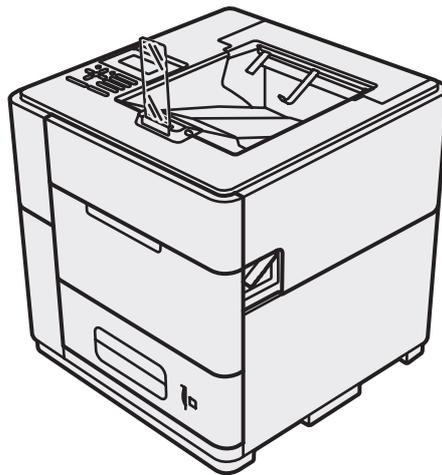




Brother Printer SERVICE MANUAL

MODEL: HL-S7000DN



Read this manual thoroughly before maintenance work.
Keep this manual in a convenient place for quick and easy reference at all times.

September 2012
SM-PRN087
8CY1

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APPENDIX 1 HOW TO USE EJECT TRAY A5/B5

REGULATION

■ Federal Communications Commission (FCC) Declaration of Conformity (USA only)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

! IMPORTANT

- Changes or modifications not expressly approved by Brother Industries, Ltd. could void the user's authority to operate the equipment.
- A specific shielded interface cable should be used to ensure compliance with the limits for a Class A digital device.

■ Industry Canada Compliance Statement (Canada only)

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Operation is subject to the following two conditions:

(1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of this device.

L'utilisation de ce dispositif est autorisée seulement aux conditions suivantes :

(1) il ne doit pas produire de brouillage et (2) l'utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

■ LED Radiation

When removing the eject stopper, DO NOT view LED directly with optical instruments.
Class 1M LED product.



This equipment is certified as Class 1M LED product as defined in IEC60825-1: 2001.
Class 1M LEDs are located under the eject stopper.

Viewing the LED output with certain optical instruments (for example, eye loupes,
magnifiers and microscopes) within a distance of 100 mm may pose an eye hazard.

■ Declaration of Conformity (Europe only)

We, Brother Industries Ltd, of 15-1 Naeshiro-cho, Mizuho-ku, Nagoya 467-8561 Japan,

Declare that this product is in compliance with the essential requirements of Directives 1999/5/
EC and 2009/125/EC.

The Declaration of Conformity (DoC) is on our Website.

Please go to <http://solutions.brother.com/>

- choose your region (eg. Europe)
- choose your country
- choose your model
- choose "Manuals"
- choose Declaration of Conformity (Select Language when required.)

■ Disconnect Device



This product must be installed near an electrical socket that is easily accessible. In case of emergencies, you must disconnect the power cord from the electrical socket to shut off power completely.

■ Wiring Information (U.K. only)

If you need to replace the plug fuse, fit a fuse that is approved by ASTA to BS1362 with the same rating as the original fuse.

Always replace the fuse cover. Never use a plug that does not have a cover. If in any doubt, call a qualified electrician.

Warning -This product must be earthed.

The wires in the mains lead are coloured in line with the following code:

- Green and Yellow: Earth
- Blue: Neutral
- Brown: Live

■ LAN Connection



DO NOT connect this product to a LAN connection that is subject to over-voltages.

■ Radio Interference

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

■ **Recycling Information in Accordance with the WEEE (2002/96/EC) and Battery (2006/66/EC) Directives**



Product mark



Battery mark

European Union only

The product/battery is marked with one of the above recycling symbols. It indicates that at the end of the life of the product/battery, you should dispose of it separately at an appropriate collection point and not place it in the normal domestic waste stream.

■ **International ENERGY STAR® Qualification Statement**

The purpose of the International ENERGY STAR® Program is to promote the development and popularization of energy-efficient equipment.

As an ENERGY STAR® Partner, Brother Industries, Ltd. has determined that this product meets the ENERGY STAR® specifications for energy efficiency.



SAFETY INFORMATION

The following conventions are used in this manual:

Mark	Contents
	WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injuries.
	CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injuries.
	IMPORTANT indicates a potentially hazardous situation which, if not avoided, may result in damage to property or loss of product functionality.
	Electrical Hazard icons alert you to a possible electrical shock.
	Fire Hazard icons alert you to the possibility of fire.
	Prohibition icons indicate actions that must not be performed.
Note	Notes tell you useful tips when servicing the machine.
Memo	Memo tells you bits of knowledge to help understand the machine.

■ To use the product safely

 **WARNING**

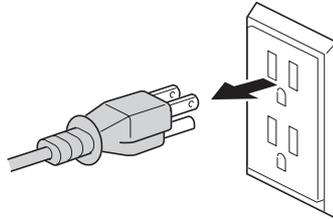
  **ELECTRICAL HAZARDS**

Failure to follow the warnings in this section may create the risk of an electrical shock. In addition, you could create an electrical short, which may create the risk of a fire.

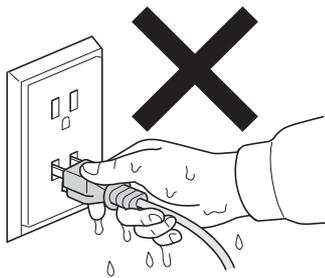


There are high voltage electrodes inside the product. Before you access the inside of the product, including for routine maintenance such as cleaning, make sure you have unplugged the power cord from the AC power outlet, as well as Ethernet (RJ-45) cables from the product.

Never push objects of any kind into this product through cabinet slots, since they may touch dangerous voltage points or short out parts.



DO NOT handle the plug with wet hands.



Always make sure the plug is fully inserted.



DO NOT use this product during an electrical storm.



If water, other liquids, or metal objects get inside the machine, immediately unplug the machine from the AC power outlet.



This product should be connected to an AC power source within the range indicated on the rating label. DO NOT connect it to a DC power source or inverter. If you are not sure what kind of power source you have, contact a qualified electrician.



Power Cord Safety:

- This product is equipped with a 3-wire grounded plug. This plug will only fit into a grounded power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, call your electrician to replace your obsolete outlet. DO NOT defeat the purpose of the grounded plug.
- Use only the power cord supplied with this product.
- DO NOT allow anything to rest on the power cord.
- DO NOT place this product where people can walk on the cord.
- DO NOT place this product in a position where the cord is stretched or strain is otherwise put on the cord. Doing so may cause the cord to become worn or frayed.
- DO NOT use the product or handle the cord if the cord has become worn or frayed.
- Unplug this product from the AC power outlet before you move the product.
- Brother strongly recommends that you DO NOT use any extension cord.



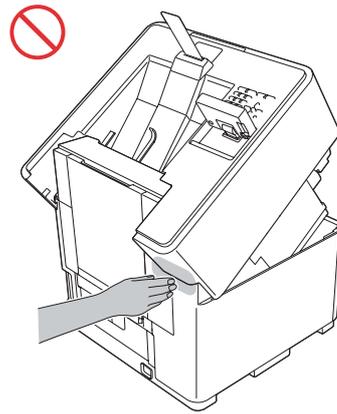
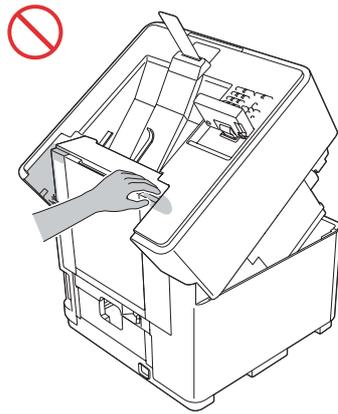
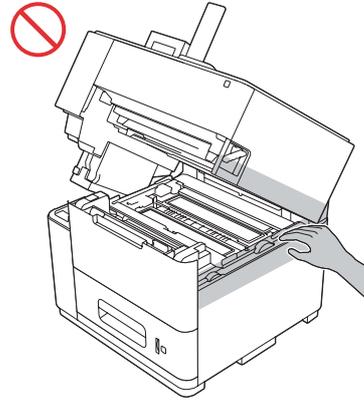
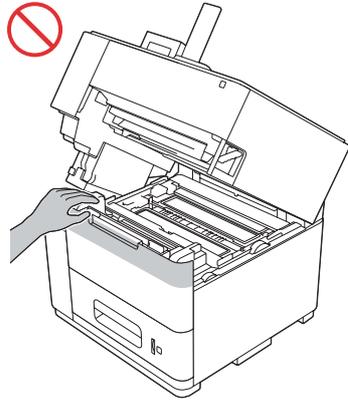
DO NOT use flammable substances, any type of spray, or an organic solvent/liquid containing alcohol or ammonia to clean the inside or outside of the product. Doing so could cause a fire or electrical shock. Instead, use only a dry, lint-free cloth.

For users with pacemakers

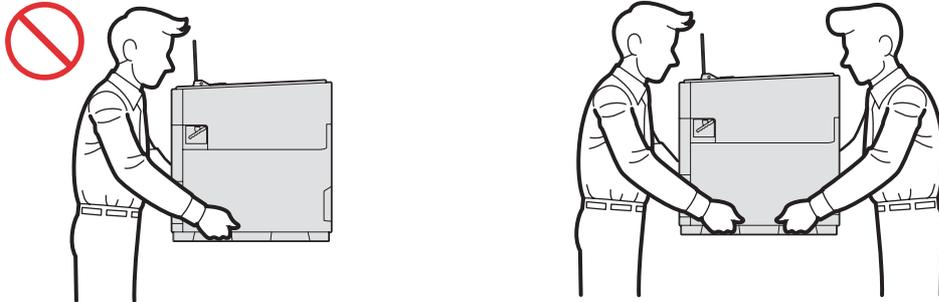
This machine generates a weak magnetic field. If you feel anything wrong with the operation of your pacemakers when near the machine, move away from the machine and consult a doctor immediately.

 **CAUTION**

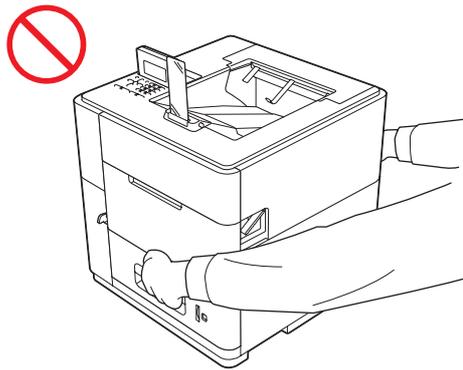
DO NOT put your hands on the edge of the machine. Doing this may cause injury to your fingers by pinching them.



This machine is heavy and weighs more than 88 lb (40 kg). To prevent possible injuries at least two people should lift the machine by holding it from the front and back. Be careful with the output stopper when moving or lifting the machine. There is a risk of injury if your face or body strikes the output stopper. Be careful not to pinch your fingers when you set the machine back down.

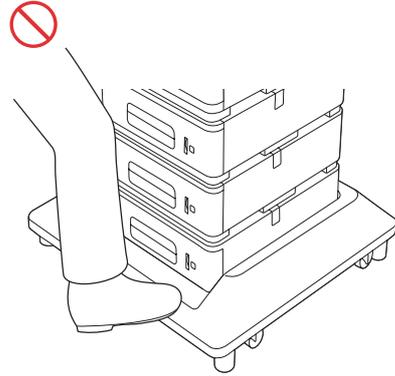


DO NOT carry the machine by holding the paper tray or the duplex tray. Doing this may cause the machine to slip out of your hands. Only carry the machine by placing your hands under the entire machine.

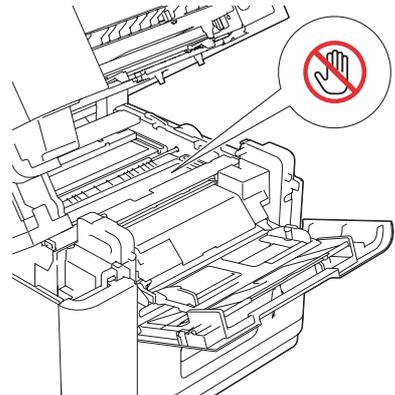
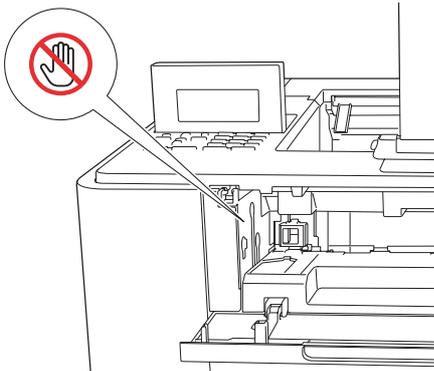


DO NOT carry the product together with the optional lower trays, optional output tray, or the optional stabilizer. These optional devices are not attached to the product, therefore there is a risk of injury or damage if you attempt to carry them together.

Be careful not to trip on the legs of the optional Stabilizer unit. Do not stand on the optional Stabilizer unit. The printer and the optional Stabilizer unit may move and cause you to fall.



DO NOT touch the hazardous moving parts. Keep fingers and other body parts away.

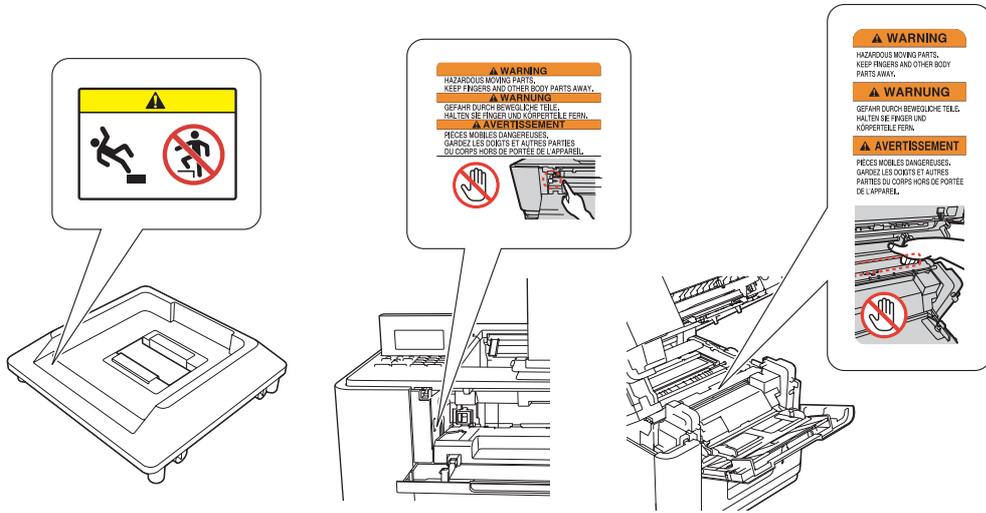


DO NOT push the optional output tray from the side after it is installed. The optional output tray may fall and cause injury to you.

Laying the machine on its side or placing it upside down causes a failure.

! IMPORTANT

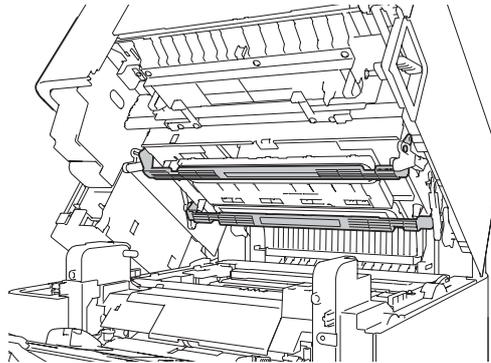
- DO NOT remove or damage any of the caution or warning labels affixed to the product.



- DO NOT remove the serial number and instruction labels that are affixed to the product.

Note:

- Lightning and power surges can damage this product. We recommend that you use a quality surge protection device on the Ethernet (RJ-45) cable plugged into the product.
- Do not touch the print head, the shaded parts shown in the illustration. If you touch the print head, ink from the print head may stain your skin. If ink stains your skin, wash with soap at once.



■ Important safety instructions

- (1) Read all of these instructions.
- (2) Save them for later reference.
- (3) Follow all warnings and instructions marked on the product.
- (4) DO NOT attempt to service this product yourself because opening or removing covers may expose you to dangerous voltage points and other risks and may void your warranty. Refer all servicing to a Brother Authorized Service Center.
For the location of your nearest Brother Authorized Service Center, please call:
In USA: 1-877-BROTHER (1-877-276-8437)
In Canada: 1-877-BROTHER
- (5) Unplug this product from the AC power outlet and refer all servicing to Brother Authorized Service Personnel under the following conditions:
 - When the power cord is damaged or frayed. (DO NOT touch the damaged/frayed part while unplugging your product.)
 - If liquid has been spilled into the product.
 - If the product has been exposed to rain or water.
 - If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
 - If the product has been dropped or the casing has been damaged.
 - If the product exhibits a distinct change in performance, indicating a need for service.

CHAPTER 1 SPECIFICATIONS

1. SPECIFICATIONS LIST

1.1 General

Model		HL-S7000DN	
Print method		Inkjet	
Resolution		600 x 600 dpi	
Print speed (from ready mode and STD tray)	Single side print	Up to 100 ppm * When loading A4 or Letter-size paper from the paper tray.	
	Duplex print	50 images per minute (25 sheets per minute) * When loading A4 or Letter-size paper from the paper tray.	
Warm-up time	From Sleep mode	Less than 5 seconds at 23 °C (73.4 F)	
	From Power ON	Less than 25 seconds at 23 °C (73.4 F)	
First print time	From Ready mode	Less than 8.5 seconds	
	From Sleep mode	Less than 13.5 seconds	
CPU		800 MHz Marvell Processor	
Memory	Standard	512 MB	
Interface USB		Hi-Speed 2.0	
Power consumption	Printing	130 W	
	Ready	30 W	
	Sleep (WLAN: ON)	3 W	
	Deep Sleep	0.9 W	
	Power OFF mode	0.5 W	
Noise level	Sound pressure	Printing	64 dB (A)
		Ready	40 dB (A)
	Sound power	Printing	7.43 B (A)
		Ready	5.16 B (A)
Environment	Temperature	18 to 33 °C (64.4 to 91.4 F)	
	Humidity	20 to 80 %	
Dimensions (W x D x H)	Carton size	642 x 665 x 729 mm (25.3 x 26.2 x 28.7 inch)	
	Machine size	478 x 472 x 484 mm (18.8 x 18.6 x 19.1 inch)	
Weights	without Carton, with Ink cartridge	46 kg (101.4 lb)	
LCD	LCD Type	30 characters x 5 lines	
	LCD Dimension (W x L)	67 x 27 mm (2.64 x 1.06 inch)	

Specifications are subject to change without prior notice.

<Computer requirements>

Computer Platform & Operating System Version		Processor Minimum Speed	Minimum RAM	Recommended RAM	Hard Disk Space to install	Supported PC Interface *
Windows® Operating System	Windows® XP Home Edition	Intel® Pentium® II or equivalent	128 MB	256 MB	80 MB	USB, 10Base-T/100Base-TX (Ethernet), 1000Base-T (Gigabit Ethernet), Wireless 802. 11b/g/n
	Windows® XP Professional					
	Windows® XP Professional x64 Edition	64-bit (Intel® 64 or AMD64) supported CPU	256 MB	512 MB		
	Windows Vista®	Intel® Pentium® 4 or equivalent 64-bit (Intel® 64 or AMD64) supported CPU	512 MB	1 GB		
	Windows® 7	Intel® Pentium® 4 or equivalent 64-bit (Intel® 64 or AMD64) supported CPU	1 GB (32-bit) 2 GB (64-bit)	1 GB (32-bit) 2 GB (64-bit)		
	Windows Server® 2003	Intel® Pentium® III or equivalent	256 MB	512 MB		
	Windows Server® 2003 x64 Edition	64-bit (Intel® 64 or AMD64) supported CPU				
	Windows Server® 2008	Intel® Pentium® 4 or equivalent 64-bit (Intel® 64 or AMD64) supported CPU	512 MB	2 GB		
	Windows Server® 2008 R2	64-bit (Intel® 64 or AMD64) supported CPU				
Macintosh Operating System	Mac OS X 10.5.8	PowerPC® G4/ G5 Intel® Processor	512 MB	1 GB		
	Mac OS X 10.6.x	Intel® Processor	1 GB	2 GB		
	Mac OS X 10.7.x	Intel® Processor	2 GB	2 GB		

* Third party USB ports are not supported.

1.2 Network Connectivity

Model		HL-S7000DN
Wired network	Network node type	NC-8400h
	Security Protocols	APOP, POP before SMTP, SMTP-AUTH, SSL/TLS (IPPS, HTTPS, SMTP, POP), SNMP v3 802.1x (EAP-MD5, EAP-FAST, PEAP, EAP-TLS, EAP-TTLS), Kerberos, IPSec
Wireless network	Network node type	NC-8000W
	Security Protocols	APOP, POP before SMTP, SMTP-AUTH, SSL/TLS (IPPS, HTTPS, SMTP, POP), SNMP v3 802.1x (LEAP, EAP-FAST, PEAP, EAP-TLS, EAP-TTLS), Kerberos, IPSec

Specifications are subject to change without prior notice.

1.3 Service Information

Model		HL-S7000DN
Machine life		1000,000 pages (A4/Letter size) or 5 years
MTTR		0.5 hour
Maximum monthly volume		Up to 275,000 pages
Periodical maintenance parts	PF kit 1/2/3/4	200,000 pages (Service replacement)
	PF kit MP	100,000 pages (Service replacement)

Specifications are subject to change without prior notice.

1.4 Supplies

Model		HL-S7000DN
Ink Cartridge Yield @ ISO/IEC 24711	Inbox Cartridge	Approximately 10,000 pages*
	High Capacity Cartridge	Approximately 30,000 pages*

* Estimated Cartridge Yield is declared in accordance with ISO/IEC 24711 test in continuous printing methodology, using monochrome test page defined in ISO/IEC 19752.

1.5 Paper

1.5.1 Paper handling

Model		HL-S7000DN
Paper Input	Paper tray 1	500 sheets
	Paper tray 2/3/4 (Optional)	500 sheets
	MP tray	For USA 100 sheets (20 lb), Except for USA 100 sheets (80 g/m ²)
Paper Output	Face-Down Output tray	For USA 500 sheets face down (20 lb), Except for USA 500 sheets face down (80 g/m ²)
	Face-Up Output tray	100 sheets face-up (straight paper path)
	Output tray (Optional)	500 sheets
Duplex		Yes

Specifications are subject to change without prior notice.

1.5.2 Media specifications

Model		HL-S7000DN
Media Types	Paper tray 1	Plain Paper, Thin Paper, Recycled Paper
	Paper tray 2/3/4 (Optional)	Plain Paper, Thin Paper, Recycled Paper
	MP tray	Plain Paper, Thin Paper, Thick Paper, Recycled Paper, Bond
	Duplex	Plain Paper, Thin Paper, Recycled Paper
Media weight	Paper tray 1	60 to 105 g/m ² (16 to 28 lb)
	Paper tray 2/3/4 (Optional)	60 to 105 g/m ² (16 to 28 lb)
	MP tray	60 to 163 g/m ² (16 to 43 lb)
	Duplex	60 to 105 g/m ² (16 to 28 lb)
Media size	Paper tray 1	A4, Letter, B5 (JIS), A5, A5 (Long Edge), Executive, Legal, Folio
	Paper tray 2/3/4 (Optional)	A4, Letter, B5 (JIS), A5, Executive, Legal, Folio
	MP tray	Width 76.2 - 216 mm, Length 127 - 355.6 mm (Width 3.0 - 8.5 inch, Length 5.0 - 14 inch)
	Duplex	A4, Letter, Legal, Folio

Specifications are subject to change without prior notice.

1.5.3 Type and size of paper

The printer loads paper from the installed paper tray or the manual feed slot.

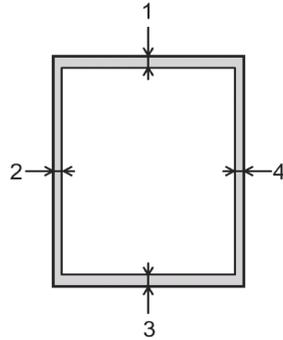
The names of the paper trays in the printer driver as follows:

The name for the paper trays	The name for the paper trays in the printer driver
Paper tray 1 (T1)	Tray 1
Paper tray 2 (T2)/3 (T3)/4 (T4)	Tray 2/Tray 3/Tray 4
Multi-Purpose tray	MP Tray
Duplex	DX

1.6 Printable Area

The figures below show maximum unprintable areas.

The unprintable areas may vary depending on the paper size or settings in the application you are using.



Usage	Document Size	Top (1)/Left (2)/Bottom (3)/Right (4)
Print	Letter/A4/Legal	4.23 mm (0.16 inch)

CHAPTER 2 ERROR INDICATION AND TROUBLESHOOTING

1. INTRODUCTION

Troubleshooting is the countermeasure procedures that the service personnel should follow if an error or malfunction occurs with the machine. It is impossible to anticipate all of the possible troubles which may occur in future and determine the troubleshooting procedures, so this chapter covers some sample troubles. However, those samples will help the service personnel pinpoint and repair other defective elements.

1.1 Precautions

Be sure to observe and follow all the precautions to prevent any secondary problems from happening during troubleshooting.

- (1) Always turn off the power and unplug the power cable before removing any covers or PCBs, adjusting the machine and so on. If you need to take voltage measurements with the power switched on, take the greatest of care not to receive an electric shock.
- (2) When connecting or disconnecting cable connectors, make sure that you hold the connector body and not the cables.
- (3) Static electricity charged in your body may damage electronic parts. Before handling the PCBs, touch a metal portion of the machine to discharge static electricity charged in your body. When transporting PCBs, be sure to wrap them in conductive sheets. When replacing the PCBs, put on a grounding wrist band and perform the job on a conductive mat.
Also take care not to touch the conductor sections on the flat cables.
- (4) Follow the warning by all means.
- (5) Verify again that the repaired portion works properly.
- (6) After disconnecting flat cables, check that each cable is not damaged at its end or shortcircuited. When connecting flat cables, do not insert them at an angle. After insertion, check that the cables are not at an angle.
- (7) When ink gets on to the skin or gets into the eyes or mouth, perform the following treatment.
 - Immediately wash away the ink on the skin with water or soap.
 - When ink gets into the eyes, immediately wash away with water. If it is untreated, red eye or light inflammation may occur. When error is found, consult with doctor immediately.
 - When ink gets into mouth, immediately spit it out and consult with a doctor immediately.
- (8) After an assembly, recommend the operation of "dielectric strength voltage check" and "continuity check".
- (9) Platen head will start head capping operation 5 seconds after completion of printing. It will require 5 to 10 seconds for capping operation to finish. If the power-supply cord of the machine is disconnected before the head capping operation is completed, the quality of the print head decreases. When disconnecting the power-supply cord, wait until the mechanical operation is finished.
- (10) When returning the machine to a user, make sure that capping is done.

1.2 Initial Check

Check the following items before attempting to repair the machine.

■ Operating environment

- (1) Put your machine on a level (inclination of 3 degrees or less), stable surface such as a desk that is free of vibration and shocks.
- (2) Use the machine in a well-ventilated room; use the machine within the following ranges of temperature and humidity: temperature between 10 °C and 32.5 °C (50 °F to 90.5 °F), and the relative humidity is maintained between 20 % and 80 %.
- (3) Ensure the machine is not exposed to direct sunlight, excessive heat, moisture, or dust.
- (4) Keep the machine horizontal when you carry it.

■ Power supply

- (1) The AC input power supply described on the rating plate of the machine should be within ± 10 % of the rated voltage.
- (2) The AC input power supply is within the regulated value.
- (3) The cables and harnesses are connected correctly.
- (4) The fuses are not blown.

■ Paper

- (1) A recommended type of paper is being used. (Refer to "1.5.2 Media specifications" in [Chapter 1](#).)
- (2) The paper is not damp.
- (3) The paper is not short-grained paper or acid paper.

■ Consumable parts

- (1) The ink cartridge is installed correctly.

■ Others

- (1) Condensation

When the machine is moved from a cold place into a warm room, condensation may occur inside the machine, causing problems.

- (2) Low temperature

The motor may not drive normally under the low temperature environment. This is due to there being too much load to drive each unit. In this case, increase the room temperature.

■ Cleaning

Use a soft dry lint-free cloth.

DO NOT use flammable substances, any type of spray or any organic solvent/liquids contains alcohol or ammonia to clean the inside or outside of the machine. Doing this may cause a fire or electrical shock.



2. OVERVIEW

2.1 Cross-section Drawing

■ Printer part

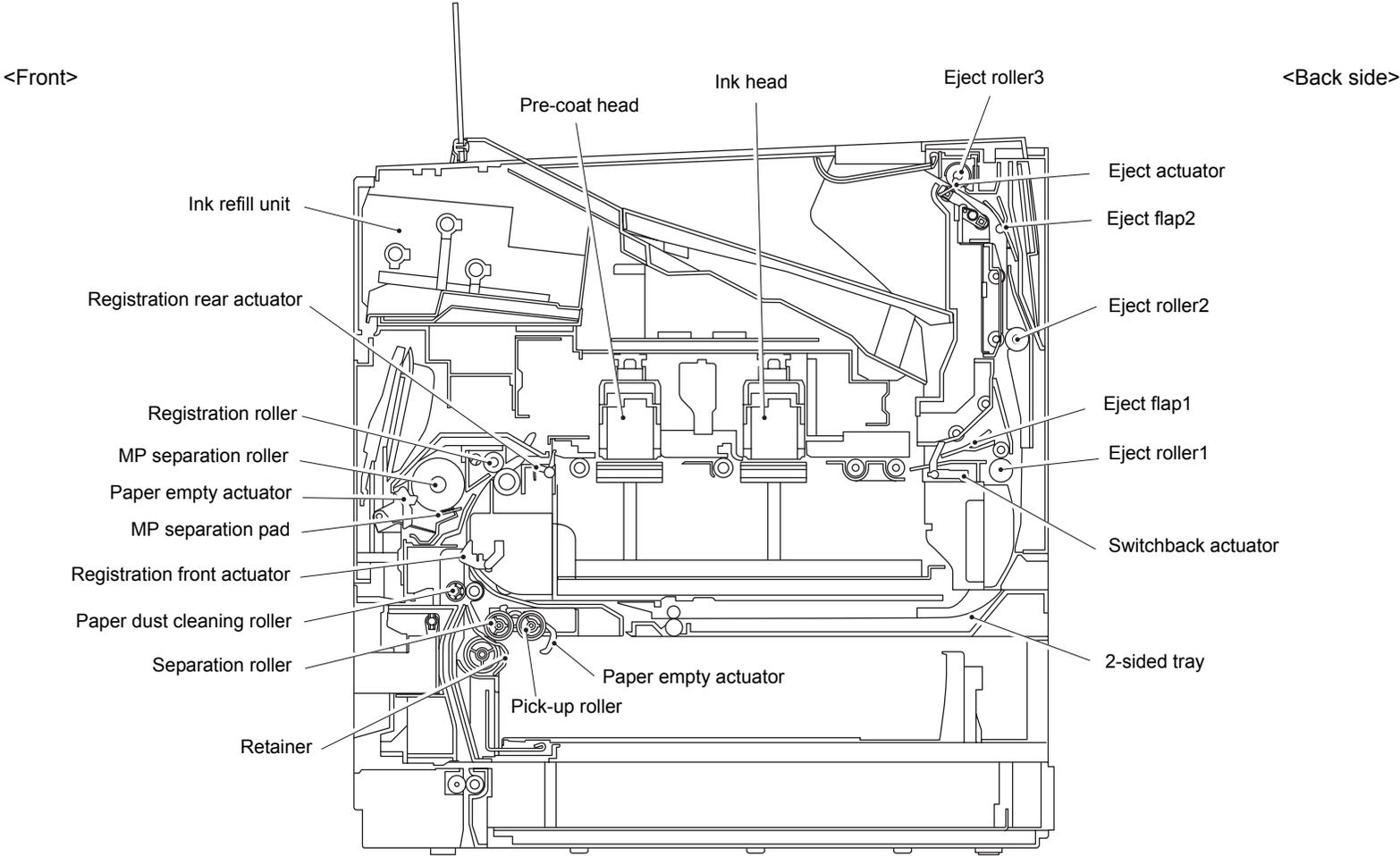


Fig. 2-1

■ Optional tray part

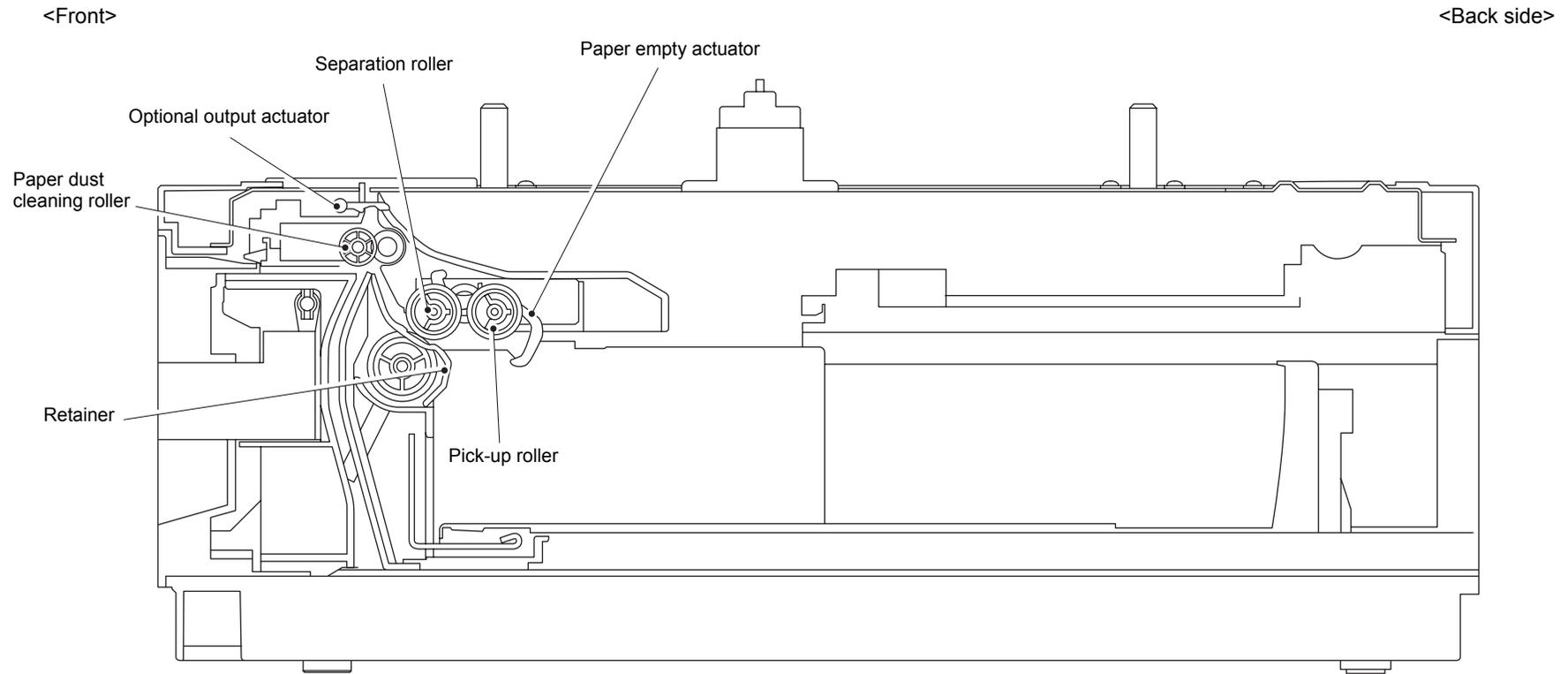


Fig. 2-2

■ Stacker part

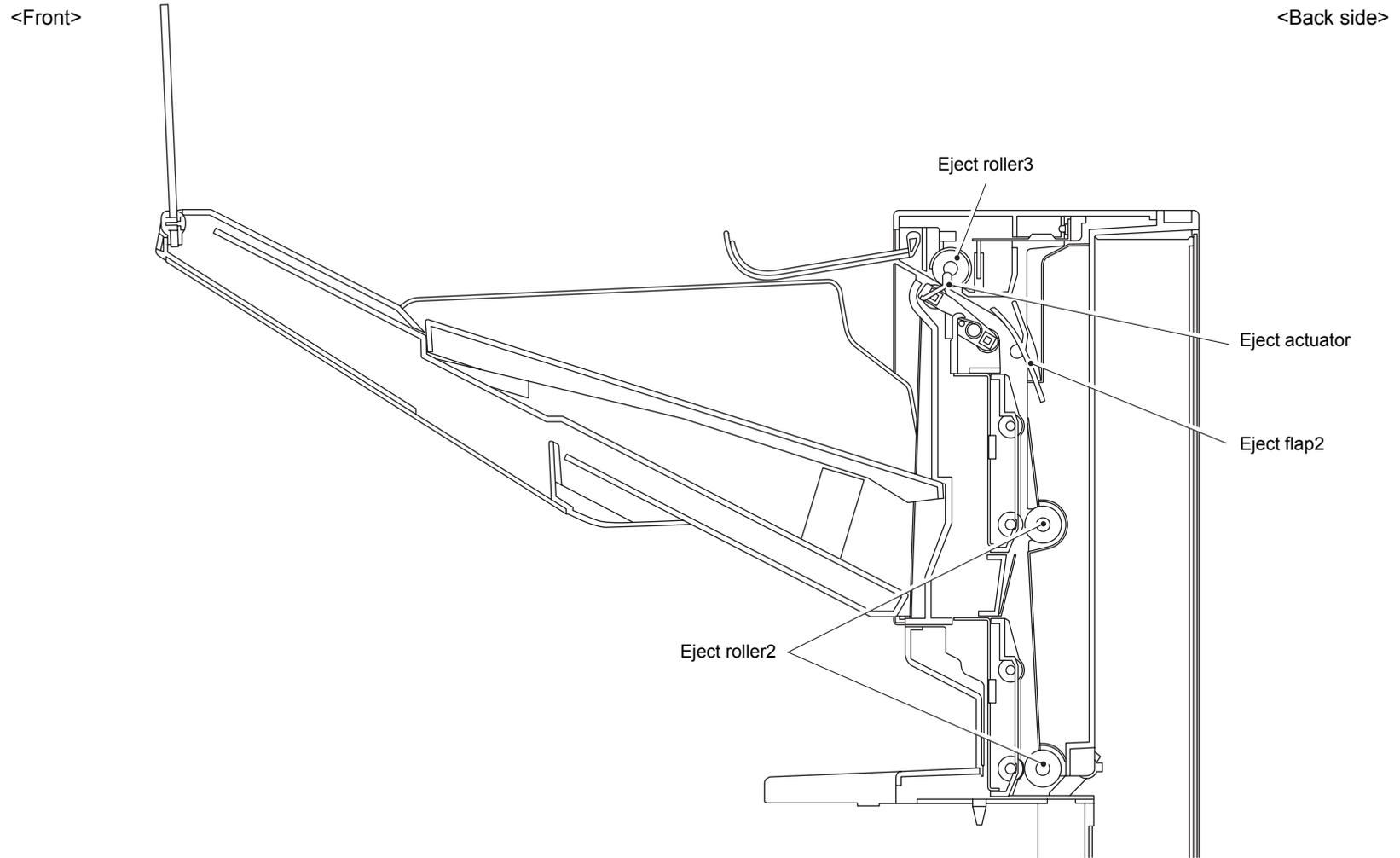


Fig. 2-3

2.2 Paper Feeding

<Front>

<Back side>

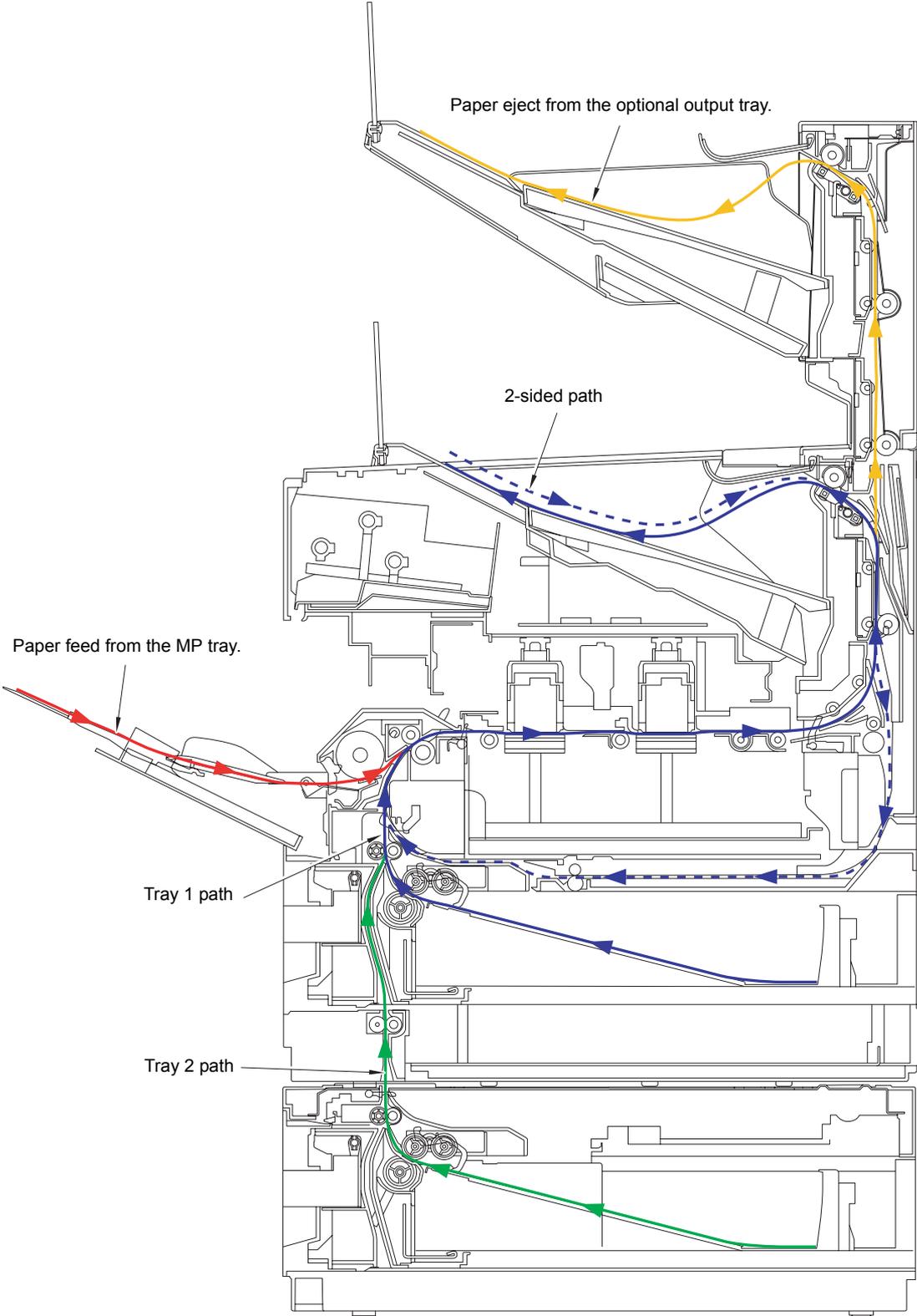


Fig. 2-4

2.3 Operation of Sensors/Rollers/Solenoids

Part name	Operation
Top cover sensor	Detect when the top cover is opened or closed.
Chute cover sensor	Detect when the chute cover is opened or closed.
Back cover sensor	Detect when the back cover is opened or closed.
Optional back cover sensor	Detect when the optional back cover is opened or closed.
Ink cartridge cover sensor	Detect when the Ink cartridge cover is opened or closed.
Cover lock sensor	Detect when the top cover is at locked or unlocked state.
Tray ID switches	Switch ID that is set on each tray.
Tray paper size sensors	Detect size of paper that is set on each tray.
Paper empty sensors	Detect with or without paper within the each tray.
Paper level sensors	When the remaining amount of paper within each tray becomes 10%, detect "paper low".
Plate up sensors	Detect when the plate-up plate of each tray is elevated to the specified position.
Pick-up rollers	Feed the paper from the each paper tray.
Retainers/Separation pads	Separate papers that were fed from each paper tray in a unit of one sheet.
Paper feed jam sensors	Detect whether paper fed from each tray normally passes the actuator position of each sensor. Along with other sensors, detect paper jam.
Registration front sensor	Detect the paper jam of front part.
Print starting actuator	Detect the front edge of paper and start printing. Detect paper jam.
Switchback sensor	Detect rear edge of the paper during 2-sided printing, control timing to pull the paper into the 2-sided tray. Along with other sensors, detect paper jam.
Paper eject sensor	Detect when paper is ejected from engine. Detect paper jam of rear part.
Optional output sensor	Detect whether paper is ejected from the optional output tray. Along with other sensors, detect paper jam.
Eject roller1/2	Feed the paper that was ejected from the engine to eject tray.
Eject roller3	Feed the paper that was ejected from the engine to eject tray. When 2-sided printing is performed, after papers are fed to some extent, reverse and feed the paper to 2-sided tray.
Stack sensor	Detect whether the amount of paper on the eject tray exceeds the limit.
Optional stack sensor	Detect whether the amount of paper on the optional output tray exceeds the limit.

Part name	Operation
2-sided jam sensor	Along with other sensors, detect paper jam.
2-sided paper feed sensor	Detect when the 2-sided tray is attached. Along with other sensors, detect paper jam.
2-sided paper feed roller	Feed the paper that passes through inside 2-sided tray to the registration roller.
MP paper empty sensor	Detect whether there are papers inside the MP tray or not.
MP separation roller/ MP separation pad	Separate papers that were set in the MP tray in a unit of one sheet.
Needle sensor 1/2	Detect when needle is inserted in the Ink cartridge.
Supply pump	Supply ink of ink cartridge, pre-coat ink, and water to the sub tank ASSY.
Water full sensor/ Full sensor (FK)/(FG)	Detect when ink, pre-coat ink, and water within the sub tank are full.
Water pump	Supply mist to the ink head.
Subtank leak sensor	Detect when Ink and pre-coat ink is leaked under the sub tank.
Waste ink box full sensor	Detect whether there is a waste ink leak at the bottom inside the waste ink box.
Waste ink box leak sensor	Detect when waste ink within the waste ink box is full.
Cap position sensor	Detect when the head cap moved to the capping position.
Platen cap position sensor	Detect when the platen moved to capping position.
Platen print position sensor	Detect when the platen moved to printing position.
Paper dust cleaning roller	Feed paper fed from each tray to the registration roller.
Intermediate roller	Feed paper fed from each tray to the paper dust cleaning roller.
Wipe position sensor (FK/FG)	Detect whether the wipe is moved to the home position.
Carriage position sensor	Detect whether the carriage is moved to the home position.
Drive switching position sensor	Detect whether each drive is moved to the iinkage position.
Drive switching home position sensor	Detect whether the drive switching unit is moved to the home position.
Waste ink box sensor	Detect whether the waste ink box is installed.
External tempareture/ humidity sensor	Measure the internal temperature and humidity of the machine.
Tray clutchs	Pick up paper.
MP solenoid	Pick up paper.
SWBK solenoid	Reverse the rotation of the exit roller to feed paper to the 2-sided tray.

Part name	Operation
2-sided clutch	Drive the 2-sided paper feed roller.
Option switch solenoid	Switch exit tray between the eject stopper tray and option output tray.
Bottom cover ink leak sensor (Main body side)	Detect ink leaks inside the machine.
Uncap position sensor	Detect whether the cap is moved to the uncapping position.
Subtank valve sensor	Detect the position of the valve that adjusts the amount of purge ink.
Platen drive switch sensor	Detect drive switching between glass stage and rib stage.
2-sided paper size sensor	Detect whether paper size is Letter/Legal or A4.

2.4 Block Diagram

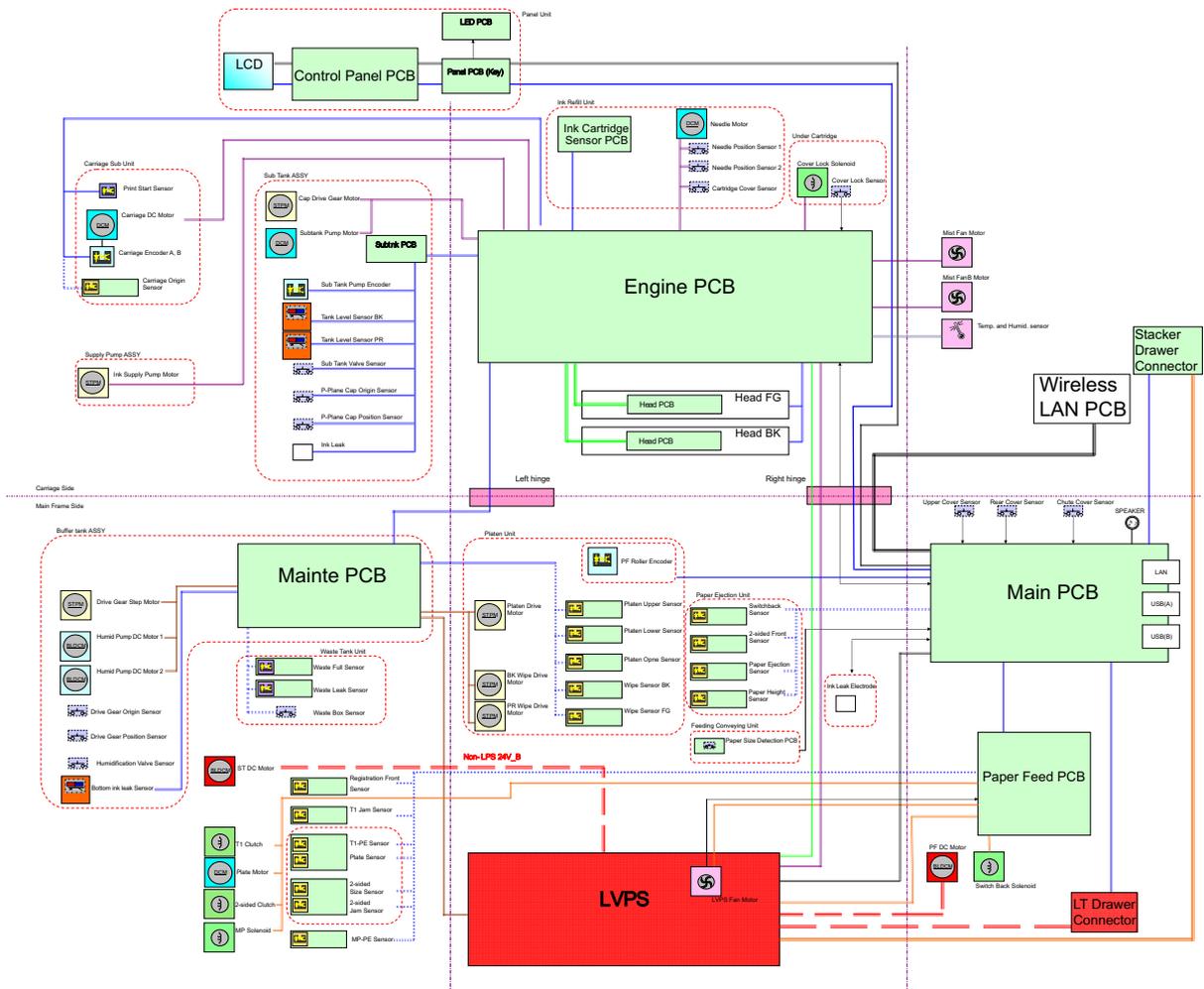
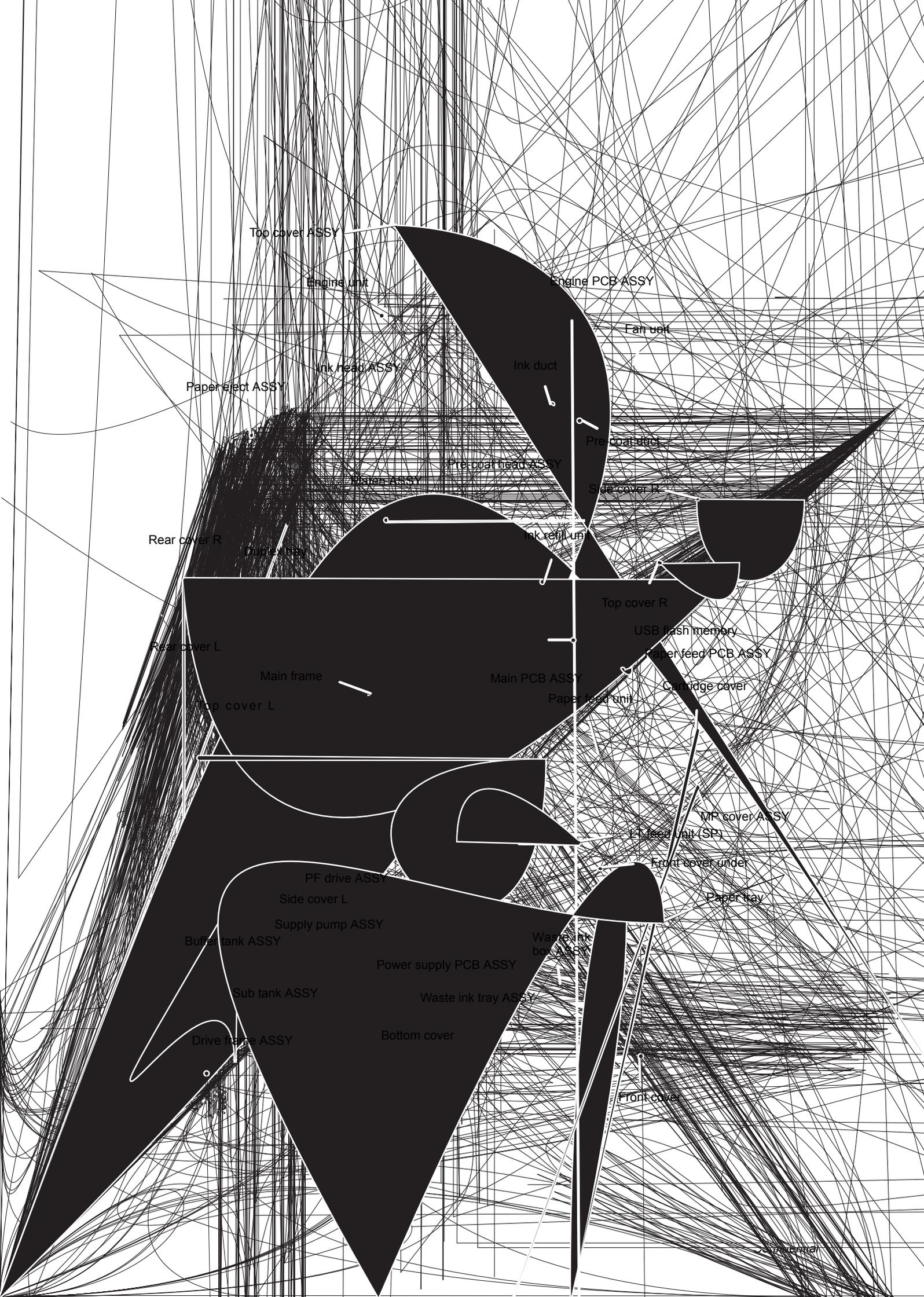


Fig. 2-5



Top cover ASSY

Engine unit

Engine PCB ASSY

Fan unit

Ink head ASSY

Ink duct

Paper eject ASSY

Pre-coat duct

Main ASSY

Pre-coat head ASSY

Side cover R

Rear cover R

Ink refill unit

Top cover R

Rear cover L

Main frame

Main PCB ASSY

USB flash memory

Paper feed PCB ASSY

Top cover L

Paper feed unit

Cartridge cover

PF drive ASSY

MP cover ASSY

Side cover L

PF head unit (SP)

Supply pump ASSY

Front cover under

Buffer tank ASSY

Waste ink box ASSY

Paper tray

Power supply PCB ASSY

Sub tank ASSY

Waste ink tray ASSY

Drive frame ASSY

Bottom cover

Front cover

3. ERROR INDICATIONS

3.1 Error Codes

The shaded errors do not occur by normal use, and are considered to occur due to noise around the installation site, fluctuation of power-supply voltage or software failure.

Error Codes	Problem	Refer to:	Error Codes	Problem	Refer to:
0B00	---		1700	When feeding paper to MP tray, the paper width sensor detected that the paper tray is open.	2-38
0C01	Time out access request for server due to such reason as wrong server address/network unconnected/server is not activated.	2-36	1800	---	
0C02	Time out access request for server due to such reason as wrong user name/wrong password/inconsistency in the date of the machine and server.	2-36	1900	---	
0C03	Time out access request for server due to such reason as wrong directory name/no write authority for directory/write lock on file.	2-36	1A00	---	
0C04	Time out access request for user due to such reason as machine watch (RTC) has not been set and time has not been obtained at SNTP.	2-36	1B00	---	
0D00	Unable to save data because there is no space in the storage data area of memory.	2-37	1C00	---	
0D01	Failed read/write data in the storage I/O.	2-37	1D00	---	
0E00	---		1E00	---	
1000	---		1F00	Detected when 4 or more optional tray was connected.	2-38
1100	---		2000	---	
1200	---		2001	Detected some sort of communication problem between main PCB and engine PCB.	2-38
1600	---		2002	Failed to communicate between main PCB and tray 2 relay PCB.	2-39
			2003	Failed to communicate between main PCB and tray 3 relay PCB.	2-39
			2004	Failed to communicate between main PCB and tray 4 relay PCB.	2-39
			2005	Failed to communicate between main PCB and optional output PCB.	2-39
			2006	---	
			2100	---	

Error Codes	Problem	Refer to:	Error Codes	Problem	Refer to:
2101	Detected operational error from pick-up motor of tray 1.	2-40	2403	Correction FPGA (Leo) failure on the engine PCB	2-43
2102	Detected operational error from pick-up motor of tray 2.	2-40	2404	Recording FPGA (Libra) failure on the main PCB	2-43
2103	Detected operational error from pick-up motor of tray 3.	2-40	2405	Engine FPGA (Gemini) failure on the engine PCB	2-44
2104	Detected operational error from pick-up motor of tray 4.	2-40	2408	Overcurrent protection function worked in power supply PCB.	2-44
2105	Detected operational error of paper feed motor.	2-41	2409	Due to malfunction of power supply PCB, power cannot be turned ON/OFF at the push of a button on the control panel.	2-44
2200	---		2500	---	
2201	Detected operational error of sub tank pump motor.	2-41	2501	Cap does not return to normal position at maintenance cap operation.	2-45
2202	Detected operational error of power fan.	2-41	2502	Cap home position sensor error.	2-45
2203	Detected operational error of carriage-up motor.	2-42	2503	Cap position sensor error.	2-46
2204	Detected operational error of pre-coat head humid motor.	2-42	2504	Detected operational error of cap drive motor.	2-46
2205	Detected operational error of ink head humid motor.	2-42	2600	---	
2206	---		2601	Unable to detect platen position.	2-46
2207	---		2602	Platen position sensor detected platen home position recovery error.	2-47
2300	---		2603	Platen upper sensor detected platen print position move error.	2-47
2301	Detected some sort of error in engine PCB.	2-43	2604	Platen cap position sensor detected platen cap position move error.	2-48
2302	Time out error occurred in engine PCB.	2-43	2605	Detected operational error of platen motor.	2-48
2400	---		2700	---	
2401	Detected error in EEPROM on the engine PCB.	2-43			
2402	Detected error in the flash ROM on the engine PCB.	2-43			

Error Codes	Problem	Refer to:	Error Codes	Problem	Refer to:
2701	Unable to detect carriage position.	2-49	2A01	Pre-coat ink sensor suddenly detected time for ink replacement although the sensor did not detect that it almost reached time for ink replacement.	2-54
2702	Carriage home position sensor is unable to detect carriage home position return error.	2-49	2A02	Ink full sensor suddenly detected time for ink replacement although the sensor did not detect that it almost reached time for ink replacement.	2-54
2703	Detected operational error of carriage motor.	2-49	2A03	Water full sensor suddenly detected time for ink replacement although the sensor did not detect that it almost reached time for ink replacement.	2-55
2800	---		2B00	---	
2801	Unable to detect pre-coat wiper position.	2-50	2B01	Drive switching home position sensor error or drive switching positions sensor error	2-55
2802	Pre-coat wiper sensor is unable to detect pre-coat wiper home position return error.	2-50	2B02	Detected operational error of drive switching motor.	2-56
2803	Detected operational error of pre-coat wiper motor.	2-51	2C00	---	
2804	---		2C01	Air vent valve sensor error.	2-56
2805	Ink wiper sensor is unable to detect home position return.	2-51	2C02	Detected operational error of buffer water pump motor.	2-57
2806	Detected operational error of ink wiper motor.	2-52	2D00	---	
2900	---		2D01	Head operation time out	2-57
2901	Sub tank valve sensor detected error of the sub tank valve position.	2-52	2E00	---	
2902	Sub tank valve sensor error.	2-52	2E01	Pre-coat head CPU connection error	2-58
2903	Detected operational error of sub tank valve motor.	2-53	2E02	Pre-coat head CPU authentication error	2-58
2904	Air vent valve sensor error.	2-53	2E03	Pre-coat head CPU unauthenticated error	2-58
2905	Detected operational error of air vent valve motor.	2-53			
2906	Software detected flashing error.	2-54			
2A00	---				

Error Codes	Problem	Refer to:	Error Codes	Problem	Refer to:
2E04	Detected non-regulated voltage value from the pre-coat head voltage.	2-58	3000	---	
2E05	Detected that pre-coat head flat cable is not inserted correctly.	2-58	3001	Lower cover leak sensor detected ink leakage from the lower cover.	2-60
2E06	Pre-coat head voltage drop is fast.	2-58	3002	Waste ink box leak sensor detected ink leakage from the under of the waste ink box.	2-60
2E07	Pre-coat head driver thermistor detected non-regulated temperature.	2-58	3003	Sub tank leak sensor detected ink leakage from the under of the sub tank.	2-60
2E08	Some sort of error occurred from pre-coat head thermistor 1.	2-58	3100	---	
2E0A	Some sort of error occurred from pre-coat head thermistor 3.	2-58	3102	Needle home position sensor detected that ink cartridge has not been installed correctly.	2-61
2F00	---		3200	---	
2F01	Ink head CPU connection error	2-59	3202	Needle insertion sensor detected that ink cartridge has not been installed correctly.	2-61
2F02	Ink head CPU authentication error	2-59	3300	---	
2F03	Ink head CPU unauthenticated error	2-59	3301	Detected error in carriage lock sensor.	2-61
2F04	Detected non-regulated voltage value from the ink head voltage.	2-59	3302	Failed to lock the top cover.	2-61
2F05	Detected that ink head flat cable is not inserted correctly.	2-59	3400	---	
2F06	Ink head voltage drop is fast.	2-59	3401	Machine IC chip initialization error	2-62
2F07	Ink head driver thermistor detected non-regulated temperature.	2-59	3402	Machine IC chip communication error	2-62
2F08	Some sort of error occurred from ink head thermistor 1.	2-59	3500	---	
2F0A	Some sort of error occurred from ink head thermistor 3.	2-59	3501	Either waste ink count is over the regulated value or waste ink full sensor is not at full state.	2-62
			3600	---	

Error Codes	Problem	Refer to:	Error Codes	Problem	Refer to:
3601	Paper eject switching sensor detected that either optional output tray is selected or paper eject switching is not set to optional output tray.	2-63	4500	---	
			4600	---	
			4700	---	
			4800	---	
3700	---		4900	---	
3701	Serial communication error occurred between RIP CPU when PC printing, internal printing, and storage printing etc. was performed.	2-63	4A00	---	
			4B00	---	
			4C00	---	
			4D00	---	
3702	Serial communication error occurred between RIP CPU when RIP CPU is activated.	2-63	4E00	---	
			4F00	---	
			5000	---	
3703	Serial communication between RIP CPU occurred after watch dog timer time out occurred.	2-63	5001	The use number of sheets for paper feeding kit MP reached the end of life. (Printing does not stop.)	2-65
3801	Error occurred in the external temperature sensor.	2-64	5002	The use number of sheets for paper feeding kit 1 reached the end of life. (Printing does not stop.)	2-65
3802	Error occurred in the external humidity sensor.	2-64	5003	The use number of sheets for paper feeding kit 2 reached the end of life. (Printing does not stop.)	2-65
3900	---		5004	The use number of sheets for paper feeding kit 3 reached the end of life. (Printing does not stop.)	2-65
3A00	Communication error occurred between the engine and control on the main PCB.	2-64	5005	The use number of sheets for paper feeding kit 4 reached the end of life. (Printing does not stop.)	2-65
3B00	Error occurred when main PCB ASSY is accessing to DRAM.	2-64	5100	Waste dot count detected that waste ink tank almost reached the time for replacement.	2-66
3C00	---		5200	Waste ink full sensor detected that waste ink tank reached time for replacement.	2-66
3D00	---				
3E00	---				
3F00	---				
4000	---				
4200	---				
4300	---				
4400	---				

Error Codes	Problem	Refer to:	Error Codes	Problem	Refer to:
5301	Pre-coat ink count detected that almost reached the time for replacement.	2-67	5902	Data unlikely to be available with genuine cartridge was received.	2-70
5302	Ink count detected that almost reached the time for replacement.	2-67	5A00	---	
5400	---		5A02	The number of times of ink cartridge insert/remove exceeded its use limit.	2-70
5401	Pre-coat ink full sensor detected time for replacement of the pre-coat ink.	2-67	5B00	Registration front sensor detected that the size of printing paper is smaller than the specified size.	2-70
5402	Ink full sensor detected time for replacement of the ink.	2-67	5B02	Communication error was detected with ink cartridge IC while printing.	2-71
5406	Water full sensor detected time for replacement of the water.	2-68	5C00	Registration front sensor detected that the paper size for printing by specifying DDL (DL Long Edge), is smaller than the specified size.	2-71
5500	---		5C02	During printing, writing into ink cartridge IC failed.	2-71
5502	Communication error with ink cartridge IC.	2-68	5D00	---	
5600	---		5E00	---	
5602	Accumulated hour of use of ink cartridge exceeded usage regulation time.	2-68	5F00	---	
5700	---		6000	---	
5702	Error occurred when ink cartridge is writing to IC.	2-69	6001	Top cover sensor detected that it is at open state.	2-72
5800	---		6002	Cartridge cover sensor detected that it is at open state.	2-72
5801	Pre-coat needle sensor detected error in needle insertion to the cartridge pre-coat section.	2-69	6003	Chute cover sensor detected that it is at open state.	2-73
5802	Ink needle sensor detected error in needle insertion to the ink cartridge section.	2-69	6100	---	
5900	---		6200	---	
			6300	---	
			6400	---	

