

**B412dn / B432dn / B512dn /
ES4132 / ES5112
Maintenance Manual**

110614A

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PREFACE

This manual provides an overview of method for maintaining the B412dn/B432dn/B512dn/ES4132dn/ES5112dn.

This manual is intended for maintenance staff. For more information about how to operate the B412dn/B432dn/B512dn/ES4132dn/ES5112dn, 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 equipment repaired/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.

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1. CONFIGURATION

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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.

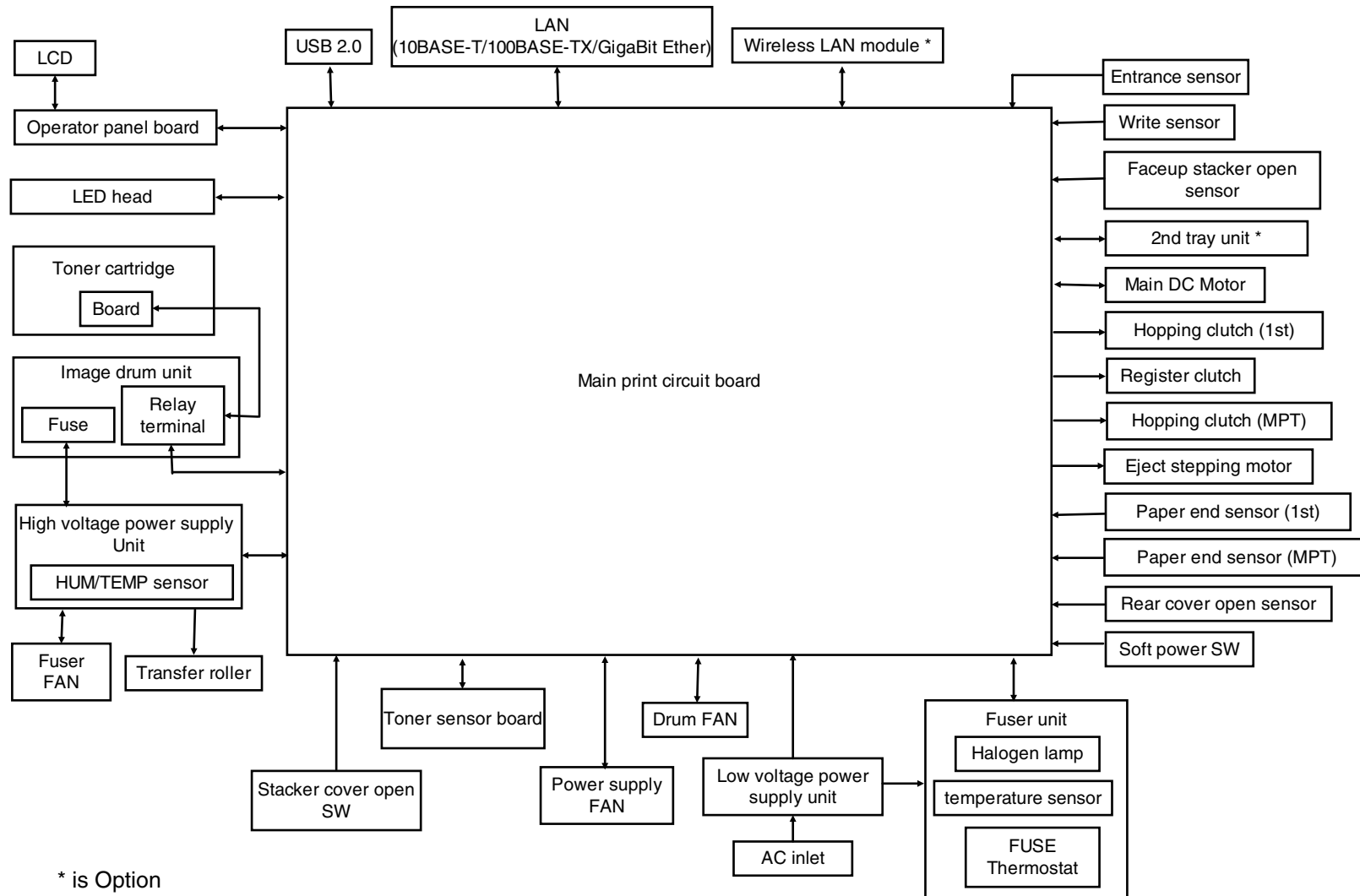


Figure1-1

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 diagram 1-2~1-3

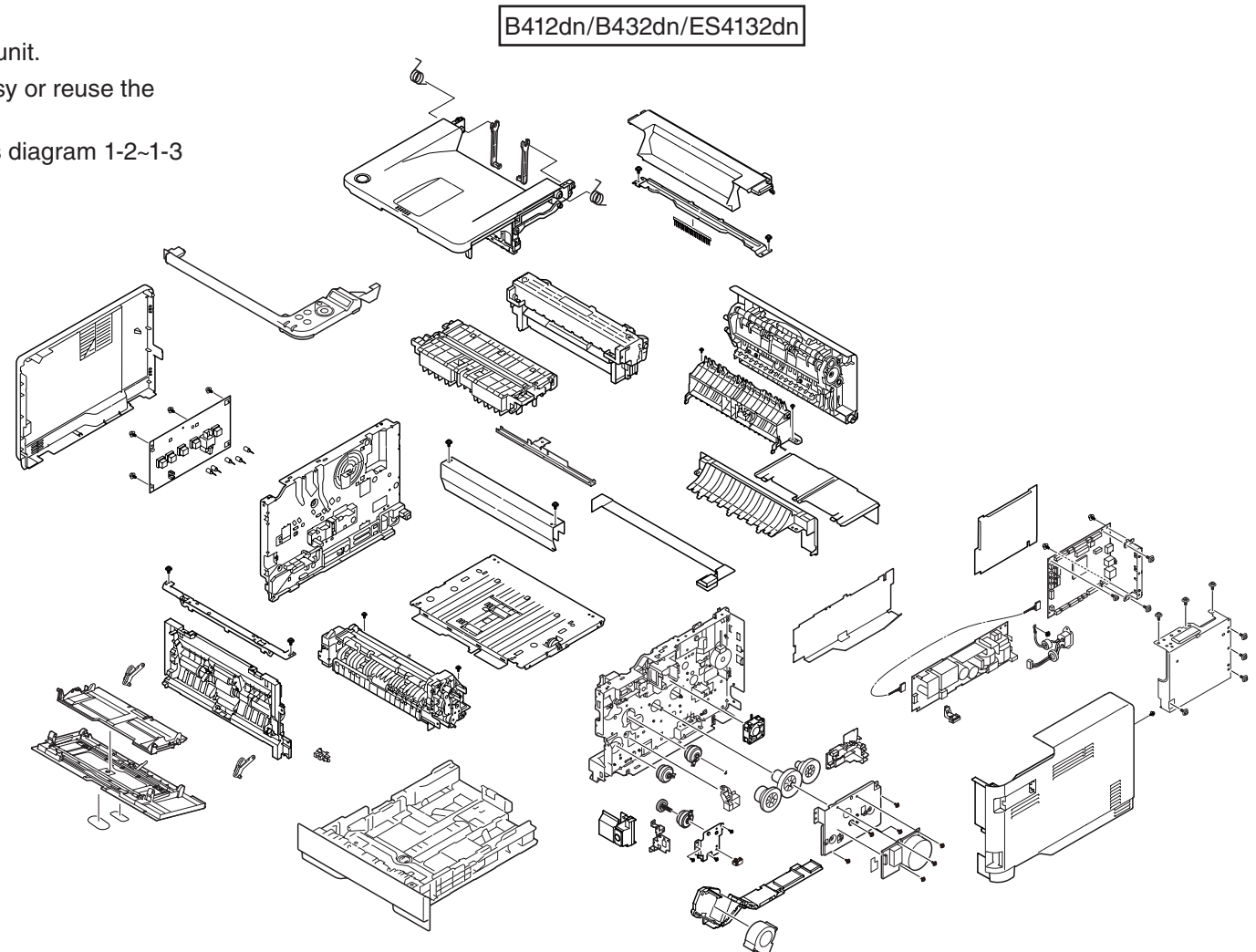


Figure1-2

B512dn/ES5112dn

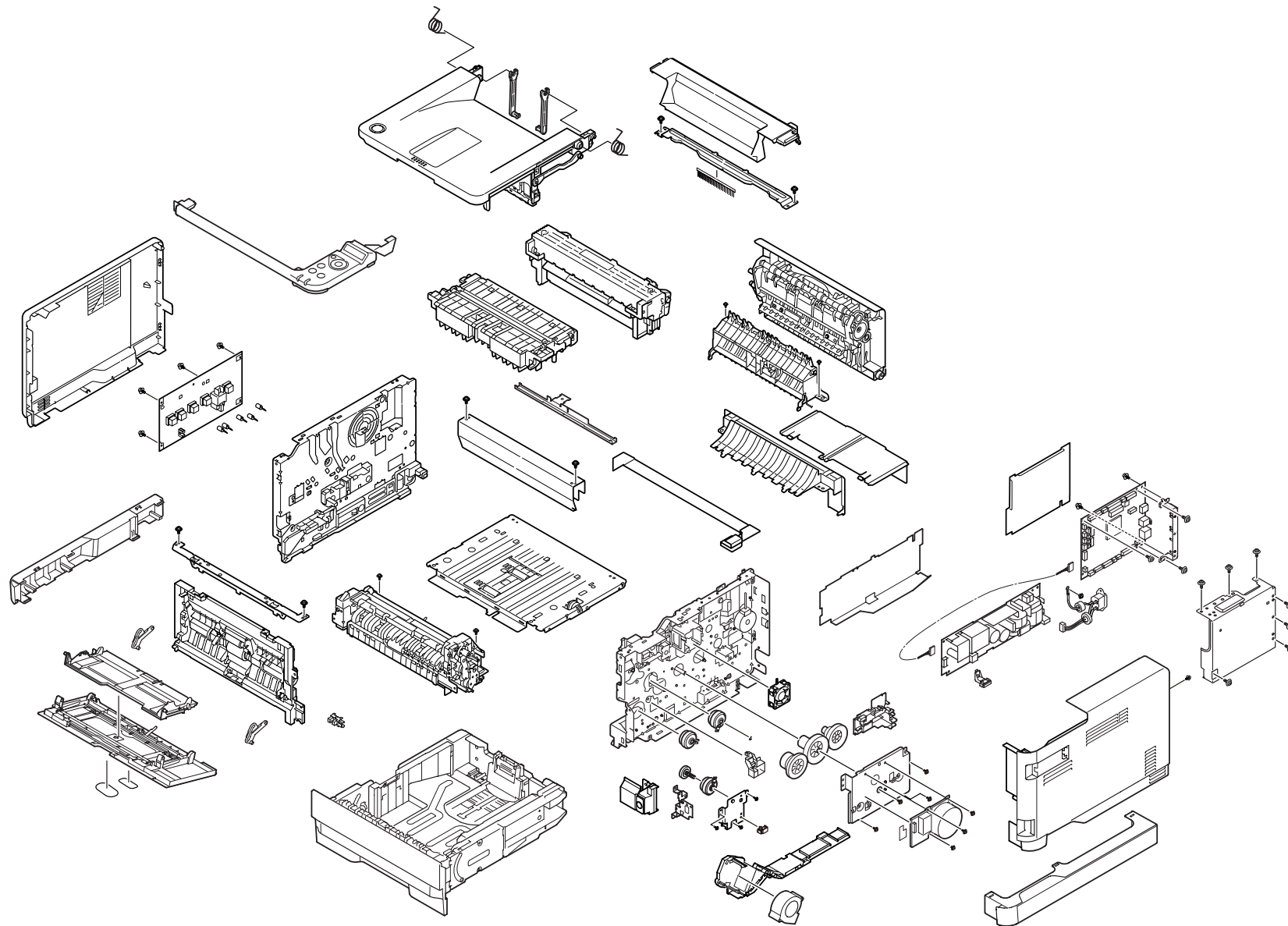
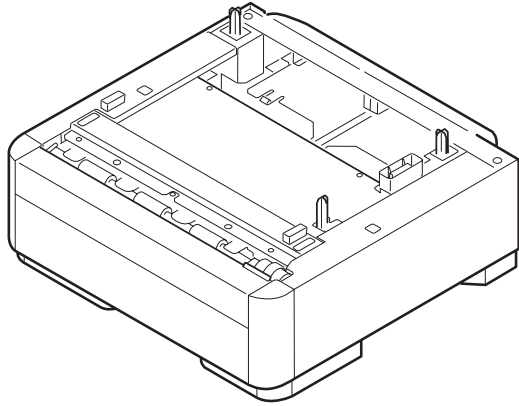


Figure1-3

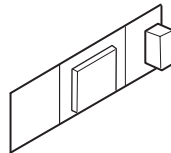
1.3 Offer of Options

This product can be installed with the following option.

(1) Second Tray Unit



(2) Wireless LAN



1.4 Specifications

Item		B412dn (DT Low speed model)	B432dn/ES4132dn (DT High speed model)	B512dn/ES5112dn (DT High speed, 530 sheet model)
Segment		DT		
Print speed (simplex) (* Fusibility spec. for this mode is different with other mode.	A4	33ppm	40ppm (NN) 38ppm (LL/HH)	45.5ppm (NN) (*) 38ppm (LL/HH)
	Letter	35ppm	42ppm (NN) 40ppm (LL/HH)	47ppm (NN) (*) 40ppm (LL/HH)
Print speed (duplex)	A4	17ppm	20ppm	
	Letter	17ppm	20ppm	
Print Width		A4 / Letter		
Time to First Print		5sec.	4.5sec.	
Warm-up time from power on		17sec.		
Recovery time from deep sleep		7sec.		
Resolution	Head	1200dpi		
	Maximum Input dpi	1200x1200dpi		
	Output dpi	1200x1200dpi 600x600dpi 300x300dpi (driver support only)		
CPU	Core	MF2		
	Clock	667MHz		
RAM	Resident	512MB		
	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 , 10/100/Gigabit Ethernet		
	Option	Wireless 802.11abgn (user option)		
Printer Language		PCL5e, PCL6(XL), EPSON FX, IBM ProPrinter, XPS	PostScript3(Emulation), PCL5e, PCL6(XL), EPSON FX, IBM ProPrinter, XPS, PDF(v1.7)	

Item		B412dn (DT Low speed model)	B432dn/ES4132dn (DT High speed model)	B512dn/ES5112dn (DT High speed, 530 sheet model)	
Fonts	Scalable Typefaces	87 PCL fonts	87 PCL fonts, 136 PostScript fonts		
	Bitmap Typefaces	4 PCL fonts (Line Printer, OCR-A/B, USPS ZIP Barcode)			
	Barcode	10 types of one dimension with 26 variations: UPC-A, UPC-E, EAN/JAN-8, EAN/JAN-13, Interleaved2of5, Code39, Code 128, EAN/UCC-128, CODABAR, ZIP+4POSTNET 2 types of two dimensions : PDF417, Qrcode			
Paper input	Paper size	1st Tray	A4,A5,A6,B5,Letter,Legal13/13.5/14, Executive,Statement,16K(197 x 273), 16K(195 x 270),16K(184 x 260),Custom	A4,A5,B5,Letter, Legal13/13.5/14, Executive,16K (197 x 273),16K (195 x 270),16K (184 x 260),Custom	
		2nd Tray (Option)	A4,A5,B5,Letter,Legal13/13.5/14,Executive, 16K (197 x 273),16K (195 x 270),16K (184 x 260),Custom		
		MPT	A4,A5,A6,B5,Letter,Legal13/13.5/14,Executive,Statement, 16K (197 x 273),16K (195 x 270),16K (184 x 260),4" x 6", 5" x 7",Custom,C6,C5,DL,Com-9,Com-10,Monarch, NAGAGATA #3,NAGAGATA #4,YOUGATA #4, HAGAKI,OUFUKU HAGAKI		
		Duplex	A4,B5,Letter,Legal13/13.5/14,Executive, 16K (197 x 273),16K (195 x 270),16K (184 x 260)		
	Minimum paper size	1st Tray	3.9" x 5.8" (100 x 148mm)		5.8"x8.3" (148x210mm) (A5 size)
		2nd Tray (Option)	5.8" x 8.3" (148x210mm) (A5 size)		
		MPT	3.4" x 5.5" (86 x 140mm)		
		Duplex	7.2" x 10.1" (182x257mm) (B5 size)		
	Maximum paper size	1st Tray/ 2ndTray/ Duplex	8.5" x 14" (216 x 356mm) (Legal14 size)		
		MPT	8.5" x 52" (216 x 1,321mm)		
Paper weight		1st Tray/ 2ndTray/ Duplex	16 - 32lb (60.16 - 120.32g/m ²)		
	MPT	16 - 43lb (60 - 163g/m ²)			

Item			B412dn (DT Low speed model)	B432dn/ES4132dn (DT High speed model)	B512dn/ES5112dn (DT High speed, 530 sheet model)
Paper input	Paper Capacity	1st Tray	250 sheets (80g/m ²)		530 sheets (80g/m ²)
		2nd Tray (Option)	530 sheets (80g/m ²)		
		MPT	100 sheets (80g/m ²)		
Paper output	Paper size	Facedown Tray	A4,A5,A6,B5, Letter, Legal13/13.5/14, Executive, Statement, 16K (197 x 273), 16K (195 x 270), 16K (184 x 260), Custom		
		Faceup Tray	A4,A5,A6,B5, Letter, Legal13/13.5/14, Executive, Statement, 16K (197 x 273), 16K (195 x 270), 16K (184 x 260), Custom, Com-9, Com-10, Monarch, DL, C5, C6, 4" x 6", 5" x 7", HAGAKI, OUFUKU HAGAKI, NAGAGATA #3, NAGAGATA #4, YOUGATA #4, Banner up to 52"		
		Facedown Tray	16 - 32lb (60.16 - 120.32g/m ²)		
	Paper weight	Faceup Tray	16 - 43lb (60 - 163g/m ²)		
		Paper Capacity	Facedown Tray	150 sheets (≤ 80g/m ²)	
	Faceup Tray		100 sheets (≤ 80g/m ²)		
Acoustic noise	Operating		53dBA	55dBA	56dBA
		(Quiet mode)	52dBA		
	Standby	30dBA			
	Power save mode	Background level			
Power consumption	Deep sleep mode	1.4W			
	Power save mode	7W			
	Idle	80W			
	Typical operation		560W	600W	630W
		Peak	900W		
Power Requirement		<Voltage> ODA, Taiwan : 120V AC +/-10% OEL, ODA230, AOS : 230V AC +/-10% <Frequency> 50/60HZ +/-2%			

Item		B412dn (DT Low speed model)	B432dn/ES4132dn (DT High speed model)	B512dn/ES5112dn (DT High speed, 530 sheet model)
Operating temperature		10 - 32 (C degree)		
Operating humidity		20 - 80 %		
Operation panel	Type/Color	Mono LCD		
	Size	16 character x 2 line		
	Back Light	No		
	LED	Ready (Green), Attention (Amber), Power save (Green), Power (Green)		
	Switches	Online, Cancel, Menu (Up Arrow, Down Arrow, OK, Back), Power save		
Soft power switch	Yes (Front-right side)			
Buzzer		No		
Dimension (inch./mm)	Width	15.2"/387mm		
	Depth			15.5"/394mm
	Height			11.2"/286mm
Weight		Approx. 12kg		Approx. 13kg
Printer life		200,000 pages or 5 years		
Max. Monthly Printer duty		60,000 pages	80,000 pages	100,000 pages
Recommended Duty Cycle		1,000 to 6,000 pages		
MTBF (2.3% duty)		5,700 hours		
MPBF		24,000 pages		
MTTR		20 minutes		
Toner life	Starter toner	B412dn/B432dn/B512dn : Approx. 2,000 pages (company standard) ES4132dn/ES5112dn : Approx. 9,700 pages (@5% duty)		
	Supplies	B412dn : 3,000 pages / 7,000 pages (@ISO19752) B432 / B512 : 3,000 pages / 7,000 pages / 12,000 pages (@ISO19752) ES4132dn/ES5112dn : 11,100 pages (@5% duty)		
Image drum life at simplex (w/o power save)	Continuous	44,000 pages		
	3 pages per job	30,000 pages		
	1 page per job	70,000 pages for extension mode (for ES models only)		
Image drum life at duplex (w/o power save)	Continuous	11,500 pages		
	6 page per job	10,500 pages		
	2 page per job	8,500 pages		

Item		B412dn (DT Low speed model)	B432dn/ES4132dn (DT High speed model)	B512dn/ES5112dn (DT High speed, 530 sheet model)
Transfer roller life		Equal to printer Life		
Fuser life		Equal to printer Life		
Print Function	Quiet mode	Yes		
	Toner save mode	Yes		
	Override A4/Letter	Yes		
	AirPrint	Yes		
	Google Cloud Print	Yes		
	USB direct print	No		
	Secure Print	Yes		
	Encrypt secure Print	No		
IC card reader	No			
Remote Firmware update		Yes		
Certification		Energy star (ver.2), Blue Angel, Wi-Fi certified (WPA2 enterprise supported)		
Emulation		PCL/SIDM/XPS	PS/PCL/SIDM/XPS	
Network (wired)		10/100/Gigabit		
Network (wireless)		802.11a/b/g/n (user install option)		
Parallel		No		
Protocol		TCP/IP v4, TCP/IP v6, NetBIOS over TCP, DHCP, BOOTP, HTTP, HTTPS, DNS, DDNS, WINS, UPNP, Bonjour., SMTP, POP3, SNMPv1&v3, SNTP, IPP, IPPS, WSD Print, LLTD, IEEE802.1X, LPR, Port9100, Telnet, FTP, IPSec, AirPrint, Google Cloud Print, WLAN 802.11abgn		

1.5 Interface specifications

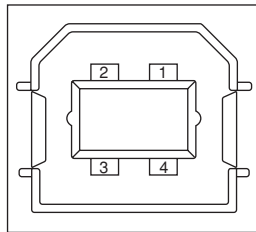
1.5.1 USB Interface Specification

1.5.1.1 Outline of USB Interface

- (1) Basic Specification
USB
- (2) Transmission Mode
Hi speed (480Mbps±0.05% max.)
- (3) Power Control
Self power device

1.5.1.2 USB Interface Connector and Cable

- (1) Connector
 - Printer side: B receptacle (female)
Upstream port
Equivalent of UBR24-4K5C00 (made by ACON)



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)

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	

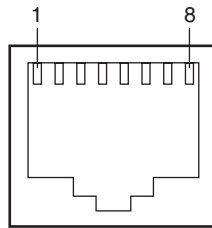
1.5.2 Network Interface Specification

1.5.2.1 Network Interface Basic Specification

Network Protocol
 · TCP/IP related

1.5.2.2 Network Interface Connector and Cable

- (1) Connector
 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)

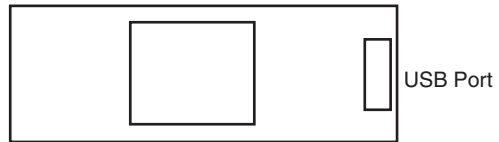
1.5.2.3 Network Interface Signal

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 Wireless LAN Interface (Option)

1.5.3.1 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



Note! In using wireless LAN, don't connect a LAN cable to this product.

2. PROCEDURES FOR REPAIRING

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2.4	Preparation for Troubleshooting.....	2-3
2.5	Troubleshooting Flow.....	2-4

2.1 Troubleshooting

- (1) Check “Troubleshooting” of the user’s manual.
- (2) Collect the information of the status at the failure as much as possible.
- (3) Inspect the device in the status similar to the status at the failure occurrence.

2.2 Points to be checked before modifying printing problems

- (1) Check that the printer is used in appropriate environment conditions.
- (2) Check that consumables (image cartridge, image drum cartridge) are proper replaced.
- (3) Check that the image drum cartridge is proper set.

2.3 Points to be checked when the printing problems are modified

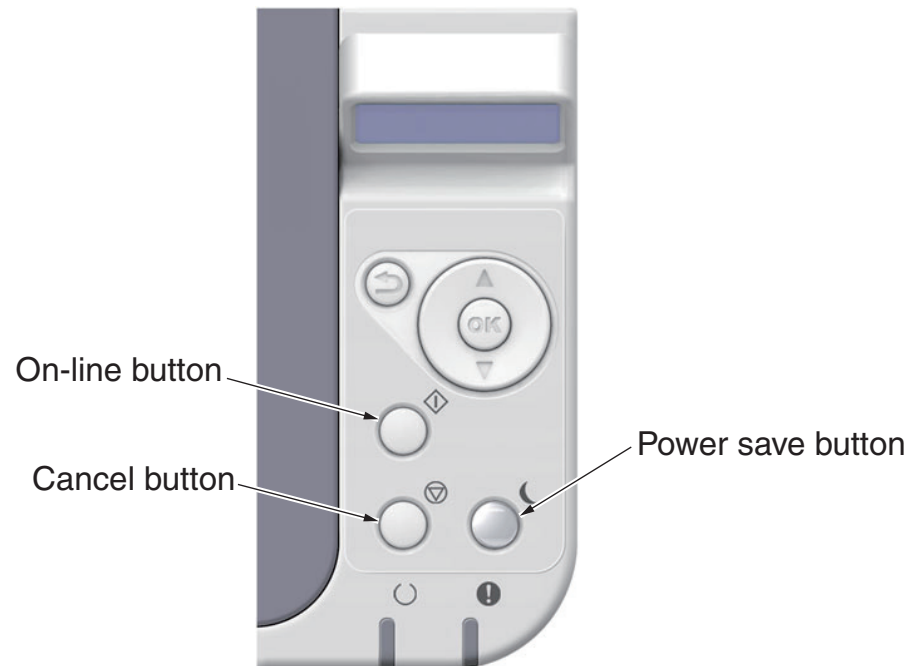
- (1) Make sure not to touch the surface of the image drum or make extraneous materials touched on the surface.
- (2) Make sure to avoid direct sunlight.
- (3) Make sure not to touch the fuser unit since it is hot during the operation.
- (4) Make sure not to exposure the image drum to the light for more than 5 minutes at ambient temperature.

2.4 Preparation for Troubleshooting

(1) Display of the operator panel

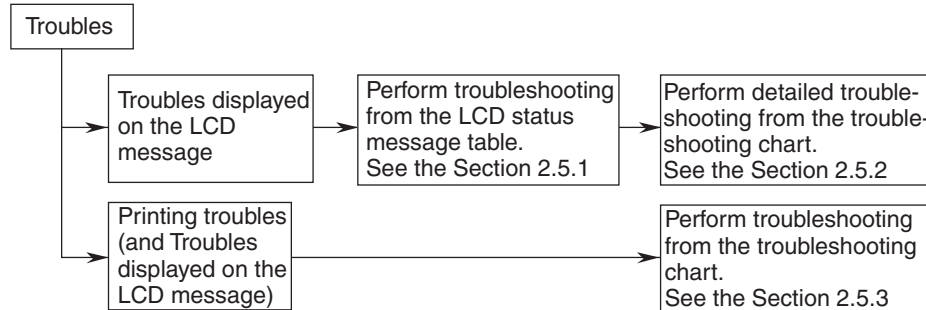
The failure status of the printer is displayed on the LCD of the operator panel. Take an appropriate action as instructed by the messages displayed on LCD.

B412dn/B432dn/B512dn/ES4132dn/ES5112dn



2.5 Troubleshooting Flow

If there are failures in the printer, troubleshooting is performed according to the following process flow.



2.5.1 LCD Status Message/ Trouble Table

Troubles and statuses possible to be displayed on LCD are outlined in Table 2-1.

Table 2-1

Status level	Error code	LCD	LED		Function
			Ready	Atten	
Initializing		PLEASE WAIT	Off	Off	During preparations of initialization
Initializing		INITIALIZING	Off	Off	The controller side is initializing.
Initializing		MENU RESETTING	Off	Off	Indicates that EEPROM of the controller side is being reset. The condition that EEPROM is reset includes the followings. <ul style="list-style-type: none"> • Changes of CU ROM (when disagreement of CU F/W version is detected) • Changes of destination channel • Compulsive initialization of EEPROM (System maintenance menu) • OEM set of PJJ command
Initializing		WAIT A MOMENT NETWORK INITIAL	Off	Off	The network is in initializing.
Initializing		FLASH CHECK	Off	Off	Displays that the content of Flash memory is being checked. It is displayed it when Resident Flash memory not fomented are detected, or "MAINTENANCE MENU"- "FLASH FORMAT" of a factory maintenance menu is performed. The function mentioned above is secret to users. Therefore, this status does not occur in a user environment.

Status level	Error code	LCD	LED		Function
			Ready	Atten	
Initializing		FLASH FORMAT	Off	Off	Displays that Flash memory is being formatted. It is displayed it when Resident Flash memory not fomented are detected, or "MAINTENANCE MENU". "FLASH FORMAT" of a factory maintenance menu is performed. The function mentioned above is secret to users. Therefore, this status does not occur in a user environment.
Initializing		PU FLASH ERROR	Off	Off	It is shown that PU firmware has booted in Loader mode. When CU firmware received PU Ver "00.00.00" from PU firmware, CU firmware displays this status. If initialization is completed, it will change to the warning status. This status may occur also in a user environment. When it occurs, the maintenance by a maintenance member is required (equivalent to S/C).
Initializing		COMMUNICATION ERROR	Off	Off	Displays that communication to PU firmware failed. This status may occur also in a user environment. When it occurs, the maintenance by a maintenance member is required (equivalent to S/C).
Initializing		STATUS MODE	Off	Off	Displays that normal Online mode starts. Data (Job) from an external portion is processed even though an error takes place after Online (ready) state once this mode starts. Displays Error or Warning on a panel. If a power supply is turned on pressing a <OK>+<Back>+<Down> switch, it will enter into this mode. This function is secret to users. Therefore, this status does not occur in a user environment.

Status level	Error code	LCD	LED		Function
			Ready	Atten	
Normal		READY TO PRINT	On	Off	Shows on-line status.
Normal		OFFLINE	Off	Off	Shows off-line status. * Ready LED in off-line is always assumed to be Off.
Normal		FILE ACCESSING	Varies	Varies	The status showing FILE SYSTEM (FLASH) is being accessed.
Normal		DATA ARRIVE	Varies	Varies	Data receiving, process not started yet.
Normal		PROCESSING	Blink	Varies	Data receiving or output processing
Normal		DATA	Varies	Varies	Un-printed data remains in Buffer. Waiting for data to follow.
Normal		PRINTING	Varies	Varies	A printer is printing.
Normal		PRINT DEMO PAGE	Varies	Varies	Printing Demo Pages
Normal		PRINT FONT	Varies	Varies	Printing Font Lists
Normal		PRINT MENU MAP	Varies	Varies	Printing Menu Maps
Normal		PRINT FILE LIST	Varies	Varies	Printing File Lists
Normal		PRINT ERROR LOG	Varies	Varies	Printing Error Logs
Normal		PRINT NETWORK CONFIG	Varies	Varies	It is shown that a network setup is printing.
Normal		☐ COLLATE COPY iii/iii	Varies	Varies	Collate printing. iii: The number of copy in printing. iii: the total number of printing.
Normal		☐ COPY kkk/III	Varies	Varies	Copy printing. kkk: The number of pages in printing. III: The total number of printing.
Normal		PREPARING CANCEL	Blink	Varies	Preparing cancelling.
Normal		CANCELING JOB	Blink	Varies	Indicates that job cancellation has been instructed and data is being ignored until the job completion.
Normal		CANCELING JOB (JAM)	Blink	Varies	Indicates if JAM occurs when Jam Recover is OFF, that job cancellation has been instructed and data is being ignored until the job completion.

Status level	Error code	LCD	LED		Function
			Ready	Atten	
Normal		CANCELING JOB (USER DENIED)	Blink	Varies	Indicates a job being cancelled due to no print permit. (Related to JobAccount) 1. A job received from a user who is denied printing. 2. A color job received from a user who is denied color printing.
Normal		CANCELING JOB (BUFFER FULL)	Blink	Varies	Indicates that a job is being cancelled because the printer area where the logs are stored has been used up and also "Cancel job" is specified as an operation at the time of Log Full. (Related to JobAccount)
Normal		<input type="checkbox"/> ADJUSTING TEMP.	Varies	Varies	Shows cooling down status. It is cautious of a period following "Adjusting Temp".
Normal		<input type="checkbox"/> ADJUSTING TEMP	Varies	Varies	Warming up.
Normal		<input type="checkbox"/> POWER SAVE	Varies	Varies	A printer is in power save mode.
Normal		INVALID OPERATION	Varies	Varies	With the printer unable to switch to the Power Save mode, pops up with a press or successive presses of the power save button, and three seconds after that, disappears, the display being restored.
Normal		<input type="checkbox"/> SLEEP MODE	Varies	Varies	Indicates the printer goes into the Sleep Mode. The printer goes into the mode immediately after this message appears, and in fact the message is hard to read.
Normal		FLASH DOWNLOAD	Varies	Varies	Downloading PU F/W (This is not user-level error) This function is secret to users. Therefore, this status does not occur in a user environment.
Normal		PLEASE WAIT EXECUTING MAINTENANCE	Varies	Blink	Indicates that the printer is executing the remote maintenance mode. During this mode, users have no permission to operate the printer.

Status level	Error code	LCD	LED		Function
			Ready	Atten	
		<input type="checkbox"/> FOR MAXIMUM PERFORMANCE ALWAYS USE %COMPANY_NAME% ORIGINAL			This should be appeared after the toner/drum/ print cartridge low/empty warning) messages when the OKI ORIGINAL CONSUMABLES DISPLAY is ON to display this.
Warning		<input type="checkbox"/> TONER LOW	Varies	On (Blink) (Off)	Toner amount is low. Displayed in a combination of other message in the first line.
Warning		<input type="checkbox"/> NON RECOMMENDED TONER	Varies	On	It is not a toner cartridge of an original manufacturer's product.
Warning		<input type="checkbox"/> NON RECOMMENDED TONER.	Varies	On	It is not a toner cartridge of an original manufacturer's product.
Warning		<input type="checkbox"/> Non Recommended Toner	Varies	On	It is not a toner cartridge of an original manufacturer's product.
Warning		PRESS ONLINE SW ERROR POSTSCRIPT	Varies	Varies	Interpreter detects an error due to the following reason. Receive data after this is ignored until the job completion. When the job is completely received, this is automatically cleared. - The job has a grammatical error. - The page is complicated, and VM was used up.
Warning		PRESS ONLINE SW ERROR PDL	Varies	Varies	This is the status to recognize the analysis error that occurred during PDL processing. Stays displayed until the ONLINE button is pressed.
Warning		<input type="checkbox"/> ORDER DRUM	Varies	On (Off)	The life of the drum (warning). Displayed in a combination of other message in the first line. The printer stops at the point when it reaches the drum life (Shifts to error, OFF-LINE).

Status level	Error code	LCD	LED		Function
			Ready	Atten	
Warning		<input type="checkbox"/> TONER EMPTY	Varies	On	The thing that the toner empties is shown. This status (Warning) is displayed to open/close the cover or turn on the power supply again after the error of no toner occurs.
Warning		<input type="checkbox"/> TONER SENSOR	Varies	On	The thing that abnormality is detected in the toner sensor is shown. Operation is possible usually. When the setting of the engine is Factory mode, it is assumed the state of the error. (ERR 163)
Warning		<input type="checkbox"/> TONER NOT INSTALLED	Varies	On	Notifies the toner cartridge is not installed. This is a warning only.
Warning		<input type="checkbox"/> DRUM LIFE	Varies	On	Notifies the life of the drum. Or, the waste toner box has become full. This is a warning only. This appears when the cover was opened and closed just after the drum life error occurred. This occurs when toner empty error occurs at the same time.
Warning		<input type="checkbox"/> HEAD DATA ERROR	Varies	On	The LED head calibration data is missing or invalid. Printing can be proceeded without calibrating light radiation. PU firmware does not notify this warning to CU firmware at the time of Shipping Mode. Therefore, this status does not occur in a user environment.

Status level	Error code	LCD	LED		Function
			Ready	Atten	
Warning		<input type="checkbox"/> %TRAY% EMPTY	Varies	On	%TRAY%: The tray is empty. Treated as Warning until printing to the empty tray is designated. %TRAY% TRAY1 TRAY2
Warning		<input type="checkbox"/> %TRAY% MISSING	Varies	On	Shown that the cassette is extracted from the tray. Treats as warning until the tray in which the cassette is extracted has printing specification. %TRAY% TRAY1
Warning		<input type="checkbox"/> FILE SYSTEM IS FULL	Varies	On	Disk-full is occurring. Because this is a temporary warning, it remains until the end of the job and disappears.
Warning		<input type="checkbox"/> FILE IS WRITE PROTECTED	Varies	On	An attempt to write in a read-only file was done. Because this is a temporary warning, it remains until the end of the job and disappears.
Warning		PRESS ONLINE SW EXPIRED SECURE JOB	Varies	On	Indicates that an applicable job has been automatically deleted as the retention period for authentication printing has expired.
Warning		<input type="checkbox"/> ACCOUNTING LOG BUFFER IS NEAR FULL	Varies	Varies	It indicates the Job Accounting log buffer is near full.
Warning		<input type="checkbox"/> ACCOUNTING LOG BUFFER FULL(DELETE OLD LOGS)	Varies	Varies	The function isn't accepted because log buffer is full. (Related to JobAccount). This message is displayed, if the log buffer is full and "Operation at Log Full" in Job Accounting Server Software is set to "Delete old logs". The new jobs will be able to execute after the following operations. 1. The log in the unit must be got by Job Accounting Server Software. 2. The setting of "Operation at Log Full" must be changed to "Does not acquire logs".

Status level	Error code	LCD	LED		Function
			Ready	Atten	
Warning		%INFO%	Varies	Varies	Indicates that the new consumable (toner). This status should be appeared at detecting the new consumable (toner), and be disappeared automatically after 3 seconds. %INFO% is contained in the consumable tag. [OKI Original]
Warning		PRESS ONLINE SW COLLATE FAIL:TOO MANY PAGES	Varies	Varies	Memory overflow was occurred in the collate copy. Stays displayed until the ONLINE button is pressed.
Warning		PRESS ONLINE SW PRINT RESTRICTED. JOB REJECTED	Varies	On	Notifies users that jobs have been cancelled because they are not permitted for printing. (Related to JobAccount). Stays displayed until the ON LINE key is pressed.
Warning		PRESS ONLINE SW LOG BUFFER IS FULL. JOB REJECTED	Varies	On	Notifies users that jobs have been cancelled because the buffer is full. (Related to JobAccount.) Stays displayed until the ON LINE key is pressed.
Warning		PRESS ONLINE SW SYSTEM JOB LOG WRITING ERROR	Varies	On	The system job log was written in and the disk access error occurred in inside. Therefore, it is shown to a user that a log was not able to be written in normally. (Related to Logging) Stays displayed until the ONLINE button is pressed.
Warning		PRESS ONLINE SW E-MAIL RECEIVING HAS BEEN CANCELLED	Varies	On	Indicates that Email receiving has been canceled. It has the following possibilities. - The format of email that has received is illegal or not supported. - The attached file is illegal or not supported. - The attached file that has received is too large, for example, file size exceeds 8MB. - network connection has disconnected.

Status level	Error code	LCD	LED		Function
			Ready	Atten	
Warning		<input type="checkbox"/> FILE OPERATION FAILED %FS_ERR%	Varies	On	A disk error is occurred, which is other than the file system fill or the disk write protected. Operation that does not involve a disk is available. nnn: An identifier to Error type (For details, see the overview chapter.) %FS_ERR% = 0 ... GENERAL ERROR = 1 ... VOLUME NOT AVAILABLE = 3 ... FILE NOT FOUND = 4 ... NO FREE FILE DESCRIPTORS = 5 ... INVALID NUMBER OF BYTES = 6 ... FILE ALREADY EXISTS = 7 ... ILLEGAL NAME = 8 ... CANT DEL ROOT = 9 ... NOT FILE = 10 ... NOT DIRECTORY = 11 ... NOT SAME VOLUME = 12 ... READ ONLY = 13 ... ROOT DIR FULL = 14 ... DIR NOT EMPTY = 15 ... BAD DISK = 16 ... NO LABEL = 17 ... INVALID PARAMETER = 18 ... NO CONTIG SPACE = 19 ... CANT CHANGE ROOT = 20 ... FD OBSOLETE = 21 ... DELETED = 22 ... NO BLOCK DEVICE = 23 ... BAD SEEK = 24 ... INTERNAL ERROR = 25 ... WRITE ONLY
		<input type="checkbox"/> %PUFLASH% FLASH ERROR	varies	varies	PU flush error (Error occurs during the alteration of PU farm or it failed in the alteration in PU flush of such as LED Head information.) %PUFLASH% PU TRAY2
Warning		PRESS ONLINE SW INVALID SECURE DATA	varies	varies	Indicates that a job has been deleted because corruption of data has been detected by the integrity verification in authentication printing.

Status level	Error code	LCD	LED		Function
			Ready	Atten	
Warning		PRESS ONLINE SW INVALID DATA	Varies	Varies	Invalid data was received. Press the On-line switch and eliminate the warning..
Warning		PRESS ONLINE SW ACCOUNTING LOG WRITING ERROR	Varies	Varies	The Job Accounting log is not registered correctly because of thr disc access error is occurred during accounting log. (Related to Logging). This message is displayed until Online key pressed.
Warning		PRESS ONLINE SW ERROR PDF	Varies	Varies	An error in the content of PDF file. This message is displayed until Online key pressed
Warning		PRESS ONLINE SW INVALID PASSWORD	Varies	Varies	The password of the encrypted PDF is different with the one inputed. The file will not be printed. This message is displayed until Online key pressed
Warning		PRESS ONLINE SW PASSWORD REQUIRED TO PRINT	Varies	Varies	The PDF is limited not be printed by a password. The owner password is required. This message is displayed until Online key pressed
Warning		PRESS ONLINE SW PDF CACHE WRITE ERROR	Varies	Varies	An error occurred when writing PDF cache. This message is displayed until Online key pressed
Warning		PRESS ONLINE SW DECODE ERROR OCCURRED	Varies	Varies	Decode error has occurred in a PDF file. This message is displayed until Online key pressed
Warning		CHANGE IPv4 ADDRESS IPv4 ADDRESS IS CONFLICTED	Varies	Varies	An IPv4 address repeats with other machinery.
Error (ONLINE)		LOAD %MEDIA_ SIZE% IN MP TRAY AND PRESS ONLINE SWITCH	On	Off	Manual paper feed is required. Manually insert the paper shown by %MEDIA_SIZE%.

Status level	Error code	LCD	LED		Function
			Ready	Atten	
Error	461 462	LOAD %MEDIA_SIZE%/ %MEDIA_TYPE% AND PRESS ONLINE SWITCH %ERRCODE%:%TRAY% MEDIA MISMATCH	Off	Blink	The media type in the tray and the print data do not match. Load mmmmmm/pppppp paper in tttttt tray (It takes a while until the status disappears after you have closed the tray and the lever lifted.) (ttttt : TrayName, mmmmmm:PaperName, pppppp:MediaTypeName) Error 461 : TRAY1 Error 462 : TRAY2 As a user pressed ONLINE key, the printer could ignore this error at the just printing job.
Error	460	LOAD %MEDIA_SIZE%/ %MEDIA_TYPE% AND PRESS ONLINE SWITCH %ERRCODE%:%TRAY% MEDIA MISMATCH	Off	Blink	The media type in the tray and the print data do not match. Load paper in tray (It takes a while until the status disappears after you have closed the tray and the lever lifted.) (%TRAY% : TrayName, %MEDIA_SIZE%: PaperName, %MEDIA_TYPE%: MediaTypeName) Error 460 : MP TRAY A user needs to press ONLINE key after changing the paper.
Error	461 462	LOAD %MEDIA_SIZE%/ %MEDIA_TYPE% AND PRESS ONLINE SWITCH %ERRCODE%:%TRAY% SIZE MISMATCH	Off	Blink	The size of paper or media type in the tray does not match the print data. Load paper in tray (It takes a while until the status disappears after you have closed the tray and the lever lifted.) Error 461 : TRAY1 Error 462 : TRAY2 As a user pressed ONLINE key, the printer could ignore this error at the just printing job.

Status level	Error code	LCD	LED		Function
			Ready	Atten	
Error	460	LOAD %MEDIA_SIZE%/ %MEDIA_TYPE% AND PRESS ONLINE SWITCH %ERRCODE%:%TRAY% SIZE MISMATCH	Off	Blink	The size of paper or media type in the tray does not match the print data. Load paper in tray (It takes a while until the status disappears after you have closed the tray and the lever lifted.) Error 460 : MP TRAY After replacing the form, the user should press the ONLINE key.
Error	420	REDUCE PRINT DATA %ERRCODE%:MEMORY OVERFLOW	Off	Blink	Memory capacity overflows due to the following reason. Press ON-LINE switch so that it continues. Please reduce print data. - Too much print data in a page. - Too much Macro data. - Too much DLL data. - After frame buffer compression, over flow occurred. - EmailToPrint.
Error (ONLINE)		DOWNLOAD MESSAGE PROCESSING	Varies	Varies	Indicates that message data to be updated is being processed.
Error (ONLINE)		DOWNLOAD MESSAGE WRITING	Varies	Varies	Indicates that message data to be updated is being written.
Error (ONLINE)		DOWNLOAD MESSAGE SUCCESS	Varies	Varies	Indicates that message data to be updated has been written successfully.
Error (ONLINE)		DOWNLOAD MESSAGE FAILED %CODE%	Varies	Varies	Indicates that writing of message data to be uploaded has been failed. %CODE% is a decimal value (one digit) and represents the cause of failure in writing. = 1 ... FAIL: Other errors. = 2 ... DATA_ERROR: Hash check error in data reading/writing, or abnormal FLASH = 3 ... OVERFLOW: Downloading failure due to FLASH memory full at starting or during writing in a language file = 4 ... MEMORYFULL: Memory reservation failure = 5 ... UNSUPPORTED_DATA: Downloading data unsupported on the printer

Status level	Error code	LCD	LED		Function
			Ready	Atten	
Error (ONLINE)		NETWORK CONFIG WRITING	Varies	Varies	This appears during the NIC configuration data is storing into the flash memory, as the setting was changed.
Error (ONLINE)		WAIT A MOMENT NETWORK INITIAL	Varies	Varies	This appears when the NIC initialization is occurred, as the setting was changed.
Error	517	PRESS ONLINE SW %ERRCODE%:WIRELESS STARTUP ERROR	Off	Blink	An error occurred at the communication with wireless bridge. For example, response timeout, etc. This status only for wireless LAN printer.
Error (ONLINE)	506	PRESS ONLINE SW %ERRCODE%:NOT CONNECTED TO WIRELESS ACCESS POINT	Off	Blink	Can not setup communication with an Access Point(there is not an usable AP). This status only for wireless LAN printer.
Error (ONLINE)	519	PRESS ONLINE SW FOR RESTORATION %ERRCODE%:RECEIVING DATA TIMEOUT	Varies	Blink	When receiving data by Port9100, LPR, FTP, IPP, WSD, or Email, a timeout occurred in stream.
Error (ONLINE)	302	PLEASE TRY AGAINE %ERRCODE%:FW UPDATE ERROR.IF NETWORK DOESN'T WORK,PLEASE TRY FW UPDATE OVER USB	Varies	Varies	FW Update was failed. When this error occurred, the FW Update needs to be executed again, and the printer needs to keep On-Line.
Error	581	CLOSE FACE UP STACKER %ERRCODE%:DUPLEX NOT AVAILABLE	Off	Blink	It is occurred when duplex printing pages are added at the face up stacker cover opened.

