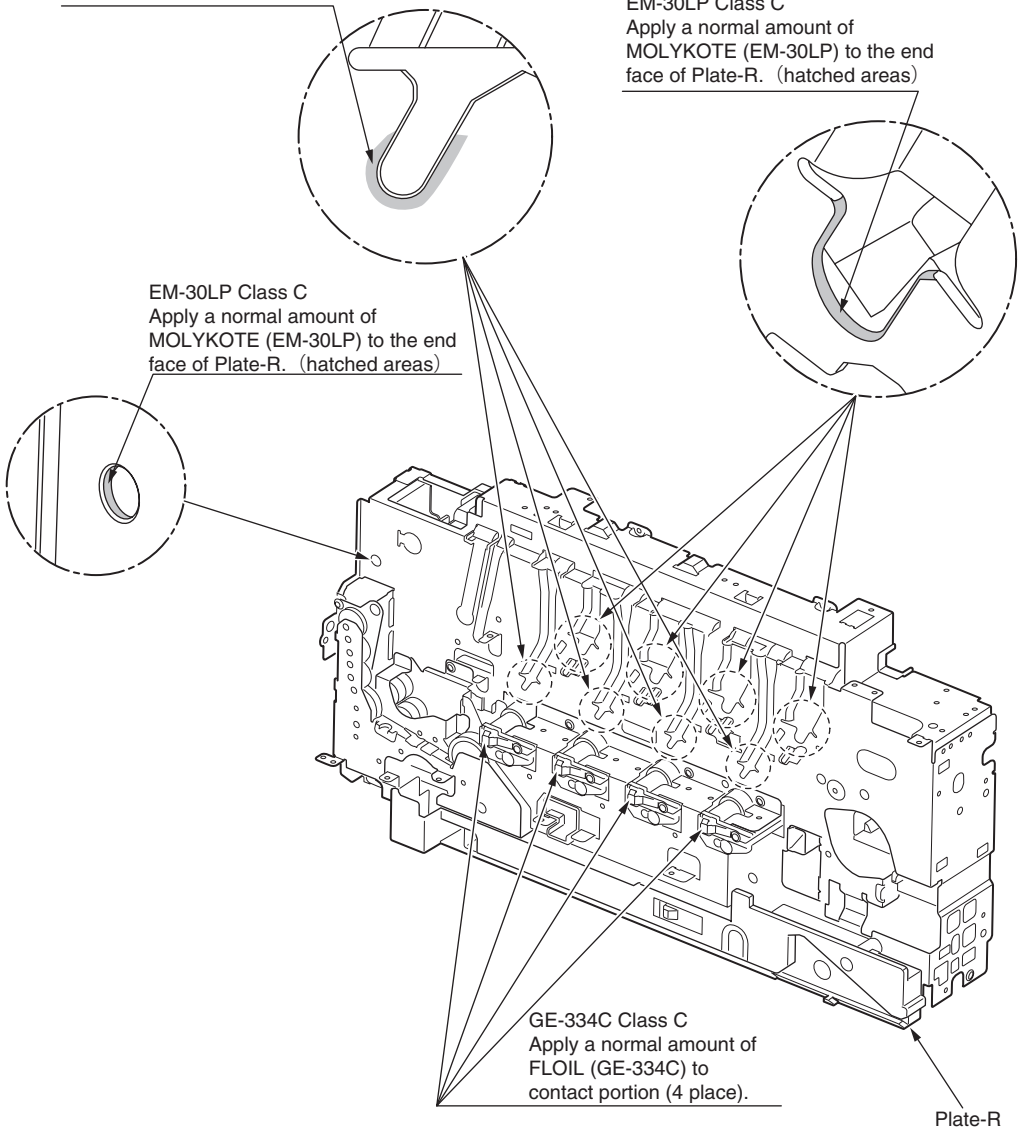


④ -3 Printer Unit-PX760

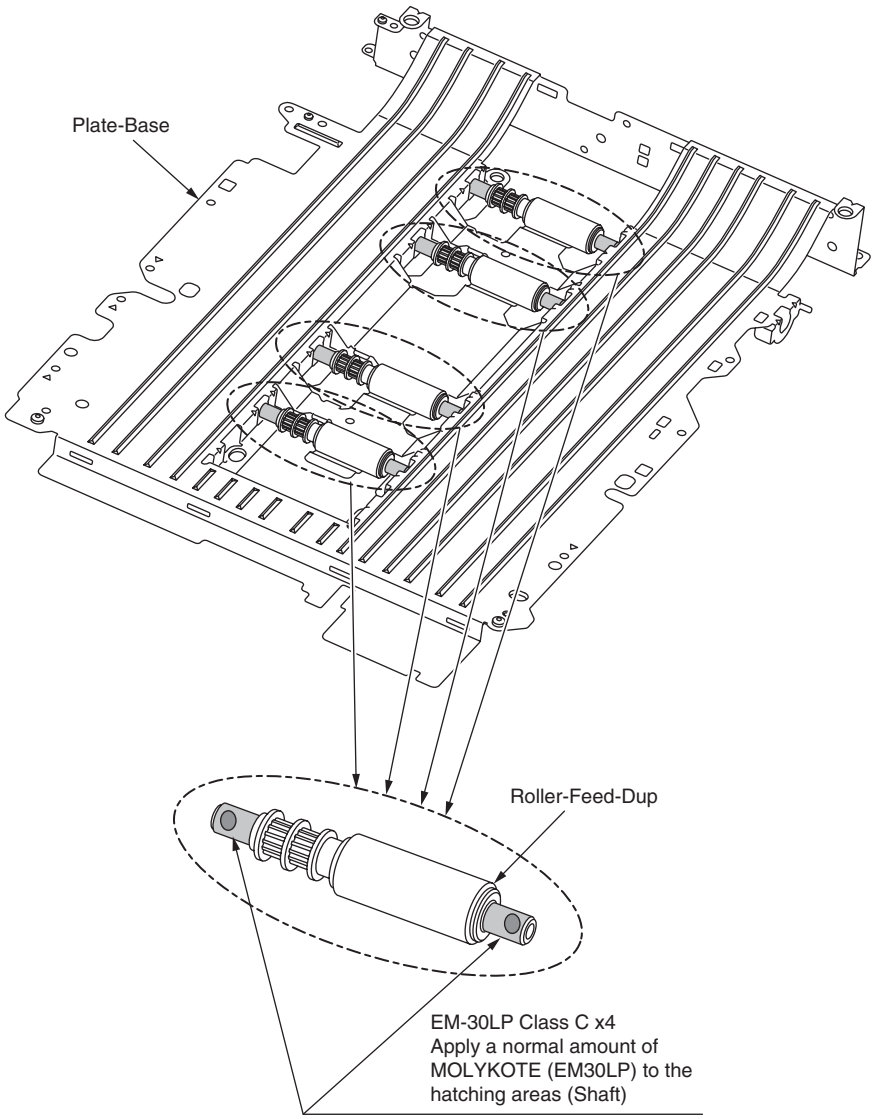
EM-30LP Class C
Apply a normal amount of MOLYKOTE (EM-30LP) to the sliding surface with Drum Shaft.（hatched areas）

EM-30LP Class C
Apply a normal amount of MOLYKOTE (EM-30LP) to the end face of Plate-R.（hatched areas）