Error Codes	Problem	Refer to:	Error Codes	Problem	Refer to:
6500	---		7002	Paper jam. (After registration front sensor detected paper feeding while paper feed sensor is at no paper state, even if a certain amount of paper is fed, print start sensor does not change to paper feeding state.)	2-75
6600	---				
6602	Due to communication error with cartridge IC, the machine judged cartridge is not installed.	2-73			
6700	---				
6701	Waste ink box sensor is unable to detect installation of waste ink box.	2-73	7003	Paper jam. (After paper feeding from print start sensor is detected, even if a certain amount of paper is fed, switchback sensor does not change to paper feeding state.)	2-76
6800	---		7004	Paper jam. (After print start sensor shifted to no paper state after the sensor detected paper feeding, switchback sensor does not change to paper feeding state.)	2-76
6801	Internal thermistor detected temperature at or above the given temperature.	2-74			
6802	Ink head thermistor detected temperature at or above the given temperature.	2-74	7100	---	
6900	---		7101	Paper jam. (With back cover closed, although a certain amount of paper is fed while switchback sensor is paper feeding state, print start sensor paper remains to be paper feeding state. (Paper eject sensor is turned OFF.))	2-77
6A00	---				
6B00	---				
6C00	---				
6D00	---		7102	Paper jam. (While back cover is closed, when switchback sensor is at paper feeding state, even if a certain amount of paper is fed, paper eject sensor remains at no paper state.)	2-77
6E00	---				
6F00	---				
7000	---				
7001	Paper jam. (Paper feed sensor is at paper feeding state, and after registration front sensor detected that paper is fed, even if a certain amount of papers is fed, print start sensor does not change to paper feeding state.)	2-75	7103	Paper jam. (While back cover is closed, after switchback sensor state shifted from paper feeding to no paper, even if a certain amount of paper is fed, paper eject sensor remained as at no paper state.)	2-77

Error Codes	Problem	Refer to:	Error Codes	Problem	Refer to:
7104	Paper jam. (While back cover is closed, after paper eject sensor shifted to paper feeding state, even if a certain amount of paper is fed, paper eject sensor remains at paper feeding state.)	2-78	7501	Paper jam. (When printing is started by tray 3, even if a certain amount of paper is fed, T3 paper feed sensor does not change to paper feeding state.)	2-82
7105	---		7502	Paper jam. (While tray 3 paper feed sensor is at paper feeding state, even if a certain amount of paper is fed, registration front sensor does not change to paper feeding state.)	2-83
7106	Paper jam. (While back cover is closed, after print start sensor shifted to no paper state, switchback sensor remains at paper feeding state.)	2-78	7600	---	
7200	---		7601	Paper jam. (When printing is started by tray 4, even if a certain amount of paper is fed, T4 paper feed sensor does not change to paper feeding state.)	2-83
7201	Paper jam. (When performing MP printing, while MP paper empty sensor is at with paper state, registration front sensor does not change to paper feeding state.)	2-79	7602	Paper jam. (While tray 4 paper feed sensor is at paper feeding state, even if a certain amount of paper is fed, registration front sensor does not change to paper feeding state.)	2-84
7300	---		7701	---	
7301	Paper jam. (When printing is started by tray 1, even if a certain amount of paper is fed, paper feed sensor does not change to paper feeding state.)	2-80	7702	Paper jam. (After SWBK sensor shifted from paper feeding to no paper state, even if a certain amount of paper is fed, 2-sided jam sensor does not change to no paper state.)	2-84
7302	Paper jam. (While paper feed sensor is at paper feeding state, even if a certain amount of paper is fed, registration front sensor does not change to paper feeding state.)	2-81	7703	---	
7400	---		7704	Paper jam. (After 2-sided jam sensor is shifted from paper feeding status to paper-less status, although a certain amount of paper is fed, paper feed sensor does not turn to the paper feeding state.)	2-85
7401	Paper jam. (When printing is started by tray 2, even if a certain amount of paper is fed, T2 paper feed sensor does not change to paper feeding state.)	2-81	7705	Paper jam. (While 2-sided jam sensor is at paper feeding state, even if a certain amount of paper is fed, paper feed sensor does not change to no paper state.)	2-85
7402	Paper jam. (While tray 2 paper feed sensor is at paper feeding state, even if a certain amount of paper is fed, registration front sensor does not change to paper feeding state.)	2-82	7800	---	

Error Codes	Problem	Refer to:	Error Codes	Problem	Refer to:			
7801	Paper jam. (After switchback sensor is at paper feeding state, even if a certain amount of paper is fed, optional output sensor does not change to paper feeding state.)	2-86	8505	When paper feeding is specified from tray 1 or the tray, which is lower than the tray 1, it was detected that the tray 1 was opened while printing.	2-89			
7802	Paper jam. (While optional output sensor is at paper feeding state, even if a certain amount of paper is fed, optional output sensor does not change to no paper state.)	2-86	8506	When paper feeding is specified from tray 2 or the tray, which is lower than the tray 2, it was detected that the tray 2 was opened while printing.	2-89			
7A00	---		8507	When paper feeding is specified from tray 3 or tray 4, it was detected that tray 3 was opened while printing.	2-90			
7B00	---							
7C00	---							
7D00	---							
7E00	---							
7F00	---							
8000	---							
8100	---		8601	Although paper feeding from tray ID 1 is specified, tray ID 1 is not set to any of the trays.	2-91			
8200	---							
8300	---							
8400	---		8602	Although paper feeding from tray ID 2 is specified, tray ID 2 is not set to any of the trays.	2-91			
8501	When paper is fed from tray 1 or another tray located below tray 1, paper width sensor detected that tray 1 is open.	2-87						
8502	When paper is fed from tray 2 or another tray located below tray 2, paper width sensor detected that tray 2 is open.	2-87						
8503	When paper is fed from tray 3 or tray 4, paper width sensor detected that tray 3 is open.	2-88	8603	Although paper feeding from tray ID 3 is specified, tray ID 3 is not set to any of the trays.	2-91			
8504	When paper is fed from tray 4, it was detected that tray 4 is open.	2-88				8604	Although paper feeding from tray ID 4 is specified, tray ID 4 is not set to any of the trays..	2-91
			8701	When auto is specified to eject tray, it was detected that stack sensor of all eject trays became full state.	2-92			
			8702	When paper eject tray is specified, the stack sensor of paper eject tray detected full state.	2-92			

Error Codes	Problem	Refer to:	Error Codes	Problem	Refer to:
8703	When optional output tray is specified, the stack sensor of optional output tray detected full state.	2-92	9005	When receiving print command from tray 4, the tray 4 paper size setting (Function setting) and paper size of the data designated for printing are not identical.	2-94
8800	---				
8900	When 2-sided printing is performed, registration front sensor detected that the paper size is smaller than Letter or the length exceeds Legal.	2-93	9102	When receiving print command from tray 1, the paper size of the data designated for printing is larger than the paper size detected at tray 1 width sensor.	2-95
8D00	---		9103	When receiving print command from tray 2, the paper size of the data designated for printing is larger than the paper size detected at tray 2 width sensor.	2-95
8E00	---				
8F00	---				
8F01	---				
8F02	---				
8F03	---				
9001	When receiving print command from MP tray, the MP tray paper size setting (Function setting) and paper size of the data designated for printing are not identical.	2-94	9104	When receiving print command from tray 3, the paper size of the data designated for printing is larger than the paper size detected at tray 3 width sensor.	2-95
9002	When receiving print command from tray 1, the tray 1 paper size setting (Function setting) and paper size of the data designated for printing are not identical.	2-94	9105	When receiving print command from tray 4, the paper size of the data designated for printing is larger than the paper size detected at tray 4 width sensor.	2-95
9003	When receiving print command from tray 2, the tray 2 paper size setting (Function setting) and paper size of the data designated for printing are not identical.	2-94	9200	When receiving print command from MP tray with thick paper setting, back cover sensor detected that the cover is close state.	2-96
9004	When receiving print command from tray 3, the tray 3 paper size setting (Function setting) and paper size of the data designated for printing are not identical.	2-94	9301	When receiving print command from MP tray, MP paper empty sensor detected no paper state.	2-97
			9302	When receiving print command from tray 1, T1 paper empty sensor detected no paper state.	2-97
			9303	When receiving print command from tray 2, T2 paper empty sensor detected no paper state.	2-97

Error Codes	Problem	Refer to:	Error Codes	Problem	Refer to:
9304	When receiving print command from tray 3, T3 paper empty sensor detected no paper state.	2-97	9504	When printing on paper fed from tray 3, paper size sensor detected that the size of paper set on the tray was smaller than the one specified by the printer driver.	2-99
9305	When receiving print command from tray 4, T4 paper empty sensor detected no paper state.	2-97	9505	When printing on paper fed from tray 4, paper size sensor detected that the size of paper set on the tray was smaller than the one specified by the printer driver.	2-99
9306	When receiving print command by auto, all paper empty sensors detected no paper state.	2-98	9701	During 2-sided printing, paper size, which does not support 2-sided printing, was set by the driver.	2-100
9401	The counter of tray 1 paper level sensor indicates 10% or less.	2-98	9702	When receiving print command from tray 1, driver instructed non-support size.	2-100
9402	The counter of tray 2 paper level sensor indicates 10% or less.	2-98	9703	When receiving print command from tray 2, driver instructed non-support size.	2-100
9403	The counter of tray 3 paper level sensor indicates 10% or less.	2-98	9704	When receiving print command from tray 3, driver instructed non-support size.	2-100
9404	The counter of tray 4 paper level sensor indicates 10% or less.	2-98	9705	When receiving print command from tray 4, driver instructed non-support size.	2-100
9501	When printing on paper fed from MP tray, paper size sensor detected that the size of paper set on the tray was smaller than the one specified by the printer driver.	2-99	9801	During 2-sided printing, 2-sided size sensor detected that there is no paper on the 2-sided tray.	2-101
9502	When printing on paper fed from tray 1, paper size sensor detected that the size of paper set on the tray was smaller than the one specified by the printer driver.	2-99	9802	During 2-sided printing, the paper size switching lever of 2-sided tray and paper size from the driver are not identical.	2-101
9503	When printing on paper fed from tray 2, paper size sensor detected that the size of paper set on the tray was smaller than the one specified by the printer driver.	2-99	9803	When starting 2-sided printing, back cover detected that the cover is open state.	2-102

Error Codes	Problem	Refer to:	Error Codes	Problem	Refer to:
9804	During 2-sided printing, back cover sensor detected that the cover is open state.	2-102	9F00	---	
			9F01	---	
			A000	---	
9901	When printing has started with setting for ejecting paper to optional output tray, back cover sensor of optional output tray detected that the cover is open state.	2-102	A200	---	
			A300	---	
			A400	---	
			A500	---	
9902	When printing with the setting for ejecting paper to optional output tray, back cover sensor of the optional output tray detected that the cover is open state.	2-103	A600	---	
			A700	---	
			A800	---	
			A900	---	
9A00	When paper feed is fixed to MP tray, MP paper empty sensor detected paper-less state.	2-103	AA00	---	
			AB00	---	
			AC00	---	
9B00	---		AD00	---	
9C00	---		AE00	---	
9C01	Ink full sensor detected that there is no ink inside during head cleaning.	2-103	AF00	---	
			B000	---	
			B100	---	
9C02	During head cleaning, waster ink box sensor detected that waste ink box was removed.	2-104	B200	---	
			B300	---	
			B400	---	
9C03	During head cleaning, waste ink box sensor detected that waste ink box became full.	2-104	B500	---	
			B600	---	
			B700	---	
9C06	During head cleaning, it was detected that some sort of error occurred.	2-104	B800	---	
			B900	---	
			BA00	---	
9C07	During head cleaning, an error caused by an operator was detected.	2-104	BB00	---	
			BC00	---	
			BD00	---	
9D00	---		BE00	---	
9E00	---		BF00	---	

Error Codes	Problem	Refer to:	Error Codes	Problem	Refer to:
C000	---		D200	---	
C100	---		D300	---	
C200	---		D400	---	
C300	---		D500	---	
C401	Within the specified time, plate sensor of the tray 1 was unable to detect completion of lift-up.	2-105	D600	---	
			D700	---	
			D800	---	
C402	Within the specified time, plate sensor of the tray 2 was unable to detect completion of lift-up.	2-105	D900	---	
			DA00	---	
			DB00	---	
C403	Within the specified time, plate sensor of the tray 3 was unable to detect completion of lift-up.	2-105	DC00	---	
			DD00	---	
			DE00	---	
C404	Within the specified time, plate sensor of the tray 4 was unable to detect completion of lift-up.	2-105	DF00	---	
			E000	An error occurred in the ROM checksum.	2-106
C500	---		E100	Error occurred in the main PCB program.	2-106
C600	---				
C700	Memory is insufficient to deploy print data.	2-106	E200	---	
			E300	---	
C800	---		E400	---	
C900	---		E600	Error occurred in E2PROM on the main PCB.	2-107
CA00	The overcurrent protection circuit worked when an off-specification USB device was inserted into the USB host terminal.	2-106	E700	---	
			E800	---	
			EA00	---	
CB00	---		EB00	---	
CC00	---		EC00	---	
CD00	---		ED00	Communication with the wireless LAN module and main PCB cannot be established upon startup of the power supply.	2-107
CE00	---				
CF00	---				
D000	---				
D100	---				

Error Codes	Problem	Refer to:	Error Codes	Problem	Refer to:
EE00	After Wireless LAN module and main PCB connection was established at power ON, communication problem was detected.	2-107	FB0E	---	
			FB0F	---	
			FC00	---	
			FC01	---	
EF00	---		FC02	---	
F000	---		FC03	---	
F100	---		FC04	---	
F200	---		FC05	---	
F300	---		FD00	---	
F400	---		FE00	---	
F500	---		FF00	---	
F600	---				
F800	---				
F900	During function code 74, power is turned OFF.	2-107			
FA00	---				
FA01	---				
FA02	---				
FA03	---				
FB00	---				
FB01	---				
FB02	---				
FB03	---				
FB04	---				
FB05	---				
FB06	---				
FB07	---				
FB08	---				
FB09	---				
FB0A	---				
FB0B	---				
FB0C	---				
FB0D	---				

3.2 Error message

The error messages displayed on the LCD of the machine and their description are shown in the table below.

Error message	Problem	Error codes	Refer to:
Access Denied Function Locked	Failure to authenticate print restriction ID when PC print is performed	---	4.4.1
BackCover closed Open the Back Cover.	When receiving print command from MP tray with thick paper setting, back cover sensor detected that the cover is close state.	9200	2-96
Cartridge Alert Ink Cartridge expired.To preserve print quality install new cartridge.Open and close cover to clear alert.	Accumulated hour of use of ink cartridge exceeded usage regulation time.	5602	2-68
Cartridge Alert Non-Brother cartridge detected.Genuine Brother cartridge recommended. Open and close cover to clear alert.	Data unlikely to be available with genuine cartridge was received. (Printing is not prohibited.)	5902	2-70
Cartridge Alert Recommend using new cartridge. Cartridge may leak if repeatedly installed.	The number of times of ink cartridge insert/remove exceeded its use limit.	5A02	2-70
Cartridge Error Reinstall the Ink Cartridge. If the error reappears refer to the User's Guide for service options.	When ink cartridge is inserted, communication error with the ink cartridge IC was detected.	5502 5702 5B02 5C02	2-68 2-69 2-71
Cartridge Error Turn the machine OFF and then back ON. If the error reappears, Call for Service.	Pre-coat needle sensor detected error in needle insertion to the cartridge pre-coat section.	5801	2-69
	Ink needle sensor detected error in needle insertion to the ink cartridge section.	5802	2-69
Cooling Down Wait for a while.	Room air temperature detection thermistor or head temperature detection thermistor detected temperature increase over constant temperature.	6801 6802	2-74
Cover is Open Close the Top Cover using both hands.	Top cover sensor detected that it is at open state.	6001	2-72

Error message	Problem	Error codes	Refer to:
Cover is Open Close the Cartridge Cover.	Cartridge cover sensor detected that it is at open state.	6002	2-72
Cover is Open Close the Inner Back Cover.	Chute cover sensor detected that it is at open state.	6003	2-73
Cover is Open Close the Optional Output Tray Cover.	When ejecting the paper to the optional output tray, the back cover of the optional output tray is open.	9901 9902	2-102 2-103
Duplex Disabled Close the Back Cover of the machine.	During 2-sided printing, it was detected that the back cover is open state.	9803 9804	2-102
DX Lever Error Set the Duplex Lever to the correct position according to paper size used.	During 2-sided printing, the paper size switching lever of 2-sided tray and paper size from the driver are not identical.	9802	2-101
Ignore Data Press Cancel	Undecodable PS data is received.	---	4.4.1
Ink Low The cartridge is nearing the end of it's life. Have a new cartridge available to avoid printing interruptions.	Ink cartridge almost reaches time for replacement.	5301 5302	2-67
Insufficient Ink Ink level is too low to print. Install anew Brother Genuine ink cartridge.	Ink cartridge reached time for replacement.	5401 5402	2-67
Jam A Tray 1 Remove the jammed paper from Tray 1.	After paper feed from tray 1, the registration front sensor does not turn to the paper feeding state.	7301 7302	2-80 2-81
Jam A Tray 2 Remove the jammed paper from Tray 2.	After paper feed from tray 2, the registration front sensor does not turn to the paper feeding state.	7401 7402	2-81 2-82
Jam A Tray 3 Remove the jammed paper from Tray 3.	After paper feed from tray 3, the registration front sensor does not turn to the paper feeding state.	7501 7502	2-82 2-83
Jam A Tray 4 Remove the jammed paper from Tray 4.	After paper feed from tray 4, the registration front sensor does not turn to the paper feeding state.	7601 7602	2-83 2-84
Jam B Inside Open the Top Cover and MP tray. Then Release the green levers. Follow step B to remove jammed paper.	After registration front sensor detected paper feeding while paper feed sensor is at no paper state, even if a certain amount of paper is fed, print start sensor does not change to paper feeding state.	7001 7002	2-75

Error message	Problem	Error codes	Refer to:
Jam C Inside Open the Top Cover and release the green levers. Follow step C to remove jammed paper. (then Press Go)	After the print start sensor was at the paper feeding state, switchback sensor does not turn to paper feeding state.	7003 7004	2-76
Jam D Duplex Remove the Duplex Tray from the back of the machine and check for jammed paper.	After printing one-side, even after a certain period of time has passed, the paper feed sensor does not turn to the paper feeding state.	7702 7704 7705	2-84 2-85
Jam E Rear Open the Back Cover and Paper Chute and remove jammed paper from the back of the machine.	While the back over is close state, after the print start sensor was shifted to paper-less state, the switchback sensor remains at the paper feeding state.	7102 7103 7104 7106	2-77 2-78
Jam F OP Tray Open the Back Cover of optional Output Tray and remove jammed paper from the back of the machine.	When ejecting paper from optional output tray, after the switchback sensor was at paper feeding state, the optional output sensor does not turn to the paper feeding state.	7801 7802	2-86
Jam MP Tray Remove the jammed paper from the Multi Purpose Tray and press Go.	When performing MP printing, while MP paper empty sensor is at with paper state, registration front sensor does not change to paper feeding state.	7201	2-79
Limit Exceeded Function Locked	During printing, it reached the maximum number of print pages.	---	4.4.1
Log Access Error. Server Timeout, contact your administrator.	Time out access request for server due to such reason as wrong server address/network unconnected/server is not activated.	0C01	2-36
Log Access Error. Authentication Error, contact your administrator.	Time out access request for server due to such reason as wrong user name/wrong password/inconsistency in the date of the machine and server.	0C02	2-36
Log Access Error. File Access Error, contact your administrator.	Time out access request for server due to such reason as wring directory name/no write authority for directory/write lock on file.	0C03	2-36
Log Access Error. Wrong Date&Time, contact your administrator.	Time out access request for user due to such reason as machine watch (RTC) has not been set and time has not been obtained at SNTP.	0C04	2-36

Error message	Problem	Error codes	Refer to:
Low Temperature Increase room temperature to allow the machine to operate.	The machine detected that the room temperature was low.	---	4.8.2
No Cartridge Reinstall Cartridge. If not recover, try to reinstall genuin cart. The problem persists, refer to User's Guide.	Due to communication error with cartridge IC, the machine judged cartridge is not installed.	6602	2-73
No DX Tray Install the duplex tray correctly.	During 2-sided printing, 2-sided size sensor detected that there is no paper on the 2-sided tray.	9801	2-101
No HUB Support	USB device embedded with USB hub was connected.	---	4.8.3
No Paper Load #S paper in Multi Purpose Tray.	When receiving print command from MP tray, MP paper empty sensor detected no paper state.	9301	2-97
No Paper Load #S paper in Tray1.	When receiving print command from tray 1, T1 paper empty sensor detected no paper state.	9302	2-97
No Paper Load #S paper in Tray2.	When receiving print command from tray 2, T2 paper empty sensor detected no paper state.	9303	2-97
No Paper Load #S paper in Tray3.	When receiving print command from tray 3, T3 paper empty sensor detected no paper state.	9304	2-97
No Paper Load #S paper in Tray4.	When receiving print command from tray 4, T4 paper empty sensor detected no paper state.	9305	2-97
No Paper Load #S paper in #T.	When receiving print command by auto, all paper empty sensors detected no paper state.	9306	2-98
No Tray The paper tray cannot be detected, re-install Tray1.	Prior to warming up, correction, and printing, the paper width sensor detected that tray 1 is open.	1700	2-38
No Tray The paper tray cannot be detected, re-install Tray1.	When paper is fed from tray 1 or another tray located below tray 1, paper width sensor detected that tray 1 is open.	8501	2-87
No Tray The paper tray cannot be detected, re-install Tray2.	When paper is fed from tray 2 or another tray located below tray 2, paper width sensor detected that tray 2 is open.	8502	2-87

Error message	Problem	Error codes	Refer to:
No Tray The paper tray cannot be detected, re-install Tray3.	When paper is fed from tray 3 or tray 4, paper width sensor detected that tray 3 is open.	8503	2-88
No Tray The paper tray cannot be detected, re-install Tray 4.	When paper is fed from tray 4, it was detected that tray 4 is open.	8504	2-88
No Tray The paper tray cannot be detected, re-install Tray1.	When paper feeding is specified from tray 1 or the tray, which is lower than the tray 1, it was detected that the tray 1 was opened while printing.	8505	2-89
No Tray The paper tray cannot be detected, re-install Tray 2.	When paper feeding is specified from tray 2 or the tray, which is lower than the tray 2, it was detected that the tray 2 was opened while printing.	8506	2-89
No Tray The paper tray cannot be detected, re-install Tray 3.	When paper feeding is specified from tray 3 or tray 4, it was detected that tray 3 was opened while printing.	8507	2-90
No Tray The paper tray cannot be detected, re-install Tray 4.	When paper feeding is specified from tray 4, it was detected that tray 4 was opened while printing.	8508	2-90
No Tray ID 1 The Paper Tray ID 1 Not Set. Check the Paper Tray ID setting on printer driver and tray. Refer to Users Guide.	Although paper feeding from tray ID 1 is specified, tray ID 1 is not set to any of the trays.	8601	2-91
No Tray ID 2 The Paper Tray ID 2 Not Set. Check the Paper Tray ID setting on printer driver and tray. Refer to Users Guide.	Although paper feeding from tray ID 2 is specified, tray ID 2 is not set to any of the trays.	8602	2-91
No Tray ID 3 The Paper Tray ID 3 Not Set. Check the Paper Tray ID setting on printer driver and tray. Refer to Users Guide.	Although paper feeding from tray ID 3 is specified, tray ID 3 is not set to any of the trays.	8603	2-91
No Tray ID 4 The Paper Tray ID 4 Not Set. Check the Paper Tray ID setting on printer driver and tray. Refer to Users Guide.	Although paper feeding from tray ID 4 is specified, tray ID 4 is not set to any of the trays.	8604	2-91

Error message	Problem	Error codes	Refer to:
No Waste Tank No Waste Tank detected. Call for Service to have the Waste Tank checked for proper installation or replacement.	Waste ink box sensor is unable to detect installation of waste ink box.	6701	2-73
Out of Memory Press Cancel	Memory is insufficient to deploy print data.	C700	2-106
Output Tray full Remove the paper from the Output Tray.	When auto is specified to eject tray, it was detected that stack sensor of all eject trays became full state.	8701	2-92
Output Tray full Remove the paper from the Standard Output Tray.	When paper eject tray is specified, the stack sensor of paper eject tray detected full state.	8702	2-92
Output Tray full Remove the paper from the Optional Output Tray.	When optional output tray is specified, the stack sensor of optional output tray detected full state.	8703	2-92
Paper Low Tray1 Refill paper in Tray 1.	The counter of tray 1 paper level sensor indicates 10% or less.	9401	2-98
Paper Low Tray2 Refill paper in Tray 2.	The counter of tray 2 paper level sensor indicates 10% or less.	9402	2-98
Paper Low Tray3 Refill paper in Tray 3.	The counter of tray 3 paper level sensor indicates 10% or less.	9403	2-98
Paper Low Tray4 Refill paper in Tray 4.	The counter of tray 4 paper level sensor indicates 10% or less.	9404	2-98
Replace Parts PF Kit MP	The use number of sheets for paper feeding kit MP reached the end of life. (Printing does not stop.)	5001	2-65
Replace Parts PF Kit 1	The use number of sheets for paper feeding kit 1 reached the end of life. (Printing does not stop.)	5002	2-65
Replace Parts PF Kit 2	The use number of sheets for paper feeding kit 2 reached the end of life. (Printing does not stop.)	5003	2-65
Replace Parts PF Kit 3	The use number of sheets for paper feeding kit 3 reached the end of life. (Printing does not stop.)	5004	2-65
Replace Parts PF Kit 4	The use number of sheets for paper feeding kit 4 reached the end of life. (Printing does not stop.)	5005	2-65
Short Paper Open the Back Cover and then press Go.	Registration front sensor detected that the size of printing paper is smaller than the specified size.	5B00	2-70

Error message	Problem	Error codes	Refer to:
Size Error Specify the correct paper size for Tray 1.	When receiving print command from tray 1, driver instructed non-support size.	9702	2-100
Size Error Specify the correct paper size for Tray 2.	When receiving print command from tray 2, driver instructed non-support size.	9703	2-100
Size Error Specify the correct paper size for Tray 3.	When receiving print command from tray 3, driver instructed non-support size.	9704	2-100
Size Error Specify the correct paper size for Tray 4.	When receiving print command from tray 4, driver instructed non-support size.	9705	2-100
Size Error DX Press Cancel. Specify the correct paper and load the same size paper as the Printer driver setting.	During 2-sided printing, paper size, which does not support 2-sided printing, was set by the driver.	9701	2-100
Size Error DX Specify the correct paper.	When 2-sided printing is performed, because the size of the fed paper is too small or large, it is unable to perform 2-sided feeding.	8900	2-93

Error message	Problem	Error codes	Refer to:
Size Mismatch Load #S paper in #T and press Go.	When receiving print command from MP tray, the MP tray paper size setting (Function setting) and paper size of the data designated for printing are not identical.	9001	2-94
	When receiving print command from tray 1, the tray 1 paper size setting (Function setting) and paper size of the data designated for printing are not identical.	9002	2-94
	When receiving print command from tray 2, the tray 2 paper size setting (Function setting) and paper size of the data designated for printing are not identical.	9003	2-94
	When receiving print command from tray 3, the tray 3 paper size setting (Function setting) and paper size of the data designated for printing are not identical.	9004	2-94
	When receiving print command from tray 4, the tray 4 paper size setting (Function setting) and paper size of the data designated for printing are not identical.	9005	2-94
	When printing on paper fed from MP tray, paper size sensor detected that the size of paper set on the tray was smaller than the one specified by the printer driver.	9501	2-99
	When printing on paper fed from tray 1, paper size sensor detected that the size of paper set on the tray was smaller than the one specified by the printer driver.	9502	2-99
	When printing on paper fed from tray 2, paper size sensor detected that the size of paper set on the tray was smaller than the one specified by the printer driver.	9503	2-99
	When printing on paper fed from tray 3, paper size sensor detected that the size of paper set on the tray was smaller than the one specified by the printer driver.	9504	2-99
	When printing on paper fed from tray 4, paper size sensor detected that the size of paper set on the tray was smaller than the one specified by the printer driver.	9505	2-99

Error message	Problem	Error codes	Refer to:
Small paper Open the Back Cover and then press Go.	Registration front sensor detected that the paper size for printing by specifying DDL (DL Long Edge), is smaller than the specified size.	5C00	2-71
Storage Error To use other functions, press GO. Refer to the User's Guide for instructions on correcting the Storage Error.	Failed read/write data in the storage I/O.	0D01	2-37
Storage Full There is no space in the Memory.	Unable to save data because there is no space in the storage data area of memory.	0D00	2-37
Table Print Change Emulation	Emulation performed table print by PS fixed.	---	4.4.1
Too Many Trays Maximum number of optional trays is three. Remove additional trays.	Detected when 4 or more optional tray was connected.	1F00	2-38
Tray 1 Error Pull out Tray 1 completely. Check inside the Tray.	Within the specified time, plate sensor of the tray 1 was unable to detect completion of lift-up.	C401	2-105
Tray 2 Error Pull out Tray 2 completely. Check inside the Tray.	Within the specified time, plate sensor of the tray 2 was unable to detect completion of lift-up.	C402	2-105
Tray 3 Error Pull out Tray 3 completely. Check inside the Tray.	Within the specified time, plate sensor of the tray 3 was unable to detect completion of lift-up.	C403	2-105
Tray 4 Error Pull out Tray 4 completely. Check inside the Tray.	Within the specified time, plate sensor of the tray 4 was unable to detect completion of lift-up.	C404	2-105
Unusable Device Remove the Device. Turn the power off and back on again.	The overcurrent protection circuit worked when an off-specification USB device was inserted into the USB host terminal.	CA00	2-106
Waste Tank Alert The Waste Tank is almost full - Printing can continue until full. Call for Service to have Waste Tank replaced.	Waste ink tank almost reaches time for replacement.	5100	2-66

Error message	Problem	Error codes	Refer to:
Waste Tank Full The Waste Tank is full - Printing cannot continue. Call for Service to have Waste Tank replaced.	Waste ink tank reached time for replacement.	5200	2-66
Wrong Paper Size Load the correct paper size in Tray 1 or press cancel then delete the job to return to Ready.	When receiving print command from tray 1, the paper size of the data designated for printing is larger than the paper size detected at tray 1 width sensor.	9102	2-95
Wrong Paper Size Load the correct paper size in Tray 2 or press cancel then delete the job to return to Ready.	When receiving print command from tray 2, the paper size of the data designated for printing is larger than the paper size detected at tray 2 width sensor.	9103	2-95
Wrong Paper Size Load the correct paper size in Tray 3 or press cancel then delete the job to return to Ready.	When receiving print command from tray 3, the paper size of the data designated for printing is larger than the paper size detected at tray 3 width sensor.	9104	2-95
Wrong Paper Size Load the correct paper size in Tray 4 or press cancel then delete the job to return to Ready.	When receiving print command from tray 4, the paper size of the data designated for printing is larger than the paper size detected at tray 4 width sensor.	9105	2-95

4. TROUBLESHOOTING

4.1 Error Cause and Remedy

■ Error code 0C01

Log Access Error.
Server Timeout, contact your administrator.

Time out access request for server due to such reason as wrong server address/network unconnected/server is not activated.

■ Error code 0C02

Log Access Error.
Authentication Error, contact your administrator.

Time out access request for server due to such reason as wrong user name/wrong password/inconsistency in the date of the machine and server.

■ Error code 0C03

Log Access Error.
File Access Error, contact your administrator.

Time out access request for server due to such reason as wrong directory name/no write authority for directory/write lock on file.

■ Error code 0C04

Log Access Error.
Wrong Date&Time, contact your administrator.

Time out access request for user due to such reason as machine watch (RTC) has not been set and time has not been obtained at SNTP.

<User Check>

- Following the instructions in User's guide, perform the network setting again.
- Check the network cable.
- Check the network cable for disconnection.

Step	Cause	Remedy
1	Main PCB failure	Replace the main PCB ASSY.

■ Error code 0D00

Storage Full
There is no space in the Memory.

Unable to save data because there is no space in the storage data area of memory.

<User Check>

- Delete the data of secure print, personal print, or public print that is stored in the machine.

Step	Cause	Remedy
1	Malfunction of USB storage memory	Format the USB storage memory.
2	USB storage memory failure	Replace the USB storage memory.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 0D01

Storage Error.
To use other functions, press GO. Refer to the User's Guide for instructions on correcting the Storage Error.

Failed to read/write data in the storage I/O.

<User Check>

- Turn OFF and ON the power switch.
- Delete error indication by the following procedure.
 - (1) Press the **Menu** button at ready state.
 - (2) Press the ▼ button three times to select the "General Set Up".
 - (3) Press the ▼ button eight times to select the "Macro / Font".
 - (4) Press the ▲ button and **Cancel** button at the same time. "Format Stage" is displayed.
 - (5) Press the 1 button. "Format OK?" is displayed on the LCD.
 - (6) Press the 1 button again. "Formatting" is displayed on the LCD and error is cancelled.

Step	Cause	Remedy
1	USB storage memory failure	Replace the USB storage memory.
2	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 1700**

No Tray
The paper tray cannot be detected, re-install Tray1.

When feeding paper to MP tray, the paper width sensor detected that the paper tray is open.

<User Check>

- Use the A4 or Letter size paper.

Step	Cause	Remedy
1	Edge actuator catching on some position	Reinstall the edge actuator.
2	Edge sensor PCB harness disconnection	Reconnect harness of edge sensor PCB.
3	Paper feed PCB feeding failure	Replace the paper feed PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 1F00**

Too Many Trays
Maximum number of optional trays is three. Remove additional trays.

Detected when 4 or more optional tray was connected.

<User Check>

- Reduce the number of the installed optional tray to a maximum of three.

■ **Error code 2001**

Print Unable 20
Turn the power off and then back on again.

Detected some sort of communication problem between main PCB and engine PCB.

Step	Cause	Remedy
1	Disconnected harness between engine PCB and main PCB	Reconnect the harness between engine PCB and main PCB.
2	Engine PCB failure	Replace the engine PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 2002**

Print Unable 20
Turn the power off and then back on again.

Failed to communicate between main PCB and tray 2 relay PCB.

Error code 2003

Print Unable 20
Turn the power off and then back on again.

Failed to communicate between main PCB and tray 3 relay PCB.

Error code 2004

Print Unable 20
Turn the power off and then back on again.

Failed to communicate between main PCB and tray 4 relay PCB.

<User Check>

- Reinstall the optional tray accurately.

Step	Cause	Remedy
1	Harness disconnection inside of each optional tray	Reconnect harness inside of each optional tray.
2	LT connector failure	Replace the LT connector.
3	LT relay PCB failure of each optional tray	Replace the LT Replay PCB of each optional tray.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 2005**

Print Unable 20
Turn the power off and then back on again.

Failed to communicate between main PCB and optional output PCB.

<User Check>

- Reinstall the optional output unit accurately.

Step	Cause	Remedy
1	Disconnected harness between optional output PCBB and main PCB	Reconnect the harness between optional output PCB and main PCB.
2	Optional output relay PCB failure	Replace the optional output relay PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 2101**

Print Unable 21
Turn the power off and then back on again.

Detected operational error from pick-up motor of tray 1.

Error code 2102

Print Unable 21
Turn the power off and then back on again.

Detected operational error from pick-up motor of tray 2.

Error code 2103

Print Unable 21
Turn the power off and then back on again.

Detected operational error from pick-up motor of tray 3.

Error code 2104

Print Unable 21
Turn the power off and then back on again.

Detected operational error from pick-up motor of tray 4.

<User Check>

- Remove jammed paper from the relevant tray.

Step	Cause	Remedy
1	Pick up motor harness connection failure	Reconnect the pick up motor harness.
2	Foreign object inside each paper feed ASSY	Remove foreign object inside of each paper feed ASSY.
3	Paper feed PCB failure	Replace the paper feed PCB ASSY.
4	LT relay PCB failure	Replace the LT relay PCB ASSY.
5	Pick-up motor failure inside of each paper feed ASSY	Replace pick-up motor inside each paper feed ASSY.
6	Power supply PCB failure	Replace the power supply PCB ASSY.
7	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 2105**

Print Unable 21
Turn the power off and then back on again.

Detected operational error of paper feed motor.

Step	Cause	Remedy
1	Paper feed motor harness connection failure	Reconnect the paper feed motor harness.
2	Paper feed PCB failure	Replace the paper feed PCB ASSY.
3	Power supply PCB failure	Replace the power supply PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 2201**

Print Unable 22
Turn the power off and then back on again.

Detected operational error of sub tank pump motor.

Step	Cause	Remedy
1	Sub tank pump motor harness connection failure	Reconnect the sub tank pump motor harness.
2	Sub tank pump motor failure	Replace the sub tank ASSY.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2202**

Print Unable 22
Turn the power off and then back on again.

Detected operational error of power fan.

Step	Cause	Remedy
1	Power fan harness connection failure	Reconnect the power fan harness.
2	Power fan or power supply PCB failure	Replace the power supply PCB ASSY.
3	Paper feed PCB failure	Reinstall the paper feed PCB.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 2203**

Print Unable 22
Turn the power off and then back on again.

Detected operational error of carriage-up motor.

Step	Cause	Remedy
1	Carriage-up motor harness connection failure	Reconnect the carriage-up motor harness.
2	Carriage-up motor failure	Replace the carriage-up motor.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2204**

Print Unable 22
Turn the power off and then back on again.

Detected operational error of pre-coat head humid motor.

Step	Cause	Remedy
1	Pre-coat head humid motor harness connection failure	Reconnect the pre-coat head humid motor harness.
2	Pre-coat head humid motor failure	Replace the pre-coat head humid motor.
3	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
4	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2205**

Print Unable 22
Turn the power off and then back on again.

Detected operational error of ink head humid motor.

Step	Cause	Remedy
1	Ink head humid motor harness connection failure	Reconnect the ink head humid motor harness.
2	Ink head humid motor failure	Replace the ink head humid motor.
3	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
4	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2301**

Print Unable 23
Turn the power off and then back on again.

Detected some sort of error in engine PCB.

Error code 2302

Print Unable 23
Turn the power off and then back on again.

Time out error occurred in engine PCB.

Step	Cause	Remedy
1	Engine PCB failure	Replace the engine PCB ASSY.

Error code 2401

Print Unable 24
Turn the power off and then back on again.

Detected error in EEPROM on the engine PCB.

Error code 2402

Print Unable 24
Turn the power off and then back on again.

Detected error in the flash ROM on the engine PCB.

Error code 2403

Print Unable 24
Turn the power off and then back on again.

Correction FPGA (Leo) failure on the engine PCB

Step	Cause	Remedy
1	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2404**

Print Unable 24
Turn the power off and then back on again.

Recording FPGA (Libra) failure on the main PCB

Step	Cause	Remedy
1	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 2405**

Print Unable 24
Turn the power off and then back on again.

Engine FPGA (Gemini) failure on the engine PCB

Step	Cause	Remedy
1	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2408**

Print Unable 24
Turn the power off and then back on again.

Overcurrent protection function worked in power supply PCB.

Step	Cause	Remedy
1	Engine PCB failure	Replace the engine PCB ASSY.
2	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
3	External temperature/humidity sensor failure	Replace the external temperature/humidity sensor.
4	Carriage home position sensor failure	Replace the carriage home position sensor.
5	Carriage encoder sensor failure	Replace the carriage encoder sensor.
6	Sub tank PCB failure	Replace the sub tank ASSY.
7	Cartridge PCB failure	Replace the ink refill unit.
8	Each head PCB failure	Replace the ink head ASSY or pre-coat head ASSY.

■ **Error code 2409**

Print Unable 24
Turn the power off and then back on again.

Due to malfunction of power supply PCB, power cannot be turned ON/OFF at the push of a button on the control panel.

Step	Cause	Remedy
1	Harness connection failure between power supply PCB and main PCB	Reconnect the harness between power supply PCB and main PCB.
2	Power supply PCB failure	Replace the power supply PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 2501**

Print Unable 25
Turn the power off and then back on again.

Cap does not return to normal position at maintenance cap operation.

Step	Cause	Remedy
1	Foreign object in the gear on the side of the sub tank ASSY	Remove the foreign object.
2	Foreign object inside the head cap	Remove the foreign object.
3	Cap drive motor harness connection failure	Reconnect the cap drive motor harness.
4	Cap home position sensor harness connection failure	Reconnect the cap home position sensor harness.
5	Cap drive motor failure	Replace the cap drive motor.
6	Cap home position sensor failure	Replace the sub tank ASSY.
7	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2502**

Print Unable 25
Turn the power off and then back on again.

Cap home position sensor error.

Step	Cause	Remedy
1	Cap home position sensor harness connection failure	Reconnect the cap home position sensor harness.
2	Cap home position sensor failure	Replace the sub tank ASSY.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2503**

Print Unable 25
Turn the power off and then back on again.

Cap position sensor error.

Step	Cause	Remedy
1	Cap home position sensor harness connection failure	Reconnect the cap home position sensor harness.
2	Cap position sensor failure	Replace the sub tank ASSY.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2504**

Print Unable 25
Turn the power off and then back on again.

Detected operational error of cap drive motor.

Step	Cause	Remedy
1	Cap drive motor harness connection failure	Reconnect the cap drive motor harness.
2	Cap drive motor failure	Replace the cap drive motor.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2601**

Print Unable 26
Turn the power off and then back on again.

Unable to detect platen position.

Step	Cause	Remedy
1	The unit is not returned to the home position after Function code 18	Turn OFF/ON the power.
2	Platen position sensor harness connection failure	Reconnect the platen position sensor harness.
3	Harness connection failure between maintenance PCB and engine PCB	Reconnect the harness between maintenance PCB and engine PCB.
4	Platen position sensor failure	Replace the platen unit.
5	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
6	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2602**

Print Unable 26
Turn the power off and then back on again.

Platen position sensor detected platen home position recovery error.

Step	Cause	Remedy
1	Platen position sensor harness connection failure	Reconnect the platen position sensor harness.
2	Platen drive motor harness connection failure	Reconnect the platen drive motor harness.
3	Platen drive motor failure	Replace the platen drive motor.
4	Platen position sensor failure	Replace the platen unit.
5	Harness connection failure between maintenance PCB and engine PCB	Reconnect the harness between maintenance PCB and engine PCB.
6	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
7	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2603**

Print Unable 26
Turn the power off and then back on again.

Platen upper sensor detected platen print position move error.

Step	Cause	Remedy
1	Platen upper sensor harness connection failure	Reconnect the platen upper sensor harness.
2	Platen drive motor harness connection failure	Reconnect the platen drive motor harness.
3	Platen drive motor failure	Replace the platen drive motor.
4	Platen upper sensor failure	Replace the platen unit.
5	Harness connection failure between maintenance PCB and engine PCB	Reconnect the harness between maintenance PCB and engine PCB.
6	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
7	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2604**

Print Unable 26
Turn the power off and then back on again.

Platen cap position sensor detected platen cap position move error.

Step	Cause	Remedy
1	Platen cap position sensor harness connection failure	Reconnect the platen cap position sensor harness.
2	Platen drive motor harness connection failure	Reconnect the platen drive motor harness.
3	Platen drive motor failure	Replace the platen drive motor.
4	Platen cap position sensor failure	Replace the platen unit.
5	Harness connection failure between maintenance PCB and engine PCB	Reconnect the harness between maintenance PCB and engine PCB.
6	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
7	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2605**

Print Unable 26
Turn the power off and then back on again.

Detected operational error of platen motor.

Step	Cause	Remedy
1	Platen motor harness connection failure	Reconnect the platen motor harness.
2	Platen motor failure	Replace the platen motor.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2701**

Print Unable 27
Turn the power off and then back on again.

Unable to detect carriage position.

Step	Cause	Remedy
1	The unit is not returned to the home position after Function code 18	Turn OFF/ON the power.
2	Carriage home position sensor harness connection failure	Reconnect the carriage home position sensor harness.
3	Carriage home position sensor failure	Replace the carriage home position sensor PCB ASSY.
4	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2702**

Print Unable 27
Turn the power off and then back on again.

Carriage home position sensor is unable to detect carriage home position return error.

Step	Cause	Remedy
1	Carriage home position sensor harness connection failure	Reconnect the carriage home position sensor harness.
2	Carriage home position sensor failure	Replace the carriage home position sensor PCB ASSY.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2703**

Print Unable 27
Turn the power off and then back on again.

Detected operational error of carriage motor.

Step	Cause	Remedy
1	Carriage motor harness connection failure	Reconnect the carriage motor harness.
2	Carriage motor failure	Replace the carriage motor.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2801**

Print Unable 28
Turn the power off and then back on again.

Unable to detect pre-coat wiper position.

Step	Cause	Remedy
1	The unit is not returned to the home position after Function code 18	Turn OFF/ON the power.
2	Pre-coat wiper sensor harness connection failure	Reconnect the pre-coat wiper sensor harness.
3	Harness connection failure between maintenance PCB and engine PCB	Reconnect the harness between maintenance PCB and engine PCB.
4	Pre-coat wiper sensor failure	Replace the platen unit.
5	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
6	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2802**

Print Unable 28
Turn the power off and then back on again.

Pre-coat wiper sensor is unable to detect pre-coat wiper home position return error.

Step	Cause	Remedy
1	Pre-coat wiper sensor harness connection failure	Reconnect the pre-coat wiper sensor harness.
2	Pre-coat wiper sensor failure	Replace the platen unit.
3	Harness connection failure between maintenance PCB and engine PCB	Reconnect the harness between maintenance PCB and engine PCB.
4	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
5	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2803**

Print Unable 28
Turn the power off and then back on again.

Detected operational error of pre-coat wiper motor.

Step	Cause	Remedy
1	Pre-coat wiper motor harness connection failure	Reconnect the pre-coat wiper motor harness.
2	Pre-coat wiper motor failure	Replace the pre-coat wiper motor.
3	Harness connection failure between maintenance PCB and engine PCB	Reconnect the harness between maintenance PCB and engine PCB.
4	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
5	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2805**

Print Unable 28
Turn the power off and then back on again.

Ink wiper sensor is unable to detect home position return.

Step	Cause	Remedy
1	Ink wiper sensor harness connection failure	Reconnect the ink wiper sensor harness.
2	Ink wiper sensor failure	Replace the platen unit.
3	Harness connection failure between maintenance PCB and engine PCB	Reconnect the harness between maintenance PCB and engine PCB.
4	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
5	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2806**

Print Unable 28
Turn the power off and then back on again.

Detected operational error of ink wiper motor.

Step	Cause	Remedy
1	Ink wiper motor harness connection failure	Reconnect the ink wiper motor harness.
2	Ink wiper motor failure	Replace the ink wiper motor.
3	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
4	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2901**

Print Unable 29
Turn the power off and then back on again.

Sub tank valve sensor detected error of the sub tank valve position.

Step	Cause	Remedy
1	Sub tank valve sensor harness connection failure	Reconnect the sub tank valve sensor harness.
2	Sub tank valve sensor failure	Replace the sub tank valve sensor.
3	Gear failure inside of sub tank ASSY	Replace the sub tank ASSY.
4	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2902**

Print Unable 29
Turn the power off and then back on again.

Sub tank valve sensor error.

Step	Cause	Remedy
1	Sub tank valve sensor harness connection failure	Reconnect the sub tank valve sensor harness.
2	Sub tank PCB harness connection failure	Reconnect the sub tank PCB harness.
3	Sub tank valve sensor failure	Replace the sub tank valve sensor.
4	Sub tank PCB failure	Replace the sub tank ASSY.
5	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2903**

Print Unable 29
Turn the power off and then back on again.

Detected operational error of sub tank valve motor.

Step	Cause	Remedy
1	Sub tank valve motor harness connection failure	Reconnect the sub tank valve motor harness.
2	Sub tank valve motor failure	Replace the sub tank valve motor.
3	Gear failure inside of sub tank ASSY	Replace the sub tank ASSY.
4	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2904**

Print Unable 29
Turn the power off and then back on again.

Air vent valve sensor error.

Step	Cause	Remedy
1	Air vent valve sensor harness connection failure	Reconnect the air vent valve sensor harness.
2	Air vent valve sensor failure	Replace the air vent valve sensor.
3	Gear failure inside of sub tank ASSY	Replace the sub tank ASSY.
4	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
5	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2905**

Print Unable 29
Turn the power off and then back on again.

Detected operational error of air vent valve motor.

Step	Cause	Remedy
1	Air vent valve motor harness connection failure	Reconnect the air vent valve motor harness.
2	Air vent valve motor failure	Replace the air vent valve motor.
3	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
4	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2906**

Print Unable 29
Turn the power off and then back on again.

Software detected flashing error.

Step	Cause	Remedy
1	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2A01**

Print Unable 2A
Turn the power off and then back on again.

Pre-coat ink sensor suddenly detected time for ink replacement although the sensor did not detect that it almost reached time for ink replacement.

<User Check>

- Replace the Ink cartridge.

Step	Cause	Remedy
1	Pre-coat ink full sensor harness connection failure	Reconnect the pre-coat ink full sensor harness.
2	Pre-coat ink full sensor or ink float failure	Replace the sub tank ASSY.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2A02**

Print Unable 2A
Turn the power off and then back on again.

Ink full sensor suddenly detected time for ink replacement although the sensor did not detect that it almost reached time for ink replacement.

Step	Cause	Remedy
1	Ink full sensor harness connection failure	Reconnect the ink full sensor harness.
2	Ink full sensor or ink float failure	Replace the sub tank ASSY.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2A03**

Print Unable 2A
Turn the power off and then back on again.

Water full sensor suddenly detected time for ink replacement although the sensor did not detect that it almost reached time for ink replacement.

Step	Cause	Remedy
1	Water full sensor harness connection failure	Reconnect the water full sensor harness.
2	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
3	Water full sensor or ink float failure	Replace the drive switching unit.
4	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2B01**

Print Unable 2B
Turn the power off and then back on again.

Drive switching home position sensor error or drive switching positions sensor error

Step	Cause	Remedy
1	Drive switching home position sensor harness connection failure	Reconnect the drive switching home position sensor harness.
2	Drive switching position sensor harness connection failure	Reconnect the drive switching position sensor harness.
3	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
4	Drive switching home position sensor failure or drive switching positions sensor failure	Replace the drive switching unit.
5	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2B02**

Print Unable 2B
Turn the power off and then back on again.

Detected operational error of drive switching motor.

Step	Cause	Remedy
1	Drive switching motor harness connection failure	Reconnect the drive switching motor harness.
2	Drive switching motor failure	Replace the drive switching motor.
3	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
4	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2C01**

Print Unable 2C
Turn the power off and then back on again.

Air vent valve sensor error.

Step	Cause	Remedy
1	Air vent valve sensor harness connection failure	Reconnect the air vent valve sensor harness.
2	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
3	Air vent valve sensor failure	Replace the drive switching unit.
4	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2C02**

Print Unable 2C
Turn the power off and then back on again.

Detected operational error of buffer water pump motor.

Step	Cause	Remedy
1	Each buffer water pump motor harness connection failure	Reconnect each buffer water pump motor harness.
2	Drive switching motor harness connection failure	Reconnect the drive switching motor harness.
3	Each buffer water pump motor failure	Replace the each buffer water pump motor.
4	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
5	Drive switching motor failure	Replace the drive frame ASSY.
6	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2D01**

Print Unable 2D
Turn the power off and then back on again.

Head operation time out

Step	Cause	Remedy
1	Engine PCB failure	Replace the engine PCB ASSY.
2	Ink/pre-coat head PCB failure	Replace the ink head or pre-coat head.

■ **Error code 2E01**

Print Unable 2E
Turn the power off and then back on again.

Pre-coat head CPU connection error

Error code 2E02

Print Unable 2E
Turn the power off and then back on again.

Pre-coat head CPU authentication error

Error code 2E03

Print Unable 2E
Turn the power off and then back on again.

Pre-coat head CPU unauthenticated error

Error code 2E04

Print Unable 2E
Turn the power off and then back on again.

Detected non-regulated voltage value from the pre-coat head voltage.

Error code 2E05

Print Unable 2E
Turn the power off and then back on again.

Detected that pre-coat head flat cable is not inserted correctly.

Error code 2E06

Print Unable 2E
Turn the power off and then back on again.

Pre-coat head voltage drop is fast.

Error code 2E07

Print Unable 2E
Turn the power off and then back on again.

Pre-coat head driver thermistor detected non-regulated temperature.

Error code 2E08

Print Unable 2E
Turn the power off and then back on again.

Some sort of error occurred from pre-coat head thermistor 1.

Error code 2E0A

Print Unable 2E
Turn the power off and then back on again.

Some sort of error occurred from pre-coat head thermistor 3.

Step	Cause	Remedy
1	Pre-coat head harness connection failure	Reconnect the pre-coat head harness.
2	Pre-coat head failure	Replace the pre-coat head.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 2F01**

Print Unable 2F
Turn the power off and then back on again.

Ink head CPU connection error

Error code 2F02

Print Unable 2F
Turn the power off and then back on again.

Ink head CPU authentication error

Error code 2F03

Print Unable 2F
Turn the power off and then back on again.

Ink head CPU unauthenticated error

Error code 2F04

Print Unable 2F
Turn the power off and then back on again.

Detected non-regulated voltage value from the ink head voltage.

Error code 2F05

Print Unable 2F
Turn the power off and then back on again.

Detected that ink head flat cable is not inserted correctly.

Error code 2F06

Print Unable 2F
Turn the power off and then back on again.

Ink head voltage drop is fast.

Error code 2F07

Print Unable 2F
Turn the power off and then back on again.

Ink head driver thermistor detected non-regulated temperature.

Error code 2F08

Print Unable 2F
Turn the power off and then back on again.

Some sort of error occurred from ink head thermistor 1.

Error code 2F0A

Print Unable 2F
Turn the power off and then back on again.

Some sort of error occurred from ink head thermistor 3.

Step	Cause	Remedy
1	Ink head harness connection failure	Reconnect the ink head harness.
2	Ink head failure	Replace the ink head.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 3001**

Print Unable 30
Turn the power off and then back on again.

Lower cover leak sensor detected ink leakage from the lower cover.

<User Check>

- Check whether the machine is installed on a tilted location.

Step	Cause	Remedy
1	Each tube connection failure	Check all the tubes and reconnect disconnected tubes, if any. Otherwise, replace the tubes.
2	Waste ink box is not set correctly.	Set the waste ink box correctly.
3	Ink is adhered to the connector of ink leak sensor of optional tray	Clean the connector of ink leak sensor of optional tray.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 3002**

Print Unable 30
Turn the power off and then back on again.

Waste ink box leak sensor detected ink leakage from the under of the waste ink box.

Step	Cause	Remedy
1	Tube connection failure of waste ink box.	Reconnect the tube of the waste ink box. Otherwise, replace the tubes.
2	Waste ink box is not set correctly.	Set the waste ink box correctly.
3	Waste ink box failure	Replace the waste ink box.
4	Ink is adhered to the connector of waste ink box leak sensor or the sensor is faulty	Clean the connector of the waste ink box leak sensor or replace the sensor.
5	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 3003**

Print Unable 30
Turn the power off and then back on again.

Sub tank leak sensor detected ink leakage from the under of the sub tank.

Step	Cause	Remedy
1	Ink is adhered to the connector of sub tank leak sensor the sensor is faulty	Clean the connector of the sub tank leak sensor or replace the sensor.
2	Supply pump ASSY failure	Replace the supply pump ASSY.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 3102**

Print Unable 31
Turn the power off and then back on again.

Needle home position sensor detected that ink cartridge has not been installed correctly.

Error code 3202

Print Unable 32
Turn the power off and then back on again.

Needle insertion sensor detected that ink cartridge has not been installed correctly.

Error code 3301

Print Unable 33
Turn the power off and then back on again.

Detected error in carriage lock sensor.

Step	Cause	Remedy
1	Ink refill unit failure	Replace the ink refill unit.
2	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 3302**

Print Unable 33
Open the Top Cover and remove any object or paper that may be present.

Failed to lock the top cover.

<User Check>

- Close the top cover accurately.

Step	Cause	Remedy
1	Top cover sensor harness connection failure	Reconnect the top cover sensor harness.
2	Top cover lock solenoid harness connection failure	Reconnect the top cover lock solenoid harness.
3	Top cover sensor installation failure	Reinstall the top cover sensor.
4	Top cover lock solenoid installation failure	Reinstall the top cover lock solenoid.
5	Top cover sensor failure	Replace the top cover sensor.
6	Engine PCB failure	Replace the engine PCB ASSY.
7	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 3401**

Print Unable 34
Turn the power off and then back on again.

Machine IC chip initialization error

■ **Error code 3402**

Print Unable 34
Turn the power off and then back on again.

Machine IC chip communication error

Step	Cause	Remedy
1	Ink cartridge sensor PCB harness connection failure	Reconnect the ink cartridge sensor PCB harness.
2	IC chip PCB failure	Replace the ink refill unit.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 3501**

Print Unable 35
Turn the power off and then back on again.

Either waste ink count is over the regulated value or waste ink full sensor is not at full state.

Step	Cause	Remedy
1	Waste ink box full sensor harness connection failure	Reconnect the waste ink box full sensor harness.
2	Failure to reset counter after replacement of waste ink box	Replace the waste ink box and reset the counter.
3	Waste ink box full sensor harness disconnection	Replace the waste ink box full sensor harness.
4	Waste ink box full sensor failure	Replace the waste ink box full sensor PCB.
5	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
6	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 3601**

Print Unable 36

Turn the power off and then back on again.

Paper eject switching sensor detected that either optional output tray is selected or paper eject switching is not set to optional output tray.

<User Check>

- Set paper eject switching destination to the optional output tray.

Step	Cause	Remedy
1	Foreign object inclusion in the paper eject ASSY	Remove foreign object in the paper eject ASSY.
2	Optional output tray failure	Replace the optional output tray.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 3701**

Print Unable 37

Turn the power off and then back on again.

Serial communication error occurred between RIP CPU when PC printing, internal printing, and storage printing etc. was performed.

Error code 3702

Print Unable 37

Turn the power off and then back on again.

Serial communication error occurred between RIP CPU when RIP CPU is activated.

Error code 3703

Print Unable 37

Turn the power off and then back on again.

Serial communication between RIP CPU occurred after watch dog timer time out occurred.

Step	Cause	Remedy
1	Main firmware is old	Update the main firmware.
2	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 3801**

Print Unable 38
Turn the power off and then back on again.

Error occurred in the external temperature sensor.

■ **Error code 3802**

Print Unable 38
Turn the power off and then back on again.

Error occurred in the external humidity sensor.

Step	Cause	Remedy
1	External temperature/humidity sensor harness connection failure	Reconnect the external temperature/humidity sensor harness.
2	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 3A00**

Print Unable 3A
Turn the power off and then back on again.

Communication error occurred between the engine and control on the main PCB.

Step	Cause	Remedy
1	Main firmware or engine firmware is old	Update the main firmware or engine firmware.
2	Harness connection failure between main PCB and engine PCB	Reconnect the harness between main PCB and engine PCB.
3	Engine PCB failure	Replace the engine PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 3B00**

Print Unable 3B
Turn the power off and then back on again.

Error occurred when main PCB ASSY is accessing to DRAM.

Step	Cause	Remedy
1	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 5001**

Replace Parts
PF Kit MP

The use number of sheets for paper feeding kit MP reached the end of life.
(Printing does not stop.)

Error code 5002

Replace Parts
PF Kit1

The use number of sheets for paper feeding kit 1 reached the end of life.
(Printing does not stop.)

Error code 5003

Replace Parts
PF Kit2

The use number of sheets for paper feeding kit 2 reached the end of life.
(Printing does not stop.)

Error code 5004

Replace Parts
PF Kit3

The use number of sheets for paper feeding kit 3 reached the end of life.
(Printing does not stop.)

Error code 5005

Replace Parts
PF Kit4

The use number of sheets for paper feeding kit 4 reached the end of life. (Printing does not stop.)

Step	Cause	Remedy
1	Paper feeding kit 1/2/3/4/MP abrasion	Replace the paper feeding kit1/2/3/4/MP and reset the counter..
2	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 5100**

Waste Tank Alert
The Waste Tank is almost full - Printing can continue until full. Call for Service to have Waste Tank replaced.

Waste dot count detected that waste ink tank almost reached the time for replacement.

Step	Cause	Remedy
1	Waste ink box is full	Replace the waste ink box.
2	Engine PCB failure	Replace the engine PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 5200**

Waste Tank Full
The Waste Tank is full - Printing cannot continue. Call for Service to have Waste Tank replaced.

Waste ink full sensor detected that waste ink tank reached time for replacement.

Step	Cause	Remedy
1	Waste ink box is full	Replace the waste ink box.
2	Adjustment failure of waste ink box full sensor	Adjust the waste ink box full sensor again. (Refer to Function code 19.)
3	Waste ink full sensor failure	Replace the waste ink full sensor.
4	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
5	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 5301**

Ink Low
The cartridge is nearing the end of its life. Have a new cartridge available to avoid printing interruptions.

Pre-coat ink count detected that almost reached the time for replacement.

■ **Error code 5302**

Ink Low
The cartridge is nearing the end of its life. Have a new cartridge available to avoid printing interruptions.

Ink count detected that almost reached the time for replacement.

Step	Cause	Remedy
1	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 5401**

Insufficient Ink
Ink level is too low to print. Install a new Brother Genuine ink cartridge.

Pre-coat ink full sensor detected time for replacement of the pre-coat ink.

■ **Error code 5402**

Insufficient Ink
Ink level is too low to print. Install a new Brother Genuine ink cartridge.

Ink full sensor detected time for replacement of the ink.

<User Check>

- Replace the ink cartridge.

Step	Cause	Remedy
1	Ink supply motor harness connection failure	Reconnect the ink supply motor harness.
2	Tube connection failure or bend of pre-coat ink/ink flow channel	Reconnect or replace the tube of pre-coat ink/ink flow channel. Otherwise, replace the tubes.
3	Pre-coat ink full sensor/ink full sensor failure	Replace the sub tank ASSY.
4	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 5406**

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Water full sensor detected time for replacement of the water.

Step	Cause	Remedy
1	Drive switching motor harness connection failure	Reconnect the drive switching motor harness.
2	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
3	Water full sensor failure	Replace the drive switching unit.
4	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 5502**

<p>Cartridge Error Reinstall the Ink Cartridge. If the error reappears refer to the User's Guide for service options.</p>
--

Communication error with ink cartridge IC.

<User Check>

- Reset the ink cartridge.
- Replace the ink cartridge.

Step	Cause	Remedy
1	Cartridge PCB harness connection failure	Reconnect the cartridge PCB harness.
2	Cartridge PCB installation failure	Reinstall the cartridge PCB.
3	Cartridge PCB failure	Replace the ink refill unit.
4	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 5602**

<p>Cartridge Alert Ink Cartridge expired.To preserve print quality install new cartridge.Open and close cover to clear alert.</p>
--

Accumulated hour of use of ink cartridge exceeded usage regulation time.

<User Check>

- Reset the ink cartridge.
- Replace the ink cartridge.

Step	Cause	Remedy
1	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 5702**

Cartridge Error
Reinstall the Ink Cartridge. If the error reappears refer to the users guide for service options.

Error occurred when ink cartridge is writing to IC.

<User Check>

- Reset the ink cartridge.
- Replace the ink cartridge.

Step	Cause	Remedy
1	Ink cartridge IC failure	Replace the ink refill unit.
2	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 5801**

Cartridge Error
Turn the machine OFF and then back ON. If the error reappears, Call for Service.

Pre-coat needle sensor detected error in needle insertion to the cartridge pre-coat section.

Error code 5802

Cartridge Error
Turn the machine OFF and then back ON. If the error reappears, Call for Service.

Ink needle sensor detected error in needle insertion to the ink cartridge section.

<User Check>

- Reset the ink cartridge.
- Replace the ink cartridge.

Step	Cause	Remedy
1	Needle motor harness connection failure	Reconnect the needle motor harness.
2	Needle sensor or needle failure/ bend	Replace the ink refill unit.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ Error code 5902

Cartridge Alert
Non-Brother cartridge detected. Genuine Brother cartridge recommended.
Open and close cover to clear alert.

Data unlikely to be available with genuine cartridge was received.

<User Check>

- Reset the ink cartridge.
- Replace the ink cartridge.

Step	Cause	Remedy
1	Ink cartridge IC failure	Replace the ink refill unit.
2	Engine PCB failure	Replace the engine PCB ASSY.

■ Error code 5A02

Cartridge Alert
Recommend using new cartridge. Cartridge may leak if repeatedly installed.

The number of times of ink cartridge insert/remove exceeded its use limit.

<User Check>

- Ignore the indication and continue to use the ink cartridge until it runs out.
- Replace the ink cartridge.

■ Error code 5B00

Short Paper
Open the Back Cover and then press Go.

Registration front sensor detected that the size of printing paper is smaller than the specified size.

<User Check>

- Replace with the paper with the specified size.

Step	Cause	Remedy
1	Paper feed PCB failure	Replace the paper feed PCB ASSY.
2	Registration front sensor failure	Replace the paper feeding drive unit.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 5B02

Cartridge Error
Reinstall the Ink Cartridge. If the error reappears refer to the users guide for service options.

Communication error was detected with ink cartridge IC while printing.

<User Check>

- Reset the ink cartridge.
- Replace the ink cartridge.

Step	Cause	Remedy
1	Ink cartridge IC failure	Replace the ink refill unit.
2	Engine PCB failure	Replace the engine PCB ASSY.

■ Error code 5C00

Small paper
Open the Back Cover and then press Go.

Registration front sensor detected that the paper size for printing by specifying DDL (DL Long Edge), is smaller than the specified size.

<User Check>

- Replace with the paper with the specified size.

Step	Cause	Remedy
1	Paper feed PCB failure	Replace the paper feed PCB ASSY.
2	Registration front sensor failure	Replace the paper feeding drive unit.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 5C02

Cartridge Error
Reinstall the Ink Cartridge. If the error reappears refer to the users guide for service options.