Status level	Error code	LCD	LED		Function
			Ready	Atten	
Error	490 491 492	LOAD%MEDIA_SIZE% %ERRCODE%:%TRAY% EMPTY	Off	Blink	Printing request is issued to an empty tray. Load paper. (It takes a while until the status disappears after you have closed the tray and the lever lifted.) Error 490 : MP TRAY Error 491 : TRAY1 Error 492 : TRAY2 The paper size displaying form of the custom mode is the same as above if the driver doesn't set. Otherwise, same as the driver set.
Error	440	INSTALL PAPER CASSETTE %ERRCODE%:TRAY1 OPEN	Off	Blink	Indicates removal of the paper cassette of Tray 1 that is a paper path in attempting to print from Tray 2.
Error	430	INSTALL PAPER CASSETTE %ERRCODE%:%TRAY% MISSING	Off	Blink	Indicates that paper feed is unavailable in attempting to print from Tray 1 due to removal of the paper cassette of Tray 1. %TRAY% Tray1
		INSTALL TONER FOR MAXIMUM PERFORMANCE ALWAYS USE %COMPANY_NAME% ORIGINAL			This should be appeared after the toner empty error (Error 413) messages when OKIORIGINALCONSUMABLEDISPLAY is ON to display this.
Error	413	REPLACE TONER %ERRCODE%:TONER EMPTY	Off	Blink	Toner ends. Warning status takes effect at Cover Open/Close.
Error	557	REPLACE TONER %ERRCODE%:NON RECOMMENDED TONER	Off	Blink	It is a toner besides our specification. Please exchange to the toner cartridge of an original manufacturer's product.

Status level	Error code	LCD	LED		Function
			Ready	Atten	
Error	617	REPLACE TONER %ERRCODE%: NON RECOMMENDED TONER	Off	Blink	It is a toner besides our specification. Please exchange to the toner cartridge of an original manufacturer's product.
Error	623	REPLACE TONER %ERRCODE%: NON RECOMMENDED TONER	Off	Blink	It is a toner besides our specification. Please exchange to the toner cartridge of an original manufacturer's product.
Error	553	REPLACE TONER %ERRCODE%: NON RECOMMENDED TONER	Off	Blink	It is a toner besides our specification. Please exchange to the toner cartridge of an original manufacturer's product.
Error	613	INSTALL TONER %ERRCODE%:TONER MISSING	Off	Blink	The toner cartridge is not installed.
Error	709	Unknown Consumable Go to User Manual "Trouble Shooting"	Off	Blink	Unknown Consumable detected. Use a special startup(Press Cancel when power on) to start the printer to on-line, but a history will be recorded.
Error	543	CHECK IMAGE DRUM %ERRCODE%:TONER SENSOR ERROR	Off	Blink	It is shown to have detected abnormality with the toner sensor. This status is displayed only at Shipping Mode. When this trouble is detected at Factory Mode, it is displayed as service call (SC163).
Error	400	OPEN UPPER COVER %ERRCODE%:PAPER SIZE ERROR	Off	Blink	Inappropriate size paper was fed from a tray. Check the paper in the tray or check for Multiple-feed. Open and close the cover to perform recovery printing, and continue.
Error	390	CHECK MP TRAY %ERRCODE%:PAPER JAM	Off	Blink	Paper jam occurred during paper feeding from tray. Error 390 : MP TRAY

Status level	Error code	LCD	LED		Function
			Ready	Atten	
Error	391 392	OPEN UPPER COVER %ERRCODE%:PAPER JAM	Off	Blink	Paper jam occurred during paper feeding from tray. Error 391 : TRAY1 Error 392 : TRAY2
Error	380 381 382 389	OPEN UPPER COVER %ERRCODE%:PAPER JAM	Off	Blink	Jam has occurred in paper path. Error 380 : Feed Error 381 : Transport Error 382 : Exit Error 389 : Printing Page Lost
Error	409	CLOSE FACE UP STACKER %ERRCODE%:DUPLEX NOT AVAILABLE	Off	Blink	Indicates stop printing because the face up stacker was operated while printing, and to have assumed the error.
Error	372	OPEN REAR COVER %ERRCODE%:PAPER JAM	Off	Blink	Jam has occurred nearby DUPLEX unit. Error 372 : Misfeed from Duplex
		REPLACE IMAGE DRUM FOR MAXIMUM PERFORMANCE ALWAYS USE %COMPANY_NAME% ORIGINAL			This should be appeared after the image drum life error (Error 347, 353, 563) messages when OKIORIGINALCONSUMABLEDISPLAY is ON to display this.
Error	347	REPLACE IMAGE DRUM %ERRCODE%:DRUM LIFE	Off	Blink	Indicates the waste toner box has become full and needs to be replaced. Error 347 .
Error	353	REPLACE IMAGE DRUM %ERRCODE%:DRUM LIFE	Off	Blink	The life of the image drum (Alarm) Warning status takes effect at Cover Open/Close.
Error	563	REPLACE IMAGE DRUM %ERRCODE%:DRUM LIFE	Off	Blink	The toner empty error is occurred after the image drum reached its life. This is displayed until a user exchanges the image drum.
Error	547	CHECK TONER CARTRIDGE %ERRCODE%:IMPROPER LOCK LEVER POSITION	Off	Blink	Shows that the toner cartridge lever has not been locked.
Error	343	CHECK IMAGE DRUM %ERRCODE%:DRUM MISSING	Off	Blink	Indicates that the black image drum is not set properly.
Error	310 587	CLOSE COVER %ERRCODE%:COVER OPEN	Off	Blink	The cover is open. Error 310 : Upper Cover Error 587 : Rear Cover

Status level	Error code	LCD	LED		Function
			Ready	Atten	
Error		REBOOTING %CODE%	Off	On (Off)	Rebooting of the controller unit. %CODE% is a decimal value (one digit) and represents the reason to reboot. = 0 ... Reboot due to a reason other than the followings. = 1 ... Reboot due to PJLCommand. = 2 ... Reboot in accordance with a menu change. = 3 ... Reboot due to quit operator of PostScript Language. = 4 ... reboot by Network Utility (including Web).
Error		SHUTTING DOWN. PLEASE WAIT TURN OFF AUTOMATICALLY	Off	Off	It is shown that a printer is shutting down.
Fatal	<nnn>	POWER OFF/ON %ERRCODE%: ERROR	Off	Blink	A fatal error occurred. * Fatal Error is not available in national language.
Fatal	<nnn>	SERVICE CALL %ERRCODE%: ERROR	Off	Blink	A fatal error occurred. * Fatal Error is not available in national language.
Fatal	072 073 075 203	POWER OFF/ON %ERRCODE%:ERROR *	Off	Blink	A fatal error occurred. ** specifies the detailed error cause. ※Fatal Error is not available in national language.
Fatal	231 128	SERVICE CALL %ERRCODE%:ERROR *	Off	Blink	A fatal error occurred. *** specifies the detailed error cause. * Fatal Error is not available in national language.
Fatal	002 003 005 FFF	POWER OFF/ON %ERRCODE%:ERROR nnnnnnnn nnnnnnnn nnnnnnnn	Off	Blink	A fatal error occurred. 'nnnnnnnn' specifies the detailed error cause. * Fatal Error is not available in national language.
Fatal	209	POWER OFF/ON %ERRCODE%: DOWNLOAD ERROR	Off	Blink	Downloading Media Table to PU has failed. (Related to CustomMediaType.) * Fatal Error is not available in national language.

2.5.2 Service Call List

Display	Cause	Error details		Measure
POWER OFF/ON 002:ERROR 003:ERROR 005:ERROR FFF:ERROR	CPU Exception	Is the error display provided again?	Yes	Turn off and on the SFP. Replace the CU/ PU board.
SERVICE CALL 030:ERROR	CU RAM Check Error	Is the error display provided again?	Yes	Turn off and on the SFP. Replace the CU/ PU board.
SERVICE CALL 040:ERROR	CU EEPROM error	Is the error display provided again?	Yes	Turn off and on the SFP. Replace the CU/ PU board.
SERVICE CALL 042:ERROR 043:ERROR	Flash memory file system error	Accessing the flash ROM directly mounted on the CU/ PU board failed.		Turn off and on the SFP. Replace the CU/ PU board.
SERVICE CALL 067:ERROR	IM Communication Error			
SERVICE CALL 069:ERROR	NIC Chip Error			
POWER OFF/ON 070:ERROR	PostScript error	Error is detected inside the postscript core		Take note of the address that is displayed on LCD. Turn off and on the SFP.
POWER OFF/ON 072:ERROR *	Engine interface error or PU-CU interface error	Is the CU/PU board installed properly?	No Yes	Reinstall the CU/ PU board properly. Replace the CU/ PU board.
POWER OFF/ON 073:ERROR **	Video error. An error was detected in expanding image data (an invalid data was received)	Is the CU/PU board installed properly?	No Yes	Reinstall it properly. Change the PC to a high- specification one or decrease the resolution, and perform printing again.
		Does the error occur again?	Yes	Replace the CU/ PU board.
				Replace the interface cable. Reinstall the PC printer driver.
		Is the CU/PU board installed properly? Does the error occur again? Does the error depend on print data?	No Yes Yes No Yes	Reinstall it properly. Perform printing again. Print other data. Replace the CU/PU board. Ask design people to analyze the data.

Display	Cause	Error details		Measure
POWER OFF/ON 075:ERROR **	Video error. An error was detected in expanding image data.	Is the CU/PU installed properly?	No Yes	Reinstall it properly. Replace it.
POWER OFF/ON 077:ERROR	VIC Illegal Decomp Error			
SERVICE CALL 081:ERROR	Parameter matching check error	Reading from or writing into EEPROM or flash memory cannot be made properly.		Turn off and on the SFP. Replace the CU/ PU board when the symptom persists.
SERVICE CALL 098:ERROR	Power Control Error			
SERVICE CALL 104:ERROR	An engine EEPROM read/write error was detected.	Does the error occur again?	Yes	Turn off and on the SFP. Replace the CU/PU board.
SERVICE CALL 106:ERROR	Engine control logic error	Does the error occur again?	Yes	Turn off and on the SFP. Replace the CU/PU board.
SERVICE CALL 112:ERROR	The 2nd tray for a model different from the SFP was detected.	Is the 2nd tray for the SFP installed?	No	Install proper 2nd tray.
SERVICE CALL 121:ERROR	High-voltage power supply interface error	Is the cable between the CU/ PU board and the high- voltage power unit connected properly? Is a contact faulty?	No Yes No	Reconnect it properly. Check the high- voltage line for no poor connection. Replace the high- voltage power supply.
SERVICE CALL 122:ERROR	Power Supply Fan error	Does the fan at the rear of the SFP operate? Is the connector of the fan connected properly?	No Yes No Yes	Be sure of the connection of the fan. Replace the CU/PU board. Connect the fan properly. Replace the CU/PU board.

Display	Cause	Error details		Measure
SERVICE CALL 123:ERROR	Ambient humidity error or non connection of humidity sensor	Is the cable from the CU/PU board to the toner sensor board connected properly?	No Yes	Re-connect it properly. Replace the toner sensor board.
SERVICE CALL 124:ERROR	Ambient temperature error	Is the cable from the CU/PU board to the toner sensor board connected properly?	No Yes	Re-connect it properly. Replace the toner sensor board.
POWEROFF ANDWAITFORA WHILE 126:CONDENSING ERROR	Sensor Dewed Error			
SERVICE CALL 127:ERROR	An error of exhaust fan of the Fuser	Is the fan's connector properly connected? Does the error occur again?	No Yes No	Connect properly. Replace the fan's motor. Replace the PU board.
SERVICE CALL 128:ERROR 05	Image drum fan error	Is the connector of the fan connected properly? Does the error occur again?	No Yes No	Re-connect it properly. Replace the fan motor. Replace the CU/PU board.
SERVICE CALL 134:ERROR	LED head detection error (134=K)	Is the LED head installed properly? Is the LED head fuse broken? Does the error occur again?	No Yes Yes No Yes	Install the LED head unit. Check the LED head fuse. Check the fuse. Turn off and on the SFP. Replace the LED head unit.
SERVICE CALL 153:ERROR	Image drum unit fuse-cut error	Is the image drum unit installed properly? Does the error occur again? Is the SFP recovered by replacing the toner sensor board.	No Yes Yes No	Re-install it. Turn off and on the SFP. Be sure of the cable connection from the CU/PU board to the toner sensor board, and then replace the toner sensor board. Replace the CU/PU board.

Display	Cause	Error details		Measure
SERVICE CALL 163:ERROR	Toner sensor detection error (163=K). This error does not occur with the SFP in the factory shipped configuration.	Is the toner cartridge installed? Is the toner slide shutter set?	No No Yes	Install the toner cartridge. Turn it to the fixed position. Turn off and on the SFP. Replace the toner sensor assembly.
SERVICE CALL 170:ERROR 171:ERROR	A fuser thermistor short or open circuit was detected.	Does the error occur again?	Yes	Turn off and on the SFP. Replace the fuser unit.
SERVICE CALL 172:ERROR 173:ERROR	A fuser thermistor temperature error (high or low temperature) was detected.	Does the error occur again? Does the error occur again?	Yes Yes	Turn off and on the SFP. Replace the fuser unit. Replace the low-voltage power supply, and then replace the CU/PU board when the error occurs again.
SERVICE CALL 182:ERROR	Option unit I/F error	Does the error occur again? Does the error occur again?	Yes Yes	Turn off and on the SFP. Be sure of connector connection. Replace the option unit.
POWER OFF/ON 190:ERROR	System memory overflow	Does the error occur again?	Yes	Turn off and on the SFP. Replace the CU/PU board.
POWER OFF/ON 203:ERORR * 204:ERORR 207:ERORR 208:ERORR 213:ERORR 214:ERORR	CU program error (203 to 214 do not occur in general use of the SFP)	Invalid processing was performed with a CU program.		Replace the CU/PU board.
POWER OFF/ON 209:DOWNLOAD ERROR	Custom Media Type table downloading failure	Custom Media Type table downloading failed.		Turn off and on the SFP, and then re-download it (In general use of the SFP, this downloading is not performed and this error does not occur).

Display	Cause	Error details		Measure
SERVICE CALL 230:ERROR	TAG Reader not installed			
SERVICE CALL 231:ERROR *	TAG interface error	IA TAG interface error was detected. 01 : A short-circuit error. 02 : TAG communication error.		Be sure the toner cartridges and the image drums are properly set. Replace the toner cartridges. When the error occurs again after the image drums are re- installed, be sure of the cable connection from the CU/PU board to the toner sensor board.
POWER OFF/ON 923:ERROR	A lock error with black image drum	The image drum does not revolve properly. Does the error display is provided again by turning off and on the SFP?	Yes Yes	Be sure the image drum is properly installed properly. Replace the image drum unit. Replace the image drum motor.
POWER OFF/ON 933:ERROR	Tray-2 CPU clock frequency error			The error is occurred when Factory mode only.
POWER OFF/ON 941:ERROR 942:ERROR 943:ERROR 944:ERROR 946:ERROR	PU Error	A PU error was detected. 941 : Watch Doc Timer Error 942 : Detection of Unassigned Interruption 943 : CPU Error Detection 944 : Dcon Access Error 946 : AC Voltage Zero- crossing Error		Turn off and on the SFP. When this error occurs again, replace the CU/ PU board. The 946 error is occurred when Factory mode only.
SERVICE CALL 982:ERROR	Excessive Optional Tray Detected			
SERVICE CALL 984:ERROR	Black Tag Version Mismatch			

Note! With the SFP's temperature not more than 0°C, Service call errors 171 Error may occur. After turn off the SFP, turn on the SFP after the SFP warms.

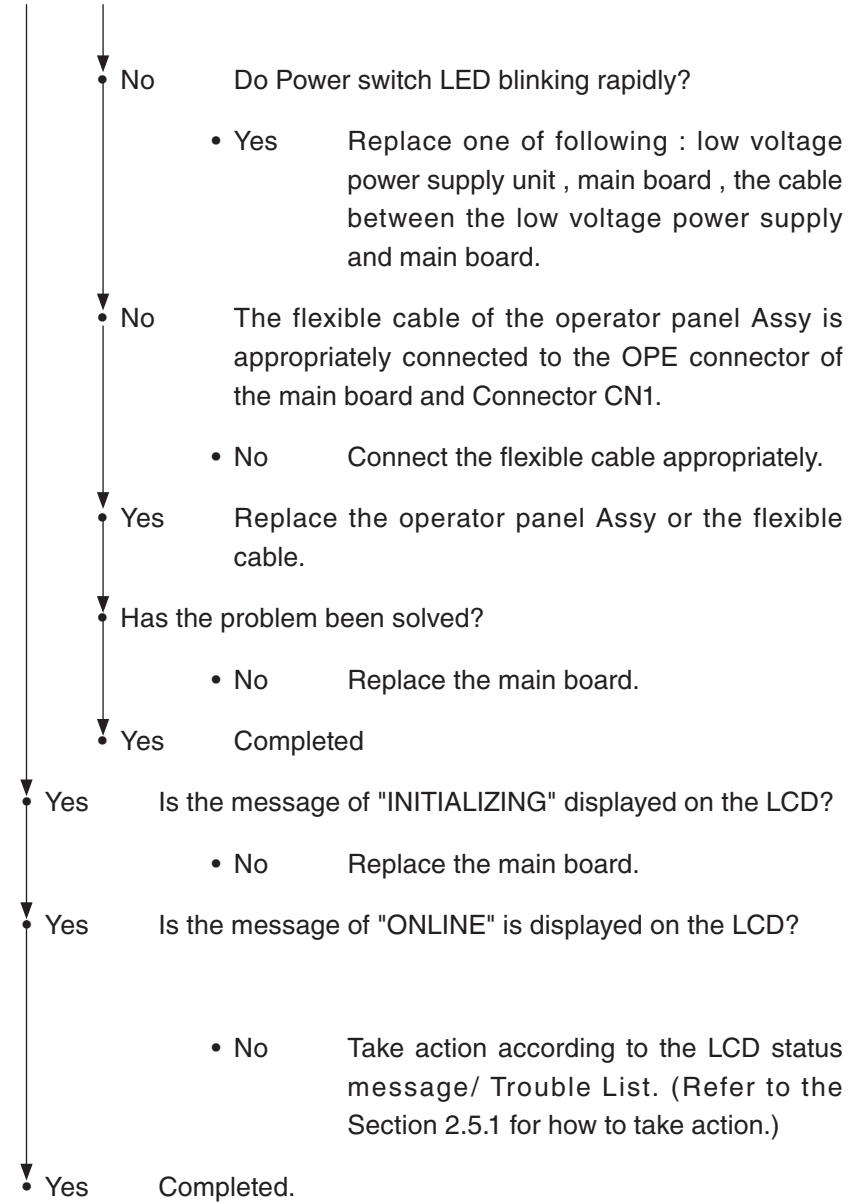
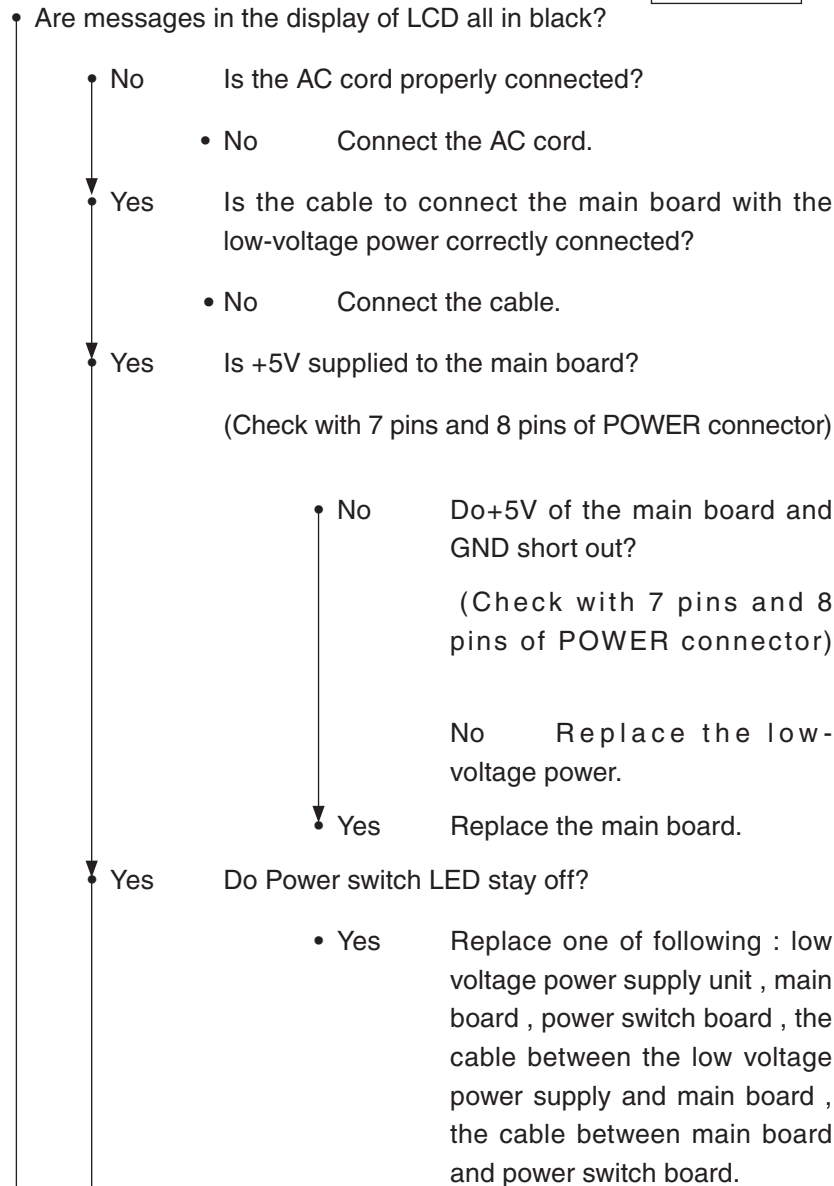
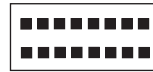
2.5.3 LCD Message Troubleshooting

If you still have trouble even after using the LCD Status Message/ Trouble List, follow the troubleshooting flowchart displayed below to solve the trouble.

No.	Trouble	Flowchart No.
1.	The printer does not work normally after tuning on the power.	①
2.	Jam Alert <ul style="list-style-type: none"> — Paper feed jam — Paper path jam — Paper ejection jam 	②-1 ②-2 ②-3
3.	Paper size error	③
4.	Fuser unit error	④
5.	SSIO (Synchronized serial input and output) between Printer and Option Tray (Second Tray unit) Error interface time out (No response)	⑤
6.	Fan error	⑥-1 ⑥-2 ⑥-3

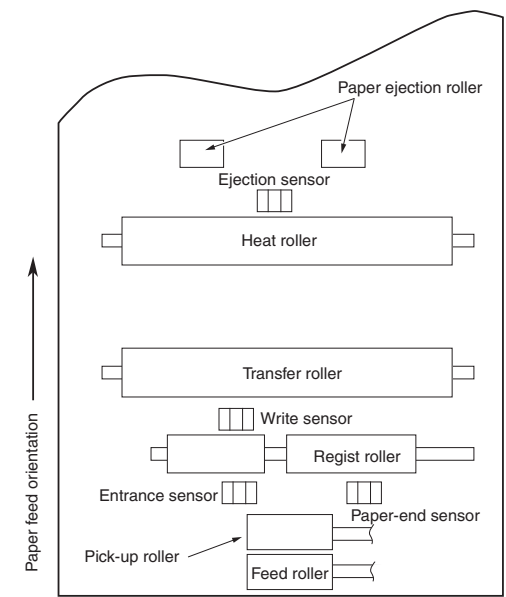
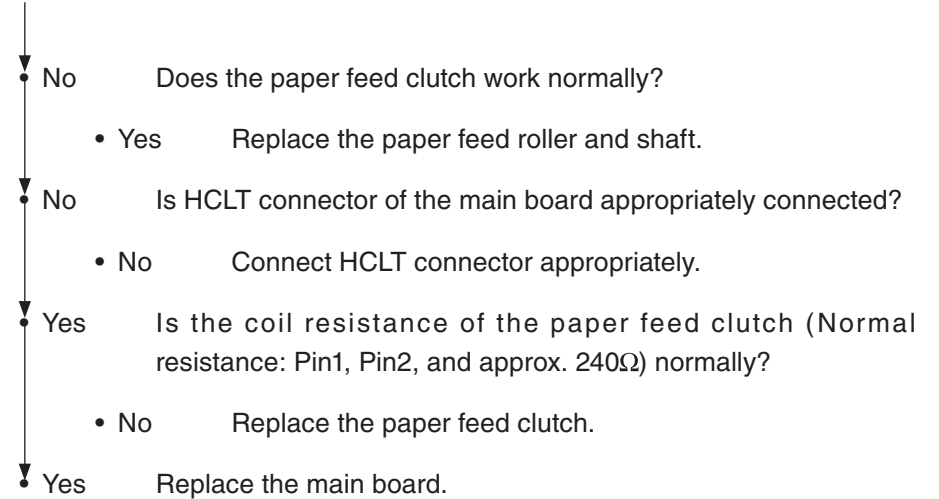
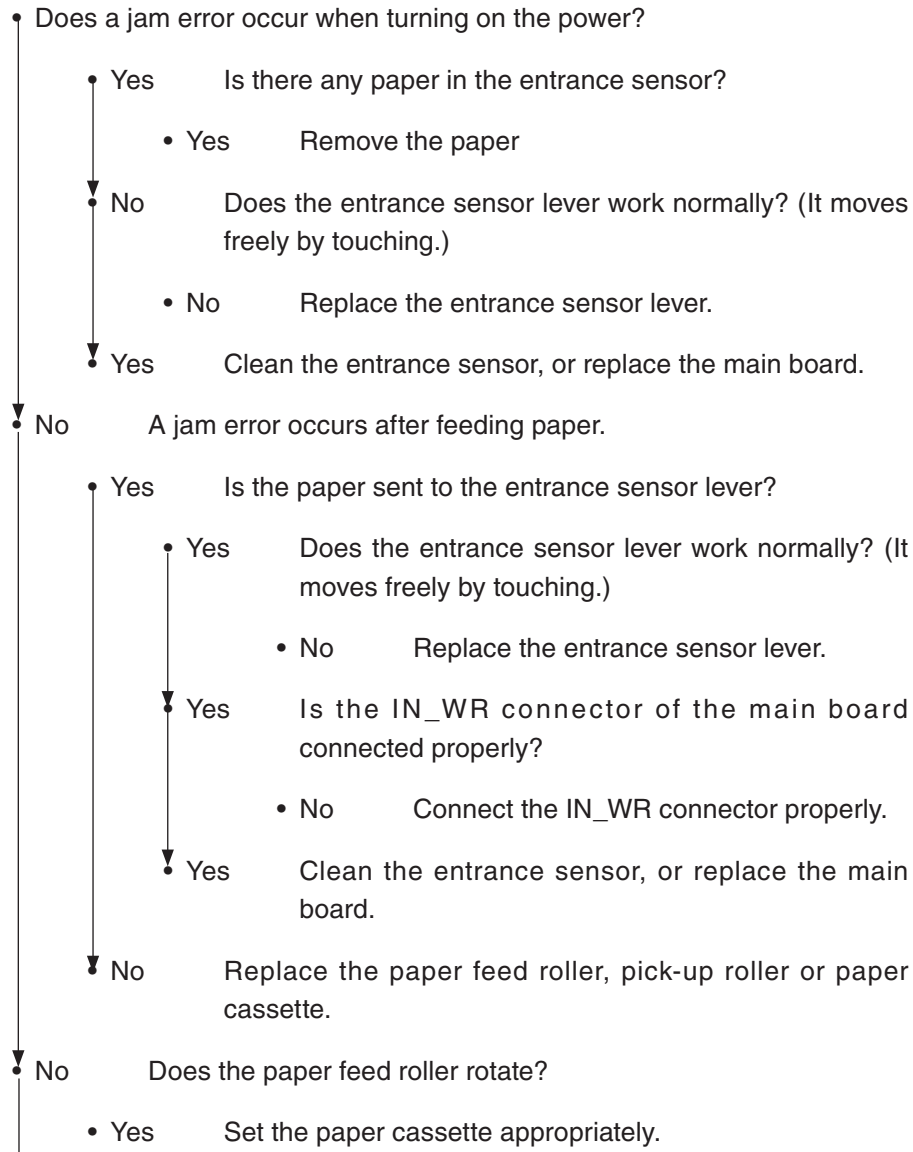
① The case where the printer does not work normally after tuning on the power

- Turn off the power and then, turn on the power again.



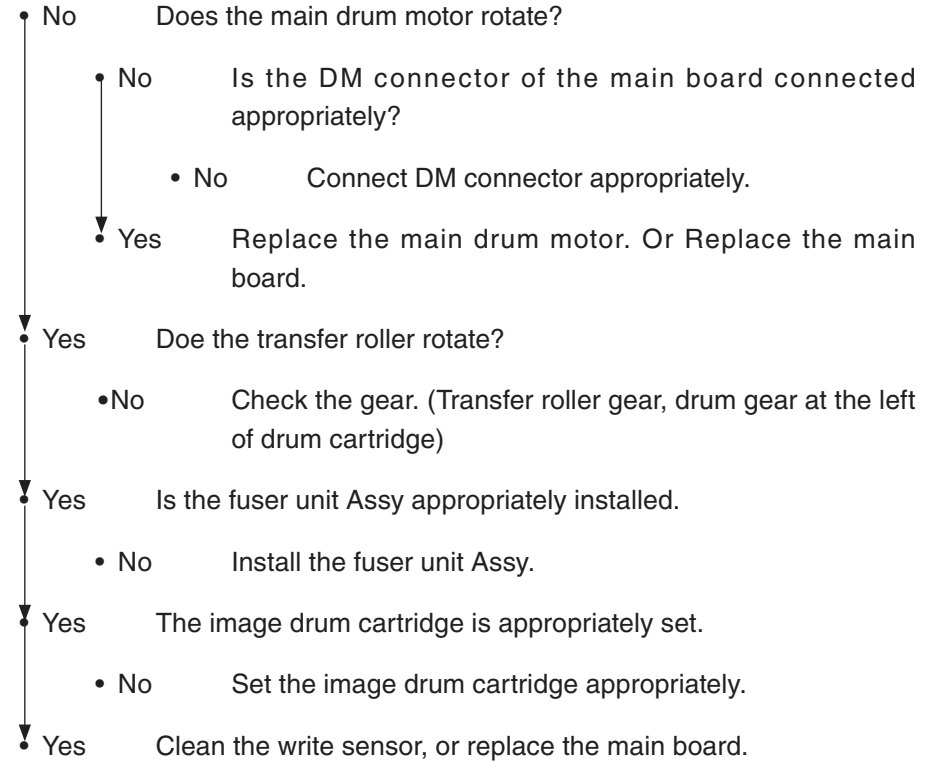
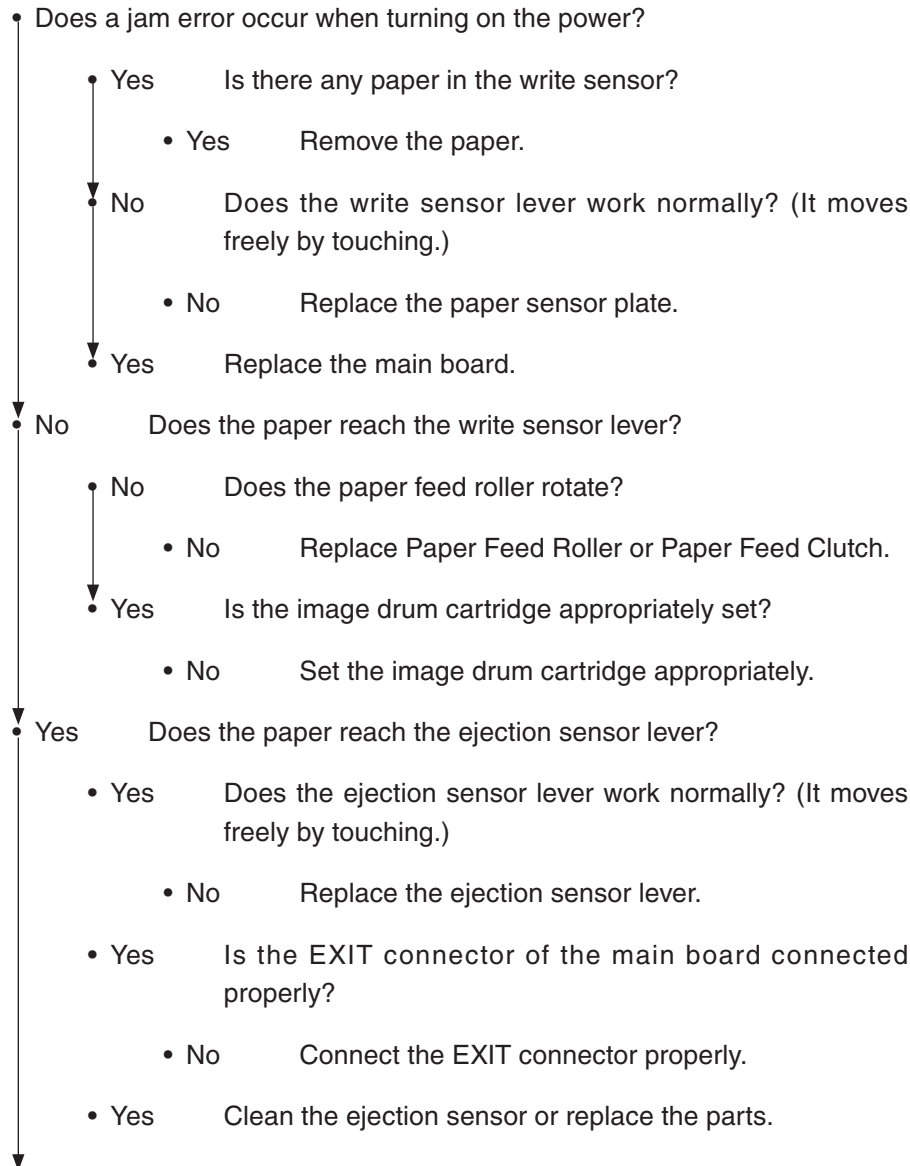
[Jam Error]

②-1 Paper feed jam (Error 390)(Error 391)(Error 392)



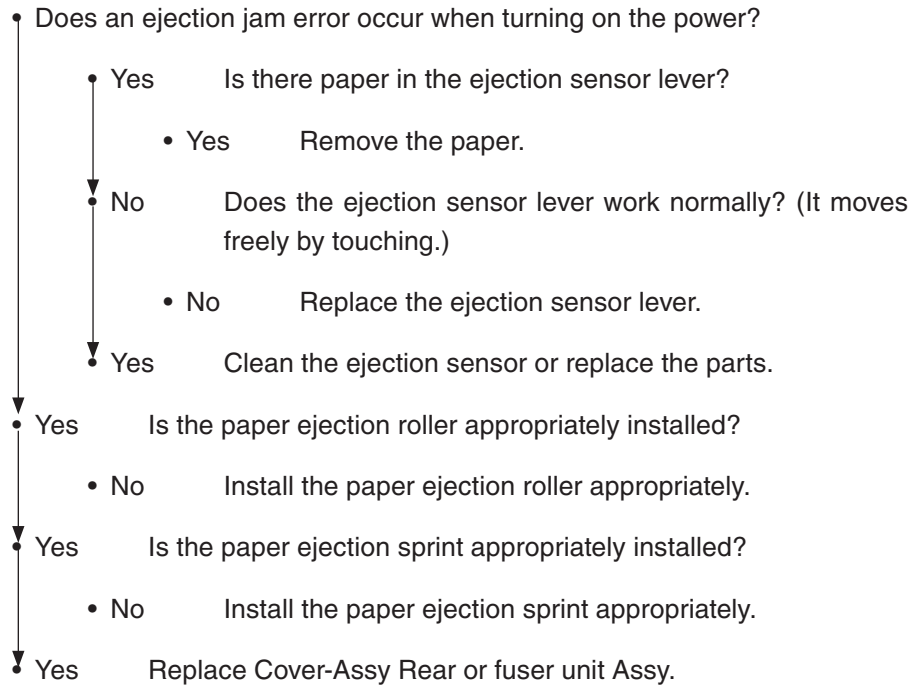
[Jam Error]

②-2 Running jam (Error 380)(Error 381)

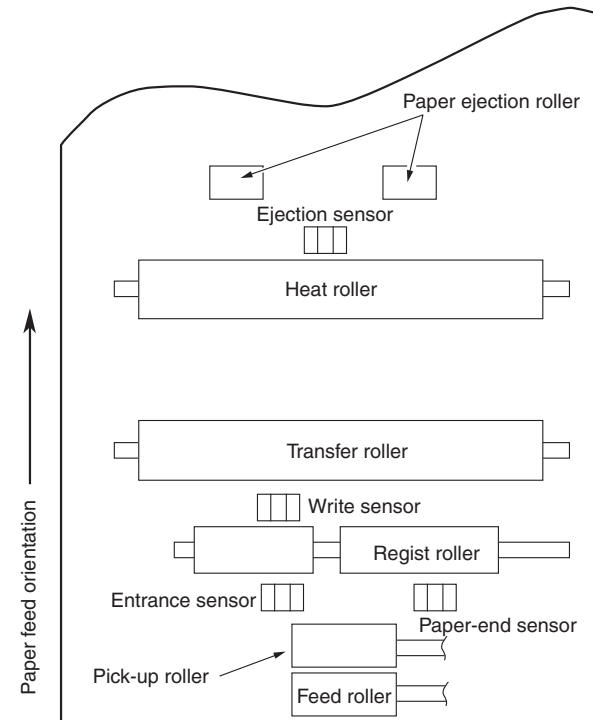
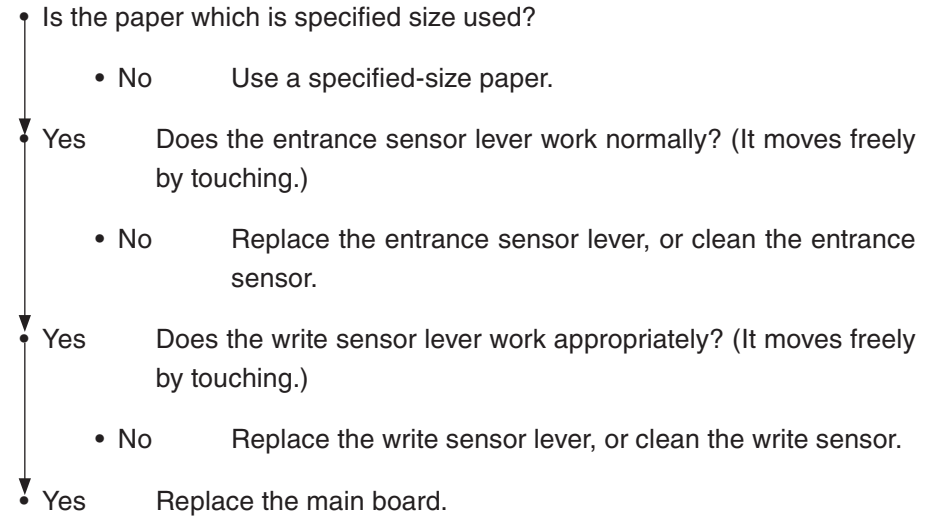


[Jam Error]

②-3 Ejection Jam (Error 382)



③ Paper Size Error (Error 400)



④ Fuser unit Assy (Error 170) (Error 171) (Error 172) (Error 173)

- Is the thermistor connector inserted into the THERM connector of the main board normally?
 - No Insert the Thermistor connector correctly.
- Yes Is the heater connector normally inserted in the CN2 connector of the low-voltage power.
 - No Insert the heater connector appropriately.
- Yes Is the heater ON when turning on the power?
 - No Replace the fuser unit Assy, low-voltage power or main board.
- Yes Replace the fuser unit Assy or the main board.

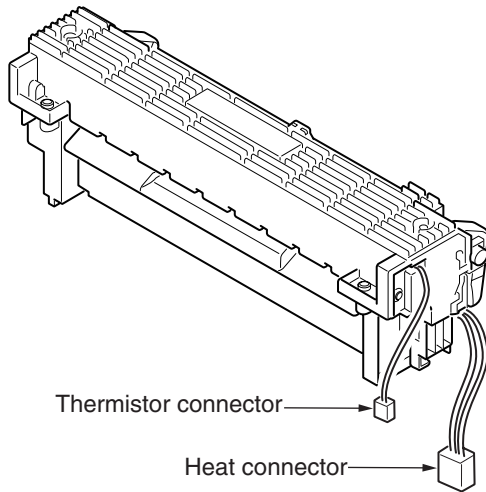


Figure 2-1

⑤ Interface Error (Error 182)

- Is the Second Tray unit used?
 - Yes Is the printer main body appropriately set on the Second Tray unit?
 - No Set the printer main body appropriately.
 - Yes Replace the main board.
- Has the trouble been solved?
 - No Check the trouble according to the maintenance manual of the Second Tray unit .
 - Yes Completed.
- No Replace the main board.

⑥-1 Fuser Fan Error (Error 127)

- Is the exhaust fan rotating?
 - Yes Replace the main board.
- No Is the CN2 connector of the high-voltage power supply unit connected to the board properly?
 - No Connect the CN2 connector appropriately.
- Yes Replace the exhaust fan or main board.

⑥-2 Drum Fan Error (Error 128)

- Is the drum fan rotating?
 - Yes Replace the main board.
- No Is the DFAN1 connector of the main board connected to the board properly?
 - No Connect the DFAN1 connector appropriately.
- Yes Replace the drum fan or main board.

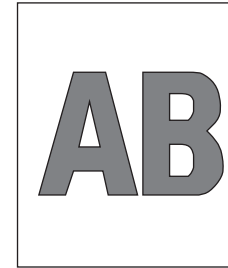
⑥-3 Power supply unit Fan Error (Error 122)

- Is the power supply unit fan rotating?
 - Yes Replace the main board.
- No Is the PWFAN2 connector of the main board connected to the board properly?
 - No Connect the PWFAN2 connector appropriately.
- Yes Replace the power supply unit fan or main board.

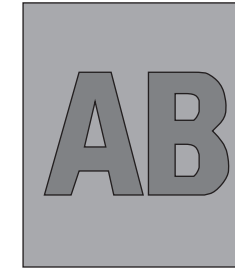
2.5.4 Print Troubleshooting

The troubleshooting procedure of abnormal printing is described as follows.
The typical abnormal printing is shown in the following Figure 2-2.

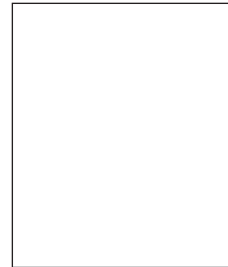
Trouble	Flowchart number
Pale printing or the whole printing is faded. (Fig.2-2 (A))	①
The white section is dirty. (Fig.2-2 (B))	②
White paper is outputted (Fig. 2-2 (C))	③
Vertical black belt/ Black line (Fig. 2-2 (D))	④
Periodic failure (Fig. 2-2 (E))	⑤
A part of printing is extracted	⑥
Inefficient fusing (when touching the printed sheet, printed characters or image is faded or come off.)	⑦
Vertical white belt/ White line (Fig. 2-2 (F))	⑧



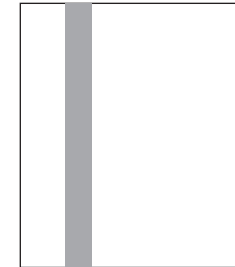
Ⓐ Pale printing or the whole printing is faded



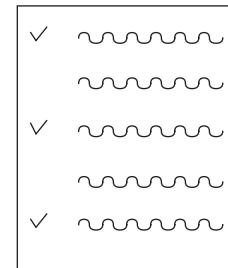
Ⓑ The white section is dirty



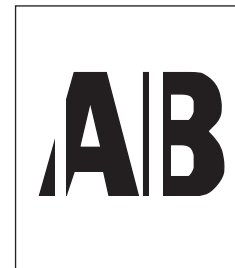
Ⓒ White paper



Ⓓ Vertical black belt/ Black line



Ⓔ Periodic failure



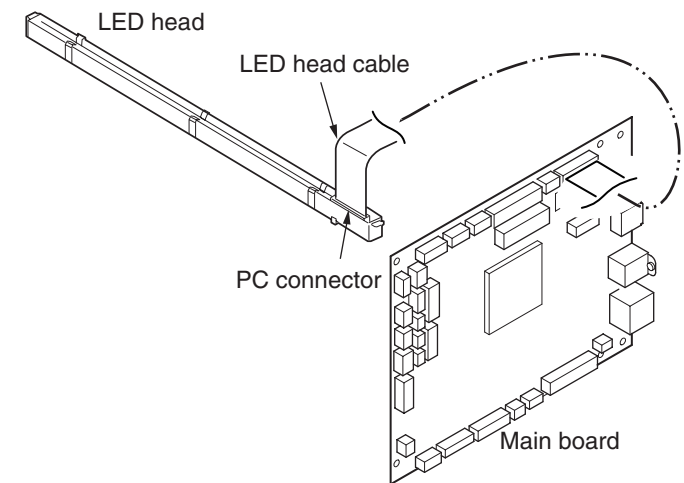
Ⓕ Vertical white belt/ White line

Figure 2-2

① Pale printing or the whole printing is faded.

- Does the printer lack toner? (Is the message of Toner Low displayed?)
 - Yes Supply the toner.
- No Is specified paper used.
 - No Use specified paper.
- Yes Is the lens of the LED head dirty?
 - Yes Clean the lens.
- No Is the LED head appropriately installed? (Check that the HEAD0 connector of the main board and the PC connector of the LED head are appropriately connected.)
 - No Install the LED head appropriately.
- Yes Does the contact plate of the transfer roller contact the TR terminal of the high-voltage power supply unit properly? (See Figure 2-4 , Section 6.2(6))
 - No Adjust the contact plate of the transfer roller so that it contacts the TR terminal of the high-voltage power supply unit and the transfer roller shaft well.
- Yes Are the contact of the developing roller and toner supply roller of the image drum cartridge appropriately connected to the contact assembly? (See Figure 2-3 ① and ②)
 - No Adjust so that the contacts of the developing roller and toner supply roller are connected to the contact assembly.
- Yes Replace the transfer roller.

- Has the trouble been solved?
 - Yes Completed
- No Replace the image drum cartridge.
- Has the trouble been solved?
 - Yes Completed
- No Is the surface elasticity of the back-up roller normal?
 - No Replace the fuser Assy.
- Yes Replace the main board or high-voltage power supply unit.



② The white section is dirty

- Is the image drum exposed by the external light?
 - Yes Install the image drum in the printer and wait 30 minutes.
- No From [MAINTENANCE MENU], select [PAPER BLACK SET] - [SMR SETTING] and set a larger value for adjustment.
- Has the trouble been solved?
 - Yes Completed.
- No From [MAINTENANCE MENU], select [SMR SETTING] and set a smaller value for adjustment.
- Has the trouble been solved?
 - Yes Completed.
- No Is the heat roller of the fuser unit assy dirty?
 - Yes Clean the heat roller.
- Has the trouble been solved?
 - Yes Completed.
- No Replace the image drum cartridge.
- Has the trouble been solved?
 - Yes Completed.
- No Replace the main board, high-voltage power/ sensor board.

③ White paper is outputted

- Is the LED head appropriately connected? (Check the HEAD0 connector of the main board and the PC connector of the LED head.)
 - No Connect the LED head appropriately or replace the head cable.
- Yes Is the image drum cartridge appropriately connected to the earth contact? (See Figure 2-3 ㉔)
- No Adjust the earth contact (drum) of the contact assembly.
- Yes Replace the LED head.
- Has the trouble been solved?
 - Yes Completed.
- No Replace the main board or high-voltage power supply unit.