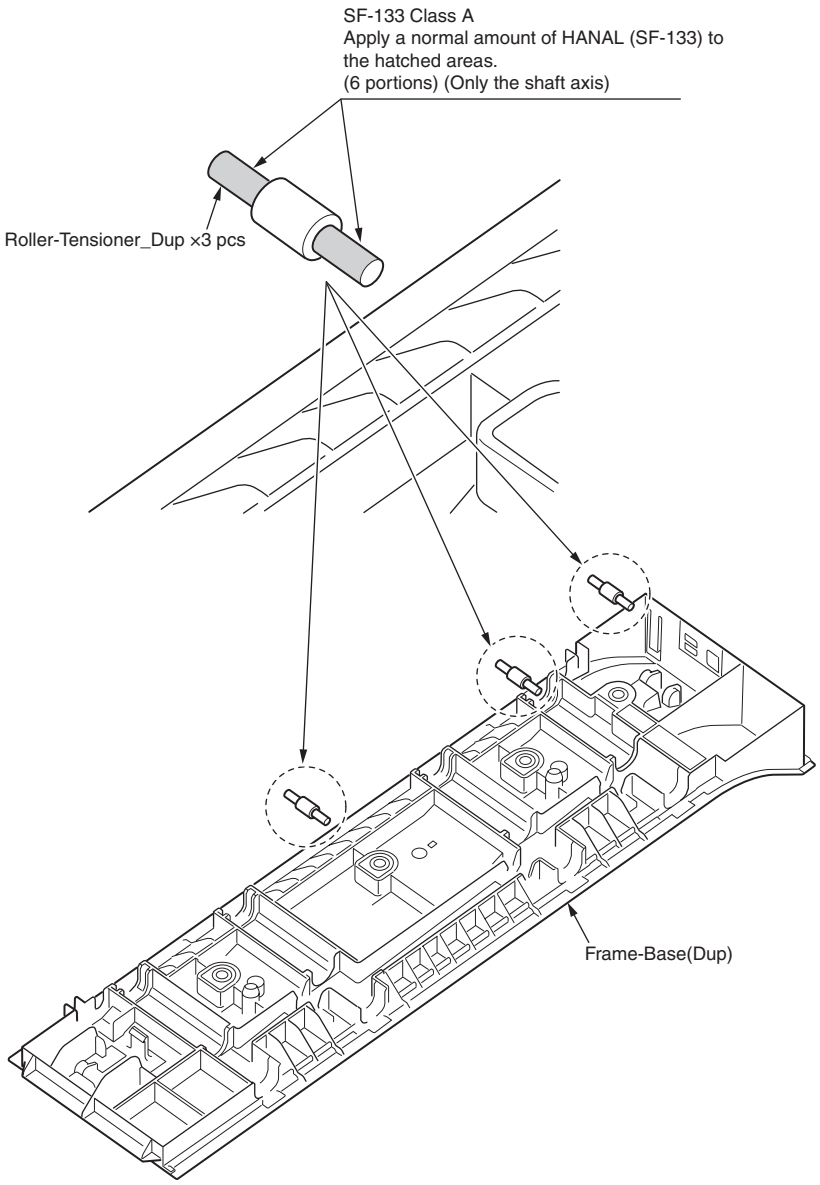
EM-30LP Class C
Apply a normal amount of MOLYKOTE (EM-30LP) to the end face of Plate-R.（hatched areas）



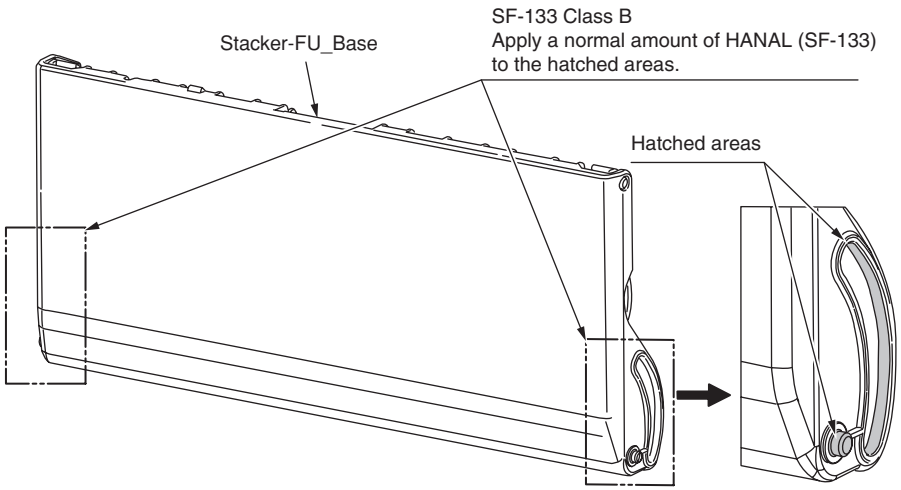
⑤ -1 Base-Assy



⑤ -2 Base-Assy

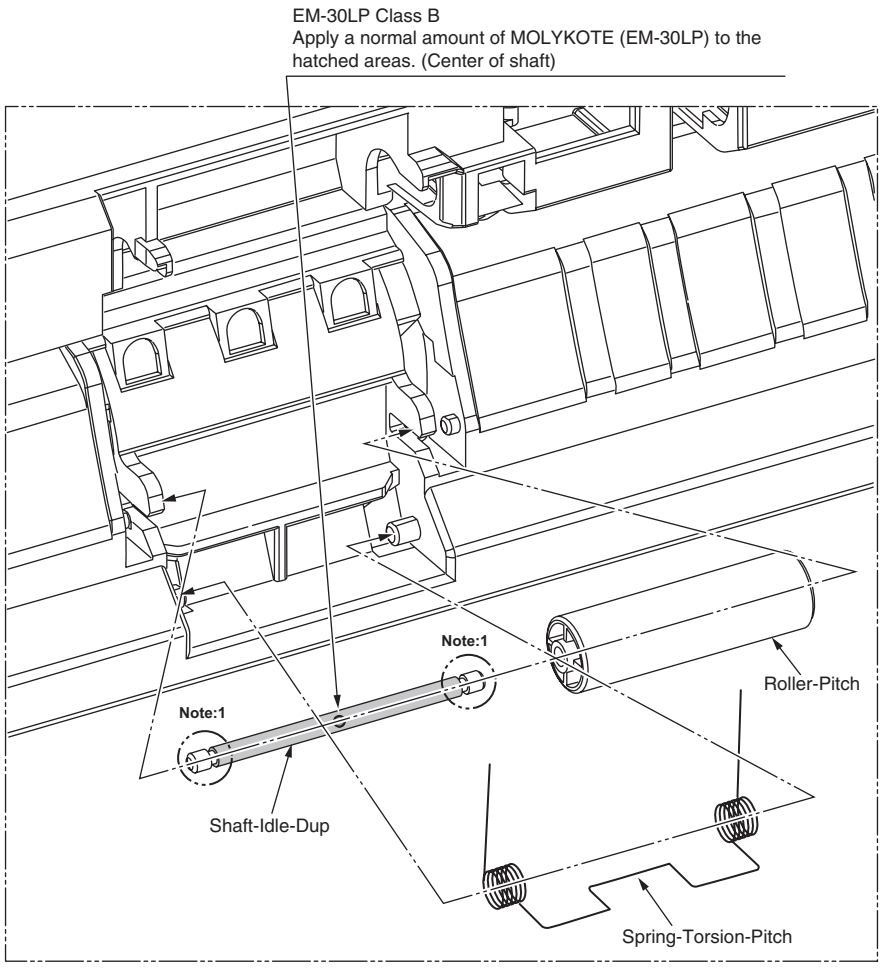


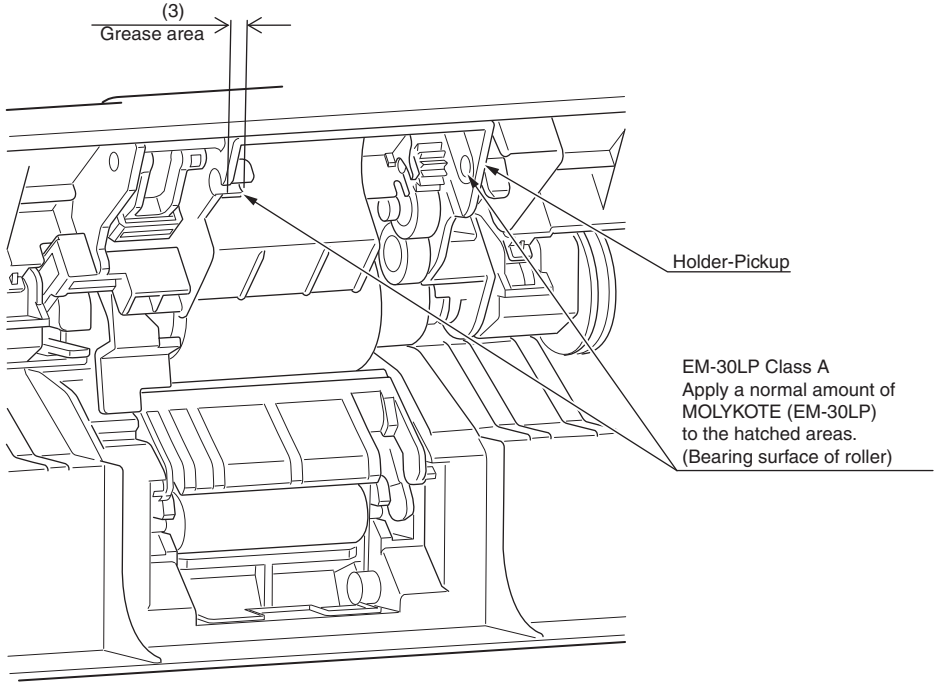
⑥ -1 Cover-Assy.-Rear



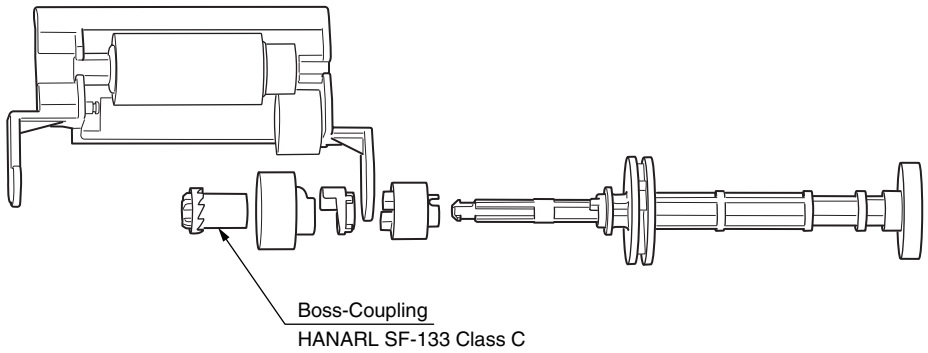
Leave it for about 3 minutes (drying time) after painting HANAL SF-133, and then assemble the Cover-Assy.-Stacker.