During printing, writing into ink cartridge IC failed.

<User Check>

- Reset the ink cartridge.
- Replace the ink cartridge.

Step	Cause	Remedy
1	Ink cartridge IC failure	Replace the ink refill unit.
2	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 6001**

Cover is Open
Close the Top Cover using both hands.

Top cover sensor detected that it is at open state.

<User Check>

- Close the top cover.

Step	Cause	Remedy
1	Top cover sensor harness connection failure	Reconnect the top cover sensor harness.
2	Top cover sensor failure	Replace the top cover sensor.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 6002**

Cover is Open
Close the Cartridge Cover.

Cartridge cover sensor detected that it is at open state.

<User Check>

- Close the cartridge cover.

Step	Cause	Remedy
1	Cartridge cover sensor harness connection failure	Reconnect the cartridge cover sensor harness.
2	Cartridge cover breakage	Replace the cartridge cover.
3	Cartridge cover sensor failure	Replace the cartridge cover sensor.
4	Ink cartridge PCB failure	Replace the ink refill unit.
5	Engine PCB failure	Replace the engine PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 6003**

Cover is Open
Close the Inner Back Cover.

Chute cover sensor detected that it is at open state.

<User Check>

- Close the chute cover.

Step	Cause	Remedy
1	Chute cover sensor harness connection failure	Reconnect the chute cover sensor harness.
2	Chute cover breakage	Replace the chute cover.
3	Chute cover sensor failure	Replace the chute cover sensor.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 6602**

No Cartridge
Reinstall Cartridge. If not recover, try to reinstall genuin cart. The problem persists, refer to User's Guide.

Due to communication error with cartridge IC, the machine judged cartridge is not installed.

<User Check>

- Replace the ink cartridge.

Step	Cause	Remedy
1	Cartridge PCB failure	Replace the ink refill unit.
2	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 6701**

No Waste Tank
No Waste Tank detected. Call for Service to have the Waste Tank checked for proper installation or replacement.

Waste ink box sensor is unable to detect installation of waste ink box.

Step	Cause	Remedy
1	Waste ink box not installed	Install the waste ink box.
2	Waste ink box sensor harness connection failure	Reconnect the waste ink box sensor harness.
3	Waste ink box sensor installation failure	Reinstall the waste ink box sensor.
4	Waste ink box sensor failure	Replace the waste ink box sensor.
5	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
6	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 6801**

Cooling Down
Wait for a while.

Internal thermistor detected temperature at or above the given temperature.

<User Check>

- Wait until the temperature of the machine falls below the given temperature before turning ON the power.
- Decrease the room temperature.

Step	Cause	Remedy
1	Internal thermistor failure	Replace the internal thermistor.
2	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 6802**

Cooling Down
Wait for a while.

Ink head thermistor detected temperature at or above the given temperature.

<User Check>

- Wait until the temperature of the machine falls below the given temperature before turning ON the power.
- Decrease the room temperature.

Step	Cause	Remedy
1	Head thermistor failure	Replace the ink head or pre-coat head.
2	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 7001**

Jam B Inside

Open the Top Cover and MP tray. Then Release the green levers. Follow step B to remove jammed paper.

Paper jam. (Paper feed sensor is at paper feeding state, and after registration front sensor detected that paper is fed, even if a certain amount of papers is fed, print start sensor does not change to paper feeding state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the front chute	Remove foreign object in the front chute.
2	Coming off of registration front actuator	Re-assemble the registration front actuator.
3	Registration front sensor harness connection failure	Reconnect the registration front sensor harness.
4	Paper feed PCB failure	Replace the paper feed PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 7002**

Jam B Inside

Open the Top Cover and MP tray. Then Release the green levers. Follow step B to remove jammed paper.

Paper jam. (After registration front sensor detected paper feeding while paper feed sensor is at no paper state, even if a certain amount of paper is fed, print start sensor does not change to paper feeding state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the front chute	Remove foreign object in the front chute.
2	Coming off of registration front actuator	Re-assemble the registration front actuator.
3	Edge sensor harness connection failure	Reconnect the edge sensor harness.
4	Registration front sensor harness connection failure	Reconnect the registration front sensor harness.
5	Paper feed PCB failure	Replace the paper feed PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 7003**

Jam C Inside
Open the Top Cover and release the green levers. Follow step C to remove jammed paper.

Paper jam. (After paper feeding from print start sensor is detected, even if a certain amount of paper is fed, switchback sensor does not change to paper feeding state.)

Error code 7004

Jam C Inside
Open the Top Cover and release the green levers. Follow step C to remove jammed paper, then press Go.

Paper jam. (After print start sensor shifted to no paper state after the sensor detected paper feeding, switchback sensor does not change to paper feeding state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the engine	Remove foreign object in the engine.
2	Back cover is open	Firmly close the back cover.
3	Coming off of switchback actuator	Re-assemble the switchback actuator.
4	Switchback sensor harness connection failure	Reconnect the switchback sensor harness.
5	Switchback sensor failure	Replace the paper eject.
6	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 7101**

Jam C Inside
Open the Top Cover and release the green levers. Follow step C to remove jammed paper.

Paper jam. (With back cover closed, although a certain amount of paper is fed while switchback sensor is paper feeding state, print start sensor paper remains to be paper feeding state. (Paper eject sensor is turned OFF.))

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the back cover	Remove foreign object in the back cover.
2	Coming off of paper eject actuator	Re-assemble the paper eject actuator.
3	Print starting actuator catching on some position	Reinstall the print starting actuator.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 7102**

Jam E Rear
Open the Back Cover and Paper Chute and remove jammed paper from the back of the machine.

Paper jam. (While back cover is closed, when switchback sensor is at paper feeding state, even if a certain amount of paper is fed, paper eject sensor remains at no paper state.)

Error code 7103

Jam E Rear
Open the Back Cover and Paper Chute and remove jammed paper from the back of the machine.

Paper jam. (While back cover is closed, after switchback sensor state shifted from paper feeding to no paper, even if a certain amount of paper is fed, paper eject sensor remained as at no paper state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the back cover	Remove foreign object in the back cover.
2	Coming off of paper eject actuator	Re-assemble the paper eject actuator.
3	Paper eject sensor harness connection failure	Reconnect the paper eject sensor harness.
4	Paper eject sensor failure	Replace the paper eject.
5	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 7104**

Jam E Rear
Open the Back Cover and Paper Chute and remove jammed paper from the back of the machine.

Paper jam. (While back cover is closed, after paper eject sensor shifted to paper feeding state, even if a certain amount of paper is fed, paper eject sensor remains at paper feeding state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the back cover	Remove foreign object in the back cover.
2	Eject actuator catching on some position	Reinstall the eject actuator.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 7106**

Jam E Rear
Open the Back Cover and Paper Chute and remove jammed paper from the back of the machine.

Paper jam. (While back cover is closed, after print start sensor shifted to no paper state, switchback sensor remains at paper feeding state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the back cover	Remove foreign object in the back cover.
2	Switchback actuator catching on some position	Reinstall the switchback actuator.
3	Switchback sensor failure	Replace the paper eject.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 7201**

Jam MP Tray
Remove the jammed paper from Multi Purpose Tray and press Go.

Paper jam. (When performing MP printing, while MP paper empty sensor is at with paper state, registration front sensor does not change to paper feeding state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the MP tray	Remove foreign object in the MP tray.
2	Coming off of registration front actuator	Re-assemble the registration front actuator.
3	Registration front sensor harness connection failure	Reconnect the registration front sensor harness.
4	MP solenoid harness connection failure	Reconnect the MP solenoid harness.
5	Paper feed motor harness connection failure	Reconnect the paper feed motor harness.
6	MP solenoid failure	Replace the MP solenoid.
7	Paper Feed motor failure	Replace the paper feed motor.
8	Paper feed PCB failure	Replace the paper feed PCB ASSY.
9	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7301

Jam A Tray 1
Remove the jammed paper from Tray 1.

Paper jam. (When printing is started by tray 1, even if a certain amount of paper is fed, paper feed sensor does not change to paper feeding state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the paper tray	Remove foreign object in the paper tray.
2	Coming off of paper feed actuator	Re-assemble the paper feed actuator.
3	Paper feed sensor harness connection failure	Reconnect the paper feed sensor harness.
4	Paper feed motor harness connection failure	Reconnect the paper feed motor harness.
5	Paper feed sensor failure	Replace the paper eject.
6	T1 paper empty sensor failure	Replace the T1 paper empty sensor.
7	Paper feed motor failure	Replace the paper feed motor.
8	Paper feed PCB failure	Replace the paper feed PCB ASSY.
9	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 7302**

Jam A Tray 1
Remove the jammed paper from Tray 1.

Paper jam. (While paper feed sensor is at paper feeding state, even if a certain amount of paper is fed, registration front sensor does not change to paper feeding state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the front chute	Remove foreign object in the front chute.
2	Coming off of registration front actuator	Re-assemble the registration front actuator.
3	Registration front sensor harness connection failure	Reconnect the registration front sensor harness.
4	Registration front sensor failure	Replace the registration front sensor.
5	Paper feed PCB failure	Replace the paper feed PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 7401**

Jam A Tray 2
Remove the jammed paper from Tray 2.

Paper jam. (When printing is started by tray 2, even if a certain amount of paper is fed, T2 paper feed sensor does not change to paper feeding state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the tray 2	Remove foreign object in the tray 2.
2	Coming off of tray 2 paper feed actuator	Re-assemble the tray 2 paper feed actuator.
3	T2 paper feed sensor harness connection failure	Reconnect the T2 paper feed sensor harness.
4	T2 paper feed motor harness connection failure	Reconnect the T2 paper feed motor harness.
5	T2 paper empty sensor failure	Replace the T2 paper empty sensor.
6	T2 paper feed motor failure	Replace the T2 paper feed motor.
7	LT relay PCB failure	Replace the LT relay PCB ASSY.

■ **Error code 7402**

Jam A Tray 2
Remove the jammed paper from Tray 2.

Paper jam. (While tray 2 paper feed sensor is at paper feeding state, even if a certain amount of paper is fed, registration front sensor does not change to paper feeding state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the front chute	Remove foreign object in the front chute.
2	Foreign object inclusion in the tray 1	Remove foreign object in the tray 1.
3	Registration front sensor harness connection failure	Reconnect the registration front sensor PCB harness.
4	Coming off of paper feed actuator	Re-assemble the paper feed actuator.
5	Registration front sensor failure	Replace the registration front sensor PCB.
6	Paper feed PCB failure	Replace the paper feed PCB ASSY.
7	LT relay PCB failure	Replace the LT relay PCB ASSY.

■ **Error code 7501**

Jam A Tray 3
Remove the jammed paper from Tray 3.

Paper jam. (When printing is started by tray 3, even if a certain amount of paper is fed, T3 paper feed sensor does not change to paper feeding state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the tray 3	Remove foreign object in the tray 3.
2	Coming off of tray 3 paper feed actuator	Re-assemble the tray 3 paper feed actuator.
3	T3 paper feed sensor harness connection failure	Reconnect the T3 paper feed sensor harness.
4	T3 paper feed motor harness connection failure	Reconnect the T3 paper feed motor harness.
5	T3 paper empty sensor failure	Replace the T3 paper empty sensor.
6	T3 paper feed motor failure	Replace the T3 paper feed motor.
7	LT relay PCB failure	Replace the LT relay PCB ASSY.

■ **Error code 7502**

Jam A Tray 3
Remove the jammed paper from Tray 3.

Paper jam. (While tray 3 paper feed sensor is at paper feeding state, even if a certain amount of paper is fed, registration front sensor does not change to paper feeding state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the front chute	Remove foreign object in the front chute.
2	Foreign object inclusion in the tray 1	Remove foreign object in the tray 1.
3	Foreign object inclusion in the tray 2	Remove foreign object in the tray 2.
4	Coming off of paper feed actuator	Re-assemble the paper feed actuator.
5	Registration front sensor harness connection failure	Reconnect the registration front sensor PCB harness.
6	Registration front sensor failure	Replace the registration front sensor PCB.
7	Paper feed PCB failure	Replace the paper feed PCB ASSY.
8	LT relay PCB failure	Replace the LT relay PCB ASSY.

■ **Error code 7601**

Jam A Tray 4
Remove the jammed paper from Tray 4.

Paper jam. (When printing is started by tray 4, even if a certain amount of paper is fed, T4 paper feed sensor does not change to paper feeding state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the tray 4	Remove foreign object in the tray 4.
2	Coming off of tray 4 paper feed actuator	Re-assemble the tray 4 paper feed actuator.
3	T4 paper feed sensor harness connection failure	Reconnect the T4 paper feed sensor harness.
4	T4 paper feed motor harness connection failure	Reconnect the T4 paper feed motor harness.
5	T4 paper empty sensor failure	Replace the T4 paper empty sensor.
6	T4 paper feed motor failure	Replace the T4 paper feed motor.
7	LT relay PCB failure	Replace the LT relay PCB ASSY.

■ **Error code 7602**

Jam A Tray 4
Remove the jammed paper from Tray 4.

Paper jam. (While tray 4 paper feed sensor is at paper feeding state, even if a certain amount of paper is fed, registration front sensor does not change to paper feeding state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the front chute	Remove foreign object in the front chute.
2	Foreign object inclusion in the tray 1	Remove foreign object in the tray 1.
3	Foreign object inclusion in the tray 2	Remove foreign object in the tray 2.
4	Foreign object inclusion in the tray 3	Remove foreign object in the tray 3.
5	Coming off of paper feed actuator	Re-assemble the paper feed actuator.
6	Registration front sensor harness connection failure	Reconnect the registration front sensor PCB harness.
7	Registration front sensor failure	Replace the registration front sensor PCB.
8	Paper feed drive PCB failure	Replace the paper feed drive PCB ASSY.
9	LT relay PCB failure	Replace the LT relay PCB ASSY.

■ **Error code 7702**

Jam D Duplex
Remove the Duplex Tray from the back of the machine and check for jammed paper.

Paper jam. (After SWBK sensor shifted from paper feeding to no paper state, even if a certain amount of paper is fed, 2-sided jam sensor does not change to no paper state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the 2-sided tray	Remove foreign object in the 2-sided tray.
2	2-sided jam actuator catching on some position	Reinstall the 2-sided jam actuator.
3	2-sided tray failure	Replace the 2-sided tray.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 7704**

Jam D Duplex
Remove the Duplex Tray from the back of the machine and check for jammed paper.

Paper jam. (After 2-sided jam sensor is shifted from paper feeding status to paper-less status, although a certain amount of paper is fed, paper feed sensor does not turn to the paper feeding state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the 2-sided tray	Remove foreign object in the 2-sided tray.
2	Coming off of paper feed actuator	Re-assemble the paper feed actuator.
3	2-sided tray failure	Replace the 2-sided tray.

■ **Error code 7705**

Jam D Duplex
Remove the Duplex Tray from the back of the machine and check for jammed paper.

Paper jam. (While 2-sided jam sensor is at paper feeding state, even if a certain amount of paper is fed, paper feed sensor does not change to no paper state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the 2-sided tray	Remove foreign object in the 2-sided tray.
2	2-sided jam actuator catching on some position	Reinstall the 2-sided jam actuator.
3	2-sided tray failure	Replace the 2-sided tray.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 7801**

Jam F OP Tray
Open the Back Cover of optional Output Tray and remove jammed paper from the back of the machine.

Paper jam. (After switchback sensor is at paper feeding state, even if a certain amount of paper is fed, optional output sensor does not change to paper feeding state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the optional output tray	Remove foreign object in the optional output tray.
2	Coming off of optional output actuator	Re-assemble the optional output actuator.
3	Harness connection failure of eject solenoid	Reconnect harness of eject solenoid.
4	Optional output sensor harness connection failure	Reconnect the optional output sensor harness.
5	Optional output motor harness connection failure	Reconnect the optional output motor harness.
6	Eject solenoid failure	Replace the eject solenoid.
7	Optional output sensor failure	Replace the optional output sensor.
8	Optional output motor failure	Replace the optional output motor.
9	Optional output tray failure	Replace the optional output tray.
10	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 7802**

Jam F OP Tray
Open the Back Cover of optional Output Tray and remove jammed paper from the back of the machine.

Paper jam. (While optional output sensor is at paper feeding state, even if a certain amount of paper is fed, optional output sensor does not change to no paper state.)

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inclusion in the optional output tray	Remove foreign object in the optional output tray.
2	Harness connection failure of Eject solenoid	Reconnect harness of eject solenoid.
3	Optional output tray failure	Replace the optional output tray.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 8501**

No Tray
The paper tray cannot be detected, re-install Tray 1.

When paper is fed from tray 1 or another tray located below tray 1, paper width sensor detected that tray 1 is open.

<User Check>

- Set the paper tray in the machine.

Step	Cause	Remedy
1	Tray 1 paper size PCB harness connection failure	Reconnect the tray 1 paper size PCB harness.
2	Tray 1 paper size PCB installation failure	Reinstall the tray 1 paper size PCB.
3	Tray 1 failure	Replace the tray 1.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 8502**

No Tray
The paper tray cannot be detected, re-install Tray 2.

When paper is fed from tray 2 or another tray located below tray 2, paper width sensor detected that tray 2 is open.

<User Check>

- Set the tray 2 in the machine.

Step	Cause	Remedy
1	Tray 2 paper size PCB harness connection failure	Reconnect the tray 2 paper size PCB harness.
2	Tray 2 paper size PCB installation failure	Reinstall the tray 2 paper size PCB.
3	Tray 2 failure	Replace the tray 2.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 8503**

No Tray
The paper tray cannot be detected, re-install Tray 3.

When paper is fed from tray 3 or tray 4, paper width sensor detected that tray 3 is open.

<User Check>

- Set the tray 3 in the machine.

Step	Cause	Remedy
1	Tray 3 paper size PCB harness connection failure	Reconnect the tray 3 paper size PCB harness.
2	Tray 3 paper size PCB installation failure	Reinstall the tray 3 paper size PCB.
3	Tray 3 failure	Replace the tray 3.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 8504**

No Tray
The paper tray cannot be detected, re-install Tray 4.

When paper is fed from tray 4, it was detected that tray 4 is open.

<User Check>

- Set the paper tray in the machine.

Step	Cause	Remedy
1	Tray 4 paper size PCB harness connection failure	Reconnect the tray 4 paper size PCB harness.
2	Tray 4 paper size PCB installation failure	Reinstall the tray 4 paper size PCB.
3	Tray 4 failure	Replace the tray 4.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 8505**

No Tray
The paper tray cannot be detected, re-install Tray 1.

When paper feeding is specified from tray 1 or the tray, which is lower than the tray 1, it was detected that the tray 1 was opened while printing.

<User Check>

- Set the paper tray in the machine.

Step	Cause	Remedy
1	Tray 1 paper size PCB harness connection failure	Reconnect the tray 1 paper size PCB harness.
2	Tray 1 paper size PCB installation failure	Reinstall the tray 1 paper size PCB.
3	Paper tray failure	Replace the paper tray.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 8506**

No Tray
The paper tray cannot be detected, re-install Tray 2.

When paper feeding is specified from tray 2 or the tray, which is lower than the tray 2, it was detected that the tray 2 was opened while printing.

<User Check>

- Set the tray 2 in the machine.

Step	Cause	Remedy
1	Tray 2 paper size PCB harness connection failure	Reconnect the tray 2 paper size PCB harness.
2	Tray 2 paper size PCB installation failure	Reinstall the tray 2 paper size PCB.
3	Tray 2 failure	Replace the tray 2.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 8507**

No Tray
The paper tray cannot be detected, re-install Tray 3.

When paper feeding is specified from tray 3 or tray 4, it was detected that tray 3 was opened while printing.

<User Check>

- Set the tray 3 in the machine.

Step	Cause	Remedy
1	Tray 3 paper size PCB harness connection failure	Reconnect the tray 3 paper size PCB harness.
2	Tray 3 paper size PCB installation failure	Reinstall the tray 3 paper size PCB.
3	Tray 3 failure	Replace the tray 3.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 8508**

No Tray
The paper tray cannot be detected, re-install Tray 4.

When paper feeding is specified from tray 4, it was detected that tray 4 was opened while printing.

<User Check>

- Set the tray 4 in the machine.

Step	Cause	Remedy
1	Tray 4 paper size PCB harness connection failure	Reconnect the tray 4 paper size PCB harness.
2	Tray 4 paper size PCB installation failure	Reinstall the tray 4 paper size PCB.
3	Tray 4 failure	Replace the tray 4.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 8601**

No Tray ID 1
The Paper Tray ID 1 Not Set. Check the Paper Tray ID setting on printer driver and tray. Refer to Users Guide.

Although paper feeding from tray ID 1 is specified, tray ID 1 is not set to any of the trays.

Error code 8602

No Tray ID 2
The Paper Tray ID 2 Not Set. Check the Paper Tray ID setting on printer driver and tray. Refer to Users Guide.

Although paper feeding from tray ID 2 is specified, tray ID 2 is not set to any of the trays.

Error code 8603

No Tray ID 3
The Paper Tray ID 3 Not Set. Check the Paper Tray ID setting on printer driver and tray. Refer to Users Guide.

Although paper feeding from tray ID 3 is specified, tray ID 3 is not set to any of the trays.

Error code 8604

No Tray ID 4
The Paper Tray ID 4 Not Set. Check the Paper Tray ID setting on printer driver and tray. Refer to Users Guide.

Although paper feeding from tray ID 4 is specified, tray ID 4 is not set to any of the trays.

<User Check>

- Perform setting of each paper tray.

Step	Cause	Remedy
1	ID key holder damaged	Replace the ID key holder.
2	ID PCB failure of each paper tray.	Replace the each paper tray.
3	Each LT relay PCB failure	Replace the each LT relay PCB.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 8701**

Output Tray full
Remove the paper from the Output Tray.

When auto is specified to eject tray, it was detected that stack sensor of all eject trays became full state.

Error code 8702

Output Tray full
Remove the paper from the Standard Output Tray.

When paper eject tray is specified, the stack sensor of paper eject tray detected full state.

<User Check>

- Remove paper from each eject tray.

Step	Cause	Remedy
1	Coming off of stack actuator	Re-assemble the stack actuator.
2	Stack sensor harness connection failure	Reconnect the stack sensor harness.
3	Stack sensor failure	Replace the paper eject.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 8703**

Output Tray full
Remove the paper from the Optional Output Tray.

When optional output tray is specified, the stack sensor of optional output tray detected full state.

<User Check>

- Remove paper from optional output tray.

Step	Cause	Remedy
1	Coming off of optional stack actuator	Re-assemble the optional stack actuator.
2	Stack sensor of the optional output tray failure	Replace the stack sensor of the optional output tray.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 8900**

Size Error DX
Specify the correct paper.

When 2-sided printing is performed, registration front sensor detected that the paper size is smaller than Letter or the length exceeds Legal.

<User Check>

- Set A4 or Letter size paper on the paper tray.

Step	Cause	Remedy
1	Registration front actuator catching on some position	Reinstall the registration front actuator.
2	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 9001**

Size Mismatch
Load #S paper in MP Tray and press Go.

When receiving print command from MP tray, the MP tray paper size setting (Function setting) and paper size of the data designated for printing are not identical.

Error code 9002

Size Mismatch
Load #S paper in Tray 1 and press Go.

When receiving print command from tray 1, the tray 1 paper size setting (Function setting) and paper size of the data designated for printing are not identical.

Error code 9003

Size Mismatch
Load #S paper in Tray 2 and press Go.

When receiving print command from tray 2, the tray 2 paper size setting (Function setting) and paper size of the data designated for printing are not identical.

Error code 9004

Size Mismatch
Load #S paper in Tray 3 and press Go.

When receiving print command from tray 3, the tray 3 paper size setting (Function setting) and paper size of the data designated for printing are not identical.

Error code 9005

Size Mismatch
Load #S paper in Tray 4 and press Go.

When receiving print command from tray 4, the tray 4 paper size setting (Function setting) and paper size of the data designated for printing are not identical.

<User Check>

- Set the size of the paper size setting of each tray and paper size of the data designated for printing identical.

Step	Cause	Remedy
1	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 9102**

Wrong Paper size
Load the correct paper size in Tray 1 or press cancel then delete the job to return to Ready.

When receiving print command from tray 1, the paper size of the data designated for printing is larger than the paper size detected at tray 1 width sensor.

Error code 9103

Wrong Paper size
Load the correct paper size in Tray 2 or press cancel then delete the job to return to Ready.

When receiving print command from tray 2, the paper size of the data designated for printing is larger than the paper size detected at tray 2 width sensor.

Error code 9104

Wrong Paper size
Load the correct paper size in Tray 3 or press cancel then delete the job to return to Ready.

When receiving print command from tray 3, the paper size of the data designated for printing is larger than the paper size detected at tray 3 width sensor.

Error code 9105

Wrong Paper size
Load the correct paper size in Tray 4 or press cancel then delete the job to return to Ready.

When receiving print command from tray 4, the paper size of the data designated for printing is larger than the paper size detected at tray 4 width sensor.

<User Check>

- Match the paper size of each tray with the paper size of the data designated for printing.

Step	Cause	Remedy
1	Paper size sensor PCB failure of each tray	Replace the paper size sensor PCB of each tray.
2	Paper size sensor slider failure of each tray	Replace the each tray.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 9200**

BackCover closed
Open the Back Cover.

When receiving print command from MP tray with thick paper setting, back cover sensor detected that the cover is close state.

<User Check>

- Open the back cover.

Step	Cause	Remedy
1	Back cover sensor failure	Replace the back cover sensor.
2	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 9301**

No Paper
Load #S paper in Multi Purpose Tray.

When receiving print command from MP tray, MP paper empty sensor detected no paper state.

Error code 9302

No Paper
Load #S paper in Tray1.

When receiving print command from tray 1, T1 paper empty sensor detected no paper state.

Error code 9303

No Paper
Load #S paper in Tray2.

When receiving print command from tray 2, T2 paper empty sensor detected no paper state.

Error code 9304

No Paper
Load #S paper in Tray3.

When receiving print command from tray 3, T3 paper empty sensor detected no paper state.

Error code 9305

No Paper
Load #S paper in Tray4.

When receiving print command from tray 4, T4 paper empty sensor detected no paper state.

<User Check>

- Set paper to each tray.

Step	Cause	Remedy
1	Coming off of paper empty actuator of each tray	Re-assemble the paper empty actuator of each tray.
2	Each paper empty sensor harness connection failure	Reconnect harness of each paper empty sensor.
3	Each paper empty sensor failure	Replace the each paper empty sensor.
4	Relay PCB failure of each tray	Replace the relay PCB ASSY of each tray.
5	Plate sensor failure of each tray	Replace the plate sensor of each tray.
6	Paper feed PCB failure	Replace the paper feed PCB ASSY.
7	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 9306**

**No Paper
Load #S paper in #T.**

When receiving print command by auto, all paper empty sensors detected no paper state.

<User Check>

- Set paper to each tray.

Step	Cause	Remedy
1	Paper feed PCB failure	Replace the paper feed PCB ASSY.
2	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 9401**

**Paper Low Tray 1
Refill paper in Tray 1.**

The counter of tray 1 paper level sensor indicates 10% or less.

Error code 9402

**Paper Low Tray 2
Refill paper in Tray 2.**

The counter of tray 2 paper level sensor indicates 10% or less.

Error code 9403

**Paper Low Tray 3
Refill paper in Tray 3.**

The counter of tray 3 paper level sensor indicates 10% or less..

Error code 9404

**Paper Low Tray 4
Refill paper in Tray 4.**

The counter of tray 4 paper level sensor indicates 10% or less.

<User Check>

- Add papers to each tray.

Step	Cause	Remedy
1	Plate-up plate sensor failure of each paper tray	Replace the plate-up plate sensor of each paper tray.
2	Paper feed PCB failure	Replace the paper feed PCB.
3	LT relay PCB failure	Replace the LT relay PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 9501**

Size Mismatch
Load #S paper in #T and press Go.

When printing on paper fed from MP tray, paper size sensor detected that the size of paper set on the tray was smaller than the one specified by the printer driver.

Error code 9502

Size Mismatch
Load #S paper in #T and press Go.

When printing on paper fed from tray 1, paper size sensor detected that the size of paper set on the tray was smaller than the one specified by the printer driver.

Error code 9503

Size Mismatch
Load #S paper in #T and press Go.

When printing on paper fed from tray 2, paper size sensor detected that the size of paper set on the tray was smaller than the one specified by the printer driver.

Error code 9504

Size Mismatch
Load #S paper in #T and press Go.

When printing on paper fed from tray 3, paper size sensor detected that the size of paper set on the tray was smaller than the one specified by the printer driver.

Error code 9505

Size Mismatch
Load #S paper in #T and press Go.

When printing on paper fed from tray 4, paper size sensor detected that the size of paper set on the tray was smaller than the one specified by the printer driver.

<User Check>

- Adjust paper size of each tray to the size of the print data. Otherwise, adjust the paper size of the print data to the size of the paper.

Step	Cause	Remedy
1	Paper feed PCB failure	Replace the paper size ASSY.
2	LT relay PCB failure	Replace the LT relay PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 9701**

Size Error DX
Press Cancel. Specify the correct paper and load the same size paper as the Printer driver setting.

During 2-sided printing, paper size, which does not support 2-sided printing, was set by the driver.

<User Check>

- Set the paper size of the specified paper tray to the size with the prescribed size for 2-sides printing.

Step	Cause	Remedy
1	Size switch PCB failure	Replace the size switch PCB.
2	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 9702**

Size Error
Specify the correct paper size for Tray 1.

When receiving print command from tray 1, driver instructed non-support size.

Error code 9703

Size Error
Specify the correct paper size for Tray 2.

When receiving print command from tray 2, driver instructed non-support size.

Error code 9704

Size Error
Specify the correct paper size for Tray 3.

When receiving print command from tray 3, driver instructed non-support size.

Error code 9705

Size Error
Specify the correct paper size for Tray 4.

When receiving print command from tray 4, driver instructed non-support size.

<User Check>

- Adjust the paper size of the print data to the size inside the prescribed size.

Step	Cause	Remedy
1	Size switch PCB failure	Replace the size switch PCB.
2	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 9801**

**No DX Tray
Install the duplex tray correctly.**

During 2-sided printing, 2-sided jam sensor detected that the 2-sided tray is not set.

<User Check>

- Install 2-sided tray.

Step	Cause	Remedy
1	2-sided jam sensor harness connection failure	Reconnect the 2-sided jam sensor harness.
2	2-sided jam sensor installation failure	Reinstall the 2-sided jam sensor.
3	2-sided jam sensor failure	Replace the 2-sided jam sensor.
4	Paper feed PCB failure	Replace the paper feed PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 9802**

**DX Lever Error
Set the Duplex Lever to the correct position according to paper size used.**

During 2-sided printing, the paper size switching lever of 2-sided tray and paper size from the driver are not identical.

<User Check>

- Match the paper size switching lever of 2-sided tray with the paper size from the driver.

Step	Cause	Remedy
1	2-sided size sensor harness connection failure	Reconnect the 2-sided size sensor harness.
2	2-sided tray failure	Replace the 2-sided tray.
3	Paper feed drive PCB failure	Replace the paper feed drive PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 9803**

Duplex Disabled
Close the Back Cover of the machine.

When starting 2-sided printing, back cover detected that the cover is open state.

<User Check>

- Close the back cover.

Step	Cause	Remedy
1	Back cover sensor harness connection failure	Reconnect the back cover sensor harness.
2	Bent back cover boss	Replace the back cover.
3	Back cover sensor failure	Replace the back cover sensor.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 9804**

Duplex Disabled
Close the Back Cover of the machine.

During 2-sided printing, back cover sensor detected that the cover is open state.

<User Check>

- Close the back cover.

Step	Cause	Remedy
1	Back cover lock section failure	Replace the back cover.
2	Back cover sensor failure	Replace the back cover sensor.

■ **Error code 9901**

Cover is Open
Close the Optional Output Tray Cover.

When printing has started with setting for ejecting paper to optional output tray, back cover sensor of optional output tray detected that the cover is open state.

<User Check>

- Close the back cover of the optional output tray.

Step	Cause	Remedy
1	Back cover sensor harness connection failure of the optional output tray	Reconnect the back cover sensor harness of the optional output tray.
2	Bent back cover boss of optional output tray.	Replace the back cover of the optional output tray.
3	Back cover sensor of the optional output tray failure	Replace the back cover sensor of the optional output tray.
4	LT relay PCB failure	Replace the LT relay PCB ASSY.

■ **Error code 9902**

Cover is Open
Close the Optional Output Tray Cover.

When printing with the setting for ejecting paper to optional output tray, back cover sensor of the optional output tray detected that the cover is open state.

<User Check>

- Close the back cover of the optional output tray.

Step	Cause	Remedy
1	Back cover lock section failure of optional output tray	Replace the back cover of the optional output tray.
2	Back cover sensor of the optional output tray failure	Replace the back cover sensor of the optional output tray.

■ **Error code 9A00**

Manual Feed
Load #S paper.

When paper feed is fixed to MP tray, MP paper empty sensor detected paper-less state.

<User Check>

- Set paper in the MP tray.

Step	Cause	Remedy
1	Coming off of MP paper empty actuator	Re-assemble the MP paper empty actuator.
2	MP paper empty sensorharness connection failure	Reconnect the MP paper empty sensorharness.
3	MP paper empty sensor failure	Replace the MP paper empty sensor.
4	Paper feed drive PCB failure	Replace the paper feed drive PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 9C01**

.

Ink full sensor detected that there is no ink inside during head cleaning.

<User Check>

- Replace ink cartridge and perform cleaning again.

Step	Cause	Remedy
1	Ink full sensor failure	Replace the Sub tank ASSY.
2	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 9C02**

.

During head cleaning, waster ink box sensor detected that waste ink box was removed.

Step	Cause	Remedy
1	Waste ink box is removed	Reinstall the waste ink box.
2	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 9C03**

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During head cleaning, waste ink box sensor detected that waste ink box became full.

Step	Cause	Remedy
1	Waste ink box full	Replace the waste ink box.
2	Maintenance drive PCB failure	Replace the maintenance drive PCB ASSY.
3	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code 9C06**

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During head cleaning, it was detected that some sort of error occurred.

Error code 9C07

.

During head cleaning, an error caused by an operator was detected.

<User Check>

- Remove the underlying cause of the error such as closing the cover.

Step	Cause	Remedy
1	During head cleaning, an operation to suspend cleaning such as opening the top cover was performed	Restore the operation.
2	Engine PCB failure	Replace the engine PCB ASSY.

■ **Error code C401**

Tray 1 Error
Pull out Tray 1 completely. Check inside the Tray.

Within the specified time, plate sensor of the tray 1 was unable to detect completion of lift-up.

Error code C402

Tray 2 Error
Pull out Tray 2 completely. Check inside the Tray.

Within the specified time, plate sensor of the tray 2 was unable to detect completion of lift-up.

Error code C403

Tray 3 Error
Pull out Tray 3 completely. Check inside the Tray.

Within the specified time, plate sensor of the tray 3 was unable to detect completion of lift-up.

Error code C404

Tray 4 Error
Pull out Tray 4 completely. Check inside the Tray.

Within the specified time, plate sensor of the tray 4 was unable to detect completion of lift-up.

<User Check>

- Set the specified paper on each tray.

Step	Cause	Remedy
1	Plate sensor harness connection failure of each tray	Reconnect the plate sensor harness of each tray.
2	Plate motor harness connection failure of each tray	Reconnect the plate motor harness of each tray.
3	Relay PCB failure of each tray	Replace the relay PCB ASSY of each tray.
4	Plate motor failure of each tray	Replace the plate motor of each tray.
5	Paper feed PCB failure	Replace the paper feed PCB ASSY.
6	LT relay PCB failure	Replace the LT relay PCB ASSY.
7	Main PCB failure	Replace the main PCB ASSY.

■ Error code C700

**Out of Memory
Press Cancel.**

Memory is insufficient to deploy print data.

<User Check>

- Print by dividing print data.

Step	Cause	Remedy
1	Main PCB failure	Replace the main PCB ASSY.

■ Error code CA00

**Unusable Device
Remove the Device. Turn the power off and back on again.**

The overcurrent protection circuit worked when an off-specification USB device was inserted into the USB host terminal.

<User Check>

- Remove the USB device.

Step	Cause	Remedy
1	Main PCB failure	Replace the main PCB ASSY.

■ Error code E000

**Print Unable E0
Turn the power off and then back on again.**

An error occurred in the ROM checksum.

<User Check>

- Write the latest firmware.

Step	Cause	Remedy
1	Main PCB failure	Replace the main PCB ASSY.

■ Error code E100

**Print Unable E1
Turn the power off and then back on again.**

Error occurred in the main PCB program.

<User Check>

- Write the latest firmware.

Step	Cause	Remedy
1	Main PCB failure	Replace the main PCB ASSY.

■ **Error code E600**

Print Unable E6
Turn the power off and then back on again.

Error occurred in E2PROM on the main PCB.

<User Check>

- Write the latest firmware.

Step	Cause	Remedy
1	Main PCB failure	Replace the main PCB ASSY.

■ **Error code ED00**

Print Unable ED
Turn the power off and then back on again.

Communication with the wireless LAN module and main PCB cannot be established upon startup of the power supply.

Step	Cause	Remedy
1	Wireless LAN harness connection failure	Reconnect the Wireless LAN harness.
2	Wireless LAN PCB failure	Replace the wireless LAN PCB.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Error code EE00**

Print Unable EE
Turn the power off and then back on again.

After Wireless LAN module and main PCB connection was established at power ON, communication problem was detected.

Step	Cause	Remedy
1	Wireless LAN PCB failure	Replace the wireless LAN PCB.
2	Main PCB failure	Replace the main PCB ASSY.

■ **Error code F900**

Machine Error F9

During function code 74, power is turned OFF.

4.2 Paper Feeding Problems

Problems related to paper feeding are end user recoverable if following the User Check items. If the same problem occurs again, follow each procedure in the order of the number described in the Step column in the tables below.

4.2.1 No paper feeding from paper tray

<User Check>

- Check if the paper is loaded into the paper tray correctly.
- Check whether the number of set sheets of paper inside the paper tray is too much.
- Turn back the paper loaded in the paper tray or change the orientation of the paper by 180°.
- Check if the thickness of the paper is 60 to 105 g/m².
- Check whether paper feeding tray specified a different tray.
- Shuffle through papers well and reinsert the papers into the paper tray.
- Clean the pick-up roller.

Step	Cause	Remedy
1	Coming off of paper feed actuator	Re-assemble the paper feed actuator.
2	Plate motor harness connection failure	Check plate motor harness connection and reconnect the harness.
	Paper feed motor harness connection failure	Check the plate feed motor harness and reconnect the harness.
3	Each paper feeding clutch harness connection failure	Check the connection of each paper feeding clutch harness and reconnect the harness.
4	Each paper feed sensor PCB harness connection failure	Check the connection of each paper feed sensor PCB harness and reconnect the harness.
5	Each Pick-up roller abrasion	Replace the each Pick-up roller.
6	Each plate-up gear breakage	Replace the each plate-up gear.
7	Each paper feeding clutch failure	Replace the each paper feeding clutch.
8	Each paper feed sensor failure	Replace the each paper feed sensor.
9	Plate motor failure	Replace the plate motor.
10	Paper feed motor failure	Replace the paper feed motor.
11	Each LT connector failure	Replace the each LT connector.
12	Each LT relay PCB failure	Replace the each LT relay PCB ASSY.
13	Paper feed PCB failure	Replace the paper feed PCB ASSY.
14	Power supply PCB failure	Replace the power supply PCB ASSY.
15	Main PCB failure	Replace the main PCB ASSY.

4.2.2 No paper feeding from MP tray

<User Check>

- Check if the paper is loaded into the MP tray correctly.
- Check whether multiple numbers of sheets of paper are set to the MP tray.
- Check if the thickness of the paper is 60 to 163 g/m².
- Check whether the MP tray is specified for the paper feeding tray.

Step	Cause	Remedy
1	Coming off of MP paper empty actuator	Re-assemble the MP paper empty actuator.
2	MP solenoid harness connection failure	Check the connection of MP solenoid harness and reconnect the harness.
3	Paper feed motor harness connection failure	Check the connection of paper feed motor harness and reconnect the harness.
4	MP paper empty sensor PCB harness connection failure	Check the connection of each MP paper empty sensor PCB harness and reconnect the harness.
5	MP paper empty sensor failure	Replace the MP paper empty sensor PCB ASSY.
6	MP solenoid failure	Replace the MP solenoid.
7	Paper feed motor failure	Replace the paper feed motor.
8	Paper feed PCB failure	Replace the paper feed PCB ASSY.
9	Power supply PCB failure	Replace the power supply PCB ASSY.
10	Main PCB failure	Replace the main PCB ASSY.

4.2.3 Feed multiple numbers of sheets of paper

<User Check>

- Check if the paper is loaded into the each paper tray correctly.
- Check whether the number of set sheets of paper inside each paper tray is too much.
- Turn back the paper loaded in the each paper tray or change the orientation of the paper by 180°.
- Check if the thickness of the paper is 60 to 105 g/m². (60 to 163 g/m² for MP tray)
- Shuffle through papers well and reinsert the papers into the paper tray.

Step	Cause	Remedy
1	Abrasion of retainer, separation pad or Separation roller	Replace the paper feeding kit of the applicable paper tray.

4.2.4 Wrinkles on paper

<User Check>

- Check if the paper is loaded into the each paper tray correctly.
- Turn back the paper loaded in the each paper tray or change the orientation of the paper by 180°.
- Adjust the paper guide corresponding to the paper size.
- Check if the thickness of the paper is 60 to 105 g/m². (60 to 163 g/m² for MP tray)
- Check whether the paper is damp.

Step	Cause	Remedy
1	Paper eject failure	Replace the paper eject.

4.2.5 Paper inclines diagonally

<User Check>

- Check if the paper is loaded into the each paper tray correctly.
- Adjust the paper guide corresponding to the paper size.
- Check if the thickness of the paper is 60 to 105 g/m². (60 to 163 g/m² for MP tray)
- Check if too much paper is loaded in the tray.

Step	Cause	Remedy
1	Main PCB failure	Replace the main PCB ASSY.

4.2.6 Unable to perform 2-sided printing

<User Check>

- Firmly close back cover.
- Firmly install paper tray.
- Set driver to 2-sided printing.
- Use the A4 or Letter size paper.
- Firmly set 2-sided tray.

Step	Cause	Remedy
1	Eject actuator catching on some position	Reinstall the eject actuator.
2	Switchback solenoid harness connection failure	Reconnect the switchback solenoid harness.
3	2-sided clutch harness connection failure	Check the connection of 2-sided clutch harness and reconnect the harness.
4	Switchback sensor connection failure	Check the connection of switchback sensor harness and reconnect the harness.
5	Back cover sensor connection failure	Check the connection of back cover sensor harness and reconnect the harness.
6	2-sided tray failure	Replace the 2-sided tray.
7	Back cover sensor failure	Replace the back cover sensor.
8	2-sided clutch failure	Replace the 2-sided clutch.
9	Back cover failure	Replace the paper eject ASSY.
10	Main PCB failure	Replace the main PCB ASSY.

4.2.7 The order of pages changes when printing on plain paper is directly placed on the tray on the back side

<User Check>

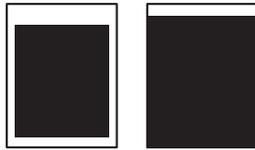
- If the temperature and humidity where the machine is used are low, increase them to normal ones.
- Instead of the eject stopper tray on the back side, use the eject tray on the top.

4.3 Image Defect Troubleshooting

4.3.1 Image defect examples



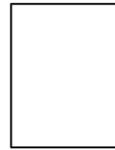
Light (2-113)



Faulty registration (2-113)



Dark (2-113)



Completely blank (2-114)



All black (2-114)



Dirt on paper (2-115)



The left side of the recording paper gets dirty (2-115)



Vertical streaks (2-116)



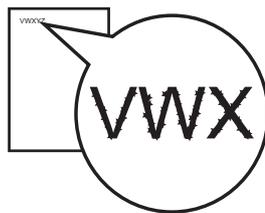
White vertical streaks (2-116)



White spots (2-117)



Black spots (2-117)



Blurred text (2-118)

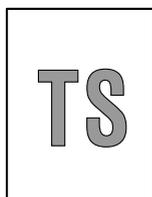


Characters become blurry (2-119)

4.3.2 Troubleshooting image defect

Image defect related problems are user recoverable if following the User Check items. If the same problem occurs again, follow each procedure in the order of the number described in the Step column in the tables below.

■ Light

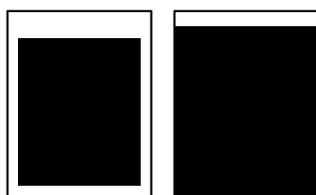


<User Check>

- If the whole page is light, ink save mode may be ON. Turn OFF the ink save mode.
- Adjust density by density adjustment.
- Perform head cleaning.

Step	Cause	Remedy
1	Old ink	Replace the Ink cartridge and clean the head.
2	Ink head failure	Replace the ink head.
3	Power supply PCB failure	Replace the power supply PCB.
4	Engine PCB failure	Replace the engine PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

■ Faulty registration

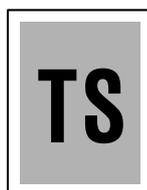


<User Check>

- Check whether appropriate paper type is selected on the driver.

Step	Cause	Remedy
1	Wrong write alignment value	Refer to "Printing of the test pattern for the print start position and adjustments" of "1.4.18 Print adjustment (Function code 68)" in Chapter 5 and reenter the value.
2	Dirt on print start sensor	Wipe the print start sensor.

■ Dark



<User Check>

- Adjust concentration by concentration adjustment.

Step	Cause	Remedy
1	Ink head PCB failure	Replace the ink head.
2	Engine PCB failure	Replace the engine PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Completely blank**



<User Check>

- Perform head cleaning.
- Check whether ink cartridge exceeded maintenance period.

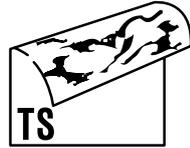
Step	Cause	Remedy
1	The top cover was left open	Perform powerful purge. (Refer to Function code 17.)
2	Head flat cable connection failure	Reconnect the head flat cable.
3	Broken tube of ink flow path between sub tank and head	Replace the ink tube that connects between the sub tank and head.
4	Ink full sensor failure	Replace the sub tank ASSY.
5	Ink head failure	Replace the ink head.
6	Engine PCB failure	Replace the engine PCB ASSY.

■ **All black**



Step	Cause	Remedy
1	Ink head failure	Replace the ink head.
2	Engine PCB failure	Replace the engine PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Dirt on paper**



<User Check>

- This symptom might stop occurring after making several prints.
- Check whether paper is curled.

Step	Cause	Remedy
1	Dirt in the paper feeding path	Wipe dirt off. (Refer to the figure below.)

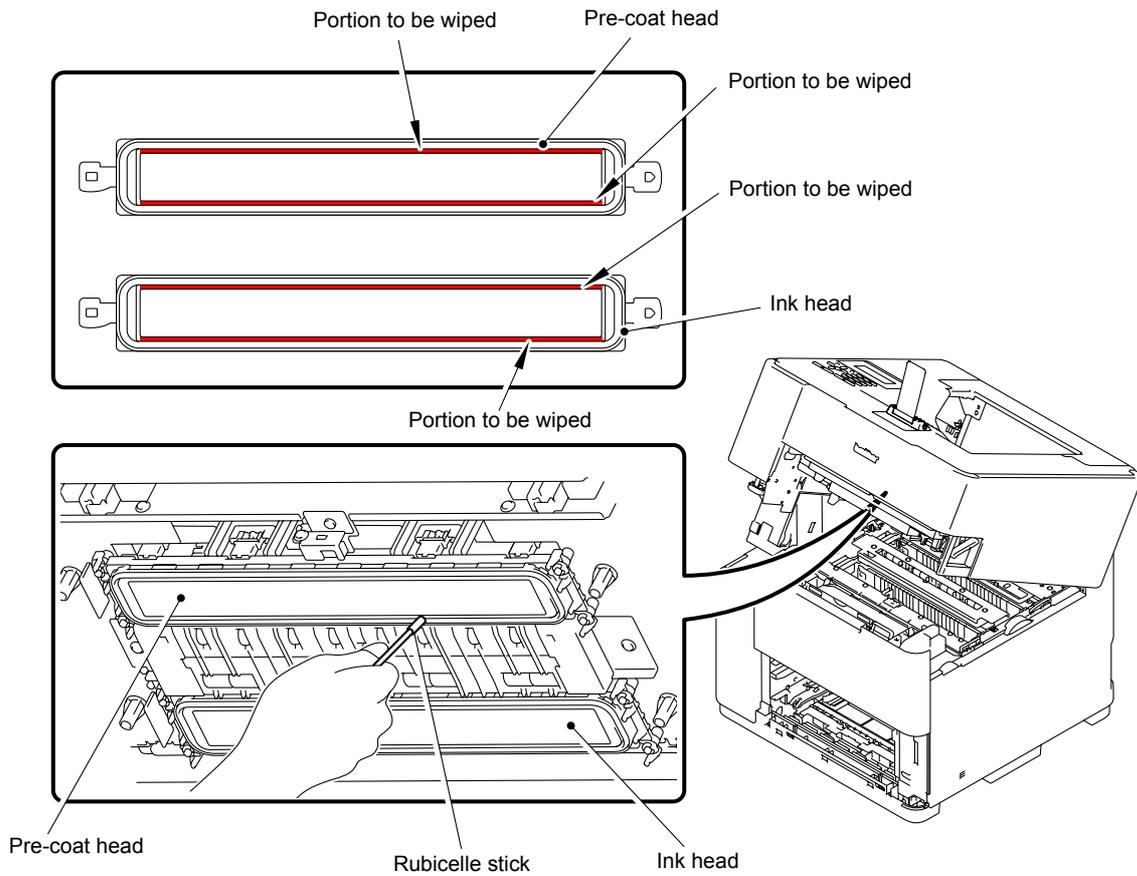


Fig. 2-7

■ **The left side of the recording paper gets dirty**



Step	Cause	Remedy
1	Drive frame ASSY failure	Replace the drive frame ASSY.
2	Dirt in the paper feeding path	Wipe dirt off. (Refer to Fig. 2-7)

■ Vertical streaks

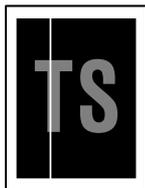


<User Check>

- This symptom might stop occurring after making several prints.
- Perform head cleaning.

Step	Cause	Remedy
1	Dirt in the paper feed system	Wipe dirt off.
2	Ink head failure	Replace the ink head.
3	Engine PCB failure	Replace the engine PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ White vertical streaks

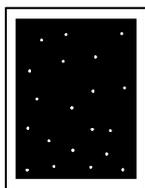


<User Check>

- Perform head cleaning.

Step	Cause	Remedy
1	Head flat cable connection failure	Reconnect the head flat cable.
2	Ink is adhered to the surface around the head	Clean the head. (Refer to Fig. 2-7 (P2-115))
3	Ink head failure	Replace the ink head.
4	Ink full sensor failure	Replace the sub tank ASSY.
5	Engine PCB failure	Replace the engine PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

■ White spots

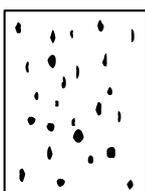


<User Check>

- Perform head cleaning.
- Check whether ink cartridge exceeded maintenance period.

Step	Cause	Remedy
1	Old ink	Replace the ink specified for the product.
2	Ink head failure	Replace the ink head.
3	Ink full sensor failure	Replace the sub tank ASSY.
4	Engine PCB failure	Replace the engine PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

■ Black spots

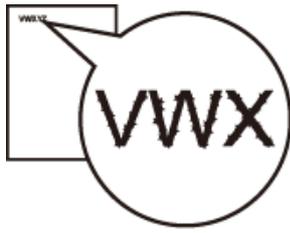


<User Check>

- Perform head cleaning.

Step	Cause	Remedy
1	Glass stage dirty	Clean the Glass stage.
2	Glass stage failure	Replace the platen unit.
3	Head cap failure	Replace the ink head.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Blurred text**



<User Check>

- Perform head cleaning.
- Check if paper is not damp.
- Lower the printing density.

Step	Cause	Remedy
1	Loose installation of ink head	Reinstall the ink head.
2	Ink head failure	Replace the ink head.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Dirt on paper edge (when printed papers are overlapped, number of lines can be seen on the end face.)**

<User Check>

- Perform blank-sheet printing several times. (Dirt might get thinner)

Step	Cause	Remedy
1	Dirt on Star Wheel roller of the paper eject	Clean the Star Wheel roller.
2	Terrible dirt on Star Wheel roller of the paper eject	Replace the paper eject.

■ **Dirt on the paper edge during 2-sided printing (Ink dirt occurred on the front edge, rear end, or corner.)**

<User Check>

- Check whether paper is curled.
- Lower the printing density.
- If short grain paper is used, change it to the long grain paper.

■ **Characters become blurry**



<User Check>

- Perform head cleaning.
- Check if paper is not damp.

Step	Cause	Remedy
1	Ink head failure	Replace the ink head.
2	Ink full sensor failure	Replace the sub tank ASSY.
3	Wiper failure	Replace the platen unit.
4	Main PCB failure	Replace the main PCB ASSY.

4.4 Software Setting Problems

The end user can solve problems pertaining to software, for instance, print cannot be made from a computer although test print and machine setting print can be made from the machine, by following the User Check items. If the same problem occurs again, follow each procedure in the order of the number described in the Step column in the tables below.

4.4.1 Cannot print data

<User Check>

- Check that the USB cable or LAN cable is not damaged.
- Check that the wireless LAN settings are correct.
- Check that the correct machine is selected if you have an interface switching device.
- Check the descriptions on the software setting in the user's guide.
- Check driver setting.
- Restore the settings at factory shipment. (Refer to User's guide.)
- Check if printing limit ID is wrong.
- Check if data is unprintable.
- Check if data will exceed the maximum printing number of sheets.
- Check emulation and reprint.

Step	Cause	Remedy
1	Machine connection	When using Macintosh, check Product ID* and if it is wrong, update the firmware.
2	Engine PCB failure	Replace the engine PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

* Check Macintosh Product ID by the following procedure.

- (1) Select "About This Mac" from "Apple" Menu.
- (2) Press **More Info** button in the dialog of "About This Mac".
- (3) Select "USB" under "Hardware" within "Contents" on the left side.
- (4) Select product "HL-S7000DN" from within "USB Device Tree".
- (5) Check whether "Product ID" in the "HL-S7000DN" is 0050h.

4.5 Network Problems

4.5.1 Cannot make a print through network connection

<User Check>

- Check the descriptions in the network user's guide.
- Check the descriptions on the software setting in the user's guide.
- Check whether LAN cable is disconnected.
- Perform network reset. (Refer to User's guide.)

Step	Cause	Remedy
1	Harness connection failure of wireless LAN PCB	Check the harness connection of the wireless LAN PCB and reconnect the harness.
2	Wireless LAN PCB failure	Replace the wireless LAN PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

4.6 Troubleshooting on Operational Panel

4.6.1 Nothing is displayed on the LCD.

Step	Cause	Remedy
1	AC cord failure	Replace the AC cord.
2	Panel PCB harness connection failure	Check the connection of panel PCB harness and reconnect the harness.
3	Panel key PCB harness connection failure	Check the connection of panel key PCB harness and reconnect the harness.
4	LCD harness connection failure	Check the connection of LCD harness and reconnect the harness.
5	LCD failure	Replace the LCD ASSY.
6	Panel PCB failure	Replace the panel PCB ASSY.
7	Panel key PCB failure	Replace the panel key PCB ASSY.
8	Power supply PCB failure	Replace the power supply PCB ASSY.
9	Main PCB failure	Replace the main PCB ASSY.

4.6.2 LED is not lit.

Step	Cause	Remedy
1	AC cord failure	Replace the AC cord.
2	Panel key PCB harness connection failure	Check the connection of panel key PCB harness and reconnect the harness.
3	LED harness connection failure	Check the connection of LED harness and reconnect the harness.
4	Panel key PCB failure	Replace the panel key PCB ASSY.
5	LED failure	Replace the LED PCB ASSY.
6	Power supply PCB failure	Replace the power supply PCB ASSY.
7	Main PCB failure	Replace the main PCB ASSY.

4.6.3 Unable to perform panel operation

<User Check>

- Check whether the function lock is not set.

Step	Cause	Remedy
1	Panel unit installation failure	Reinstall the panel unit.
2	Panel key PCB harness connection failure	Check the connection of panel key PCB harness and reconnect the harness.
3	Rubber key failure	Replace the rubber key.
4	Panel key PCB failure	Replace the panel key PCB ASSY.
5	Power supply PCB failure	Replace the power supply PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

4.7 Troubleshooting on the PCB

4.7.1 Main PCB failure

<User Check>

- Turn OFF and ON the power switch.
- Write the latest firmware.

Step	Cause	Remedy
1	Main PCB failure	Replace the main PCB ASSY.

4.7.2 Full memory

Memory is full.

<User Check>

- Press **Go** button and print the accumulated data.
- Reduce the amount of data or lower the resolution.

Step	Cause	Remedy
1	Main PCB failure	Replace the main PCB ASSY.

4.7.3 Print overrun

Data deployment is too late.

<User Check>

- Reduce complication of the data or lower the resolution.

Step	Cause	Remedy
1	Main PCB failure	Replace the main PCB ASSY.

4.7.4 Engine PCB failure

Step	Cause	Remedy
1	Harness connection failure of engine PCB	Check harness connection between the engine PCB and the main PCB ASSY and reconnect the harness.
2	Engine PCB failure	Replace the engine PCB ASSY.
3	Power supply PCB failure	Replace the power supply PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

4.7.5 Power supply PCB failure

Step	Cause	Remedy
1	Harness connection failure of power supply PCB	Check the harness connection of the power supply PCB and reconnect the harness.
2	Power supply PCB failure	Replace the power supply PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

4.8 Others Problems

4.8.1 Unable to turn ON the power.

<User Check>

- Properly insert the AC cord.

Step	Cause	Remedy
1	AC cord failure	Replace the AC cord.
2	Harness connection failure of Panel key PCB	Check the harness connection of the panel key PCB and reconnect the harness.
3	Harness connection failure of Panel PCB	Check the harness connection of the panel PCB and reconnect the harness.
4	Panel key PCB failure	Replace the panel key PCB ASSY.
5	Panel PCB failure	Replace the panel PCB ASSY.
6	Power supply PCB failure	Replace the power supply PCB ASSY.
7	Main PCB failure	Replace the main PCB ASSY.

4.8.2 Power is turned ON but the machine does not operate at all.

<User Check>

- Check whether the temperature of the installation location is below the specified temperature.
- Check that the USB cable is not damaged.
- Check that the LAN cable is not damaged.

Step	Cause	Remedy
1	Wireless LAN harness connection failure	Check the connection of wireless LAN harness and reconnect the harness.
2	Power supply PCB failure	Replace the power supply PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

4.8.3 USB port for connecting the optional card reader does not function (no response)

<User Check>

- Replace the USB cable.
- Check that card is compatible.
- Check that data form is compatible.
- Check that USB device embedded with USB HUB was not connected.
- Load the latest firmware.
- Turn OFF and ON the power switch.

Step	Cause	Remedy
1	Main PCB failure	Replace the main PCB ASSY.

CHAPTER 3 DISASSEMBLY AND ASSEMBLY

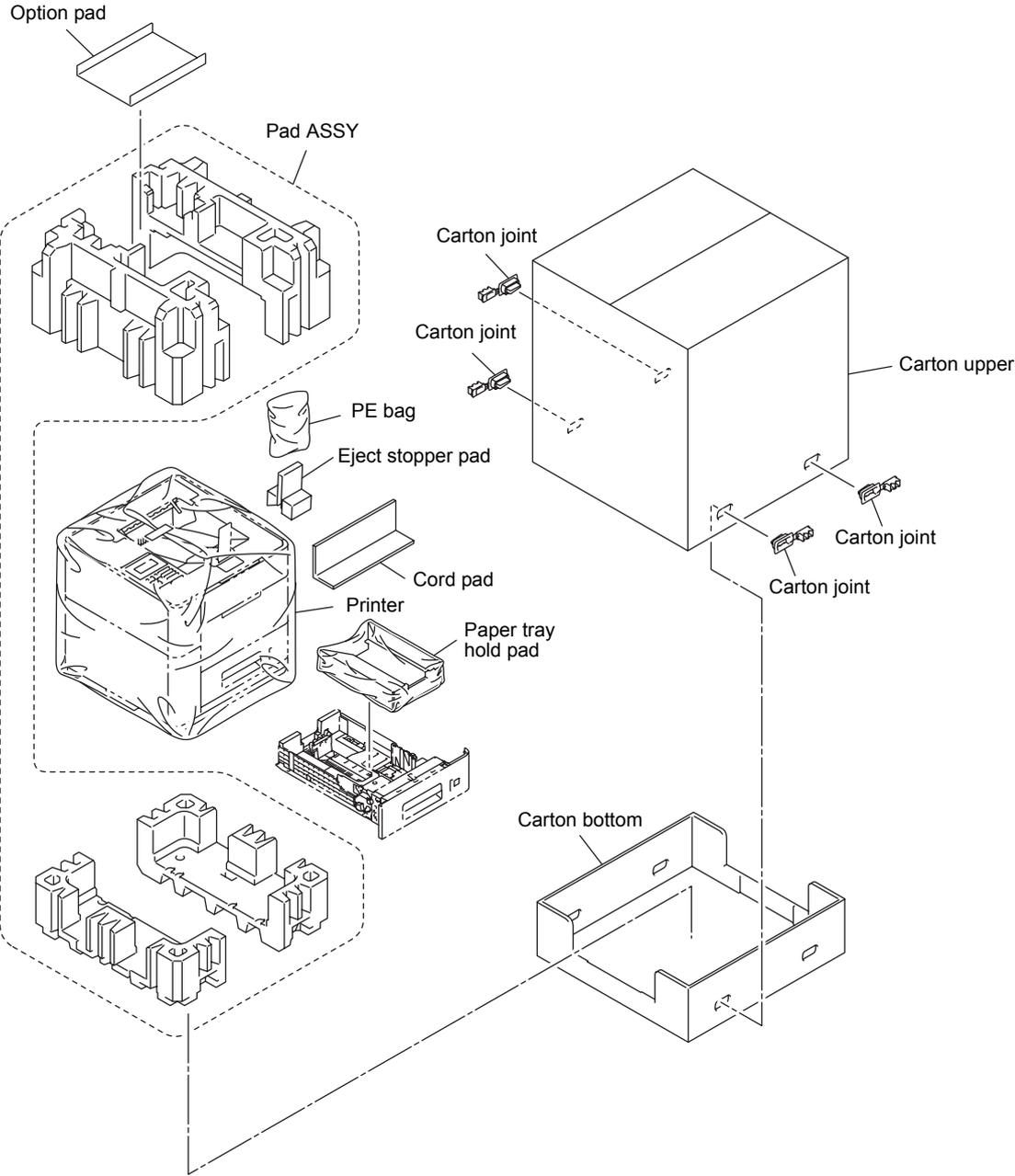
1. SAFETY PRECAUTIONS

To avoid creating secondary problems by mishandling, follow the warnings and precautions below during maintenance work.

Caution:

- Be careful not to lose screws, washers, or other parts removed.
- Be sure to apply grease to the gears and applicable positions specified in this chapter.
- When using soldering irons or other heat-generating tools, take care not to accidentally damage parts such as wires, PCBs and covers.
- Static electricity charged in your body may damage electronic parts. When transporting PCBs, be sure to wrap them in conductive sheets.
- When replacing the PCB and all the other related parts, put on a grounding wrist band and perform the job on a static mat. Also take care not to touch the conductor sections on the flat cables or on the wire harness.
- After disconnecting flat cables, check that each cable is not damaged at its end or shortcircuited.
- When connecting flat cables, do not insert them at an angle. After insertion, check that the cables are not at an angle.
- When connecting or disconnecting cable connectors, hold the connector body, not the cables. If the connector has a lock, release the connector lock first to release it.
- After a repair, check not only the repaired portion but also all connectors. Also check that other related portions are functioning properly before operational checks.
- After an assembly, recommend the operation of "dielectric strength voltage check" and "continuity check".

2. PACKING

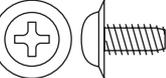


3. SCREW CATALOGUE

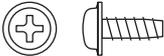
Taptite bind B

Taptite bind B M3x10	
Taptite, bind B M4x10	

Taptite cup S

Taptite cup S M3x6 SR	
Taptite, cup S M4x8	

Taptite cup B

Taptite cup B M3x8	
-----------------------	---

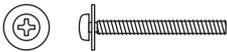
Shoulder screw

Shoulder screw	
----------------	---

Screw bind

Screw bind M2x16	
---------------------	---

Screw pan(P)

Screw pan (P) M2P0.4x18	
----------------------------	---

4. SCREW TORQUE LIST

Note:

For verifying the shape of each screw, refer to **“3. SCREW CATALOGUE”** in this chapter.