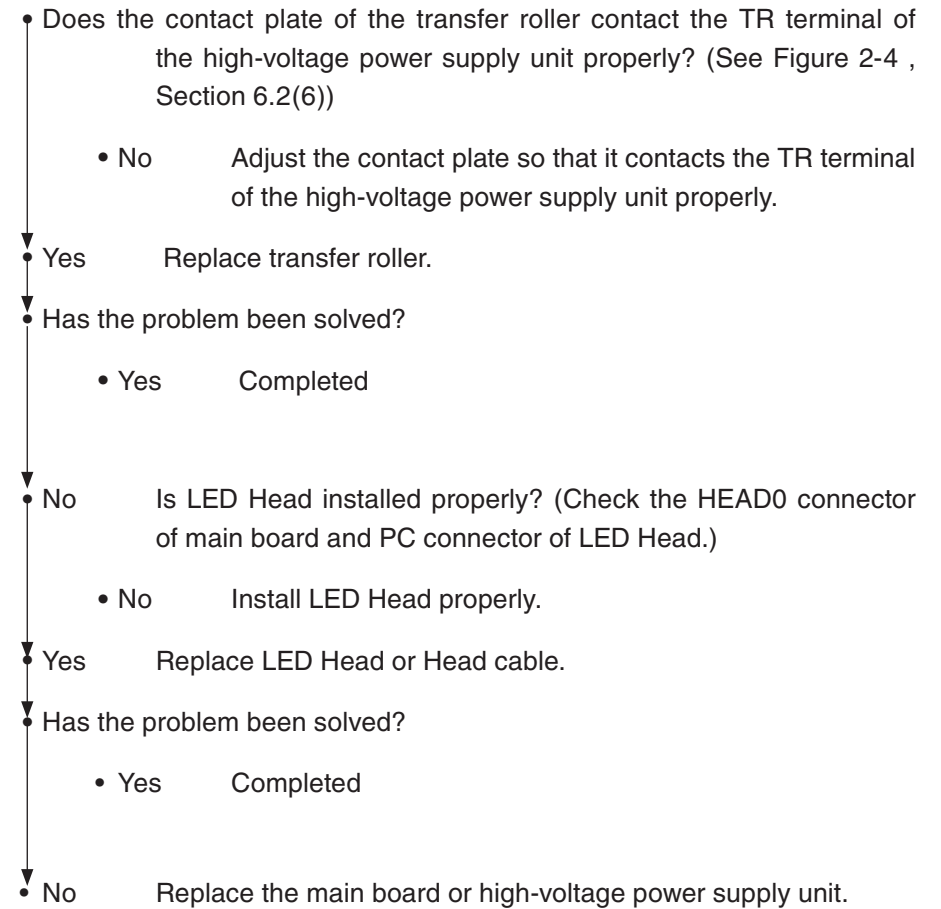
④ Vertical black belt/ Black line

- Clean the LED lens array of the LED head.
- Has the trouble been solved?
 - Yes Completed.
- No Replace the LED head.
- Has the trouble been solved?
 - Yes Completed.
- No Replace the image drum cartridge.
- Has the trouble been solved?
 - Yes Completed.
- No Replace the main board or high-voltage power supply unit.

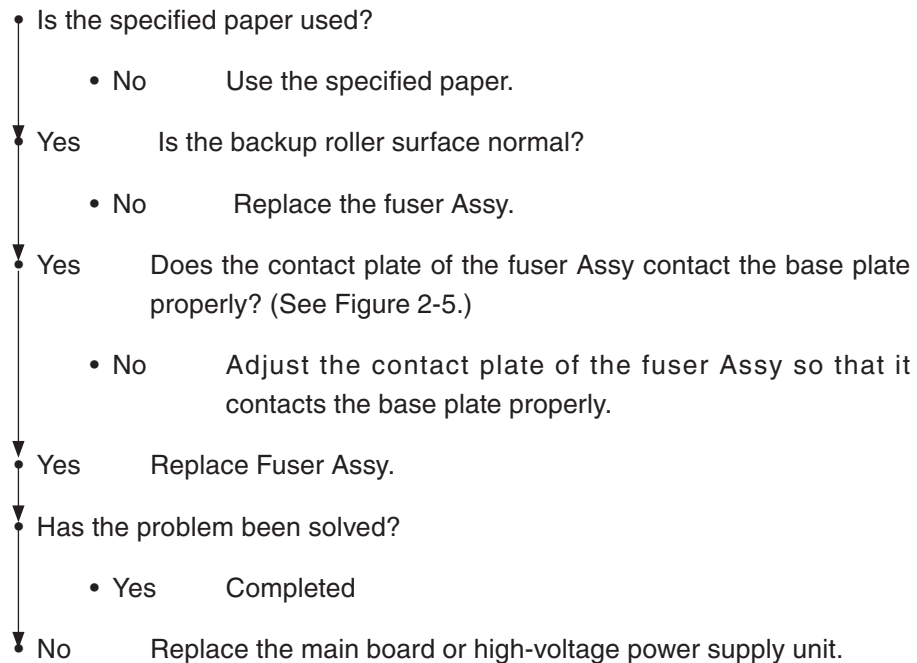
⑤ Periodic failure

	Cycle	Handling
Image Drum	94.25mm	Replace or clean the image drum cartridge.
Developing roller	39.68mm	Replace the image drum cartridge.
Toner supply roller	58.36mm	Replace the image drum cartridge.
Charging roller	37.70mm	Replace the image drum cartridge.
Transfer roller	51.52mm	Replace the transfer roller.
Heat roller	88.12mm	Replace the fuser unit Assy.
Back-up roller	89.54mm	Replace the back-up roller.

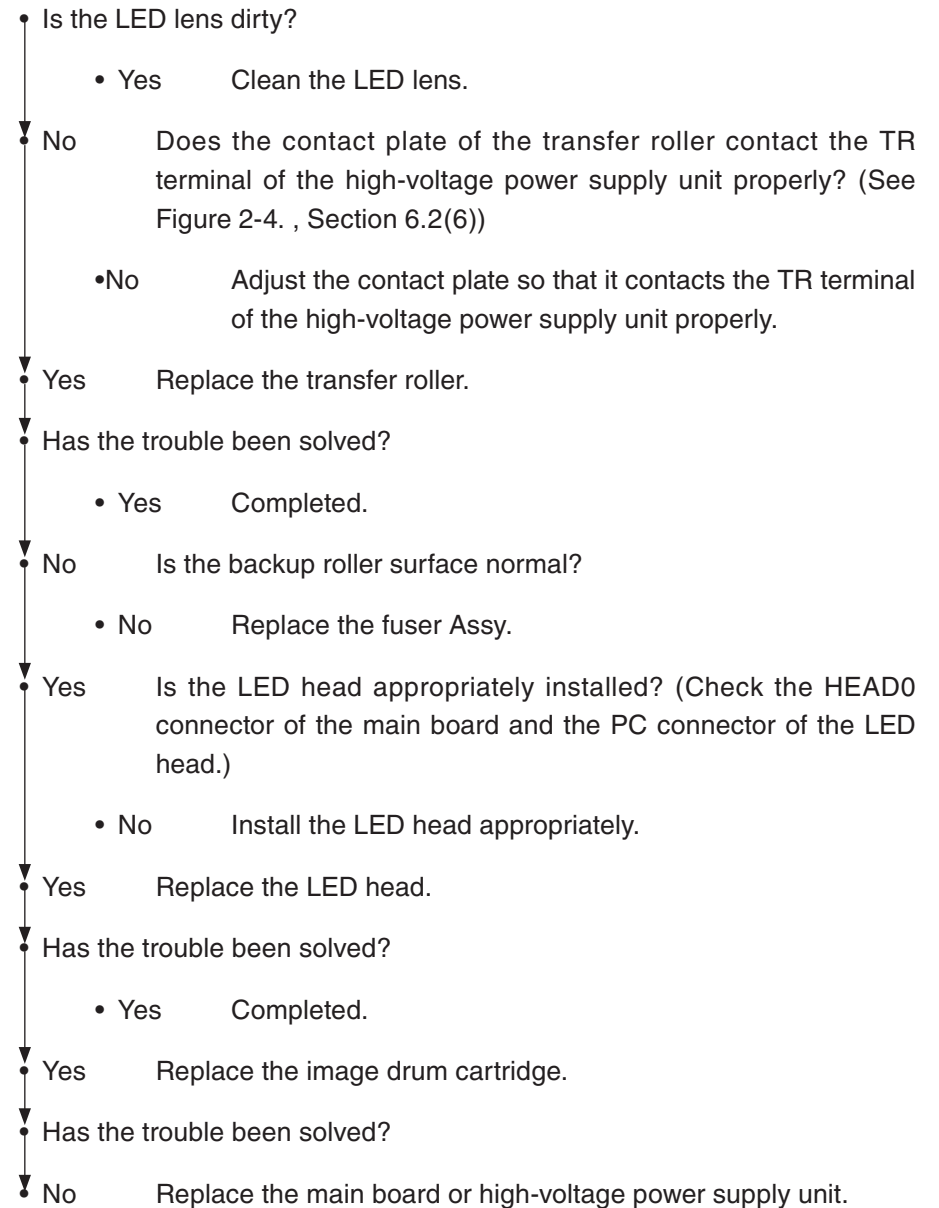
⑥ In case of error printing



- ⑦ In case of inefficient fusing (If touch by hand the character or image that are printed on paper will be faded or unstuck.)



- ⑧ Vertical white belt/ White line



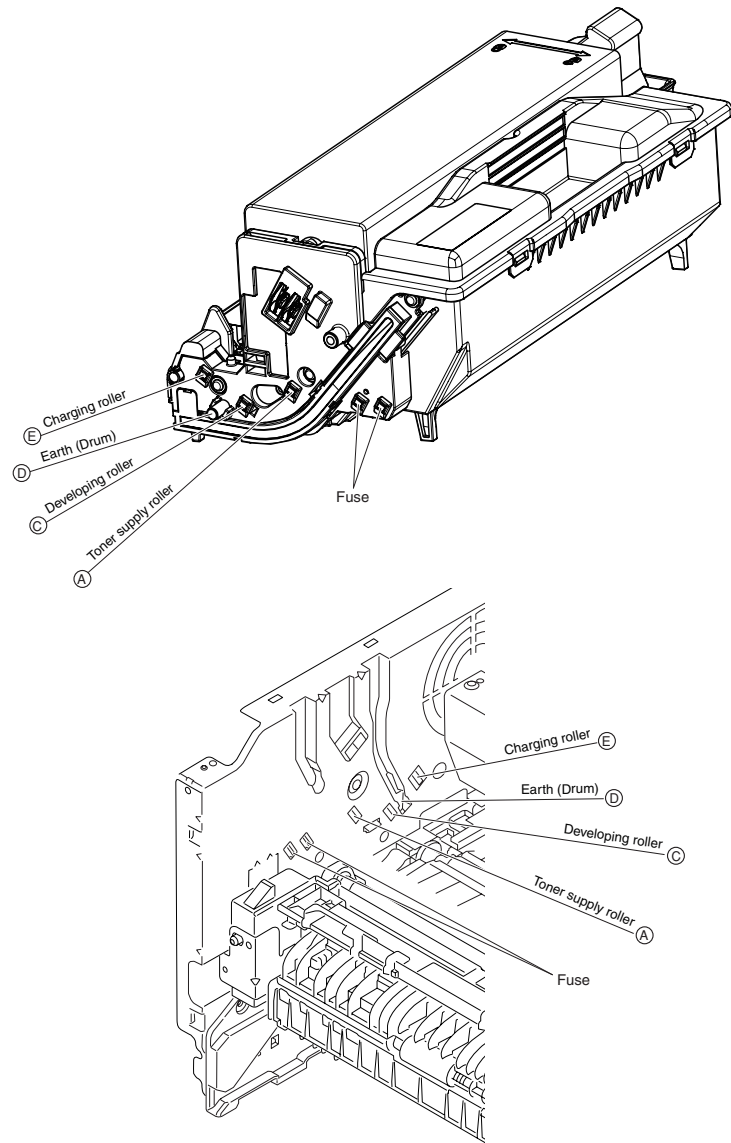


Figure 2-3

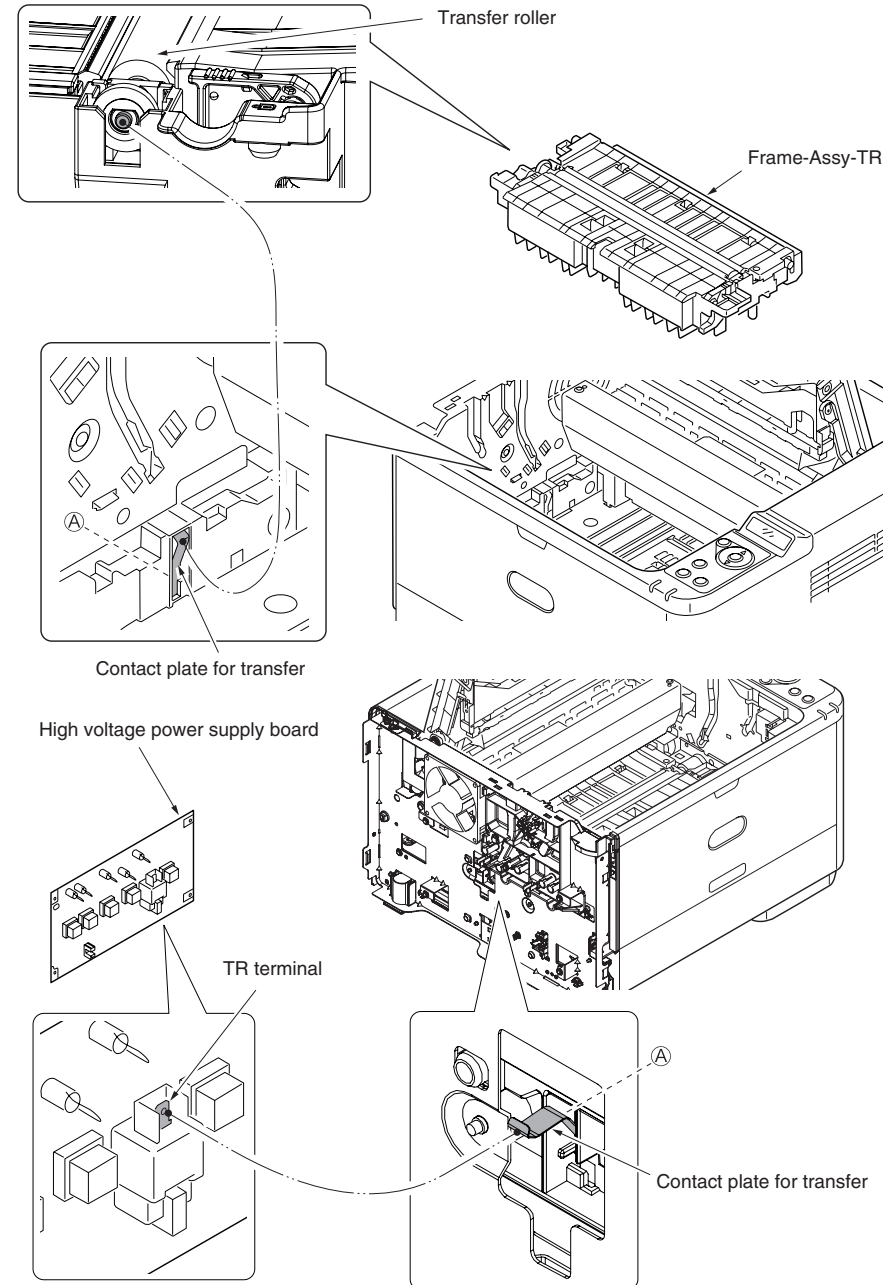


Figure 2-4

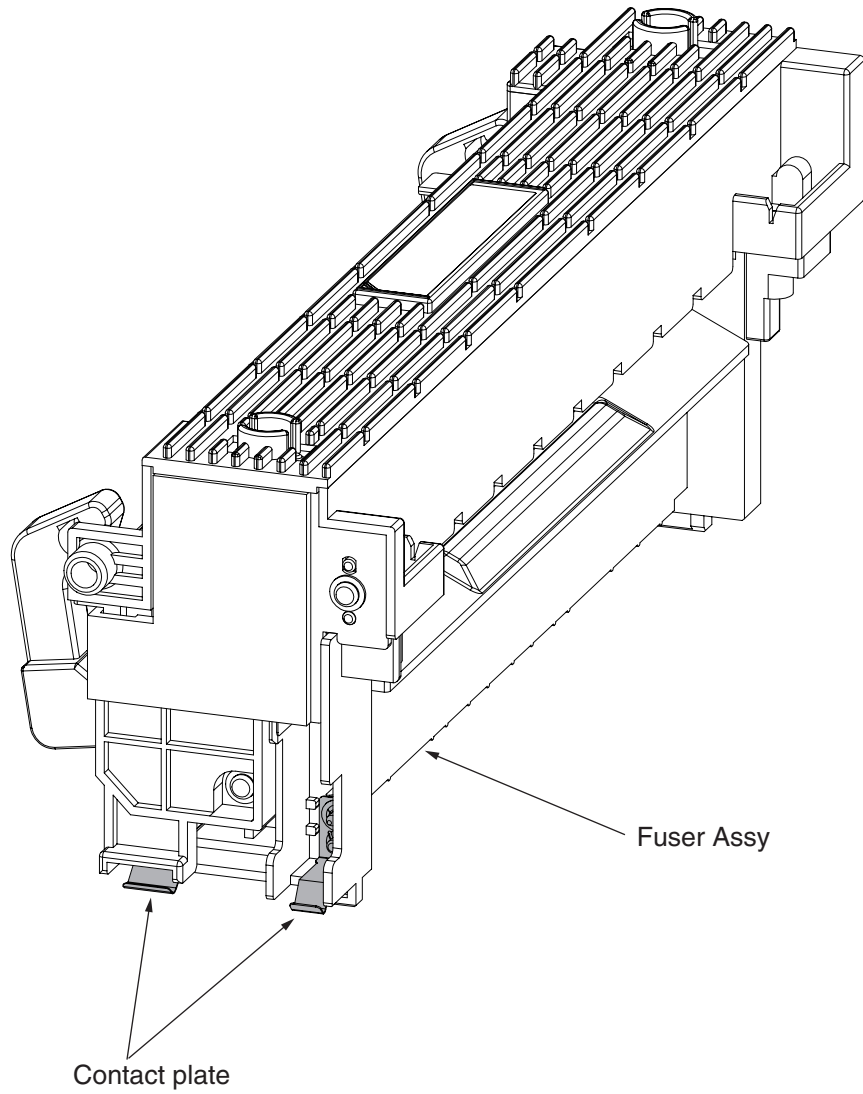


Figure 2-5

3. ADJUSTMENT

This chapter provides explains relating to the adjustment that is necessary while replacing part. Adjustment is performed by modifying the value of parameter that is set on the EEPROM of main PCB board. Parameter can be set by key operation that is from the operator panel. There are 3 kinds of maintenance mode (menu) on this printer. While replacing part it is need to choose one of the mode.

3.1	Category and function of maintenance mode.....	3-2
3.2	Adjustment at part replacement	3-23

3.1 Category and function of maintenance mode

- Maintenance mode includes the following.
 - "Admin Menu" and "Boot Menu" which is shown by an end user.
 - "Service Menu" , "System Maintenance Menu" and "Engine Maintenance Mode" for the member of maintenance that is not shown by an end user.
 - "Factory Maintenance Menu" to use in production in a factory.
- To view each category, push the button of "MENU Δ" and "MENU ▽". After the screen displays the last category, the display returns to the first category. If want the displayed function to be effective, push the "OK" button. For terminating the mode that is in category displaying, push the key of "ON LINE" and return to operation mode.

3.1.1 Admin Menu

An usual menu is similar, and Admin Menu enters a menu by pushing "Menu △" or "MENU ▽" button from a Ready state and selects "ADMIN MENU".

Enters a password is necessary for "ADMIN MENU".

The default value of password is "aaaaaa".

Except an item about emulation / interface, show a function in the following.

Category	Item		Value	Default	Function / Notes
ADMIN SETUP	PANEL SETUP	NEARLIFE STATUS	ENABLE DISABLE	*	Sets up LED display control for the occurrence of a near life warning of a drum. A near life warning is displayed when Enable is set. A near life warning is not displayed when Disable is set. (It is also not output to any of Attention LED/PJL/MIB/Web.) A status (life warning) of temporal recovery by opening and closing the cover in a life error state is not included.

Category	Item		Value	Default	Function / Notes
ADMIN SETUP	PANEL SETUP	NEARLIFE LED	ENABLE DISABLE	*	Sets up LED lighting control for the occurrence of a near life warning of a toner or drum Attention LED is lighted when Enable is set.* Attention LED is not lighted when Disable is set. The status (life warning) of temporal recovery by opening and closing the cover in a life error state is not included. * It applies to drums when "PANEL SETUP" - "NEARLIFE STATUS" is set to "ENABLE". It always applies to toner regardless of the setting of "PANEL SETUP" - "NEARLIFE STATUS".
POWER SETUP	AUTO PW OFF		ENABLE AUTOCONFIG DISABLE	*	Set the behavior of Auto Power Off. ENABLE: The printer goes to Off mode even if LAN cable is connected. AUTO CONFIG: The printer does not go to Off mode when LAN cable is connected, goes to Off mode when USB or Centro cable is connected. DISABLE: Invalidate to go to Off mode by time.
			POWER RETURN	MANUAL STATECONTINUE	*
TRAY SETUP	UNIT OF MEASURE		INCH MILLIMETER	*L *A	Specifies the unit of custom paper size.
	DEFAULT PAPERSIZE		A4 LETTER	*A *L	Set default paper size.

Category	Item		Value	Default	Function / Notes	
ADMIN SETUP	OTHERS SETUP	RAM SETUP	RECEIVE BUF SIZE	AUTO 0.1 MB 0.2 MB 0.5 MB 1 MB 2 MB 4 MB	*	Sets the size of receive buffer
			RESOURCE SAVE	AUTO OFF 0.1 MB 0.2 MB 0.5 MB 1 MB 2 MB 4 MB	*	Sets the size of resource saving area. This Item does not appear in Non-PS models.
		FLASH SETUP	FLASH INITIALIZE	EXECUTE		Initializes the range of open area of Flash (displayed on File List). When the OK key is pressed, the following confirmation message appears. ARE YOU SURE? YES/NO If NO is selected, the previous menu display resumes. If YES is selected, the following confirmation message appears. EXECUTE NOW? YES/NO If NO is selected, the previous menu display resumes. At this time, the request to execute FLASH initialization is put into the memory and initialization will be executed at power cycle. If YES is selected, reboot takes place, and FLASH is initialized at rebooting cycle.

Category	Item		Value	Default	Function / Notes		
ADMIN SETUP	OTHERS SETUP	FLASH SETUP	FORMATTING	PCL COMMON PS	*	Formats a specified partition. When the OK key is pressed, the following confirmation message appears. ARE YOU SURE? YES/NO If NO is selected, the previous menu display resumes. If YES is selected, the following confirmation message appears. EXECUTE NOW? YES/NO If NO is selected, the previous menu display resumes. At this time, the request to execute partition formatting is put into the memory and formatting will be executed at power cycle. If YES is selected, reboot takes place and the partition is formatted at rebooting cycle.	
			STORAGE SETUP	ENABLE INITIAL	NO YES	*	Prevents a setting change accompanying initialization of Block Device (FLASH).
			JOB LOG SETUP	SAVE JOB LOG	ENABALE DISABLE	*	
				CLEAR JOB LOG	EXECUTE		
SECURITY SETUP	ACCESS CONTROL	ENABALE DISABLE	*				

Category	Item		Value	Default	Function / Notes
ADMIN SETUP	OTHERS SETUP	LANGUAGE SETUP	LANG INITIALIZE	EXECUTE	Initialize the message file loaded in FLASH. The following message for confirmation will appear by pressing OK key. ARE YOU SURE? YES / NO If NO is selected, it will go back to the source menu. The procedure for clearing disk will start immediately after the menu and rebooting. Only the printer which support multi languages DOWNLOAD model support this menu.
		FONT SETUP	OUTPUT MODE	JIS90 JIS2004	* Set the Output Mode of Font. 【Conditions for display】 . Domestic brand (JP1,JPOEM1)
		JOB CANCEL SETUP	CANCEL KEY BEHAVIOR	SHORT LONG OFF	* Specify the behavior when Cancel button is pressed in printing. SHORT: Cancel the current job by pressing Cancel button below 2 seconds. LONG: Cancel the current job by pressing Cancel button in 2 - 5 seconds. OFF: Ignore the press of Cancel button. The printing can not be cancelled by pressing cancel button.
			INQUIRY DISPLAY	ON OFF	* Specify whether the Job Cancel selection request will be displayed. ON: Display when Job Cancelling. OFF: Do not display.
		FOCUS POSITION	YES NO	* Specify the default selection of Job Cancel request.	

Category	Item		Value	Default	Function / Notes	
ADMIN SETUP	OTHERS SETUP	JOB CANCEL SETUP	DISPLAY TIMEOUT	60 ~ 180 ~ 300	*	Specify the timeout of Job Cancel selection request. When the time passed, the printing will be continued as Job Cancel = No.
	SETTINGS	MENU RESET		EXECUTE	-	Resets EEPROM of CU. Resets User menu to the factory default. If Execute is selected, It exits from the menu after the COMPLETE character is displayed. However, when this function is executed with P/L, WINDOW named COMPLETE is not displayed.
		SAVE MENU		EXECUTE	-	Saves menus currently set. With this function, the menus with which operation was last performed are saved, and overwrites with them menus that were previously saved. When the Enter switch is pressed, the following confirmation message appears. ARE YOU SURE? YES/NO When NO is selected, next preceding menus are restored. When YES is selected, the current menu settings are saved and this menu is exited.

Category	Item	Value	Default	Function / Notes	
ADMIN SETUP	SETTINGS	RESTORE MENU	EXECUTE	-	Changes to the menu setting saved. When the Enter switch is pressed, the following confirmation message appears. ARE YOU SURE? YES/NO If NO is selected, the previous menu display resumes. If YES is selected, changes to the menu setting saved and exit from the menu. *It will not be executed when there is the printing data.
	CHANGE PASSWORD	NEW PASSWORD	*****	-	Allows the password to be changed for the menu's lockout function. The underline indicates the entry position. A number from 0 to 9 and character from a to z can be entered for each digit. * It is possible to move between digits after entering a number.
		VERIFY PASSWORD	*****	-	Verifies the above password. The underline indicates the entry position. A number from 0 to 9 and character from a to z can be entered for each digit.

3.1.2 Boot Menu

To enter Boot menu, you should hold on the "OK" button at the same time as the power is turned on.

A password the same as Admin menu is necessary for "BOOT MENU".

Boot menu is displayed only in English. Show a function in the following.

Category	Item	Value	Default	Function / Notes
BOOT MENU				A password input screen is displayed.
	WIRELESS MODULE	ENABLE DISABLE	*	Validate a board of wireless LAN.
	SIDM MENU	SIDM MANUAL ID#	0 ~ 2 ~ 9	*J *E Set up Pn specified in MANUAL by MANUAL-1 ID No.FX/PPR/ESCP Emu in CSF control command * (ESC EM Pn).
		SIDM MANUAL2 ID#	0 ~ 3 ~ 9	* Set up Pn specified MANUAL by MANUAL-2 ID No.FX/PPR Emu in CSF control command(ESC EM Pn)..
		SIDM MP TRAY ID#	0 ~ 4 ~ 9	* Set up Pn specified TRAYO(MPTray) by MPTray ID No.FX/PPR/ESCP Emu in CSF control command(ESC EM Pn).
		SIDM TRAY1 ID#	1 ~ 9	* Set up Pn specified TRAY 1 by Tray 1 ID No.FX/PPR/ESCP Emu in CSF control command(ESC EM Pn).
		SIDM TRAY2 ID#	0 ~ 2 ~ 5 ~ 9	*J *E Set up Pn specified TRAY 2 by Tray 2 ID No.FX/PPR/ESCP Emu in CSF control command(ESC EM Pn). 【Display Condition】 • Tray 2 installment

Category	Item	Value	Default	Function / Notes
BOOT MENU	MENU LOCKOUT	ENABLE DISABLE	*	Set On/Off of Menu Lockout function On: Menus except for "Print Secure Job" become invisible. Off: This function doesn't work.
	PANEL LOCKOUT	MODE1 MODE2 OFF	*	Set On/Off of Menu Lockout function. MODE1: All keys except for Online, OK, Cancel, Power Save, aren't have any reaction. MODE2: All keys except for Online, OK aren't have any reaction. OFF: This function doesn't work.
	MENU OPERATION SETUP	UP/DOWN KEY	NORMAL TYPE * OLD TYPE	

3.1.3 Service Menu (The member of maintenance)

This menu is used for only a member of maintenance, and it is not shown to an end user.

"SERVICE MENU" category is shown when the Service Menu is set enable by PJJ command.

When you did OFF/ON of a power supply after the Service Menu is set enable by PJJ command, "SERVICE MENU" category is displayed.

Enters a password is necessary for "SERVICE MENU". The default password is "123456".

Show a function in the following. Service Menu is a menu for the MPS administrator(dealer) .

Category	Item	Value	Default	Function / Notes
SERVICE MENU				A password input screen is displayed.
	DRUM LIFE MODE	FACTORY DEFAULT*	STANDARD	To a device that has a drum extend life, we can set the drum life to the standard (specification of the standard machine PN307) or the default of the device. Standard: Return the value of the drum life to the drum life of the standard PN307 (If you do not set the extend life, this setting is invalid) Long: Change the drum life to the extend life settings (If you do not set the extend life, this setting is invalid) ※ The printer will reboot automatically after setting.

Category	Item	Value	Default	Function / Notes
SERVICE MENU	DRUM NEARLIFE	500 1000 1500 2000 2500 3000 3500 4000 4500 5000	*	When drum extend life is set, set the time to display the warning of drum near life. Against life drum, the drum near life warning display in front of the selected count. If drum extend life is not set, this setting is invalid. ※ Even Drum Life Mode is set into standard, this setting is still effective. ※ The printer will reboot automatically after setting.
	CHANGE PASSWORD	NEW PASSWORD	*****	Sets a new password to enter "Service Menu" menu. 6 digits of number or Roman character can be enter.
		VERIFY PASSWORD	*****	Makes User input the new password to enter "Service Menu" set in "New Password" for confirmation. 6 digits of number or Roman character can be enter.

3.1.4 System Maintenance Menu (The member of maintenance)

This menu is used for only a member of maintenance, and it is not shown to an end user.

"SYS MAINTENANCE MENU" enters it by doing hold of a "Back" + "OK" + "Online" button by push from a Ready state simultaneously more than five seconds. Enters a password to enter "SYS MAINTENANCE MENU". The default password is "000000".

System Maintenance menu is displayed only in English. Show a function in the following.

Category	Item	Value	Default	Function / Notes
SYS MAINTENANCE MENU				A password input screen is displayed.
	SAVE SYSLOG	EXECUTE		Save network communication log(syslog) to flash rom.
	PRINT SYSLOG	EXECUTE		Print the saved network communication log(syslog).
	CODESET	TYPE1 TYPE2	*	This menu needs to be displayed for all brands. TYPE1: does not display Russian or Greek. TYPE2: Display Russian or Greek It will be rebooted after existing from the menu. TYPE 2 is the default value for OEL/APS/OEMA brands and TYPE 1 for other brands.
	ADMIN PASSWORD RESET	EXECUTE		Reset the password (aaaaaa) of Admin Menu. When the OK switch is pressed, the following confirmation message appears. ARE YOU SURE? YES/NO When NO is selected, return to menu. When YES is selected, execute to reset.

Category	Item	Value	Default	Function / Notes
SYS MAINTENANCE MENU	FUSE KEEP MODE	EXECUTE		It will be ONLINE by pressing ENTER key which issues the command from CU to PU. Check for the operation while changing the factories supplies during keeping the power ON. A new fuse will not cut and the count-operation will not be included in the old value). The check mode will finish and invalid if turing the power ON.
	ENGINE STATUS	EXECUTE		Prints engine information.
	ENGINE DIAG MODE			Enters self-diagnosis mode of the engine.
	POWER SAVE	ENABLE DISABLE	*	Sets Enable/Disable of Power Save Mode. Change the transition time to the energy saving mode by "MENUS" - "SYSTEM ADJUST" - "POWER SAVE TIME"when Enable is set.
	SLEEP	ENABLE DISABLE	*	Sets Enable/Disable of Sleep Mode. Change the transition time to the energy saving mode by "MENUS" - "SYSTEM ADJUST" - "SLEEP TIME"when Enable is set.
	CHANGE PASSWORD	NEW PASSWORD VERIFY PASSWORD	***** *****	

3.1.5 Factory Maintenance Menu (For a factory)

This menu is used for a factory, and it is not shown to an end user.

"FAC MAINTENANCE MENU" is only shown in factory mode, and is not shown in shipping mode.

This menu enters it by doing hold of a "Back" + "OK" + "Cancel" button by push from a Ready state simultaneously more than five seconds.

In "FAC MAINTENANCE MENU", there is not a password.

Factory Maintenance menu is displayed only in English. Show a function in the following.

Category	Item	Value	Default	Function / Notes
FAC MAINTENANCE MENU	OKIUSER	ODA	*	Specifies a brand. JPOEM1: OEM to Japan OEMA: OEM to abroad for A4 paper default OEML: OEM to abroad for Letter paper default Reboots automatically after going through the menu. ※ This item is not shown when the printer is in MPS mode.
		OEL		
		APS JP1 JPOEM1 OEMA OEML		
MAINTENANCE MENU	FLASH FORMAT	EXECUTE		Formats Flash ROM. When executed, exits Menu and starts formatting a flash device installed to resident (onboard).
	EEPROM RESET	EXECUTE		Resets a content of EEPROM to the factory default. Reboots automatically after changing the setting. ※ a particular item is not initialized.

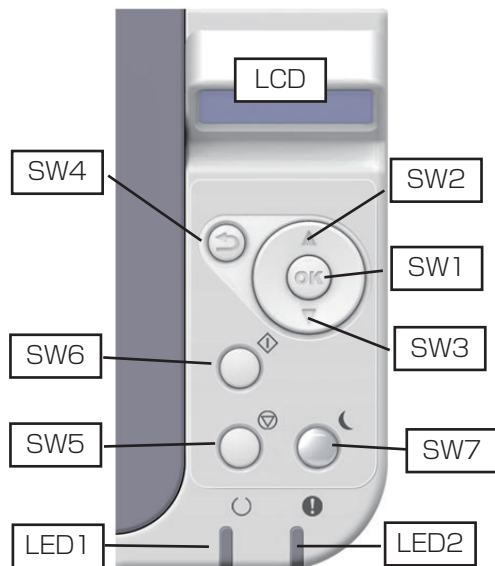
Category	Item	Value	Default	Function / Notes	
FAC MAINTENANCE MENU	PERSONALITY	XPS	ENABLE DISABLE	*	Changes the default of Support PDL per brand. PDL which is "Disable" in this menu is not displayed at "Print Setup"- "Personality" of Function menu. INVALID DATA shows up and received data is abandoned when print data of PDL which is "Disable" is received The operation will not be guaranteed if setting IBM PPR III XL and EPSON FX to ENABLE for domestic brand and ESC/P and IBM 5577 to ENABLE for overseas brand. PS3 EMU does not appear in Non-PS models.
		IBM 5577	ENABLE DISABLE	*J *E	
		IBM PPR III XL	ENABLE DISABLE	*E *J	
		EPSON FX	ENABLE DISABLE	*E *J	
		ESC/P	ENABLE DISABLE	*J *E	
		PS3 EMULATION	ENABLE DISABLE	*	
PANEL MAINTENANCE	LED TEST	EXECUTE			
	LCD TEST	EXECUTE			
	KEY TEST	EXECUTE			
	SOUND TEST	EXECUTE			

3.1.6 Self-diagnostic Mode (Engine Maintenance Mode)

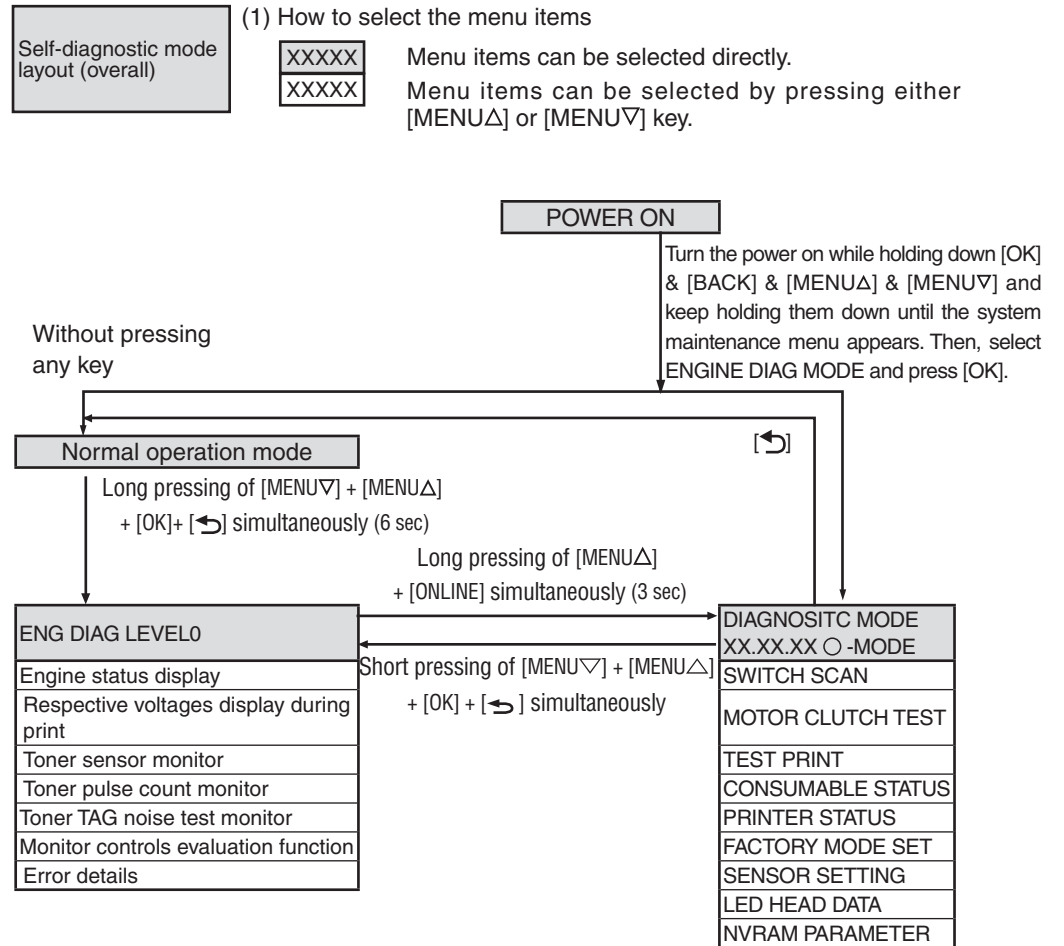
- (1) To enter Self-diagnostic mode, turn on the power switch while holding down the "OK" , "BACK" , "MENU Δ" and "MENU ▽" buttons and then select "ENGINE DIAG MODE" .
- (2) The function of this mode is selected from Menu.
- (3) The release method of this mode is different by setting.
- (4) Self-diagnostic mode (LEVEL0 and LEVEL1) provides the followings.

3.1.6.1 Operation panel

The following description on operating the self-diagnostic is premised on the operation panel layout as shown below.



- SW1:OK
- SW2:MENU Δ
- SW3:MENU ▽
- SW4: ↶ (BACK)
- SW5:CANCEL
- SW6:ONLINE
- SW7:Power Save

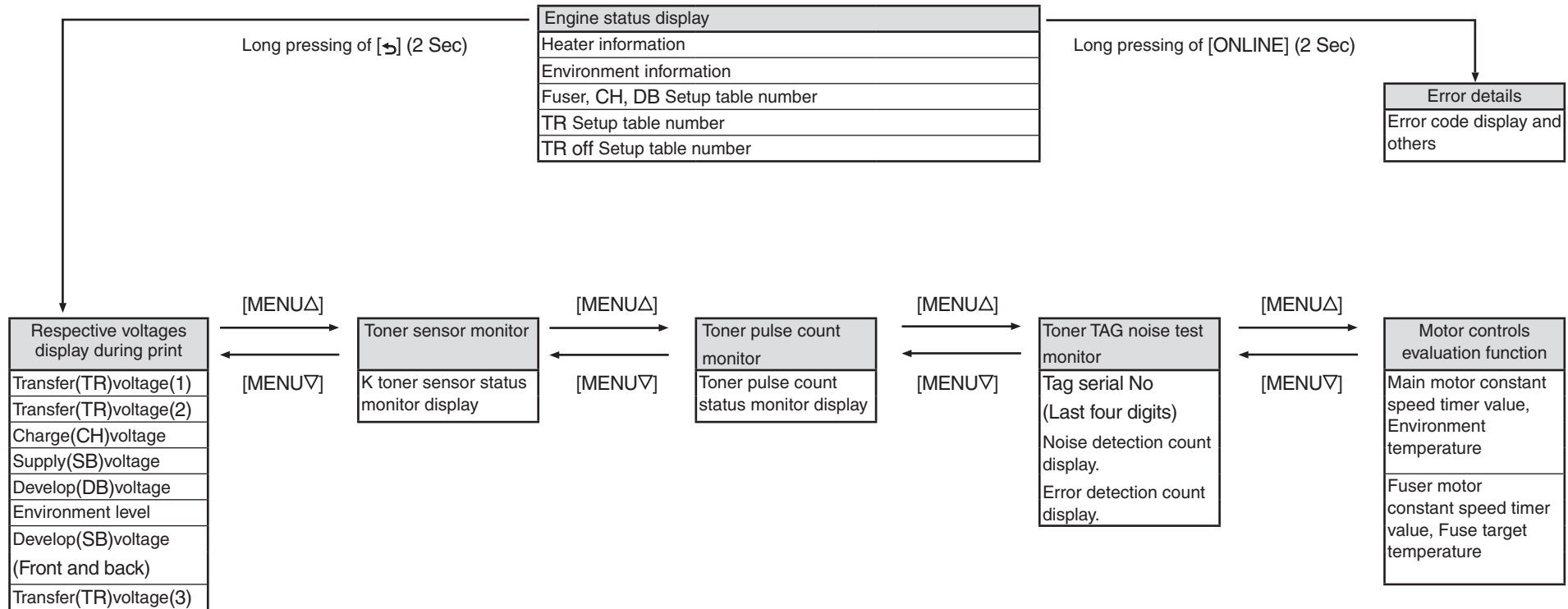


LEVEL0

(1) How to select the menu items

XXXX Menu items can be selected by long pressing of [↵] or [ONLINE], or by short pressing of [MENUΔ] or [MENU∇].

XXXX Menu items can be entered by pressing of [OK] or [↵], and can be selected by pressing of [MENUΔ] or [MENU∇].



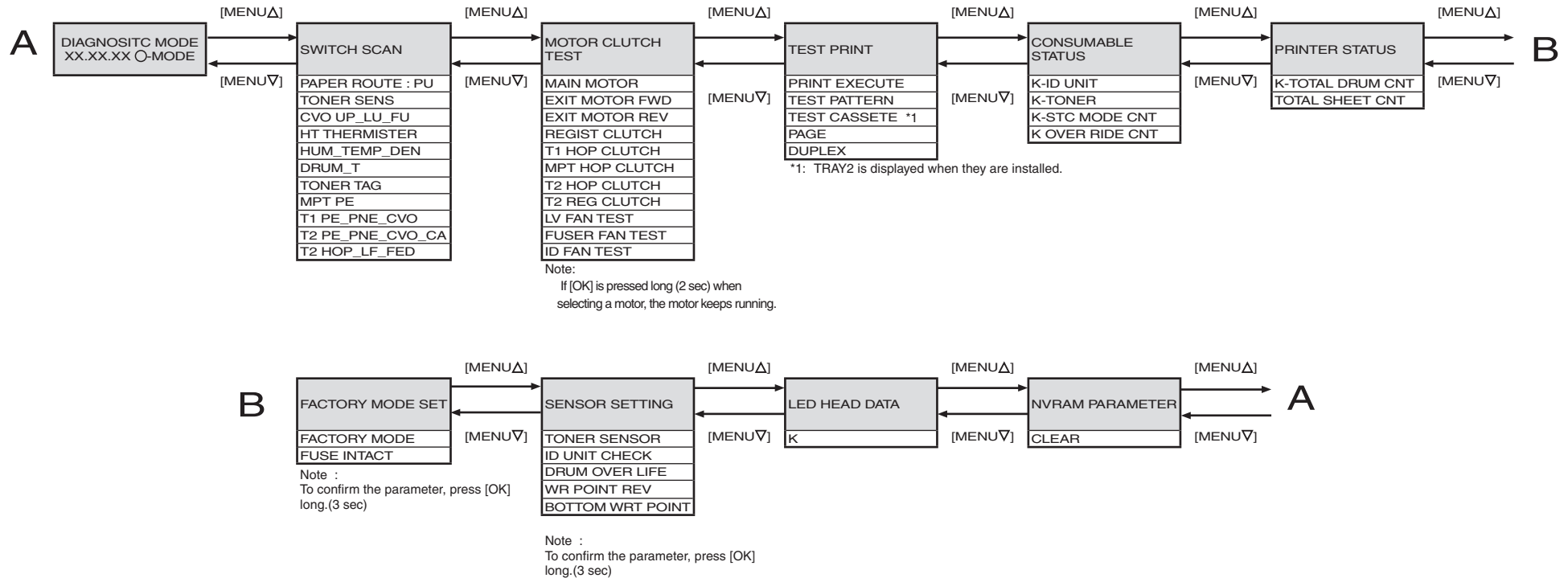
(1) How to select the menu items

LEVEL1

XXXXXX Menu items can be selected by pressing either [MENUΔ] or [MENU∇] key, and executed by pressing [OK].

XXXXXX Menu items can be entered by pressing of [OK] or [↵], and can be selected by pressing of [MENUΔ] or [MENU∇].

The test can be executed by pressing [OK], and can be exited by pressing [↵].



3.1.6.2 Ordinary self-diagnostic mode (level 1)

Menu items of the ordinary self-diagnostic mode are shown below.

	Item	Self-diagnostic menu	Adjustment contents	Maintenance utilities
1	Switch scan test	SWITCH SCAN	Entry sensor check and switch check	Refer to 2.4.1.5.1
2	Motor clutch test	MOTOR&CLTCH TEST	Motor and clutch operation test	Refer to 2.4.1.5.2
3	Test print execution	TEST PRINT	PU built-in test pattern print	It is not possible to operate it.
6	Consumable item counter display	CONSUMABLE STATUS	Consumable items consumption status display	Refer to 2.4.1.5.6
7	Consumable item accumulative counter display	PRINTER STATUS	Consumable items accumulative consumption status display	Refer to 2.4.1.5.6
8	Factory/Shipping mode selection	FACTORY MODE SET	Switching between the Factory mode and the Shipping mode	Refer to 2.4.1.5.7
9	FUSE status check		Respective FUSEs status display	Refer to 2.4.1.5.7
10	Engine parameter setting	SENSOR SETTING	Valid/Invalid setups of error detection by various sensors	Refer to 2.4.1.5.8
11	NVRAM parameter setting	NVRAM PARAMETER	Do not use this item	It is not possible to operate it.