⑦ -1 Frame-Assy.-MPT



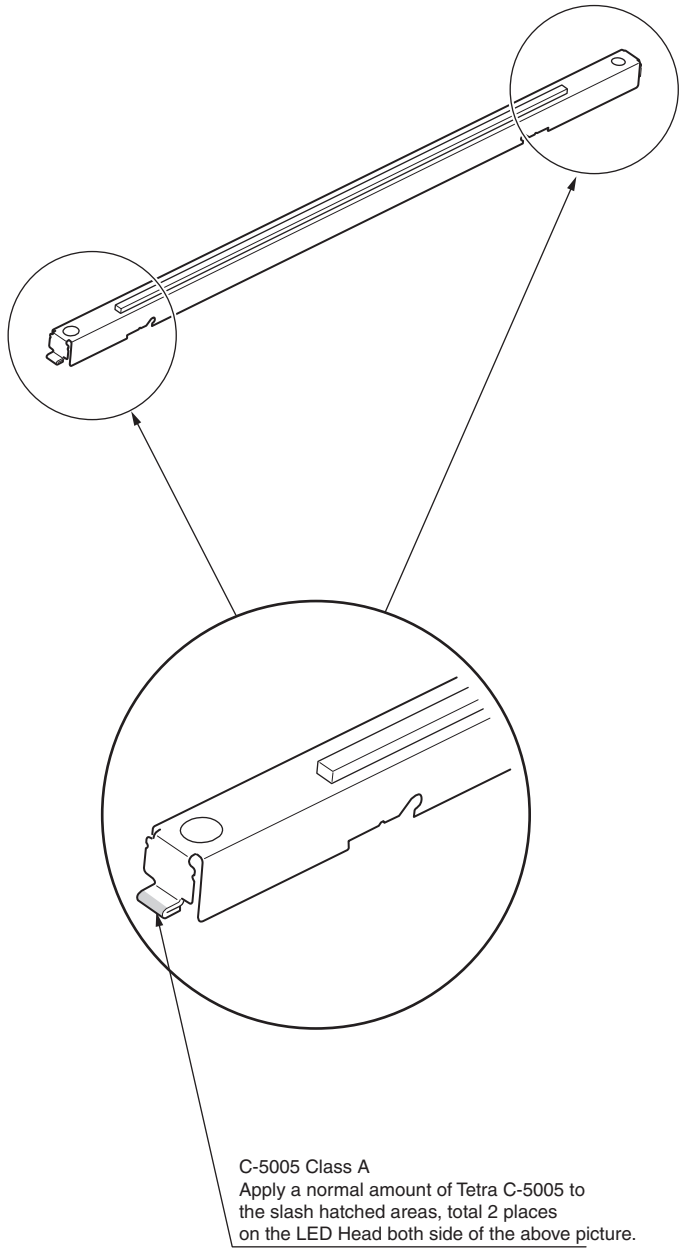


⑦ -2 Frame-Assy.-MPT

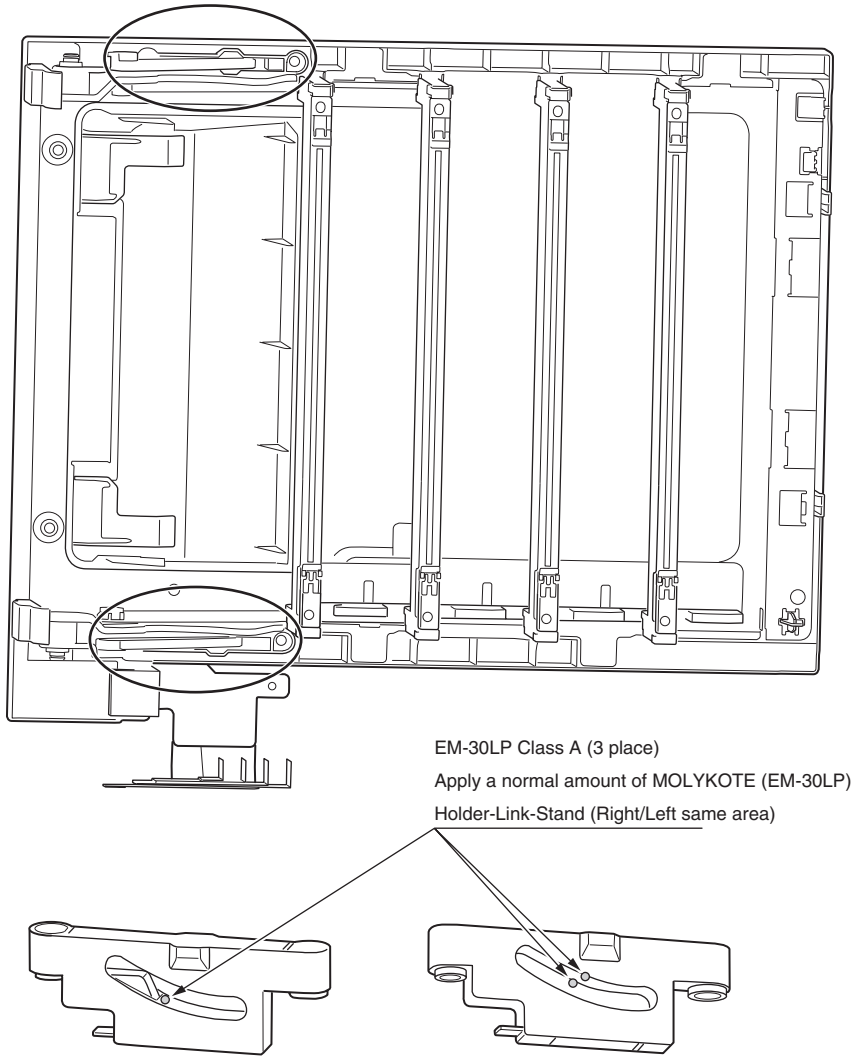


Leave it for about 30 minutes (drying time) after painting HANARL SF-133, and then assemble the Boss-Coupling.

⑧ LED Head Unit-61TRD2



⑨ Cover-Top-Assy



5. REGULAR MAINTENANCE

5.1 Cleaning

Remove toner powder and dust in the Printer inner section. Clean the inside of and the periphery of the Printer with the cloth as needed. Clean the Printer inner section with the handy cleaner (maintenance tool).

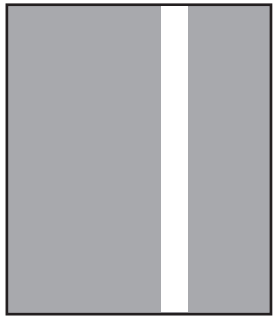
Note! Do not touch the image drum, LED lens array, and LED head terminal.

5.2 Cleaning of LED lens array

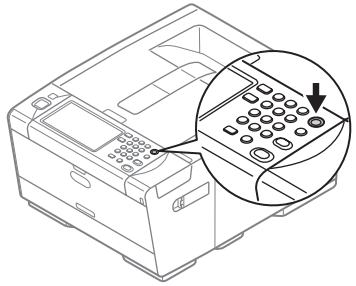
If the vertical white lines, and white belt (white spot, pale printing) occur in printing as shown below, the LED lens array should be cleaned or the toner cartridge should be replaced.

Note! As for the LED lens array, clean it with soft tissues or soft cloth after eliminating static electricity of a maintenance tool.

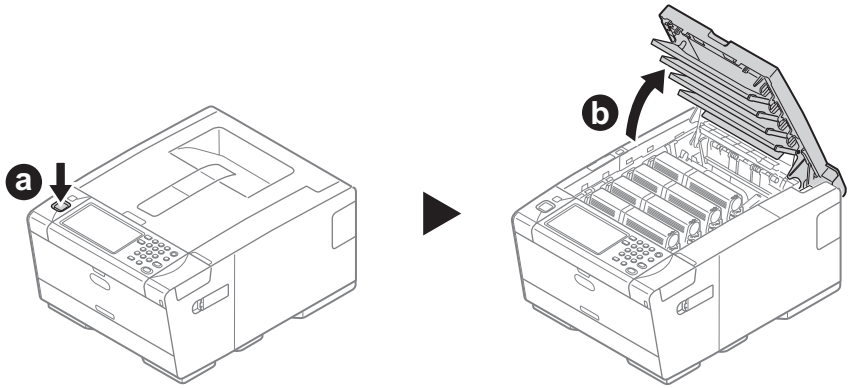
While lines or White belt
(White spot, pale printing)



(1) Power off the Printer.