Location of screw	Screw type	Q' ty	Tightening torque N·m (kgf·cm)
ID key holder	Taptite cup B M3x8	2	0.5±0.1(5±1)
Front cover	Taptite bind B M4x10	1	0.8±0.1(8±1)
Rear cover finisher L	Taptite bind B M4x10	1	0.8±0.1(8±1)
Rear cover finisher R	Taptite bind B M4x10	1	0.8±0.1(8±1)
Top cover R	Taptite bind B M4x10	1	0.8±0.1(8±1)
Top cover L	Taptite bind B M4x10	2	0.8±0.1(8±1)
Top cover ASSY	Taptite bind B M4x10	6	0.8±0.1(8±1)
	Taptite cup S M3x6 SR	2	0.8±0.1(8±1)
Earth harness	Taptite cup S M3x6 SR	1	0.8±0.1(8±1)
Panel rear cover	Taptite cup B M3x8	5	0.5±0.1(5±1)
Earth harness	Taptite bind B M3x8	1	0.5±0.1(5±1)
Panel PCB ASSY	Taptite bind B M3x8	1	0.5±0.1(5±1)
Rear cover L	Taptite cup S M3x6 SR	1	0.8±0.1(8±1)
Side cover L	Taptite cup S M3x6 SR	4	0.8±0.1(8±1)
Rear cover R	Taptite cup S M3x6 SR	1	0.8±0.1(8±1)
Side cover R	Taptite cup S M3x6 SR	3	0.8±0.1(8±1)
Under cover B	Shoulder screw	2	0.8±0.1(8±1)
Engine PCB shield plate	Taptite cup S M3x6 SR	4	0.4±0.1(4±1)
Engine PCB ASSY	Taptite cup S M3x6 SR	2	0.4±0.1(4±1)
Refill frame upper	Taptite bind B M4x10	7	0.8±0.1(8±1)
	Taptite cup S M3x6 SR	2	0.8±0.1(8±1)
Refill frame R	Taptite cup S M3x6 SR	3	0.8±0.1(8±1)
Refill frame L	Taptite cup S M3x6 SR	2	0.8±0.1(8±1)
Ink refill Unit	Taptite cup S M3x6 SR	1	0.8±0.1(8±1)
	Taptite bind B M4x10	4	0.8±0.1(8±1)
Tube holder 2	Taptite cup B M3x8	1	0.5±0.1(5±1)
Engine PCB base plate	Taptite cup S M3x6 SR	3	0.8±0.1(8±1)
Sub CR frame rear L	Taptite cup S M3x6 SR	2	0.8±0.1(8±1)

Location of screw	Screw type	Q' ty	Tightening torque N·m (kgf·cm)
Cap motor cover	Taptite cup S M3x6 SR	2	0.8±0.1(8±1)
Sub tank ASSY	Taptite cup S M3x6 SR	4	0.8±0.1(8±1)
Head attachment of the Pre-coat head	Screw pan (P) M2P0.4x18	2	0.4±0.1(4±1)
Head attachment of the Ink head	Screw pan (P) M2P0.4x18	2	0.4±0.1(4±1)
Fan unit	Taptite cup S M3x6 SR	2	0.8±0.1(8±1)
Pre-coat duct	Taptite cup S M3x6 SR	1	0.8±0.1(8±1)
Ink duct	Taptite cup S M3x6 SR	1	0.8±0.1(8±1)
Ink head ASSY	Taptite cup B M3x10	3	0.5±0.1(5±1)
Pre-coat head ASSY	Taptite cup B M3x10	3	0.5±0.1(5±1)
Head protector	Screw bind M2x16	2	0.15±0.02(1.5±0.2)
Cover frame rear L	Taptite cup S M3x6 SR	3	0.8±0.1(8±1)
Buffer tank ASSY	Taptite cup S M3x6 SR	2	0.8±0.1(8±1)
Tube holder bracket	Taptite cup S M3x6 SR	1	0.8±0.1(8±1)
Drive frame ASSY	Taptite cup S M3x6 SR	3	0.8±0.1(8±1)
Main PCB shield plate	Taptite cup S M3x6 SR	6	0.4±0.1(4±1)
Main PCB ASSY	Taptite cup S M3x6 SR	4	0.4±0.1(4±1)
Speaker holder	Taptite cup S M3x6 SR	2	0.8±0.1(8±1)
Paper feed PCB ASSY	Taptite cup S M3x6 SR	2	0.4±0.1(4±1)
Power supply PCB ASSY	Taptite cup S M3x6 SR	4	0.8±0.1(8±1)
Paper eject ASSY	Taptite cup S M4x8	4	1.0±0.1(10±1)

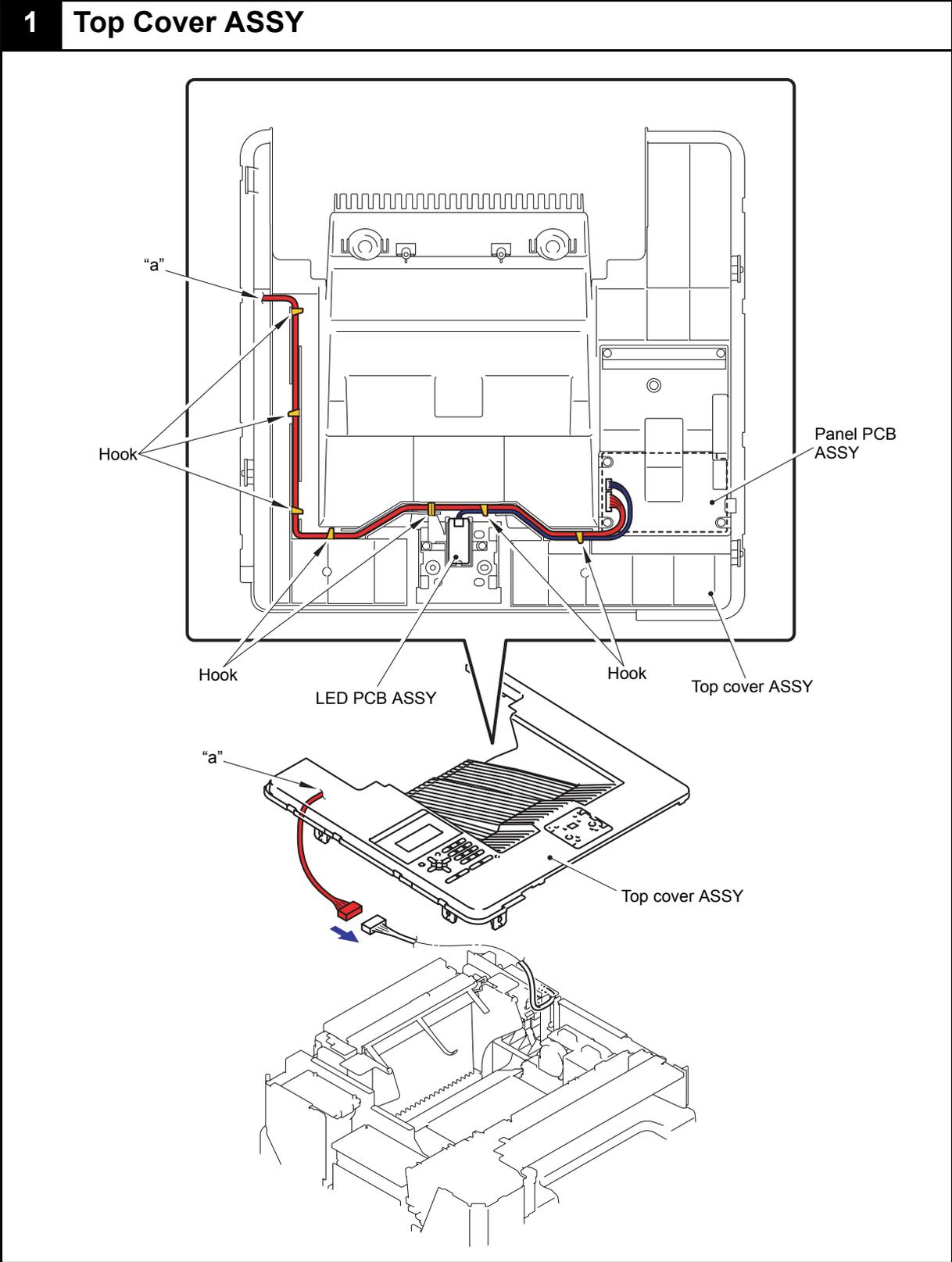
5. LUBRICATION

There are no applicable parts.

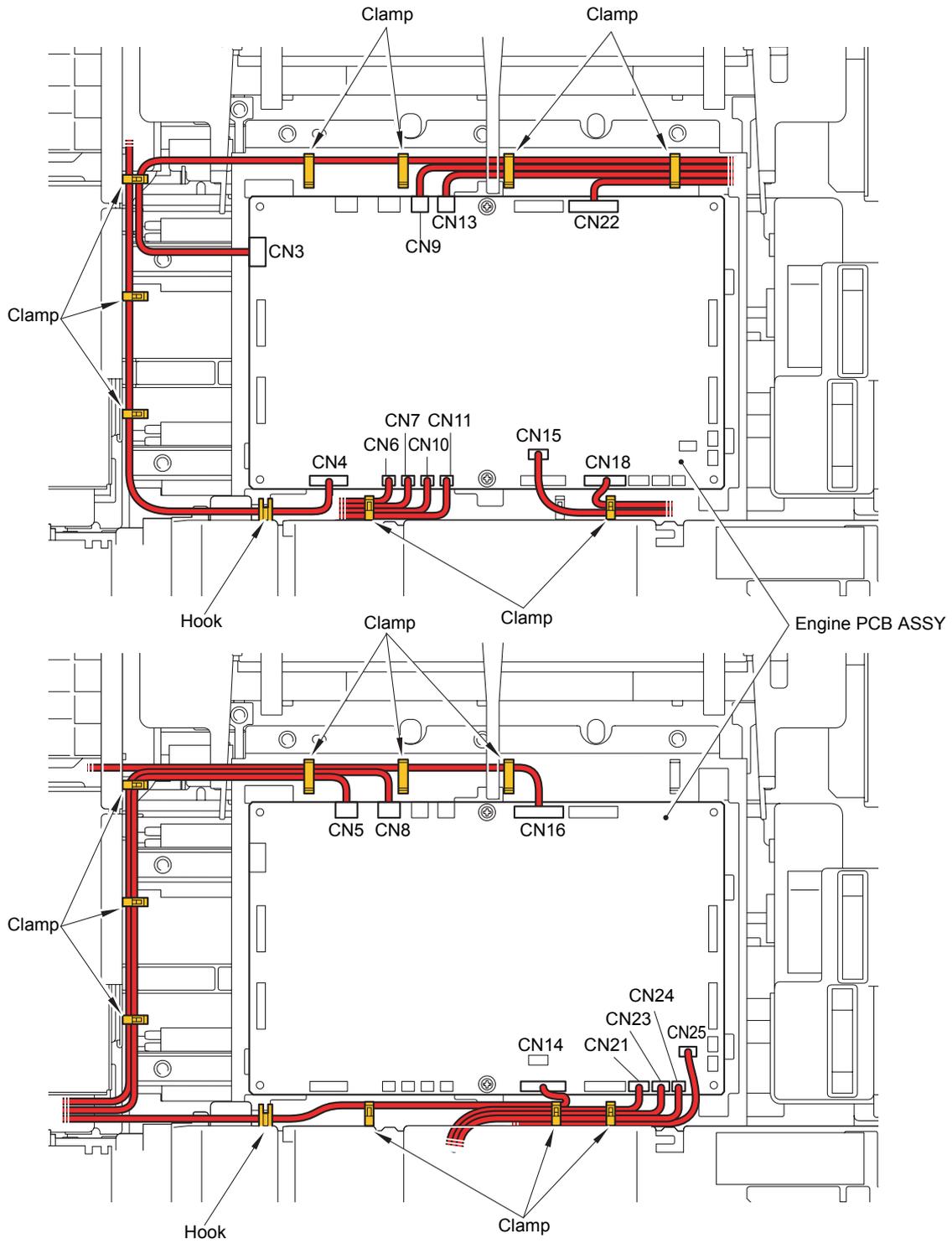
6. OVERVIEW OF GEARS

There are no applicable parts.

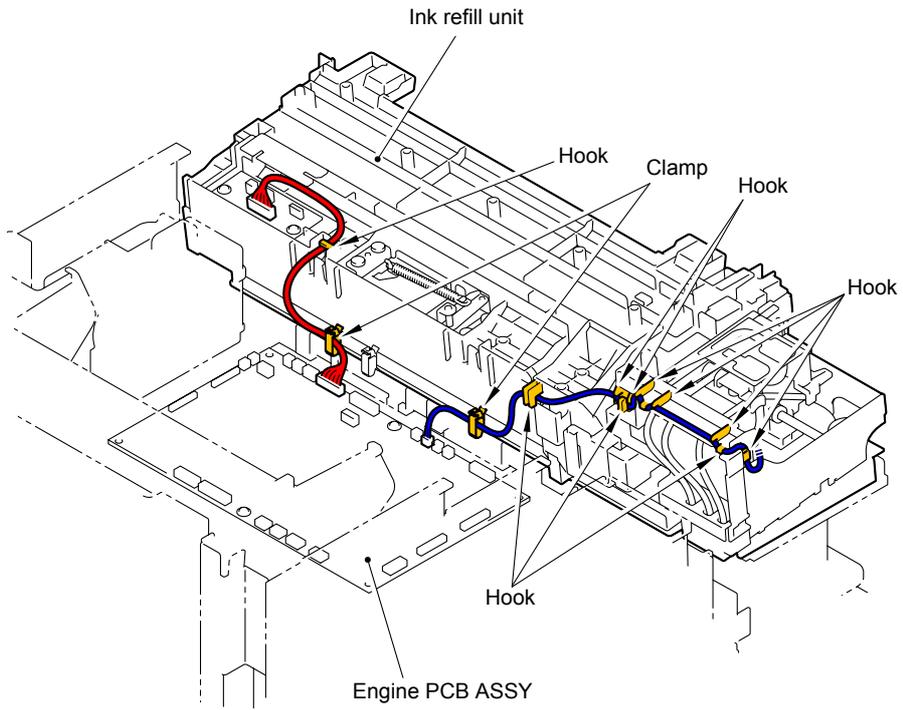
7. HARNESS ROUTING



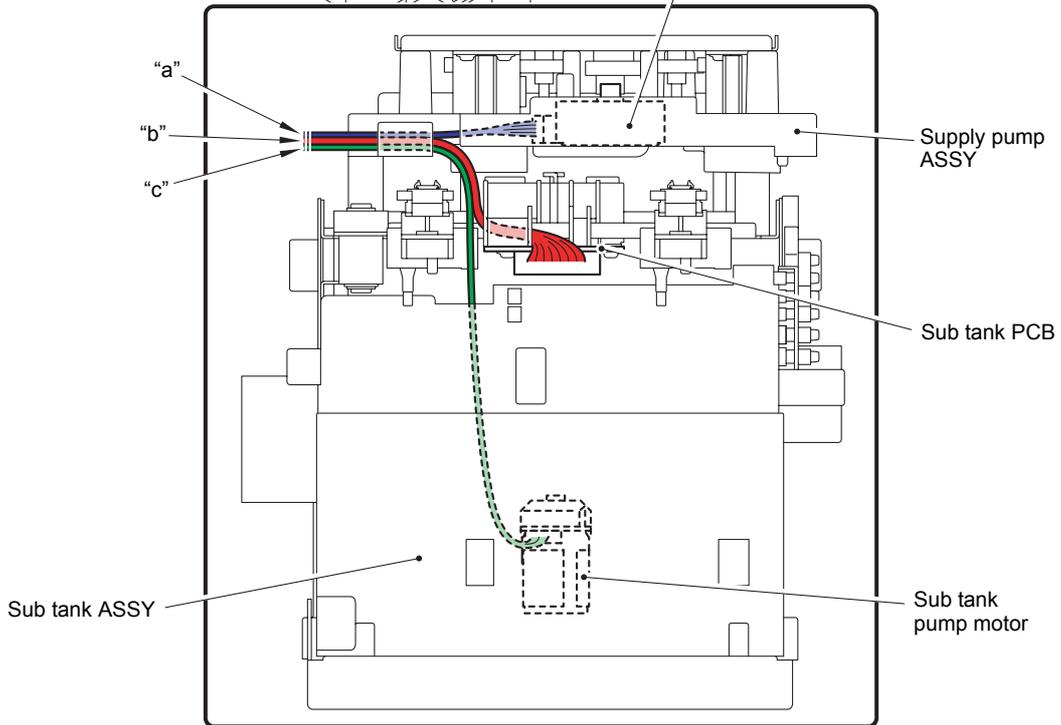
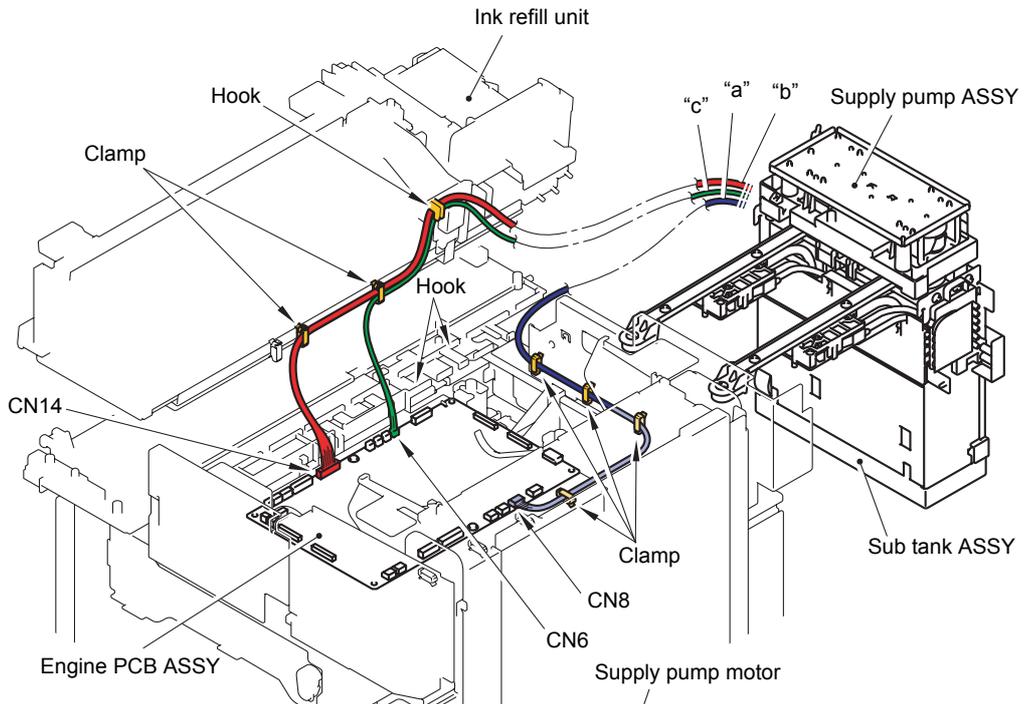
2 Engine PCB ASSY



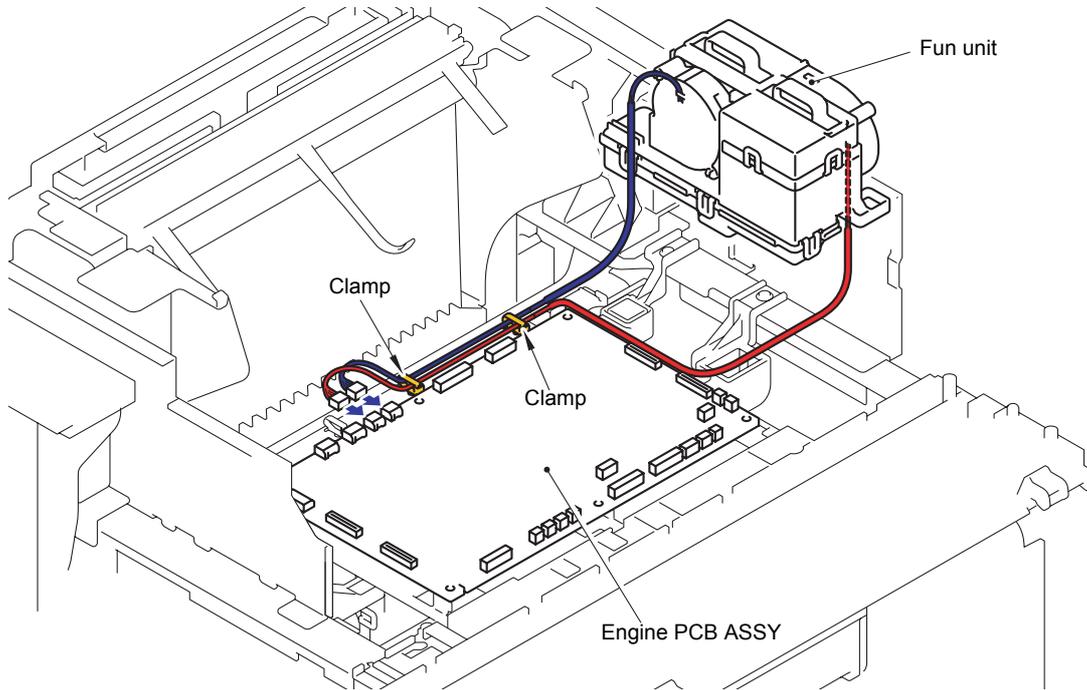
3 Ink Refill Unit



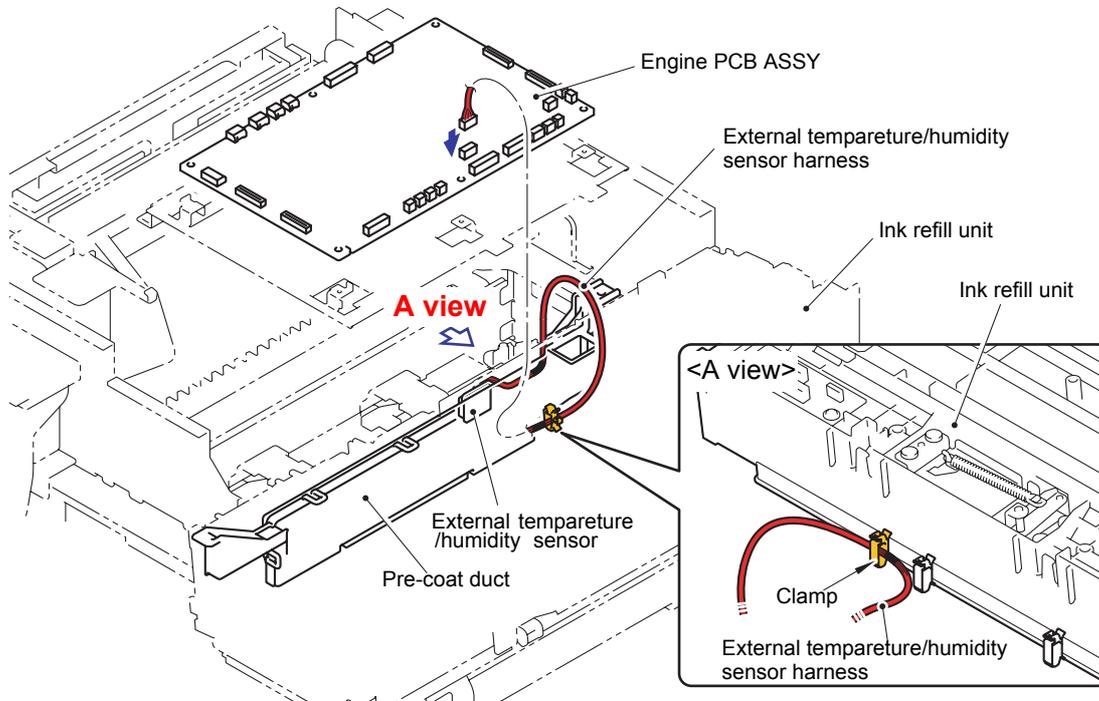
4 Supply Pump ASSY/Sub Tank ASSY



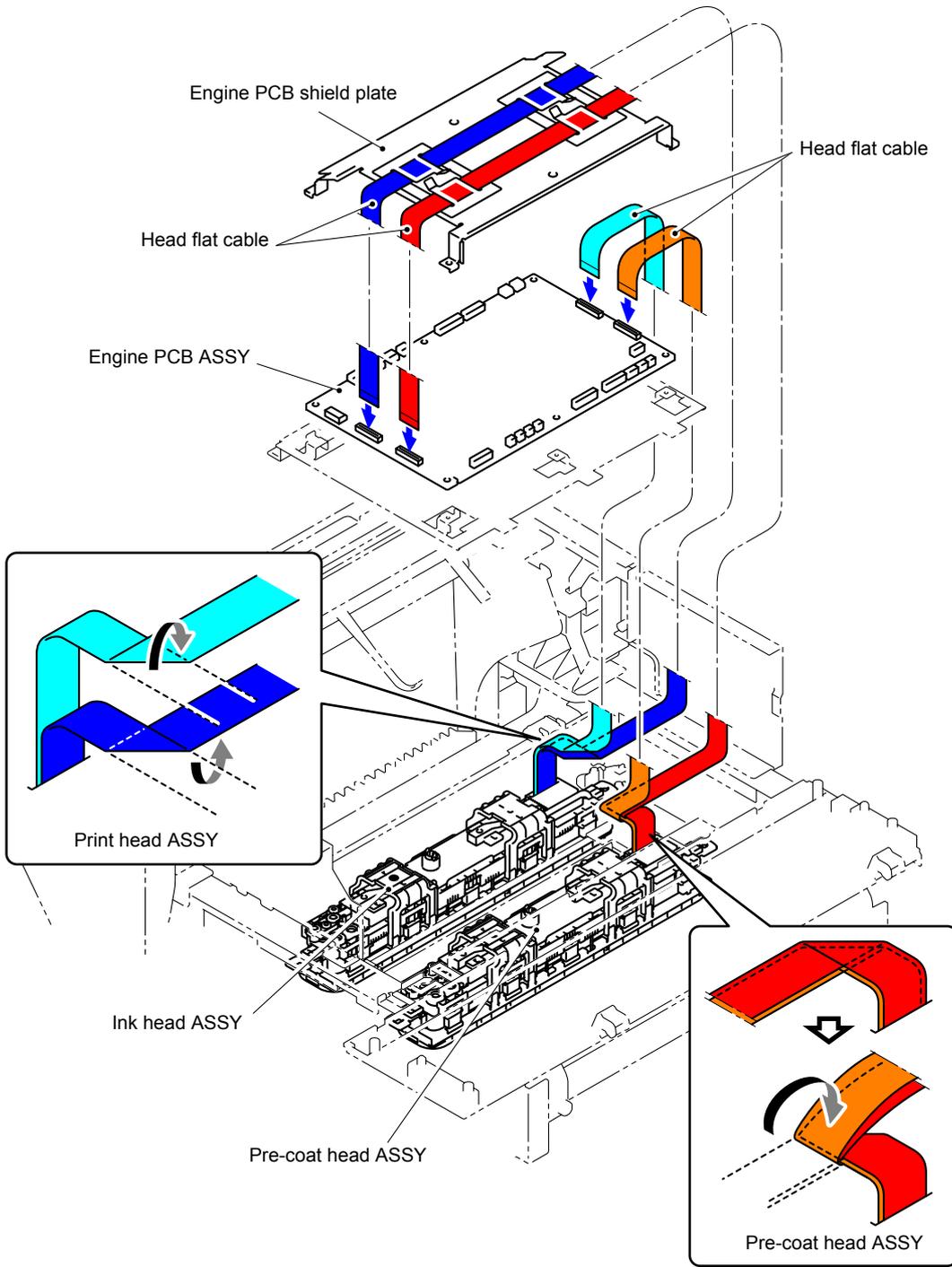
5 Fan Unit



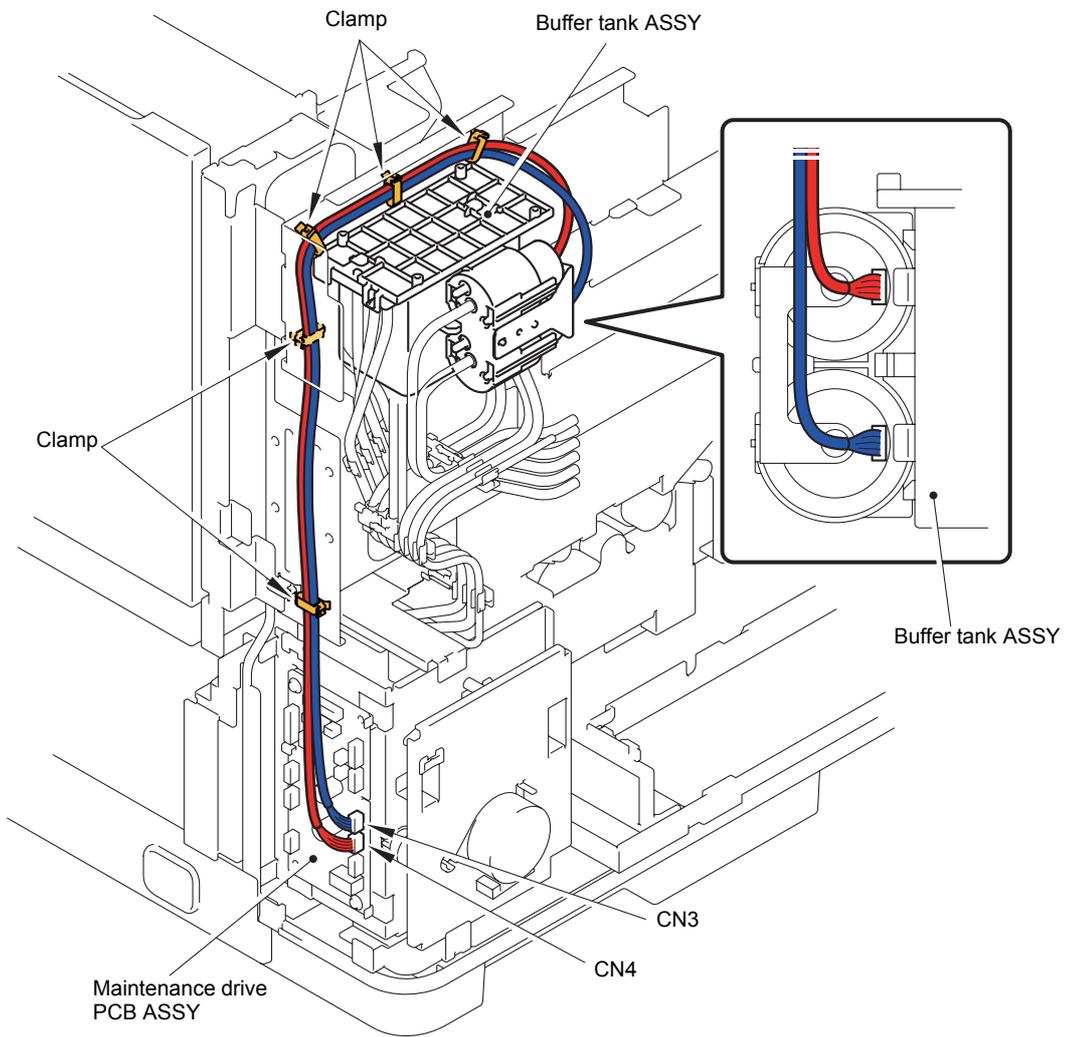
6 Pre-coat Duct



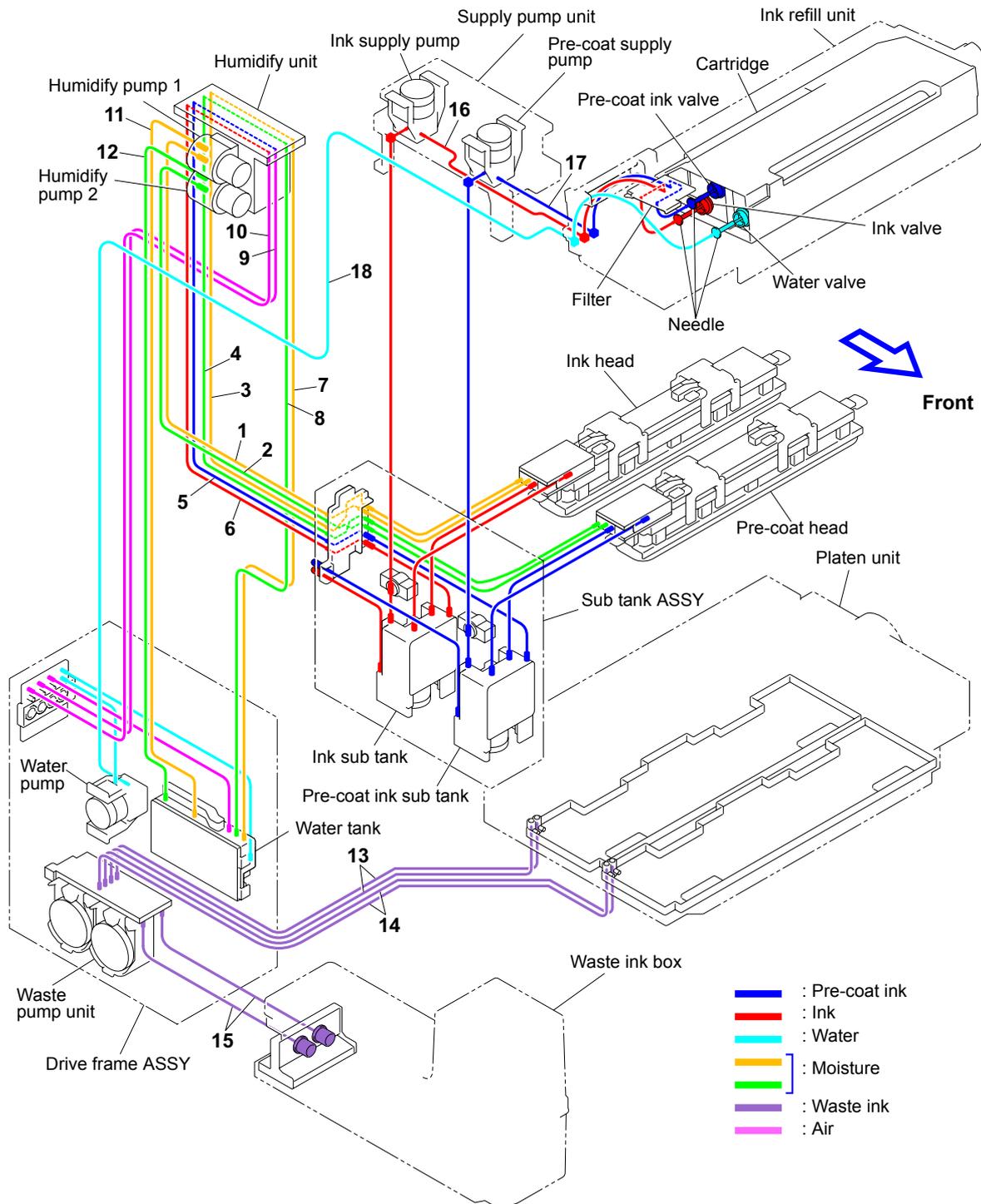
7 Ink Head ASSY/Pre-coat Head ASSY



8 Buffer Tank ASSY



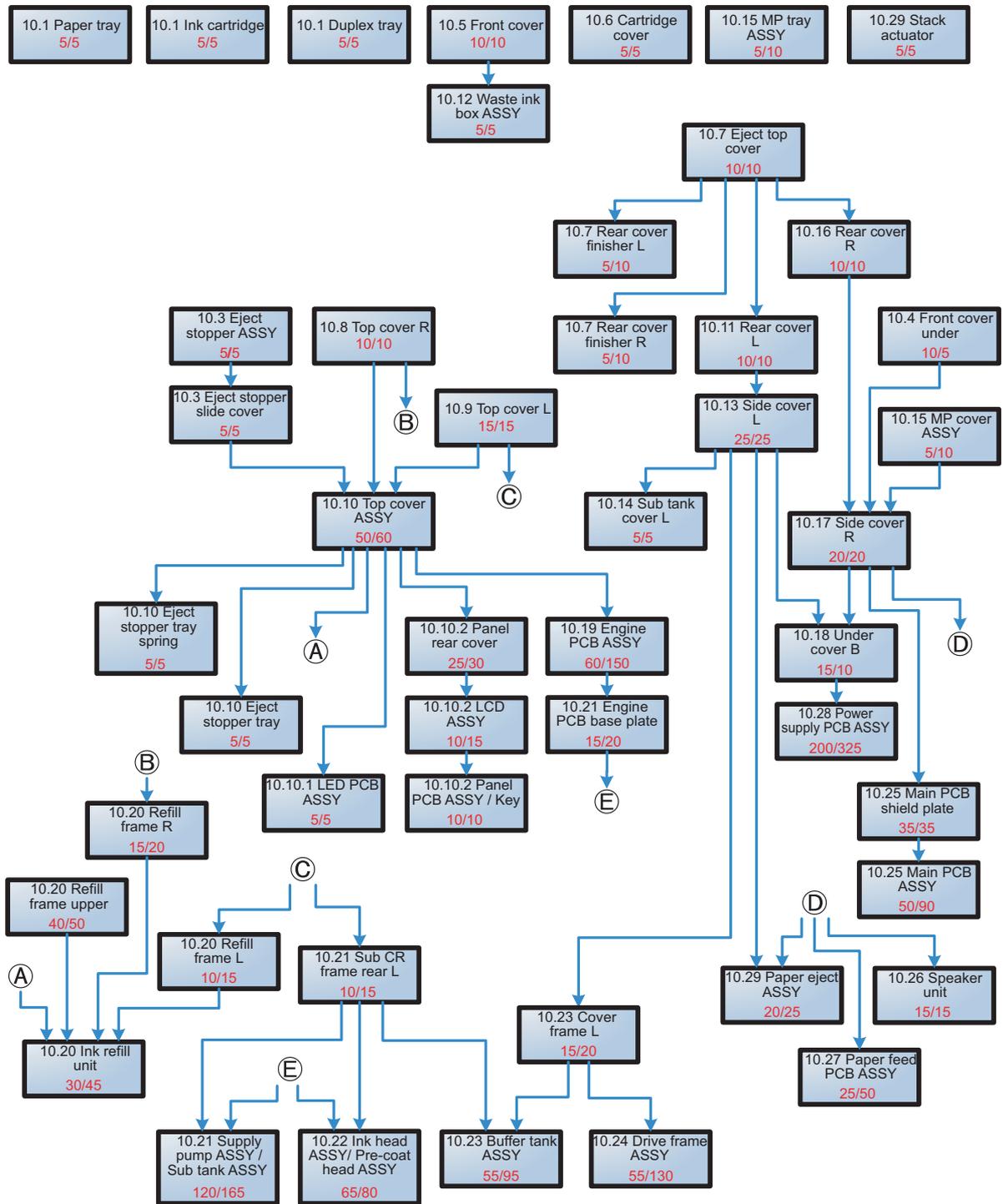
8. TUBE DIAGRAM



1	Humid tube BK GO B	LEB739001	10	Sub tank tube BK B	LEB744001
2	Humid tube FG GO B	LEB742001	11	Humid tube BK GO A	LEB723001
3	Humid tube BK RTN A	LEB737001	12	Humid tube FG GO A	LEB724001
4	Humid tube FG RTN A	LEB740001	13	PF waste tube D	LEC073001
5	Sub tank tube FG A	LEB745001	14	PF waste tube E	LEC074001
6	Sub tank tube BK A	LEB743001	15	Waste ink box tube	LEB695001
7	Humid tube BK RTN B	LEB738001	16	Supply tube BK	LEB755001
8	Humid tube FG RTN B	LEB741001	17	Supply tube FG	LEB756001
9	Sub tank tube FG B	LEB746001	18	Water in tube A	LEB719001

9. DISASSEMBLY FLOW

Disassembly/Re-Assembly (second)



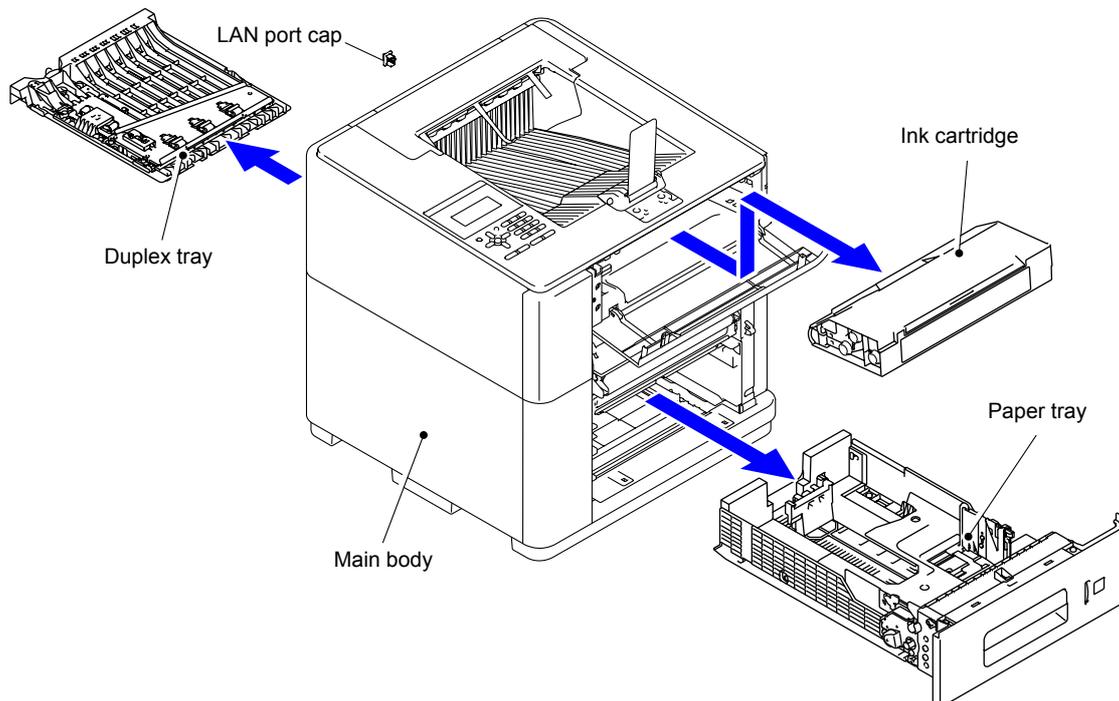
10. DISASSEMBLY PROCEDURE

10.1 Preparation

■ Wiring and disassembling supplied parts

Prior to proceeding with the disassembly procedure,

- (1) Unplug
 - the AC cord,
 - the USB cable, if connected, and
 - the LAN cable, if connected.
- (2) Remove
 - the Paper tray,
 - the Ink cartridge,
 - the Duplex tray, and
 - the LAN port cap.



10.2 Paper Tray

- (1) Open the Retard roller cover.

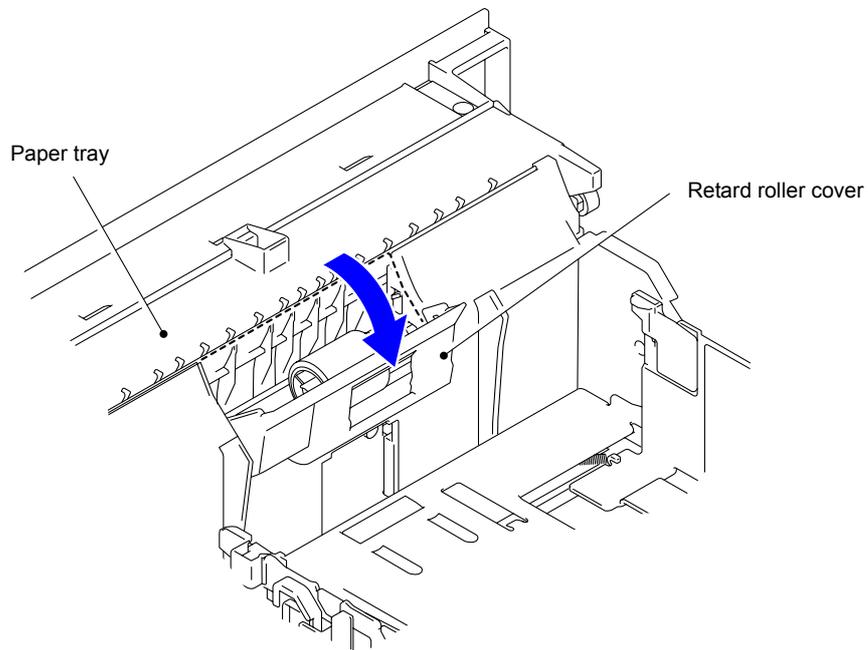


Fig. 3-1

- (2) Release the Hook of the Retard roller to remove the Retard roller from the Paper tray.

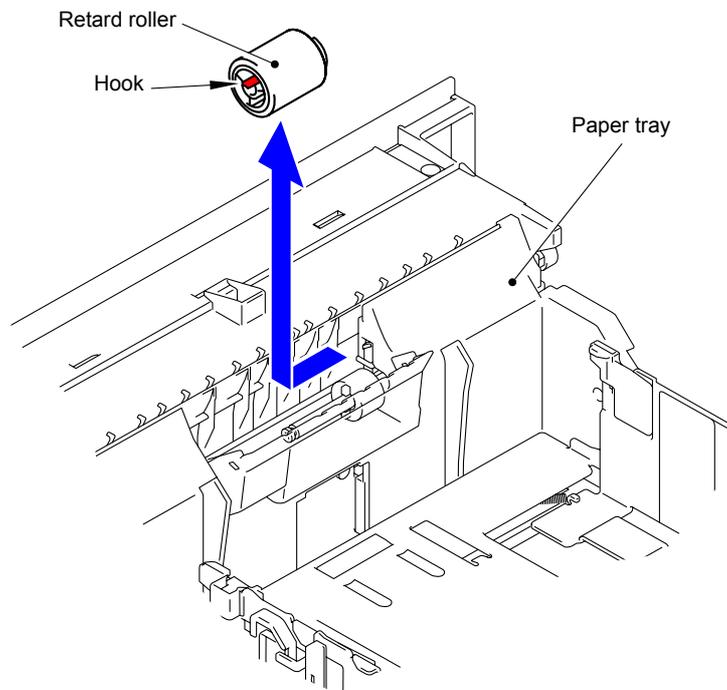


Fig. 3-2

- (3) Remove the two Taptite cup B M3x8 screws to remove the ID key holder from the Paper tray.

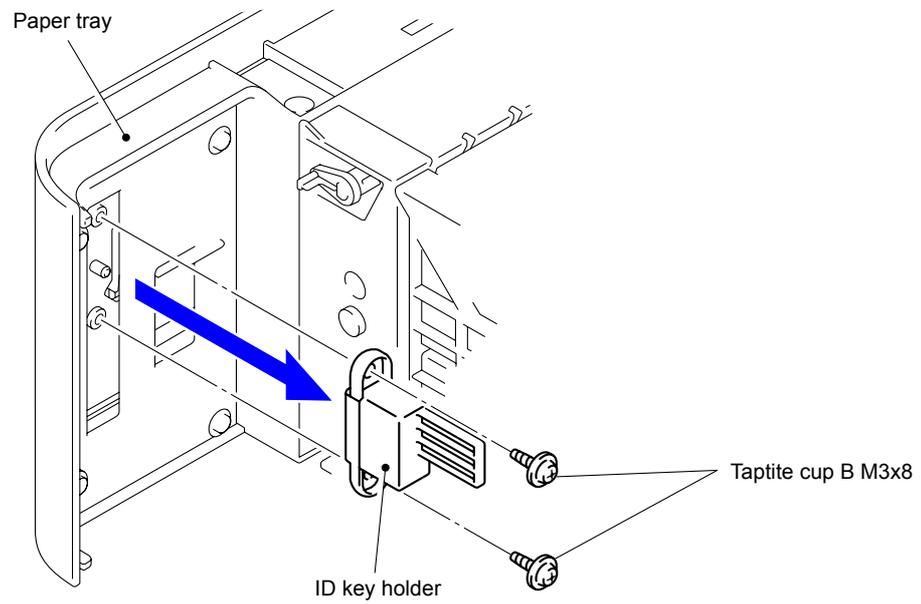


Fig. 3-3

Assembling Note:

Be sure to install the ID key holder in the orientation as shown in the figure above.

10.3 Eject Stopper ASSY

- (1) Remove the Eject stopper ASSY as pressing the Buttons at the both sides of the Eject stopper ASSY.

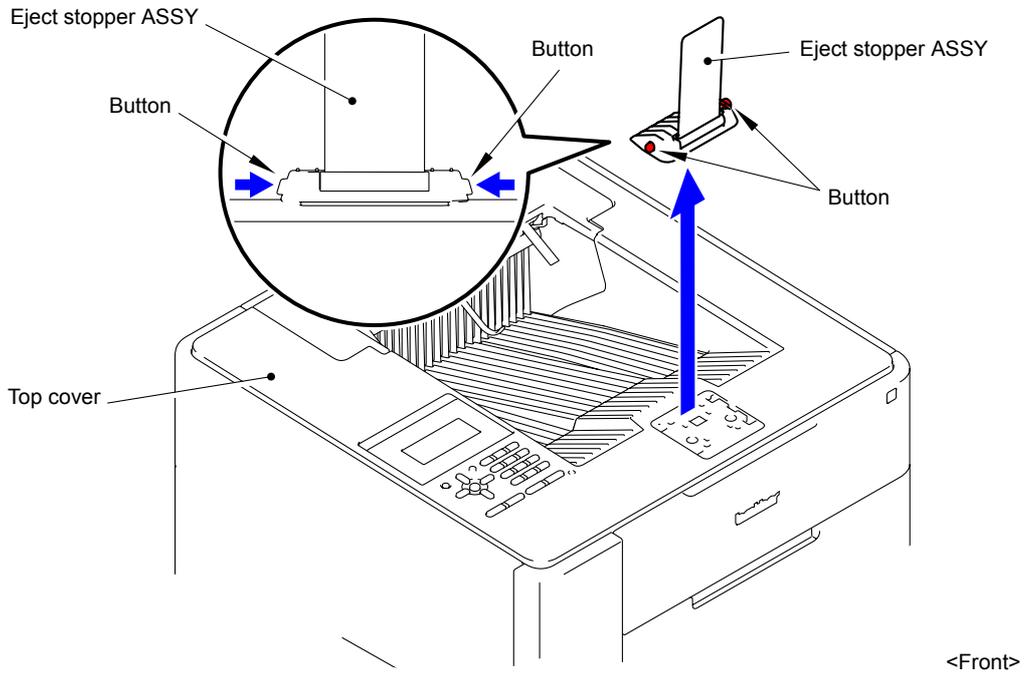


Fig. 3-4

- (2) Slide the Eject stopper slide cover to the center and release the two Hooks to remove the Eject stopper slide cover from the Top cover.

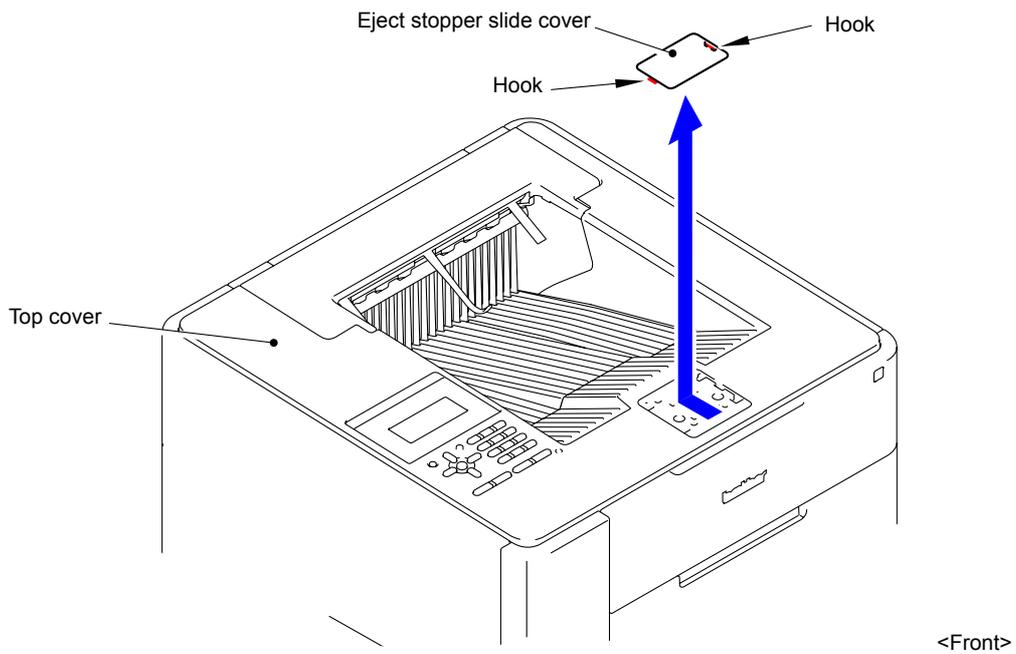


Fig. 3-5

10.4 Front Cover Under

- (1) Release the two Hooks of the Front cover under to remove the Front cover under.

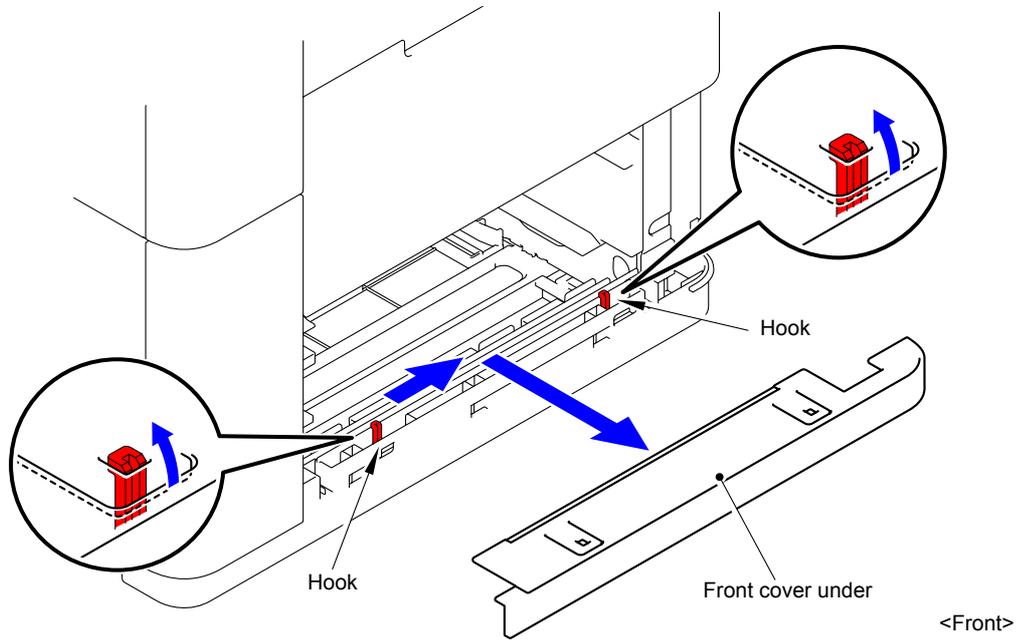


Fig. 3-6

10.5 Front Cover

- (1) Pull the Open lever to open the Top cover.

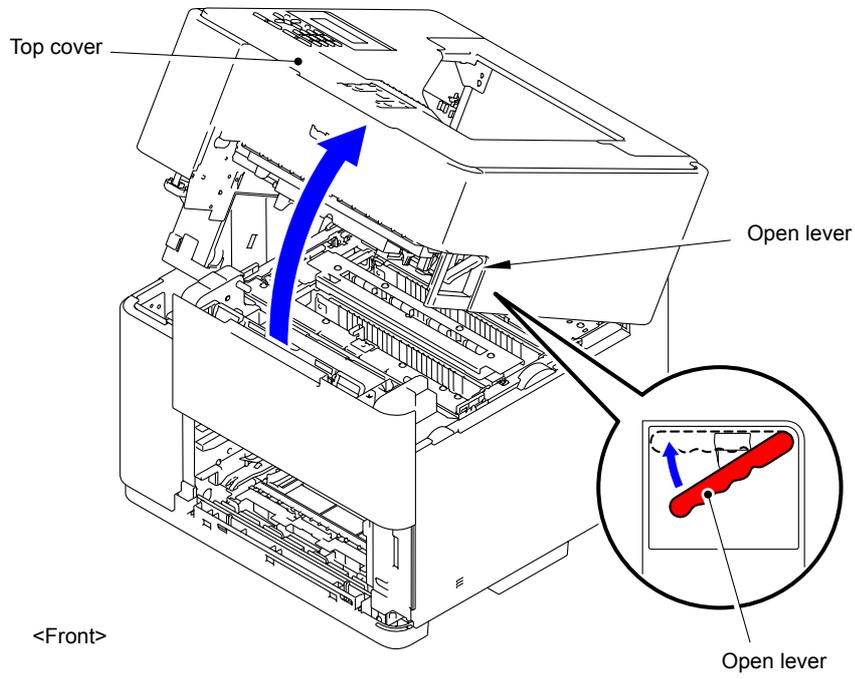


Fig. 3-7

Note:

The Top cover might be locked at the timing when the power is turned OFF.
If the Top cover is not opened even if you pull the Open lever, open the MP cover and slide the Lock lever by minus driver as shown in the figure.

- Do not pull the lever strongly, otherwise it might get broken.
- Note that the lever is locked and unlocked in turn every time it is slid.

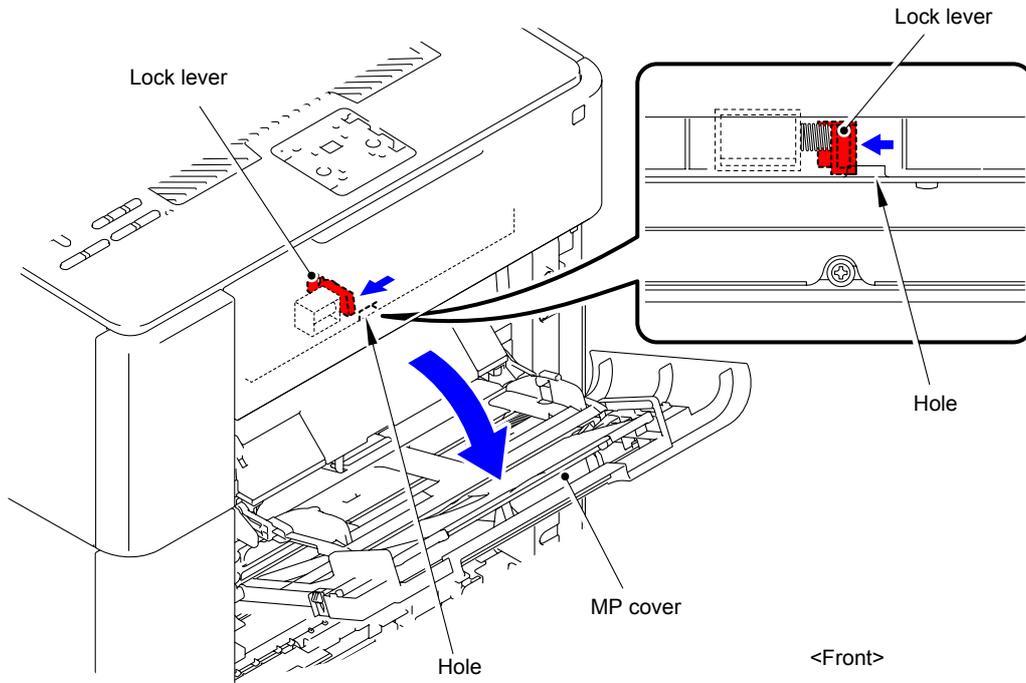


Fig. 3-8

- (2) Remove the Taptite bind B M4x10 screw. Release the Hook of the Front cover to remove the Front cover.

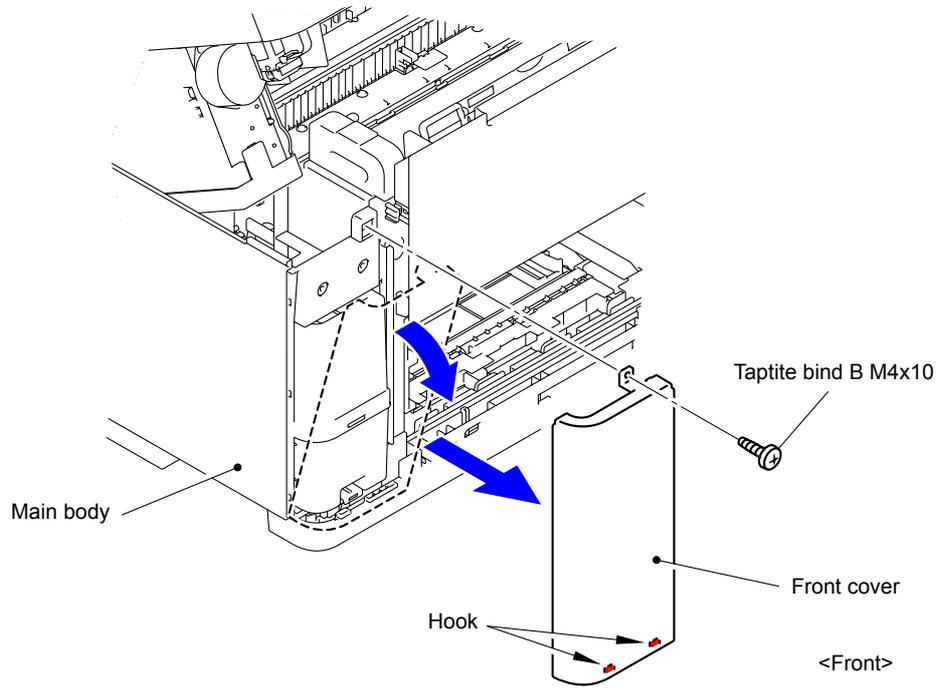


Fig. 3-9

10.6 Cartridge Cover

- (1) Open the Cartridge cover.
- (2) Remove the Cartridge cover by pulling it out to the front with the Cartridge cover open.

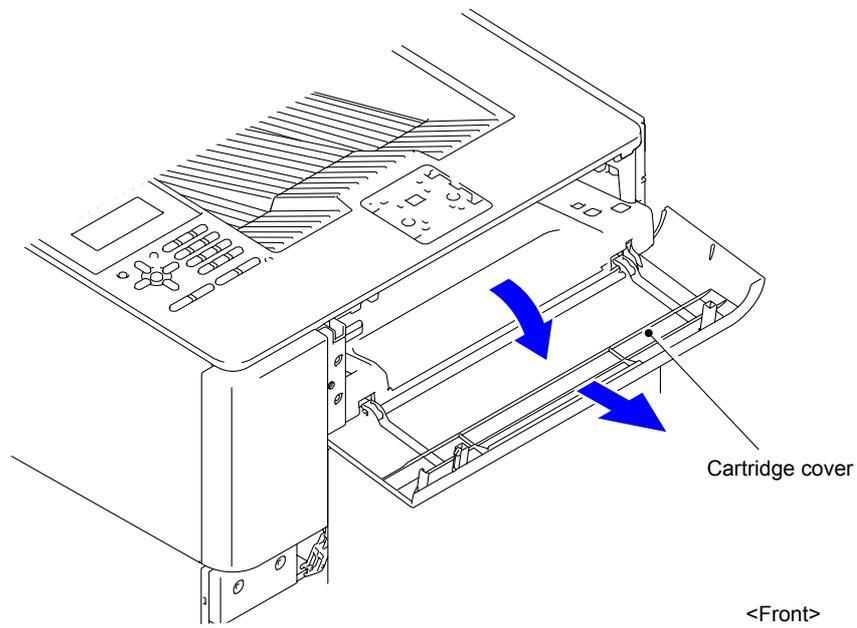


Fig. 3-10

10.7 Eject Top Cover

- (1) Close the Top cover.

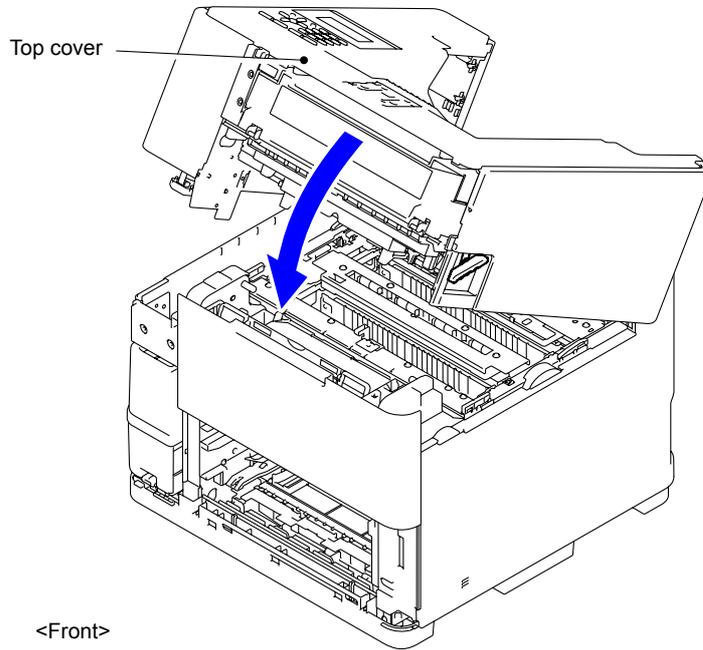


Fig. 3-11

- (2) Open the Back cover.

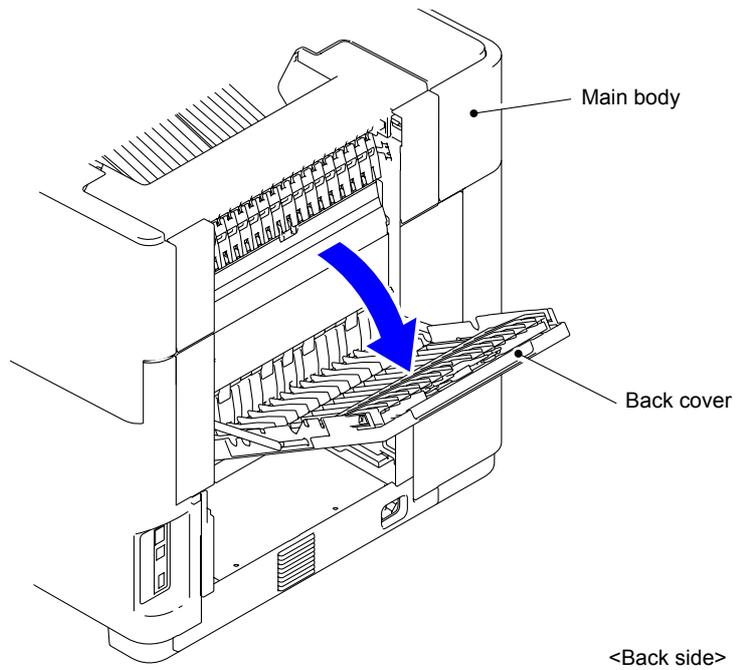


Fig. 3-12

- (3) Release the two Hooks on the surface of the Eject top cover to remove the Eject top cover.