3.1.6.2.1 How to enter the self-diagnostic mode (level 1)

1. While pressing the [MENU△] and [MENU▽] keys simultaneously, turn on the power to enter the system maintenance mode.
2. Press the [MENU△] key or [MENU▽] key several times until the message "ENGINE DIAG MODE" is displayed. Then, press the [OK] key to display "DIAGNOSTIC MODE".

DIAGNOSTICMODE
XX.XX.XX FACTORY/SHIPPING

3. XXX.XX.XX of the message "DIAGNOSTIC MODE XX.XX.XX" that is displayed on the LCD display area indicates the PU firmware version number. The FACTORY WORKING MODE setup value is displayed in the right of the lower row. S-MODE of "SHIPPING" is displayed normally.
4. Press the [MENU△] key or [MENU▽] key to advance to the desired step of each self-diagnostic menu. (The menu items rotate when either the [MENU△] key or [MENU▽] key is pressed.)

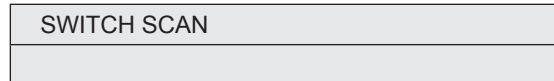
3.1.6.2.2 How to exit the self-diagnostic mode

1. Turn off the power once and back on 10 seconds later.

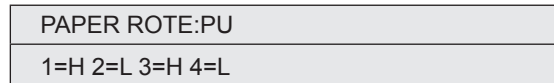
3.1.6.3 Switch scan test

This self-diagnostic menu is used to check the entry sensor and the switch.

1. Enter the self-diagnostic mode (level 1), press the [MENU Δ] or [MENU ∇] key repeatedly, and press the [OK] key when the "SWITCH SCAN" is displayed in the upper row of the display area. (Pressing the [MENU Δ] key increments the test item and pressing the [MENU ∇] key decrements the test item.)



2. Press either the [MENU Δ] or [MENU ∇] key until the desired menu item corresponding to the unit to be tested in Table 3-3 is displayed in the lower row of the display area. (Pressing the [MENU Δ] key increments the test item and pressing the [MENU ∇] key decrements the test item.)
3. Pressing the [OK] key starts the test. Name and present status of the corresponding unit are displayed.



Activate the respective units. (Figure 3-1) Status of the respective units are displayed on the corresponding areas of the LCD display. (Display changes depending on each sensor. Refer to Table 3-3 for details.)

4. Press the [CANCEL] key to return to the status of step 2.
5. Repeat steps 2 to 4 as required.
6. Press the [↵] key to exit the test. (Returns to the status of step 1.)

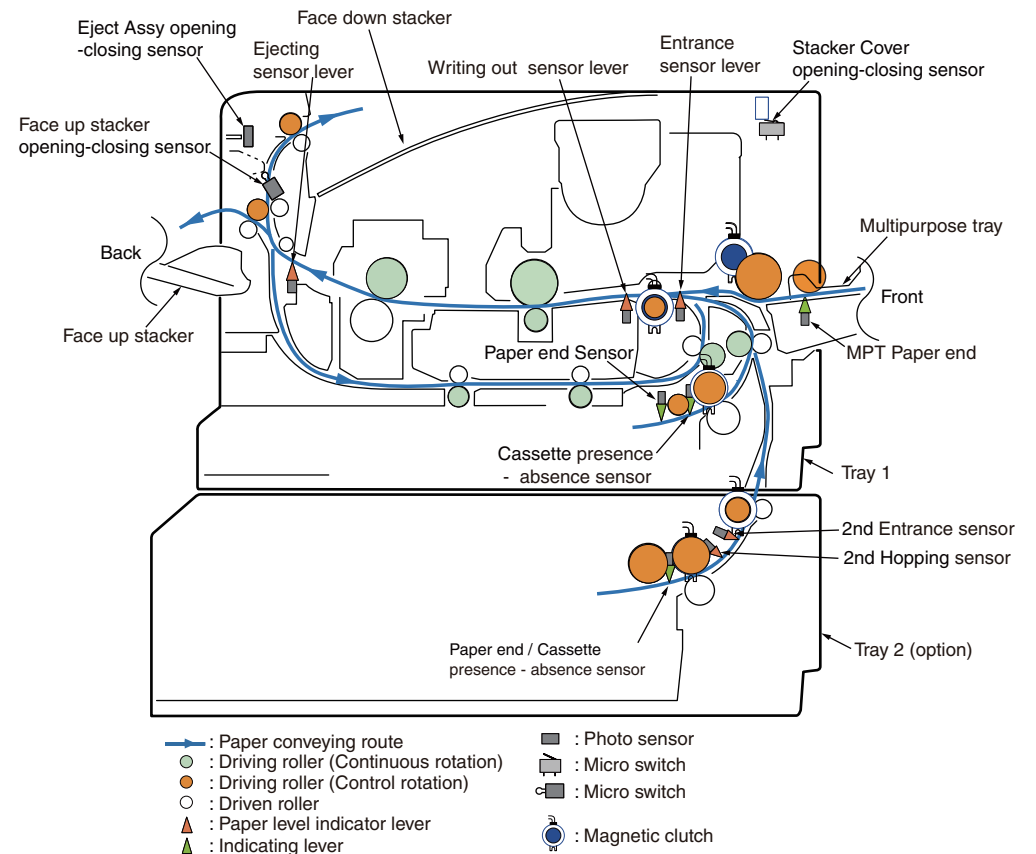


Figure 3-1 Switch and sensor location diagram

Table 3-3 SWITCH SCAN details

<Item having no function> Asterisk mark (*) is displayed in the lower row of display area.

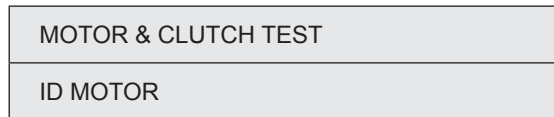
* 1: "L" is displayed when the cover is opened.

NO	Display area, upper row	1		2		3		4	
		Details	Display area, lower row	Details	Display area, lower row	Details	Display area, lower row	Details	Display area, lower row
1	PAPER ROUTE : PU	Entrance Cassette Sns(IN1)	H:OFF L:ON	In Sns	H:OFF L:ON	Write Sns	H:OFF L:ON	Exit Sns(OUT)	H:OFF L:ON
2	TONER SENS	Toner-K Sns	H:ON L:OFF	Toner-Y Sns	H:ON L:OFF	Toner-M Sns	H:ON L:OFF	Toner-C Sns	H:ON L:OFF
3	CVO UP_LU_FU	Cover-Upper	H:Close L:Open	Cover Rear	H:Open L:Close	Cover-Face Up	H:Open L:Close		
4	HT THERMISTER	Upper-Center-Thermister	AD value: ***H	Lower-Center-Thermister	AD value: ***H	Upper-Side-Thermister	AD value: ***H	Ambient Temp -Thermister (Frame Temp)	AD value: ***H
5	HUM_TEMP_DEN	Hum Sns	AD value: ***H	Temperture-Sns	AD value: ***H	DensityK-Sns	AD value: ***H	DensityYMC-Sns	AD value: ***H
6	DRUM_T	Drum Temperture-Sns	AD value: ***H						
7	TONER TAG	TAG-K presence or absence	UID: ***H	TAG-Y presence or absence	UID: ***H	TAG-M presence or absence	UID: ***H	TAG-C presence or absence	UID: ***H
8	MPT PE	MPT-Paper-End Sns	Port level H,L						
9	T1 PE_PNE_CVO	1st-Paper-End Sns	Port level H,L	1st-Paper-Near-End Sns	Port level H,L	Cover-1st	H:Open L:Close	Cassette-Sns-1st	Port level H,L
10	T2 PE_PNE_CVO_CA	2nd-Paper-End Sns	Port level H,L	2nd-Paper-Near-End Sns	Port level H,L	Cover-Open-2nd Sw	Port level H,L	Cassette-Sns-2nd	Port level H,L
11	T2 HOP_LF_FED	2nd-Hopping Sns	Port level H,L	2nd-Lifter Sns	Port level H,L	2nd-Feed Sns(TBD)	Port level H,L		

3.1.6.4 Motor clutch test

This self-diagnostic menu is used to test the motor and clutch.

1. Enter the self-diagnostic mode (level 1), press the [MENU Δ] or [MENU ∇] key repeatedly, and press the [OK] key when the "MOTOR & CLUTCH TEST" is displayed in the upper row of the display area. (Pressing the [MENU Δ] key increments the test item and pressing the [MENU ∇] key decrements the test item.)
2. Press either the [MENU Δ] or [MENU ∇] key until the desired menu item corresponding to the unit to be tested in Table 3-4 is displayed in the lower row of the display area. (Pressing the [MENU Δ] key increments the test item and pressing the [MENU ∇] key decrements the test item.)



3. Pressing the [OK] key starts the test. The unit name starts flashing and the corresponding unit is activated for 10 seconds. (Refer to Figure 3-2.)

Note! After the corresponding unit has activated for 10 seconds, it returns to the status of step2, and is re-activated when the corresponding switch is pressed.

- The clutch solenoid repeats turning on and off during the normal print drive. (If a clutch solenoid cannot be activated independently, the motor is driven at the same time.)
- If [OK] key is pressed long (2 sec) when selecting a motor, the motor keeps running.

4. When the [CANCEL] key is pressed, the corresponding unit stops activating. (Display of the corresponding unit keeps displayed.)
5. Repeat steps 2 to 4 as required.
6. Pressing the [↵] key terminates the test. (Returns to the status of step 1.)

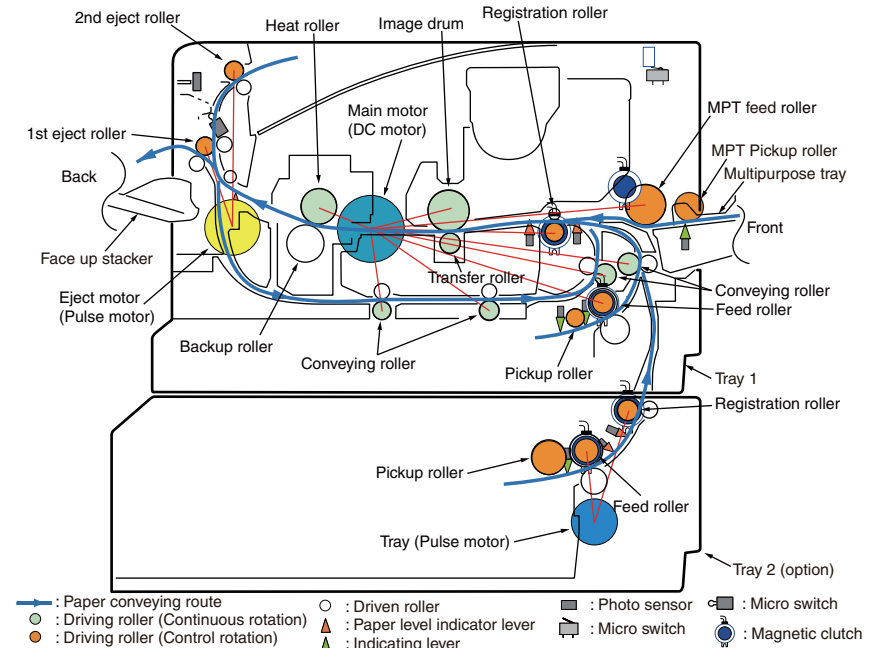


Figure 3-2

Table 3-4

Unit name display	Drive restriction condition	Remarks
MAIN MOTOR	-	-
EXIT MOTOR FWD	FaceUp Cover close	-
EXIT MOTOR REV	FaceUp Cover open	-
REGIST CLUTCH	MAIN MOTOR driving	-
T1 HOP CLUTCH	MAIN MOTOR driving	-
MPT HOP CLUTCH	MAIN MOTOR driving	-
T2 HOP CLUTCH	TRAY2 MOTOR driving	OPTION
T2 REGIST CLUTCH	TRAY2 MOTOR driving	OPTION
LV FAN TEST	-	-
FUSER FAN TEST	-	-
ID FAN TEST	-	-

Note! : The rollers that rotate continuously (each of heat rollers, image drums, and conveying rollers) run in synchronization with the main motor.

3.1.6.5 Test print

This self-diagnostic menu is used to print the test pattern that is built inside PU. Other test patterns are stored in the controller.

This test print cannot be used to check the print quality.

Diagnosis for the abnormal print image should be performed in accordance with section 2.

1. Enter the self-diagnostic mode (level 1), press the [MENU△] or [MENU▽] key repeatedly, and press the [OK] key when the "TEST PRINT" is displayed in the upper row of the display area. (Pressing the [MENU△] key increments the test item and pressing the [MENU▽] key decrements the test item.)
2. The setting items that can be applied to the test print only is displayed in the lower row of display area. Keep pressing the [MENU△], [MENU▽] key until the desired menu item is displayed. (Pressing the [MENU△] key increments the test item and pressing the [MENU▽] key decrements the test item.) (If all setting items need no entry [Default setting], go to step 5.)
3. Keep pressing the [MENU△], [MENU▽] key, and press the [OK] key at the menu item set by step 2. Then, the setting item is displayed in the upper row of display area, and the setting value is displayed in the lower row of display area.

Pressing the [MENU△] key increments the setting value. Pressing the [MENU▽] key decrements the setting value. (The setting value that is displayed at last is applied.) Pressing the [↵] key determines the entry value, and returns to step 2. Repeat step 3 as required.

TEST PATTERN
1

Display	Setting value	Function
PRINT EXECUTE	–	Pressing the [OK] key starts print/Pressing the CANCEL key terminates print. (In units of page)
TEST PATTERN	0	0: White paper print 1~7: Refer to next page. (Pattern print) 8~15: White paper print
TEST CASSETTE	TRAY1	Selecting source of paper supply.
	TRAY2	If the TRAY 2 is not installed, TRAY2 is not displayed.
	MPT	
PAGE	0000	Setting number of the test print copies
DUPLEX	OFF	Selecting OFF for duplex (2-sided) print. Duplex (1-sided) print is performed by the stack of one sheet of paper.
	1 PAGES STACK	

- is the initial default value. The menu item that is set here is valid in this menu item only.
(The setting item is not saved in EEPROM.)

Note! PAGE setting

Pressing the [MENU△] key or the [MENU▽] key shifts the digit. Pressing the [ONLINE] key increments the setting value. Pressing the [MENU△] key increments the setting value. If print is executed while the number of print copies remains in "0000", printing will continue infinitely.

Print setting for each color

Pressing the [MENU△] key or the [MENU▽] key shifts the setting. Pressing the [ONLINE] key or the CANCEL, the ON/OFF switchover will be set. Pressing the [↵] key returns the panel display.

- 4. While the message "PRINT EXECUTE" that is set by the operation specified in step 2 is being displayed, press the [OK] key and the test print is executed with the setting value that has been set by steps 2 and 3.

Pressing the [CANCEL] key stops the test print.

If any alarm that is shown in the following details column is issued at startup of test print or while test print is in progress, the test print is interrupted. (For error details, refer to section 2.5.1 LCD Status Message/ Trouble Table. However, the comment to be displayed is different in the case of the PU test print.)

Panel display	Details
PAPER END SELECTED TRAY	No paper
SELECTED TRAY IS NOT INSTALLED	Selected tray is not installed.
REMOVE PAPER OUT OF DUPLEX	DUPLEX internal error
INSTALL CASSETTE TRAY OPEN	Cassette removal

Print pattern (It cannot be used for checking PQ.)

- 0:Write paper print
- 1:2x2 print
- 2:4x4 print
- 3:Horizontal line print
- 4:Slash line print
- 5:Vertical line print
- 6:White paper print
- 7:Black paper print
- 8 to 15:White paper print

- During printing, the following messages are displayed.

P=***

P : Number of test print copies (unit: copies)

- Displays are switched by pressing the [MENUΔ] key.

T=*** U=***[###]
H=***%

- U : *** = Upper heater temperature measurement value [unit:°C]
[**] = Print execution target temperature [unit:°C]
- T : Environment temperature measurement value [unit:°C]
- H : Environment humidity measurement value [unit: %]

- Displays are switched by pressing the [MENUΔ] key.

KTR=*.**

KTR indicate the transfer voltage setting value. (unit: KV)

- Displays are switched by pressing the [MENUΔ] key.

KR=*.**

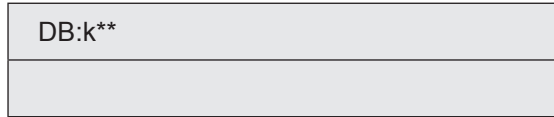
KR : BLACK transfer roller resistance value [unit: uA]

- Displays are switched by pressing the [MENUΔ] key.

ETMP=***UTMP=***

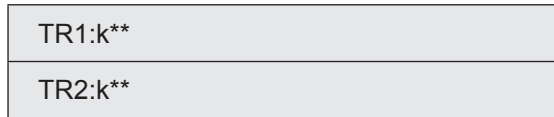
- ETMP : Hopping motor constant speed correction parameter (environment temperature) [unit: DEC]
- UTMP : Fuser motor constant speed correction parameter (fuse target temperature) [unit: DEC]

- Displays are switched by pressing the [MENUΔ] key.



DB : Develop voltage setting table ID number [unit: HEX]

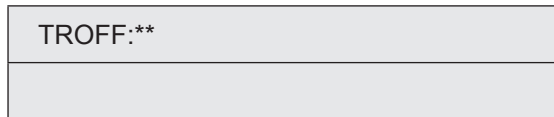
- Displays are switched by pressing the [MENUΔ] key.



TR1 : Transfer voltage parameter VTR1 table ID number [unit: HEX]

TR2 : Transfer voltage parameter VTR2 table ID number [unit: HEX]

- Displays are switched by pressing the [MENUΔ] key.



TROFF : Transfer OFF voltage setting table ID number [unit: HEX]

5. Repeat steps 2 to 4 as required.
6. Pressing the [CANCEL] key terminates the test. (Returns to the status of step 1.)

3.1.6.6 Consumable item counter display

This self-diagnostic menu is used to display the consumption status of the consumable items.

1. Enter the self-diagnostic mode (level 1), press the [MENUΔ] or [MENU▽] key repeatedly, and press the [OK] key when the "CONSUMABLE STATUS" is displayed in the upper row of the display area. (Pressing the [MENUΔ] key increments the test item and pressing the [MENU▽] key decrements the test item.)
2. When the [MENUΔ], [MENU▽] key is pressed, consumption statuses of the consumable items are displayed in order. (Pressing the [ONLINE] or [CANCEL] key is invalid.)
3. Pressing the [↵] key terminates the test. (Returns to the status of step 1.)

Display area, upper row	Display area, lower row	Format	Unit	Details
K-ID UNIT	*****IMAGES	DEC	Images	It shows the number of rotations counted after installation of a new ID UNIT on a three A4 Pages/Job basis.
K-TONER	*****%	DEC	%	It shows the amount of toner consumption.
K-STC MODE CNT	*****8192	DEC	DOT	It shows the number of print dot counts of the toner. (It is a cumulative value counted after the first use of the printer.)
K OVER RIDE CNT	*****TIMES	DEC	Times	It shows the number of overrides of life warnings for the toner cartridge.

3.1.6.7 Number of print copies counter display

This self-diagnostic menu is used to display status of the number of copies of a printer.

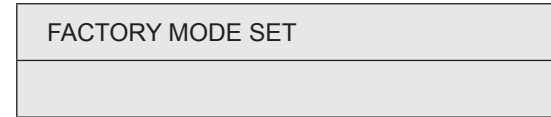
1. Enter the self-diagnostic mode (level 1), press the [MENUΔ] or [MENU▽] key repeatedly, and press the [OK] key when the "PRINTER STATUS" is displayed in the upper row of the display area. (Pressing the [MENUΔ] key increments the test item and pressing the [MENU▽] key decrements the test item.)
2. When the [MENUΔ], [MENU▽] key is pressed, statuses of the number of print copies are displayed in order. (Pressing the [ONLINE] or [CANCEL] key is invalid.)
3. Pressing the [↵] key terminates the test. (Returns to the status of step 1.)

Display area, upper row	Display area, lower row	Format	Unit	Details
K-TOTAL DRUM CNT	*****IMAGES	DEC	Images	It shows the cumulative number of rotations.
TOTAL SHEET CNT	*****COUNTS	DEC	Prints	Total number of print copies are displayed.

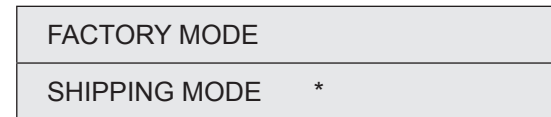
3.1.6.8 Switching between the Factory mode and the Shipping mode

This self-diagnostic menu item is used to switch between the Factory mode and the Shipping mode.

1. Enter the self-diagnostic mode (level 1) and keep pressing the [MENUΔ] or [MENU▽] key until the following message is displayed.



2. When the [OK] key is pressed, the following message is displayed. Keep pressing the [MENUΔ] or [MENU▽] key until the target item (refer to the following table) is displayed.



3. While the desired item to set is being displayed, press the [OK] key that enables selection of the setting values.
4. While the desired setting value is being displayed, press the [OK] key for long period (3 seconds) that registers the displayed value in EEPROM. (Returns to the status of step 2.)
5. Repeat steps 2 to 4 as required.
6. Pressing the [↵] key terminates the test. (Returns to the status of step 1.)

Display	Setting value	Function
FACTORY MODE	FACTORY MODE	Sets the Factory working mode (fuse cut invalid mode).
	SHIPPING MODE	Releases the Factory working mode to make the fuse cut function valid.
FUSE INTACT Note: ***** indicates INTACT or BLOWN.	ID UNIT *****	Checks the fuse status of the K-ID unit.

3.1.6.9 Self-diagnostic function setting

This self-diagnostic menu is used to set valid/invalid of the error detection by the various sensors.

The error detection can be made invalid or valid for locating source of abnormality. However, this menu item requires expert knowledge to set among the engine operations. Handle this menu item with utmost care.

Be sure to return the setting to the default setting upon completion of usage of this item.

1. Enter the self-diagnostic mode (level 1) and keep pressing the [MENU Δ] or [MENU ∇] key until the following message is displayed.

SENSOR SETTING

2. When the [OK] key is pressed, the following message is displayed. Keep pressing the [MENU Δ] or [MENU ∇] key until the target item (refer to the table below) is displayed.

TONER SENSOR
ENABLE *

3. When the [OK] key is pressed, the following message is displayed.
Pressing the [MENU Δ] key increments the setting value.
Pressing the [MENU ∇] key decrements the setting value.
4. While the desired setting value is being displayed, press the [OK] key for long period (3 seconds) that registers the displayed value in EEPROM. (Returns to the status of step 2.)
5. Repeat steps 2 to 4 as required.
6. Pressing the [↵] key terminates (except the status of step 4) the setting. (Returns to the status of step 1.)

Display	Setting value	Operation at the setting value	Function
TONER SENSOR	ENABLE	Detects	Valid/Invalid of toner sensor operation.
	DISABLE	Not to detect	
ID UNIT CHECK	ENABLE	Checks	Valid/Invalid of ID installation check operation.
	DISABLE	Not to check	
DRUM OVER LIFE	STOP	Not to continue	The restriction on extending the life of toner-related items five times is lifted.
	CONTINUANCE	To continue	
WR POINT REV TBL=**H±*.***mm	00H~FFH	Correction value	The correction value is added to the existing write-down position.
BOTTOM WRT POINT TBL=**H±*.***mm	00H~FFH	Cut value	Amount of cut at the rear end of a paper is set.

Hatched portion: Default is shown

3.1.6.10 LED head serial number display

This self-diagnostic menu item is used to check whether the downloaded LED head data matches the serial number of the actual LED head.

1. Enter the self-diagnostic mode (level 1), press the [MENU Δ] or [MENU ∇] key repeatedly, and press the [OK] key when the "LED HEAD DATA" is displayed in the upper row of the display area. (Pressing the [MENU Δ] key increments the test item and pressing the [MENU ∇] key decrements the test item.)
2. When the [MENU Δ] key or the [MENU ∇] key is pressed, serial numbers of the K LED head data are displayed in order.
3. Pressing the [↵] key terminates the test. (Returns to the status of step 1.)

K ** ** ****
XXXXXXXXXXXXXX

** ** **** : Rev number
XXXXXXXXXXXXXX : serial number

3.1.6.11 NVRAM parameter setting

Do not use this menu item.

3.1.7 Energy conservation mode setting

This printer is equipped with two types of energy conservation mode, MODE1 as "NORMAL MODE" and MODE2 as "ECO MODE."

When energy conservation mode is set to "ECO MODE," the printer prints at a low speed at the beginning of cold start to reduce the period of time required for warming up from the normal temperature.

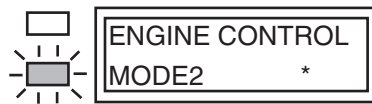
At factory default, it is "ECO MODE" MODE2.

1. Setting method

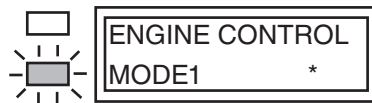
- (1) Switch on the power of printer.
- (2) After "ON LINE" appears, open the Stacker Cover.
- (3) Press [ON LINE] switch for 5 second.

Open the Top Cover by ONLINE and NODATA status, press [ON LINE] switch for 5 second. The following setting information displays on LCD for 2 second. Then it returns to the original display automatically. The check LED blinks.

- In case of setting converted by MODE1 "NORMAL MODE" status, it changes to MODE2 "ECO MODE".



- In case of setting converted by MODE2 "ECO MODE" status, it changes to MODE1 "NORMAL MODE".



3.1.8 EEPROM Initialization

The treatment for EEPROM Initialization at each phenomenon is displayed as Diagram 3-1.

Diagram 3-1 EEPROM Initial Setting Range

No	Phenomenon	CU EEPROM Area					PU EEPROM Area				
		Factory Default Area	User Menu Area	OP Menu Area	Administrator Menu/ System Maintenance Menu Area (*3)		F/W Revision Area	Engine Maintenance Menu Area			
					Brands Area			Drum Counter	Page Counter	Toner Dot Counter	
1	User Maintenance Menu MENU RESET Operation	-	○	-	-	-	-	-	-	-	-
2	F/W Revision check error at the time of a power on.	-	○	-	○(*4)	-	○	-	-	-	-
3	CU EEPROM area mapping Revision check error at the time of a power on.	○	○	○	○(*4)	-	-	-	-	-	-
4	Brands area check error at the time of a power on. (*1)	○	○	○	○(*4)	○	○	-	-	-	-
5	Engine Maintenance Menu ENGINE RESET Operation	-	-	-	-	-	-	-	○	○(*2)	○(*5)
6	PU EEPROM area mapping check error at the time of a power on.	-	-	-	-	-	-	○(*3)	○	○	○
7	FAC MAINTENANCE MENU EEPROM RESET Operation	-	○	○	○(*4)	-	-	-	-	-	-

(*1) Destination Check is for the operation on the different product (destination) with the previously operated product (destination). It is the reset relying on the recognition regarding the destination change by PJJ command and the operation at POWER ON of the new product EEPROM as an error.

(*2) It is reset to 0 limited by Page Count less than 500 pieces. (ENGINE RESET due to PJJ Command is not in this limitation.)

(*3) About DOT SHIFT setting menu, even it is also exist in System Maintenance Menu, but because the setting value keeping area is allocated in PU EEPROM AREA, in the case of the item of System Maintenance Menu initialized, DOT SHIFT setting is not initialized. By contraries, in the case of PU EEPROM AREA initialized, DOT SHIFT setting is initialized.

(*4) DOT SHIFT setting should not be initialized.

(*5) Because of the support of Toner TAG, Toner Dot Counter is not reset.

3.2 Adjustment at part replacement

Adjustment is necessary while replacing the following part.

Replacing part	Adjustment
Main PCB board	EEPROM data upload / download

3.2.1 EEPROM data upload / download method

In the case of replacing the Print Board of Controller, copy the old EEPROM content to the new EEPROM of new board and then save the customer setting. To operate this, use Maintenance Utility.

About the operating method of Maintenance Utility, refer to Maintenance Utility User's Manual.

Maintenance Utility is designed for working place engineer use only. It is not released to the end user.

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.

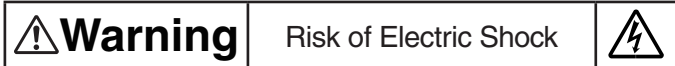
The reference part numbers used in this manual (such as ① and ②) do not identical to the part numbers in the maintenance disassembly configuration diagram 45762001TL and the RSPL 45762001TR.

4.1	Preparation for parts replacement.....	4-2
4.2	Parts replacement procedure	4-4
4.3	Lubricating points	4-30

4.1 Preparation for parts replacement

This section explains the replacement procedure of part, assembly, and unit in the working place. Disassembling procedure relating to reassembling is conducted conversely.

- (1) Be sure to unplug the AC cord and interface cable before starting to replace parts.
 - (a) Unplugging the AC cord by the following procedures.
 - i) Press and hold the power switch for approximately 1sec. to turn off the power supply switch.
 - ii) Unplug the AC insert plug of AC cord from the AC socket.
 - iii) Unplug the AC cord and interface cable from printer.

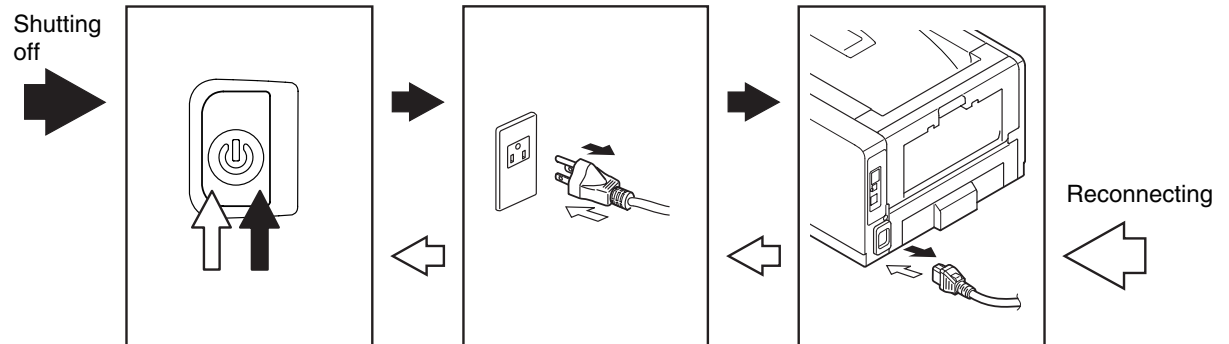


There is a risk of electric shock during replacement of the low voltage power supply. Use insulating gloves or avoid direct contact with any conducting part of the power supply, and caution should be exercised during replacement.

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

- (b) Reconnecting the printer by the following procedures.
 - i) Connect the AC cord and interface cable to the printer.
 - ii) Connect the AC insert plug to the AC socket.
 - iii) Press and hold the power switch for approximately 1sec. to turn on the power supply.





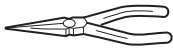
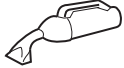

- (2) Do not disassemble the printer in the case of normal operation.
- (3) Do not disengage the part that there is not any necessary to touch. Disassembly should be the minimum.
- (4) Be sure to use the specified maintenance tools.
- (5) Be sure to temporarily install the small part such as screw, collar, and so on at its original position during disassembling because it is easy to be lost.
- (6) Do not use the gloves that is easy to occur electrostatic while dealing with IC such as micro-sensor, ROM, RAM, etc. and PCB.
- (7) Do not put the print circuit board on the equipment or on the floor directly.
- (8) Do not put the Print Circuit Board on the printer or on the floor directly.



[Maintenance tools]

The necessary tools for replacing the print circuit board, assembly, and unit is shown as graph 4-1-1.



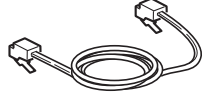
Graph 4-1-1 Maintenance tools

No.	Maintenance tools	Quantity	Use	Remark
1	 No.2-200 ⊕Magnetic driver	1	3~5mm Screw	
2	 No.3-100 Driver	1		
3	 No.5-200 Driver	1		
4	 Digital multi-meter	1		
5	 Pliers	1		
6	 Handy cleaner	1		Refer to the following Note!
7	 E ring pliers	1	For E ring removing	

Note! Use vacuum by the type that applying to toner. It may cause fire if use normal vacuum.

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		
2	 USB cable	1		
3	 Ethernet cable (crossover cable)	1		

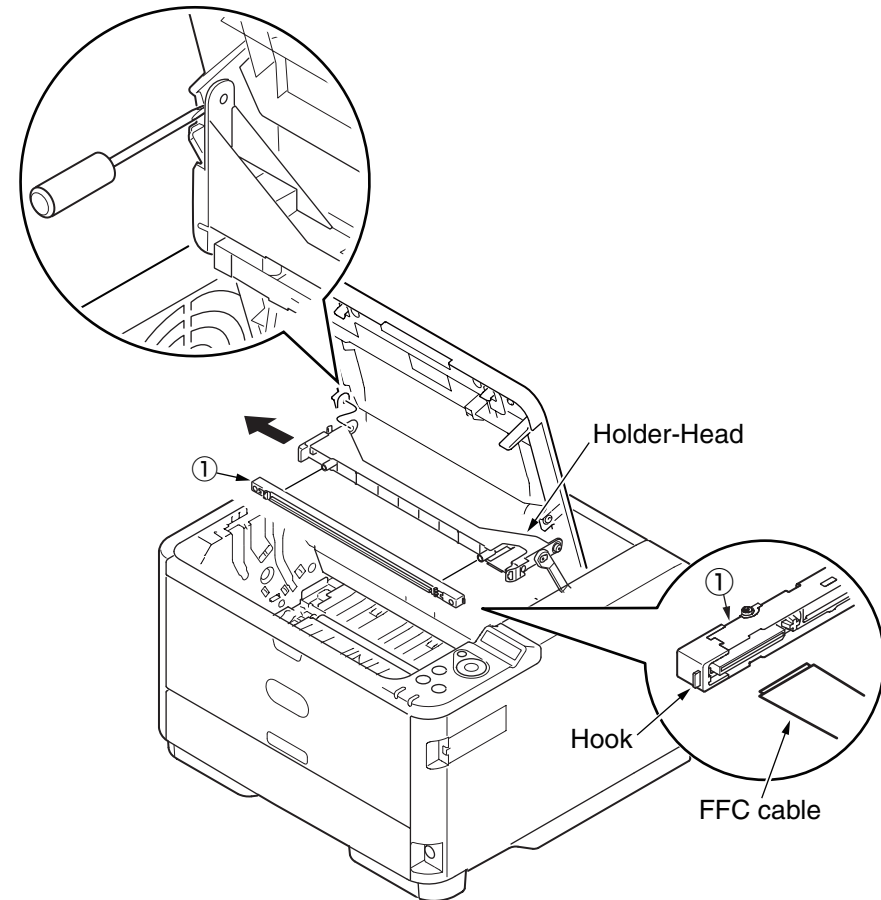
4.2 Parts replacement procedure

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

4.2.1 LED Head

- (1) Open the Stacker Cover.
- (2) Remove the ID UNIT.
- (3) Disengage the tab of the Holder-Head from the stacker cover by using a flat-head screwdriver or something.
- (4) Pull the Holder-Head toward you as illustrated below.
- (5) Open the Holder-Head by arrow direction and then remove the hook. remove the LED Assy ① .
- (6) Remove the FFC cable from the connector of LED Assy ① .
- (7) Assembling is performed by the reverse procedure with removing.

Note! Beware of not to touch or press the Lends of LED Head directly.

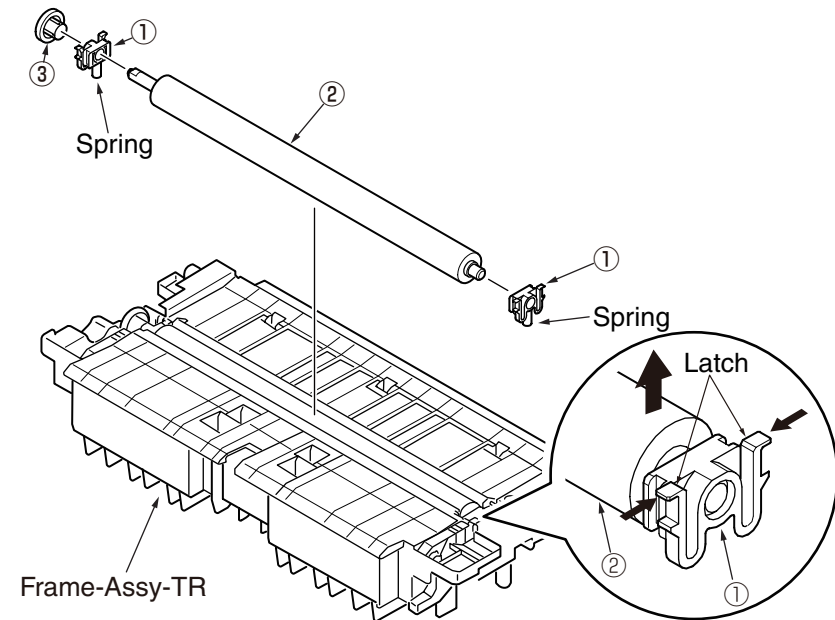


4.2.2 Roller-Transfer

- (1) Open the Stacker Cover.
- (2) Remove the ID UNIT.
- (3) Take the Frame-Assy-TR out of the printer.
- (4) Disengage the latches of Bearing-TR ① on both ends.
- (5) Hold the Bearing-TR ① on the both side, and then lift up the Roller-Transfer ②.
- (At this moment, Gear-TR ③ is also removed.)
- (6) Assembling is performed by the inverse procedure with removing.

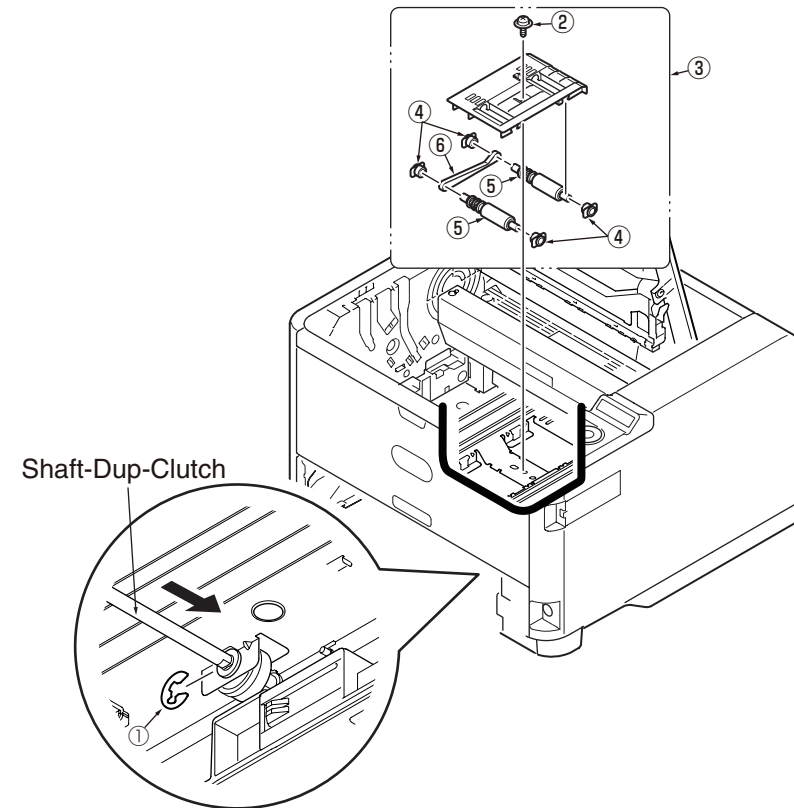
(Note on removing / assembling)

1. While assembling, pay attention to the up-and-down direction of Bearing-TR ①.
2. Operating carefully, not to touch Roller-Transfer ② surface.
3. Be careful not to fit each Bearing-TR ① to the Frame-Assy-TR with their springs inclined.
4. The each Bearing-TR and Spring are common. After assembled, strong the gear side pressure.



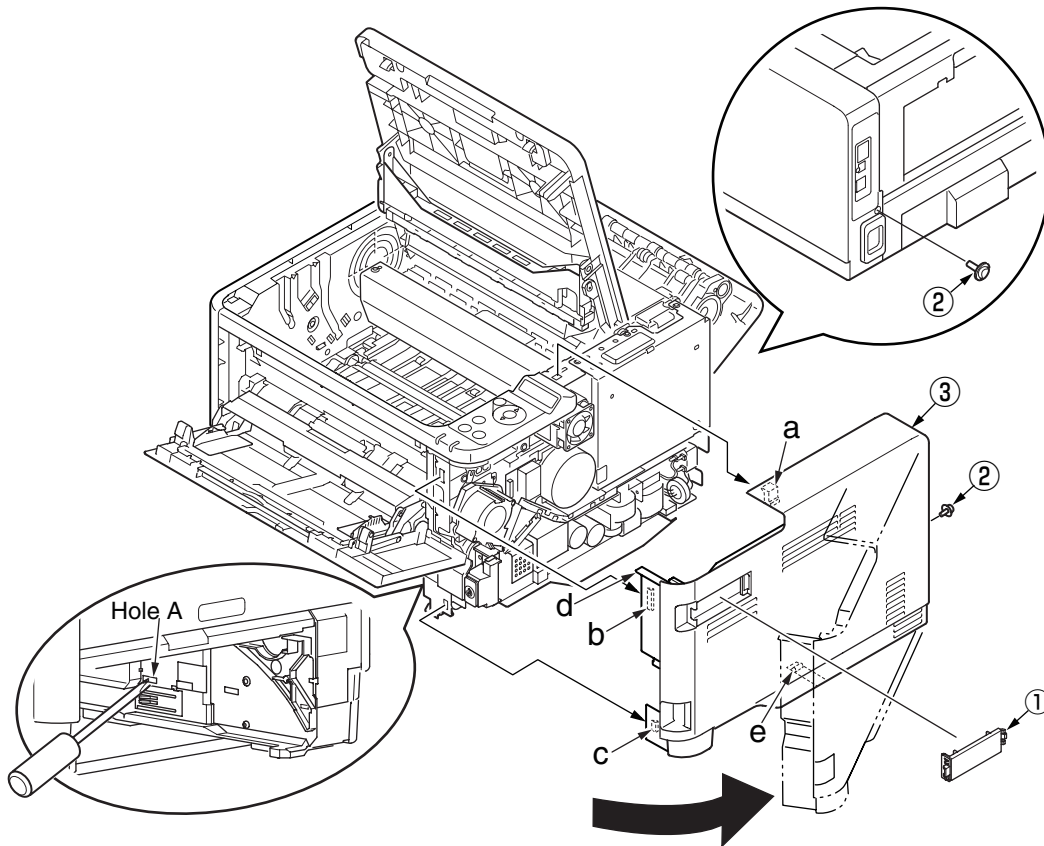
4.2.3 Duplex Belt

- (1) Take out the Frame-Assy-TR. (Refer to 4.2.2)
- (2) Remove the cassette and place the printer unit with its right side down.
- (3) Remove the E-ring ① and slide the Shaft-Dup-Clutch in the direction of the arrow.
- (4) Raise the printer unit and remove the screw (Silver) ② and Frame-Duplex-Assy ③.
- (5) Remove the four pieces of Bearing ④, Roller-Feed-Duplex ⑤ and Duplex-Belt ⑥.
- (6) Assembling is performed by the inverse procedure with removing.



4.2.4 Cover-Side-R / Cover-Lower-R (B512 only)

- (1) Remove the cassette.
- (2) Open MPT, the Cover-Assy-Stacker and the Cover-Assy-Rear.
- (3) Remove the Cover-WLAN ①.
- (4) Remove the screw (Silver) ②.
- (5) Insert the Minus Driver into the hole A of Guide-Cassette-R. (B512 only)
- (6) Push the tab a to inside and disengage the three tabs (b,c,d) and tab e, and remove Cover-Side-R ③ by opening it from the front side of the printer in the direction of the arrow.

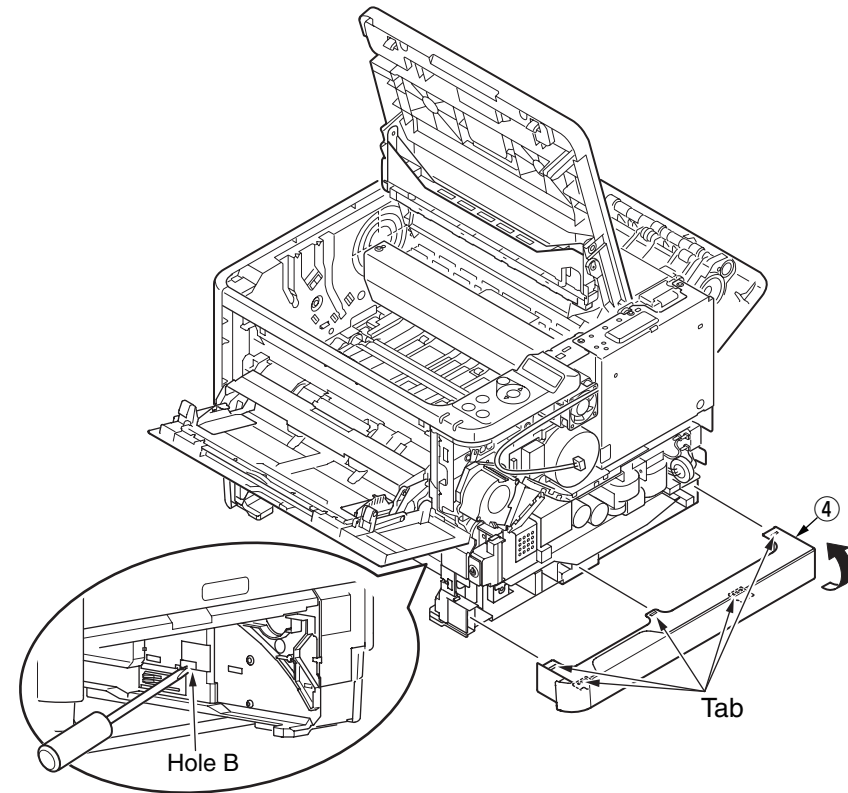


*The next step is B512 only.

- (7) Insert the Minus Driver into the hole B of Guide-Cassette-R and disengage the five tabs and remove the Cover-Lower-R ④ in the direction of the arrow.
- (8) Assembling is Cover-Side-R first, next to assemble the Cover-Lower-R.

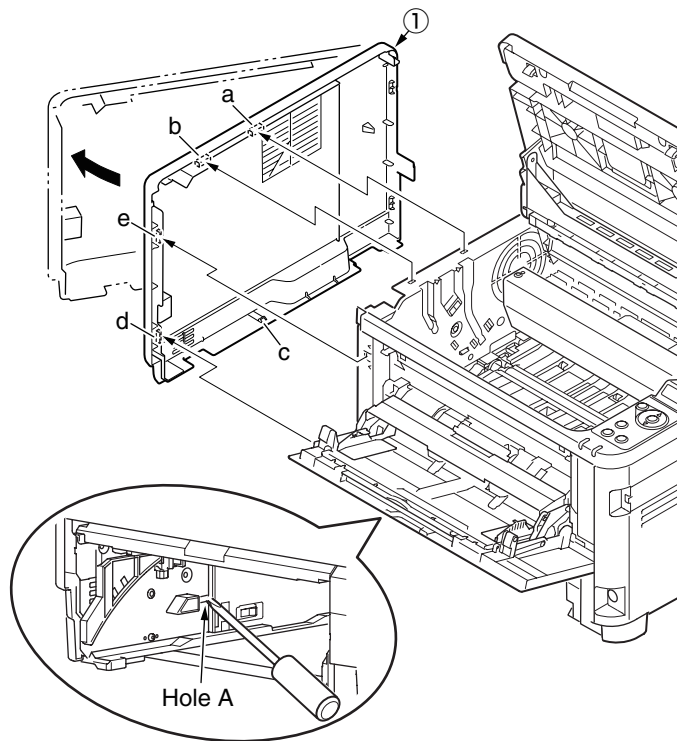
(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate motor).
2. When remove and assemble, Cover-Side-R first, next to the Cover-Lower-R.