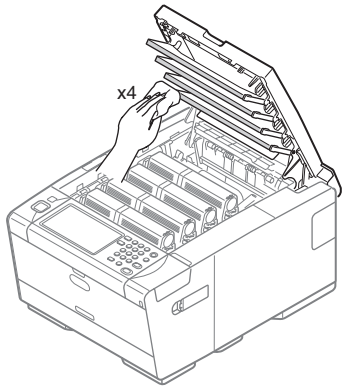


(2) Press the button (a) and open the top cover (b).



(3) Wipe the whole LED head softly with the soft tissues or cloth.

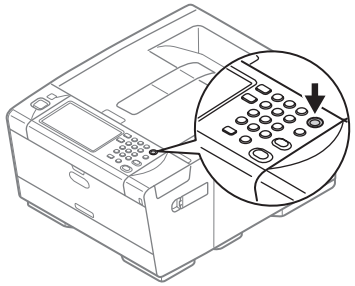
Note! Do not use solvents including methyl alcohol, and thinner.



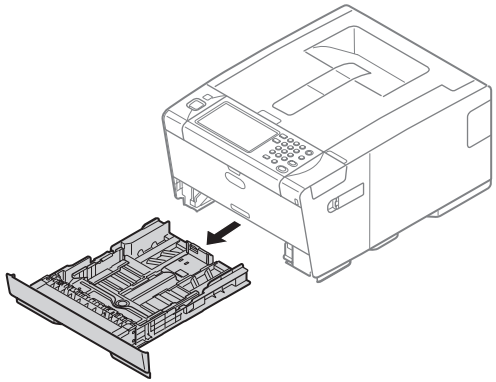
(4) Close the top cover is performed by the inverse procedure with opening.

5.3 Cleaning the Feed rollers and the Retard roller

(1) Power off the Printer.

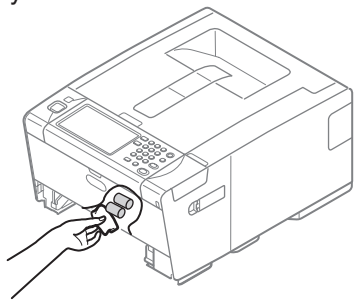


(2) Pull out the tray.



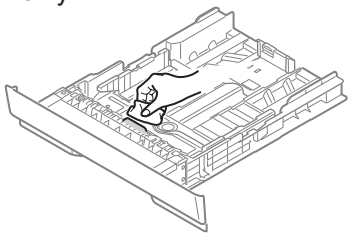
(3) Wipe two paper feed rollers inside the printer with a soft cloth that has been slightly moistened with water and then squeezed well.

Note! Use water only.

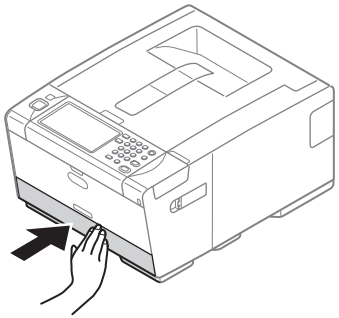


(4) Wipe two paper feed rollers in the tray with a soft cloth that has been slightly moistened with water and then squeezed well.

Note! Use water only.

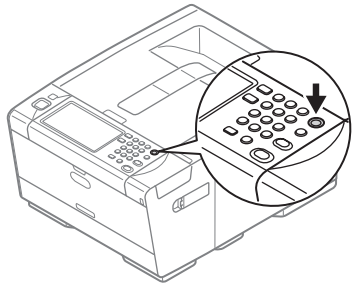


(5) Push the tray back into the Printer.

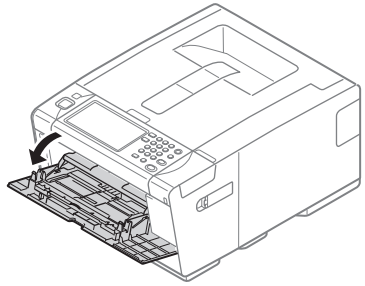


5.4 Cleaning the MPT Feed rollers

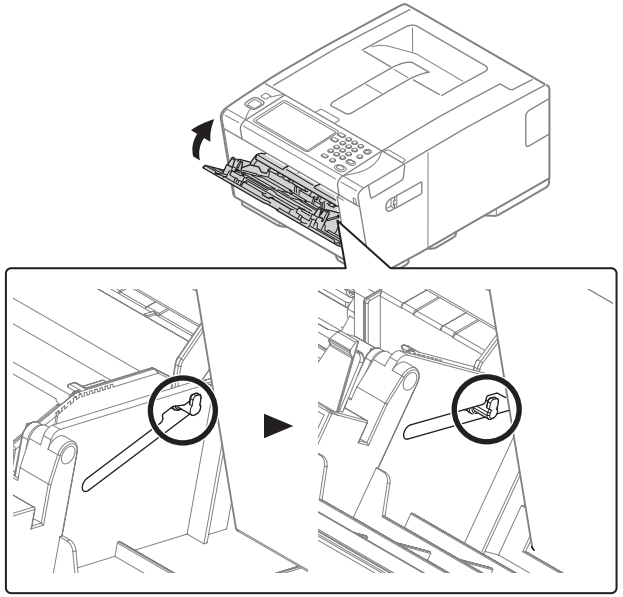
(1) Power off the Printer.



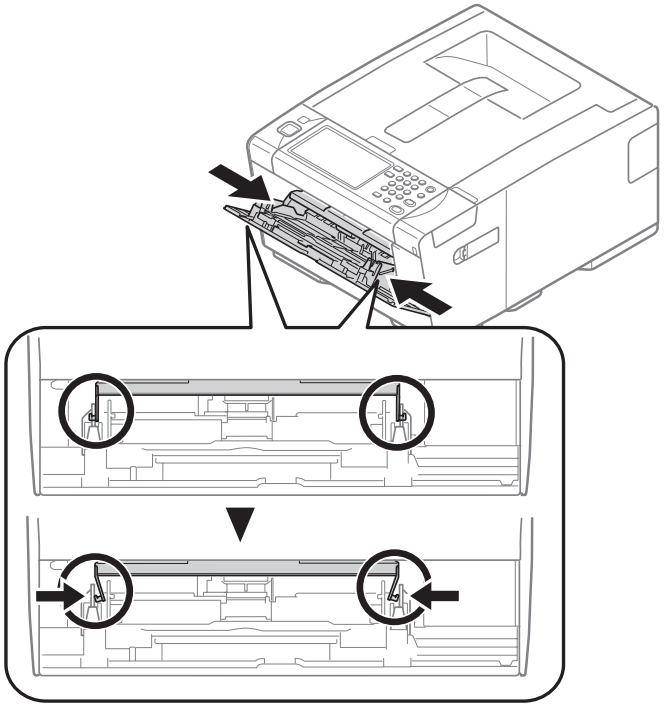
(2) Open the MPT.



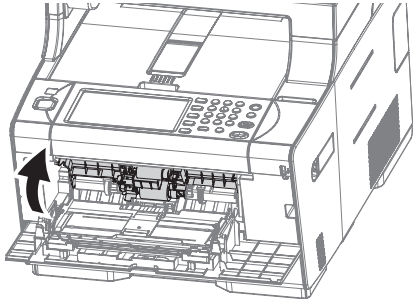
(3) Close the MPT gently to a position where the left and right tabs fit the arm grooves.



(4) Separate the tabs on the roller guide from the left and right arms by pushing the tabs to inside.

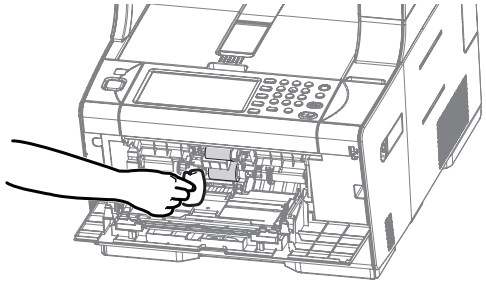


(5) Raise the roller guide until it comes in contact with the Printer.



(6) Wipe the two feed rollers with a tightly wrung cloth soaked in water through the opening for MPT.