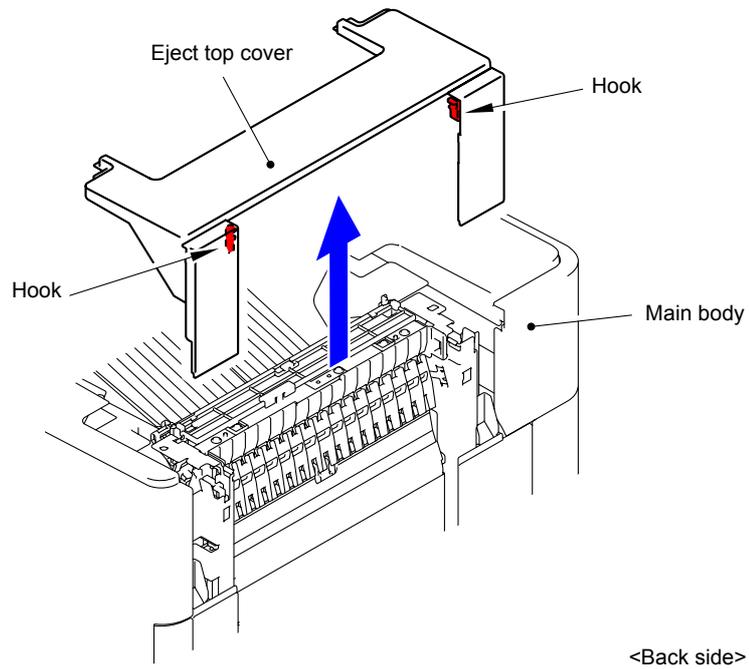


Fig. 3-13

- (4) Remove the Taptite bind B M4x10 screw to remove the Rear cover finisher L from the Eject top cover.

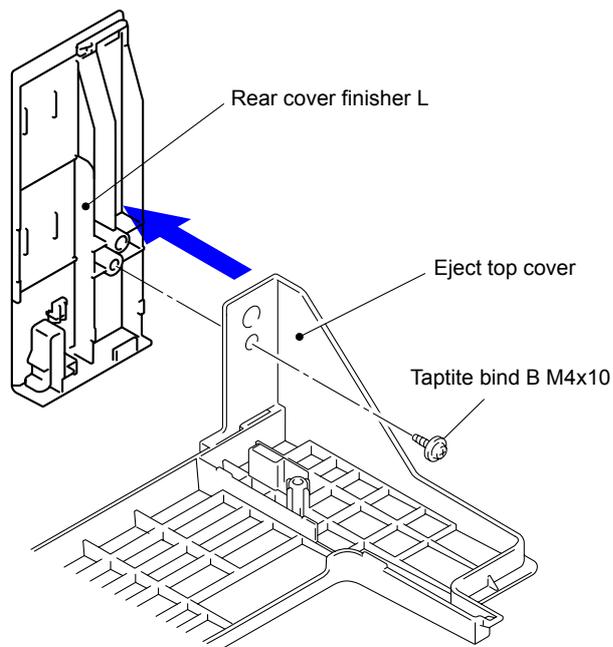


Fig. 3-14

- (5) Remove the Taptite bind B M4x10 screw to remove the Rear cover finisher R from the Eject top cover.

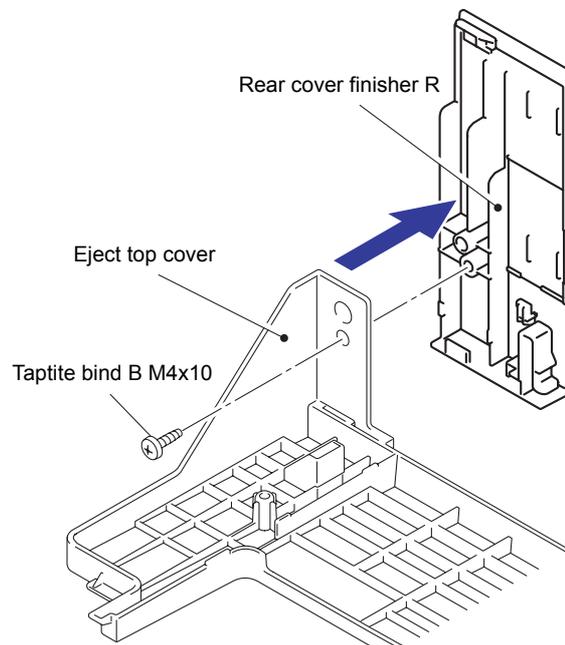


Fig. 3-15

10.8 Top Cover R

- (1) Pull the Open lever to open the Top cover. Open the MP cover ASSY.

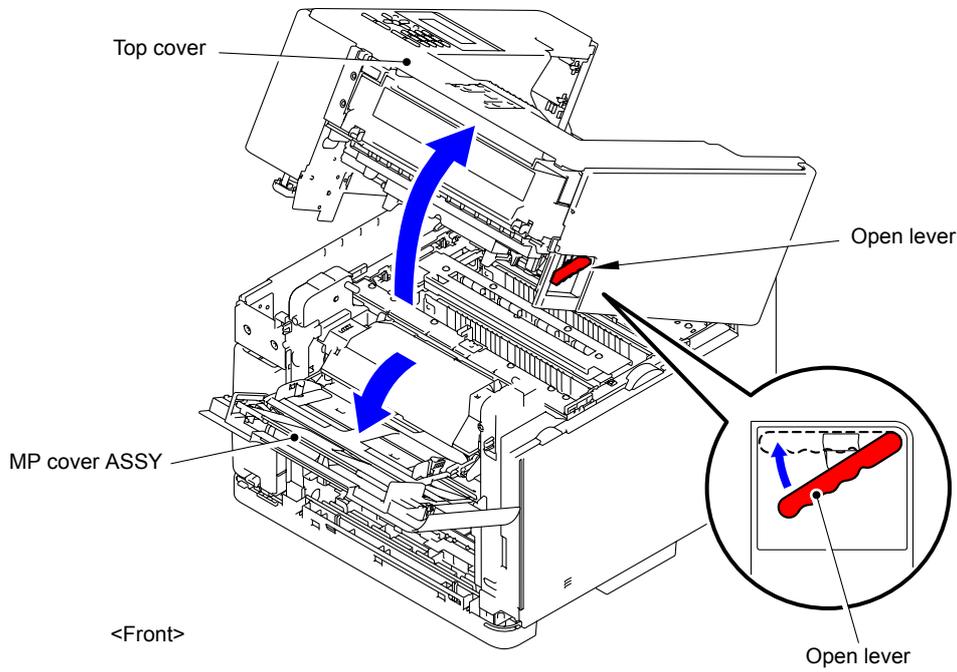


Fig. 3-16

- (2) Remove the Taptite bind B M4x10 screw.

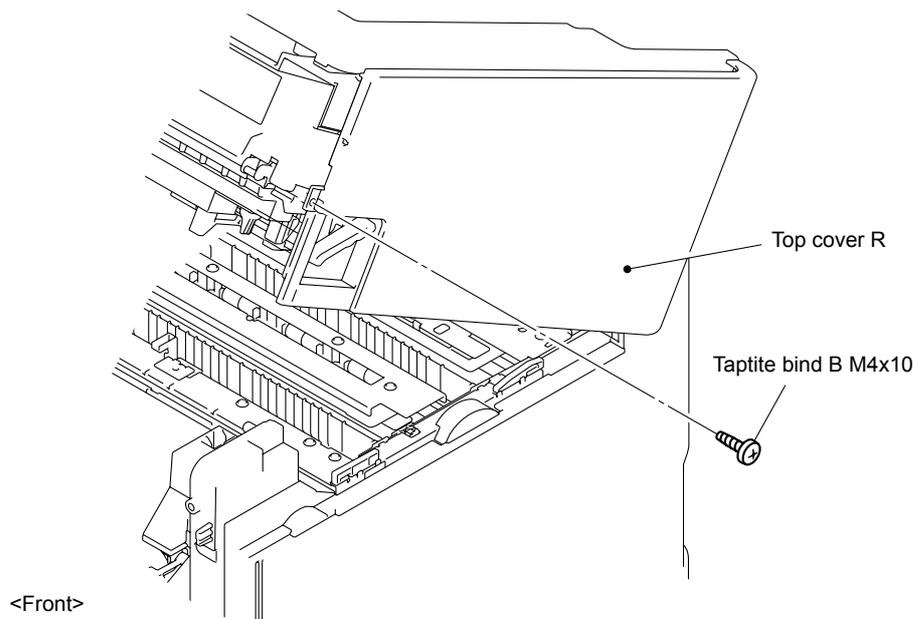


Fig. 3-17

(3) Release the three Hooks of the Top cover R to remove the Top cover R.

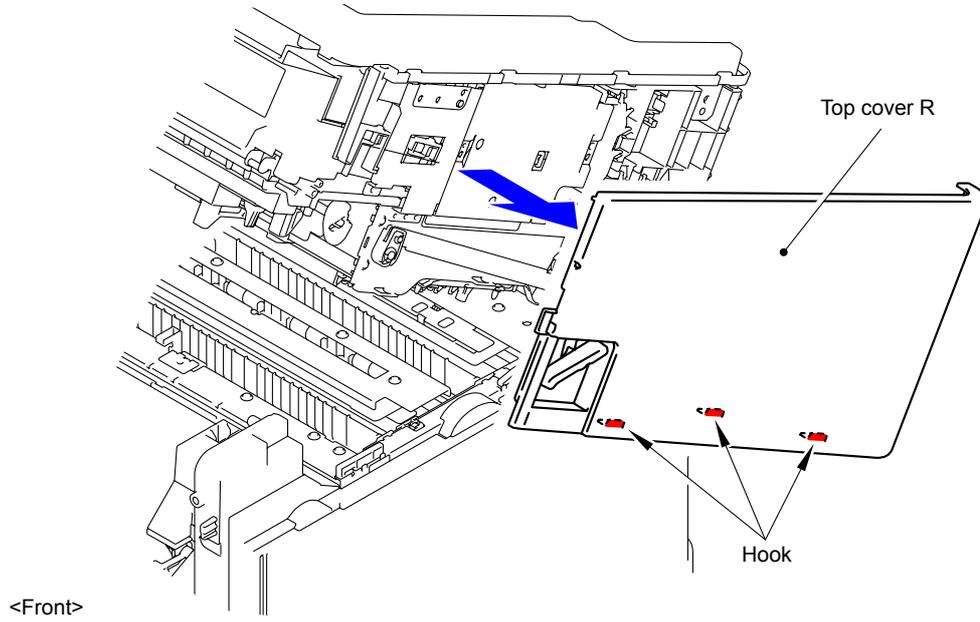


Fig. 3-18

10.9 Top Cover L

- (1) Remove the two Taptite bind B M4x10 screws.

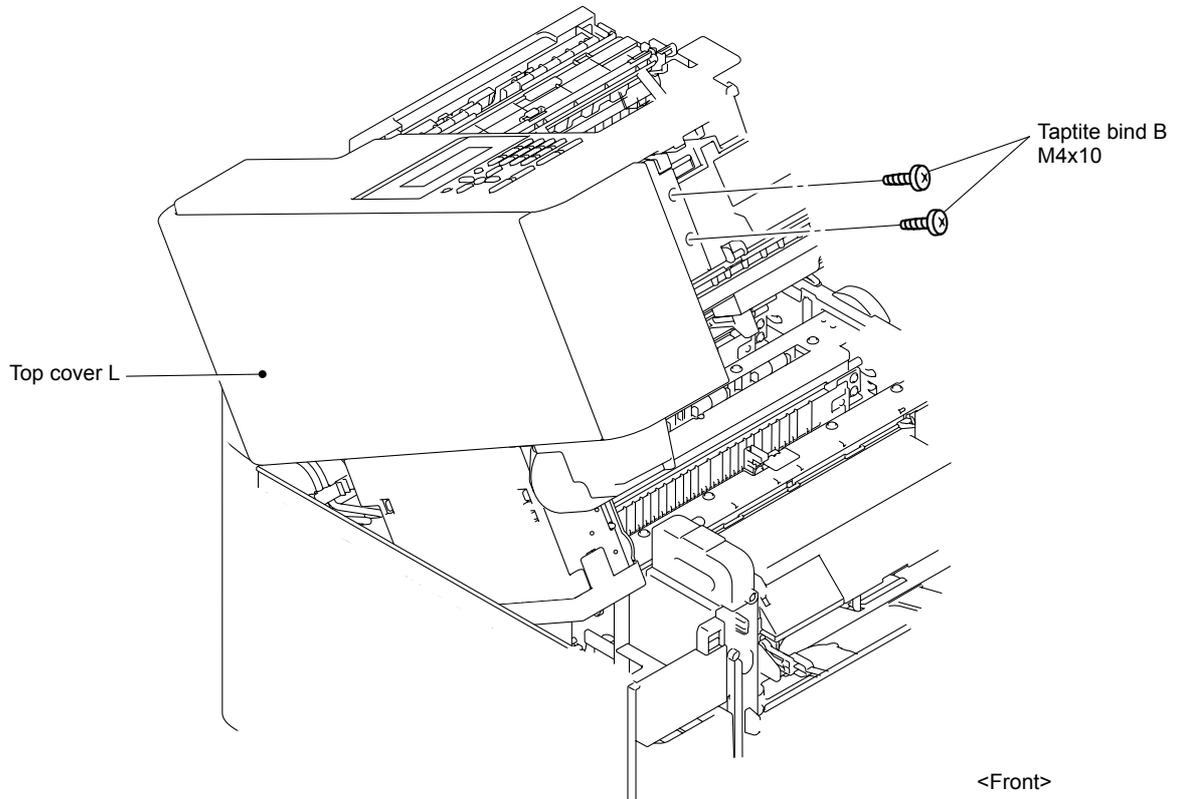


Fig. 3-19

- (2) Release the three Hooks of the Top cover L to remove the Top cover L.

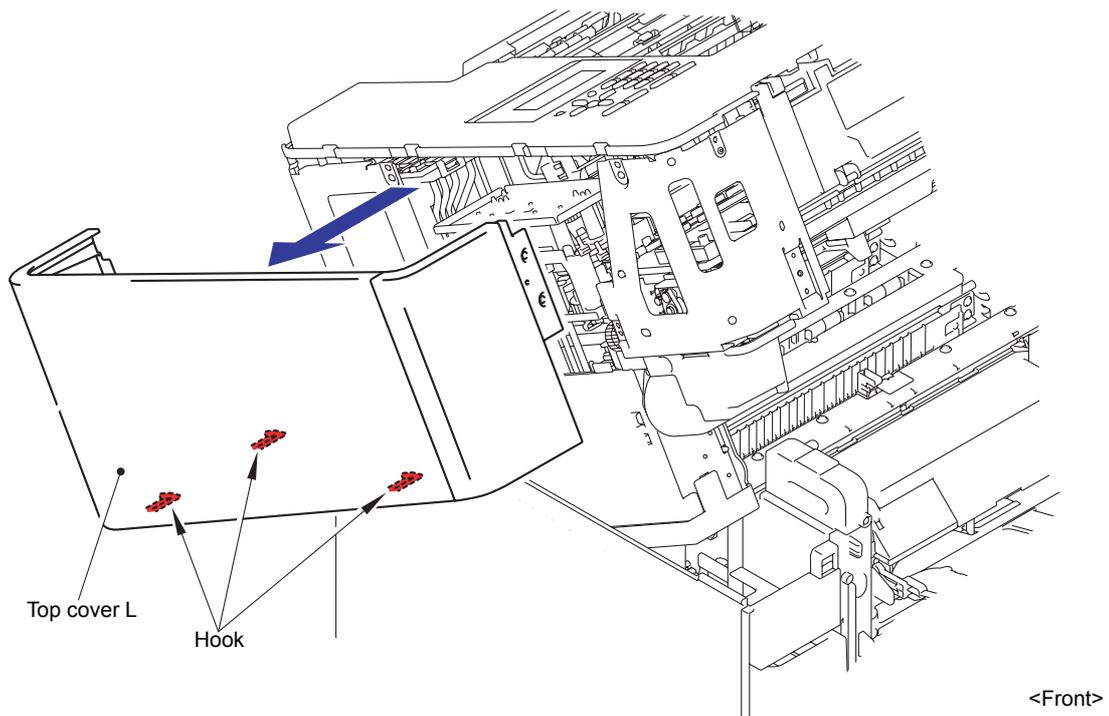


Fig. 3-20

10.10 Top Cover ASSY

- (1) Remove the six Taptite bind B M4x10 screws.

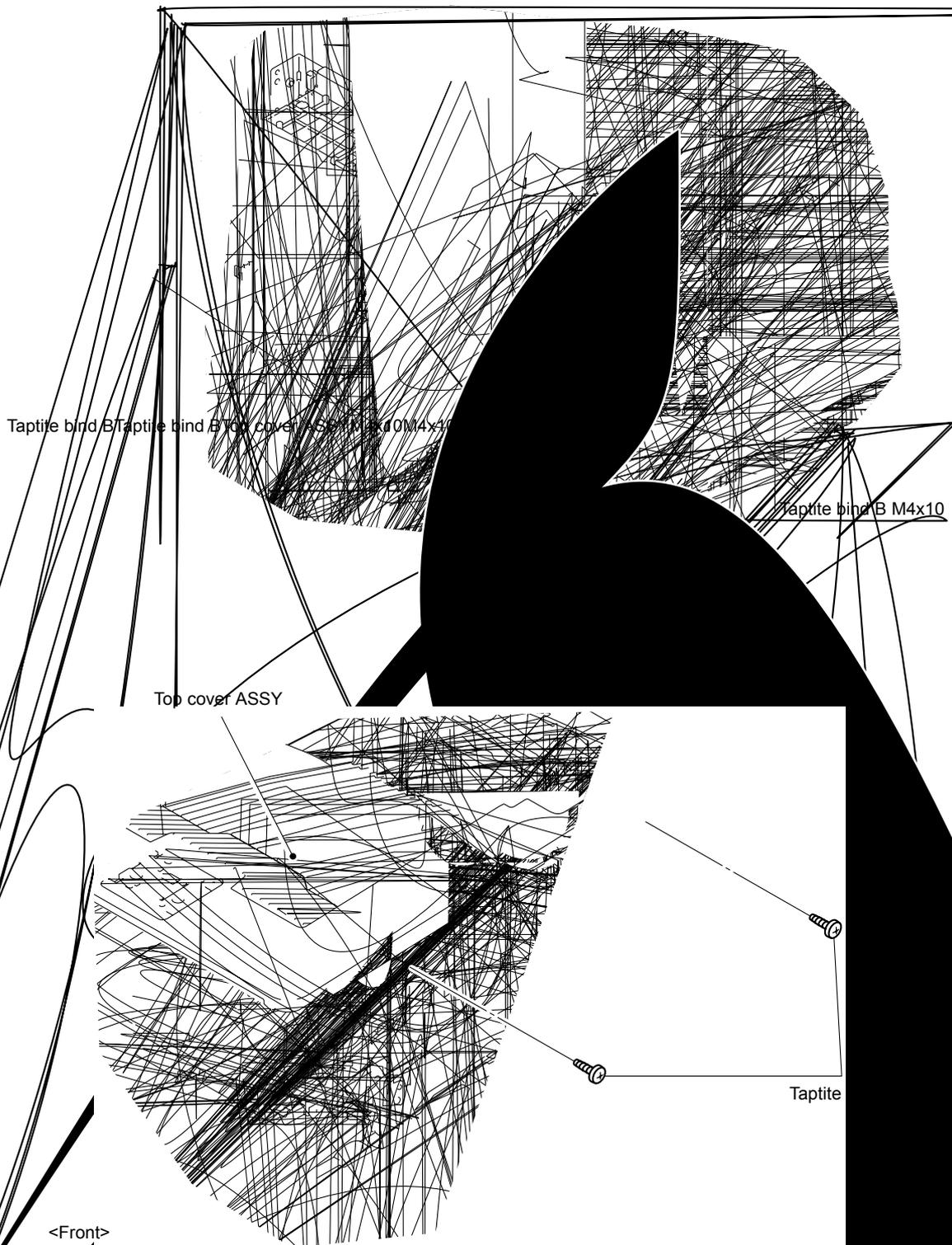


Fig. 3-22

(2) Remove the two Taptite cup S M3x6 SR screws.

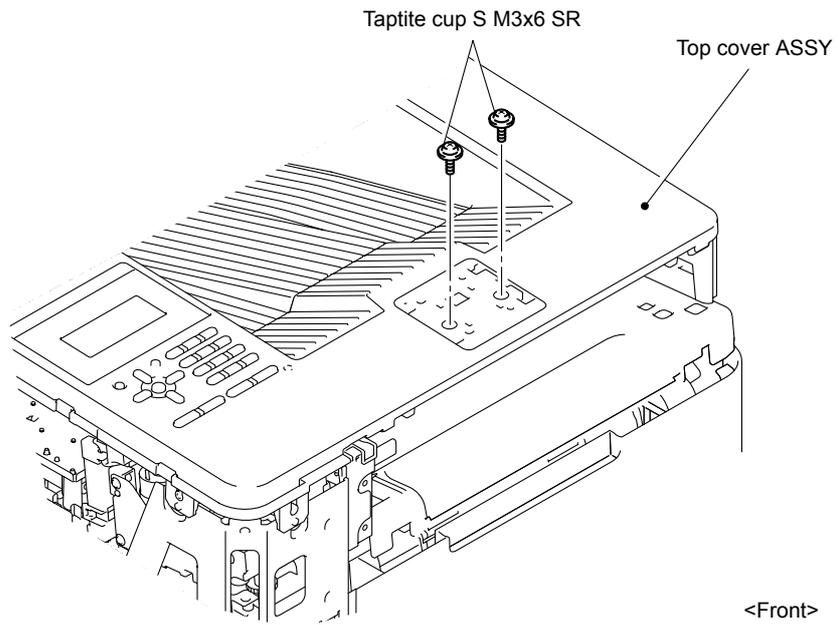


Fig. 3-23

(3) Remove the Taptite cup S M3x6 SR screw to remove the Earth harness.

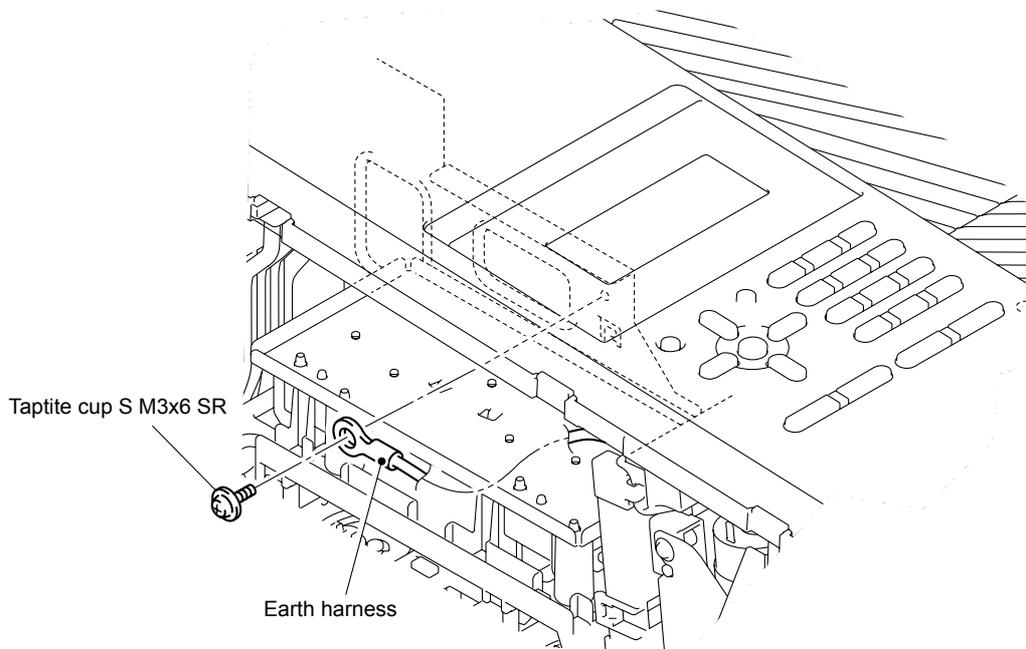


Fig. 3-24

- (4) Release the eight Hooks of the Top cover ASSY to lift the Top cover ASSY.

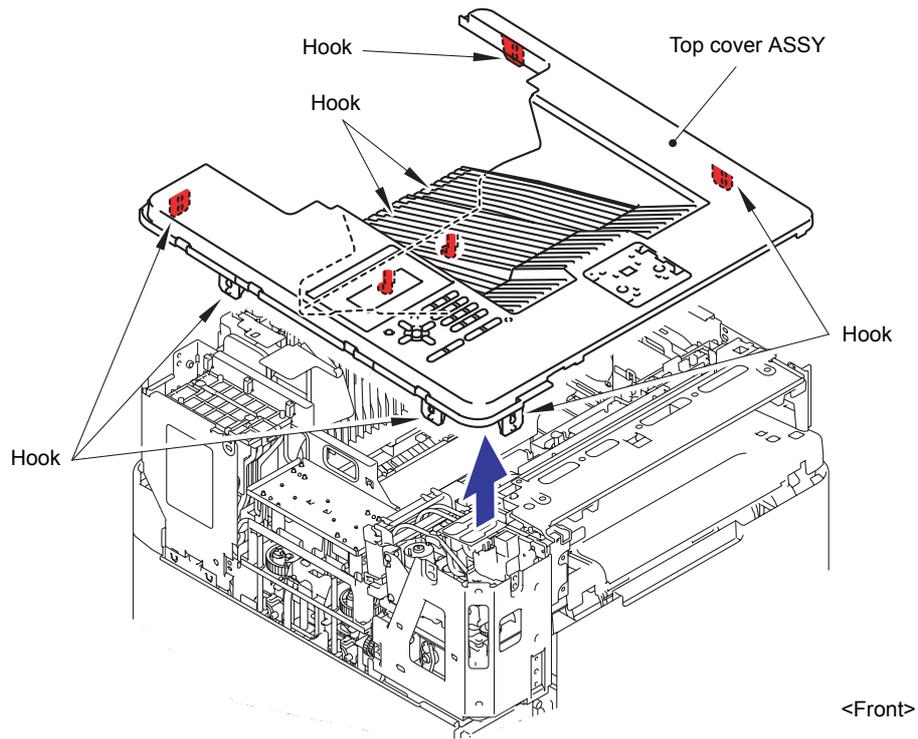


Fig. 3-25

- (5) Disconnect the Connector of the Panel harness to remove the Top cover ASSY.

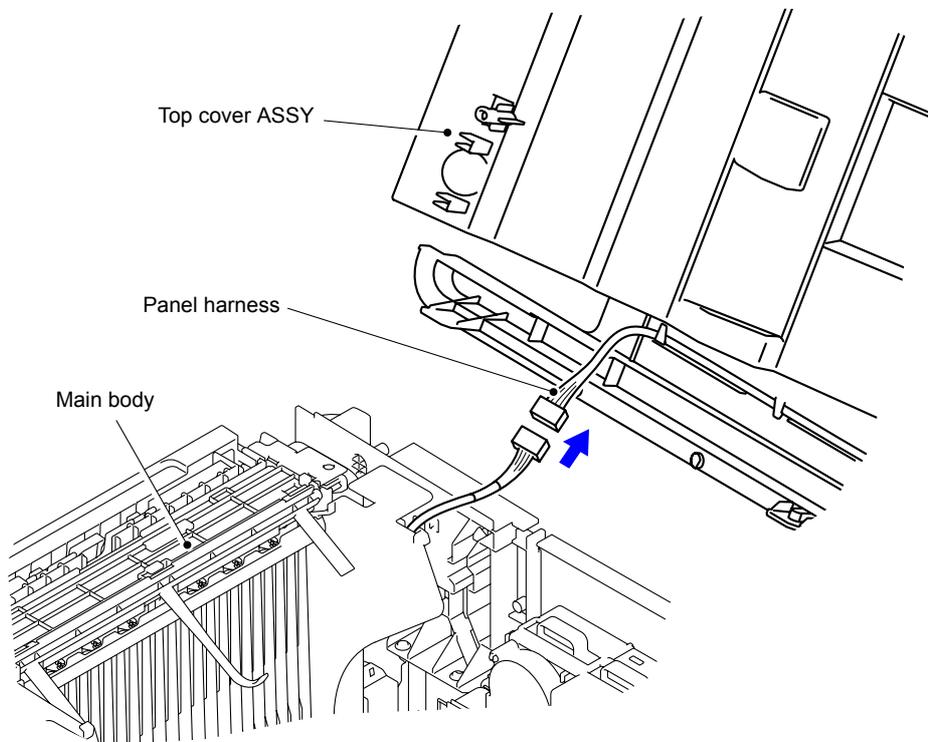


Fig. 3-26

- (6) Remove the two Bosses of the Eject stopper tray to remove the Eject stopper tray from the Top cover ASSY.

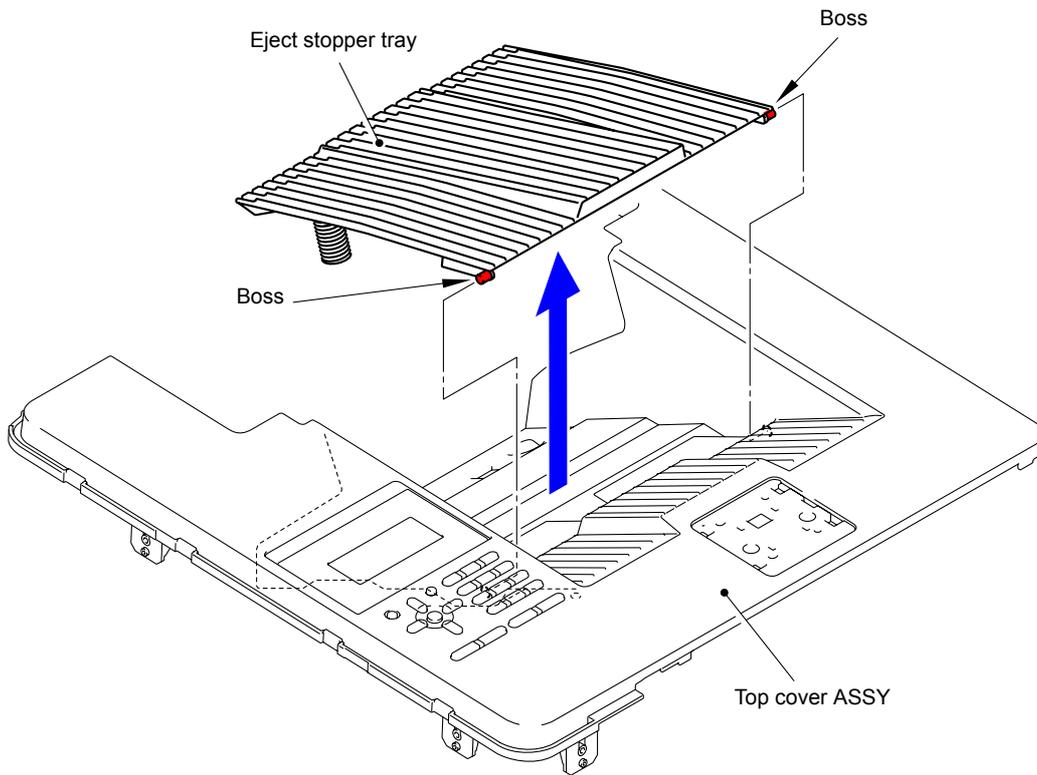


Fig. 3-27

- (7) Remove the two Eject stopper tray springs from the Eject stopper tray.

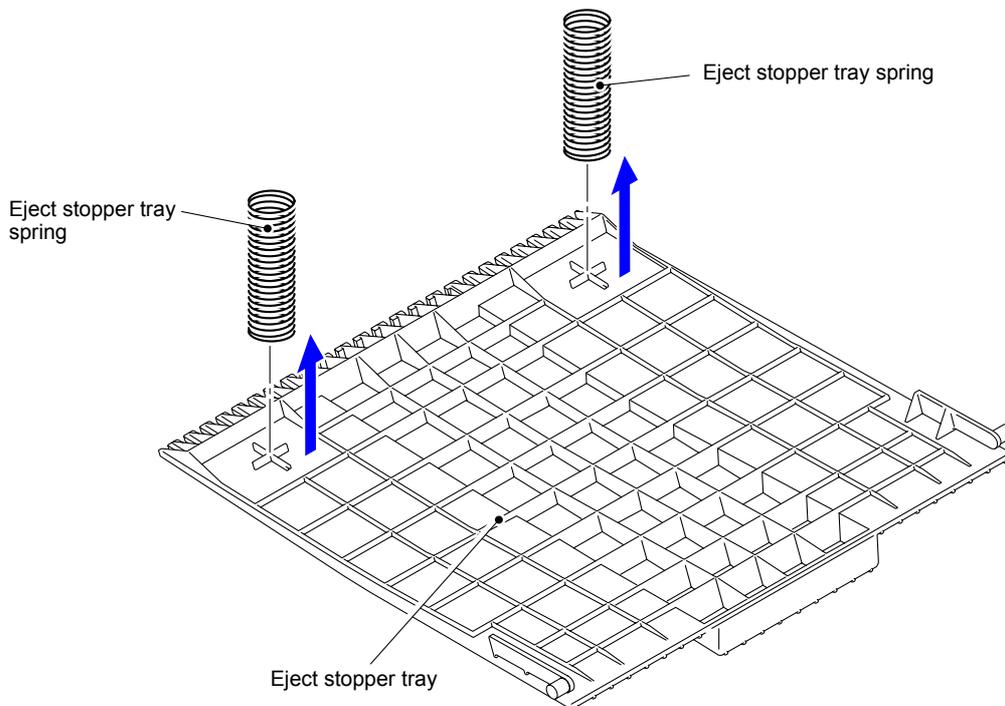


Fig. 3-28

10.10.1 LED PCB ASSY

- (1) Release the two Hooks of the LED PCB holder to remove the LED PCB ASSY from the LED PCB holder.

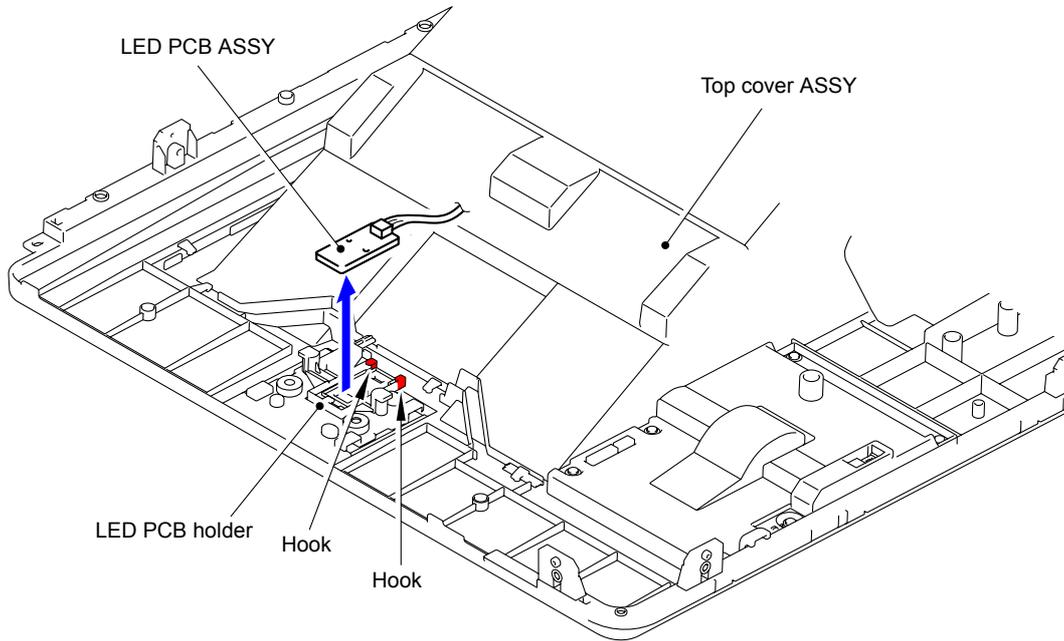


Fig. 3-29

- (2) Disconnect the Connector to remove the LED PCB harness from the LED PCB ASSY.

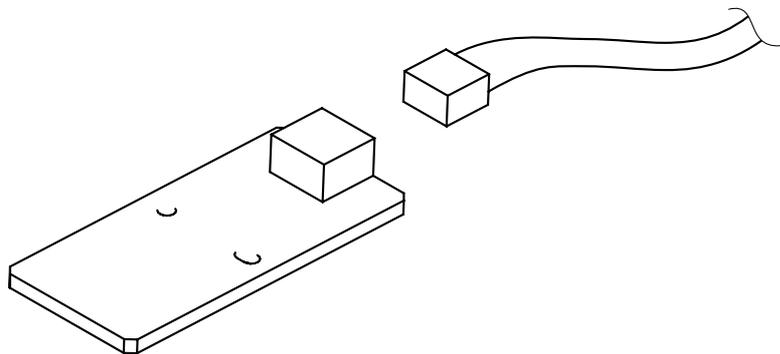


Fig. 3-30

10.10.2 Panel PCB ASSY/LCD ASSY

- (1) Remove the LED PCB harness and Panel PCB harness from the Panel PCB ASSY.

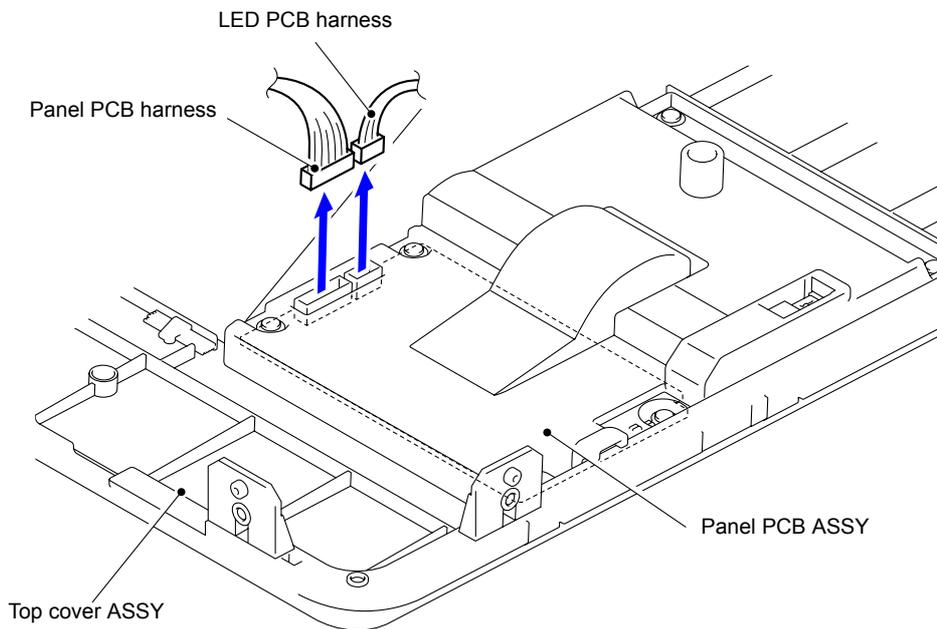


Fig. 3-31

- (2) Remove the five Taptite cup B M3x8 screws to remove the Panel rear cover from the Top cover ASSY.

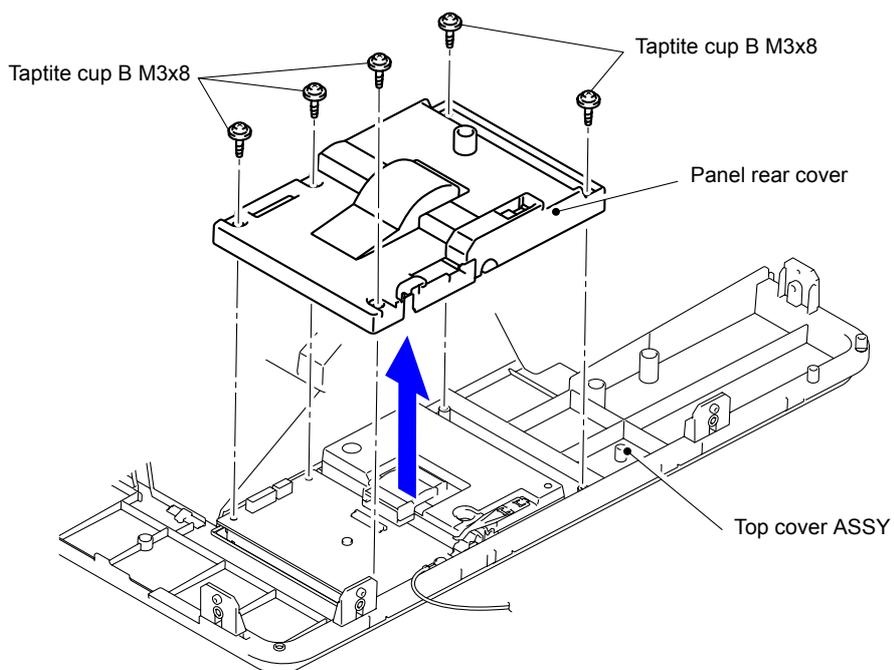


Fig. 3-32

- (3) Remove the Taptite bind B M3x8 screw to remove the Earth harness from the Panel PCB ASSY.

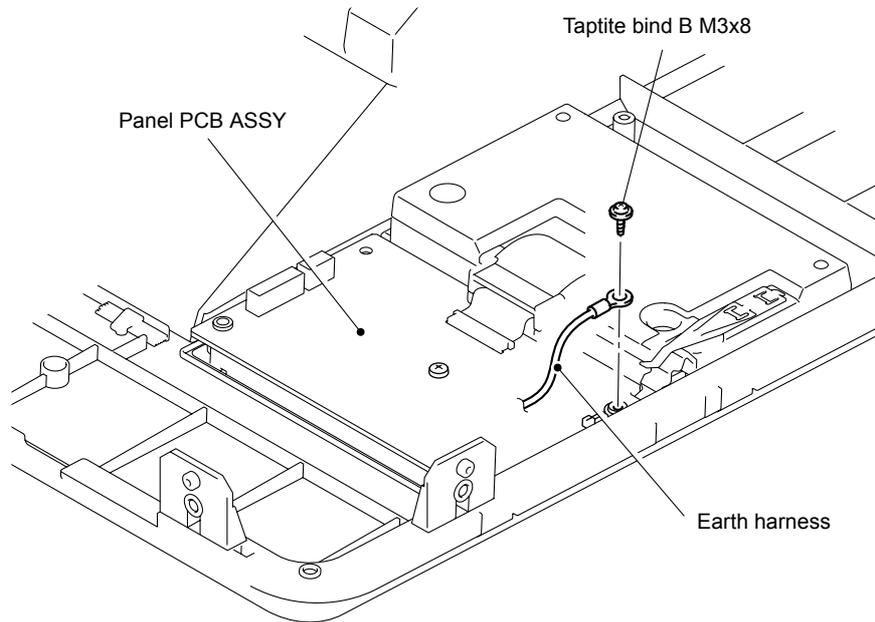


Fig. 3-33

- (4) Shift the LCD ASSY to the rear side. Remove the Lock of the connector of the LCD flat cable to remove the LCD flat cable of the Panel PCB ASSY.

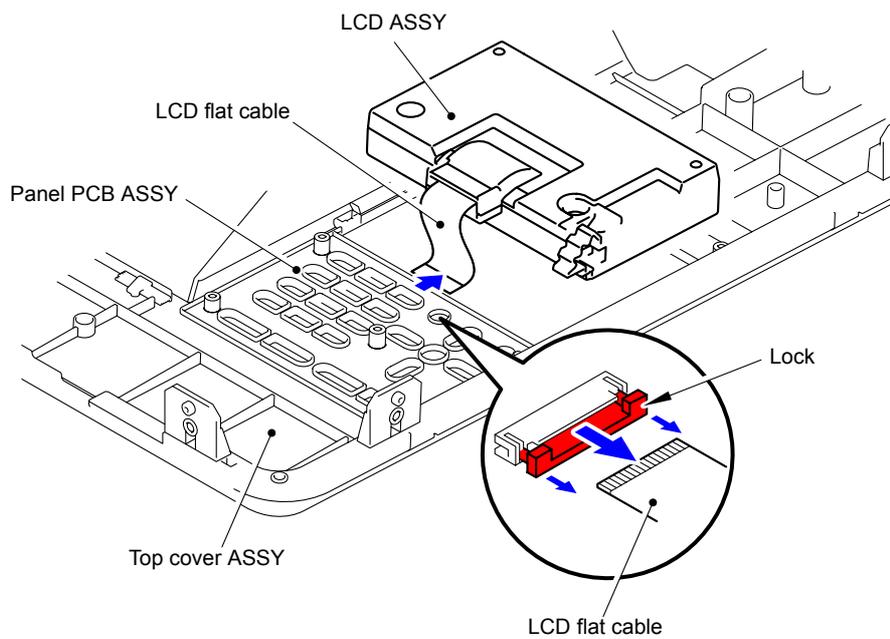


Fig. 3-34

- (5) Remove the Taptite bind B M3x8 screw to remove the Panel PCB ASSY and Key from the Top cover ASSY.

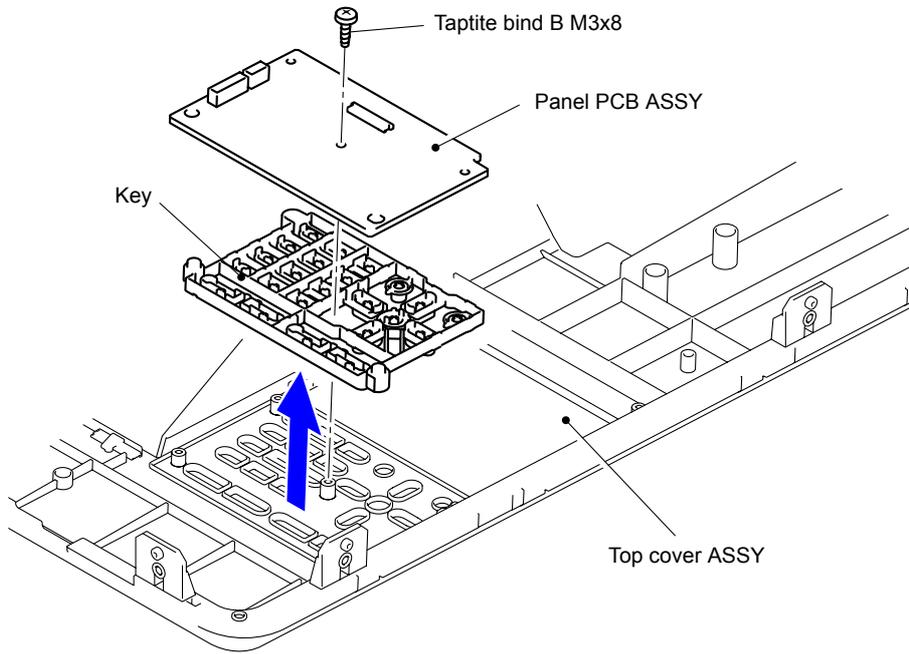


Fig. 3-35

10.11 Rear Cover L

- (1) Remove the Taptite cup S M3x6 SR screw to remove the Rear cover L.

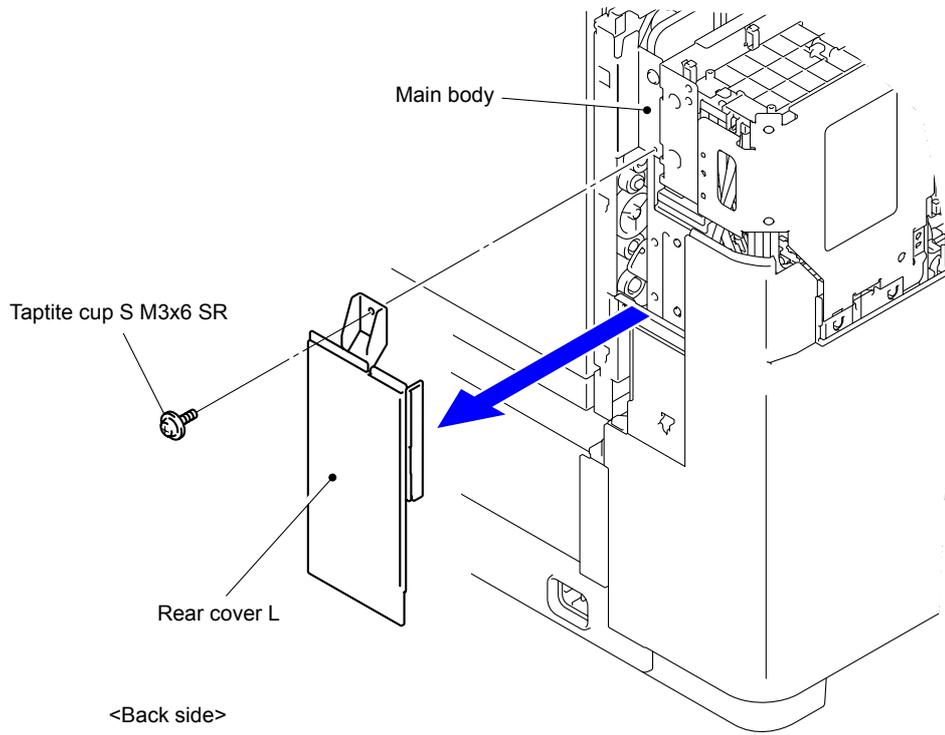


Fig. 3-36

10.12 Waste Ink Box ASSY

- (1) Release the Hook to remove the Waste ink box ASSY from the Main body.

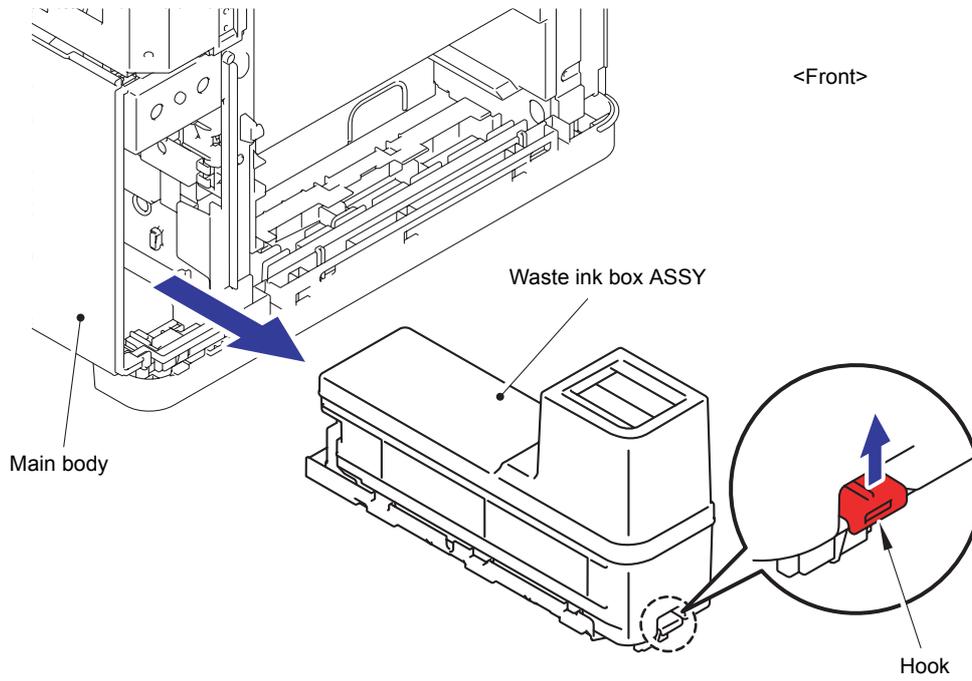


Fig. 3-37

10.13 Side Cover L

- (1) Remove the four Taptite cup S M3x6 SR screws.

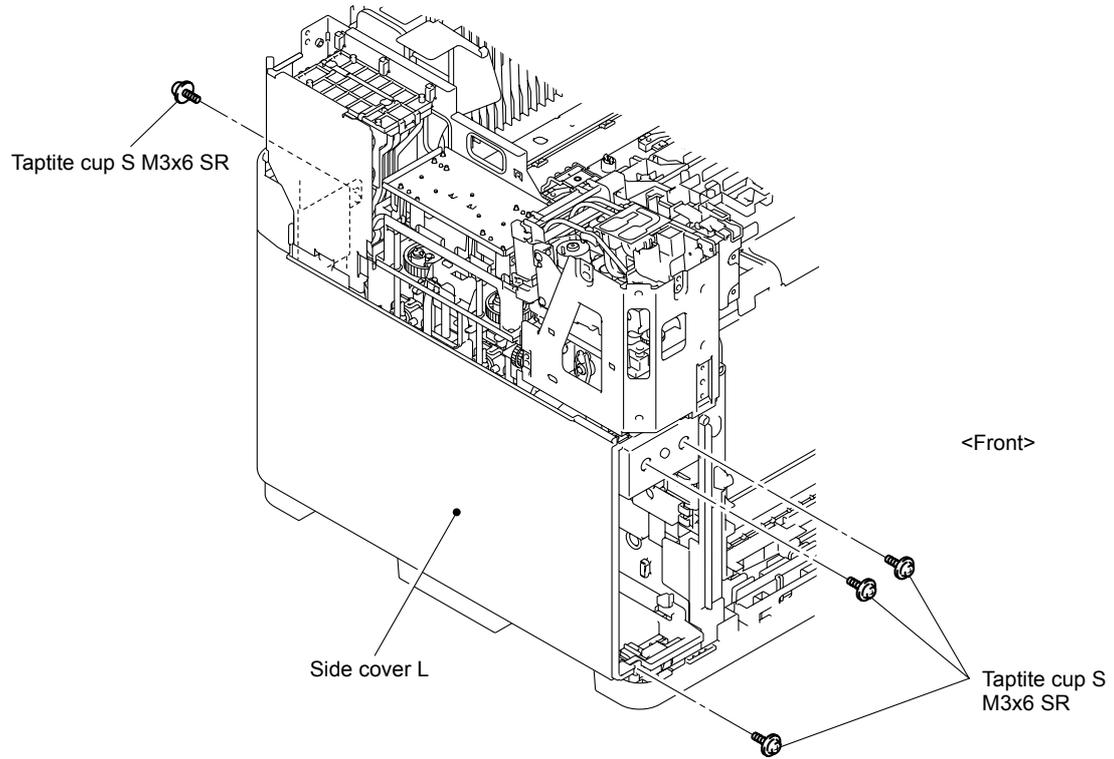


Fig. 3-38

(2) Release the two Hooks of the Side cover L to remove the Side cover L.

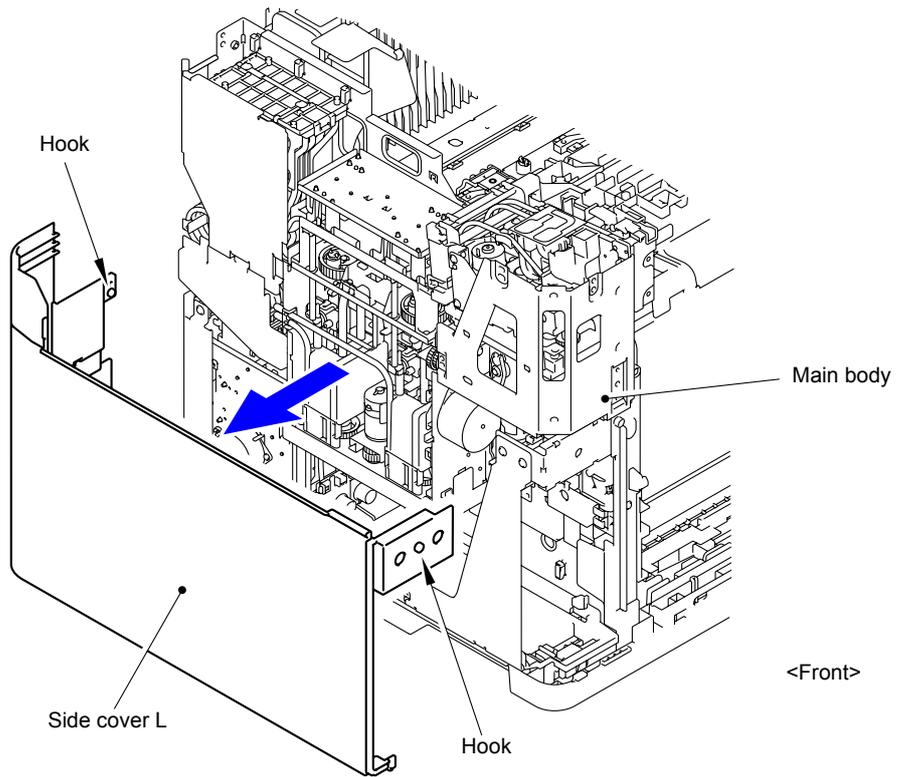


Fig. 3-39

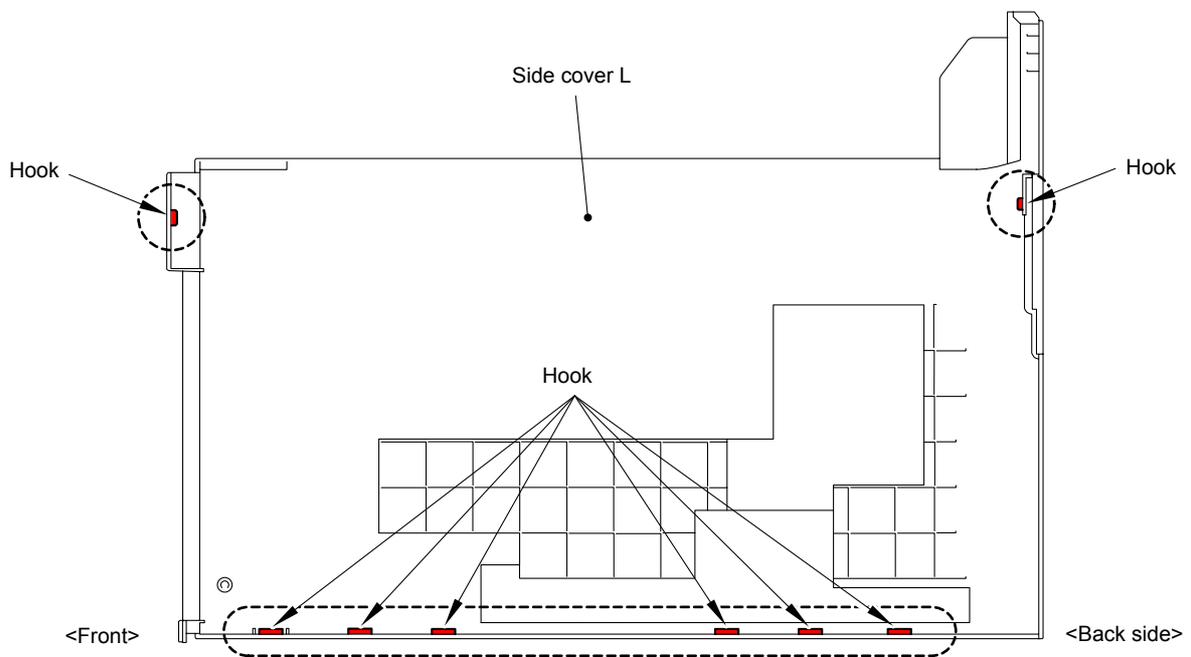


Fig. 3-40

(3) Peel off the Side cover L foam A and Side cover L foam B from the Side cover L.

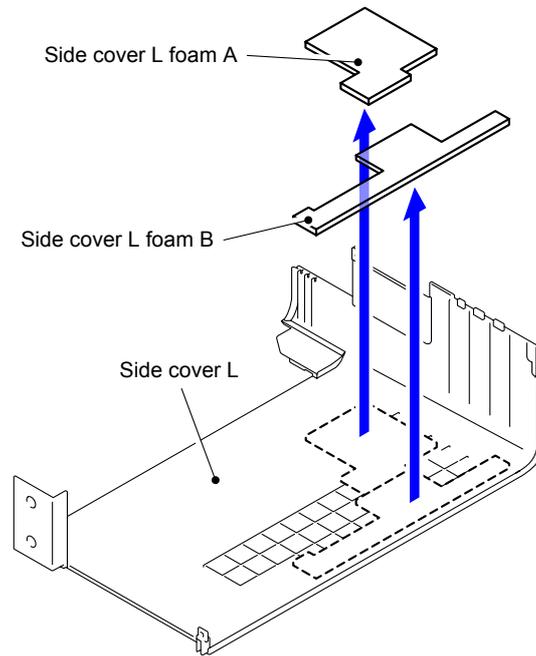
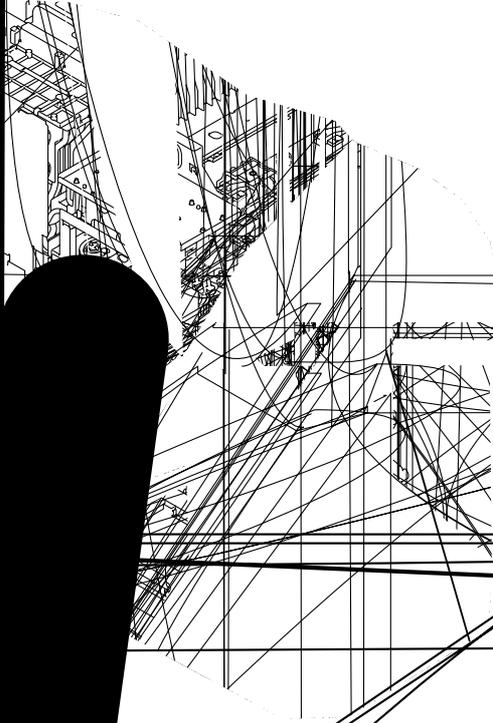


Fig. 3-41

10.14 Sub Tank Co

- (1) Release the two H to tank cover L to remove the Sub tank cover L.



10.15 MP Tray ASSY/MP Cover ASSY

- (1) Remove the two Bosses at the both sides of the MP tray ASSY from the Guide of the MP cover.

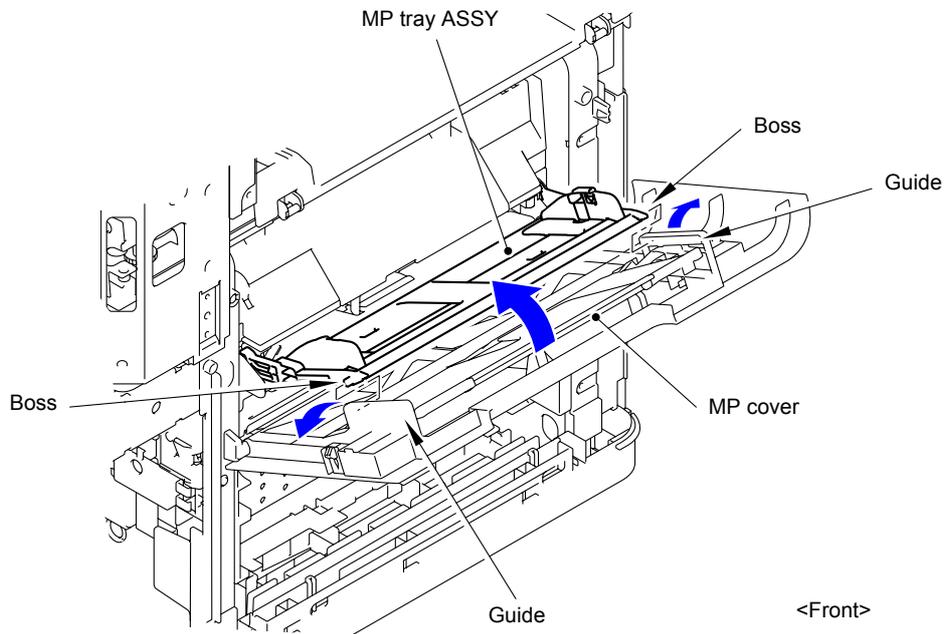


Fig. 3-43

- (2) Remove the two Bosses at the both sides of the MP cover ASSY to remove the MP cover ASSY from the Main body.

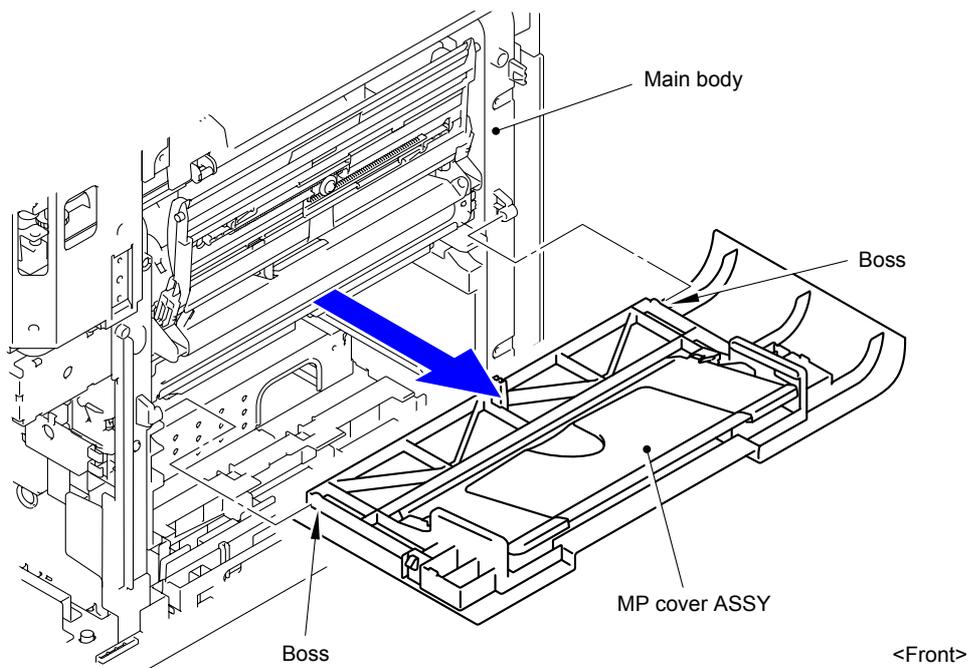


Fig. 3-44

- (3) Release the Hooks at the both sides of the MP tray ASSY with the MP tray ASSY being in the vertical state. Remove the MP tray ASSY from the Main body.