4.2.5 Cover-Side-L / Cover-Lower-L (B512 only)

- (1) Remove the cassette.
- (2) Open MPT, the Cover-Assy-Stacker and the Cover-Assy-Rear.
- (3) Insert the Minus Driver into the hole A of Guide-Cassette-L.
- (4) Disengage the two tabs (d,e) and remove the three tabs(a,b,c) while Cover-Side-L ① by opening it from the front side of the printer in the direction of the arrow.

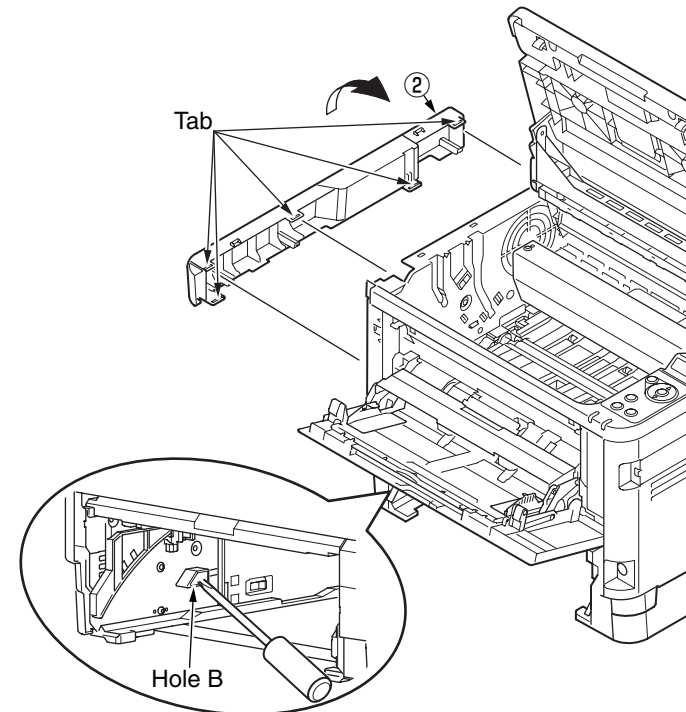


*The next step is B512 only.

- (5) Insert the Minus Driver into the hole B of Guide-Cassette-L and disengage the five tabs and remove the Cover-Lower-L ② in the direction of the arrow.
- (6) Assembling is Cover-Side-L first, next to assemble the Cover-Lower-L.

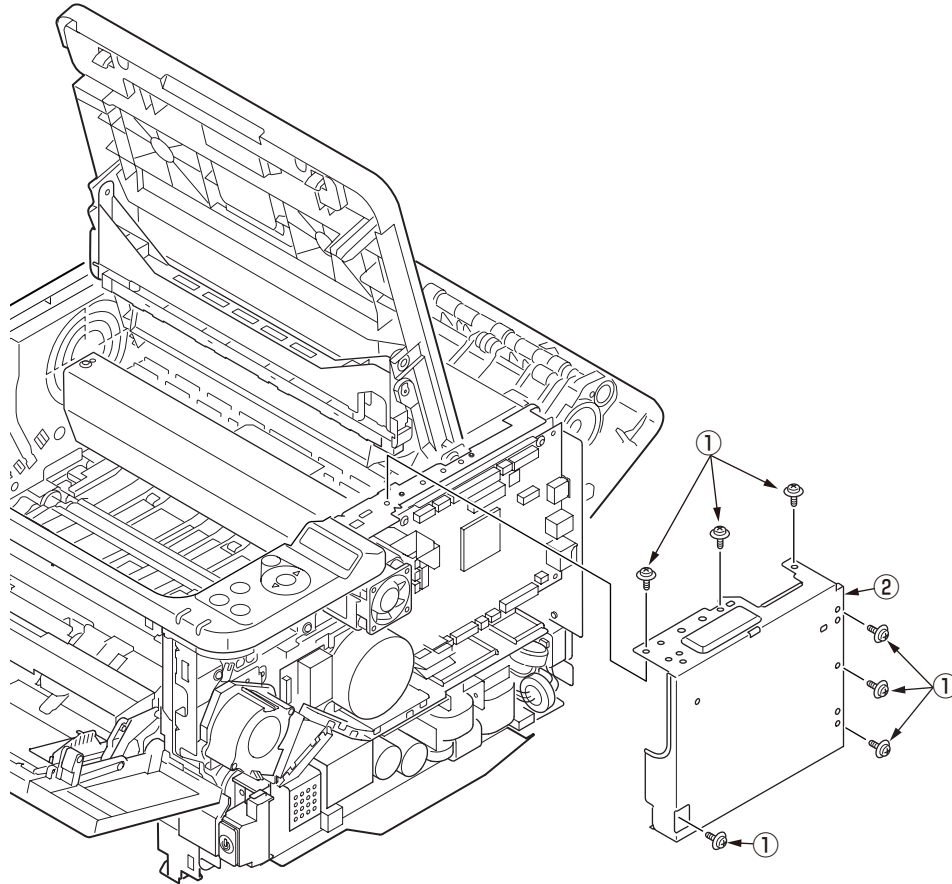
(Note on removing / assembling)

1. When remove and assemble, Cover-Side-L first, next to the Cover-Lower-L.



4.2.6 CU-Board

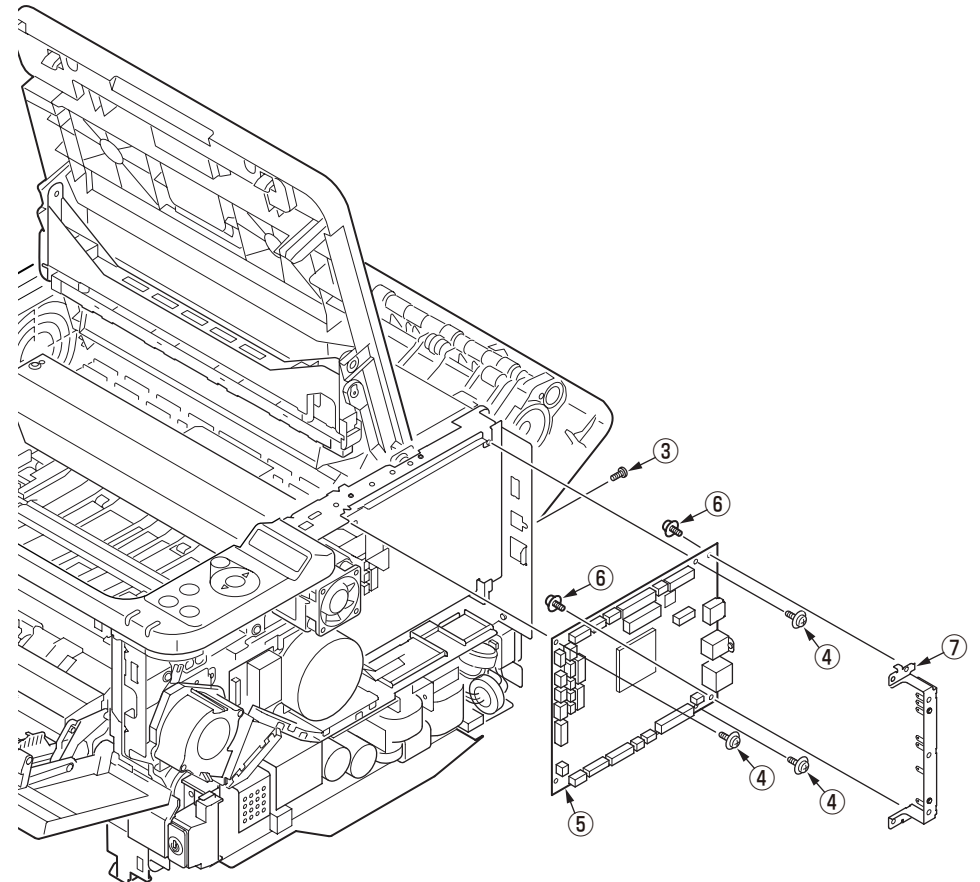
- (1) Remove the Cover-Side-R. (Refer to 4.2.4)
- (2) Remove the seven screws (Silver) ① . Remove the Plate-Shield ② .



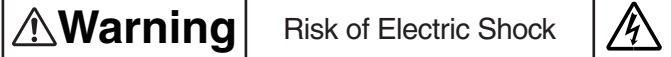
- (3) Disconnect the all cables.
- (4) Remove the screw (Silver : Small) ③ , remove the two screw (Silver) ④ and remove the CU-Board ⑤ .
- (5) Remove the two screws (Silver) ⑥ , and remove the Plate-Shield-Support ⑦ from the CU-Board ⑤ .
- (6) Assembling is performed by the inverse procedure with removing.

(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate motor).
2. Beware of not to tuck down the cable while assembling the Plate-Shield ② .
3. See 6.2(1) for the CU-Board ⑤ connector layout.



4.2.7 Power Supply Unit



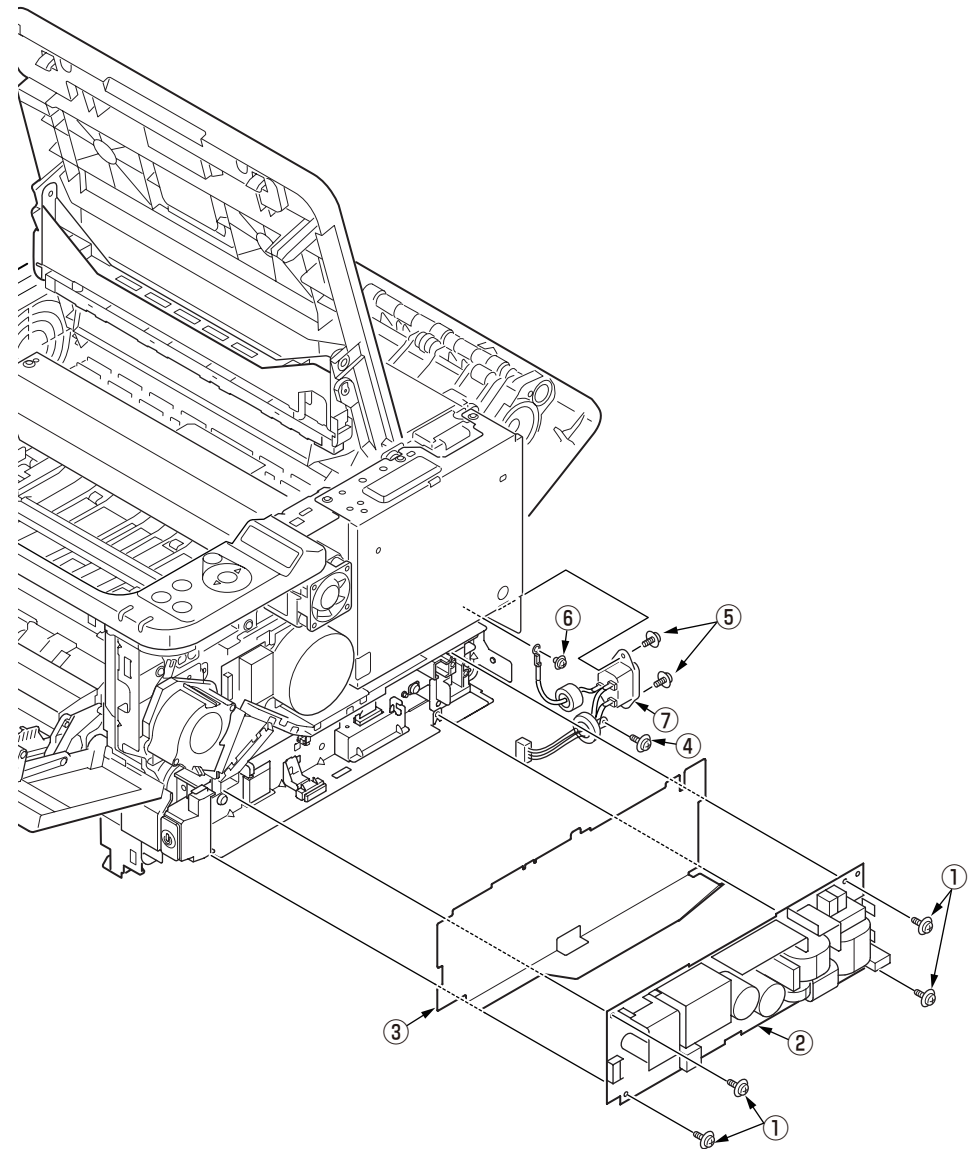
There is a risk of electric shock during replacement of the low voltage power supply. Use insulating gloves or avoid direct contact with any conducting part of the power supply, and caution should be exercised during replacement.

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

- (1) Remove the Cover-Side-R. (Refer to 4.2.4)
- (2) Disconnect all of the three cables from Power Supply Unit (Board) ② .
- (3) Remove the four screws (Silver) ① . Remove the Power Supply Unit (Board) ② .
- (4) Remove the Sheet-Insulation-LV ③ .
- (5) Remove the screw ④ .
- (6) Remove the two screws (Silver:8mm) ⑤ and the screw(M4) ⑥ , and remove Power Supply Unit (AC-Inlet) ⑦ .
- (7) Assembling is performed by the inverse procedure with removing.

(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate motor).
2. Do not apply excessive pressure to the power switch.

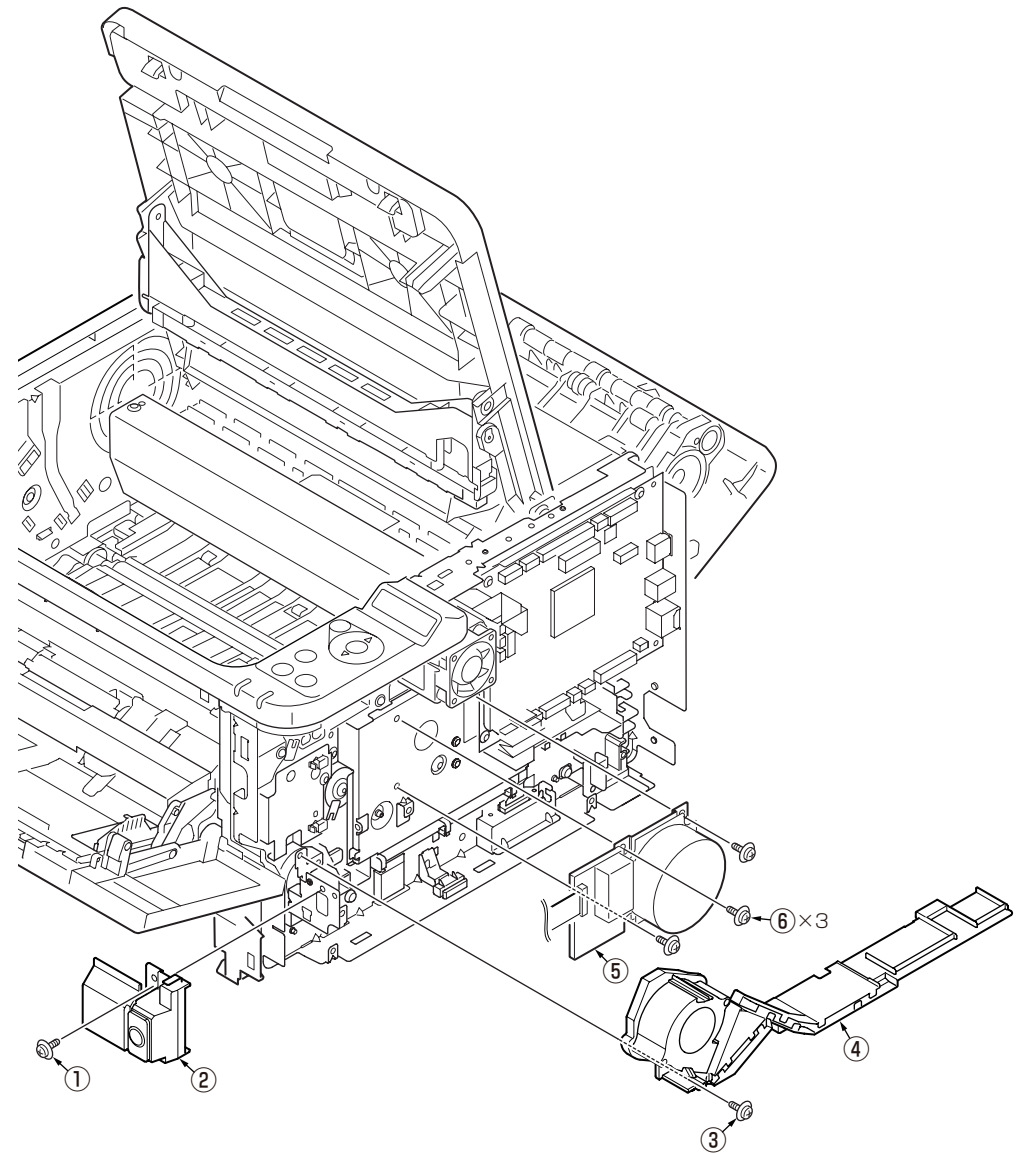


4.2.8 DC Motor

- (1) Remove the Plate-Shield. (Refer to 4.2.6)
- (2) Remove the Power Supply Unit (Board) and Sheet-Insulation-LV.(Refer to 4.2.7)
- (3) Disconnect the cable and remove the screw(Silver) ① , remove the Switch-Assy ② .
- (4) Remove the screw(Silver) ③ , remove the Duct-FAN-Power ④ .
- (5) Remove the cable of DC Motor ⑤ from CU-board.
- (6) Remove the three screws(Silver) ⑥ ,remove the DC Motor ⑤ .
- (7) Assembling is performed by the inverse procedure with removing.

(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate motor).

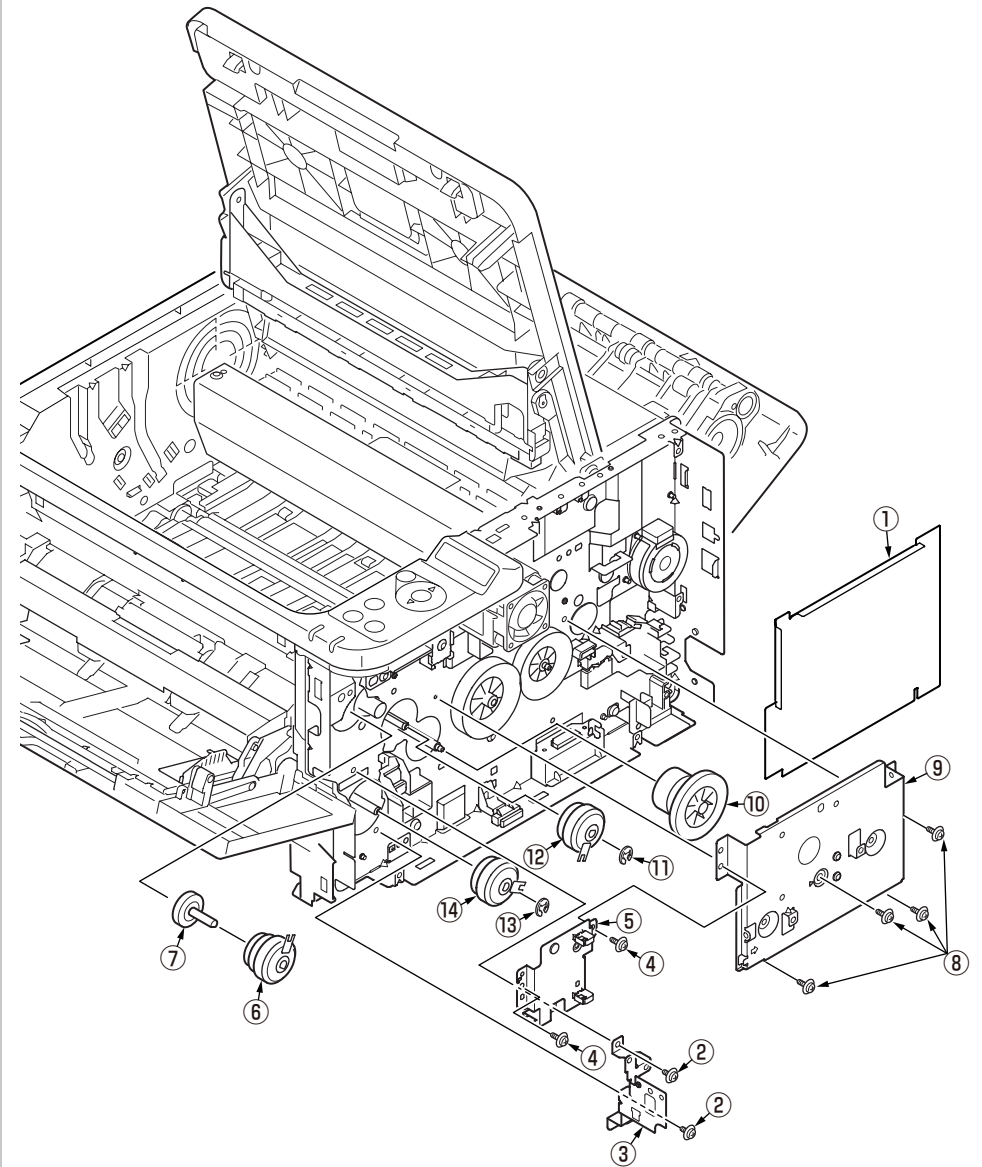


4.2.9 Hopping / MPT / Regist Clutch

- (1) Remove the CU-Board. (Refer to 4.2.6)
- (2) Remove the Power-Supply Unit (Board). (Refer to 4.2.7)
- (3) Remove the DC Motor. (Refer to 4.2.8)
- (4) Remove the Sheet-Insulation-CU ① .
- (5) Remove the two screws (Silver) ② ,remove the Plate-Base(PWU)-A ③ .
- (6) Remove the two screws (Black) ④ ,remove the Plate-Clutch-MPT ⑤ .
- (7) Remove the MPT Clutch ⑥ and the Gear-MPT ⑦ .
- (8) Remove the four screws (Silver) ⑧ ,remove Plate-Gear ⑨ .
- (9) Remove the Gear-Reduction ⑩ .
- (10)Remove the E-ring ⑪ ,remove the Regist Clutch ⑫ .
- (11) Remove the E-ring ⑬ ,remove the Hopping Clutch ⑭ .
- (12)Assembling is performed by the inverse procedure with removing.

(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate motor).

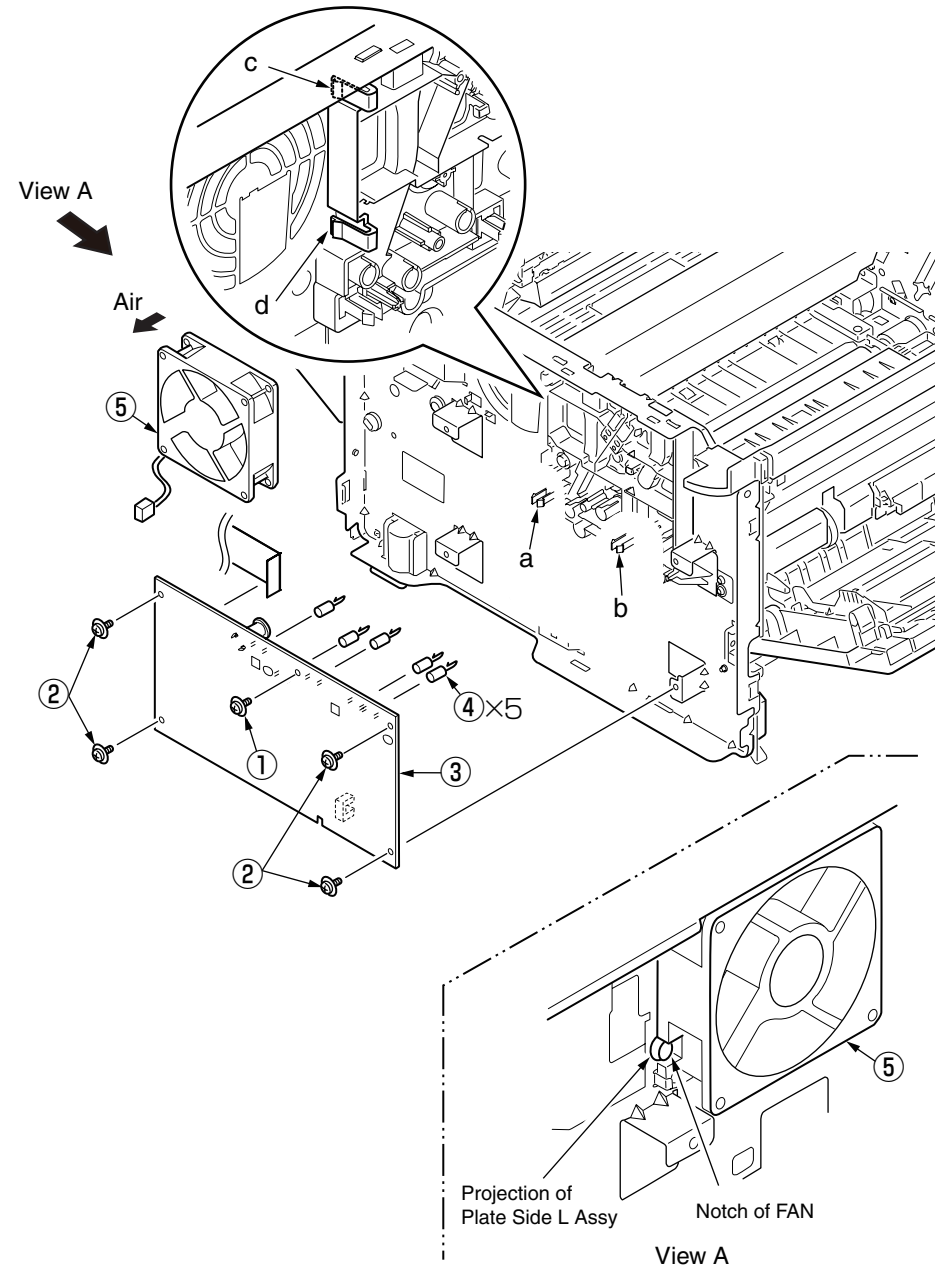
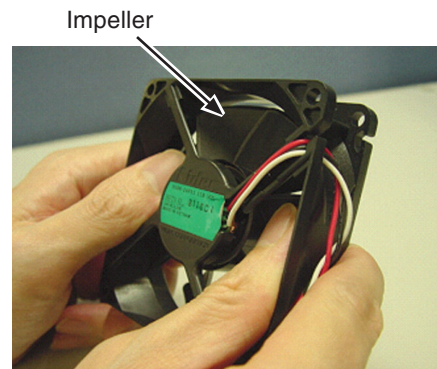


4.2.10 HV-Board / Motor-FAN

- (1) Remove the Cover-Side-L. (Refer to 4.2.5)
- (2) Remove the screw (Black) ① and the four screws (Silver) ②, disengage the two tabs (a and b), and remove HV-Board ③. Be careful not to lose Spring-Contact ④ that is removed with the board.
- (3) Disconnect all of the three cables from HV-Board ③.
- (4) Disengage the two tabs (c and d), and remove Motor-FAN ⑤.
- (5) Assembling is performed by the inverse procedure with removing.

(Note on removing / assembling)

1. Install Motor-FAN ⑤ with the label side outward and with its notch fitted to the appropriate projection of the Plate-Side-L.
2. See 7.2(2) for the HV-Board ③ connector layout.
3. While removing or assembling FAN ⑤, do not press impeller of the FAN as shown by the following photo. In case of the impeller unfastened by mistake, do not reuse it and install a new FAN ⑤.

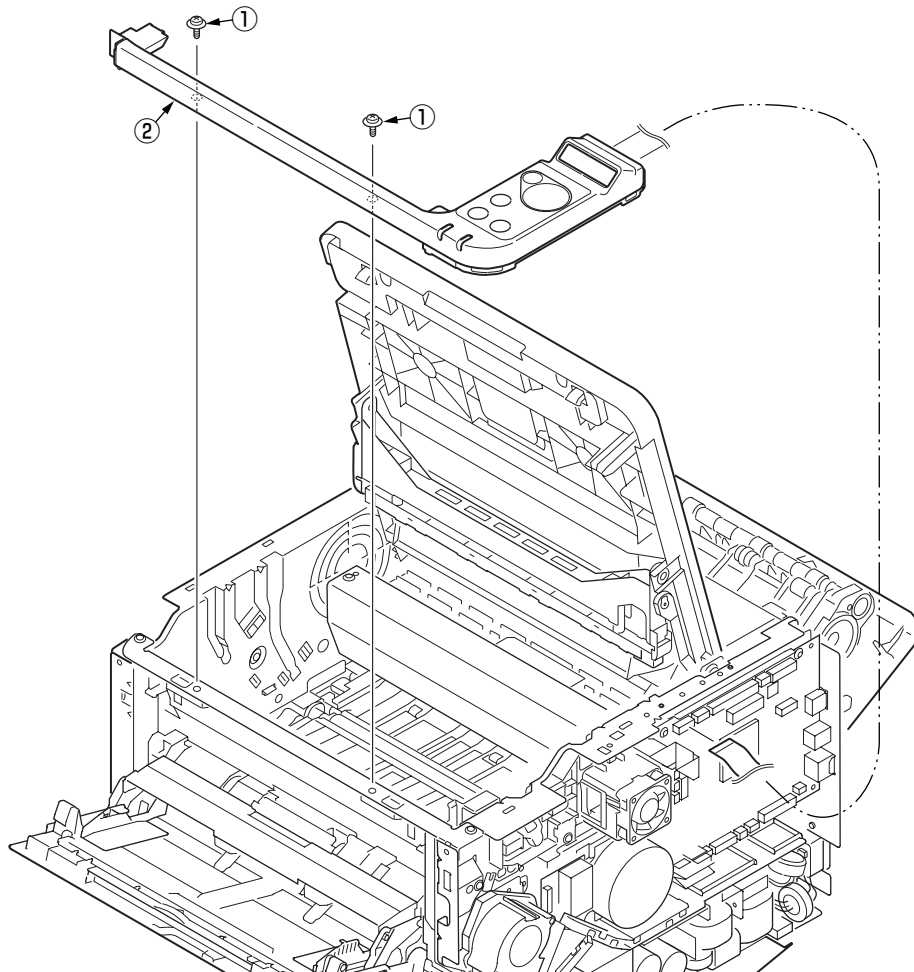


4.2.11 Cover Assy OPE

- (1) Remove the Cover-Side-R and Cover-Side-L. (Refer to 4.2.4 / 4.2.5)
- (2) Remove the Plate-Shield. (Refer to 4.2.6)
- (3) Remove the FFC cable from the CU-board.
- (4) Remove the two screws (Black) ①. Remove the Cover-Assy-Ope ②.
- (5) Assembling is performed by the reverse procedure with removing.

(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate motor).

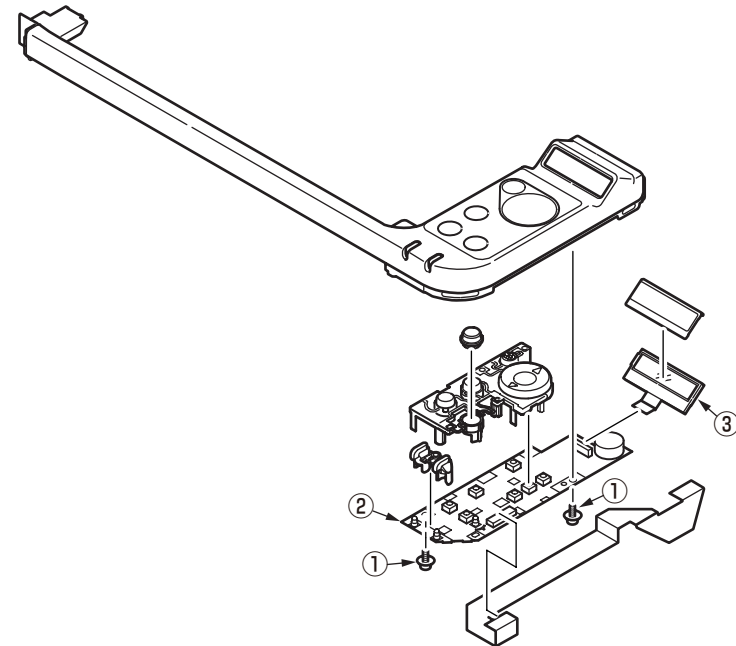


4.2.12 Ope PCB Assy

- (1) Remove the Cover Assy Ope. (Refer to 4.2.11)
- (2) Remove the two screws (Black) ①.
- (3) Remove the Ope PCB Assy ②.
- (4) Remove the FFC cable and the LCD ③.
- (5) Assembling is performed by the reverse procedure with removing.

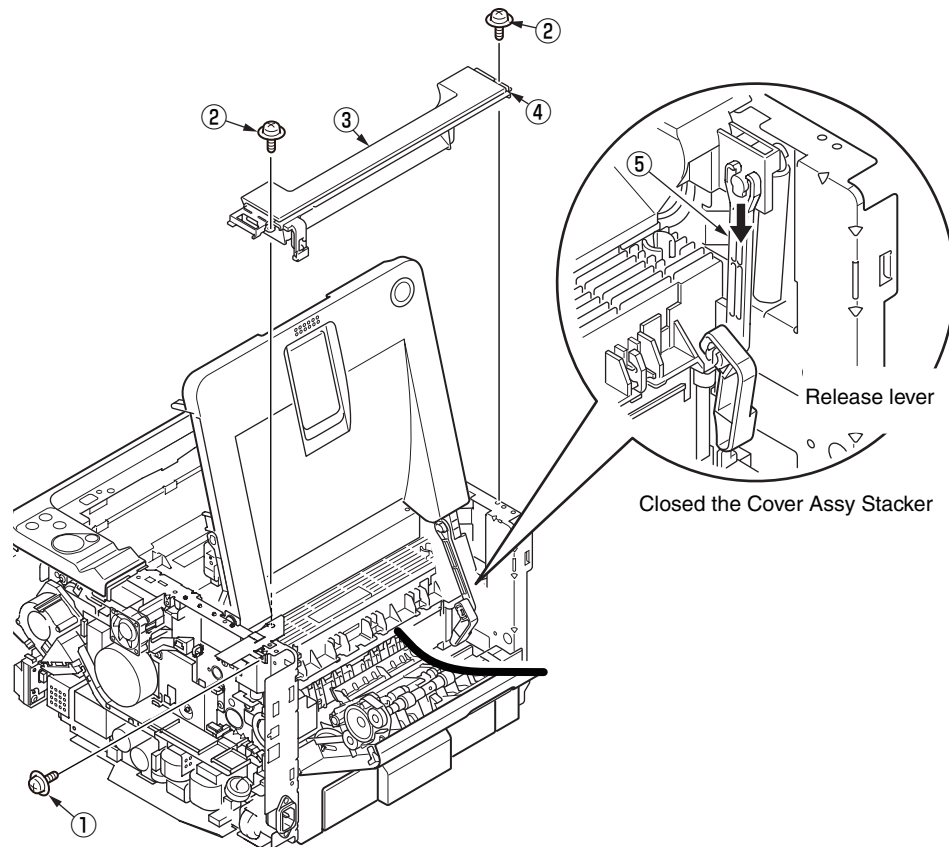
(Note on removing / assembling)

1. When remove the LCD ③, remove the two tab together, beware of not to load to LCD



4.2.13 Cover Assy Stacker

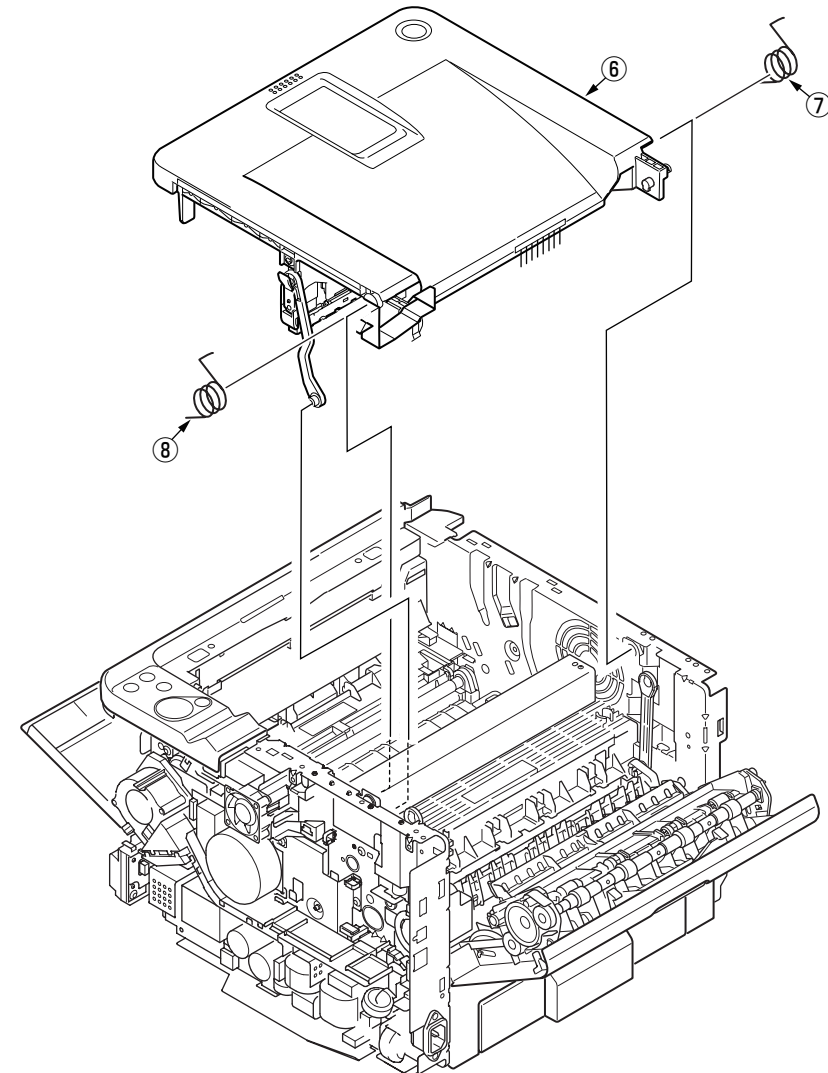
- (1) Remove the Cover-Side-R and Cover-Side-L. (Refer to 4.2.4 / 4.2.5)
 - (2) Remove the Plate-Shield. (Refer to 4.2.6)
 - (3) Remove the screw ① and disconnect FFC cable from board.
 - (4) Remove the two screws (Silver) ②. Remove the Cover-Eject ③ and Plate-Rear ④.
- (At this moment, Head cable is also removed.)
- (5) With the Cover Assy Stacker closed, detach Lever-Link-Fuser ⑤ (on both sides) from the Cover Assy Stacker.



- (6) Remove the Cover Assy Stacker ⑥ and two Spring-Torsion-ST ⑦, ⑧.
- (7) Assembling is performed by the reverse procedure with removing.

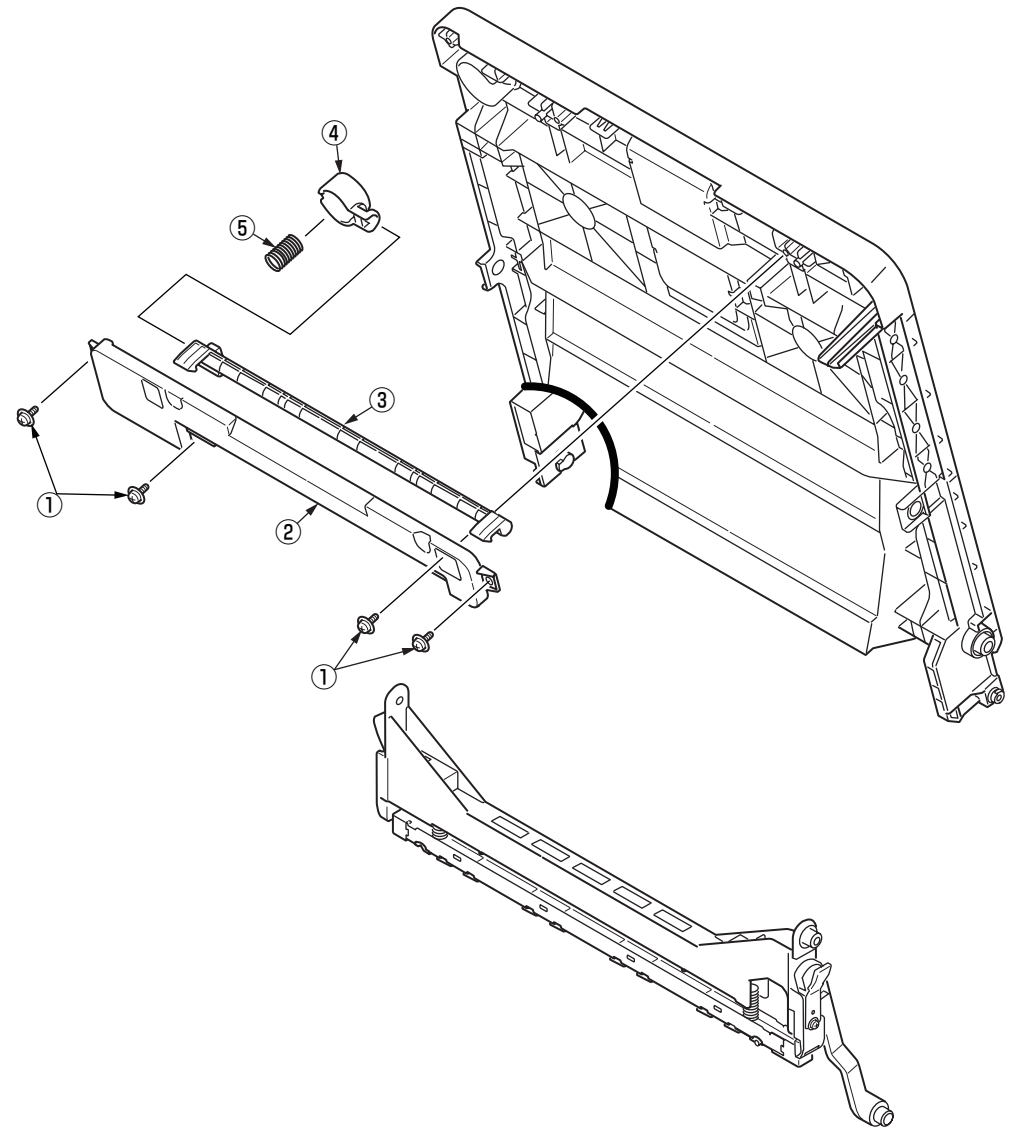
(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate motor).



4.2.14 Stacker Cover

- (1) Remove the Cover Assy Stacker. (Refer to 4.2.13)
- (2) Remove the LED Head. (Refer to 4.2.1)
- (3) Remove the four screws (Black) ② , remove the Cover-Lever ③ .
- (4) Remove the Lever-Lock-Top ④ , Lever-Lock-Button ⑤ . Remove the Spring-Lever-Top ⑥ .
- (5) Assembling is performed by the reverse procedure with removing.



4.2.15 Fuser Assy

Note! Replace the Fuser-Assy by Assy unit.

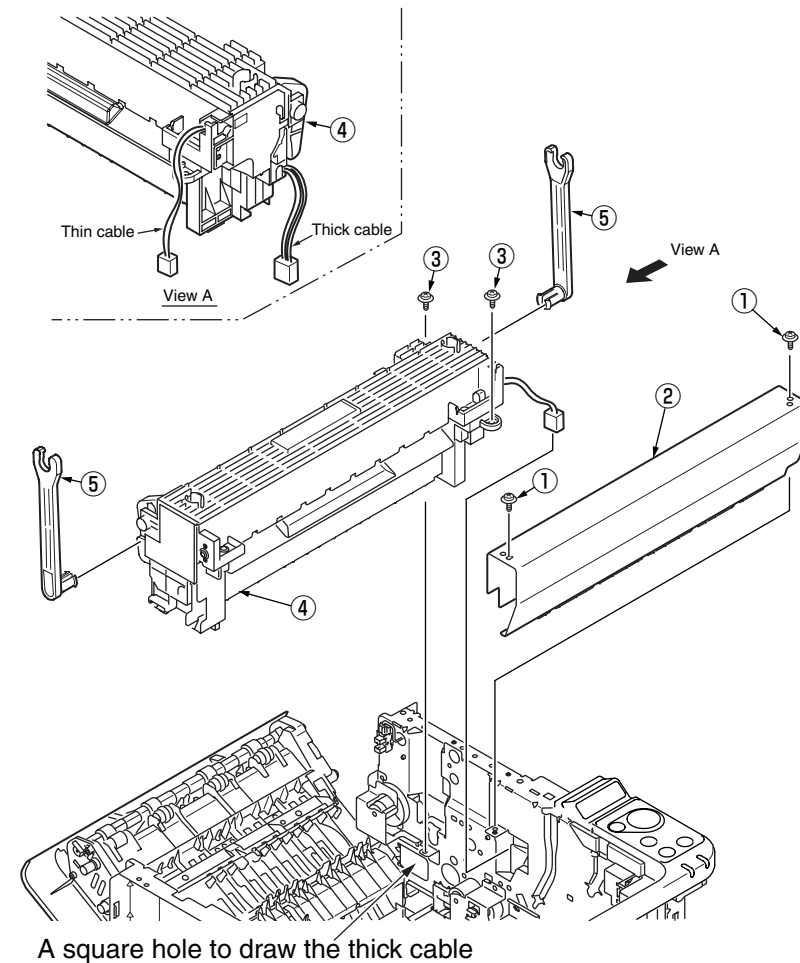
It is forbidden for disassembling the Fuser-Assy, also, reusing the disassembled Fuser-Assy.

- (1) Take out the Frame-Assy-TR. (Refer to 4.2.2)
- (2) Remove the Cover Assy Stacker. (Refer to 4.2.13)
- (3) Remove the two screws (Silver) ①. Remove the Plate-Duct-Assy ②.
- (4) Remove the two screws (Silver) ③ and lift off Fuser-Assy ④ after disconnecting two cables from it.
- (5) Remove the Lever-Link-Fuser ⑤. (Both side)
- (6) Assembling is performed by the inverse procedure with removing.

Note! Fuser-Assy ④ may be really hot, beware of handling.

(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate the motor).
2. Install the Fuser-Assy ④ and Plate-Duct-Assy ② carefully to avoid cables from being caught.
3. Beware of not to damage the FFC cable when disconnect the thick cable from Plate-Side-R-Assy.
4. Disconnect the FFC cable, when disconnect the thick cable. Beware of not to harflock the FFC cable when connect the FFC cable.