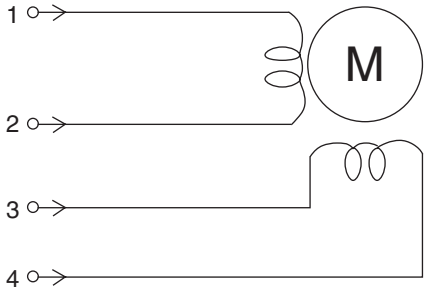
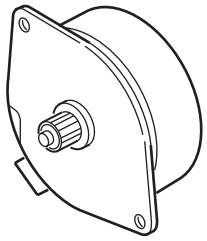
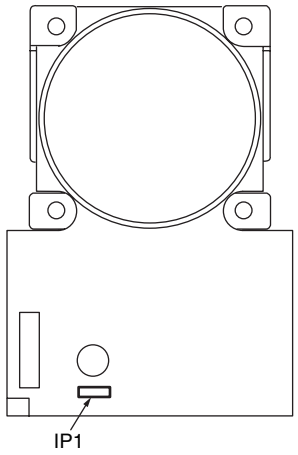
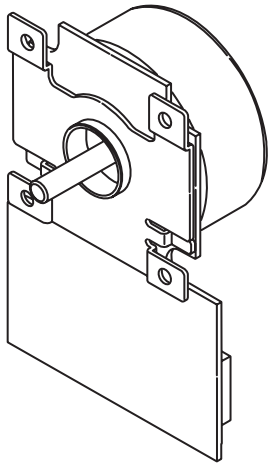
Note! 1. Use water only.

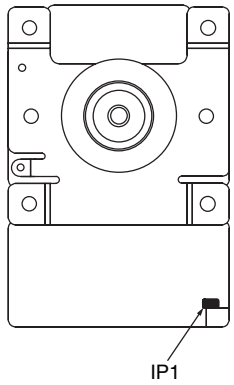
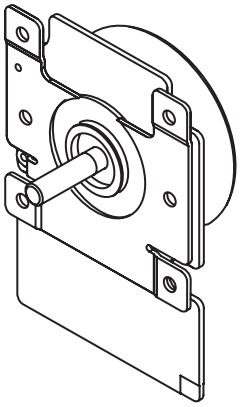
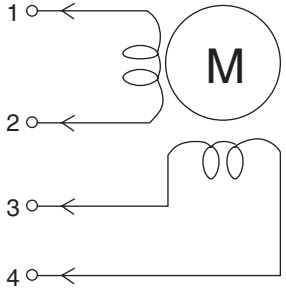
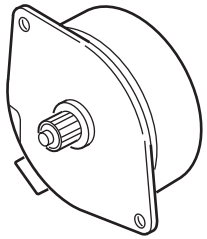
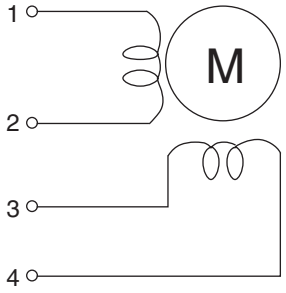
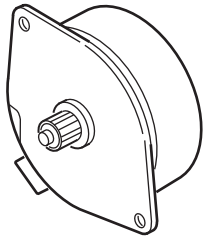


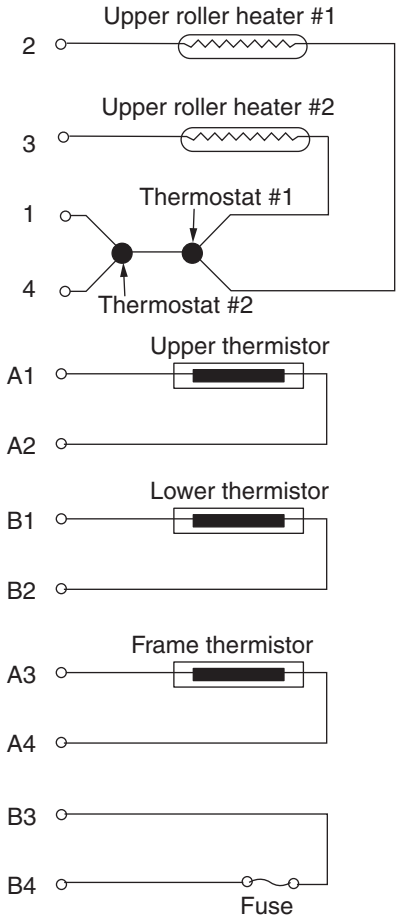
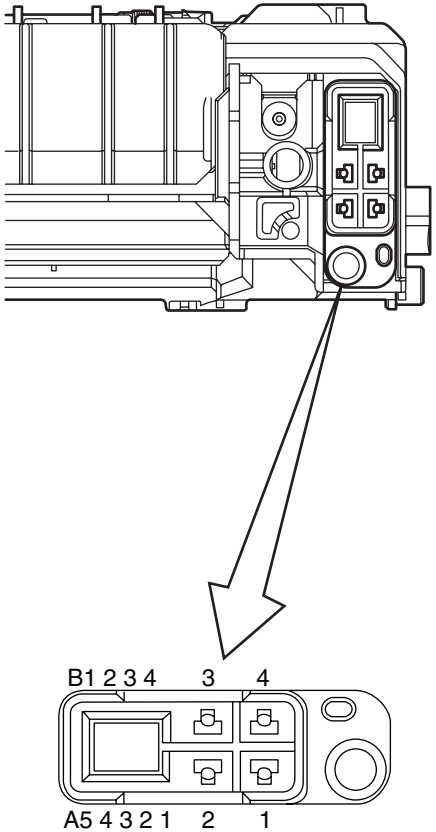
(7) Close the MPT is performed by the inverse procedure with opening.

6. CONNECTION DIAGRAMS

6.1 Check of resistance values

Unit	Circuit diagram and composition	Part drawing	Resistance value
Transport belt motor			Between pins 1 and 2: 3 Ω to 4 Ω Between pins 3 and 4: 3 Ω to 4 Ω
ID motor			Both ends of IP1: 1 Ω or less

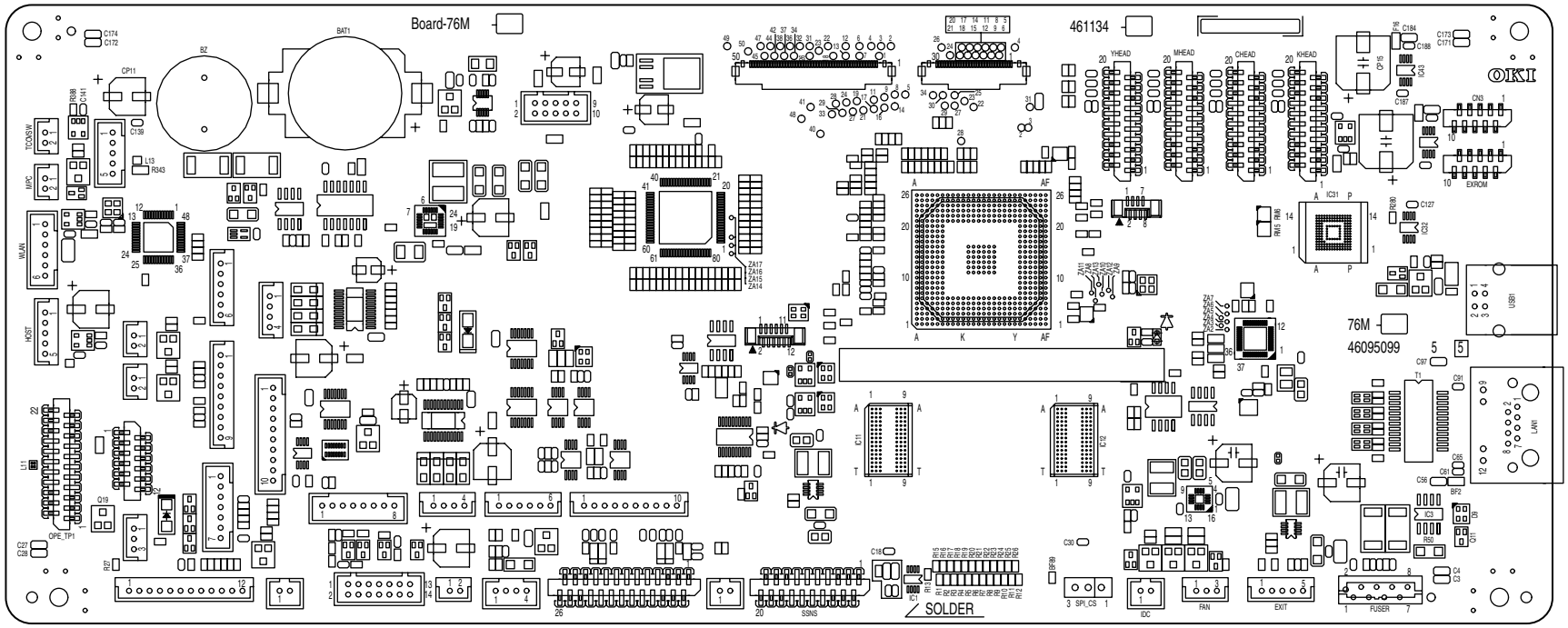
Unit	Circuit diagram and composition	Part drawing	Resistance value
Fuser motor			Both ends of IP1: 1 Ω or less
Feed motor			Between pins 1 and 2: 3 Ω to 4 Ω Between pins 3 and 4: 3 Ω to 4 Ω
2nd/ 3rd feed motor			Between pins 1 and 2: 3.4 Ω Between pins 3 and 4: 3.4 Ω