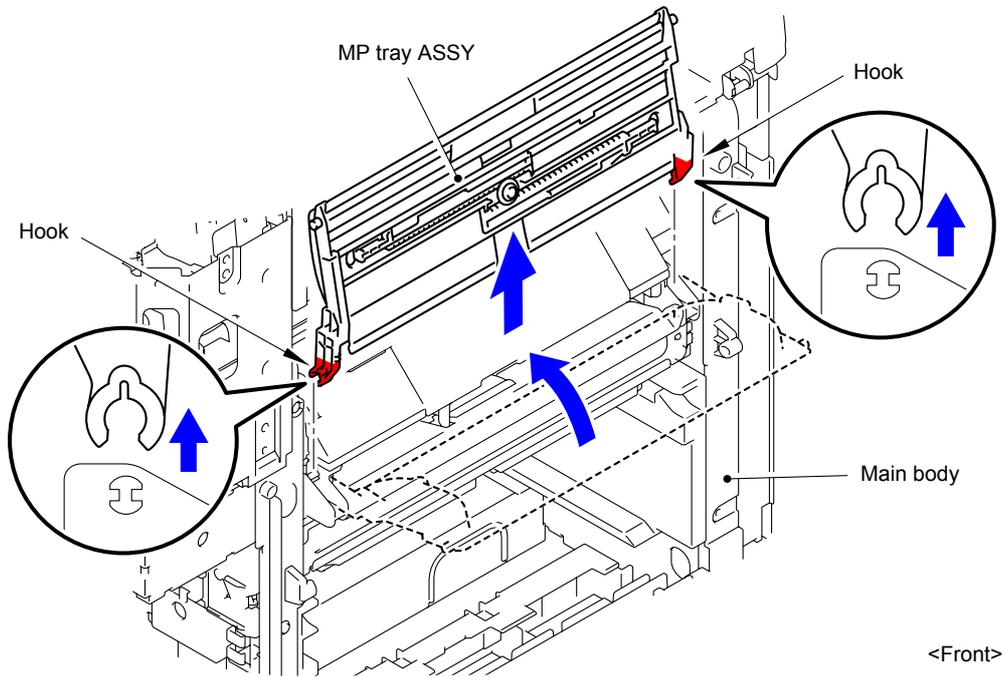


Fig. 3-45

10.16 Rear Cover R

- (1) Remove the Taptite cup S M3x6 SR screw to remove the Rear cover R.

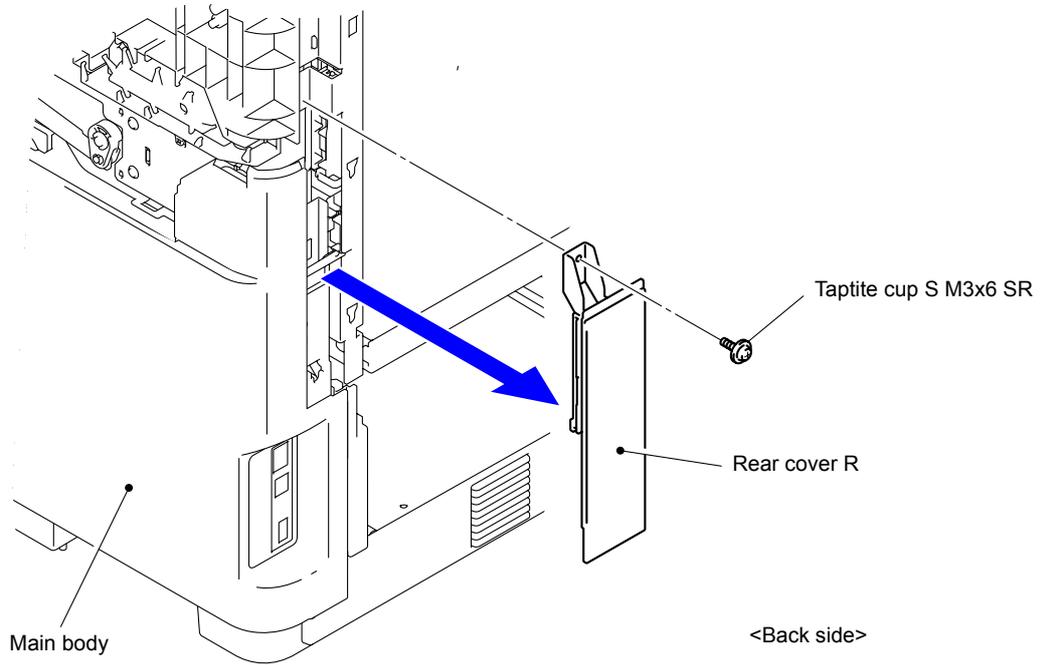


Fig. 3-46

10.17 Side Cover R

- (1) Remove the three Taptite cup S M3x6 SR screws.

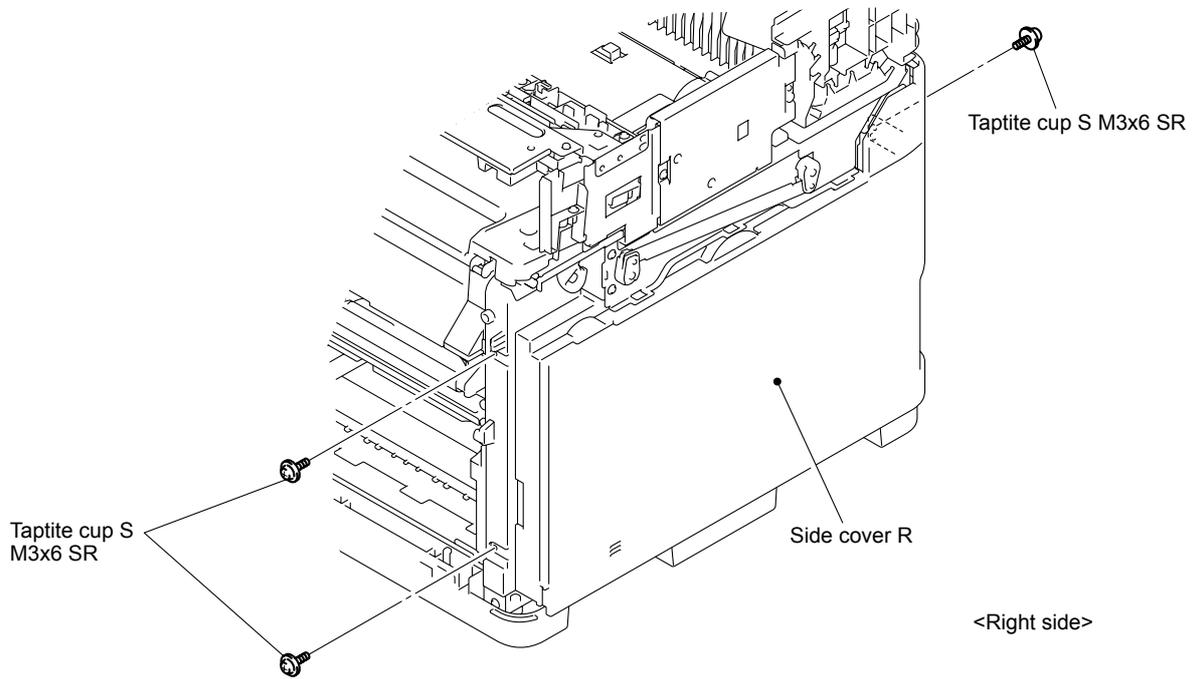


Fig. 3-47

- (2) Pull the open lever and open the top cover.
- (3) Release the two Hooks of the Side cover R to remove the Side cover R.

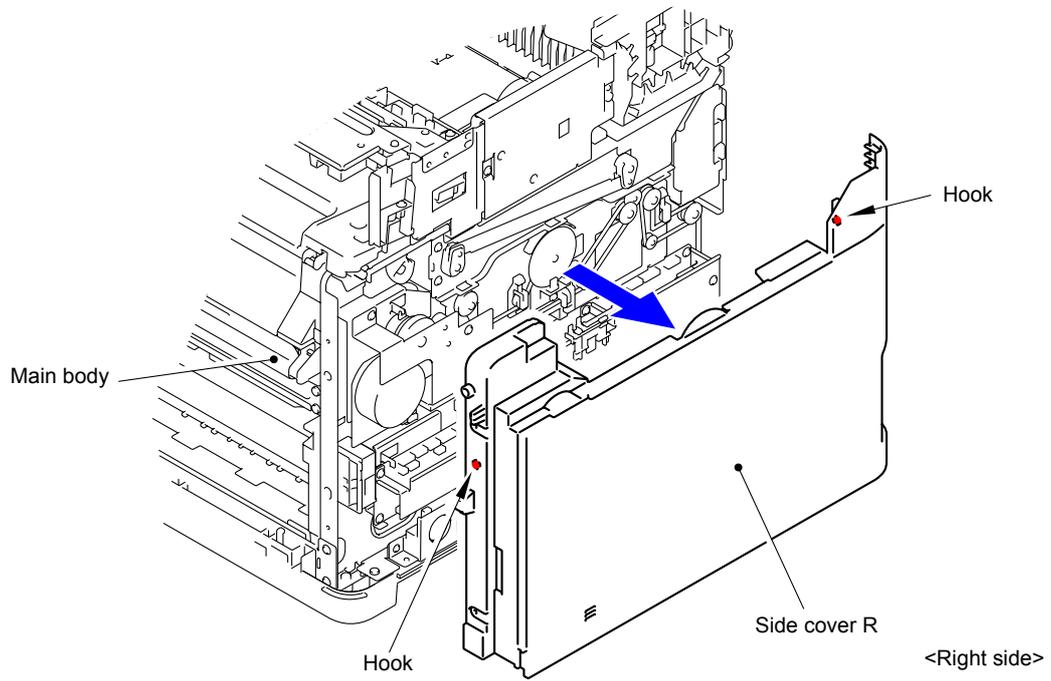


Fig. 3-48

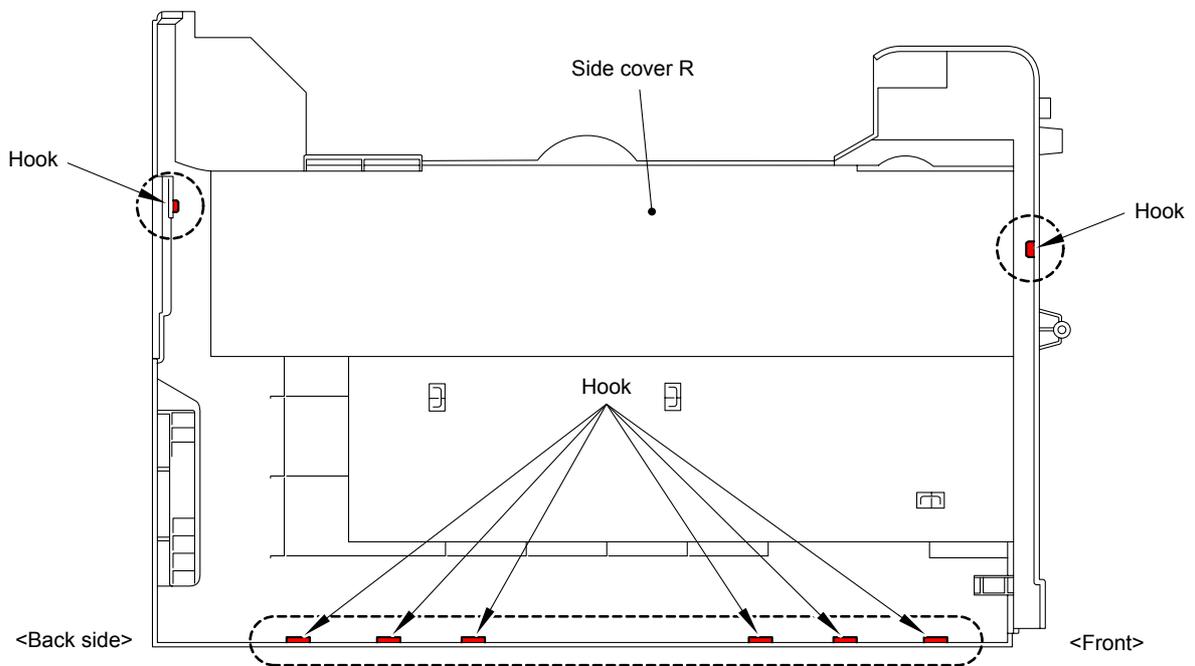


Fig. 3-49

(4) Peel off the Side cover R foam A and Side cover R foam B from the Side cover R.

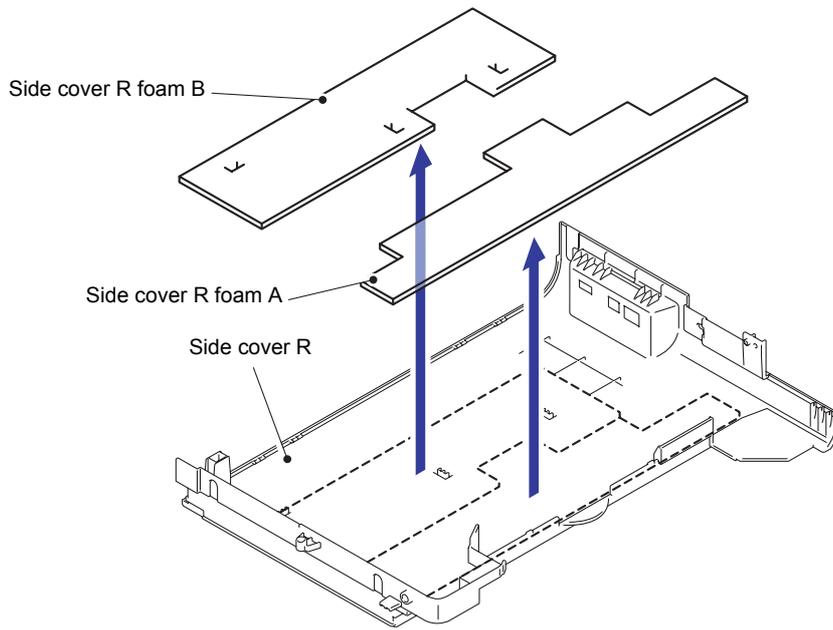


Fig. 3-50

10.18 Under Cover B

- (1) Remove the two Shoulder screws.
- (2) Remove the two Bosses to remove the Under cover B.

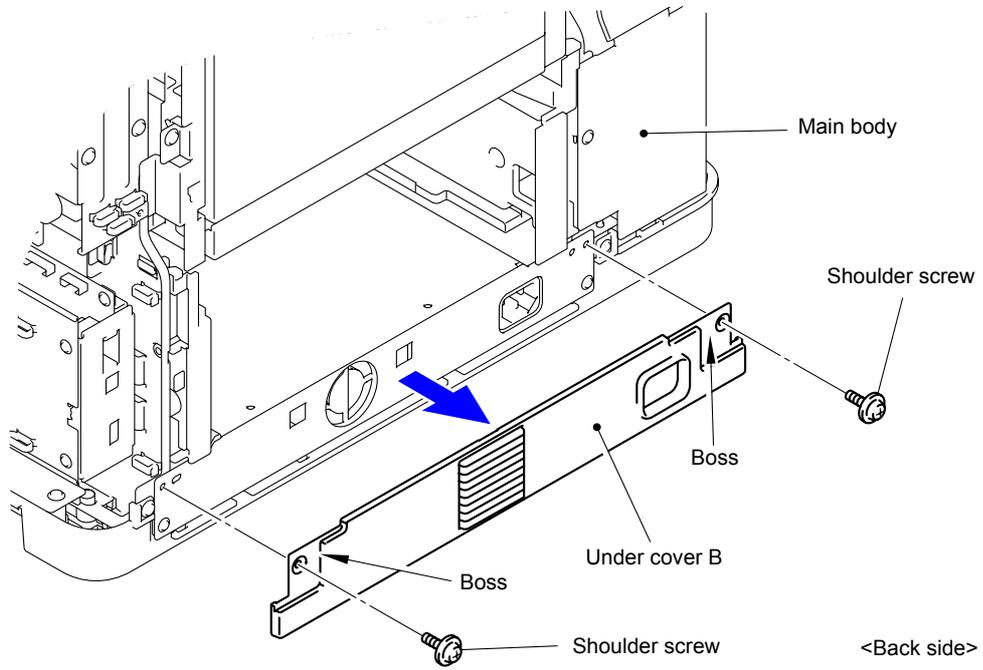


Fig. 3-51

10.19 Engine PCB ASSY

- (1) Disconnect the two Head flat cables from the Guide film to disconnect the two Head flat cables from the Engine PCB ASSY.

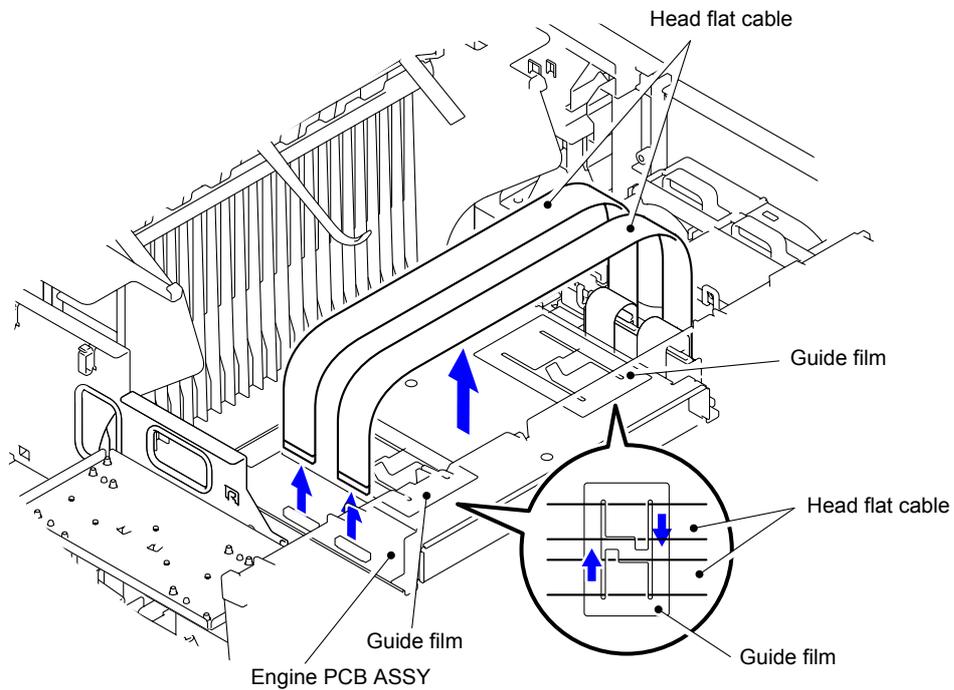


Fig. 3-52

- (2) Remove the four Taptite cup S M3x6 SR screws to remove the Engine PCB shield plate.

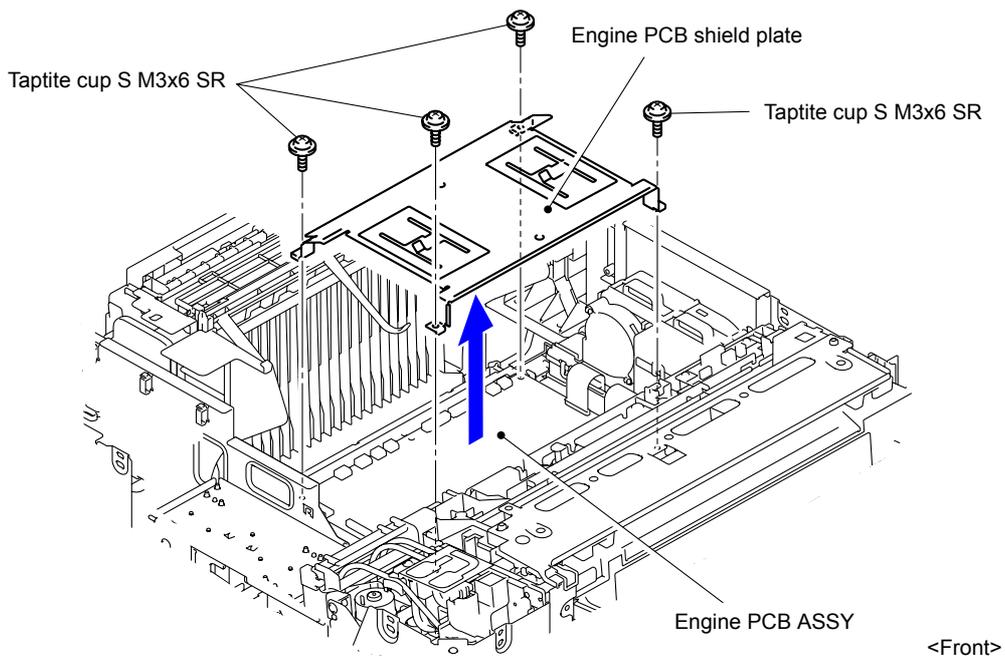


Fig. 3-53

(3) Disconnect the all Connectors from the Engine PCB ASSY.

Note:

- After disconnecting flat cable(s), check that each cable is not damaged at its end or shortcircuited.
- When connecting flat cable(s), do not insert them at an angle. After insertion, check that the cable are not at an angle.

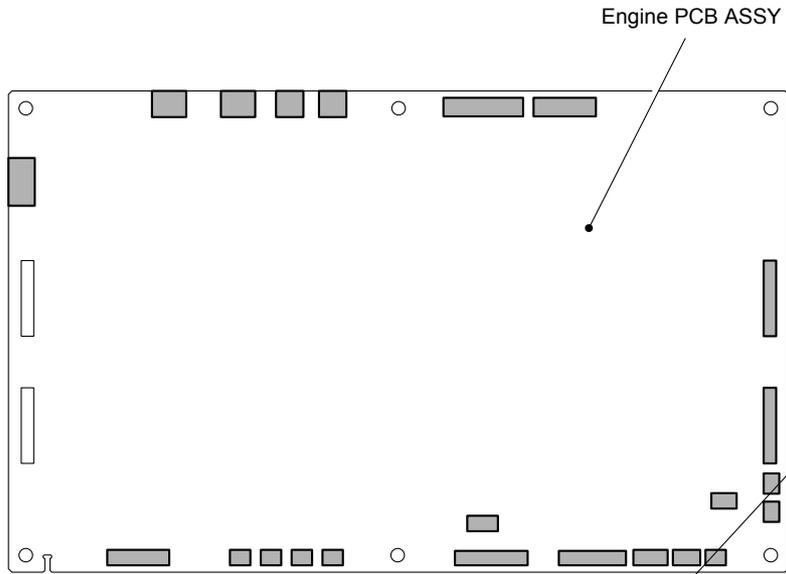


Fig. 3-54

(4) Remove the two Taptite cup S M3x6 SR screws to remove the Engine PCB ASSY.

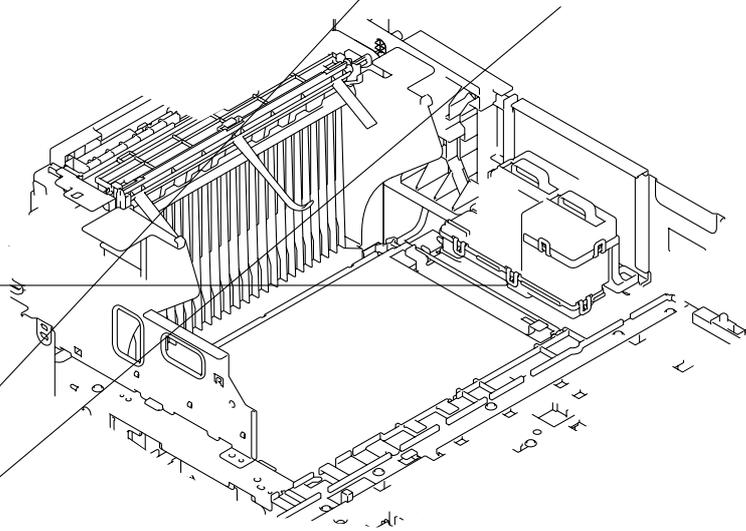


Fig. 3-55

10.20 Ink Refill Unit

Note:

Be sure to execute Maintenance 17 and remove Ink and Pre-coat ink before perform the replacement operation. (Refer to [Chapter 5, "1.4.6 Purge operations \(Function code 17\)"](#))

- (1) Remove the seven Taptite bind B M4x10 screws.
- (2) Remove the two Taptite cup S M3x6 SR screws.

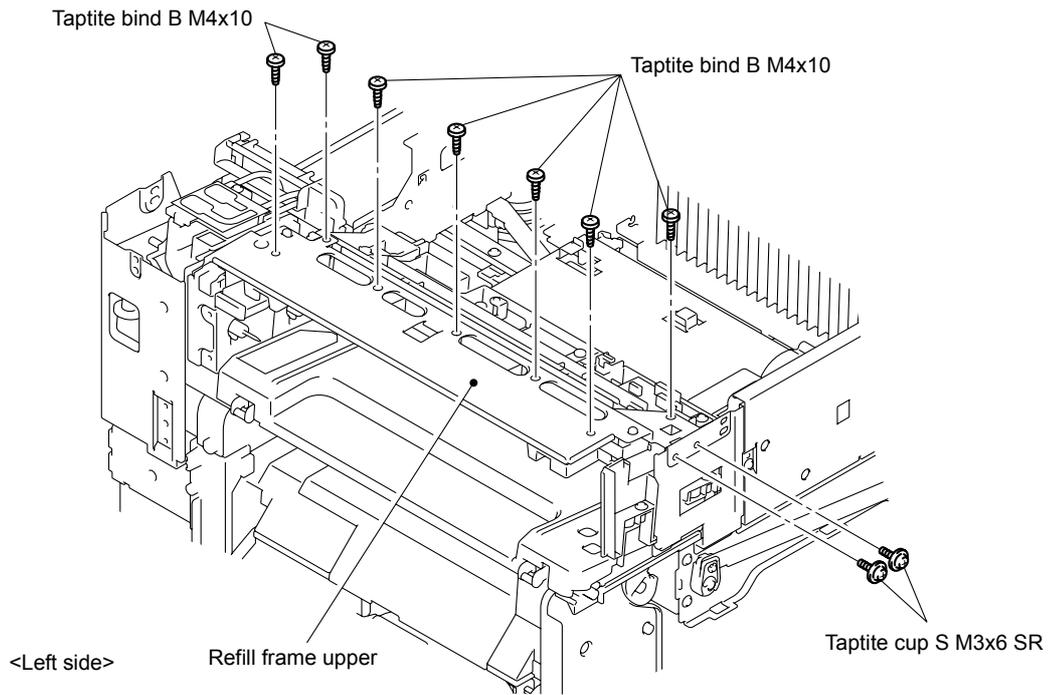


Fig. 3-56

(3) Remove the Refill earth sheet.

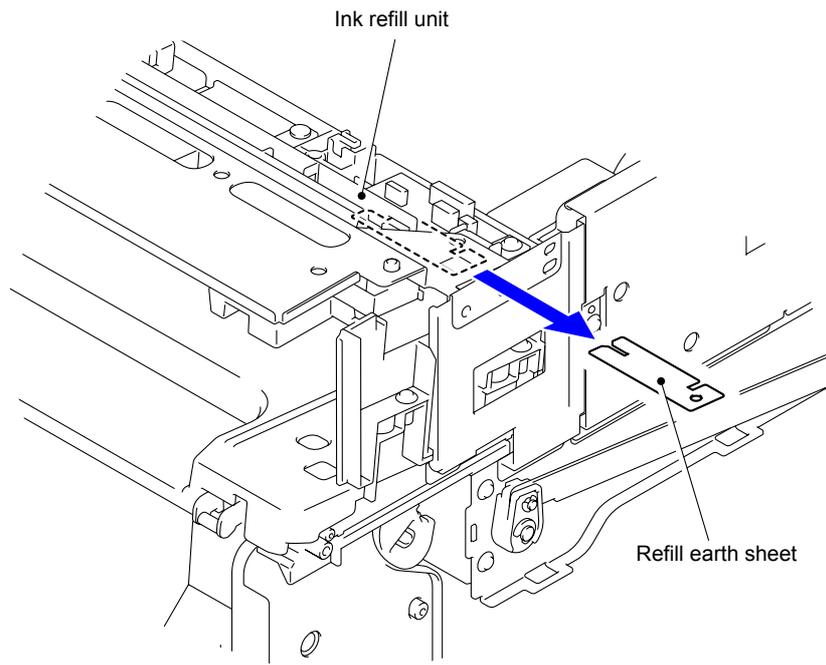


Fig. 3-57

(4) Remove the Refill frame upper.

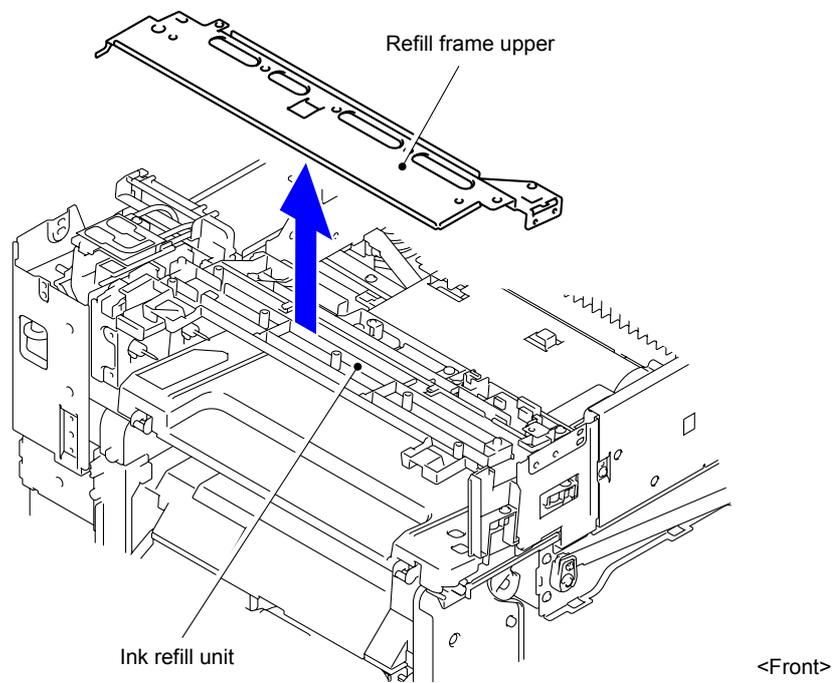


Fig. 3-58

- (5) Remove the three Taptite cup S M3x6 SR screws to remove the Refill frame R.

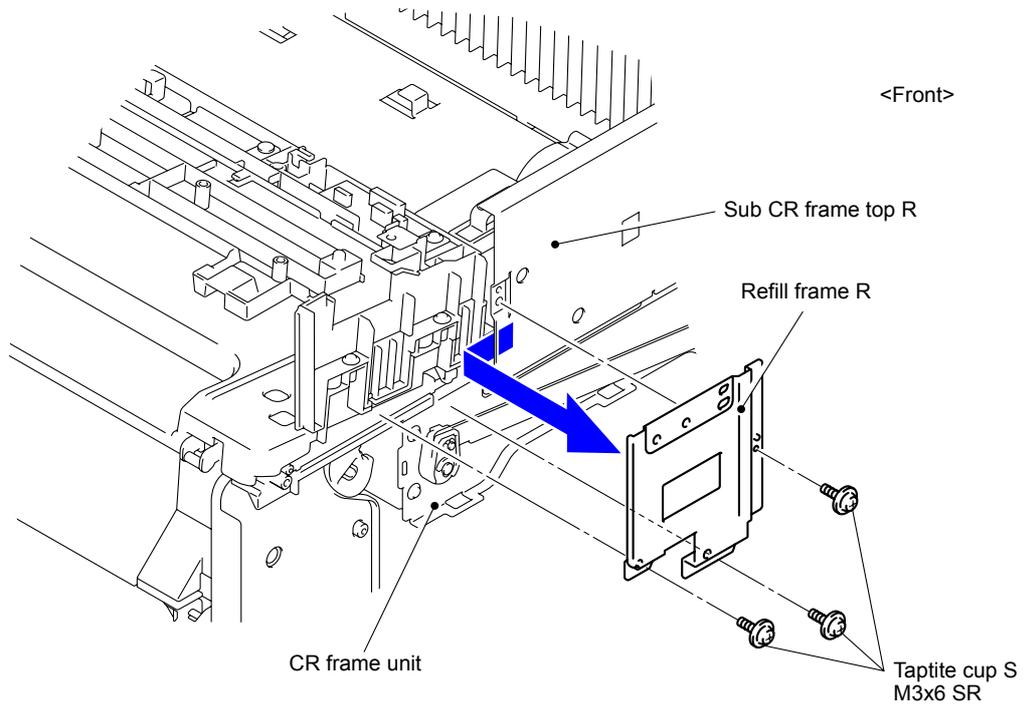


Fig. 3-59

- (6) Remove the two Taptite cup S M3x6 SR screws to remove the Refill frame L.

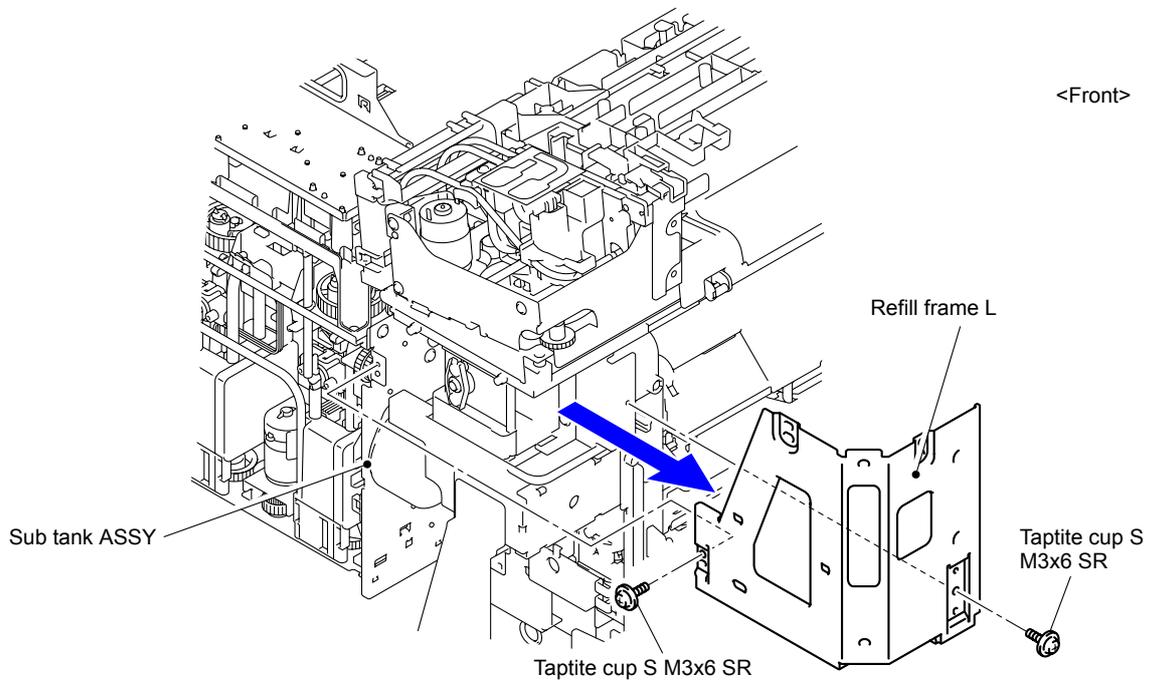


Fig. 3-60

- (7) Remove the Taptite cup S M3x6 SR screw and two Taptite bind B M4x10 screws from the left side of the Ink refill unit.
- (8) Remove the two Taptite bind B M4x10 screws from the right side of the Ink refill unit.

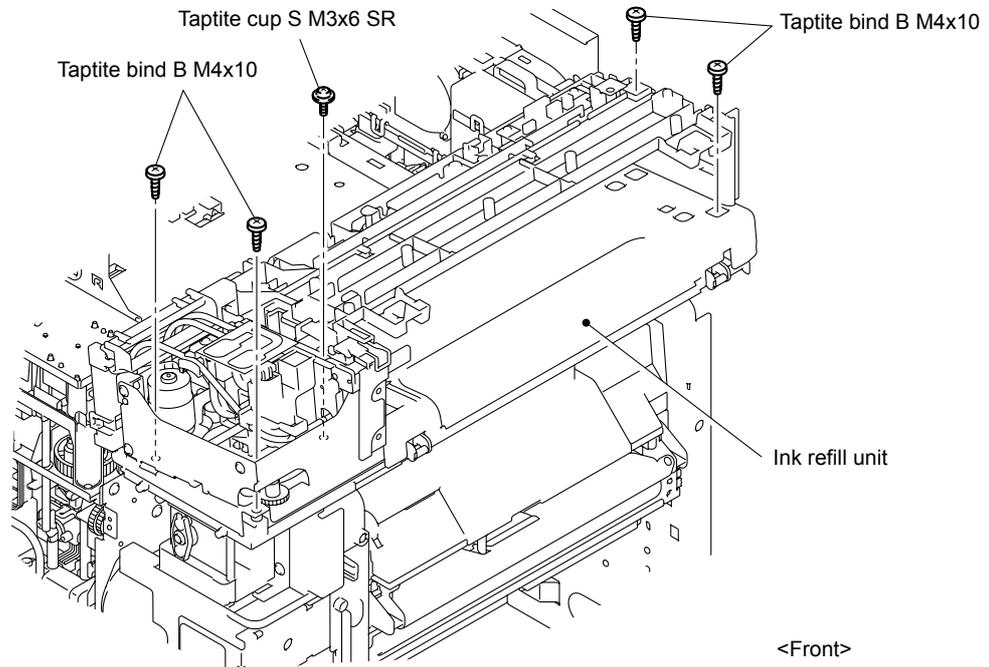


Fig. 3-61

- (9) Remove the Taptite cup B M3x8 screw to remove the Tube holder 2.

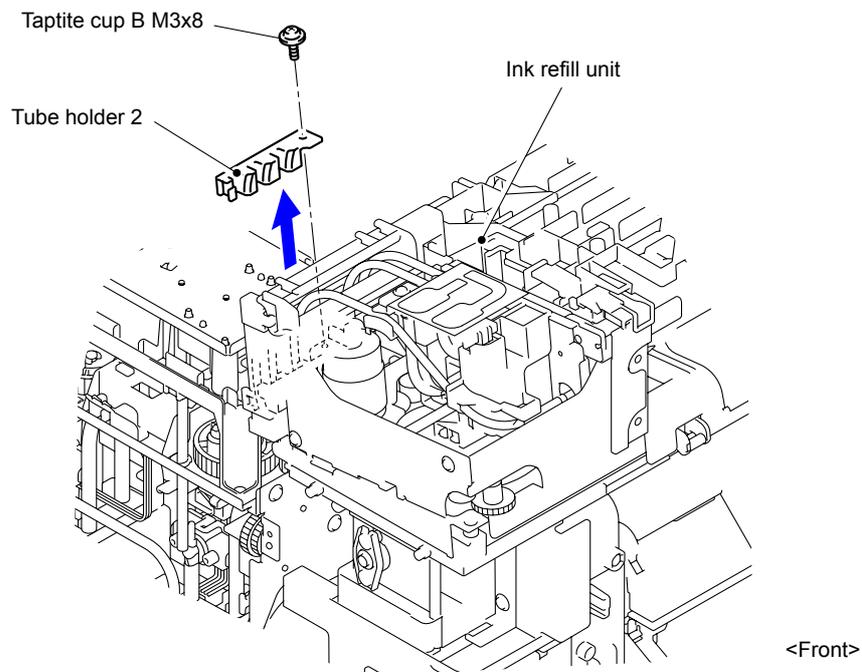


Fig. 3-62

(10) Shift the Ink refill unit to the arrow direction.

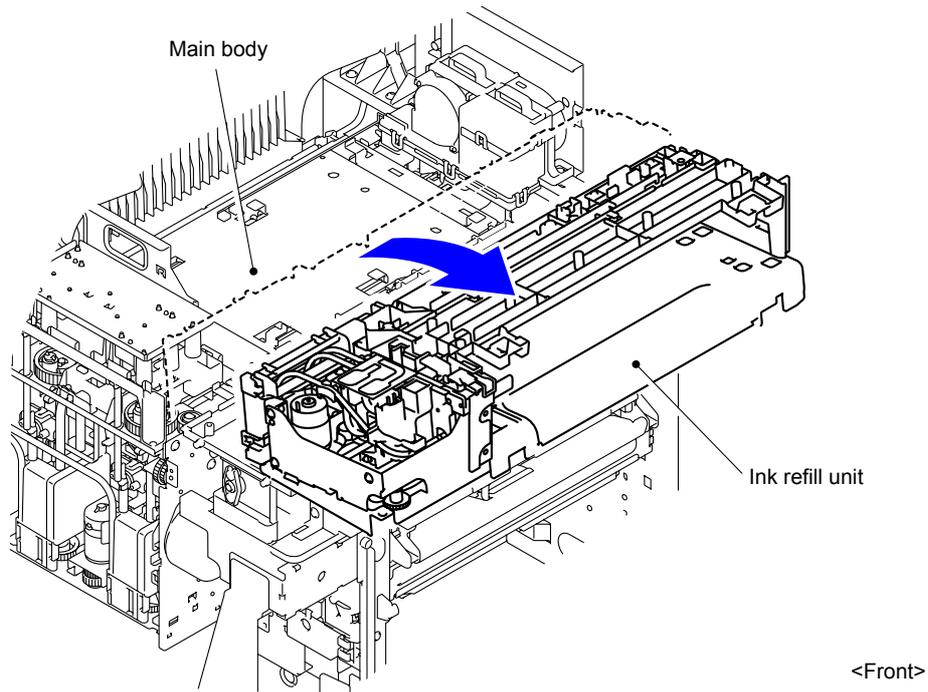


Fig. 3-63

- (11) Remove the Tube at the Ink refill unit side from the L joint. To prevent ink leakage, install the L joint with the Drain cap to the top end of the Tubes left at the Ink refill unit side.
- (12) To prevent ink leakage, install the Drain cap to the L joint at the top end of the Tube at the Main body side.

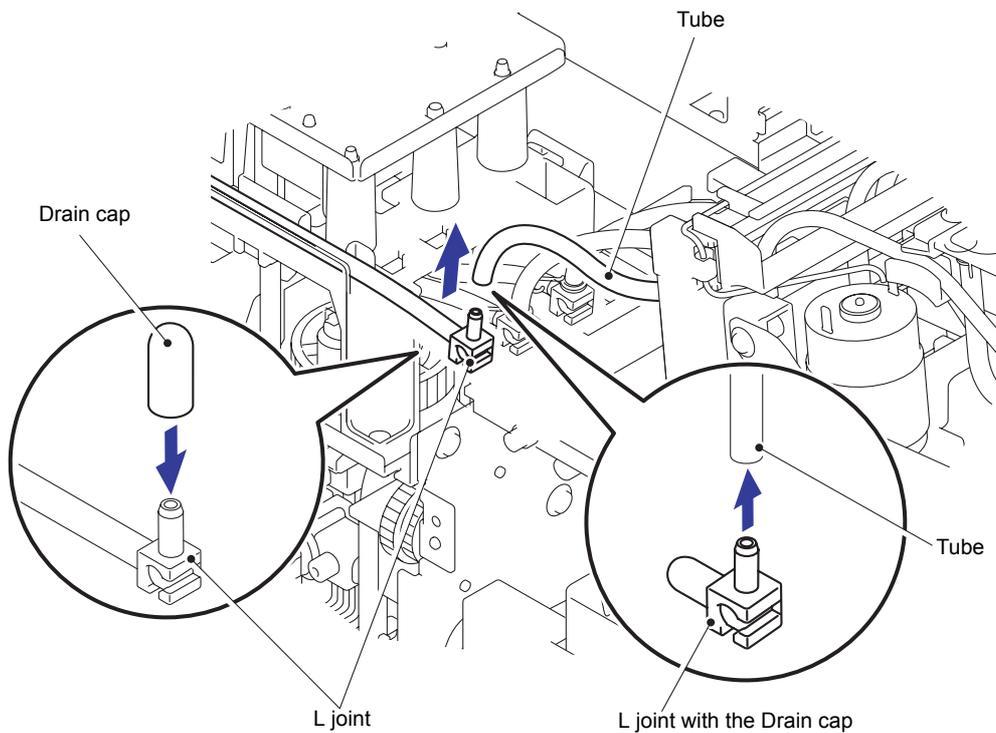


Fig. 3-64

(13) Perform the operations explained in (11) and (12) to the other two Tubes and remove the Ink refill unit.

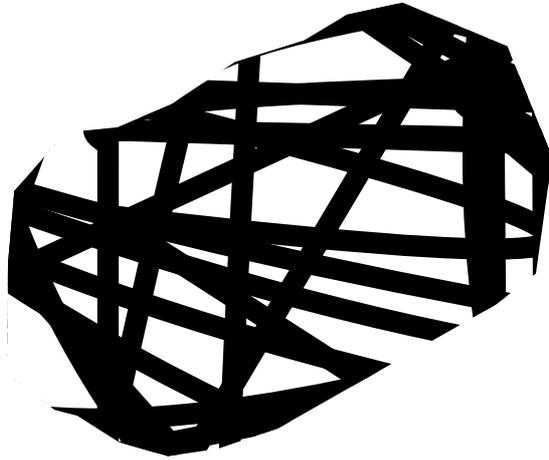


Fig. 3-65

10.21 Supply Pump ASSY/Sub Tank ASSY

Note:

- Be sure to replace the Supply pump ASSY and Sub tank ASSY at the same time. If they are replaced separately, it will cause ink leakage at the time of the replacement.
- Be sure to execute Maintenance 18 and remove Ink and Pre-coat ink before perform the replacement operation. (Refer to [Chapter 5, "1.4.7 Individual operation of each unit \(Function code 18\)"](#))

- (1) Disconnect the wiring of the Engine PCB base plate.

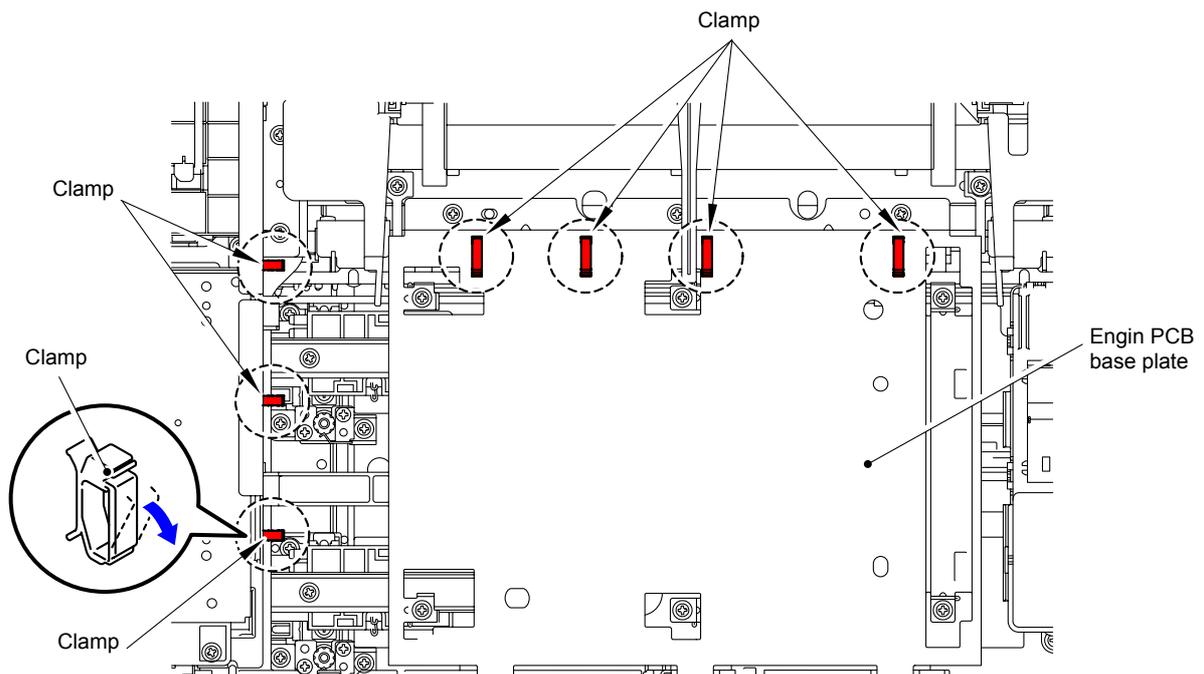


Fig. 3-66

(2) Remove the three Taptite cup S M3x6 SR screws to remove the Engine PCB base plate.

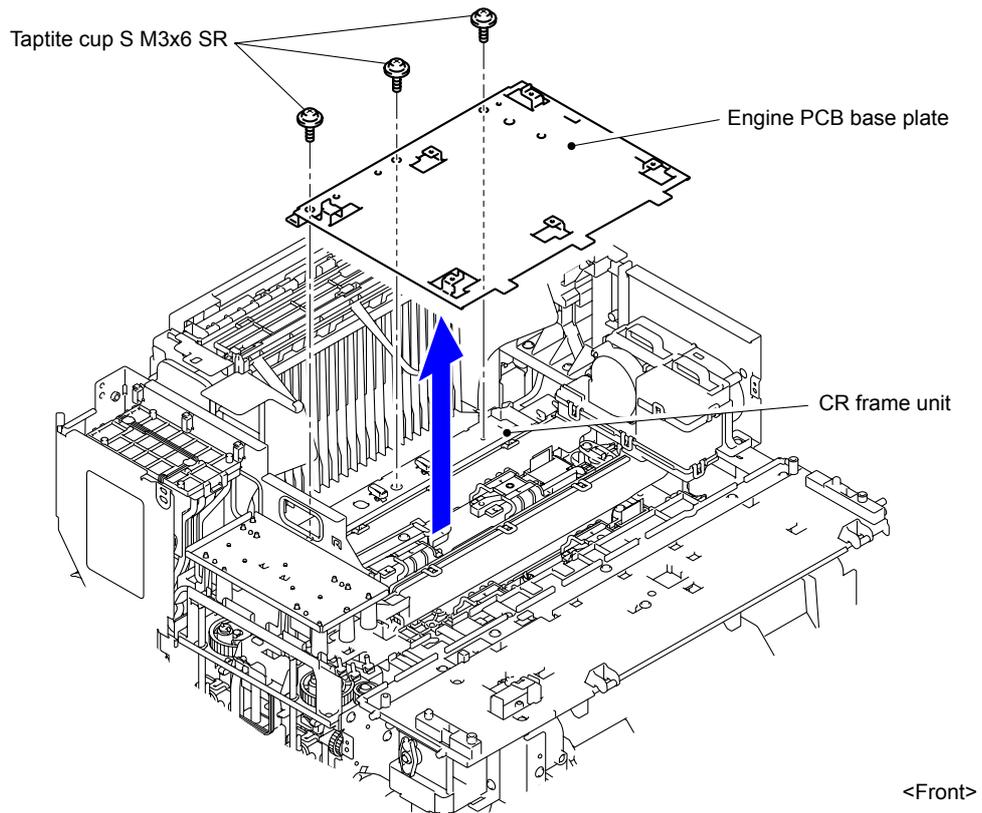


Fig. 3-67

(3) Remove the two Taptite cup S M3x6 SR screws to remove the Sub CR frame rear L.

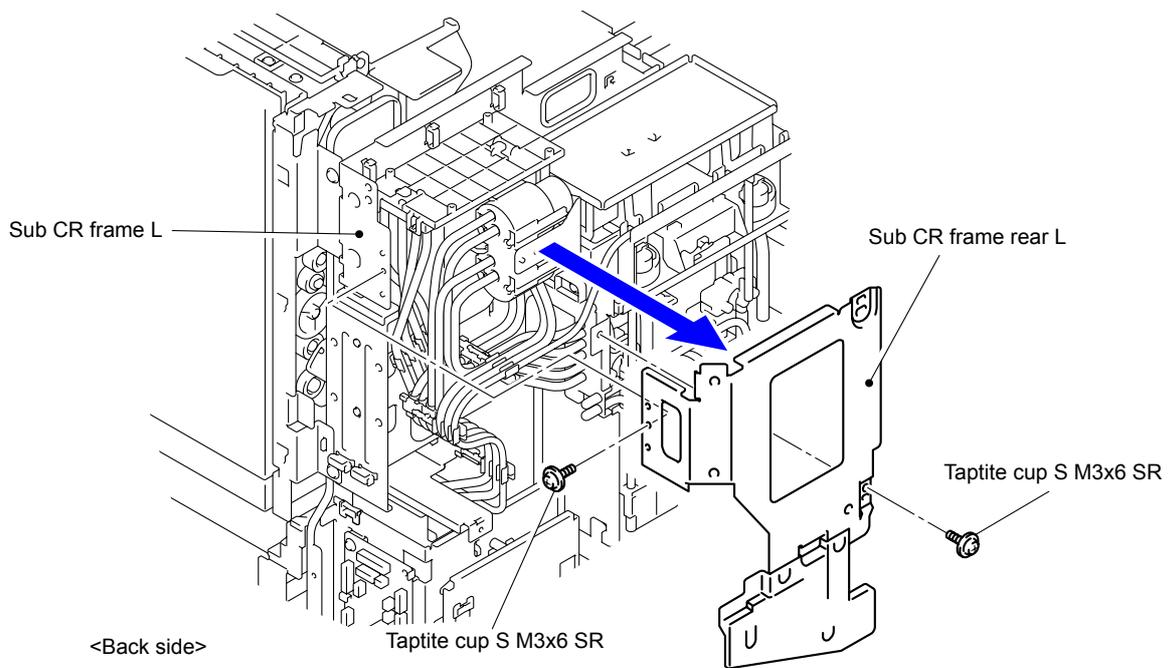


Fig. 3-68

- (4) Remove the six Tubes at the Sub tank ASSY side connected to the Sub tank ASSY. Install the Drain caps (six caps) to the locations from which the Tubes have been removed (i.e., Needle section at the Sub tank ASSY side).
- Humid tube FG GO B
 - Humid tube BK GO B
 - Humid tube BK RTN A
 - Humid tube FG RTN A
 - Sub tank tube FG A
 - Sub tank tube BK A

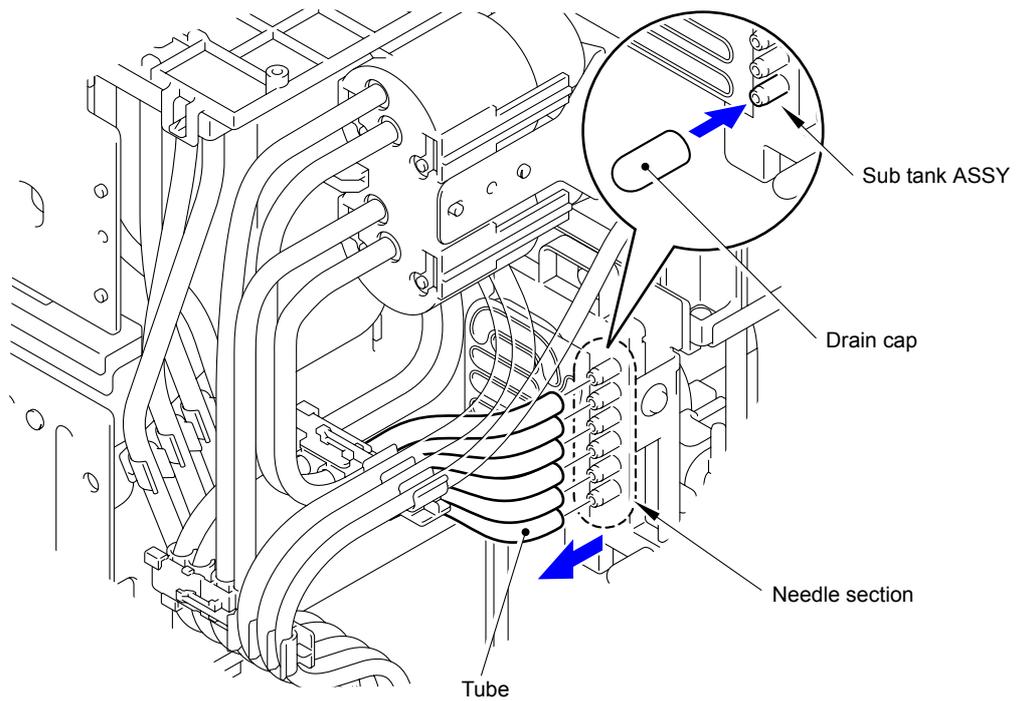


Fig. 3-69

- (5) Pull the Open lever to open the Top cover with holding down the surface of the Top cover.

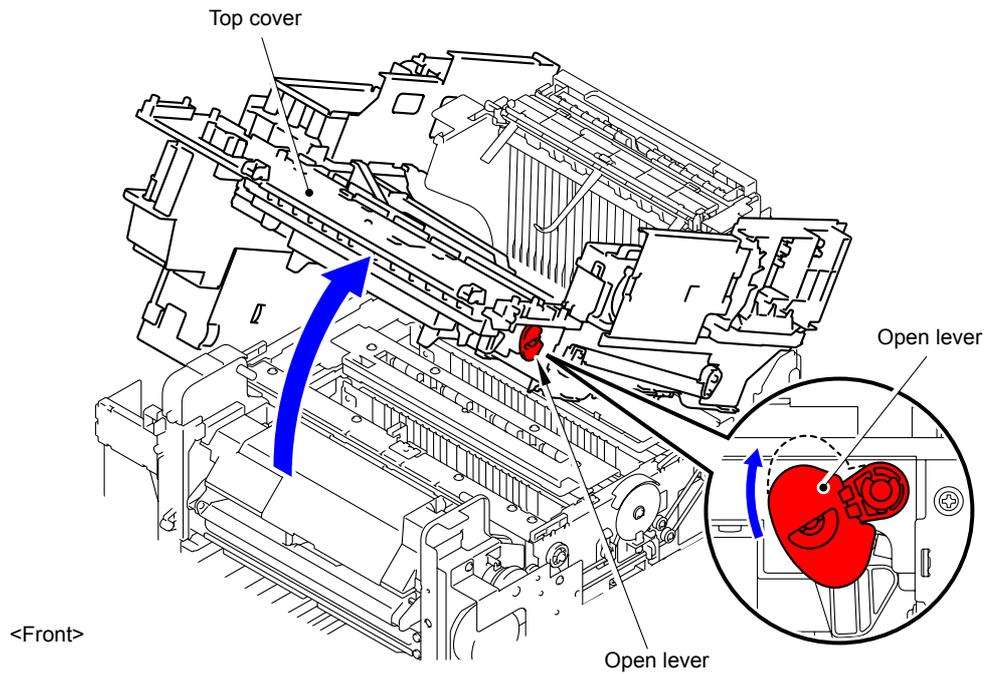


Fig. 3-70

Note:

If the parts of the Top cover have already been removed, the Top cover is burst open by the force of the spring. For this reason, be sure to hold down the surface of the Top cover when opening it.

- (6) Remove the two Taptite cup S M3x6 SR screws to remove the Cap motor cover.

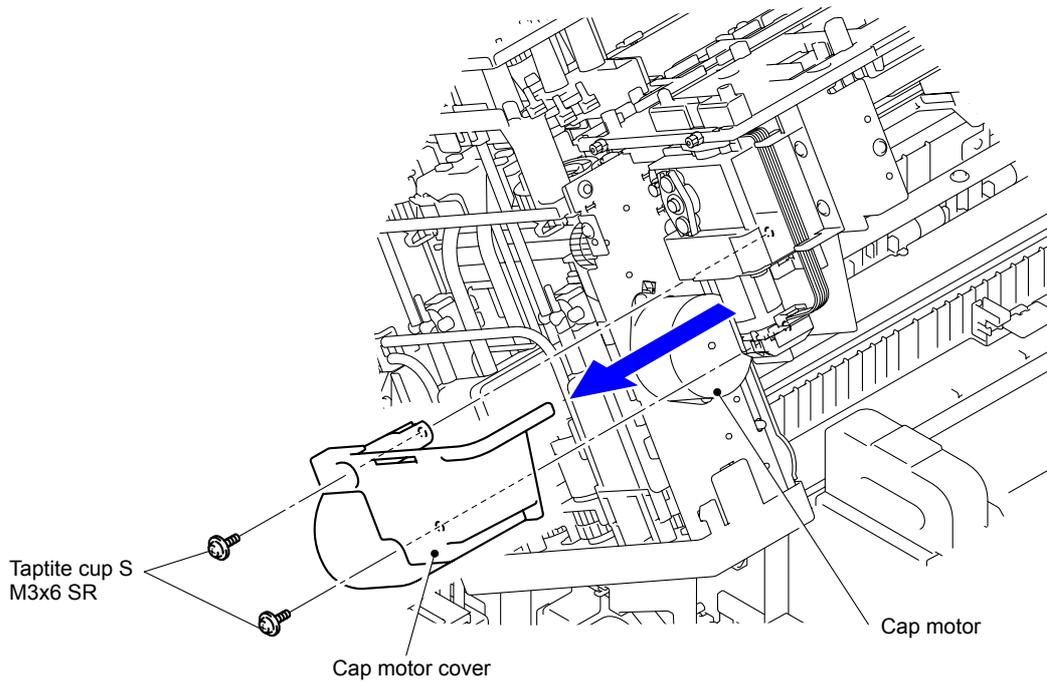


Fig. 3-71

- (7) Disconnect the Connector of the Cap motor.

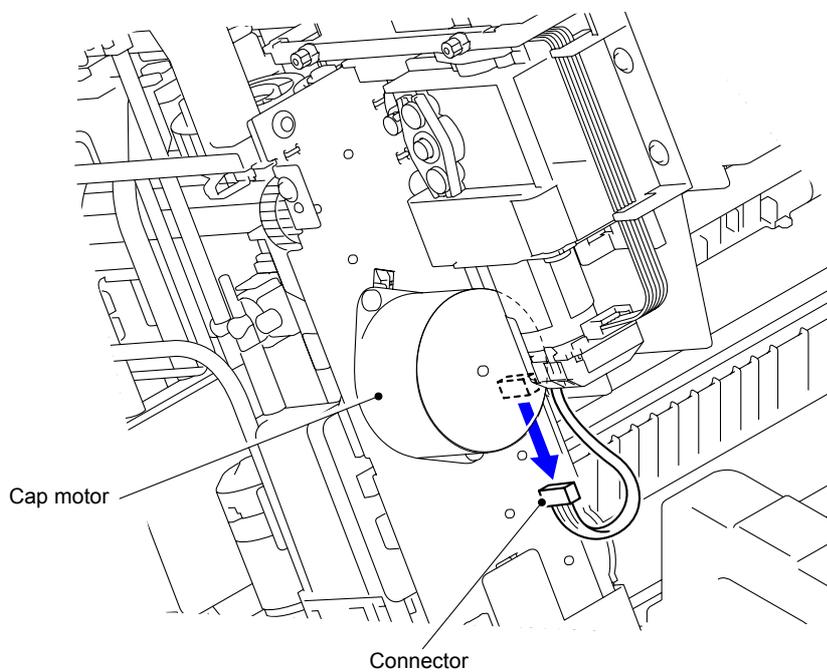


Fig. 3-72

(8) Close the Top cover.

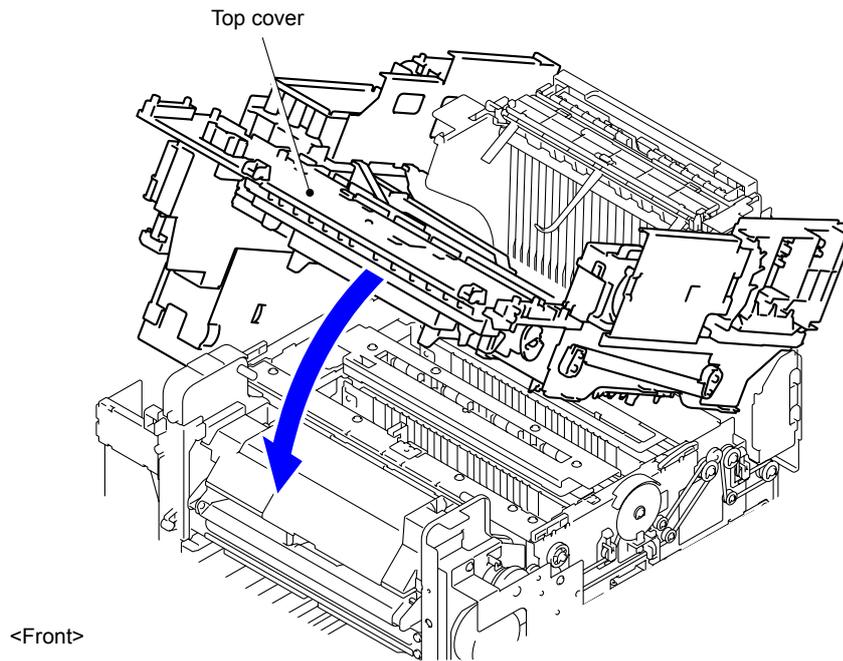


Fig. 3-73

(9) Remove the two Hanger caps to remove the Hanger.