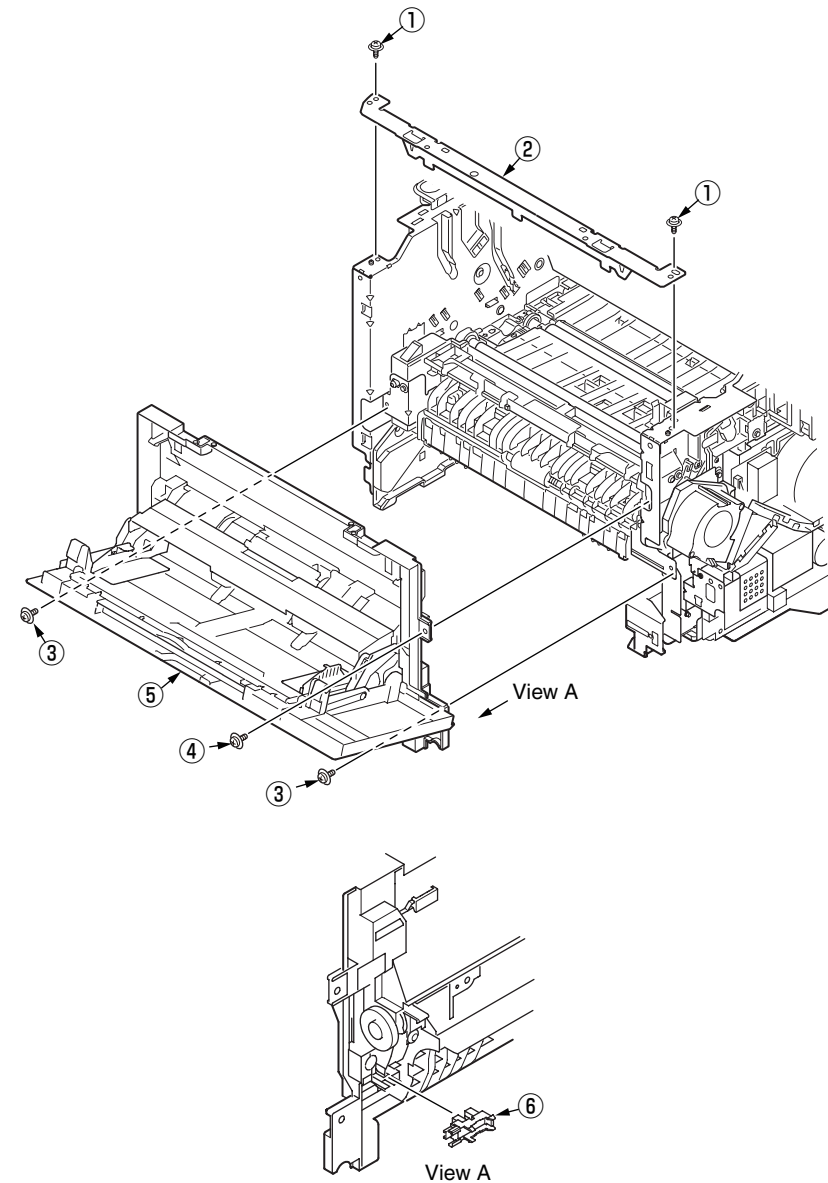


4.2.16 MPT Assy

- (1) Remove the Cover-Side-R and Cover-Side-L. (Refer to 4.2.4 / 4.2.5)
- (2) Remove the Switch-Assy.(Refer to 4.2.8)
- (3) Remove the Cover-Assy-OPE. (Refer to 4.2.11)
- (4) Remove the two screws (Silver) ① . Remove the Plate-Front ② .
- (5) Remove the two screws (Silver) ③ . Remove the screw (Black) ④ .
- (6) Remove MPT Assy ⑤ .
- (7) Remove the Photo Interrupter ⑥ .
- (8) Assembling is performed by the inverse procedure with removing.

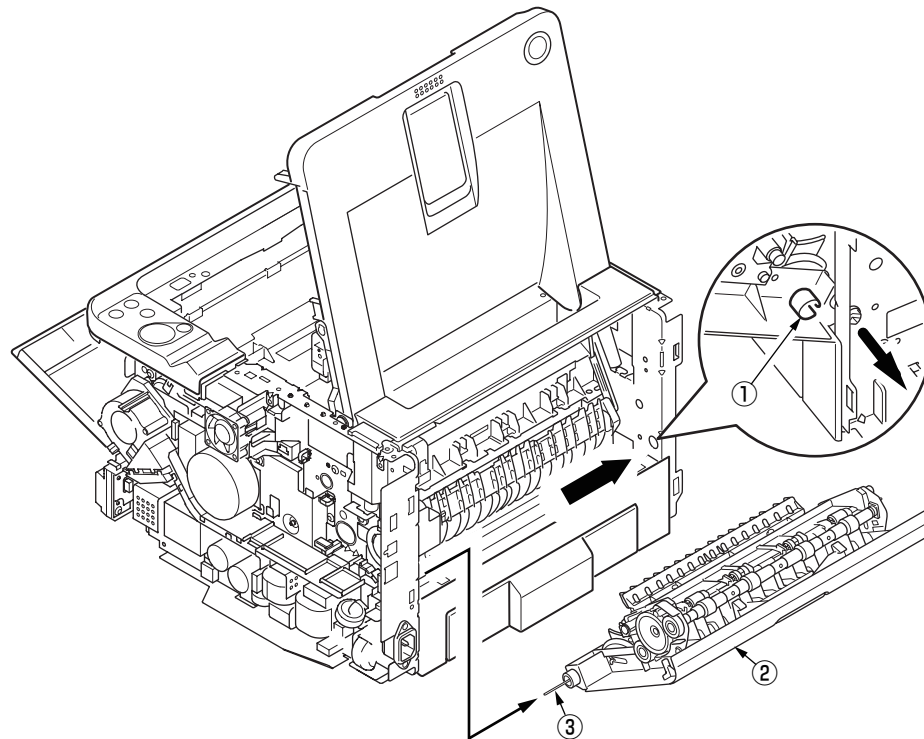
(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate motor).



4.2.17 Cover Assy Rear

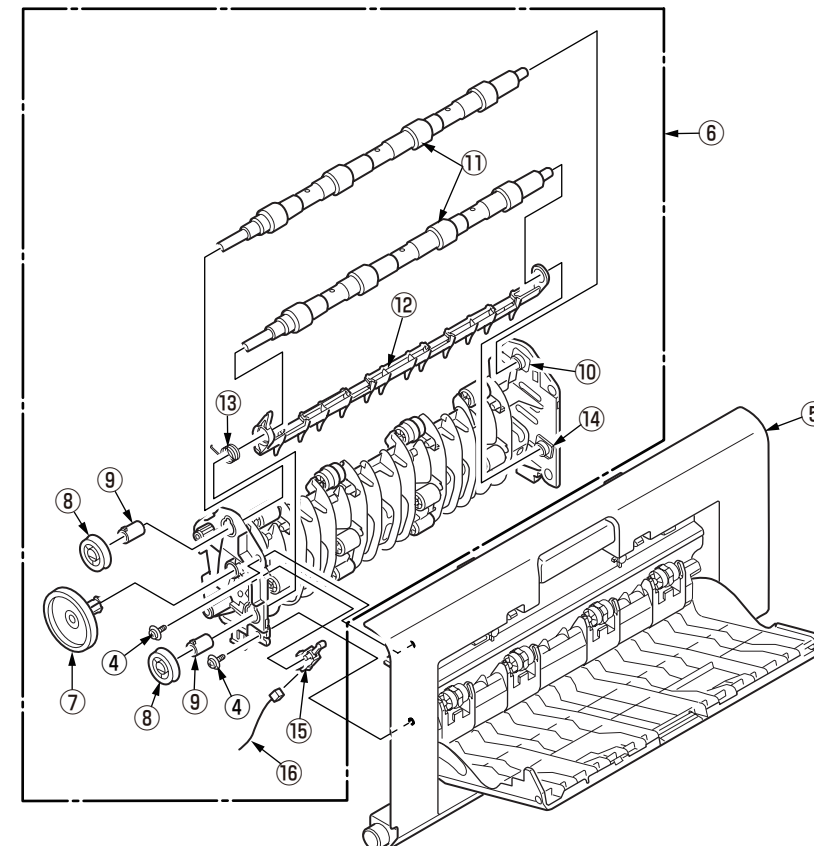
- (1) Remove the Cover-Side-R and Cover-Side-L. (Refer to 4.2.4 / 4.2.5)
- (2) Remove the CU-Board. (Refer to 4.2.6)
- (3) Remove the Sheet-Insulation-CU. (Refer to 4.2.9)
- (4) Remove the Spacer ①.
- (5) Slide Cover Assy Rear ② and pull it out of the hole on the right of the printer.
(Remove Cover Assy Rear ② carefully to avoid Cable-Sensor-FU ③ from being caught.)



- (6) Remove the two screws (Black) ④ and separate Cover-Rear ⑤ and Guide-Eject-Upper-Assy ⑥.
- (7) Remove the Gear-Idle ⑦.
- (8) Remove the Gear-Exit ⑧ (2 places), remove the Bearing-Eject_R ⑨ (2 places). Remove the Bearing-Feeder ⑩.
- (9) Remove the Shaft-Assy-Eject ⑪ (2 places).
- (10) Remove the Separator-FU ⑫. Remove the Spring-Separator_FU ⑬ and Bearing-Feeder ⑭.
- (11) Remove the Stacker-Sensor ⑮. Remove the Cable-Sensor-FU ⑯.
- (12) Assembling is performed by the inverse procedure with removing.

(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate motor).

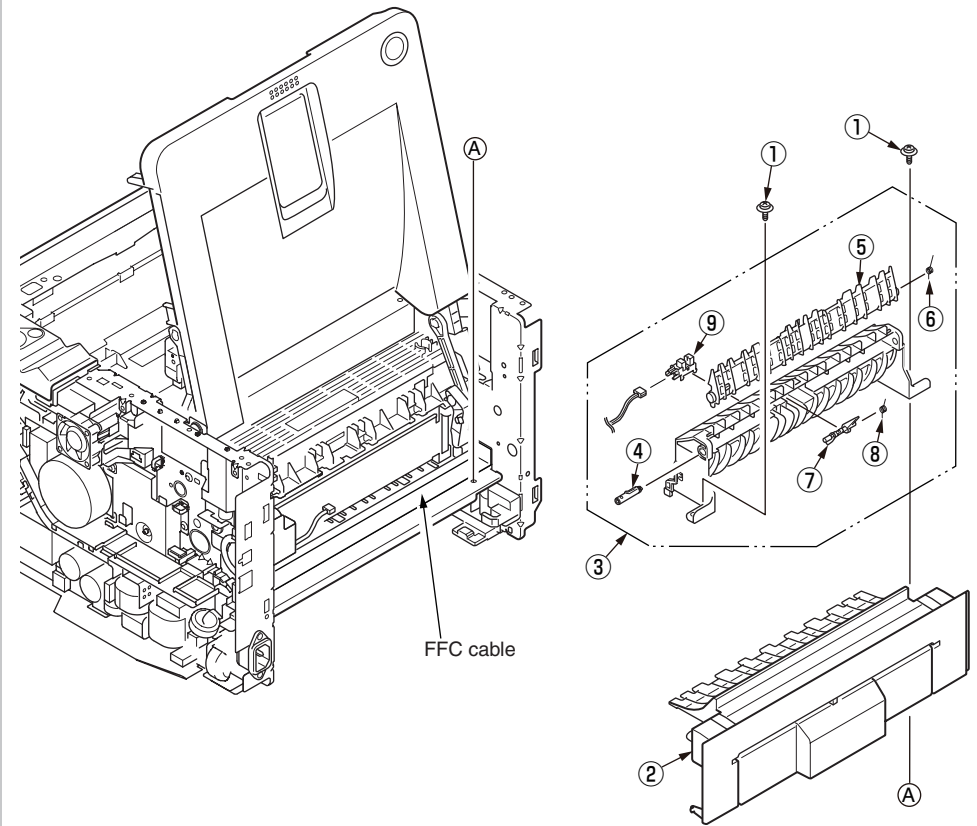


4.3.18 Guide Eject Lower Assy

- (1) Remove the Cover-Side-R and Cover-Side-L. (Refer to 4.2.4 / 4.2.5)
- (2) Remove the CU-Board. (Refer to 4.2.6)
- (3) Remove the Sheet-Insulation-CU. (Refer to 4.2.9)
- (4) Remove the Cover-Eject. (Refer to 4.2.13)
- (5) Remove the two screws (Silver : 8mm) ①. Remove the Cover-Cassette-Rear Assy ② and Guide-Eject-Lower-Assy ③.
- (6) Remove the post ④. Remove the Separator-SB-FD ⑤ and Spring-Separator_SB ⑥.
- (7) Remove the Lever-Exit-Sensor ⑦ and Spring-Sensor-Exit ⑧.
- (8) Remove the Exit-Sensor ⑨.
- (9) Assembling is performed by the inverse procedure with removing.

(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate motor).
2. Install Cover-Cassette-Rear Assy ② carefully to avoid the FFC cable from being caught.

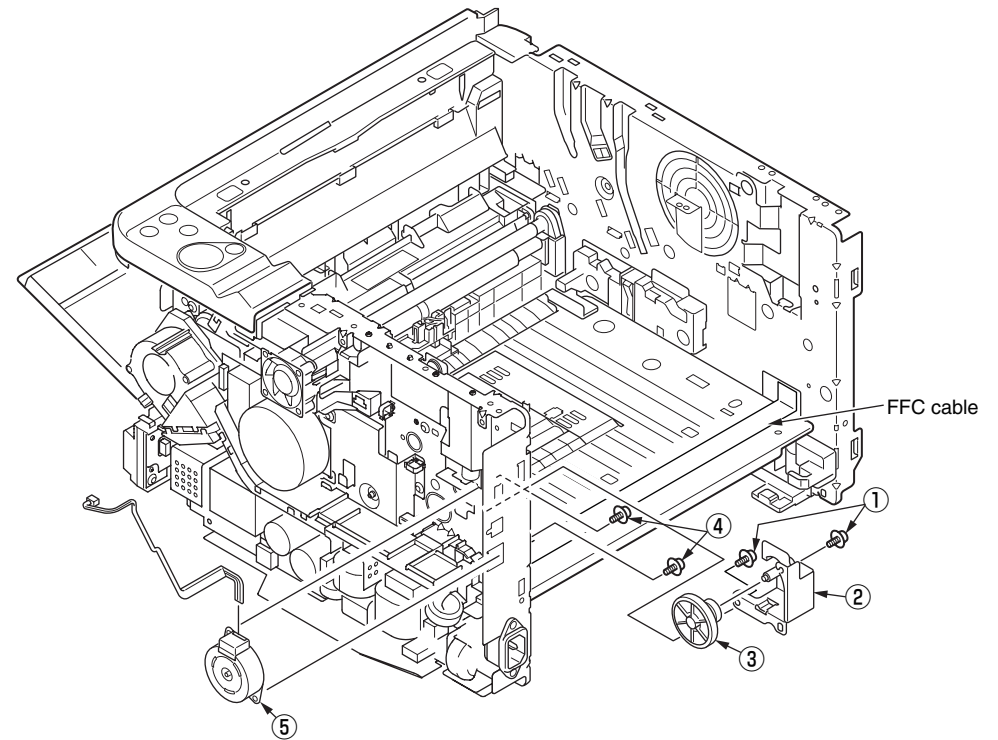


4.2.19 Eject Motor

- (1) Remove the Cover-Side-R and Cover-Side-L. (Refer to 4.2.4 / 4.2.5)
- (2) Remove the CU-Board. (Refer to 4.2.6)
- (3) Remove the Cover Assy Stacker. (Refer to 4.2.13)
- (4) Remove the Fuser Assy. (Refer to 4.2.15)
- (5) Remove the Cover Assy Rear. (Refer to 4.2.17)
- (6) Remove the Guide-Eject-Lower-Assy. (Refer to 4.2.18)
- (7) Remove the two screws (Silver) ① . Remove the Plate-Gear-Exit ② and Gear ③ .
- (8) Remove the two screws (Silver) ④ . Remove the Eject-Motor ⑤ .
- (9) Assembling is performed by the inverse procedure with removing.

(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate motor).

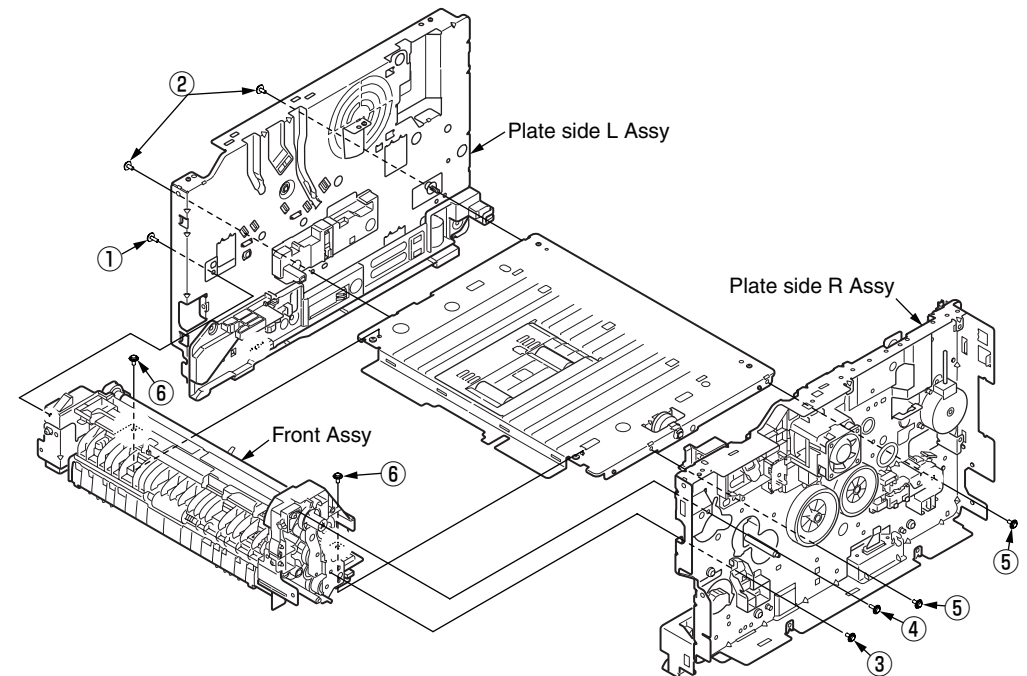


4.2.20 Plate Side R Assy / Plate Side L Assy / Front Assy

- (1) Remove the Cover-Side-R and Cover-Side-L. (Refer to 4.2.4 / 4.2.5)
- (2) Remove the CU-Board. (Refer to 4.2.6)
- (3) Remove the Power Supply Unit. (Refer to 4.2.7)
- (4) Remove the DC Motor. (Refer to 4.2.8)
- (5) Remove the Hopping / MPT / Regist Clutch. (Refer to 4.2.9)
- (6) Remove the HV-Board / Motor-FAN. (Refer to 4.2.10)
- (7) Remove the Cover-Assy OPE. (Refer to 4.2.11)
- (8) Remove the Cover Assy Stacker. (Refer to 4.2.13)
- (9) Remove the Fuser Assy. (Refer to 4.2.15)
- (10) Remove the MPT Assy. (Refer to 4.2.16)
- (11) Remove the Cover Assy Rear. (Refer to 4.2.17)
- (12) Remove the Guide Eject Lower Assy. (Refer to 4.2.18)
- (13) Remove the screw(Black) ① and the two screws(Silver) ② and separate the Plate Side L Assy.
- (14) Remove the screw(Silver) ③ , screw(Black) ④ and the two screws(Silver) ⑤ and separate the Plate Side R Assy.
- (15) Remove the two screws (Silver) ⑥ . Remove the Front Assy.
- (16) Assembling is performed by the inverse procedure with removing.

(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate motor).

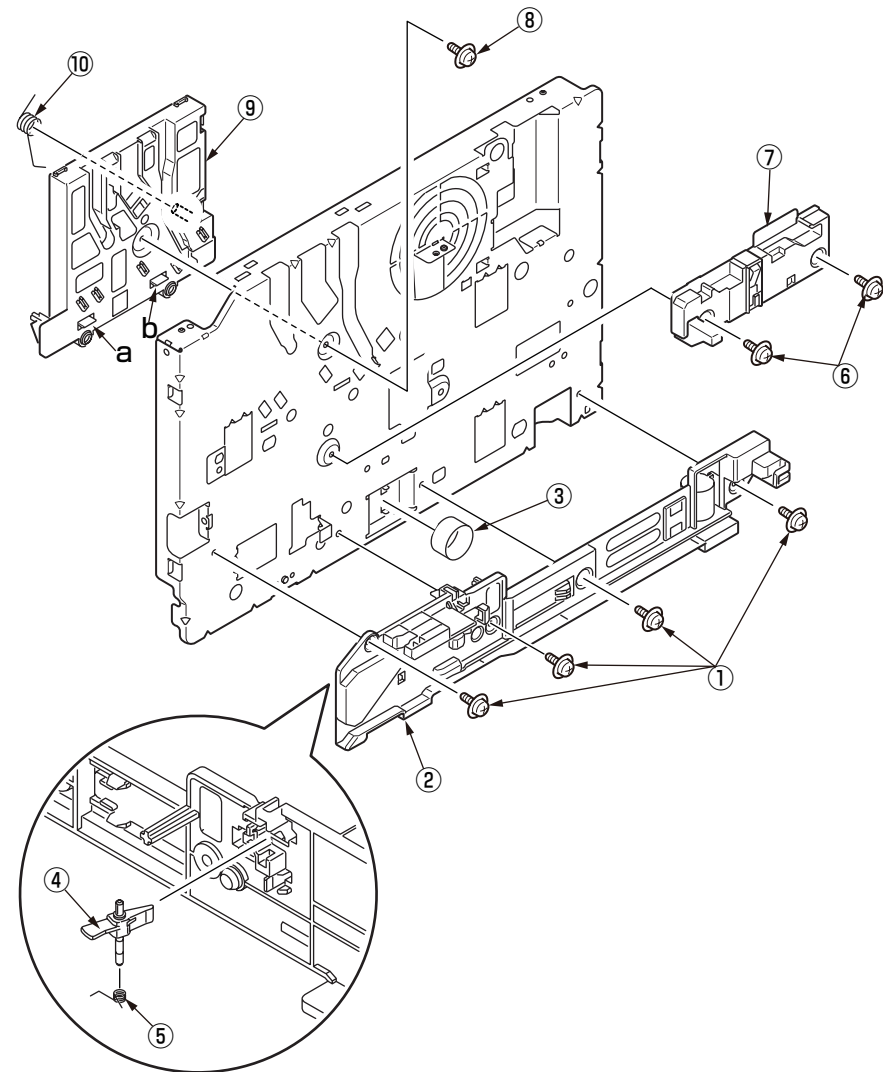


4.2.21 Plate Side L Assy

- (1) Separate the Plate Side L Assy. (Refer to 4.2.20)
- (2) Remove the four screws (Silver) ① . Remove the Guide-Cassette-L ② and Spring-Lock-Cassette ③ .
- (3) Remove Lever-Sensor Cassette ④ and Spring-Sensor ⑤ from the Guide-Cassette-L ② .
- (4) Remove the two screws (Silver) ⑥ . Remove the Frame-inner-L ⑦ .
- (5) Remove the screw (Black) ⑧ , disengage the two tabs (a and b), and remove Guide-ID-L ⑨ .
- (6) Remove the Spring-ID-Lock-L ⑩ .
- (7) Assembling is performed by the inverse procedure with removing.

(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate motor).

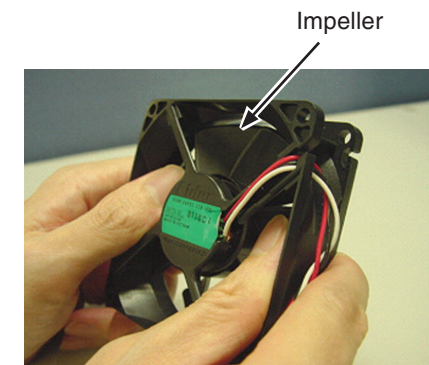
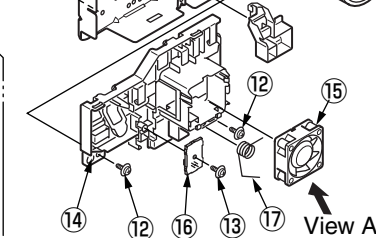
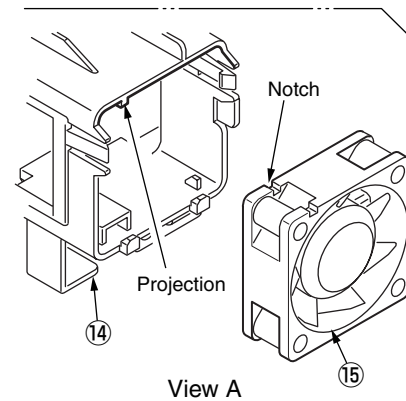
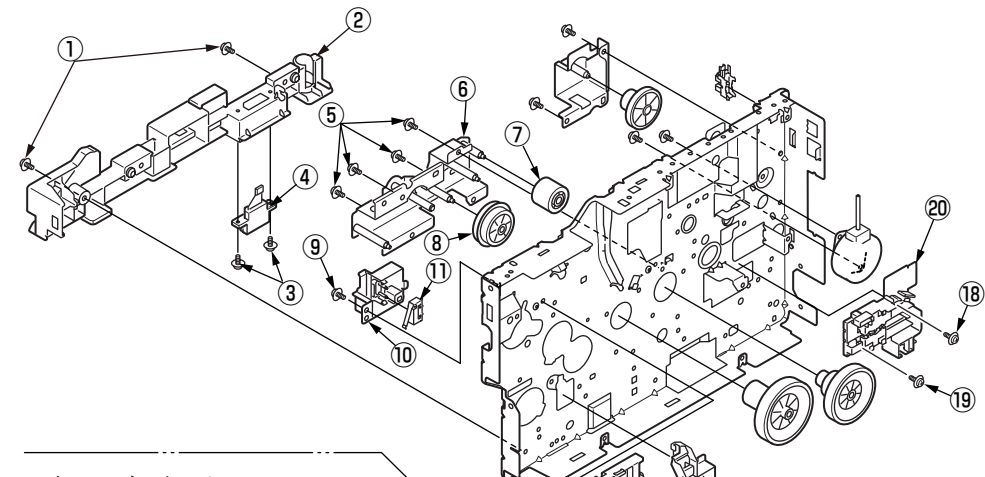


4.2.22 Plate Side R Assy

- (1) Separate the Plate Side R Assy. (Refer to 4.2.20)
- (2) Remove the two screws (Silver) ① . Remove the Guide-Cassette-R ② .
- (3) Remove the two screws (Black) ③ . Remove the Connector ④ .
- (4) Remove the four screws (Silver) ⑤ . Remove the Plate-ID-Gear ⑥ , Gear-Idle-Z21 ⑦ , Gear-Idle-Z30-33 ⑧ .
- (5) Remove the screw (Silver) ⑨ . Remove the Holder-Switch ⑩ and Micro switch ⑪ .
- (6) Remove the two screws (Silver) ⑫ , screw (Black) ⑬ . Remove the Guide-ID-R ⑭ and Motor-Fan(X40) ⑮ , Board-974 ⑯ , Spring-ID Lock R ⑰ .
- (7) Remove the screw(Silver) ⑱ and screw(M4) ⑲ .Remove the Guide-Cable ⑳ .
- (8) Assembling is performed by the inverse procedure with removing.

(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate motor).
2. Install Motor-FAN ⑮ with the label side inward and with its notch fitted to the appropriate projection of Guide-ID-R ⑭ .
3. While removing or assembling FAN ⑮ , do not press impeller of the FAN as shown by the following photo. In case of the impeller unfastened by mistake, do not reuse it and install a new FAN ⑮ .

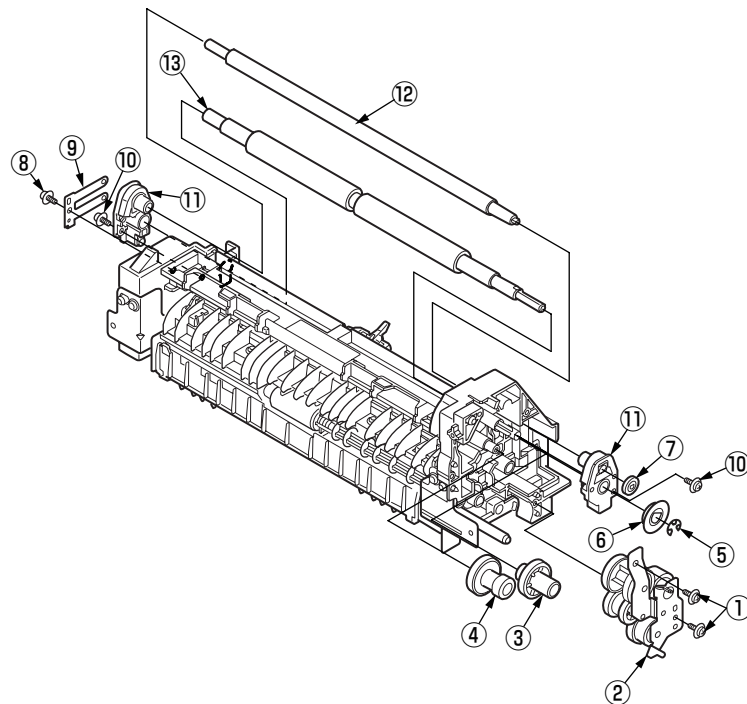


4.2.23 Roller Regist

- (1) Separate the Front Assy. (Refer to 4.2.20)
- (2) Remove the two screws (Black) ① and Plate-Feed-B ② .
(Be careful not to lose the gear that is removed with the plate.)
- (3) Remove the Gear-Idle-MPT ③ .Remove the Gear-Reduction-MPT ④ .
- (4) Remove the E-ring ⑤ . Remove the Regist-Gear ⑥ .
- (5) Remove the Gear-Pressure ⑦ .
- (6) Remove the screw (Black) ⑧ . Remove the Plate-Contact-REG ⑨ .
- (7) Remove the two screws (Black) ⑩ . Remove the Holder-Regist-L/R ⑪ .
- (8) Remove the Roller-Pressure ⑫ . Remove the Roller-Regist ⑬ .
- (9) Assembling is performed by the inverse procedure with removing.

(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate motor).

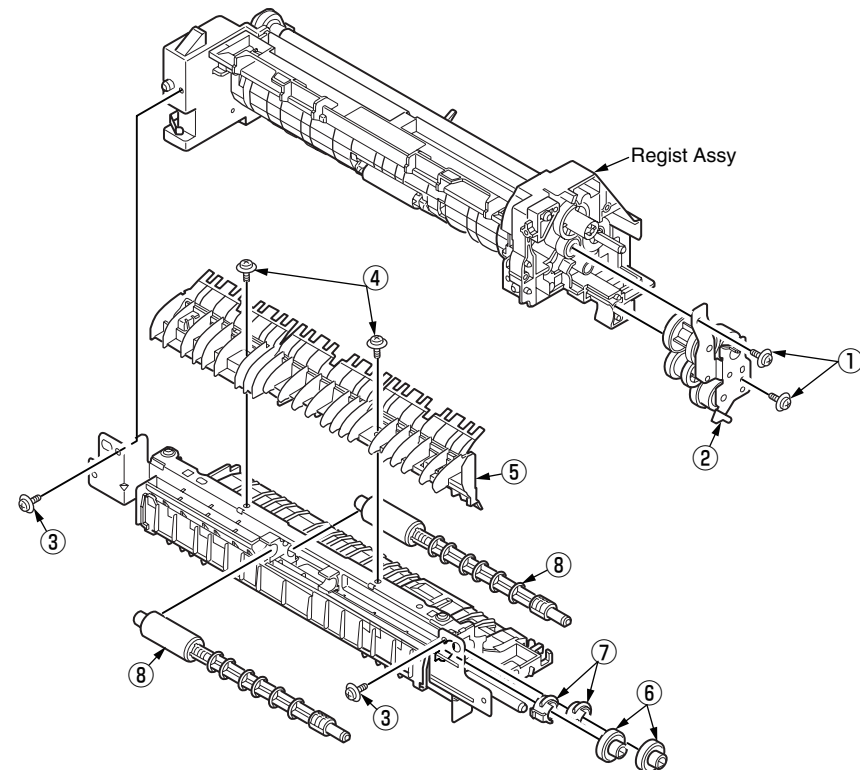


4.2.24 Roller Feed Assy

- (1) Separate the Front Assy. (Refer to 4.2.20)
- (2) Remove the two screws (Black) ① and Plate-Feed-B ② .
(Be careful not to lose the gear that is removed with the plate.)
- (3) Remove the two screws (Black) ③ . Separate the Regist Assy.
- (4) Remove the two screws (Silver) ④ . Remove the Frame-Hopping-Upper ⑤
(Four claws).
- (5) Remove the two Gear-Roller-Feed ⑥ . Remove the two Bush-Feed ⑦ .
- (6) Remove the two Roller-Feed-Assy ⑧ .
- (7) Assembling is performed by the inverse procedure with removing.

(Note on removing / assembling)

1. Beware of not to touch the DC motor inattentively (Do not rotate motor).

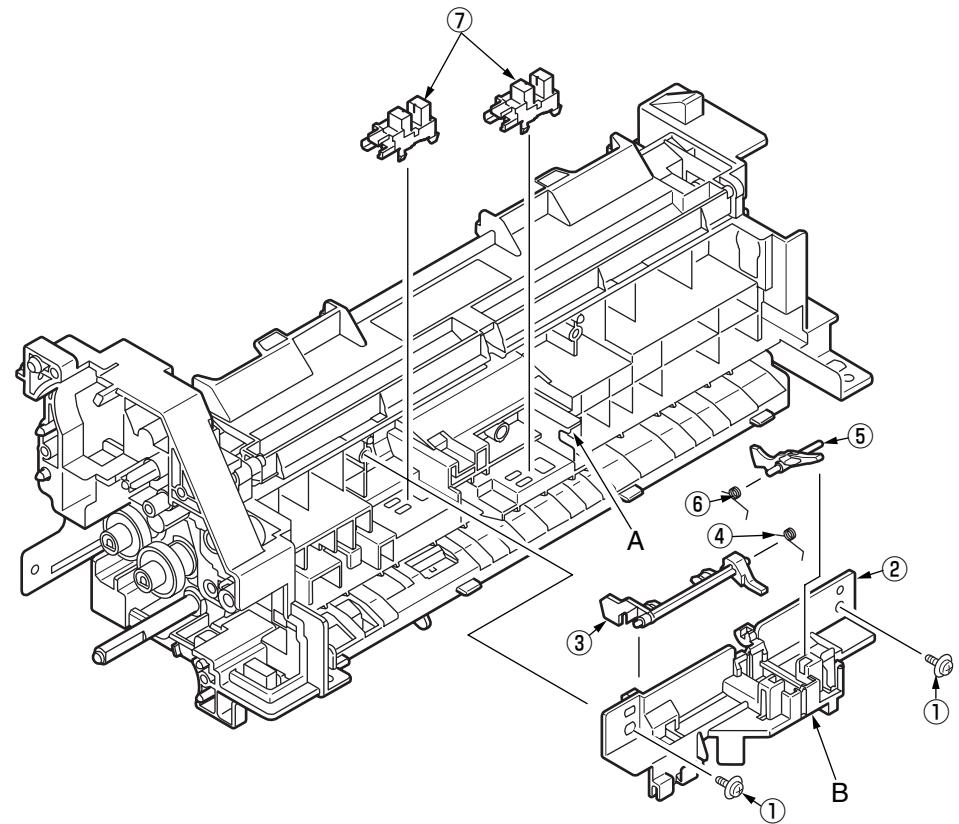


4.2.25 Lever In Sensor / Lever WR Sensor / Photo Interrupter

- (1) Separate the Front Assy. (Refer to 4.2.20)
- (2) Separate the Roller-Pressure and Roller Regist. (Refer to 4.2.23)
- (3) Remove the two screws (Black) ① . Remove the Holder-Sensor ② .
- (4) Remove the Lever-In-Sensor ③ . Remove the Spring-Sensor ④ .
- (5) Remove the Lever-WR-Sensor ⑤ . Remove the Spring-Sensor ⑥ .
- (6) Remove the two Photo Interrupter ⑦ .
- (7) Assembling is performed by the inverse procedure with removing.

(Note on removing / assembling)

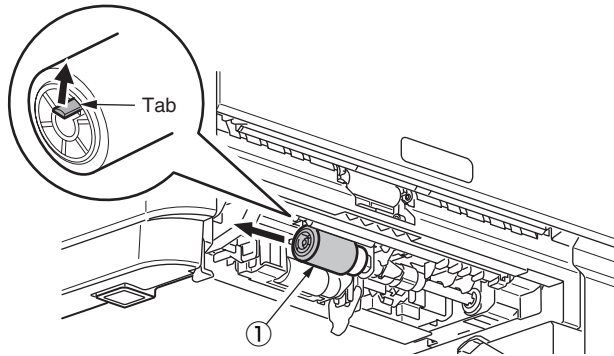
1. Beware of not to touch the DC motor inattentively (Do not rotate motor).
2. Make sure that the latch B of Holder-Sensor ② has engaged the latch A of the Front



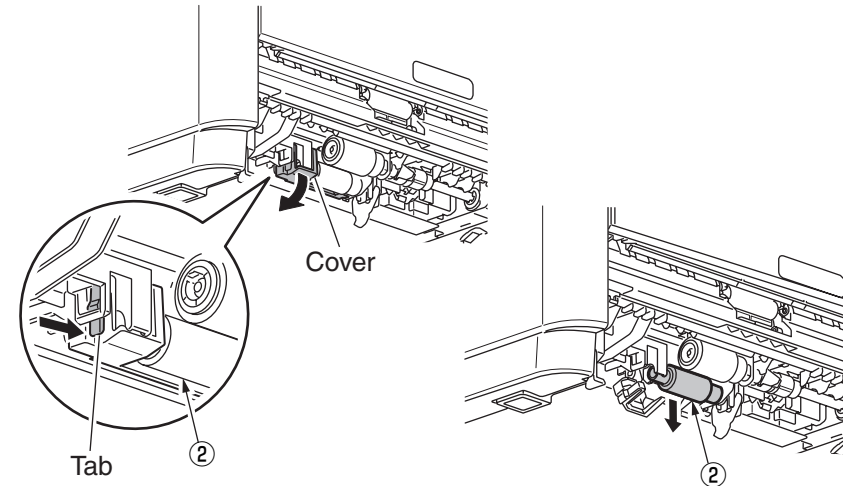
4.2.26 Paper feeding roller (Roller-Pick-Up, Roller-Feed-NOW)

- In the case of Tray 1

- (1) Turn off the printer and pull out the paper cassette tray.
- (2) Remove the feed roller ① as pushing its tab outward.



- (3) As pushing the tab downward, open the cover (black) that is on the left of the feed roller ②.
- (4) Pull out the feed roller ② downward.
- (5) Assembling is performed by the inverse procedure with removing.



(Note on removing / assembling)

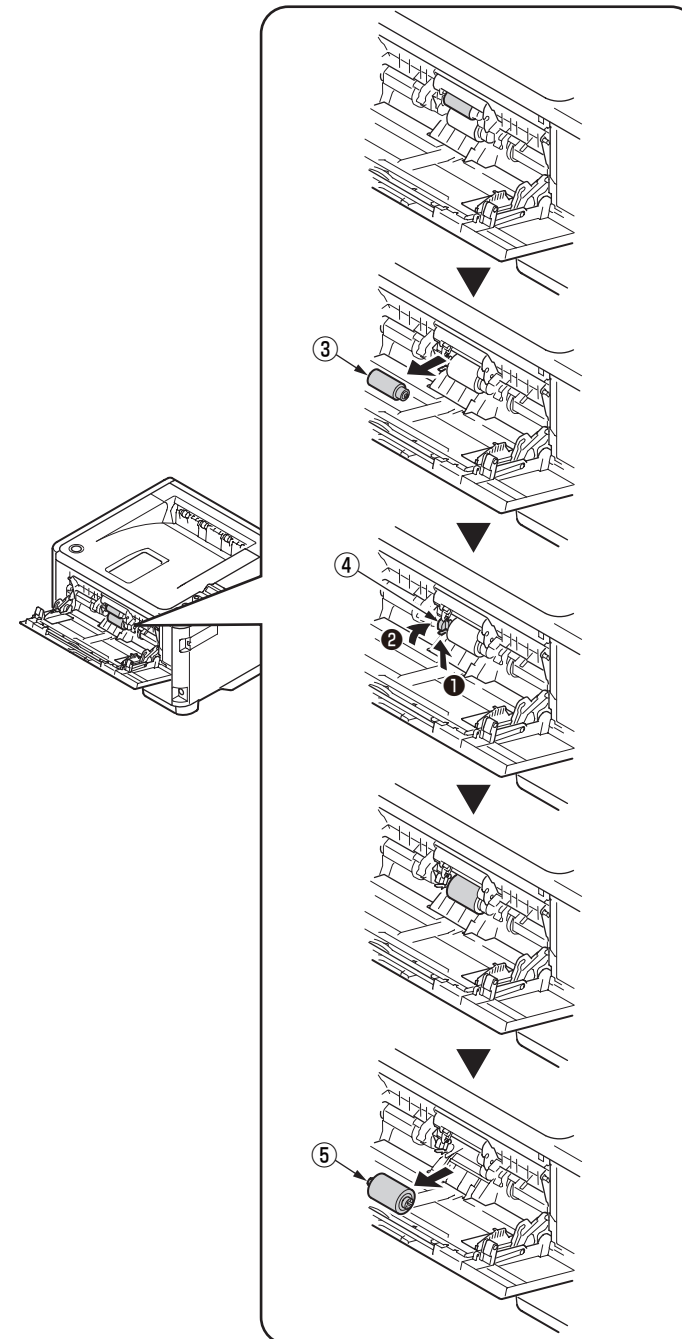
1. To install the feed roller (with no gear: Roller-Feed-NOW) ①, keep pushing it until it clicks into place and is fixed to the shaft.
2. To install the feed roller (with a gear: Roller-Pick-Up) ②, keep pushing the cover until the tab of the cover clicks into place.

4.2.27 Paper feeding roller(Roller-Assy-MPT)/Paper feeding sub roller

- (1) Turn off the printer.
- (2) Open the multipurpose tray.
- (3) Open the Lever-Link ① and feed roller cover ② .
- (4) Remove the feed sub roller ③ by rotating it toward you.
- (5) Open the feed roller cover ④ by pushing its tab to the upwards ① and rotate ②
- (6) Remove the MPT roller ⑤ by rotating it toward you.

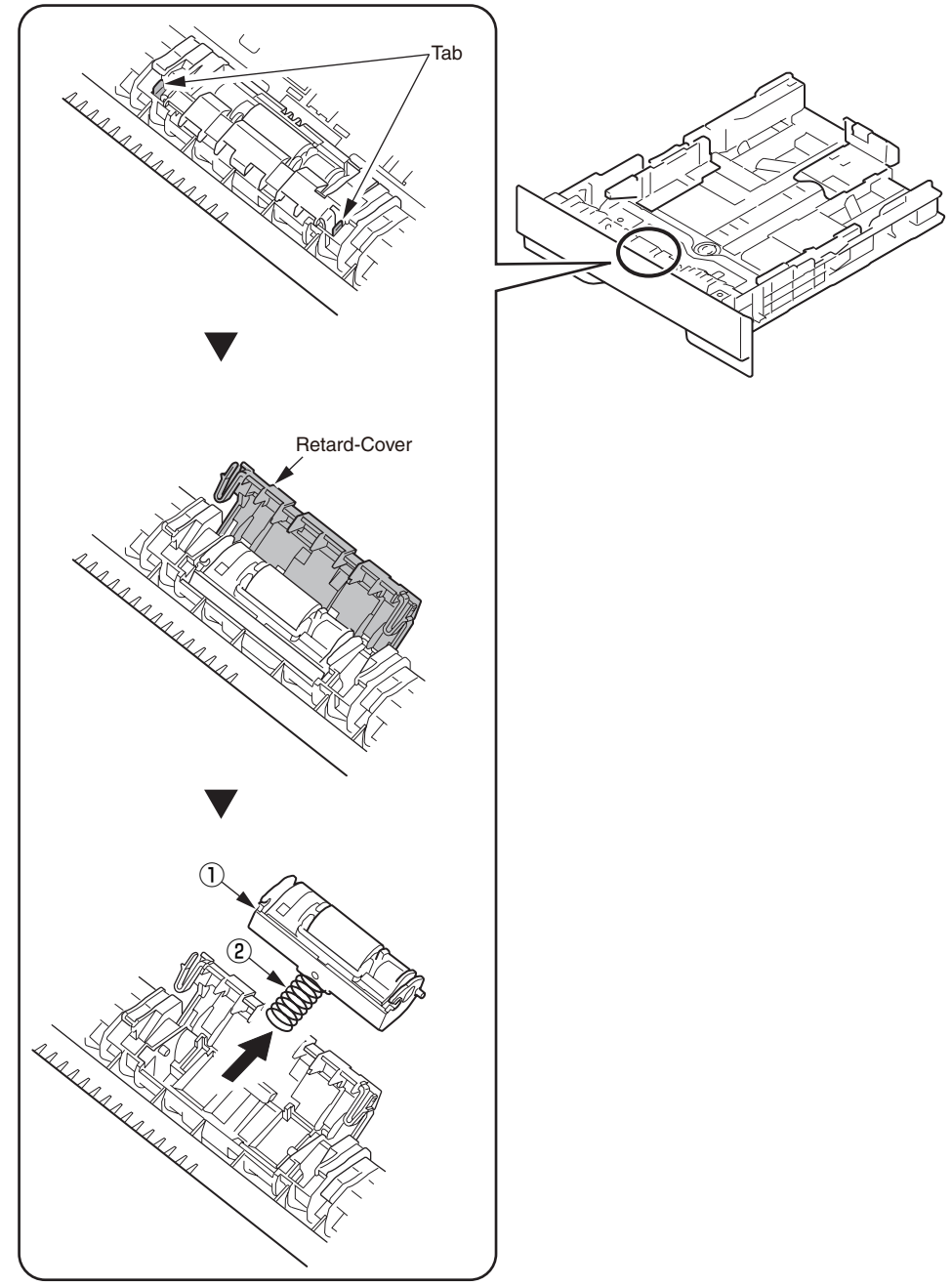
Note!

1. To install the feed roller (Roller-Assy-MPT) ⑤ , keep pushing the cover until the tab of the cover ④ clicks into place.
2. Check the feed roller cover ④ locked.



4.2.28 Frame-Assy-Retard , Spring-Retard

- (1) Remove the cassette.
- (2) Open the Retard-Cover by pushing two tabs in the directions of the arrows.
- (3) Remove Frame-Assy-Retard ① by pushing it in the direction of the arrow.
(Spring-Retard ② is removed together.)
- (4) Assembling is performed by the inverse procedure with removing.



4.3 Lubricating points

This subsection indicates the lubricating points of the printer. Conversely, it means that any other parts than the specified lubricating points must not be lubricated.

There is no need to lubricate in the midst of a disassembling job. However, if lubricating oil has been wiped off, supply the specified oil.