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

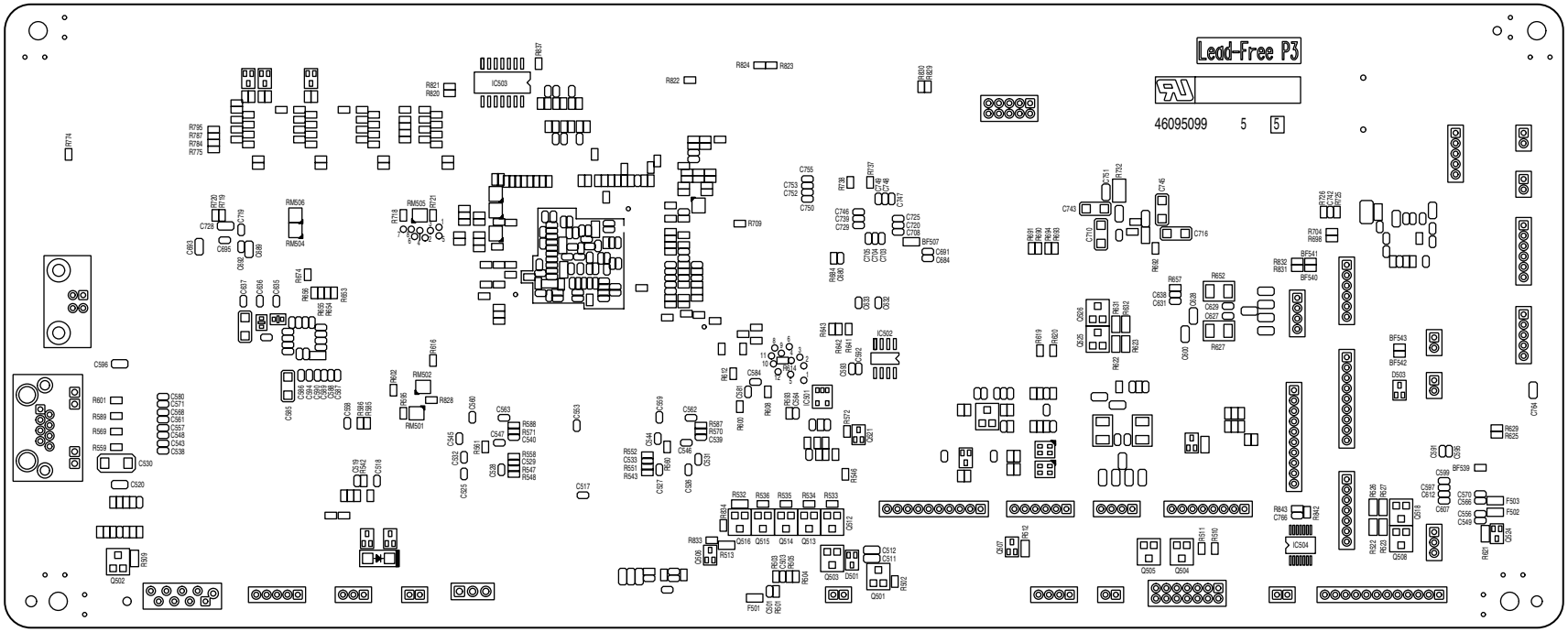
6.2 Layout of parts

(1) CU/PU board (76M)