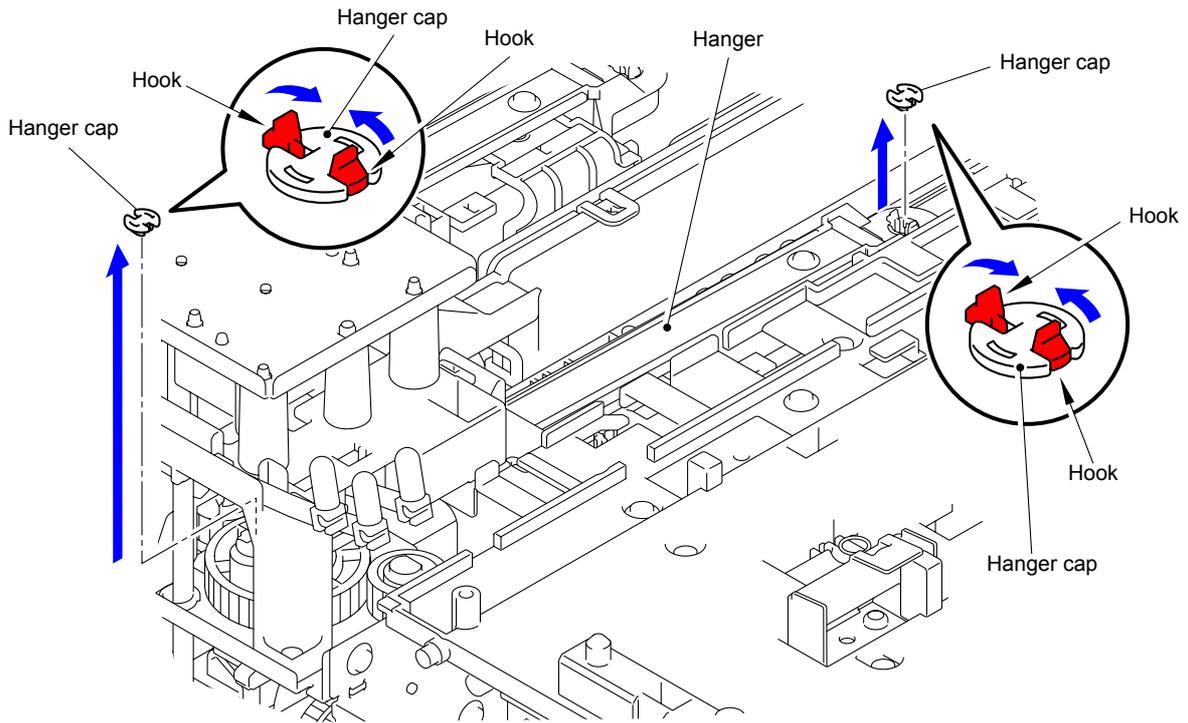


Fig. 3-74

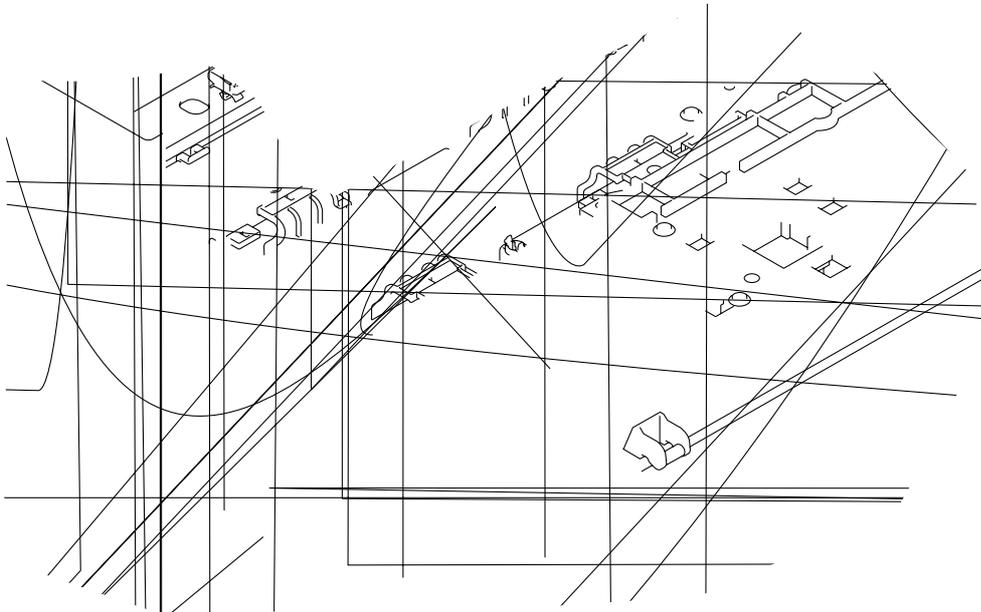


Fig. 3-75

(10) Remove another Hanger in the same procedure.

(11) Remove the four Taptite cup S M3x6 SR screws from the Sub tank ASSY.

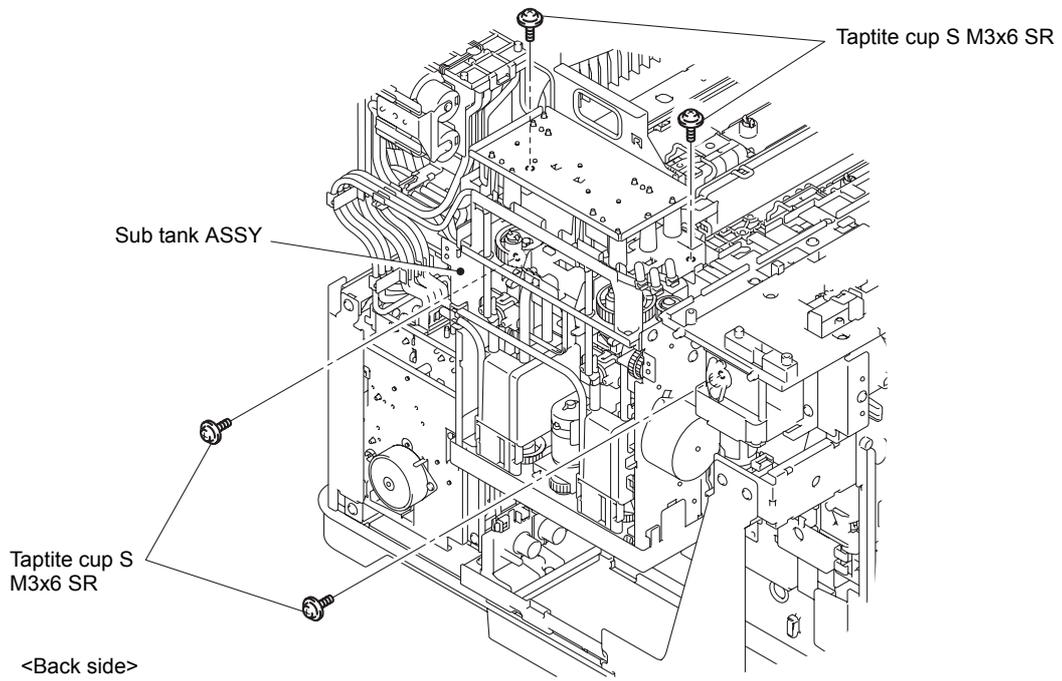


Fig. 3-76

- (12) Remove the two Screw pan (P) M2P0.4x18 screws from the Head attachment of the Pre-coat head.
- (13) Remove the two Screw pan (P) M2P0.4x18 screws from the Head attachment of the Ink head.

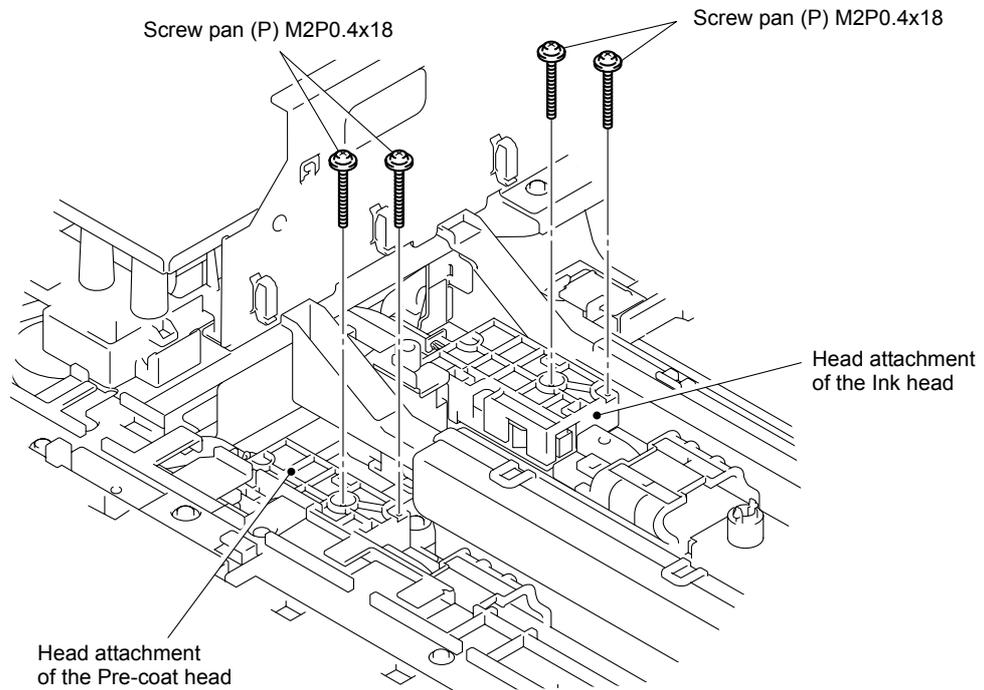


Fig. 3-77

- (14) Lift the respective Head joint of the Pre-coat head and Ink head and wipe the Needle section of the joint with a cloth.

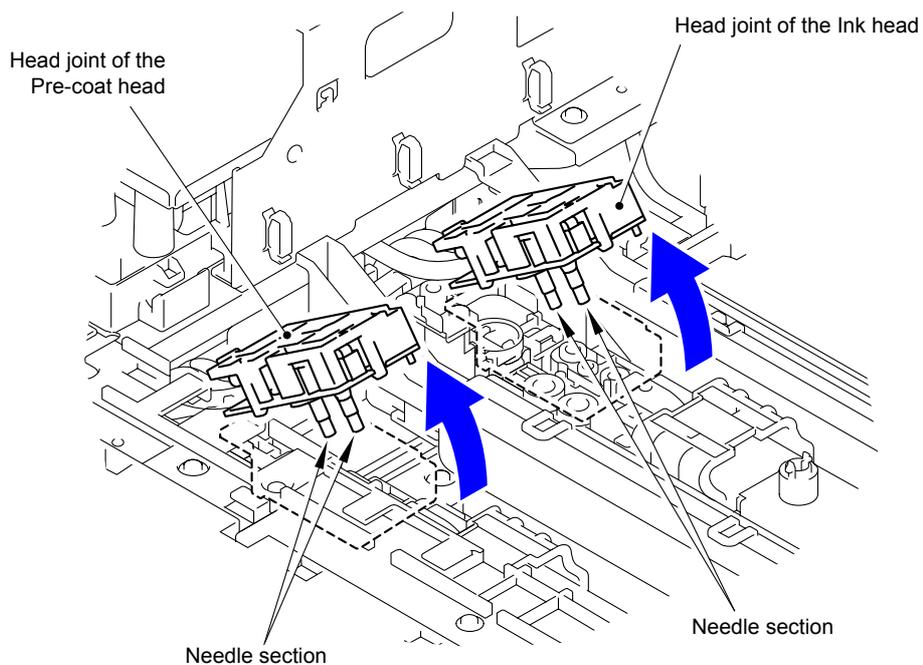


Fig. 3-78

Note:

Wipe the needle section within the range shown in the figure below.
The red circle mark on the head joint must not be moved beyond the dotted line.
If that is not followed, the tube may be broken or come out causing an ink leak. If the tube is broken or comes out, replace the sub tank ASSY as the tube cannot be reused.

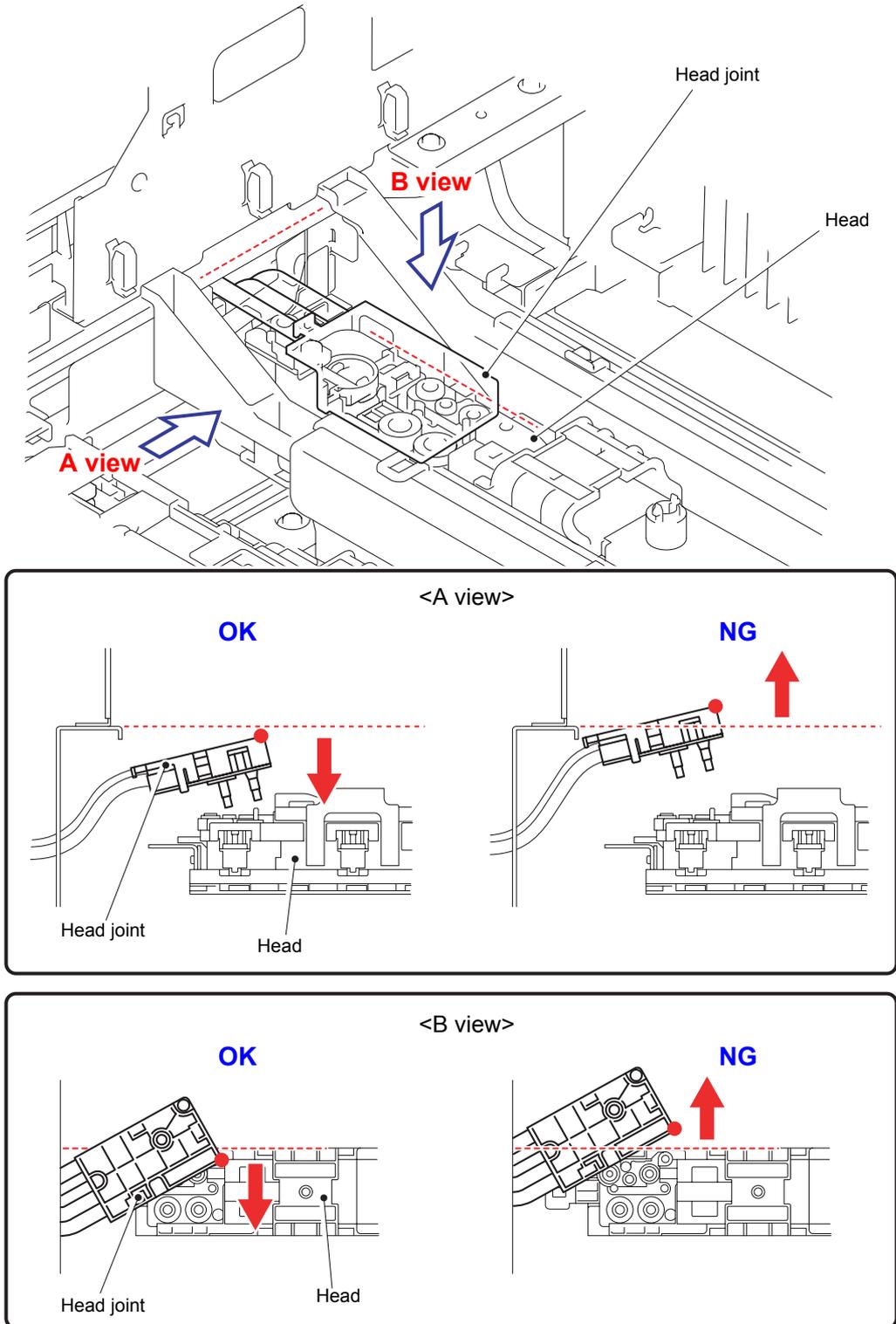


Fig. 3-79

(15) Pull the Open lever to open the Top cover with holding down the surface of the Top cover.

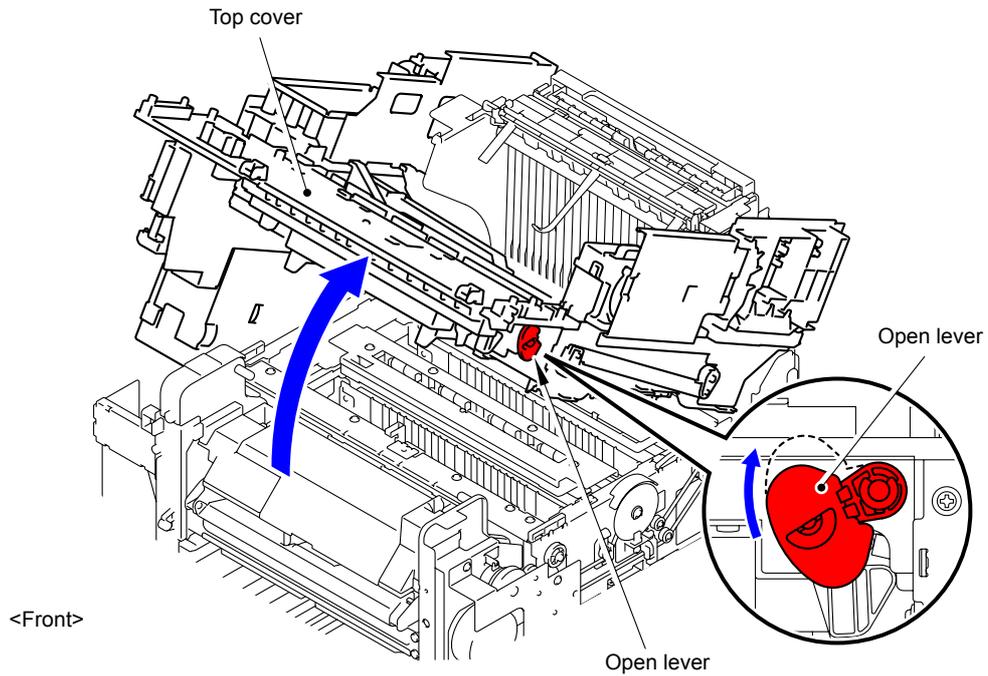


Fig. 3-80

Note:

If the parts of the Top cover have already been removed, the Top cover is burst open by the force of the spring. For this reason, be sure to hold down the surface of the Top cover when opening it.

(16) Remove the Supply pump ASSY and Sub tank ASSY from the Main frame.

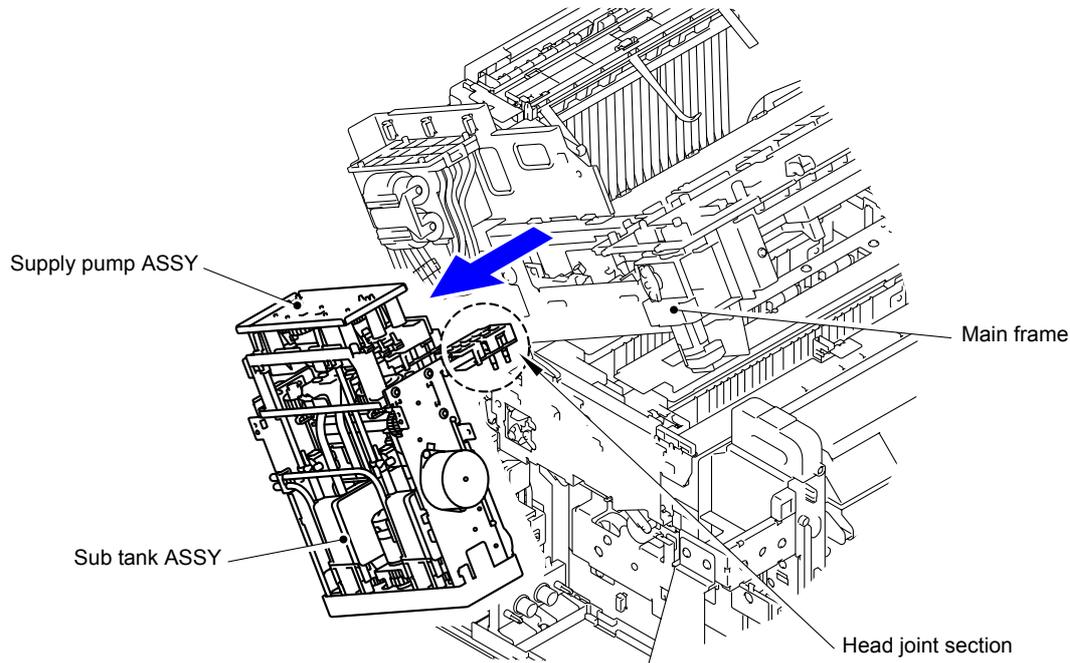


Fig. 3-81

Note:

Be careful that the Head joint section will not come into contact with Main frame.

Assembling Note:

- To replace the Supply pump ASSY and Sub tank ASSY, when removing the Tubes of the Supply tube for tank B, Humid tube BK GO B, Humid tube FG GO B, Humid tube BK RTN A, Humid tube FG RTN A, Sub tank tube FG A, and Sub tank tube BK A, they can be reused only once by cutting the top end of the Tubes. When cutting a Tube, be sure to use scissors without oil and dirt attached and vertically cut the top end of the Tube by 5 mm. If the Tube has already been cut, be sure to replace it with a new one.
- When tightening the Ink head attachment with screws, tighten the screws lightly using a precision screwdriver. (The tightening torque is 1.5 ± 0.2 kg/cm.)

(17) Install the Drain cap to Needle section of each Head joint of the Ink head ASSY and Pre-coat head ASSY.

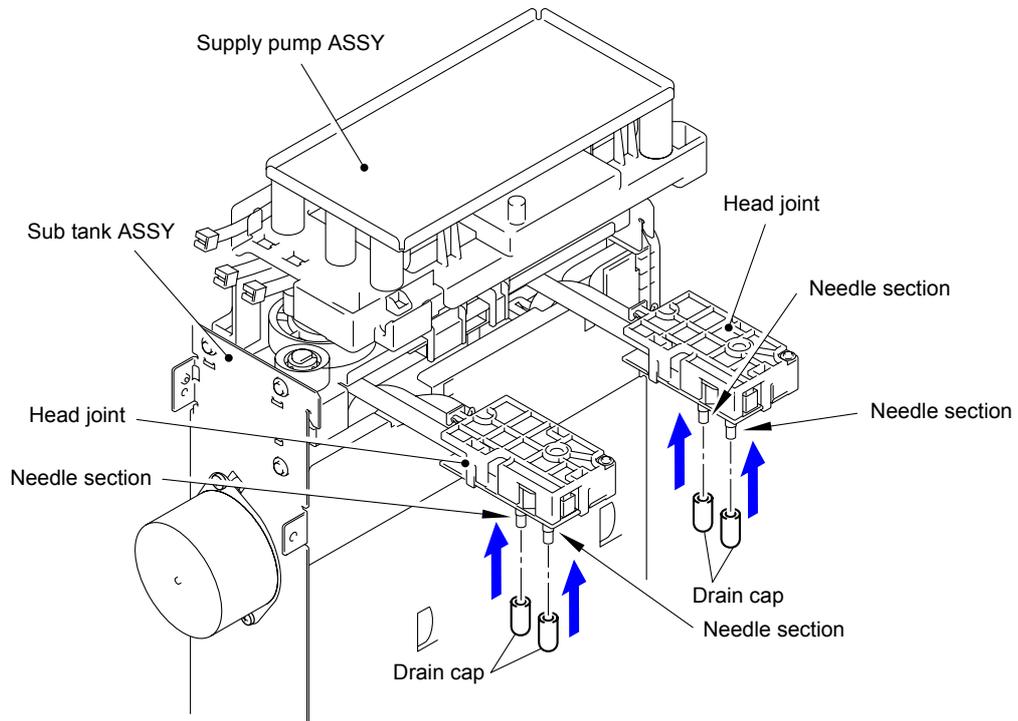


Fig. 3-82

10.22 Ink Head ASSY/Pre-coat Head ASSY

- (1) Remove the two Taptite cup S M3x6 SR screws to remove the Fan unit.

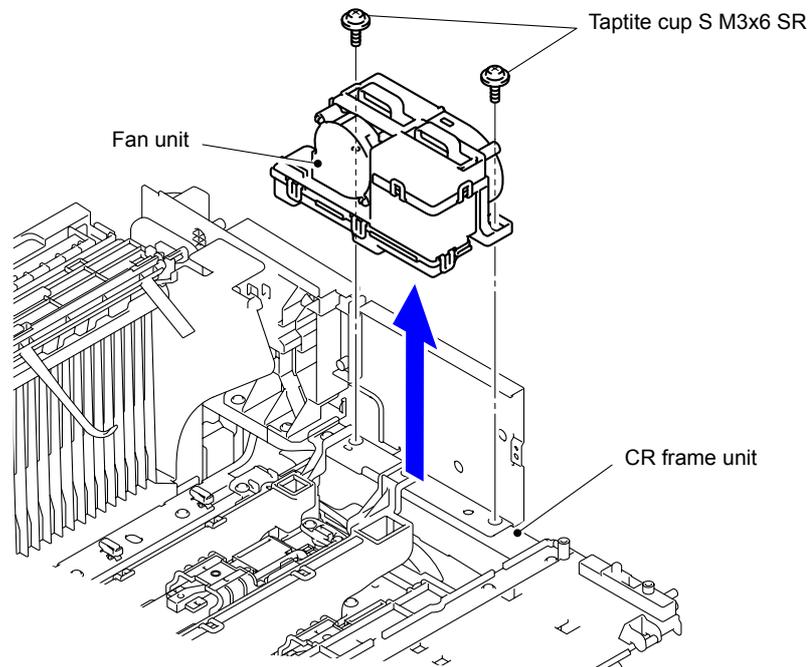


Fig. 3-83

- (2) Remove the Taptite cup S M3x6 SR screw to remove the Pre-coat duct.

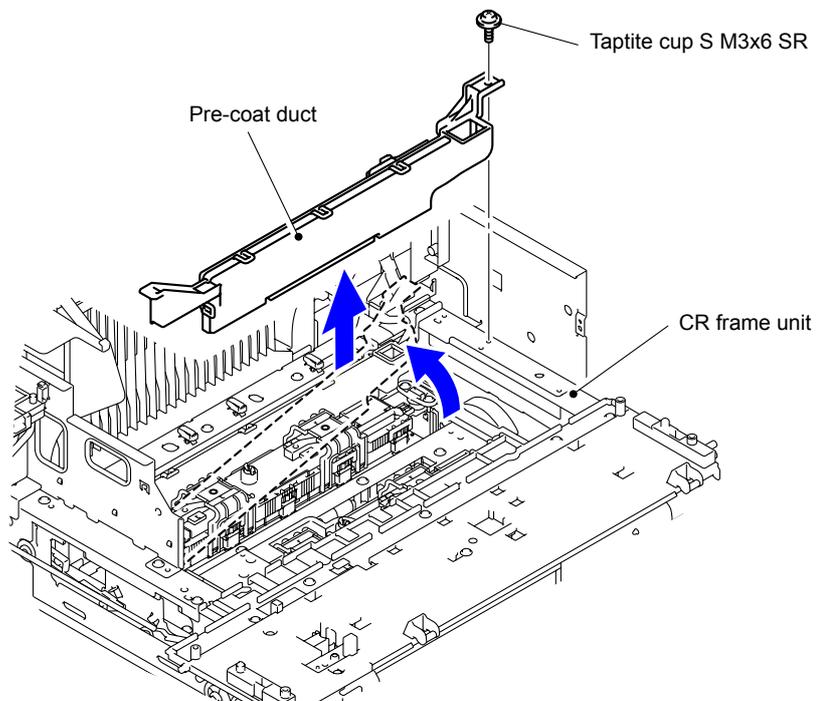


Fig. 3-84

(3) Remove the Tactile cup (3 M3x

(4) Install Attach... head and Ink head

- (5) Pull the Open lever to open the Top cover while holding down the surface of the Top cover with a hand.
- (6) Remove the two Flange nut M3 at the bottom of the Ink head ASSY.
- (7) Remove the two Flange nut M3 at the bottom of the Pre-coat head ASSY.
- (8) Close the Top cover.
- (9) Remove the three Taptite cup B M3x10 screws. (Head lock L and R at the Ink head side)
- (10) Remove the three Taptite cup B M3x10 screws. (Head lock L and R at the Pre-coat head side)
- (11) Remove the Head lock L and R at the Ink head side.
- (12) Remove the Head lock L and R at the Pre-coat head side.

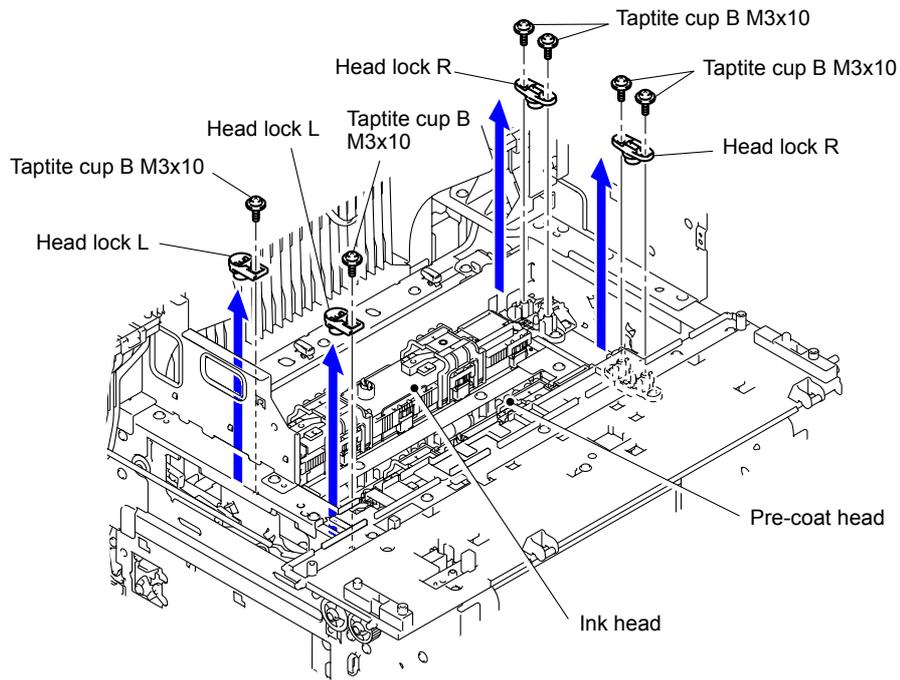


Fig. 3-87

(13) Remove the Ink head ASSY.

(14) Remove the Pre-coat head ASSY.

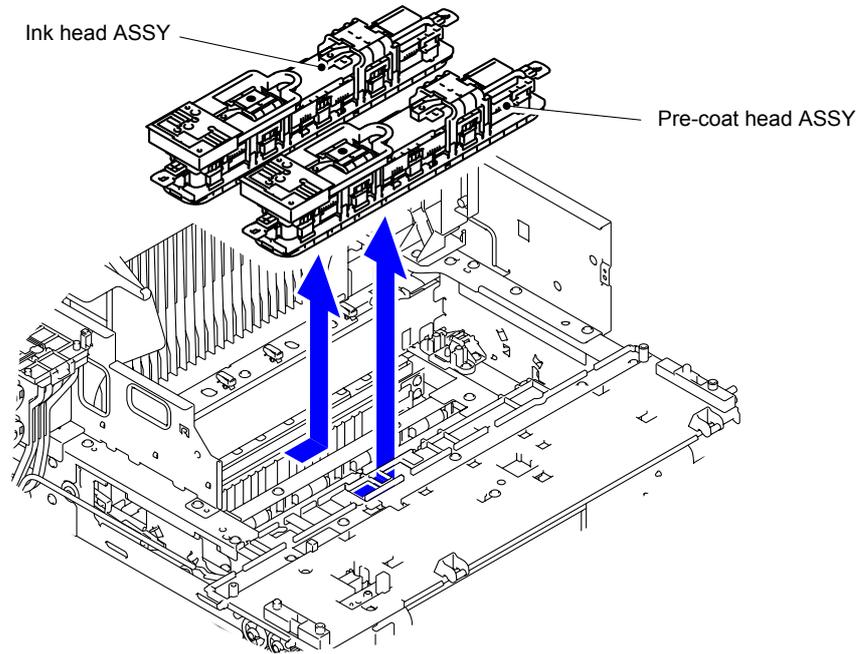


Fig. 3-88

Note:

Be sure not to install the Ink head ASSY and Pre-coat head ASSY vice versa because it will cause a print failure.

(15) Place the Ink head ASSY or the Pre-coat head ASSY on Head case. Clip the both sides of Head case to secure the Head and Protector.

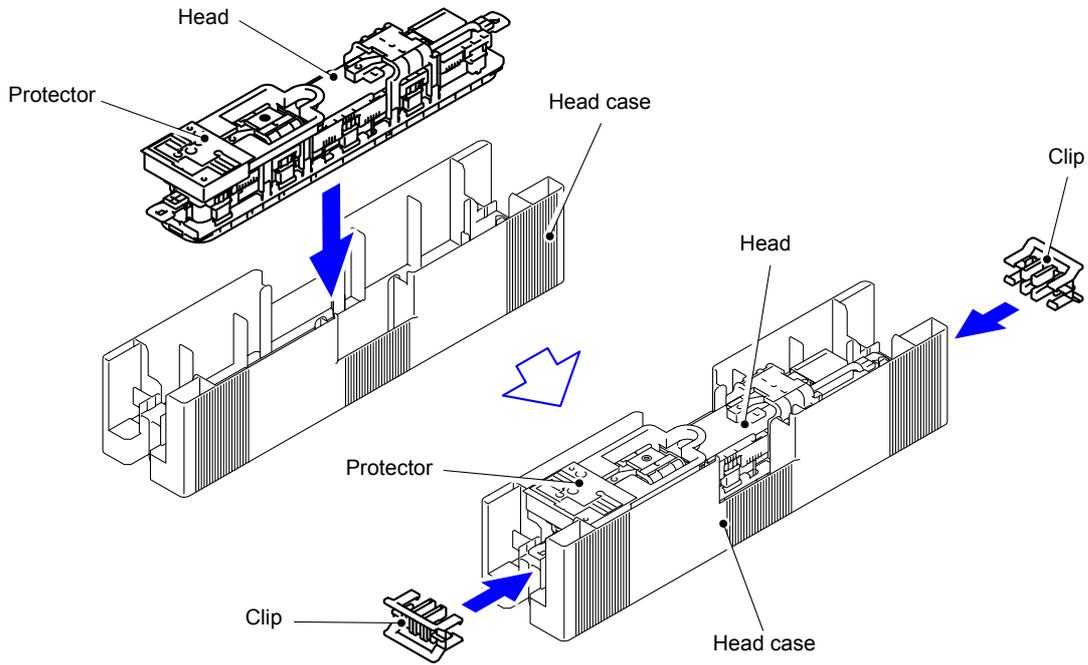


Fig. 3-89

Note when replacing the Head:

When replacing the Head, take out the Head from the Head case with the following procedure.

- (1) Remove the two Screw bind M2x16 screws to remove the Head protector.

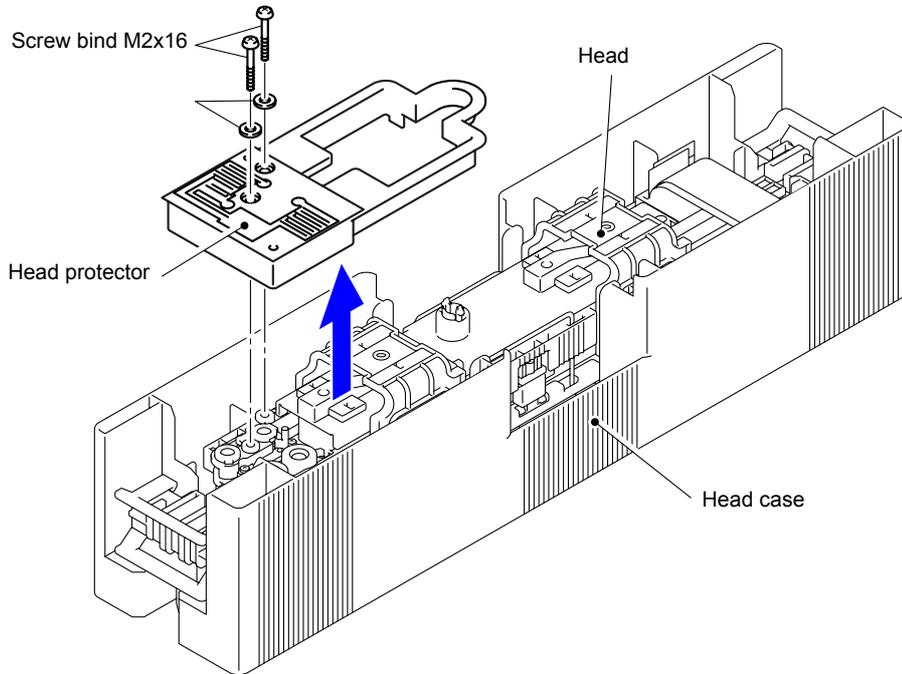


Fig. 3-90

- (2) Move the Cap slider of the Head cap in the arrow direction, open the Head cap.

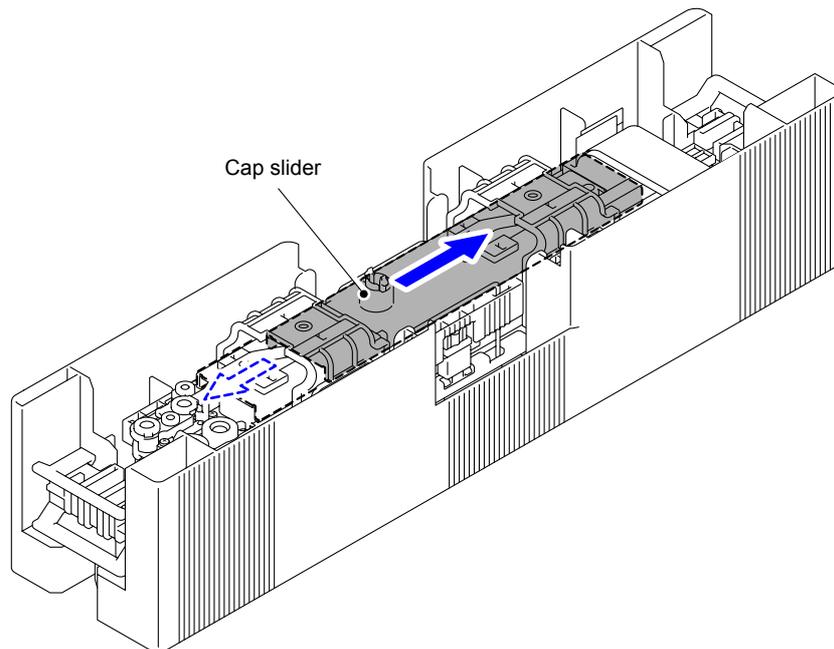


Fig. 3-91

Note:

- Do not return the Cap slider to the original position before it is fastened to the carriage. Doing so may cause the cap spring chip to come out. (Refer to Fig. 3-93)
- If the Head is taken out from the Head case without opening the Head cap, there is a possibility that the Head cap is deformed, and the sealing performance of the Head is deteriorated.

- (3) Remove the Head lock at the left and right sides.

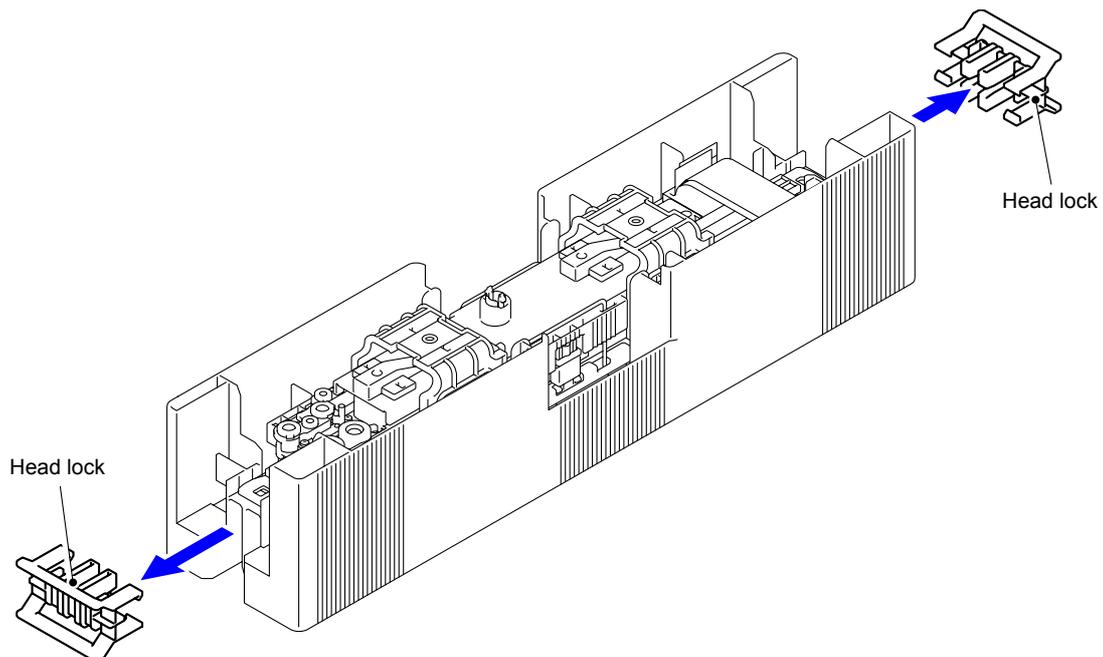


Fig. 3-92

(4) Take out the Head from the Head case.

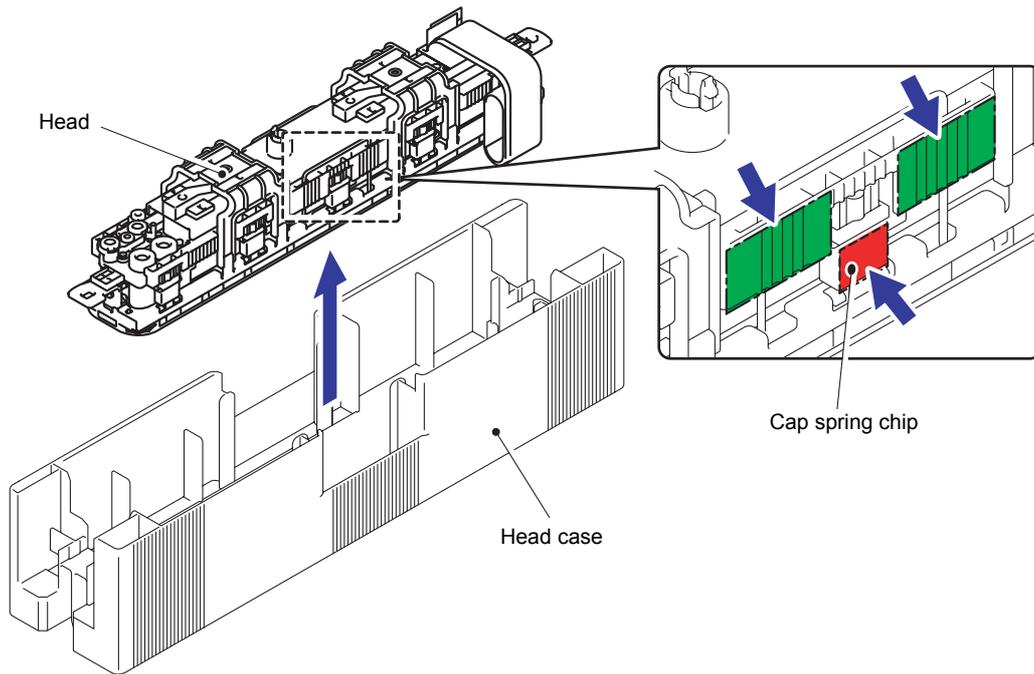


Fig. 3-93

Note:

When taking out the Head, be sure to hold the position indicated in a green dashed and dotted line and lift the Head. Be sure not to touch the red meshed part. If it is touched, the Head cap mechanism might be damaged.

10.23 Buffer Tank ASSY

- (1) Remove the three Taptite cup S M3x6 SR screws to remove the Cover frame rear L.

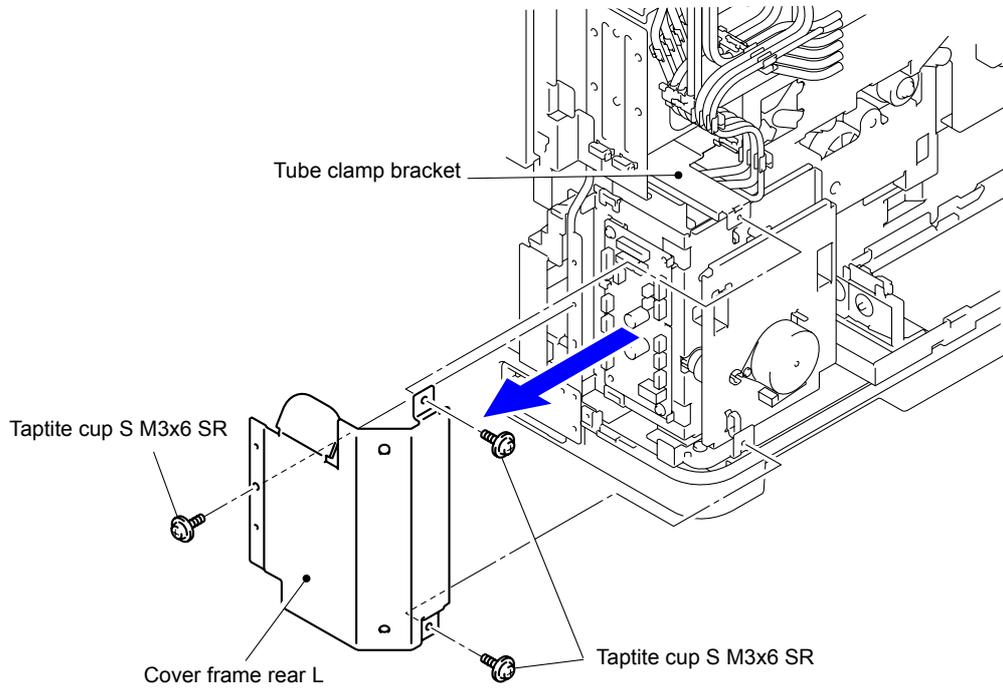


Fig. 3-94

- (2) Disconnect the two Connectors of the Water pump from the Maintenance drive PCB ASSY.

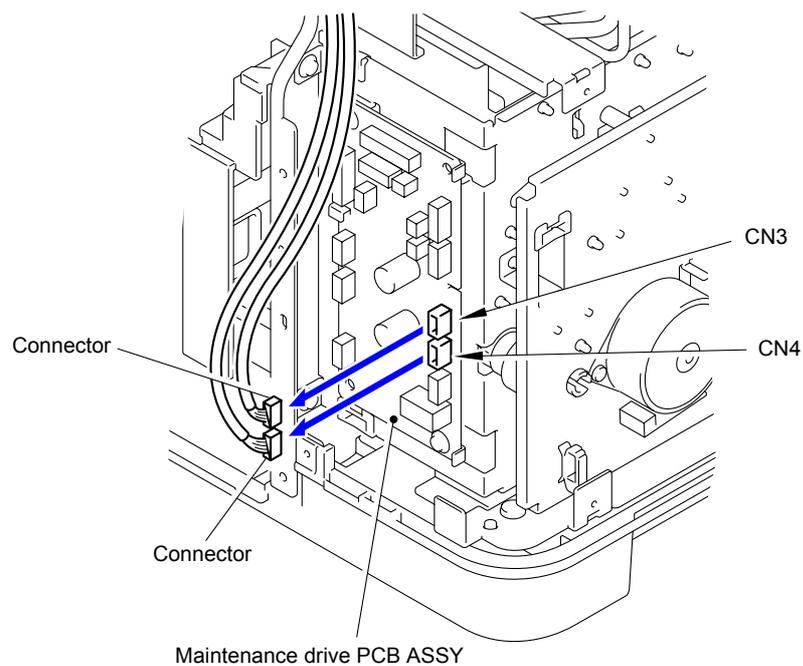


Fig. 3-95

- (3) Remove the two Tubes at the Water pump side.
- Sub tank tube FG B
 - Sub tank tube BK B

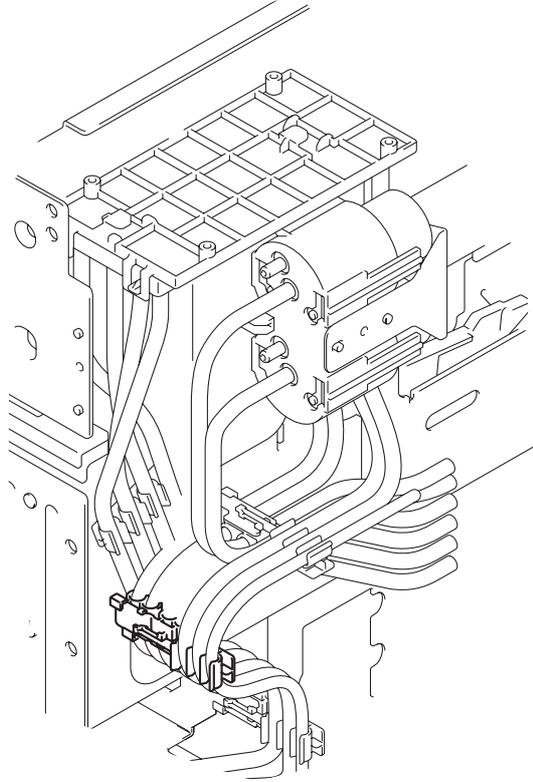


Fig. 3-96

(4) Remove the four Tubes at the Buffer tank ASSY side.

- Sub tank tube BK B
- Sub tank tube FG B
- Humid tube BK RTN B
- Humid tube FG RTN B

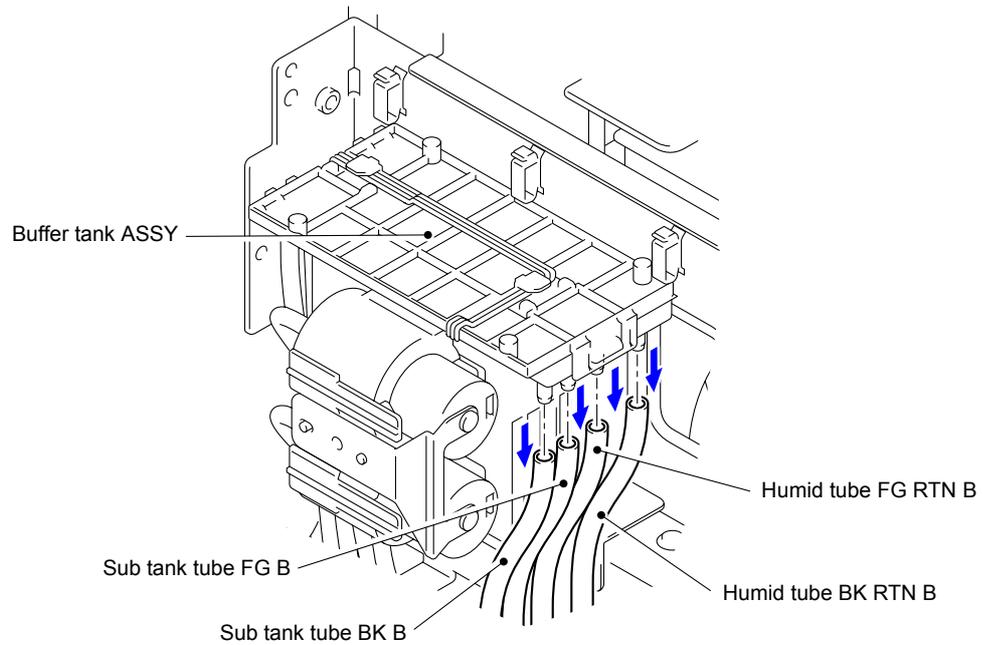


Fig. 3-97

- (5) Remove the Tube holder 1 from the Main frame. Remove the two Tubes from the Tube holder 1.
- Sub tank tube FG A
 - Sub tank tube BK A

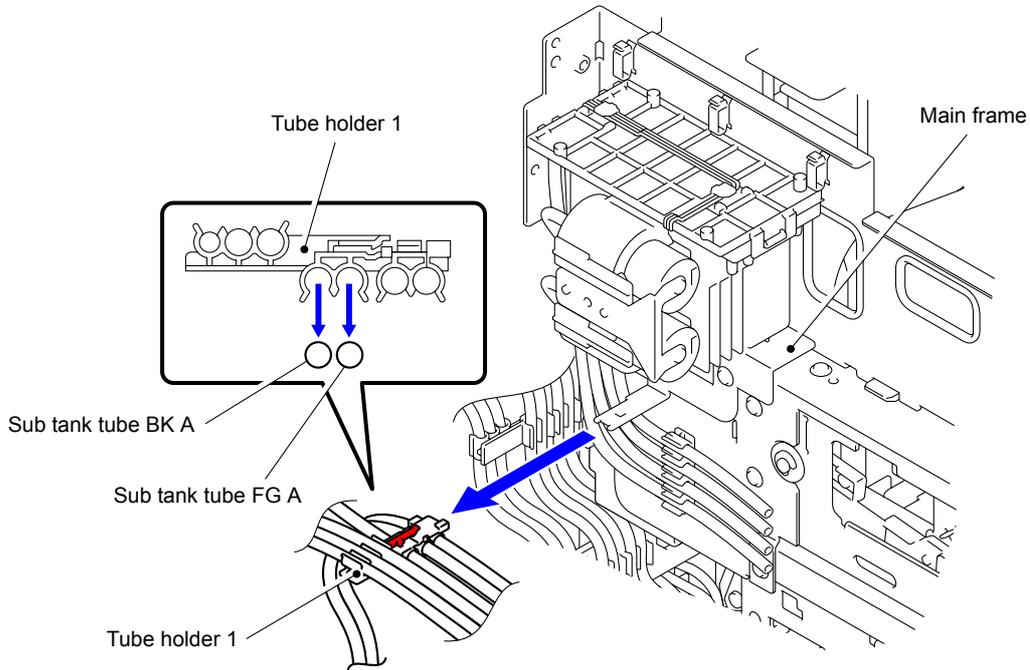


Fig. 3-98

- (6) Remove the Tube holder 5 from the Main frame.

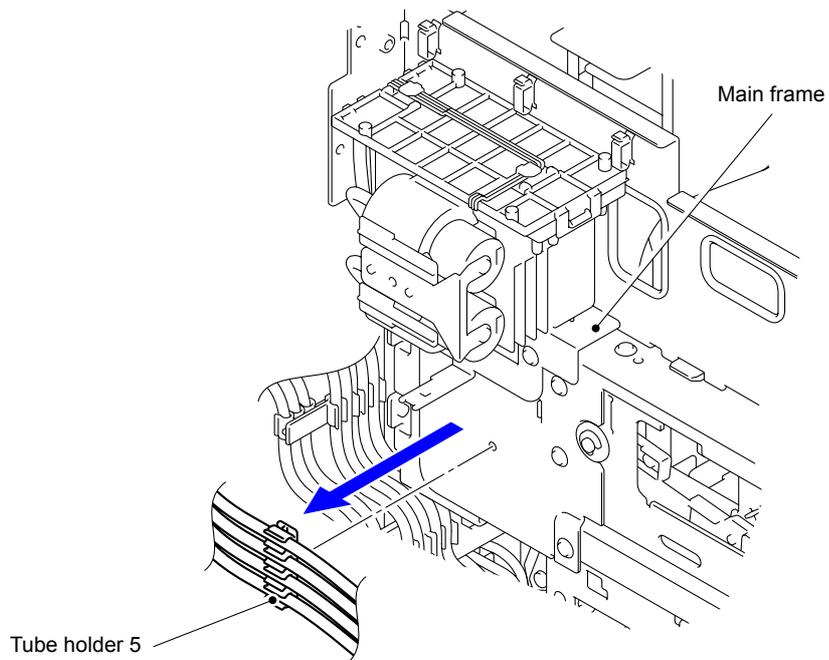


Fig. 3-99

(7) Remove the two Taptite cup S M3x6 SR screws to remove the Buffer tank ASSY.

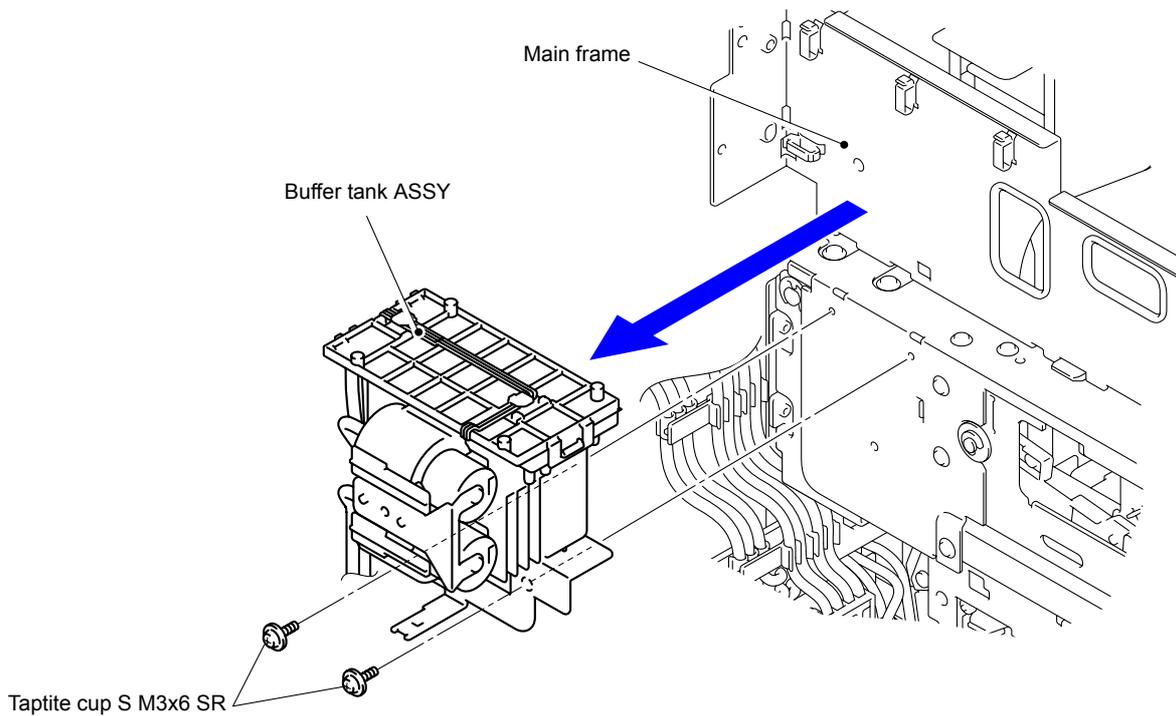


Fig. 3-100

Assembling Note:

To replace the Buffer tank ASSY, when removing the Tubes of the Humid tube BK GO A, Humid tube FG GO A, Humid tube BK RTN B, Humid tube FG RTN B, Sub tank tube FG B, and Sub tank tube BK B, they can be reused only once by cutting the top end of the Tubes. When cutting a Tube, be sure to use scissors without oil and dirt attached and vertically cut the top end of the Tube by 5 mm. If the Tube has already been cut, be sure to replace it with a new one.

10.24 Drive Frame ASSY

- (1) Remove the four Tubes at the Drive frame ASSY side connected to the Drive frame ASSY.
- (2) Install the L joint with the Drain cap to the removed four Tubes. Install the Drain cap to Needle section at the Drive frame ASSY side.
 - PF waste tube D x2
 - PF waste tube E x2

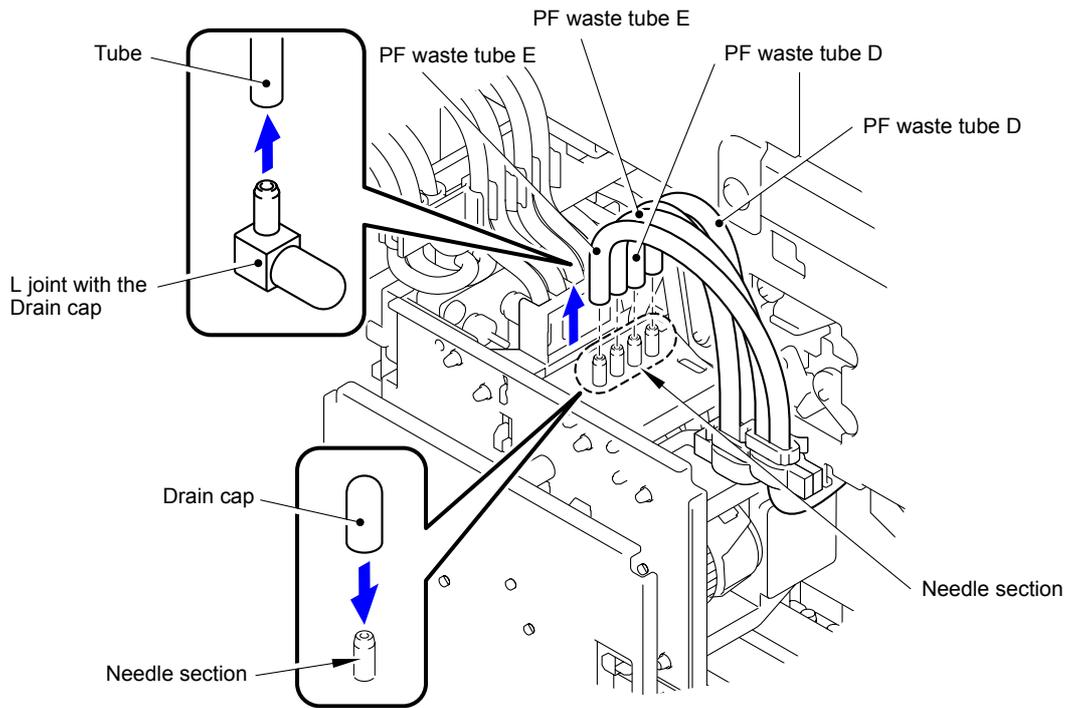


Fig. 3-101

- (3) Remove the two Tubes at the Waste ink box side connected to the Waste ink box. Install the L joint with the Drain cap to the removed two Tubes.
- Waste ink box tube x2

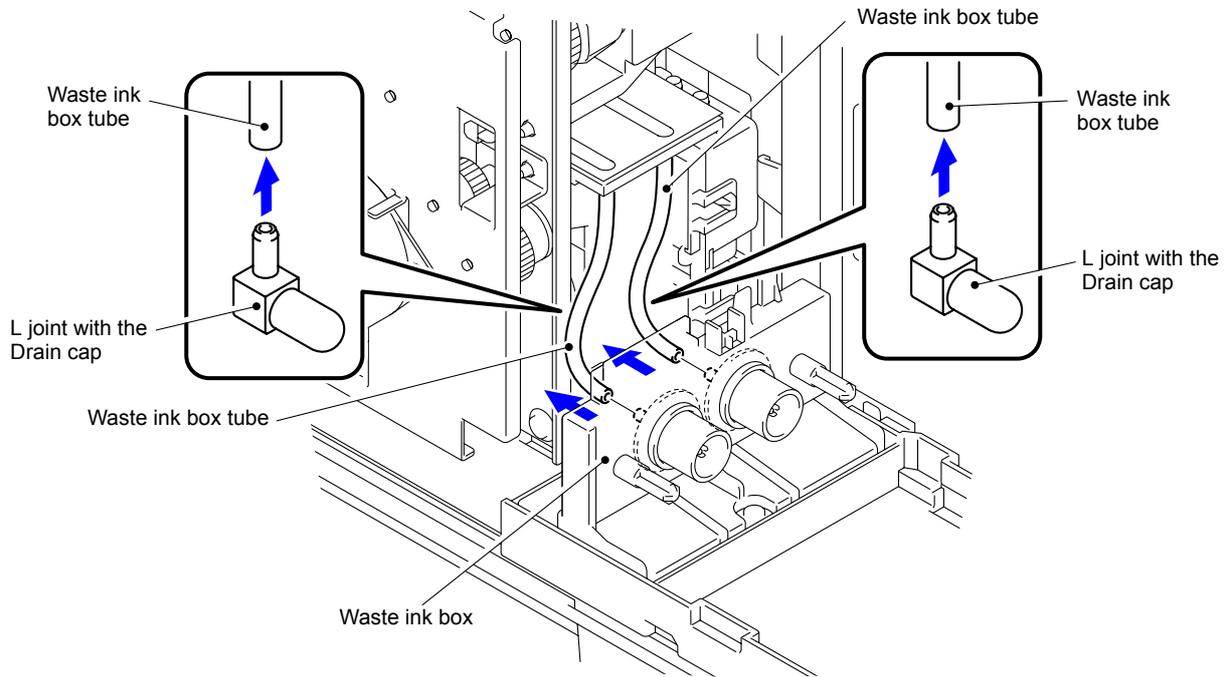


Fig. 3-102

- (4) Release the Hook to remove the Tube holder 3 from the Tube holder bracket.

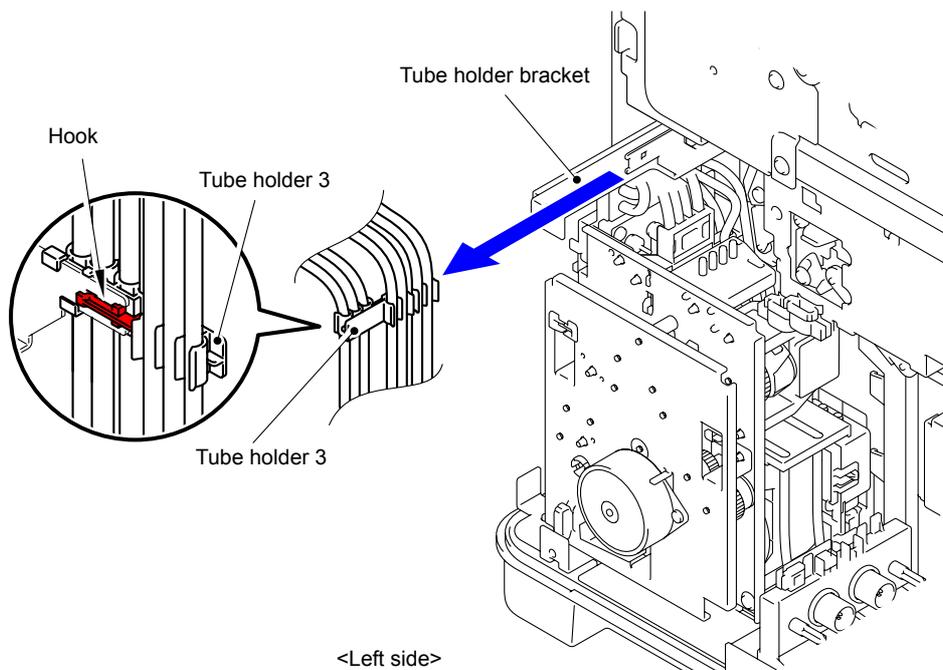


Fig. 3-103

- (5) Remove the Taptite cup S M3x6 SR screw to remove the Tube holder bracket.