Lubricating work

(1) Symbols and names of oils

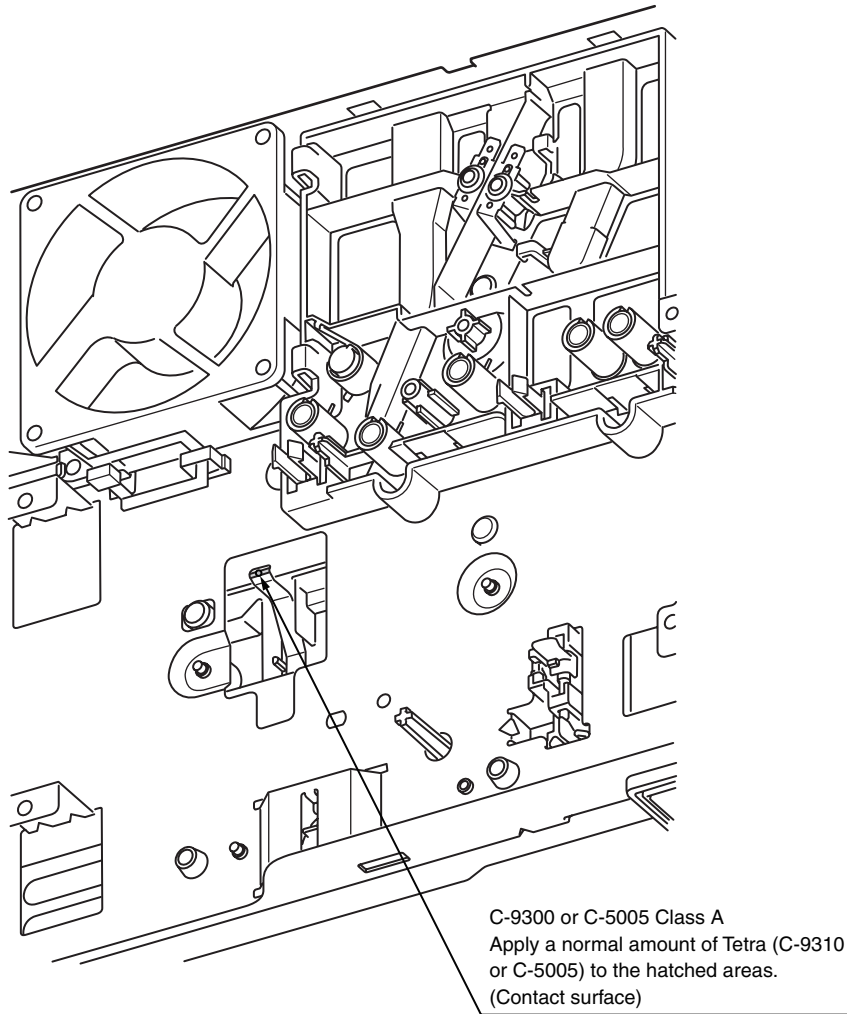
EM-30LP : MOLYKOTE EM-30LP
 Tetra : Tetra C-9310 or C-5005
 HANARL : HANARL SF-133

(2) Boundary samples of grease

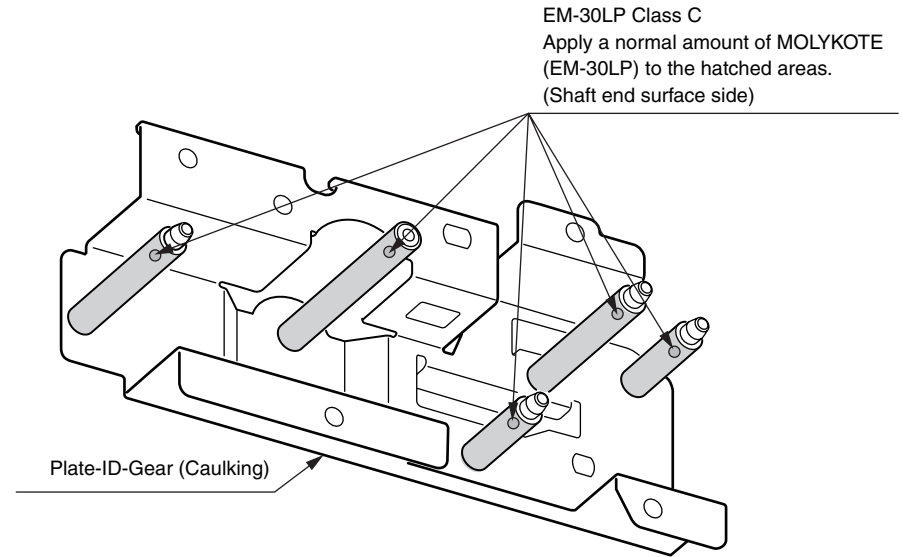
Class	S	A	B	C	D	E	F
Amount of grease(cc)	0.0005	0.003	0.005	0.01	0.03	0.05	0.1
W(mm)	1.24	2.25	2.67	3.37	4.86	5.76	7.26
Sample	•	●	●	●	●	●	●



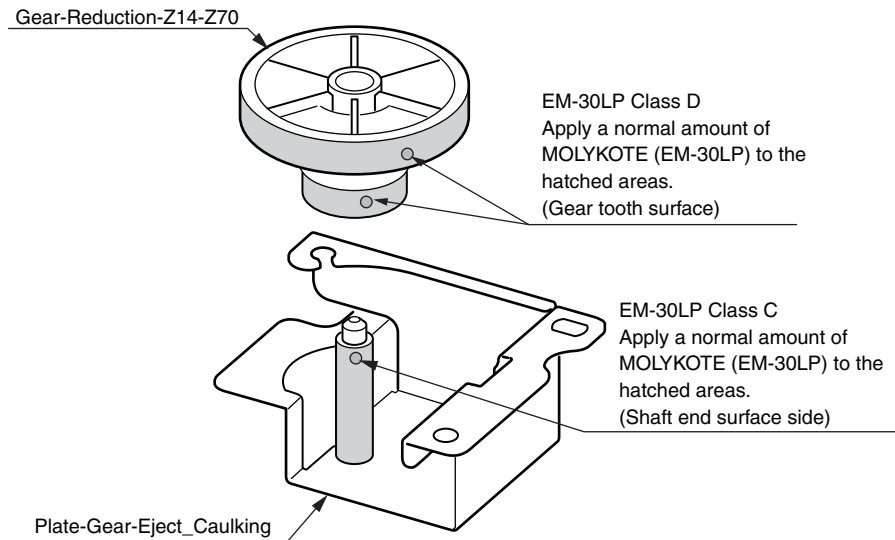
① Plate-Assy-Side-L



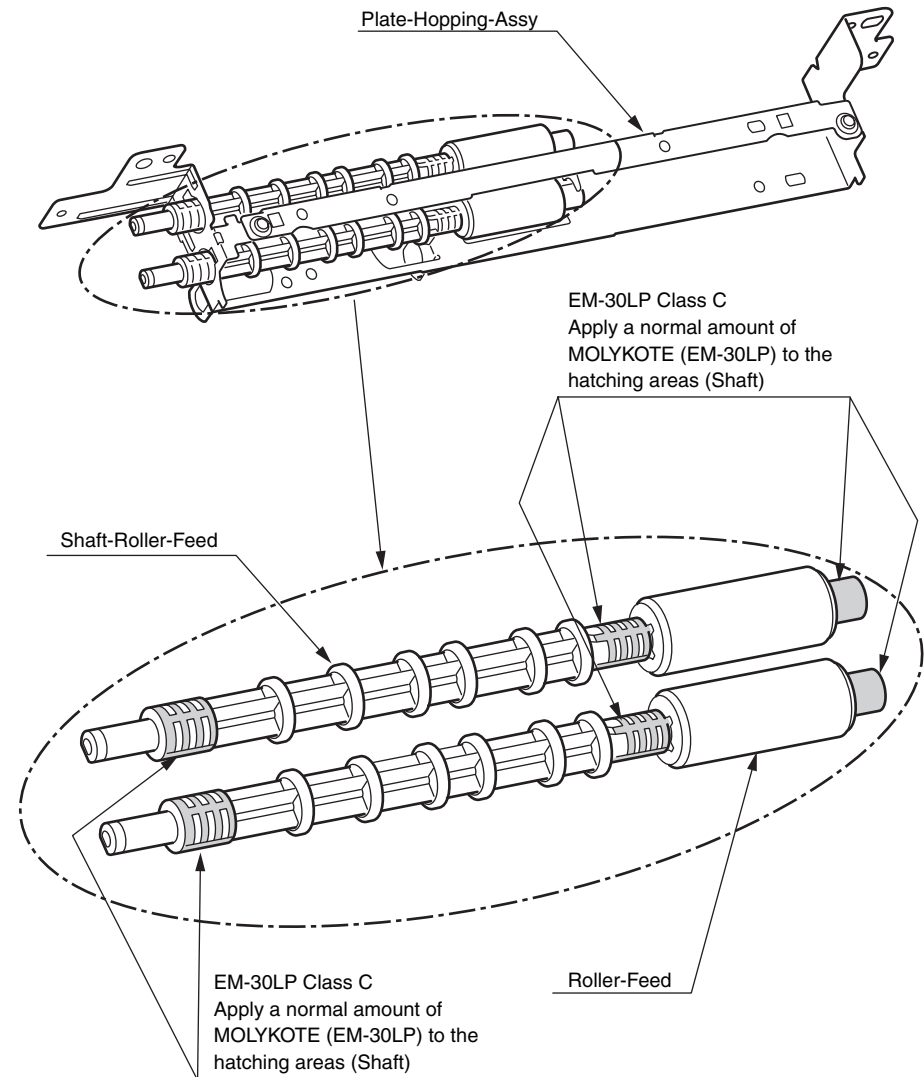
②-1 Plate-Assy-Side-R



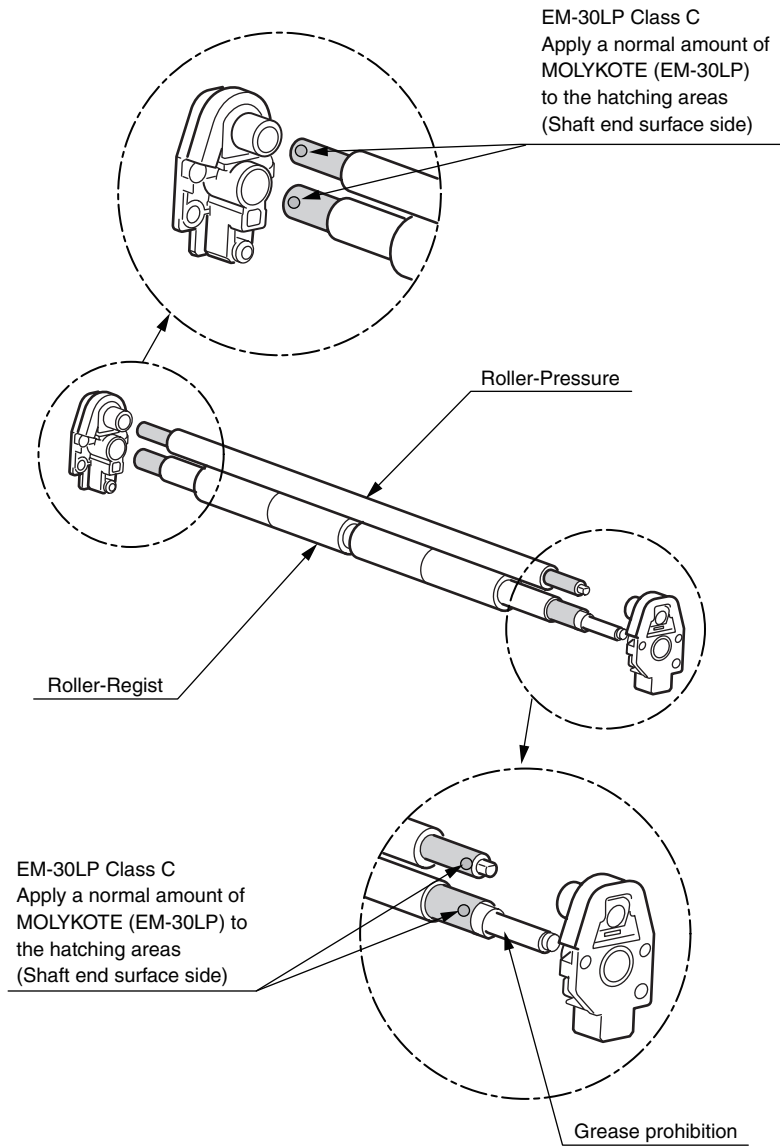
②-2 Plate-Assy-Side-R



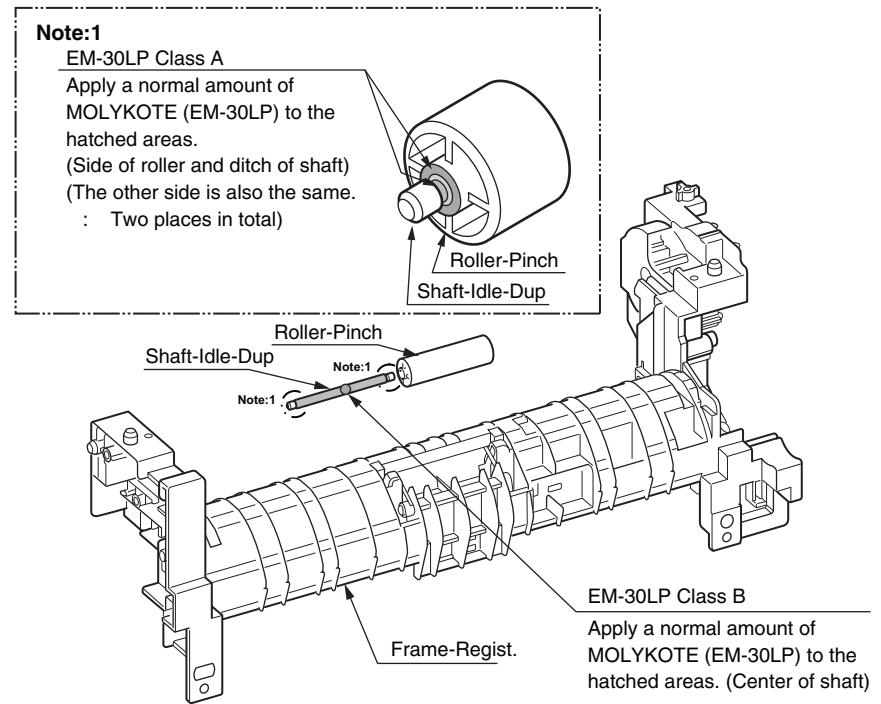
③ Frame-Assy-Hopping



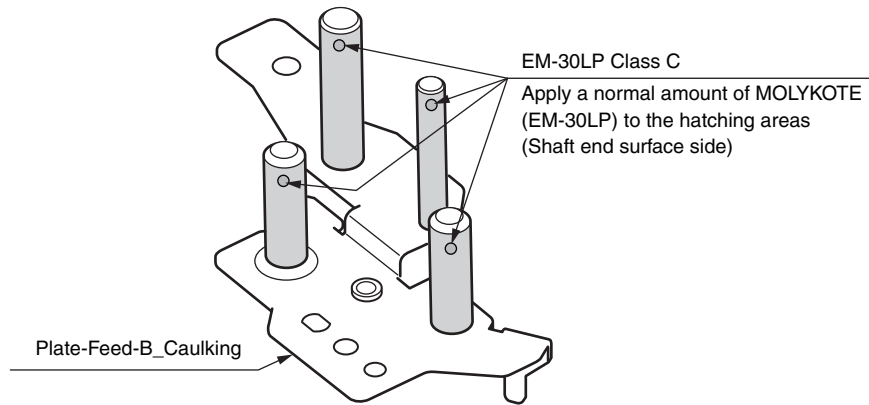
④-1 Frame Assy-Regist



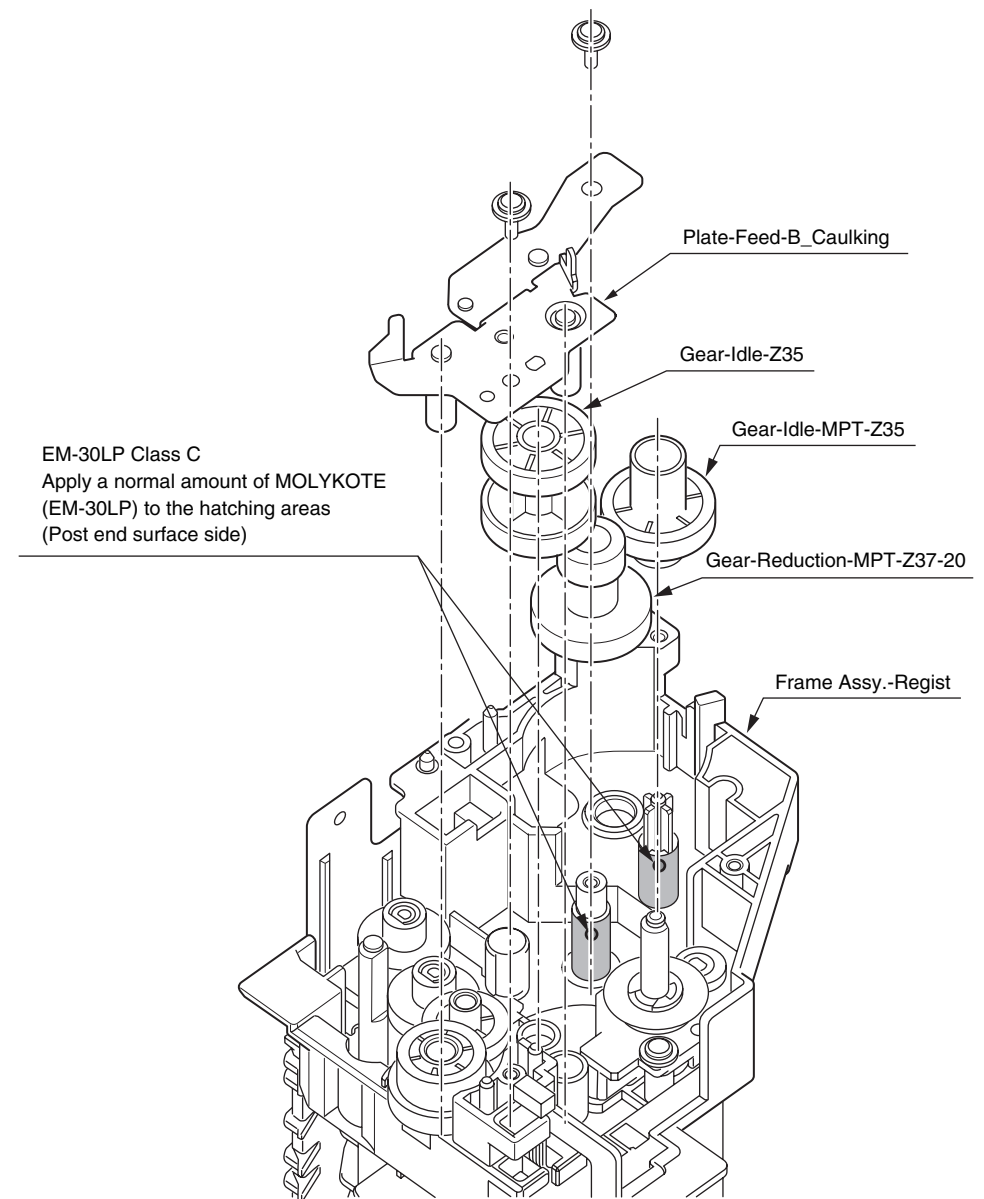
④-2 Frame Assy-Regist



⑤-1 Front-Assy



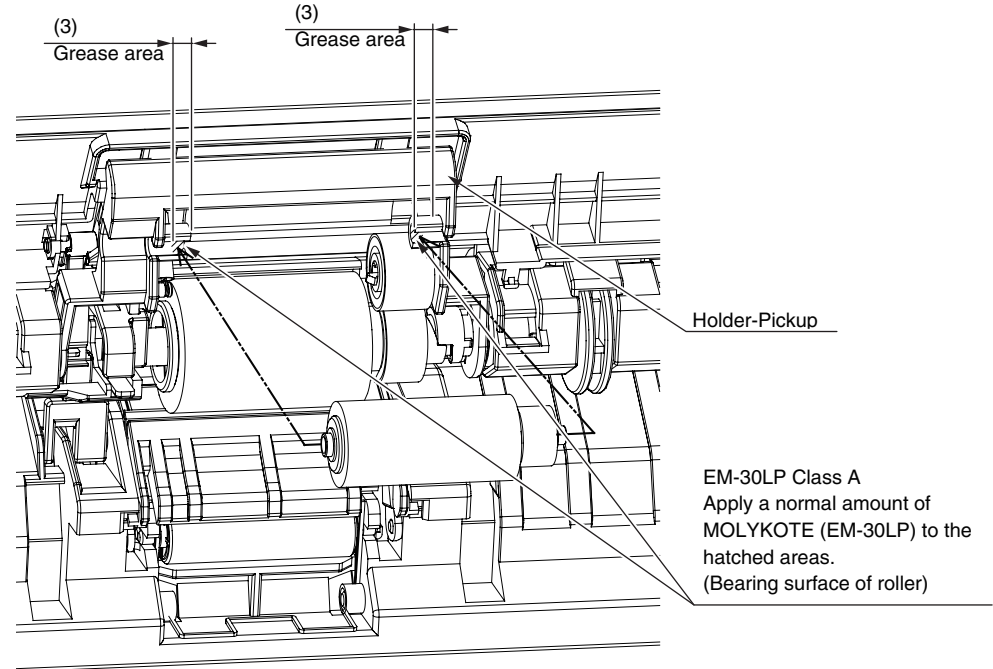
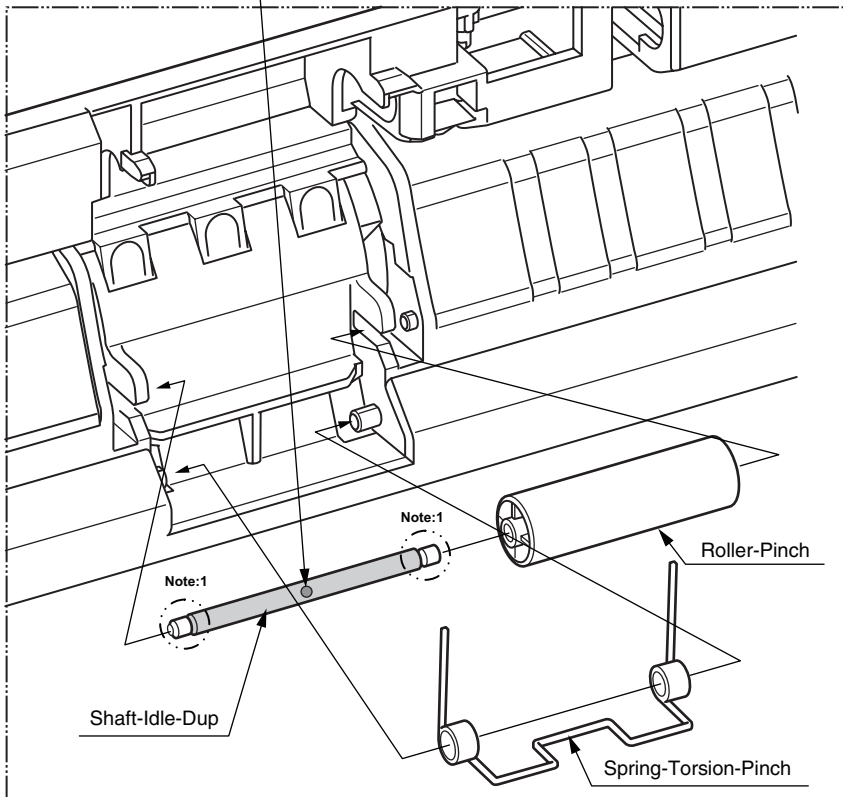
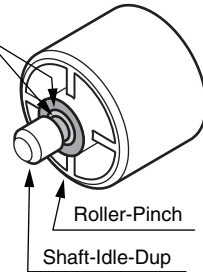
⑤-2 Front-Assy



⑥-1 Frame-Assy-MPT

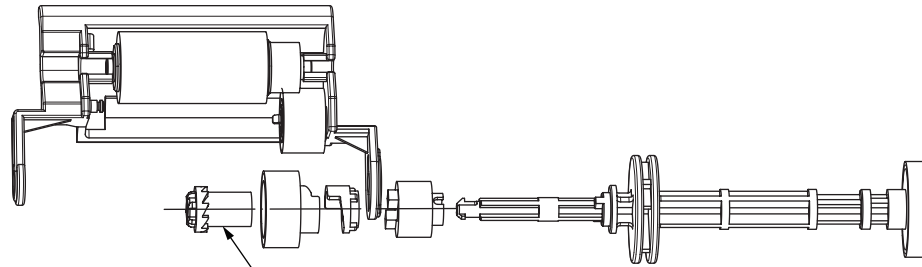
EM-30LP Class B
Apply a normal amount of Molykote (EM-30LP) to the hatched areas.
(Center of shaft)

EM-30LP Class A
Apply a normal amount of Molykote (EM-30LP) to the hatched areas.
(Side of roller and ditch of shaft)
(The other side is also the same.)
: Two places in total



EM-30LP Class A
Apply a normal amount of Molykote (EM-30LP) to the hatched areas.
(Bearing surface of roller)

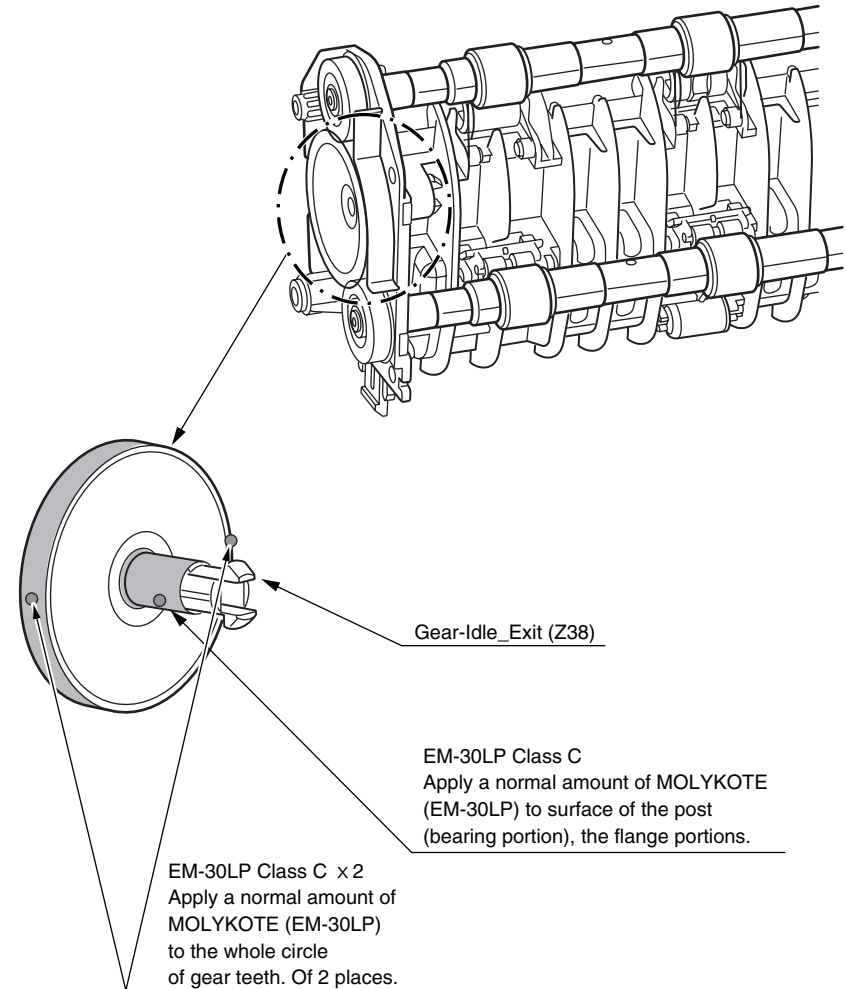
⑥-2 Frame-Assy-MPT



Boss-Coupling
HANARL SF-133 Class C

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

⑦-1 Guide-Assy -Eject-U



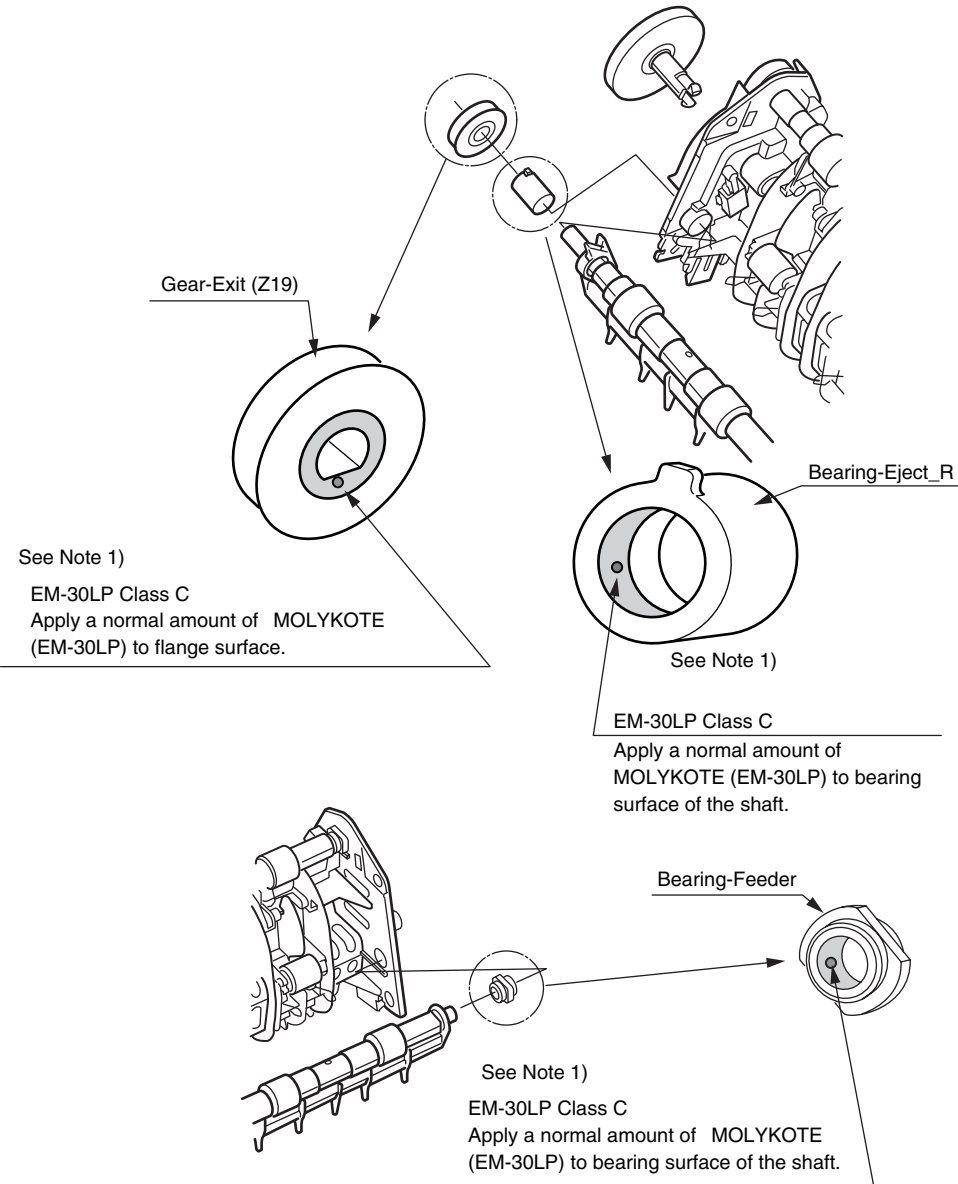
Gear-Idle_Exit (Z38)

EM-30LP Class C
Apply a normal amount of MOLYKOTE (EM-30LP) to surface of the post (bearing portion), the flange portions.

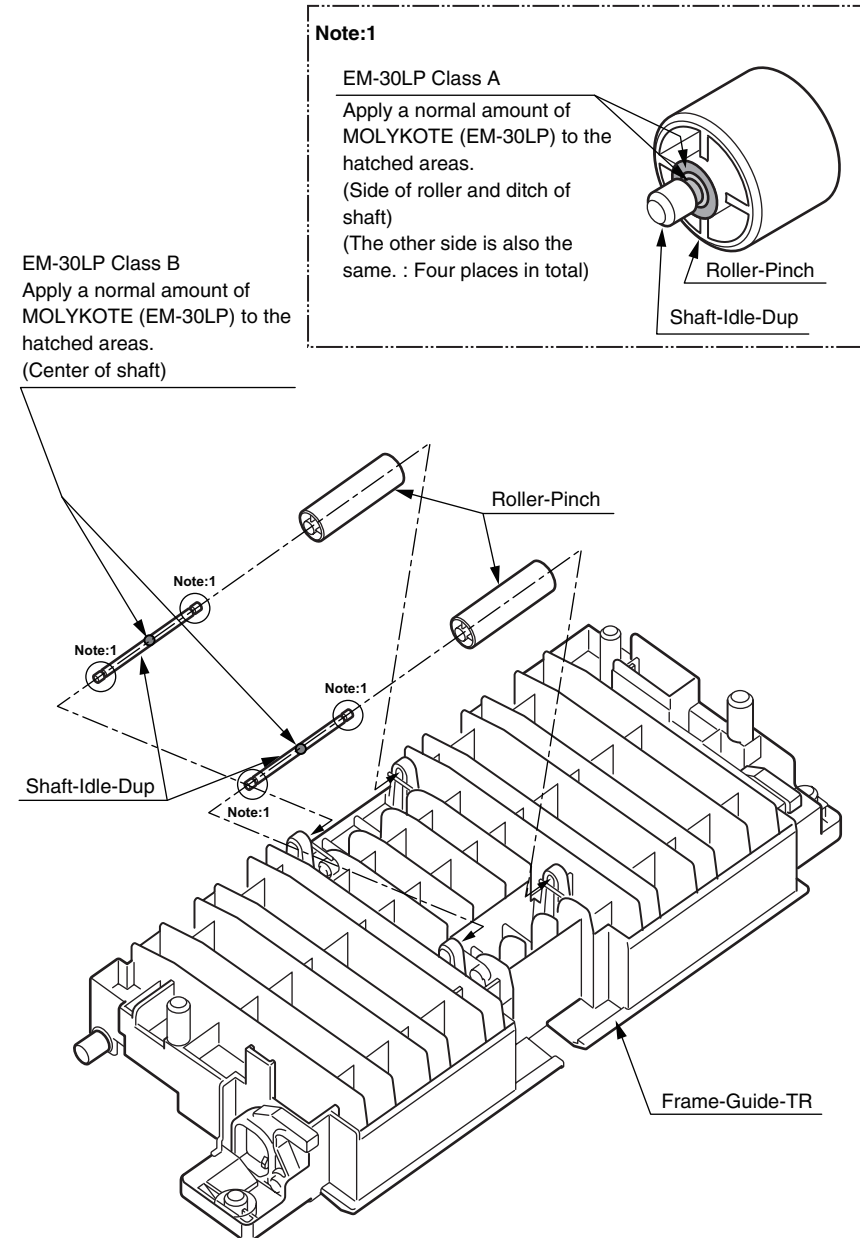
EM-30LP Class C x 2
Apply a normal amount of MOLYKOTE (EM-30LP) to the whole circle of gear teeth. Of 2 places.

⑦-2 Guide-Assy -Eject-U

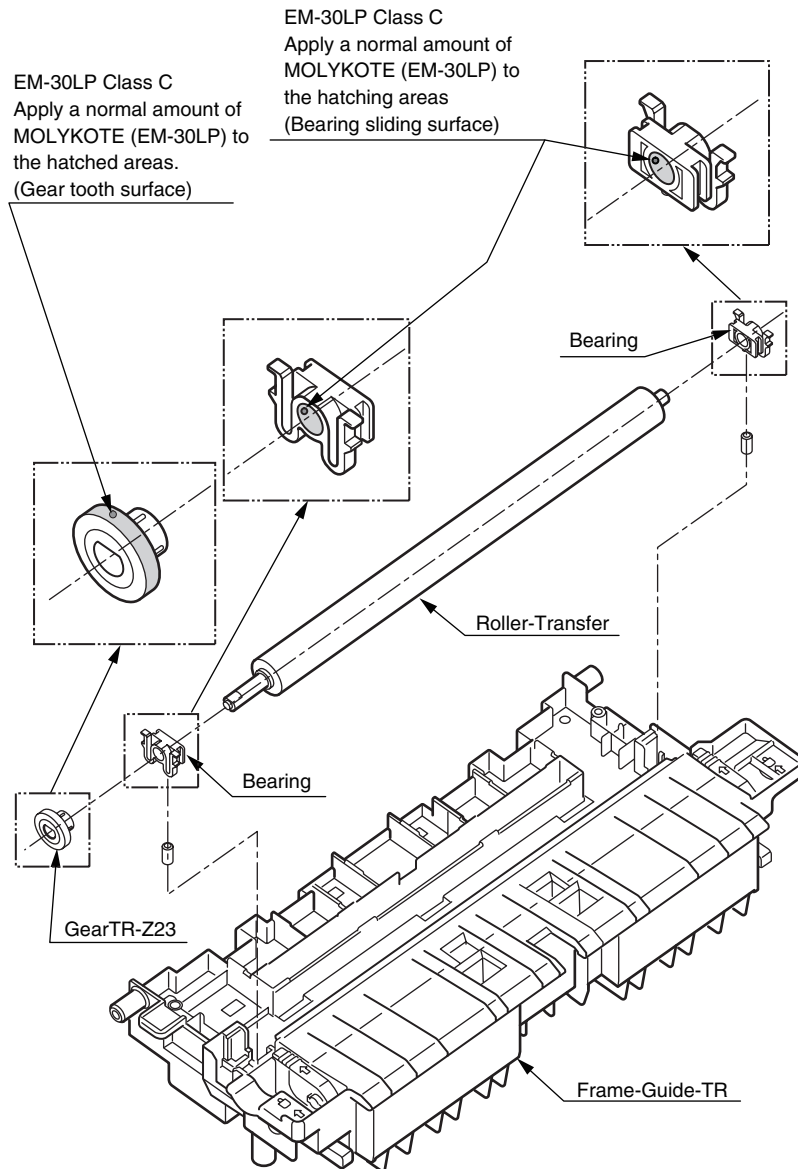
Note1) Please wipe the amount that grease began to see the sliding area off.



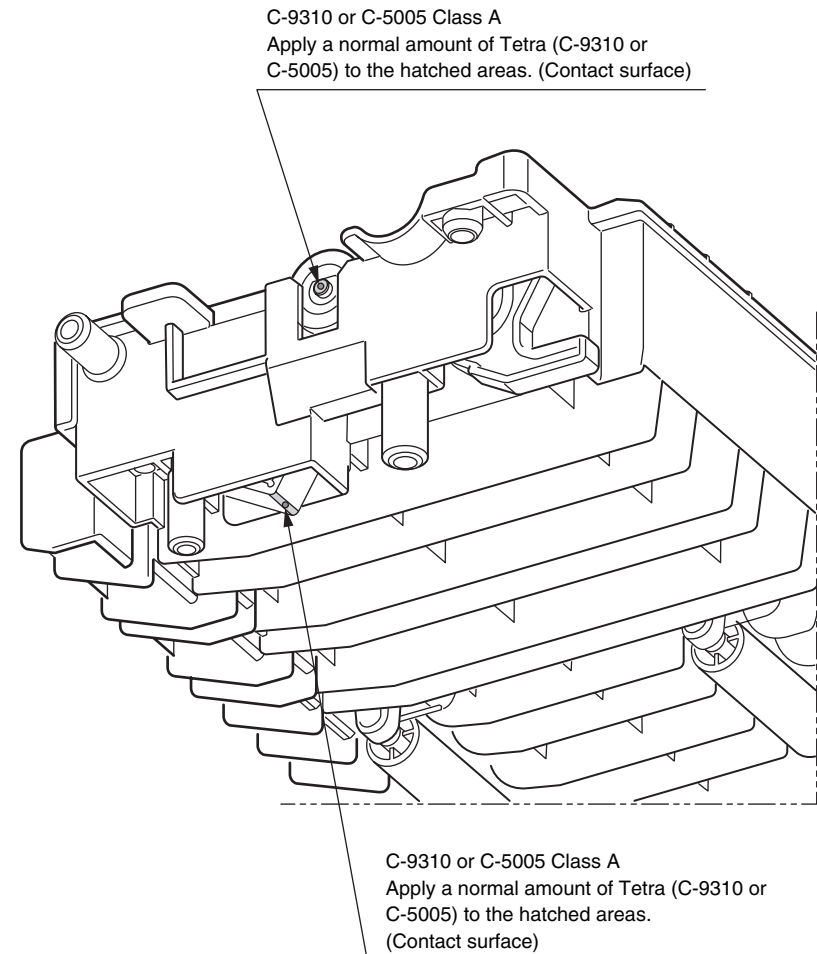
⑧-1 Frame-Assy-TR



⑧-2 Frame-Assy-TR



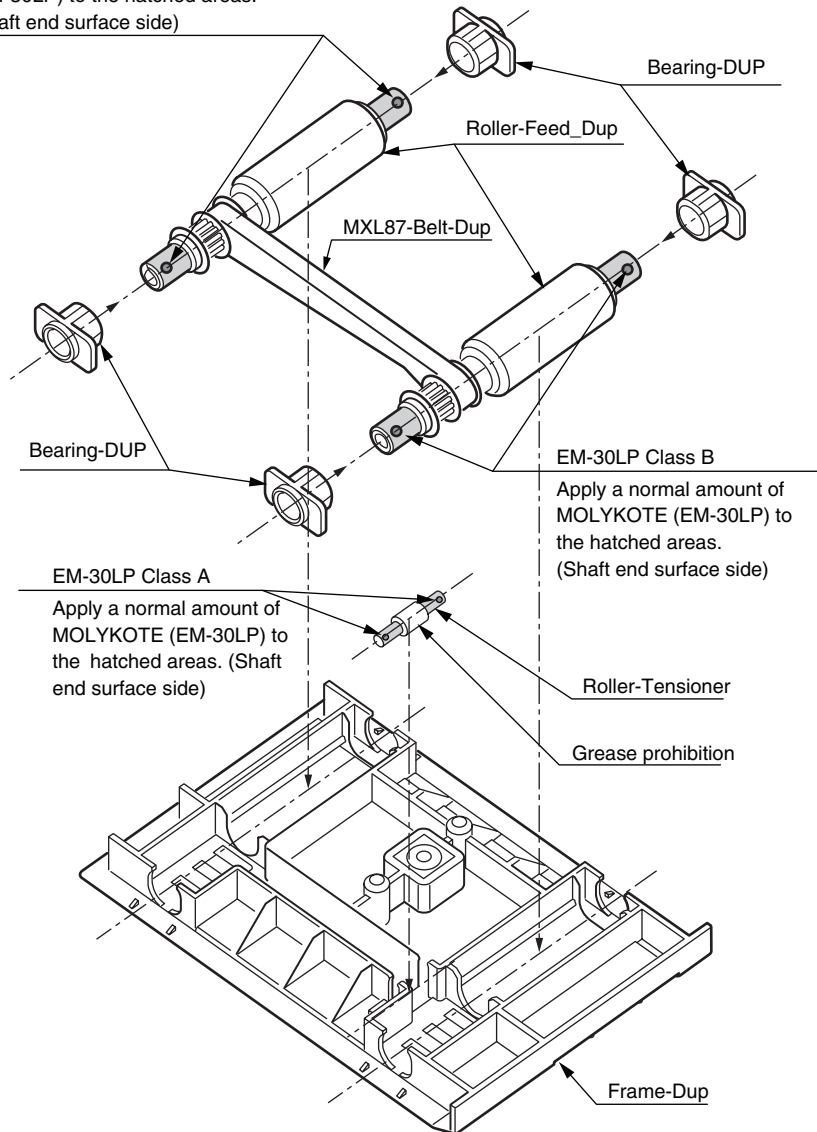
⑧-3 Frame-Assy-TR



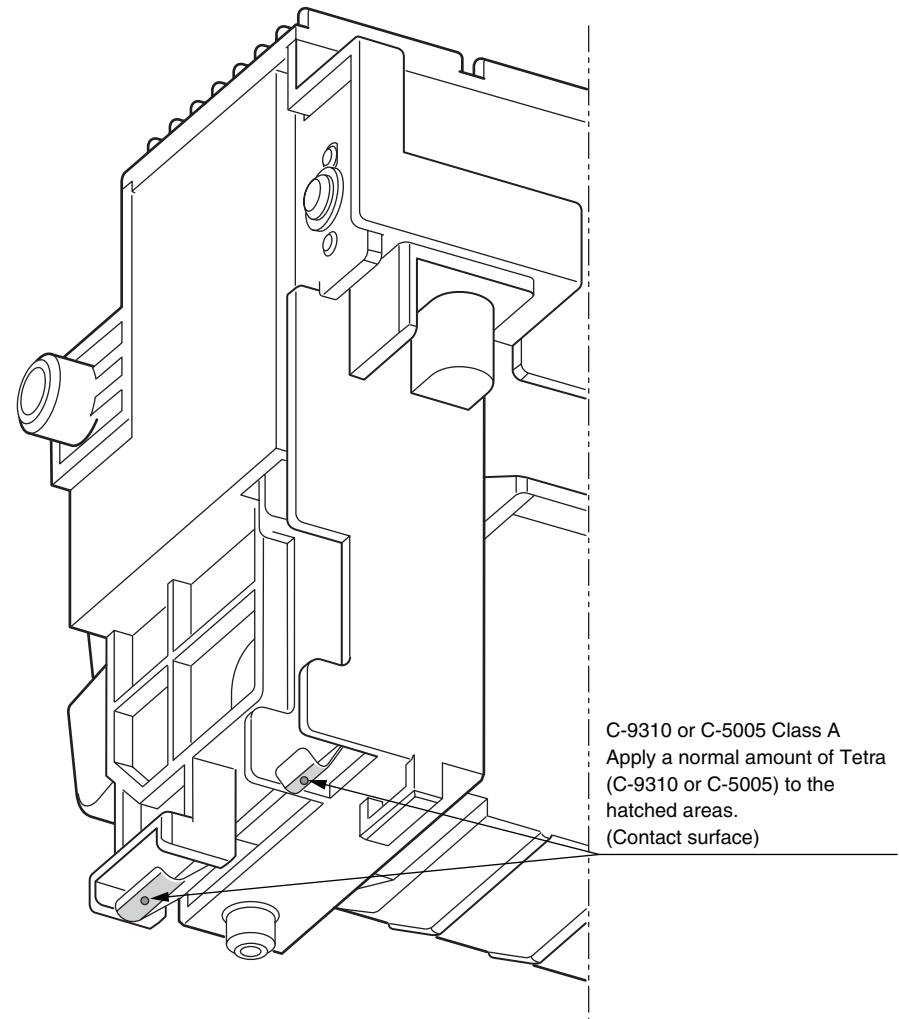
⑨ Duplex-Assy

EM-30LP Class B

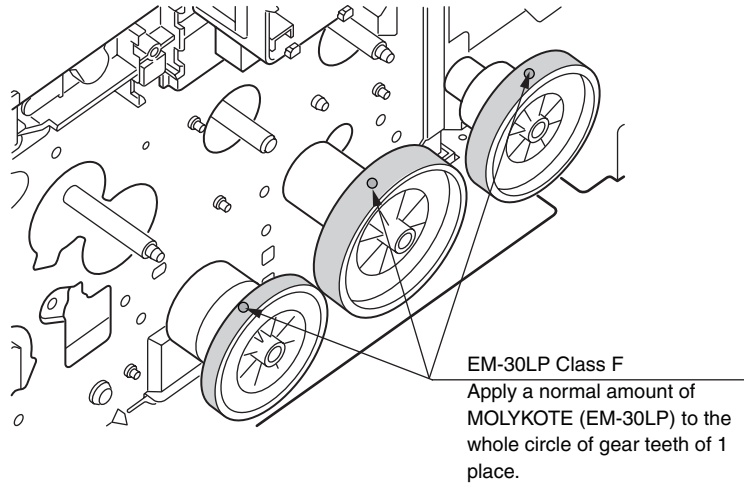
Apply a normal amount of MOLYKOTE (EM-30LP) to the hatched areas. (Shaft end surface side)



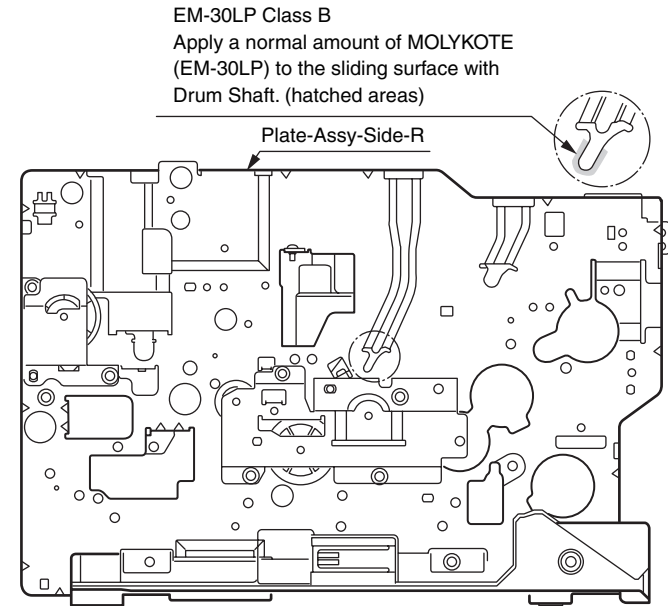
⑩ Fuser-Assy



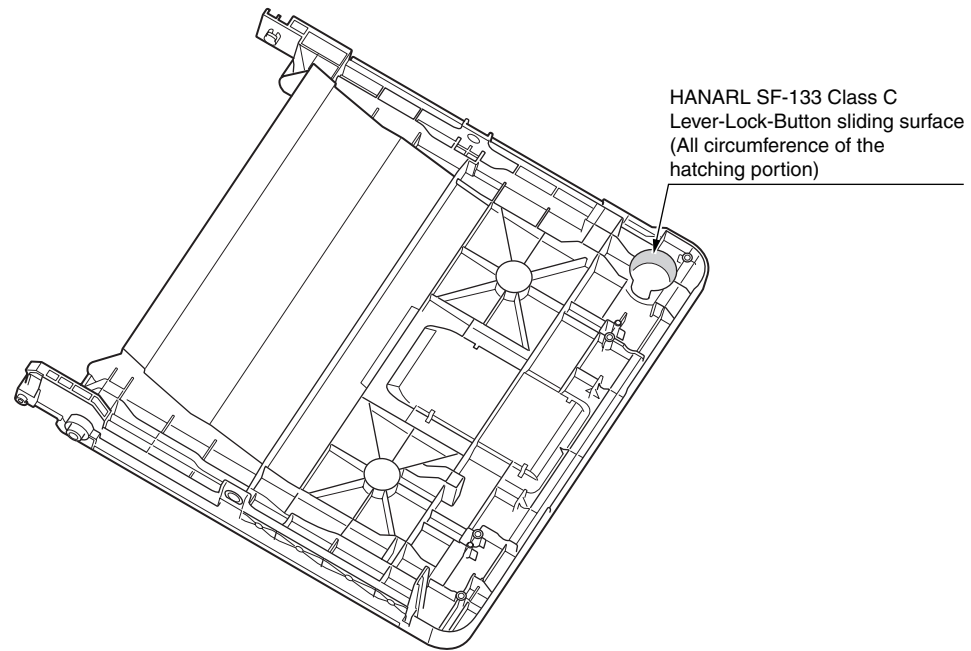
① -1 Printer NIP-PN307



① -2 Printer NIP-PN307

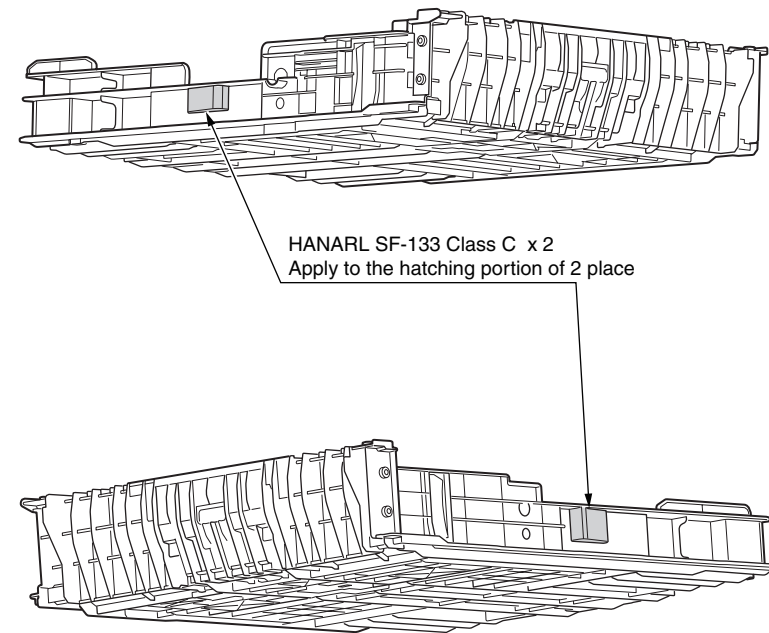


⑫ Cover-Assy-Stacker



*Leave it for about 30minutes (drying time) after painting HANARL SF-133, and then Assemble the Lever-Lock-Button.
*HANARL SF-133 should not protrude outside from the exterior surface.