Component side

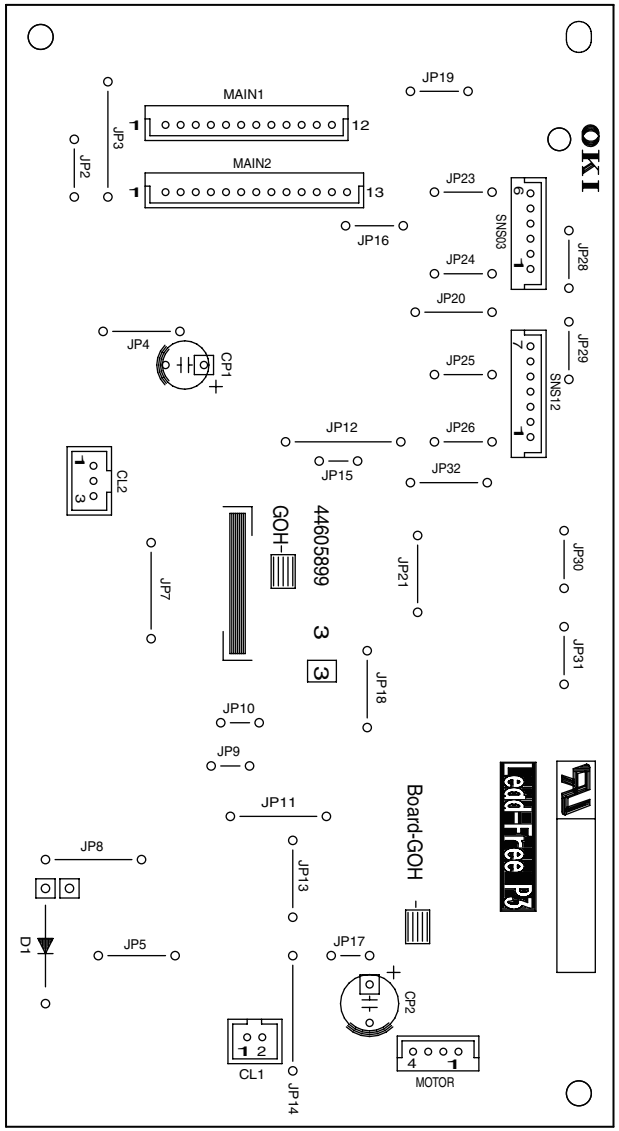


Soldering side

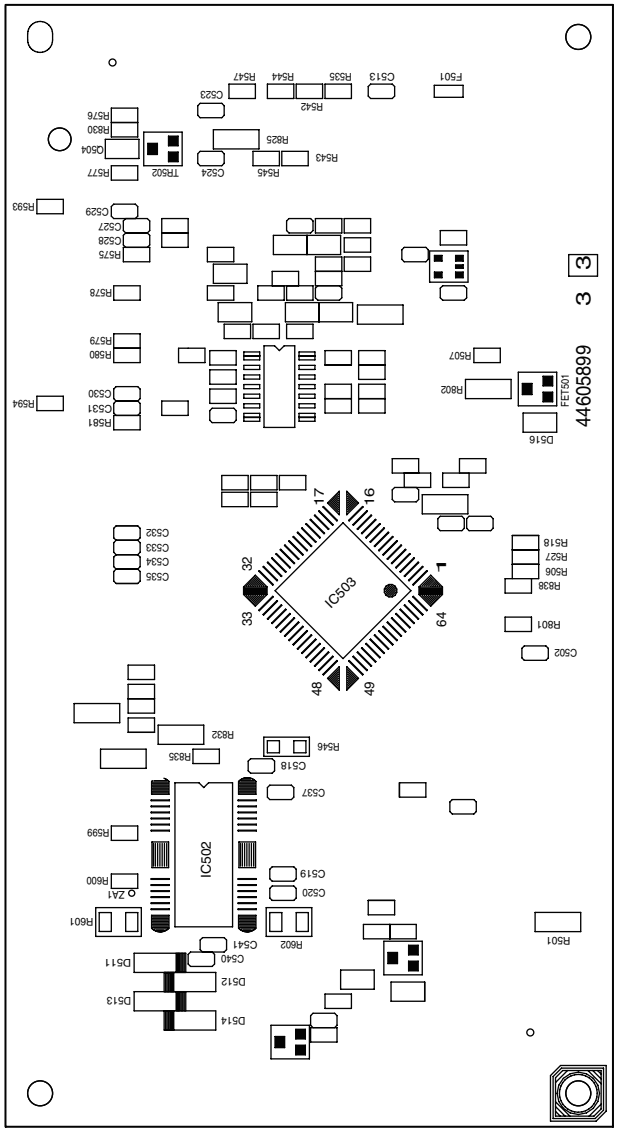


(2) Option tray board

Component side

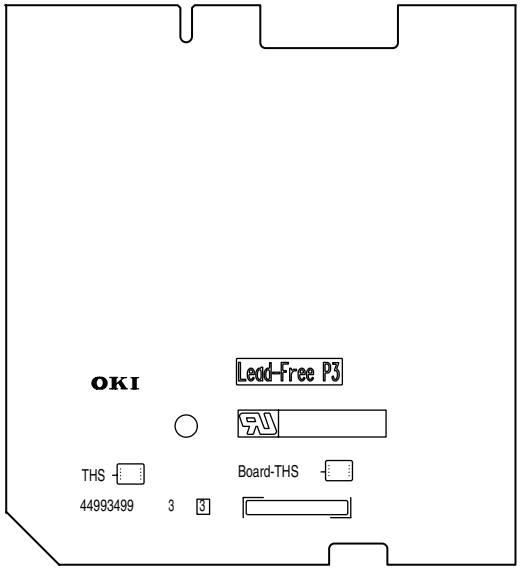


Soldering side

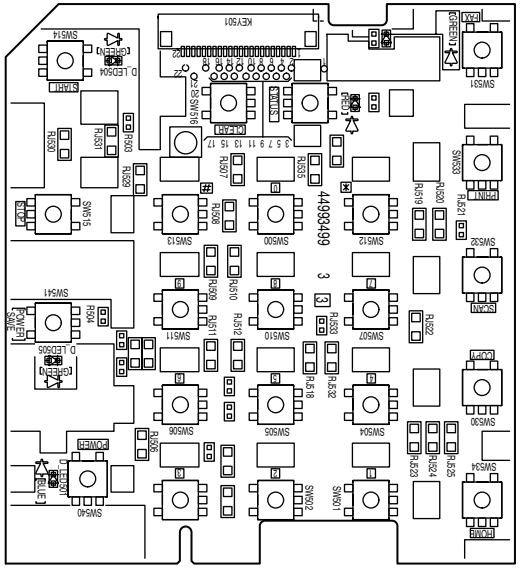


(3)-1 OPE board (ES5442)

Component side

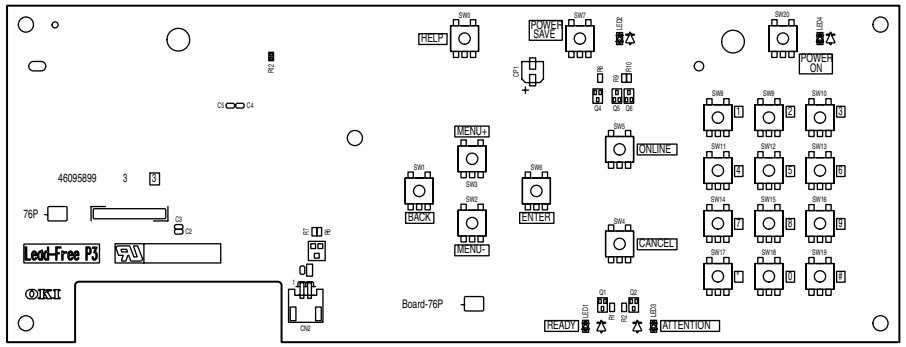


Soldering side

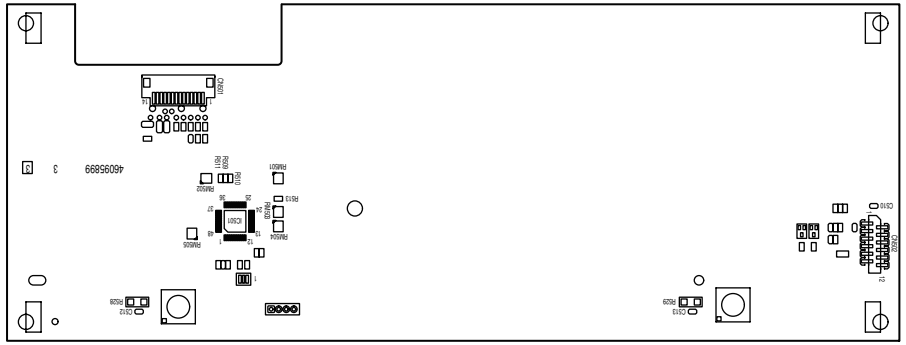


(3)-2 OPE board (C532dn)