⑬ Cassette-Assy(250sht)



*Leave it for about 30minutes (drying time) after painting HANARL SF-133, and then Assemble the Cassette-Assy to printer.

5. PERIODIC MAINTENANCE

5.1	Cleaning	5-2
5.2	Cleaning of LED lens array.....	5-3
5.3	Cleaning the Feed rollers and the Retard roller	5-4
5.4	Cleaning the MPT Feed rollers	5-6

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

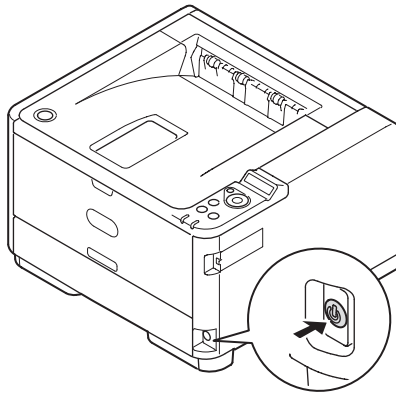
If the vertical white lines, and white belt (white spot, pale printing) occur in printing as shown below, the LED lens array should be cleaned or the toner cartridge should be replaced.

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

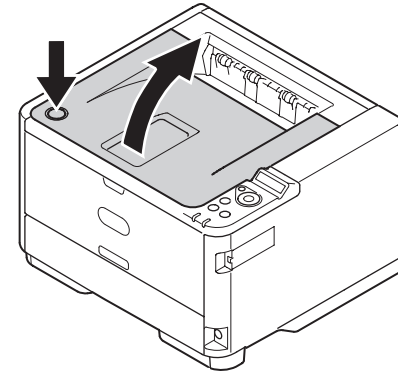
White lines or White belt
(White spot, pale printing)



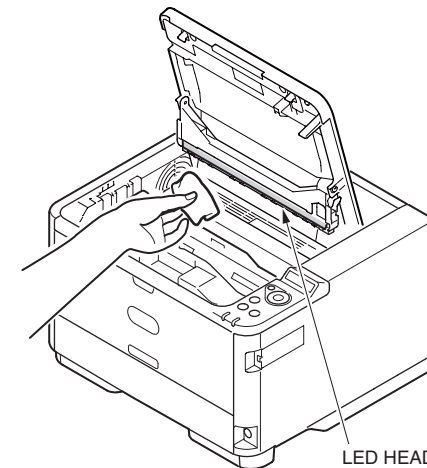
(1) Power off the printer.



(2) Open the top cover.



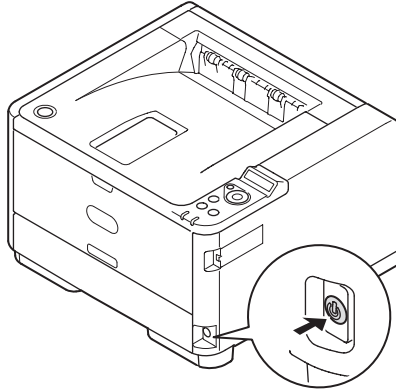
(3) Wipe the whole LED head softly with the soft tissues or cloth.



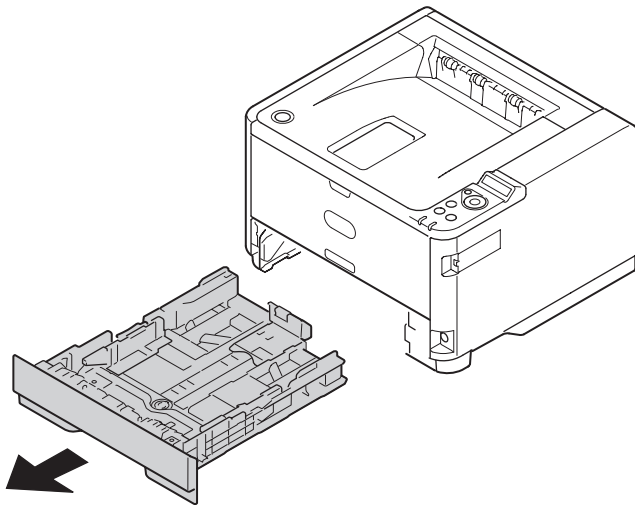
Note! Do not use solvents including methyl alcohol, and thinner.

5.3 Cleaning the Feed rollers and the Retard roller

(1) Power off the printer.

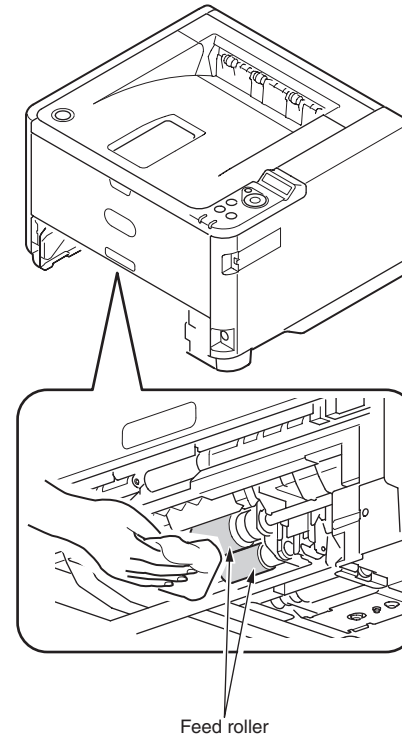


(2) Pull the tray out.



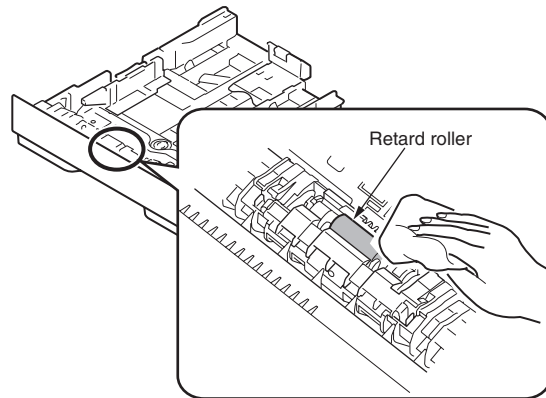
(3) Wipe two paper feed rollers inside the printer with a soft cloth that has been slightly moistened with water and then squeezed well.

Note! Use water only.

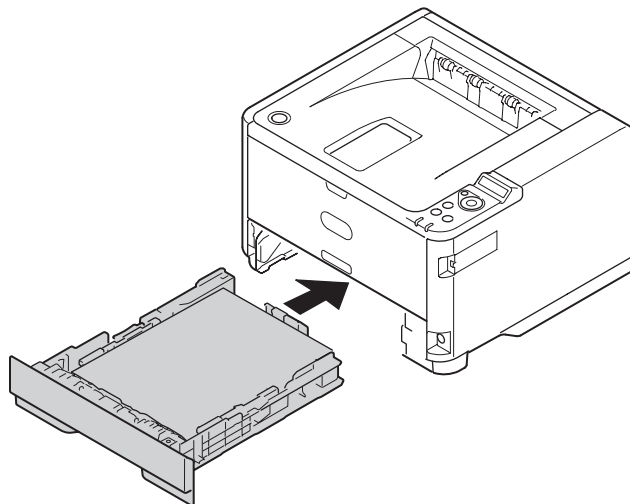


- (4) Wipe two paper feed rollers in the tray with a soft cloth that has been slightly moistened with water and then squeezed well.

Note! Use water only.

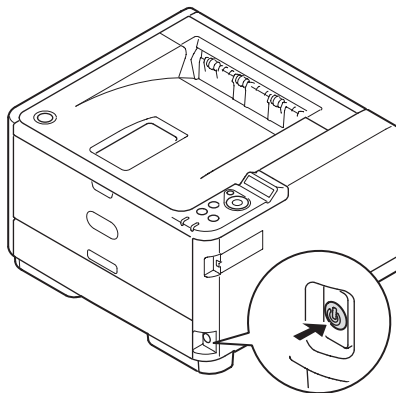


- (5) Push the tray back into the printer.

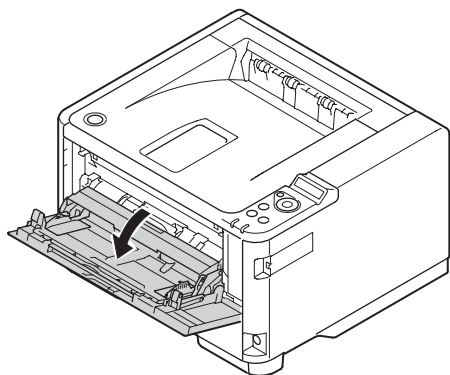


5.4 Cleaning the MPT Feed rollers

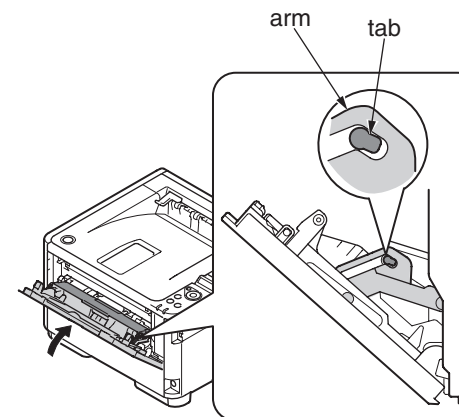
(1) Power off the printer.



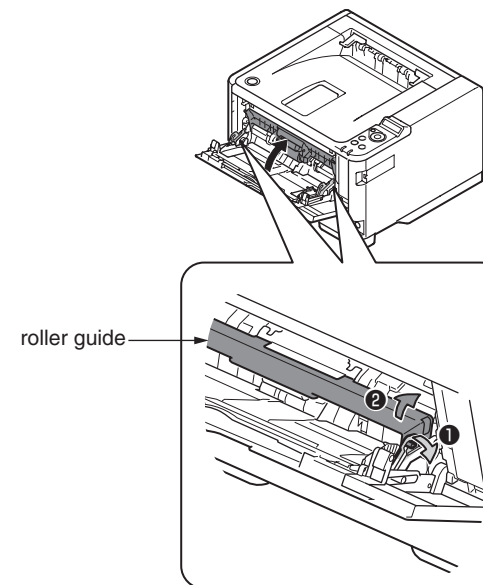
(2) Open the MPT.



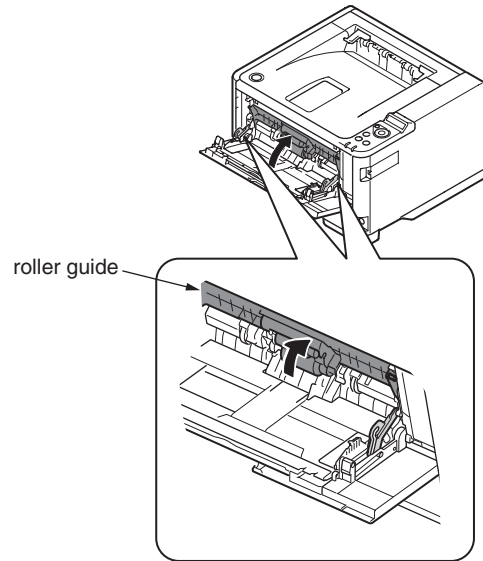
(3) Close the MPT gently to a position where the left and right tabs fit the arm grooves.



(4) Separate the tabs on the roller guide from the left and right arms by opening the arms outside.

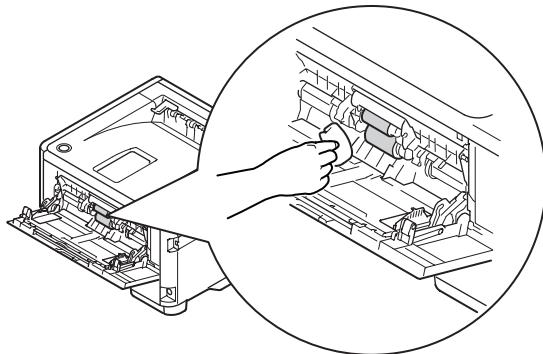


(5) Raise the roller guide until it comes in contact with the printer.



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

Note! Use water only.

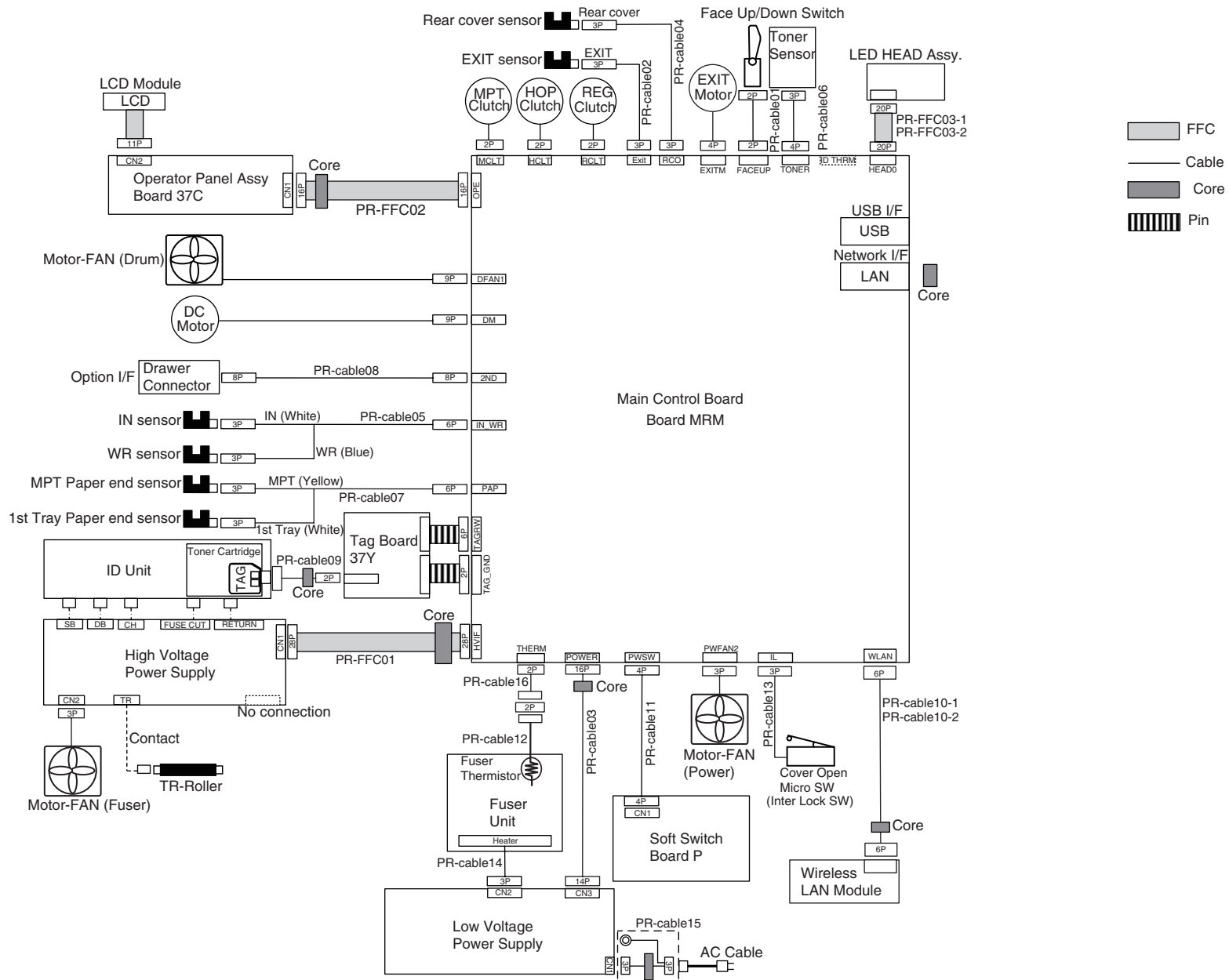


(7) Close the MPT is performed by the inverse procedure with opening.

6. CONNECTION DIAGRAM

6.1	Connection diagram	6-2
6.2	Board Layout	6-3
6.3	Resistance value	6-11

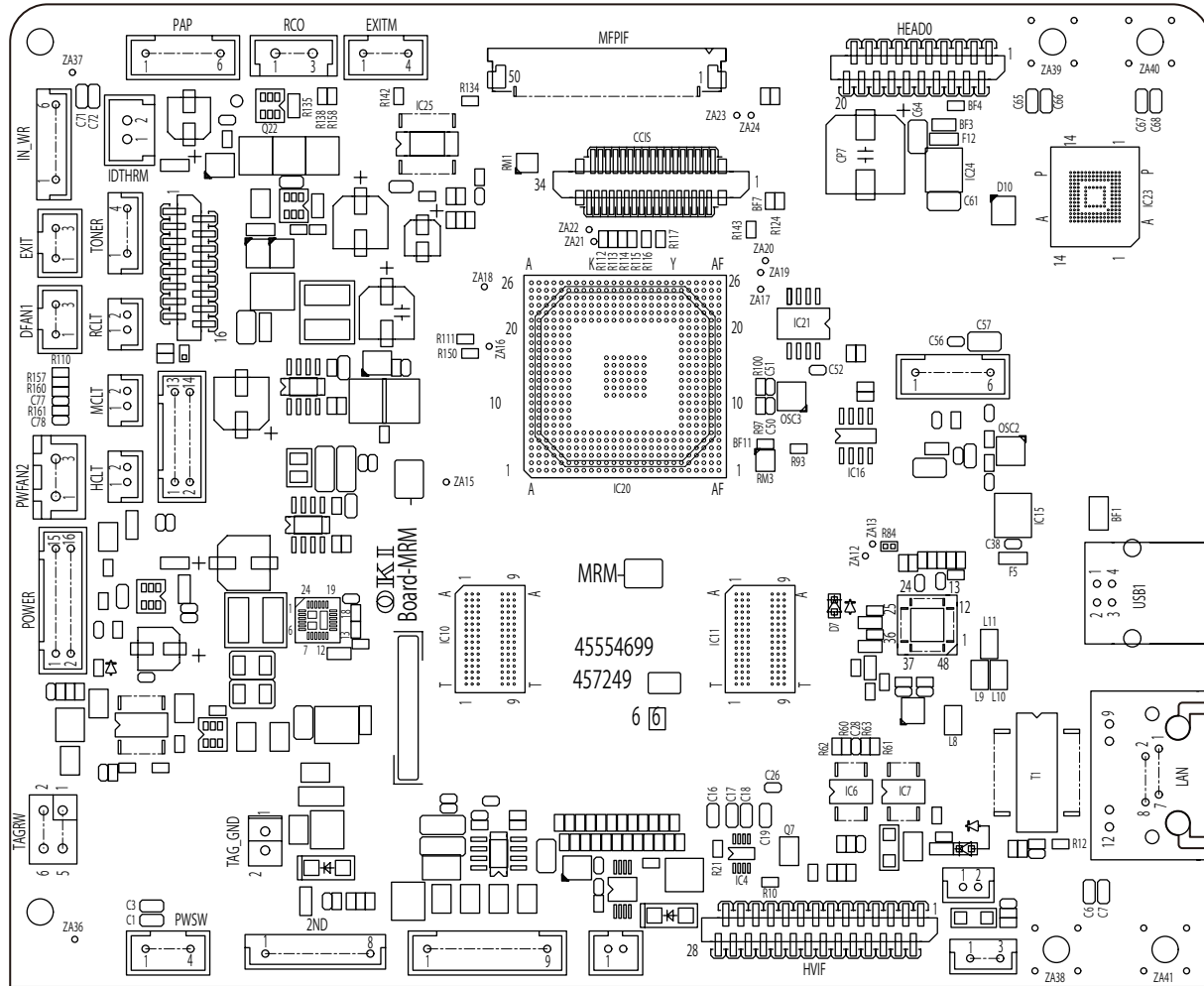
6.1 Connection diagram



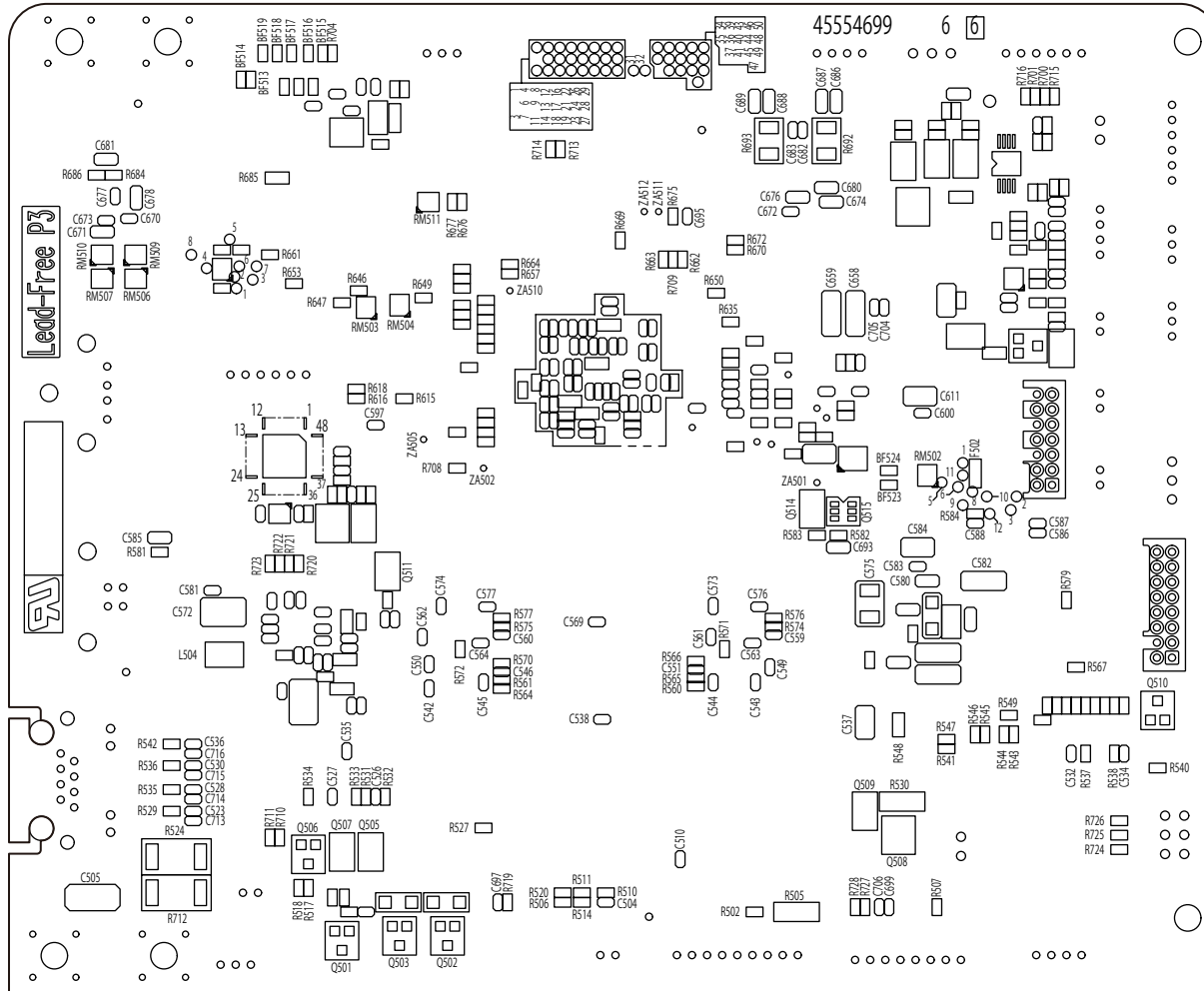
6.2 Board Layout

(1) Main control board

Component side

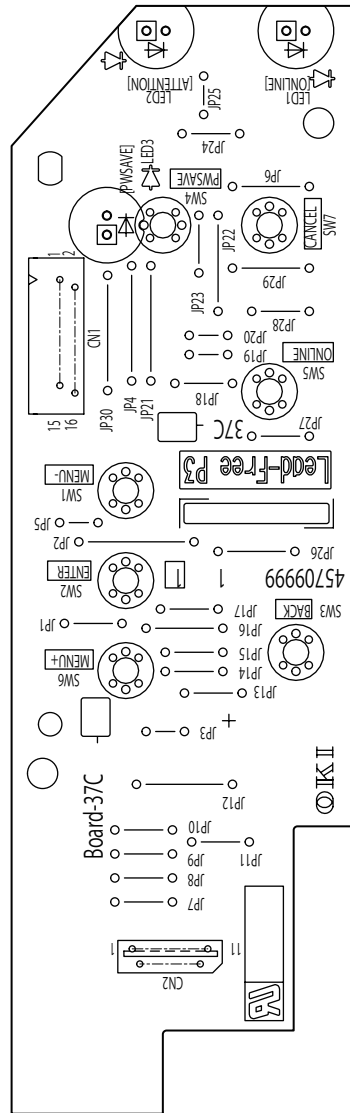


Soldering side

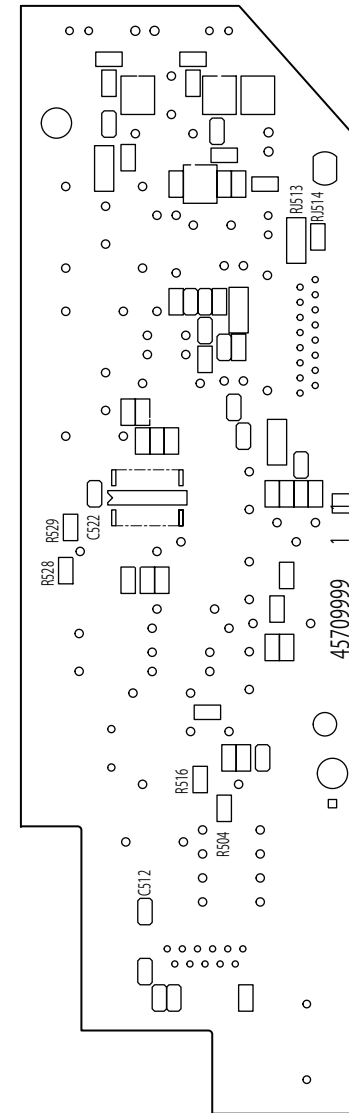


(2) OP Panel Board

Component side

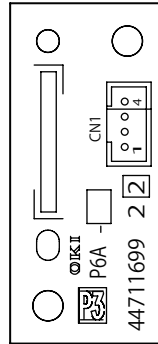


Soldering side



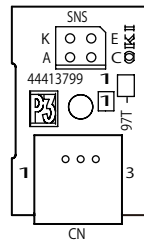
(3) Soft power switch Board

Component side



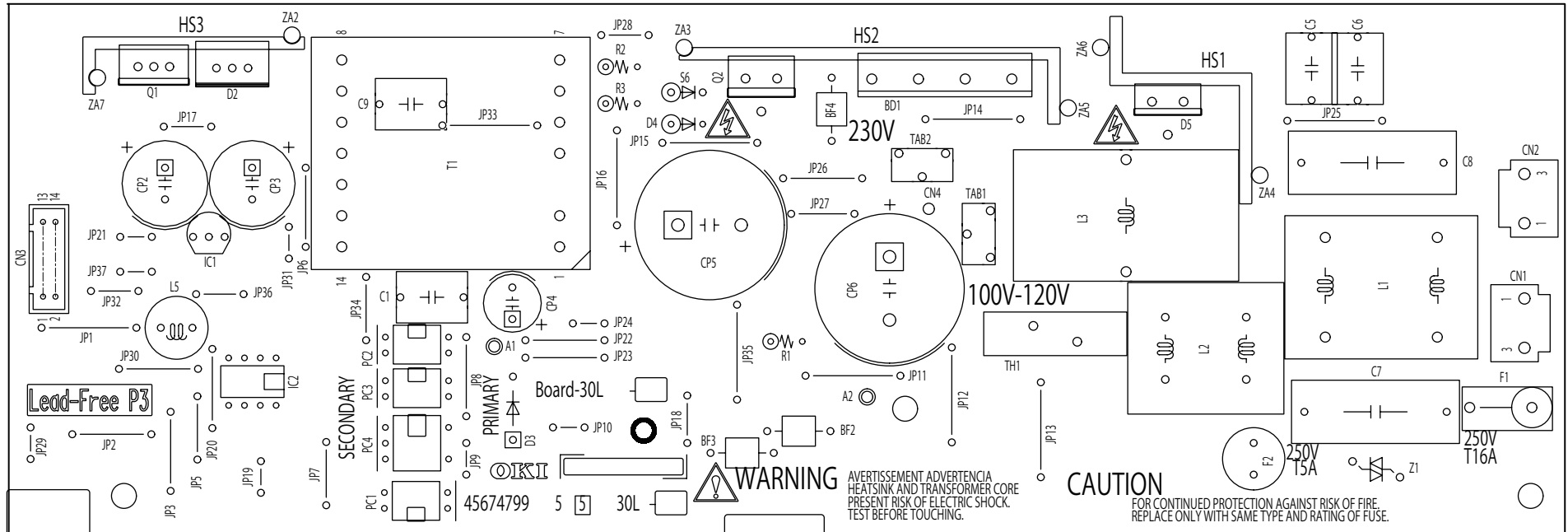
(4) Toner sensor Board

Component side

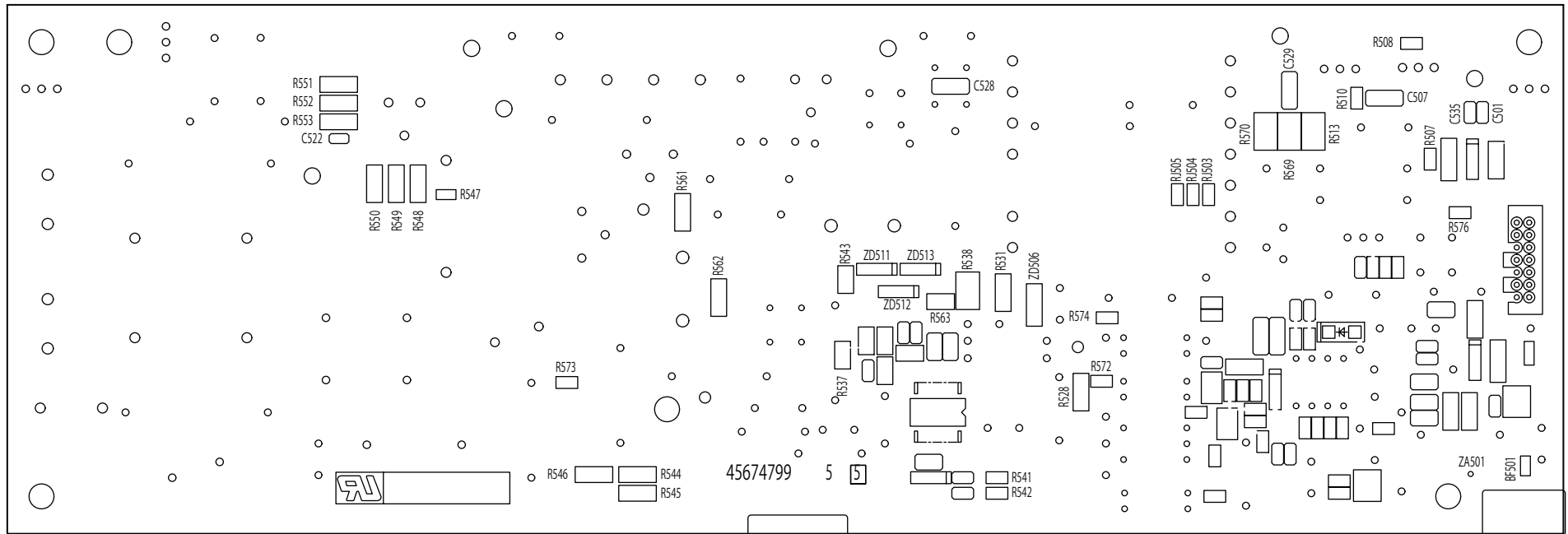


(5) Low-Voltage Power Board

Component side

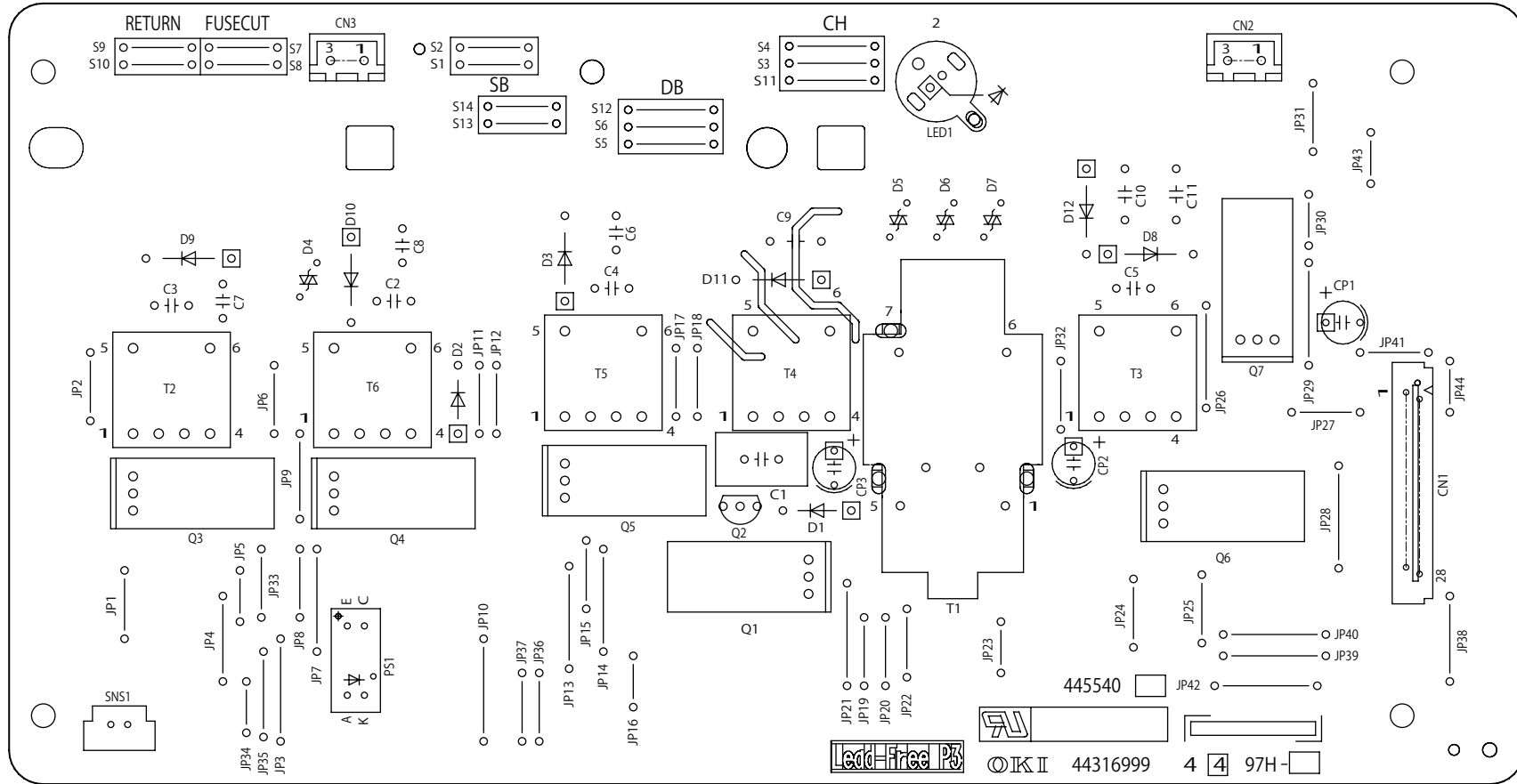


Soldering side

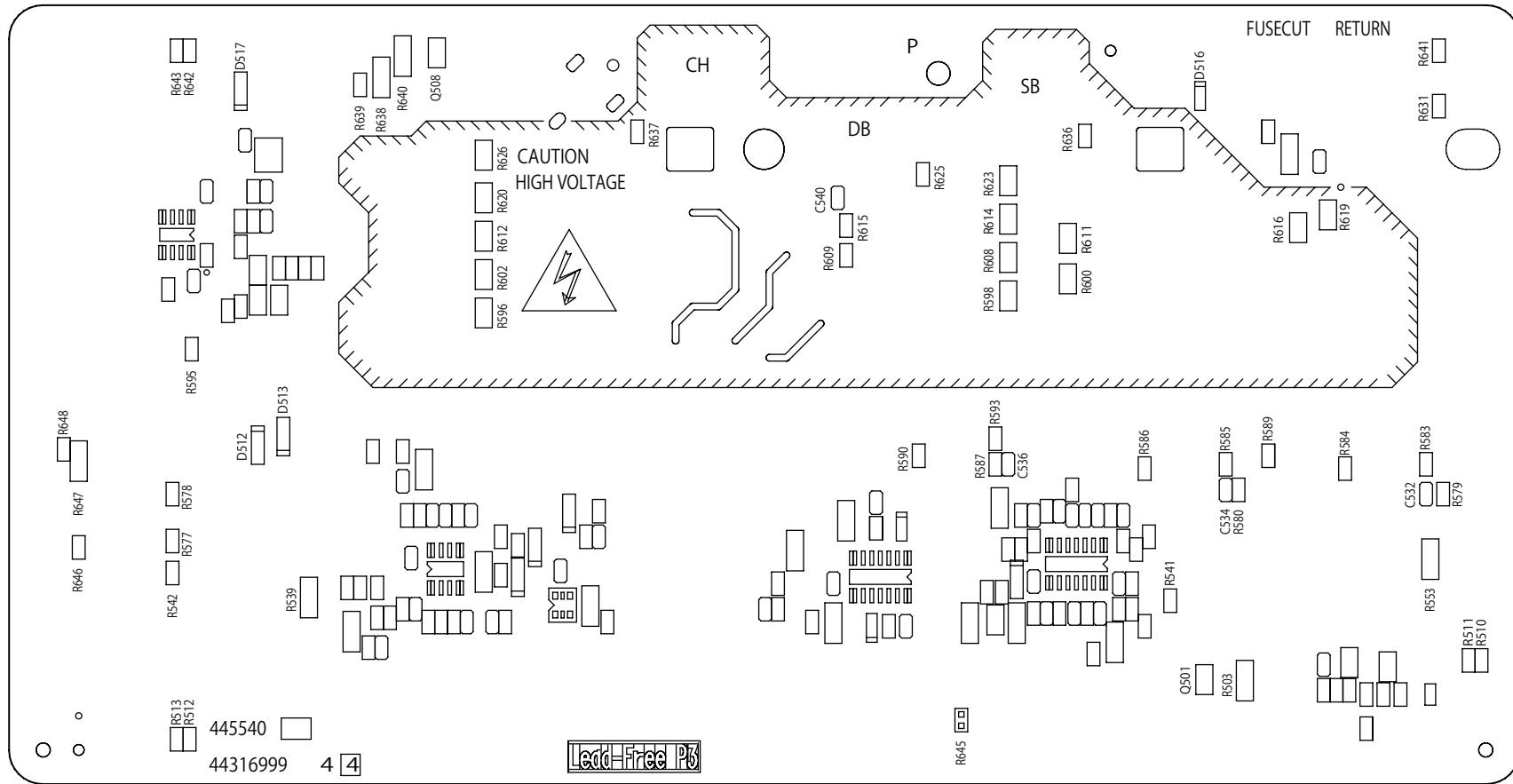


(6) High-Voltage Power Board

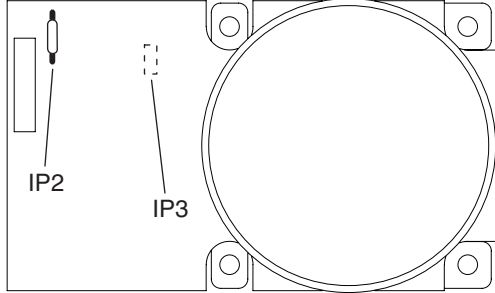
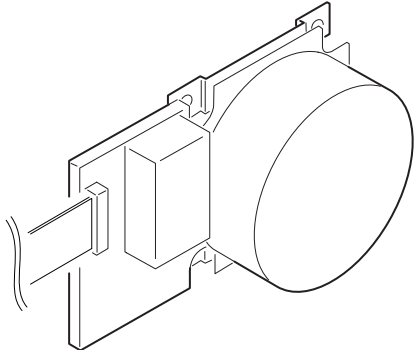
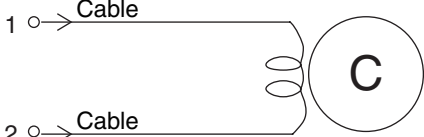
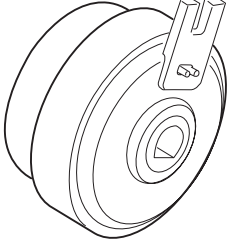
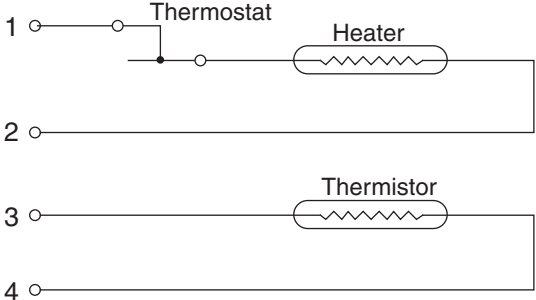
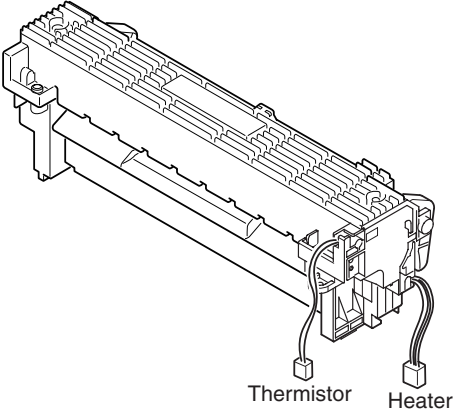
Component side



Soldering side



6.3 Resistance value

Unit	Circuit Diagram and configuration	Part Diagram	Resistance Value
DC Motor	 <p>IP2</p> <p>IP3</p>		Both ends of IP2 and IP3: 1Ω or less
Clutch (Hopping) (Regist) (MP Tray)	 <p>1 ○ → Cable</p> <p>2 ○ → Cable</p> <p>※Cable Color : Black (Hopping) : Blue (Regist) : Yellow (MP Tray)</p>		Between Pin1 and Pin2 : 240Ω
Fuser Unit Assy	 <p>1 ○ — Thermostat — Heater</p> <p>2 ○ —</p> <p>3 ○ — Thermistor</p> <p>4 ○ —</p>	 <p>Thermistor</p> <p>Heater</p>	Between Pin1 and 2: Several to several tens of ohms Between pin3 and 4 :360KΩ At the ambient temperature (25°C)

Unit	Circuit Diagram	Part Diagram	Resistance Value
<p>FAN Motor (Fuser)</p>			
<p>FAN Motor (Drum)</p>			
<p>FAN Motor (Power)</p>			