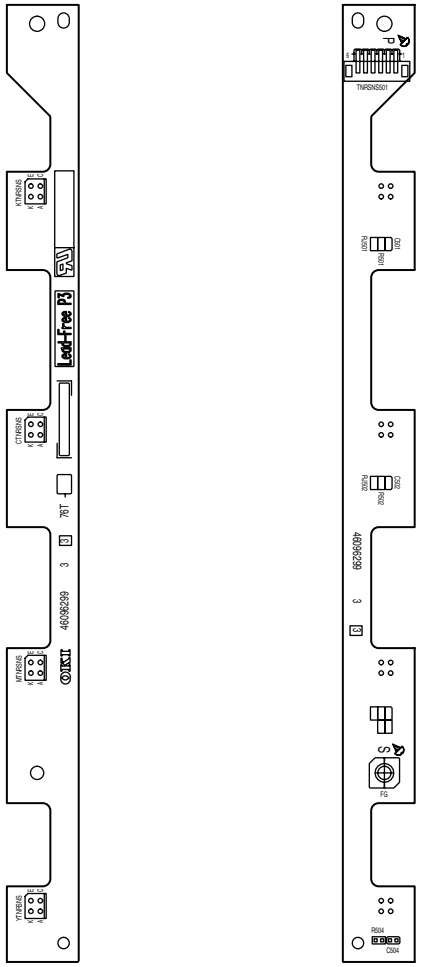
Component side



Soldering side

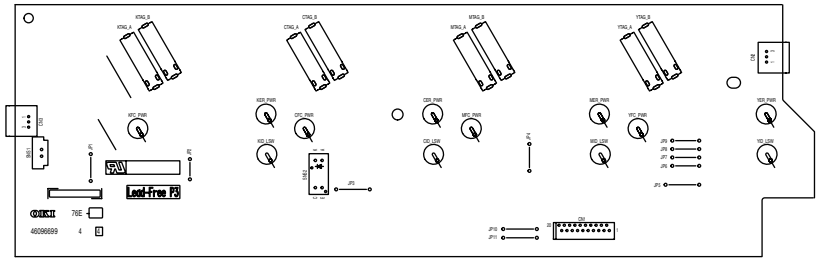


(4) Toner sensor board

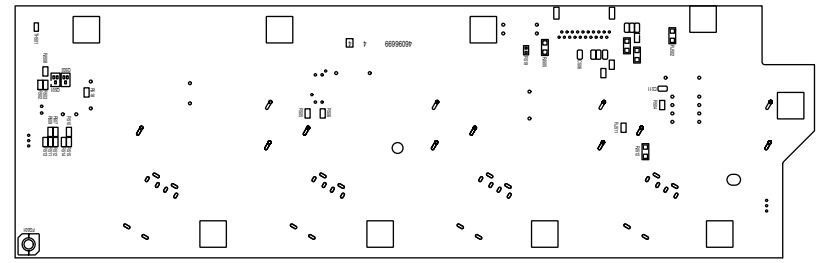


(5) Discharging light / TAG

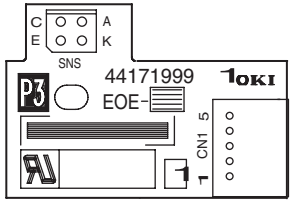
Component side



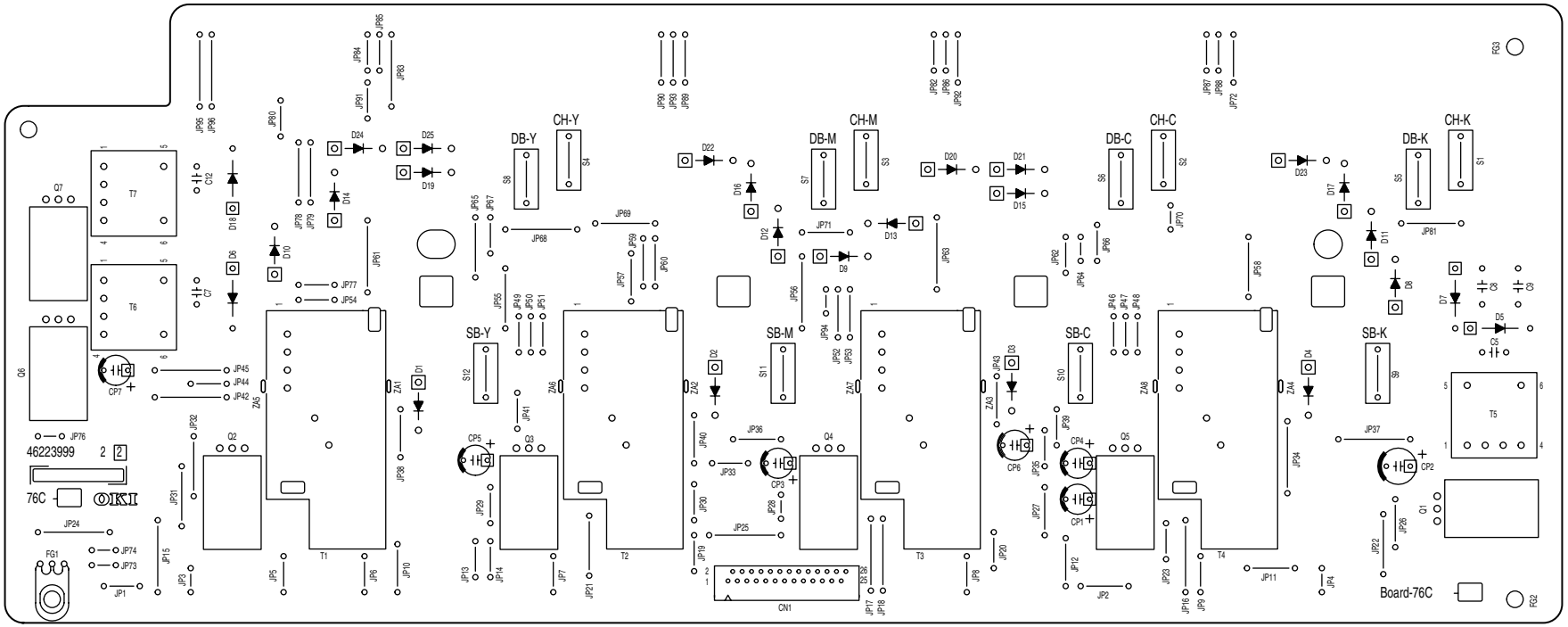
Soldering side



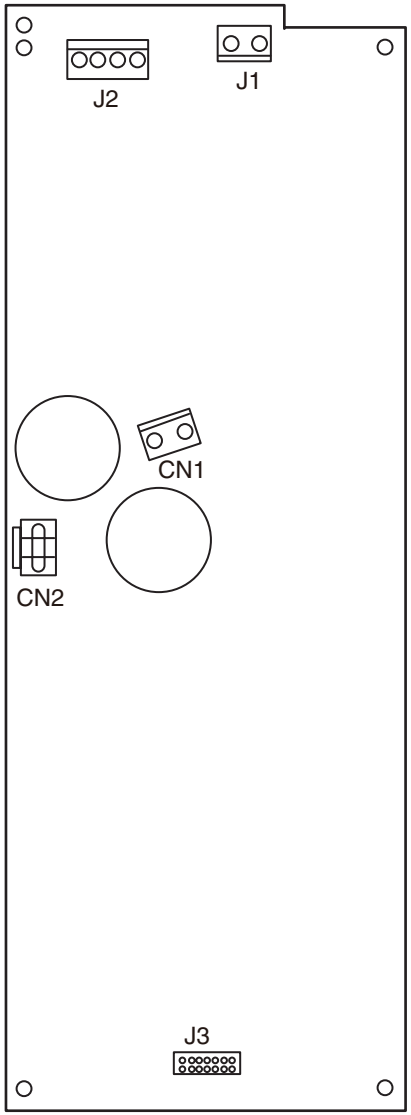
(6) Color adjustment sensor PCB



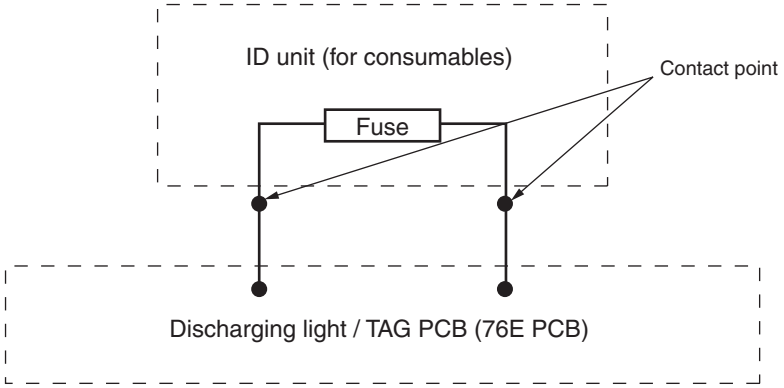
(7) High voltage power supply board

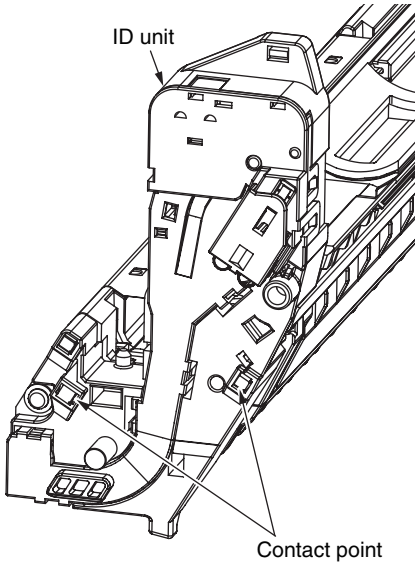


(8) Low-voltage power supply PCB

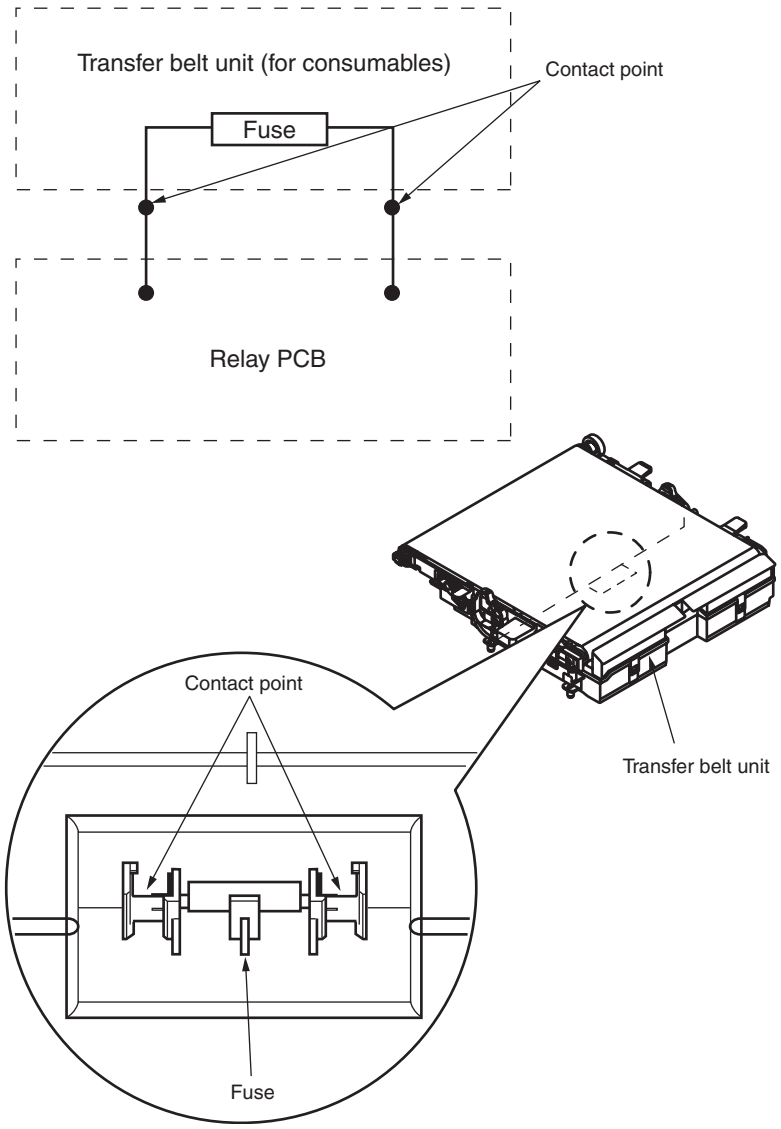


(9) ID unit



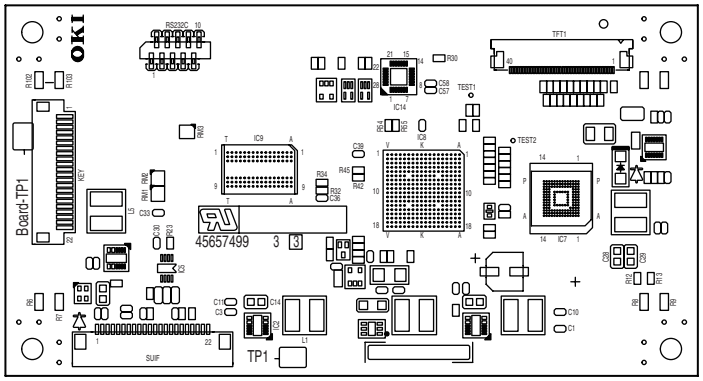


(10) Transfer belt unit



(11) Touch panel contorol PCB

Component side



Soldering side