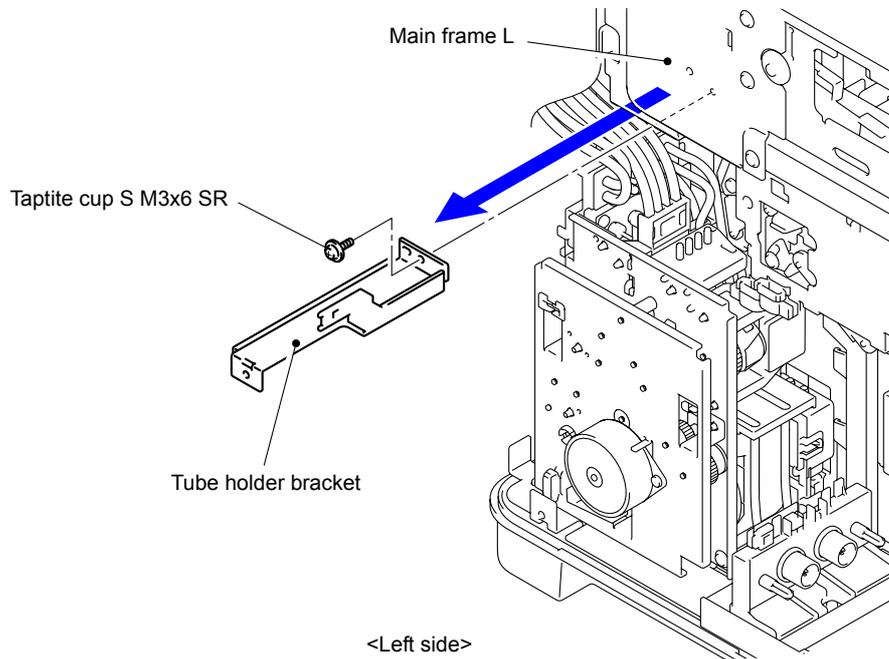


Fig. 3-104

- (6) Disconnect the nine Connectors from the Maintenance drive PCB ASSY.

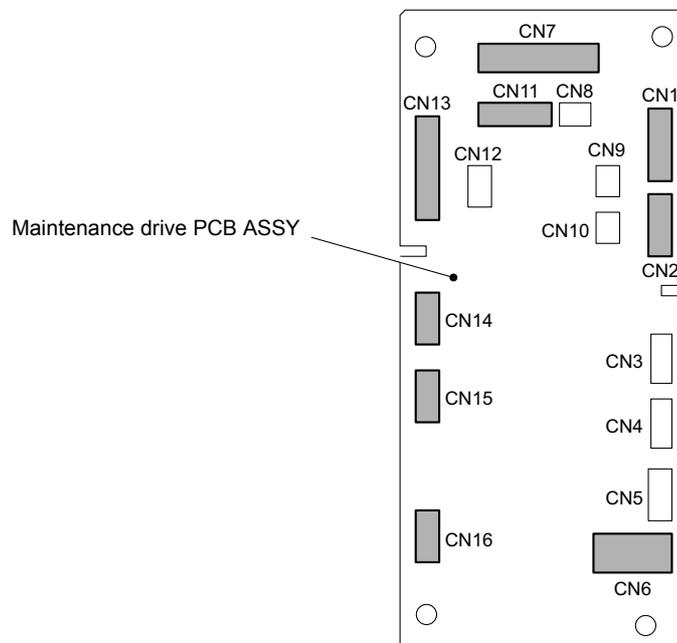


Fig. 3-105

(7) Remove the three Taptite cup S M3x6 SR screws to remove the Drive frame ASSY.

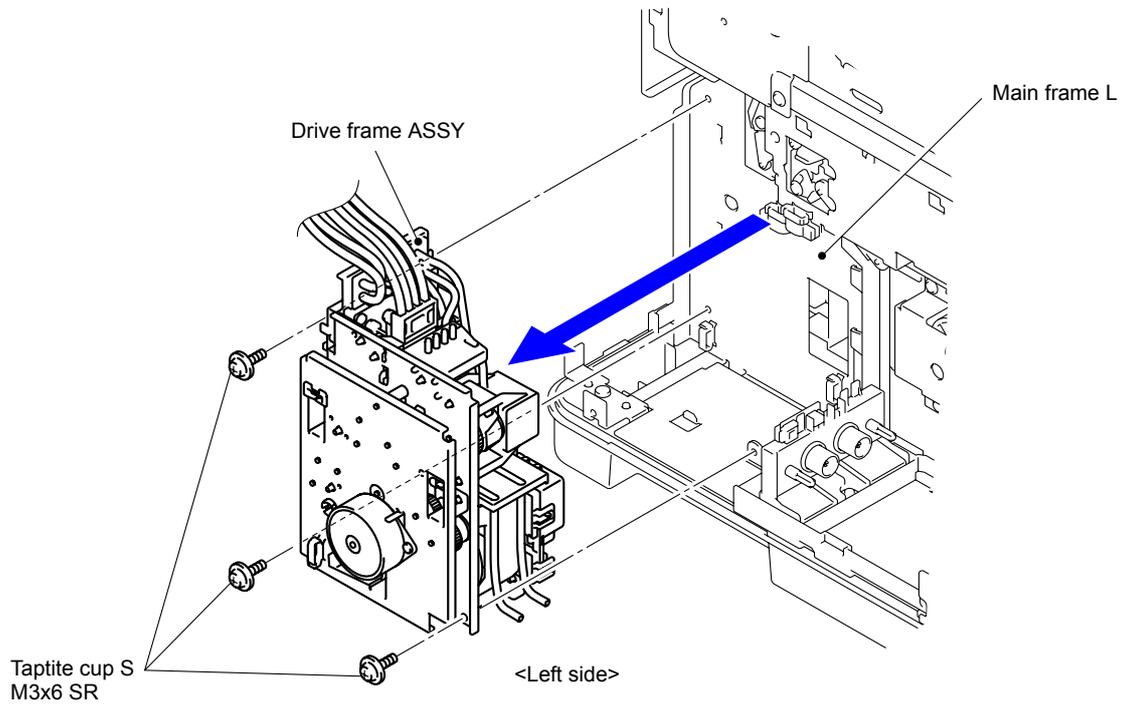


Fig. 3-106

10.25 Main PCB ASSY

- (1) Remove the two Harnesses from the Clamp of the Main PCB shield plate.

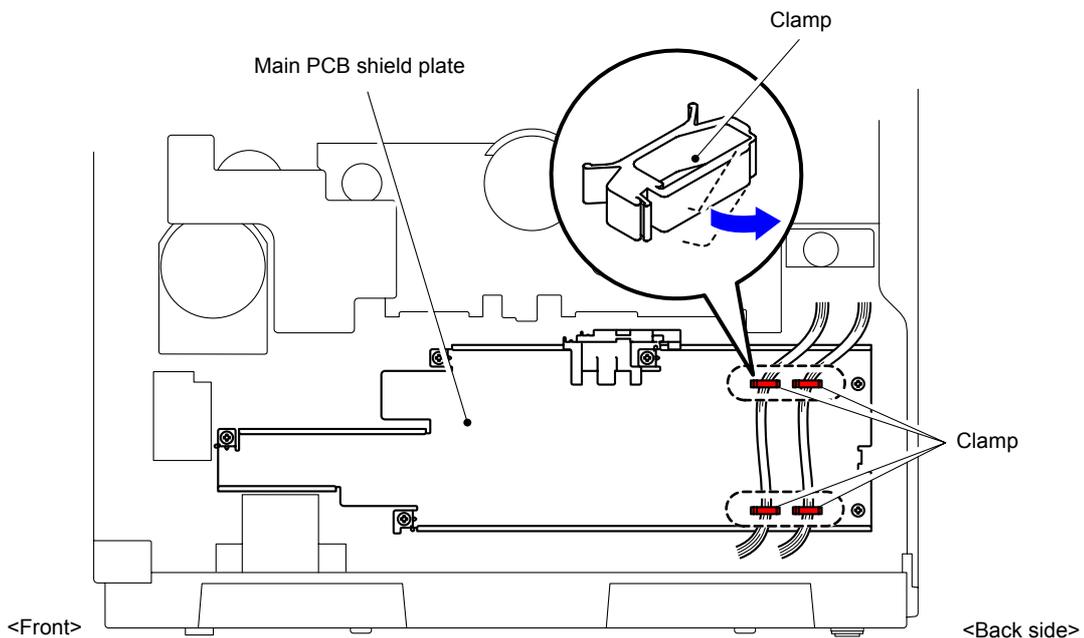


Fig. 3-107

- (2) Remove the six Taptite cup S M3x6 SR screws to remove the Main PCB shield plate from the Main frame.
- (3) Disconnect the Connector from the Main PCB shield plate on the Main PCB ASSY.

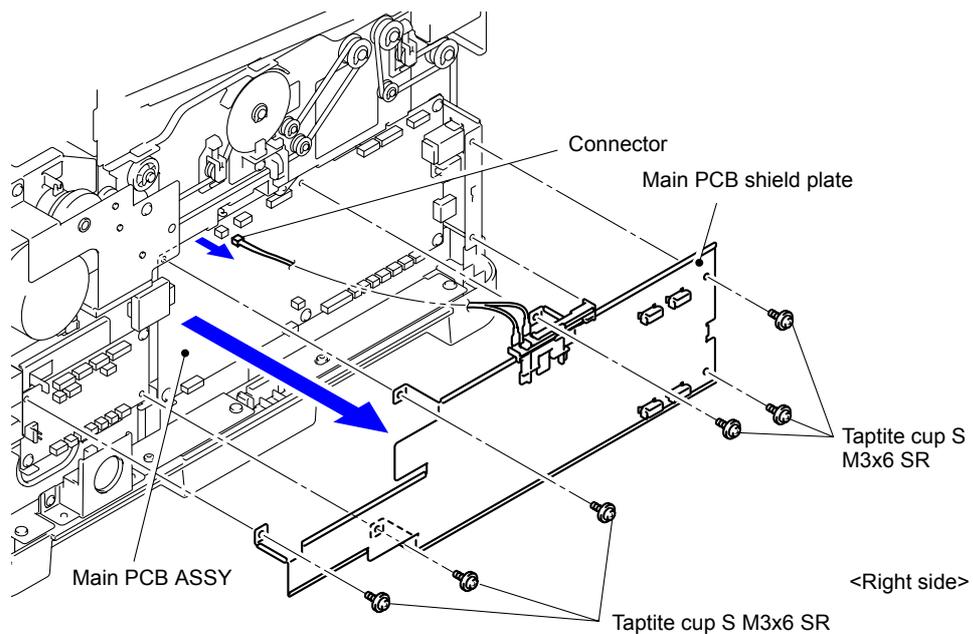


Fig. 3-108

(4) Remove the USB storage memory from the Main PCB ASSY.

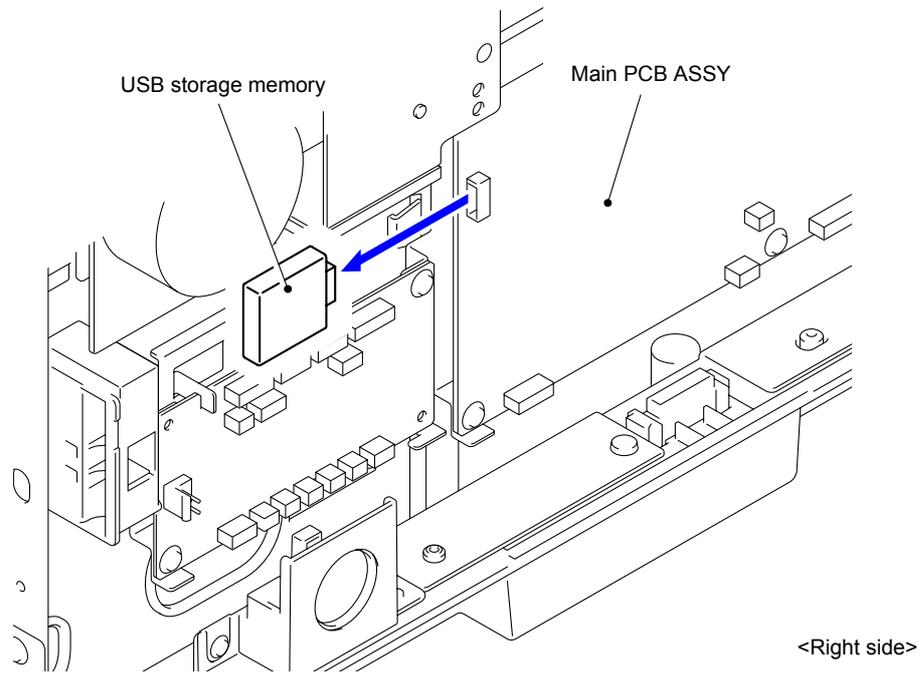


Fig. 3-109

(5) Disconnect the all Connectors from the Main PCB ASSY.

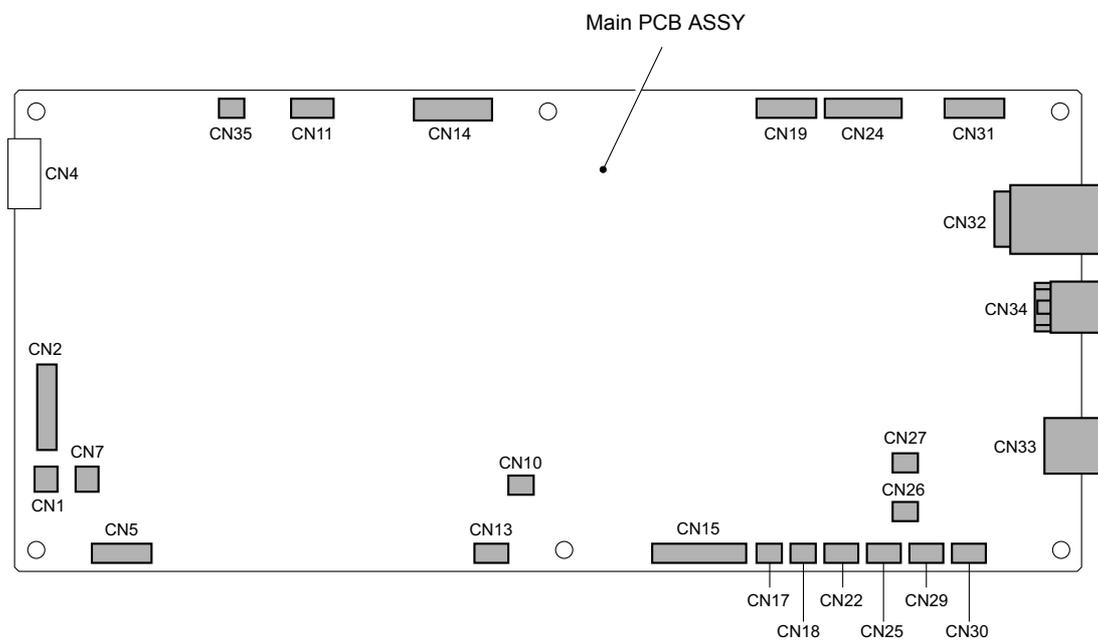


Fig. 3-110

(6) Remove the four Taptite cup S M3x6 SR screws to remove the Main PCB ASSY.

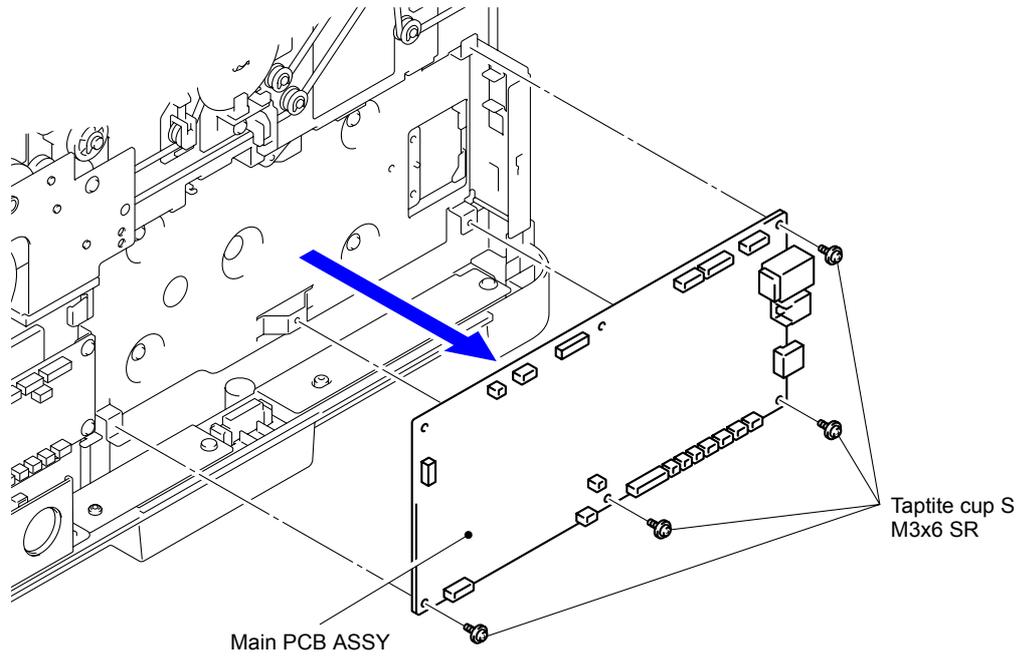


Fig. 3-111

10.26 Speaker Unit

- (1) Remove the two Taptite cup S M3x6 SR screws to remove the Speaker holder.

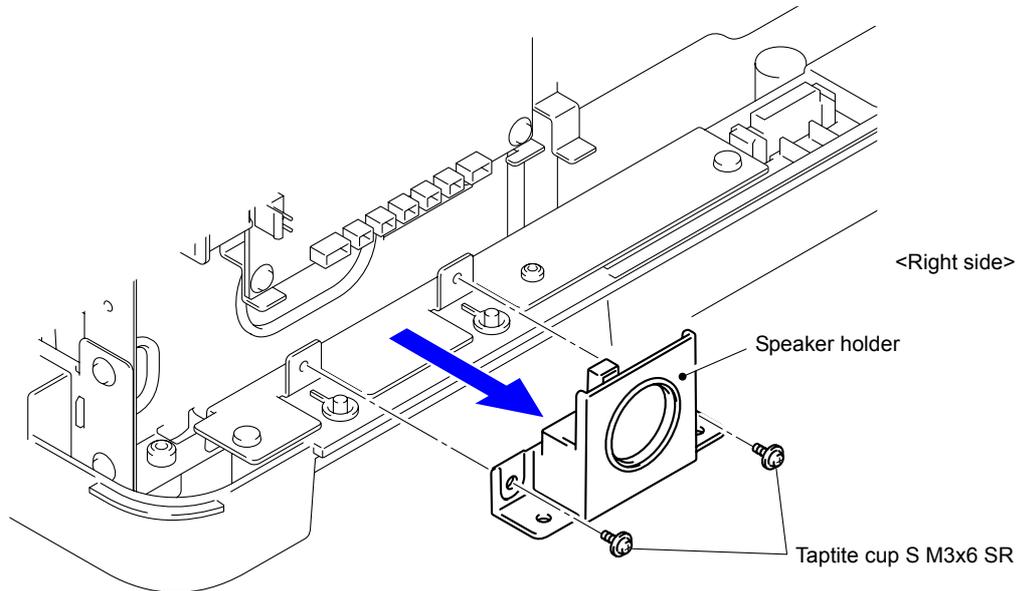


Fig. 3-112

- (2) Remove the Speaker spring from the Speaker holder to remove the Speaker unit.

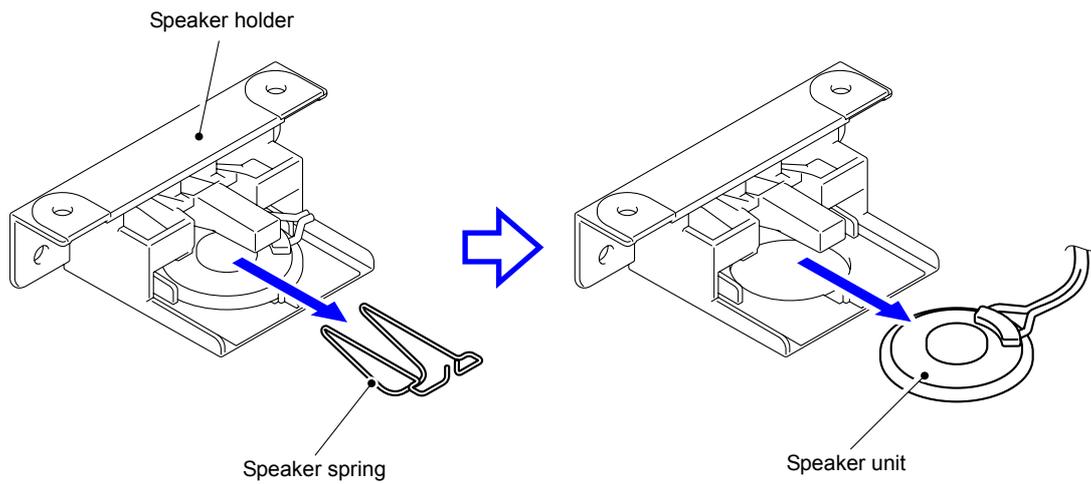


Fig. 3-113

10.27 Paper Feed PCB ASSY

- (1) Disconnect the all Connectors from the Paper feed PCB ASSY.

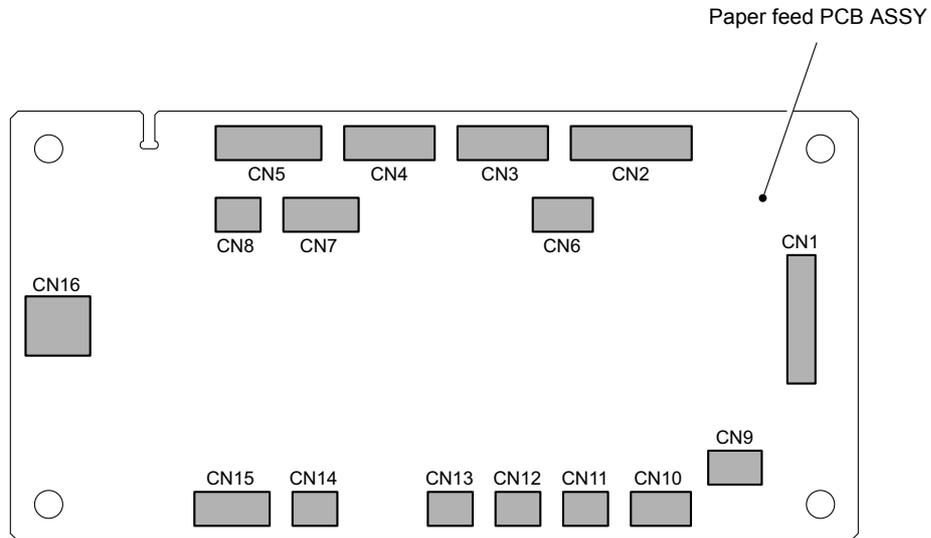


Fig. 3-114

- (2) Remove the two Taptite cup S M3x6 SR screws to remove the Paper feed PCB ASSY.

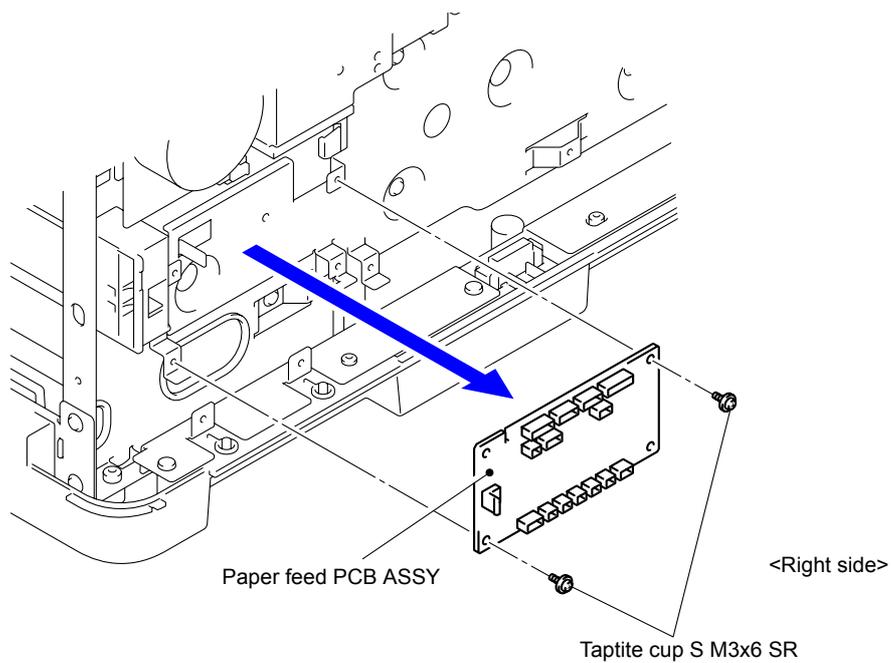


Fig. 3-115

10.28 Power Supply PCB ASSY

- (1) Disconnect the five Connectors from the Power supply PCB ASSY.

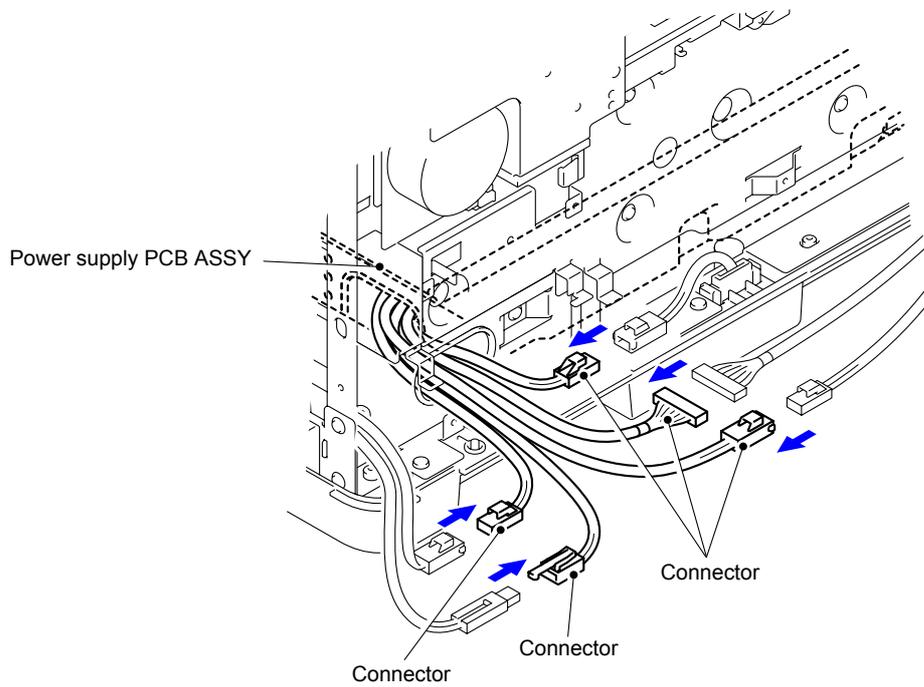


Fig. 3-116

- (2) Disconnect the Connector from the Feeding motor to remove the Harness from the Clamp.

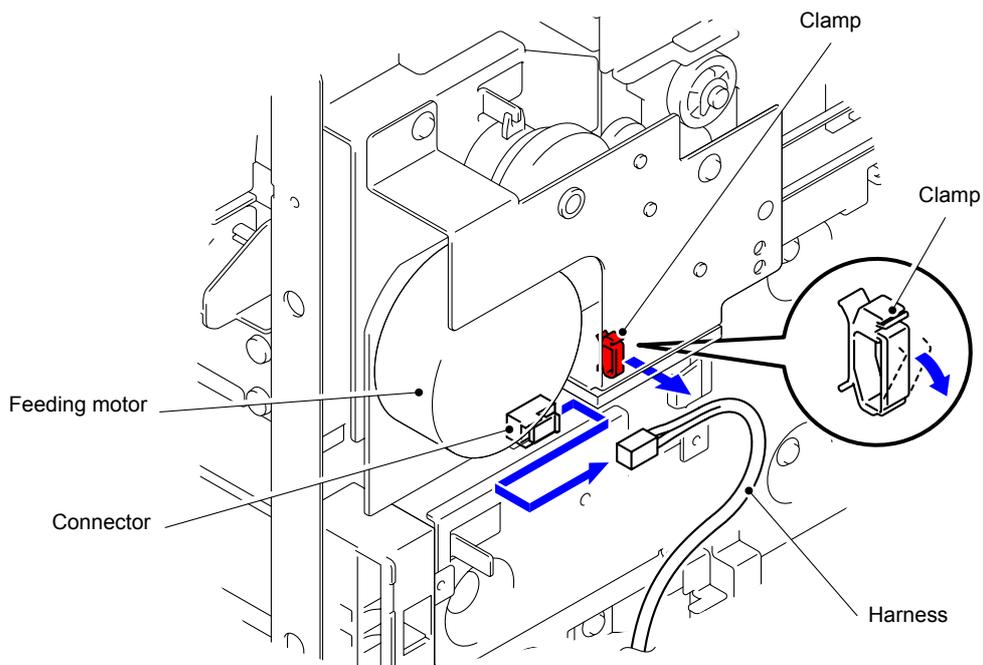


Fig. 3-117

(3) Remove the four Taptite cup S M3x6 SR screws to remove the Power supply PCB ASSY.

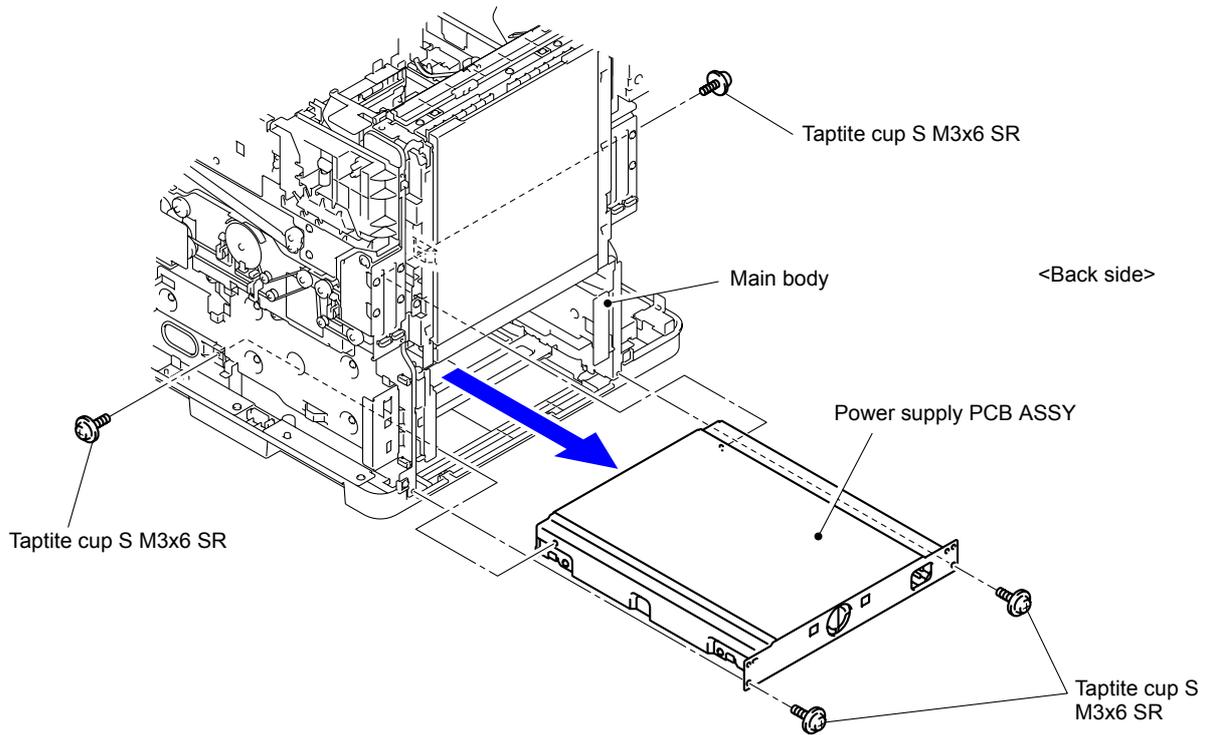
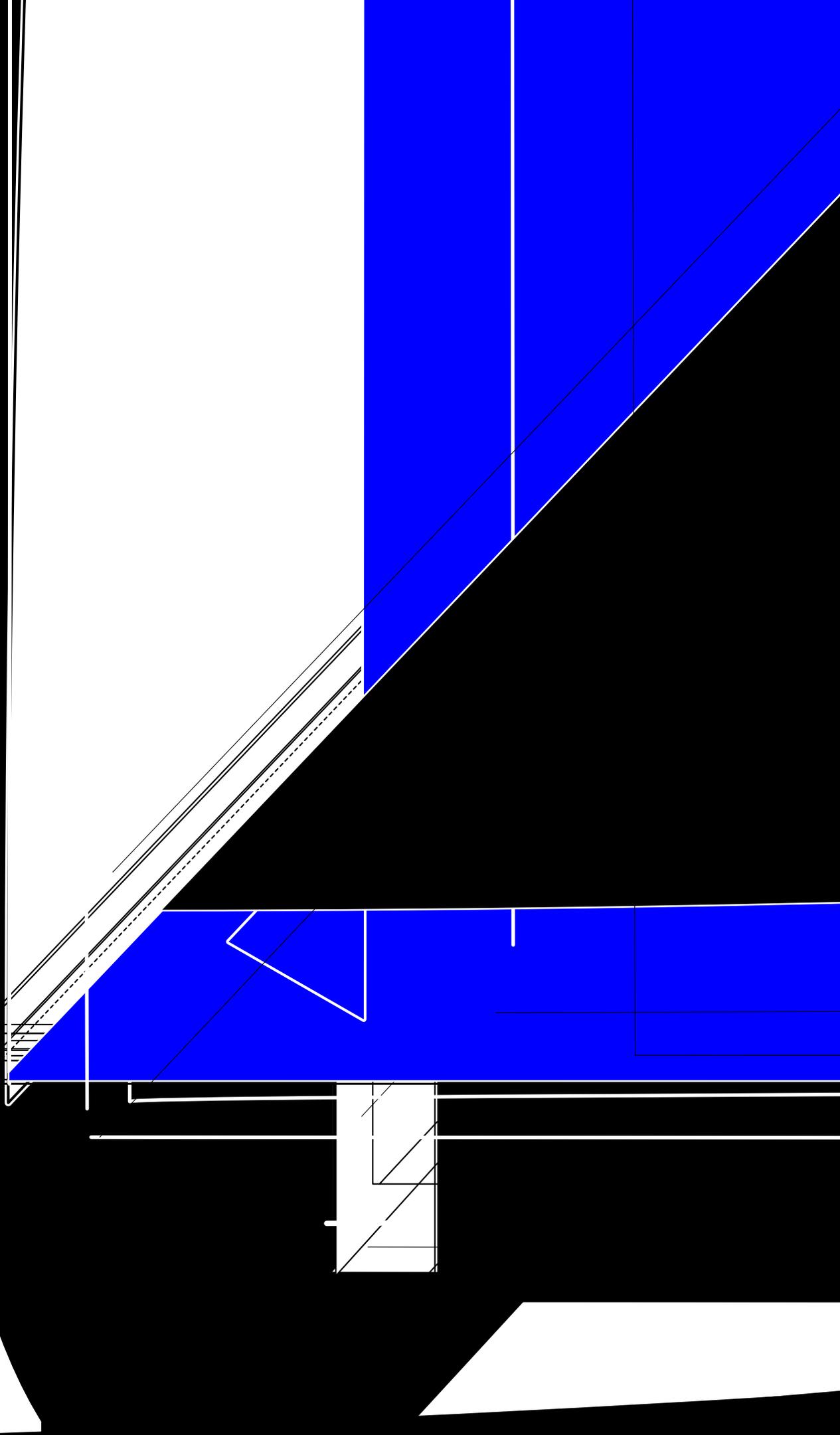


Fig. 3-118

29

(1)



CHAPTER 4 ADJUSTMENTS AND UPDATING OF SETTINGS, REQUIRED AFTER PARTS REPLACEMENT

1. WHEN REPLACING MAIN PCB ASSY

Note:

Maintenance modes 17 and 18 are not included in the firmware of the products manufactured during an early stage. Be sure to upload the latest firmware first.

<What to do when replacing the main PCB ASSY>

■ **Before replacement**

- Nothing in particular

■ **After replacement**

- 1.1 Installing the Firmware
- 1.2 Initialization of EEPROM of Main PCB ASSY (Maintenance Mode: Code 01)
- 1.3 Setting the Country Code (Maintenance Mode: Code 74)
- 1.4 Setting the Serial Number (Maintenance Mode: Code 80)
- 1.5 Replace the USB Storage Memory
- 1.6 Clock Setting

<What you need to prepare>

- (1) A USB flash memory drive
- (2) A USB cable
- (3) Create a temporary folder on the C drive on the computer (Windows[®] XP or later).
- (4) Service setting tool (brusbn.zip)
Copy it into the temporary folder created on the C drive. Decompress the copied file and double click "brusbsn.exe" included in the extracted file.
- (5) The download utility (FILEDG32.EXE)
Copy it into the temporary folder created on the C drive.
- (6) The Brother maintenance USB printer driver (MaintenanceDriver.zip)
If the maintenance printer driver is not installed, copy it into the folder created on the C drive, decompress and install it.
- (7) The firmware
LZ4168_\$.djf (Main firmware)
LZ4170_\$.djf (Rip main firmware)
- (8) All patterns data (pattern01.prn)

1.1 Installing the Firmware

Note:

When you install the firmware, write the firmware of the rip main first, and then write the firmware of the main.

1.1.1 Firmware installation with a USB flash memory

If you turn ON the power twice while the USB storage memory is not being installed, these actions are recorded in the Main PCB as error history. Make sure that the machine has new USB storage memory installed when turning ON the power.

- (1) Create a "FIRM" folder in a USB flash memory, and put the djf file of the rip main and the djf file of the main into the folder. Put the text file with the name of "_@\$EX\$U0.001" outside the "FIRM" folder.

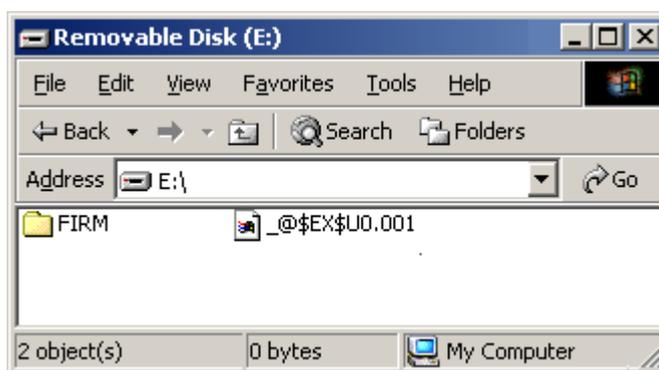


Fig. 4-1

- (2) Insert the USB flash memory into the USB port on the back of the machine. (If the port is covered with a black tape, peel it off and insert the USB flash memory.)
- (3) Check that a new storage memory is installed on the machine, and then turn ON the power of the machine.
- (4) After a little while, the machine displays "Program Updating" on the LCD and automatically starts the installation. Reboot the machine a few times. When the machine displays "Update Completed" on the LCD, the installation is finished.
- (5) Remove the USB flash memory and turn the power OFF and ON.
- (6) Enter the maintenance mode, and press the **2** and **5** buttons in this order. When the firmware version is displayed on the LCD, check if it is the same as the one of the installed firmware.

Memo:

If the machine continues to display "Storage Error" on the LCD, perform the following procedure for formatting the USB storage memory.

Formatting of USB storage memory

- 1) Press the **Menu** button, and then press the **▲** or **▼** button to display "General Setup" on the LCD and press the **OK** button.
- 2) Press the **▲** or **▼** button to display "Macro/Font" on the LCD and press the **OK** button.
- 3) While holding down the **▲** button, press the **Cancel** button. "Format Storage" is displayed on the LCD.
- 4) Press the **1** button.
- 5) Press the **1** button again. The machine starts formatting the USB storage memory.

1.1.2 Firmware installation with a computer

- (1) Turn ON the power of the machine. Enter the maintenance mode.
- (2) Connect the machine to your computer using the USB cable.
- (3) Start "filedg32.exe" on the computer.
- (4) Drag and drop the djf file of the rip main to Brother Maintenance USB Printer in the [filedg32] window.

Note:

Before using the firmware file, decompress it. As the file has a self-extracting format with the extension of ".exe", you can decompress it by double-clicking it.

The writing process is finished in 3 or 4 minutes, and the machine automatically reboots and returns to the ready state.

- (5) Disconnect the USB cable from the machine.
- (6) Enter the maintenance mode. Connect the machine to your computer using the USB cable.
- (7) Drag and drop the djf file of the main to Brother Maintenance USB Printer in the [filedg32] window. The writing process is finished in 3 or 4 minutes, and the machine automatically reboots and returns to the ready state.
- (8) Disconnect the USB cable from the machine.
- (9) Enter the maintenance mode, and press the **2** and **5** buttons in this order. As the firmware version appears on the LCD, check that the version is same as the one of the installed firmware.

Memo:

If the machine continues to display "Storage Error" on the LCD, format the USB storage memory as described in the previous page.

1.2 Initialization of EEPROM of Main PCB ASSY (Maintenance Mode: Code 01)

- (1) Enter the maintenance mode, and press the **0** and **1** buttons in this order. The EEPROM is initialized and the machine returns to the initial state of the maintenance mode.

1.3 Setting the Country Code (Maintenance Mode: Code 74)

- (1) Press the **7** and **4** buttons in this order in the initial state of the maintenance mode. The present country code is displayed.
- (2) Enter the 4-digit country code you wish to set using the ten-key pad. Refer to [Chapter 5, "1.4.21 Setting by Country \(Function code 74\)](#).
- (3) Press the **Go** button. The new setting is saved, and "PARAMETER INIT" is displayed on the LCD. After the setting is saved, the machine returns to the initial state of the maintenance mode.

1.4 Setting the Serial Number (Maintenance Mode: Code 80)

- (1) Press the **8** and **0** buttons in this order in the initial state of the maintenance mode. "USB:*****" is displayed on the LCD.
- (2) Press the **9**, **4**, **7**, and **5** buttons in this order. The cursor appears on the uppermost digit of the serial number displayed on the LCD and editing the serial number becomes possible.
Enter the number of the first digit of the serial number using the ten-key pad. The cursor moves to the second digit. Similarly, repeat the entering of the serial numbers of the 2nd to the last 15th digit.

<How to enter alphabets>

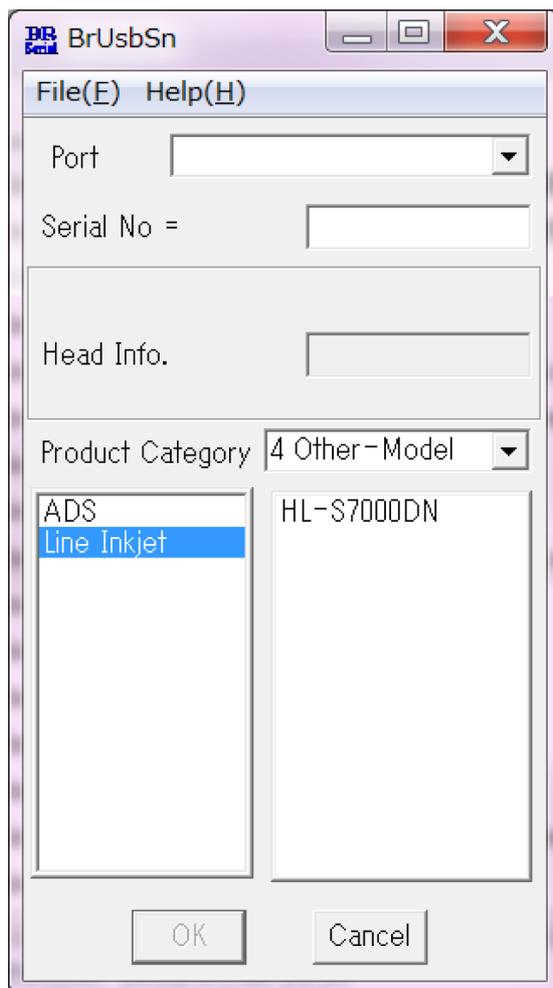
Keep pressing a corresponding key in the ten-key pad based on the table given below until the alphabet you want to enter is displayed.

Ten-key pad	Corresponding alphabet
2	2→A→B→C
3	3→D→E→F
4	4→G→H→I
5	5→J→K→L
6	6→M→N→O
7	7→P→Q→R→S
8	8→T→U→V
9	9→W→X→Y→Z

- (3) When you press the **OK** button, the serial number is written and the machine returns to the initial state of the maintenance mode.

Serial numbers can be updated using the service setting tool (BrUsbSn.exe).
The procedure is described below.

- 1) Turn ON the power of the machine. Enter the maintenance mode.
- 2) Connect the machine to your computer using the USB cable.
- 3) Start "filedg32.exe" on the computer.
- 4) Start service setting tool (BrUsbSn.exe) on the computer.
The "BrUsbSn" screen shown below appears.



- 5) In Product Category, select "4 Other-Model".
- 6) In Series Box, click "Line Inkjet".
- 7) In Port on the "BrUsbSn" screen, select the port number assigned to the Brother Maintenance USB Printer driver.
- 8) In the Serial No box, type the 15-digit serial number which is printed on the serial number label of the machine. Click the **OK** button.
- 9) In "**Function code 80**", display the serial number and check that the entered number is correct.

1.5 Replace the USB Storage Memory

Customer's data (such as secure data, macro data, and font data) are stored in the USB storage memory. When using new USB storage memory, the customer needs to copy these data to the new USB storage memory again. However, after a serial number is set as explained in [1.4 in this Chapter](#), all the data can be inherited by replacing the USB storage memory. Replace the USB storage memory according to the need.

1.6 Clock Setting

- (1) If the machine is in the maintenance mode, press the **9** button twice to return to the ready state.
- (2) Press the **Menu** button, and then press the **▲** or **▼** button to display "General Setup" on the LCD and press the **OK** button.
- (3) Press the **▲** or **▼** button to display "Date & Time" on the LCD and press the **OK** button.
- (4) Enter the current year, month and date using the ten-key pad.
- (5) Select the desired display method from "12h clock" or "24h clock" pressing the **▲** or **▼** button, and press the **OK** button.
- (6) Enter the current time using the ten-key pad. (If "12h clock" is selected, select AM or PM.)

Note:

Set the time after the machine is returned from the repair so that the periodic flashing can be done within the specified period of time.

2. WHEN REPLACING INK HEAD/PRE-COAT HEAD

<What to do when replacing the Ink head/Pre-coat head>

■ Before replacement

- 2.1 Draining Ink from Head (Maintenance Mode: Code 17)

■ After replacement

- 2.2 Supplying Ink to Head and Checking Ink Leak (Maintenance Mode: Code 16)
- 2.3 Missing Dot Check (Maintenance Mode: Code 68)
- 2.4 Head Inclination Adjustment (Maintenance Mode: Code 68)
- 2.5 Adjustment of Print Start Position (Maintenance Mode: Code 68)
- 2.6 Printing of All Check Patterns
- 2.7 Resetting of Each Head Counter

<What you need to prepare>

- (1) A USB cable
- (2) Create a temporary folder on the C drive on the computer (Windows[®] XP or later).
- (3) The download utility (FILEDG32.EXE)
Copy it into the temporary folder created on the C drive.
- (4) The Brother maintenance USB printer driver (MaintenanceDriver.zip)
If the maintenance printer driver is not installed, copy it into the folder created on the C drive, decompress and install it.

2.1 Draining Ink from Head (Maintenance Mode: Code 17)

- (1) Remove the ink cartridge.
- (2) Enter the maintenance mode, and press the **1** and **7** buttons in this order. "Cartridge" is displayed on the LCD.
- (3) Press the **▲** button to display "No Cartridge" on the LCD and press the **Go** button.
- (4) Press the **3** button to display "Power_P" on the LCD and press the **Go** button.
- (5) The machine displays "EXECUTING" on the LCD and starts draining ink from the head.
- (6) After a little while, the machine displays "COMPLETED" on the LCD and finishes draining ink from the head.
- (7) Press the **Go** button. "MAINTENANCE" is displayed on the LCD.
- (8) Repeat steps (2) to (7). (Twice)
- (9) Press the **1** and **8** buttons in this order.
- (10) The machine display "PlatenPosition" on the LCD and press the **#** button.
- (11) When "Needle" is displayed, press **▶** , and then "INSERT" is displayed.
- (12) Press the **Go** button.
- (13) Press **◀** to display "Needle" and press the **0** button, then "InkSupply" is displayed.
- (14) Press the **▶** button several times until "Supply (BK)" is displayed on the LCD, and then press the **Go** button.
- (15) Press the **▼** button several times until "Supply (PRE)" is displayed on the LCD, and then press the **Go** button.
- (16) Turn the power OFF.

2.2 Supplying Ink to Head and Checking Ink Leak (Maintenance Mode: Code 18)

- (1) Turn the power ON.
- (2) Although an ink cartridge is set, the cartridge cover remains open.
- (3) Enter the maintenance mode, and press the **1** and **8** buttons in this order. "PlatenPosition" is displayed on the LCD.
- (4) Close the cartridge cover.
- (5) Perform steps (11) through (15) in 2.1.
- (6) Press the **1** and **7** buttons in this order. "Cartridge" is displayed on the LCD.
- (7) Press the **4** button. The machine display "eINIT_P" on the LCD and press the **Go** button.
- (8) The machine displays "EXECUTING" on the LCD and starts supplying ink to the head.
- (9) After a little while, the machine displays "COMPLETED" on the LCD and finishes supplying ink to the head.
- (10) Press the **Go** button to return to the initial state of the maintenance mode.

2.3 Missing Dot Check (Maintenance Mode: Code 68)

- (1) Press the **6** and **8** buttons in this order in the initial state of the maintenance mode. "1. PIN CHK HD ADJ" is displayed on the LCD.
- (2) Press the **OK** button. "1.1 PRINT PTN FK" is displayed on the LCD.
- (3) Press the **OK** button. Displaying "PRINTING" on the LCD, the machine prints the missing dot/head inclination adjustment patterns which are shown in the [next page](#). After the patterns are printed, the display on the LCD returns to "1.1 PRINT PTN FK."
- (4) Check the patterns for missing dots/head inclination, and if there is a missing dot(s), perform an appropriate purge operation in "[Function code 17](#)". Then print and check the missing dot/head inclination adjustment patterns again.

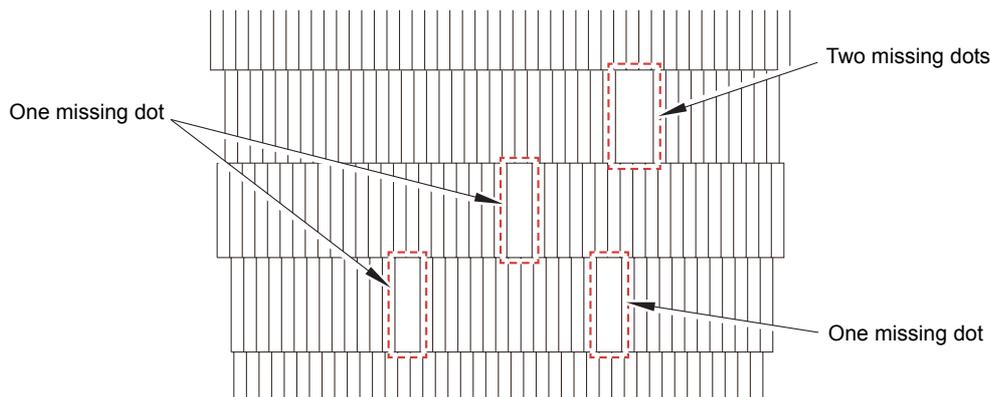


Fig. 4-2

- (5) If all dots are printed, the missing dot check is finished. As you proceed to "[2.4 Head Inclination Adjustment](#)" following the missing dot check, leave the indication of "1.1 PRINT PTN FK" displayed on the LCD after printing the missing dot/head inclination adjustment patterns.

■ Missing dot /Head inclination adjustment patterns

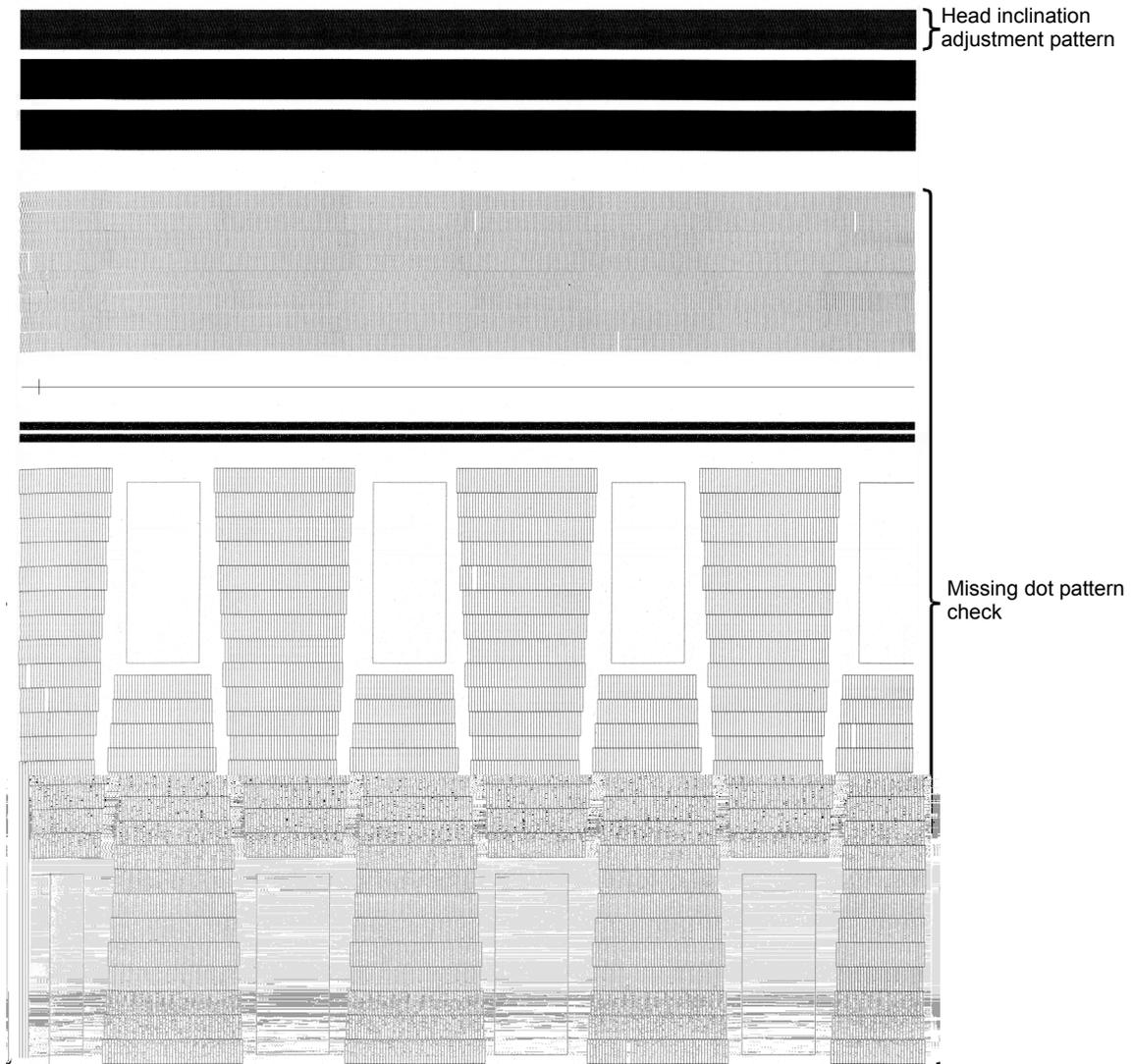


Fig. 4-3

2.4 Head Inclination Adjustment (Maintenance Mode: Code 68)

- (1) Using the missing dot/head inclination adjustment patterns used in "2.3 Missing Dot Check", check the portion of the head inclination pattern.
If the whole of the pattern is evenly printed, the check is finished.
If the pattern is not uniform with light and dark areas, go to step (2).
- (2) Turn the adjustment knob of the ink head shown in the following figure to the right by one click.

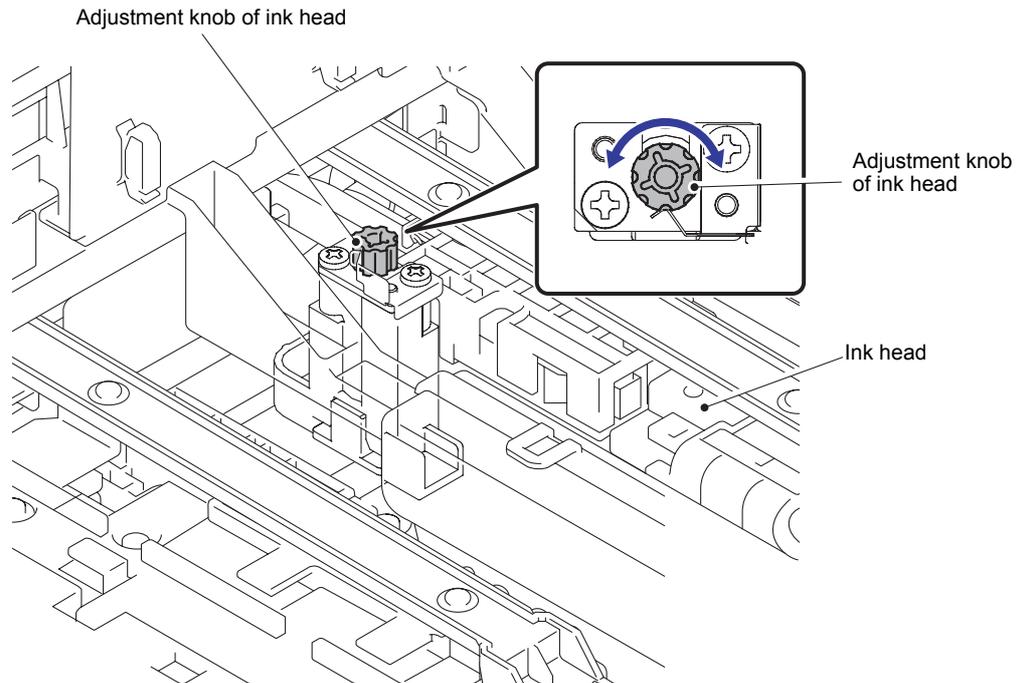


Fig. 4-4

- (3) Enter "Function code 68" again, and print the missing dot/head inclination adjustment patterns.
- (4) Recheck the portion of the head inclination pattern on the sheet.
If the whole of the pattern is evenly printed, this adjustment is finished.
If unevenness has increased, turn the knob to the left by two clicks.
If unevenness has decreased, turn the knob to the right by one click.
- (5) Repeat steps (3) and (4) until unevenness disappears.

2.5 Adjustment of Print Start Position (Maintenance Mode: Code 68)

- (1) Set A4 paper into the paper tray.
- (2) Press the **6** and **8** buttons in this order in the initial state of the maintenance mode. "1.PIN CHK HD ADJ" is displayed on the LCD.
- (3) Press the **▼** button to display "2.PRINT POS ADJ" on the LCD and press the **OK** button. "2.1 PRINT PTN" is displayed on the LCD.
- (4) Press the **OK** button. The machine displays "PRINTING" on the LCD and prints the print start position adjustment pattern as shown in the [next page](#).
- (5) For the left margin adjustment, measure and record the distance between the left end of the pattern "A" and the left end of the paper. For the top margin adjustment, measure and record the distance between the top end of the pattern "A" and the top end of the paper.

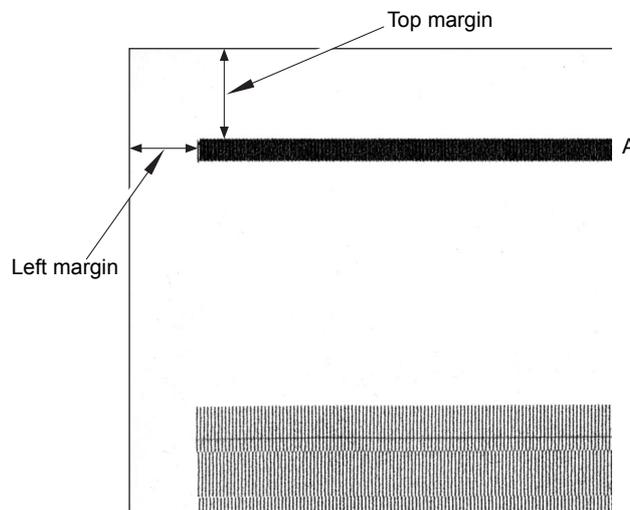


Fig. 4-5

- (6) When the machine finishes printing the print start position adjustment pattern, "2. 1 PRINT PTN" appears on the LCD. Press the **▼** button to display "2.2 ADJUST" on the LCD, and press the **OK** button. "GRADCHK 1.OK 2.NG" is displayed on the LCD.
- (7) Press the **1** button. Display "LR Adjust=10.0" on the LCD to activate the "Input margin adjustment" screen.
- (8) Enter the left margin adjustment value first.
Pressing the **▼** button decreases the value displayed on the LCD, and pressing the **▲** button increases the value. For example, if the measured value is 11.0, press the **▲** button 10 times to display "LRAdjust=11.0" on the LCD and press the **OK** button. The left margin adjustment value is input and the machine displays "Edge Adjust=10.0" on the LCD.
- (9) Enter the top margin adjustment value.
Pressing the **▼** button decreases the value displayed on the LCD, and pressing the **▲** button increases the value. For example, if the measured value is 9.5, press the **▲** button 5 times to display "EdgeAdjust=9.5" on the LCD and press the **OK** button. The top margin adjustment value is input and the machine returns to the initial state of the maintenance mode.

■ Print start position adjustment pattern

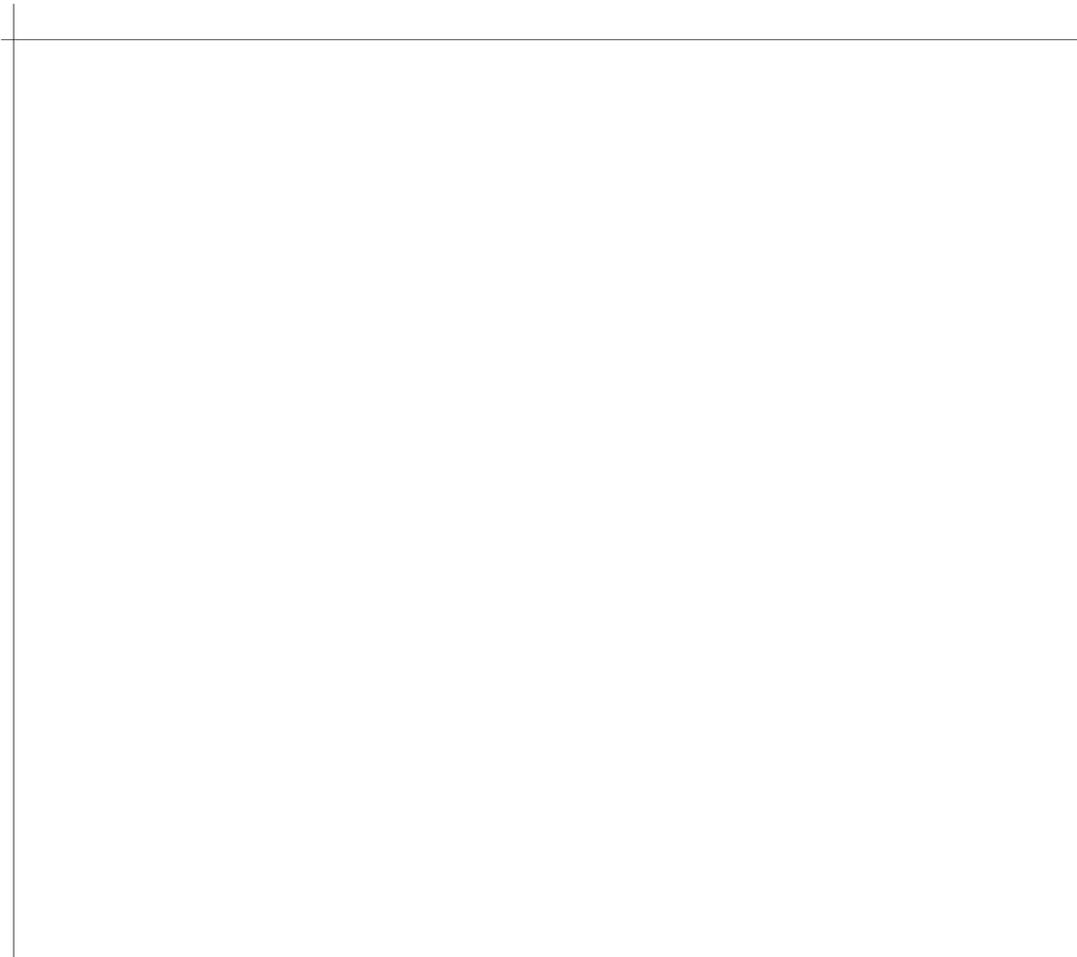
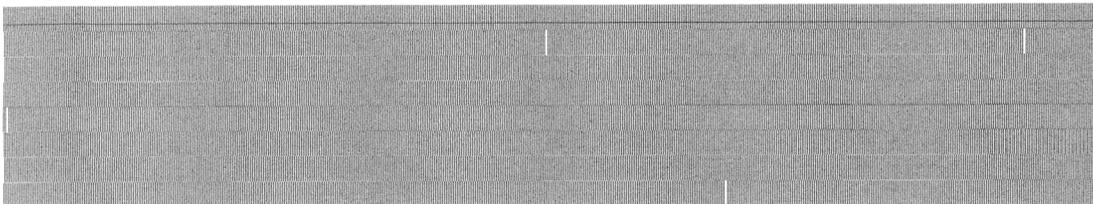


Fig. 4-6

2.6 Printing of All Check Patterns

- (1) Connect the machine to the computer using a USB cable in the initial state of the maintenance mode.
- (2) Start "filedg32.exe" on the computer.
- (3) Drag and drop the all patterns data (pattern01.prn) file to Brother Maintenance USB Printer in the [filedg32] window. The all patterns data is printed.
- (4) Check the printed patterns, and if there is a problem, go to the corresponding item and make an adjustment again.

	Check item	Check method
A	Missing dot check	No dot missing
B	Front edge margin in single-sided printing Inclination	5±1.5mm or less Difference between right and left: 1.0mm or less
C	Left-end margin in single-sided printing Inclination	13±2.0mm or less Difference between top and bottom: 1.3mm or less
D	Front edge margin in 2-sided printing Inclination	5±1.5mm or less Difference between right and left: 1.5mm or less
E	Left-end margin in 2-sided printing Inclination	13±2.5mm or less Difference between top and bottom: 2.0mm or less
F	Ghost	No ghost found
G	Vertical streak	No vertical streak found

■ All patterns

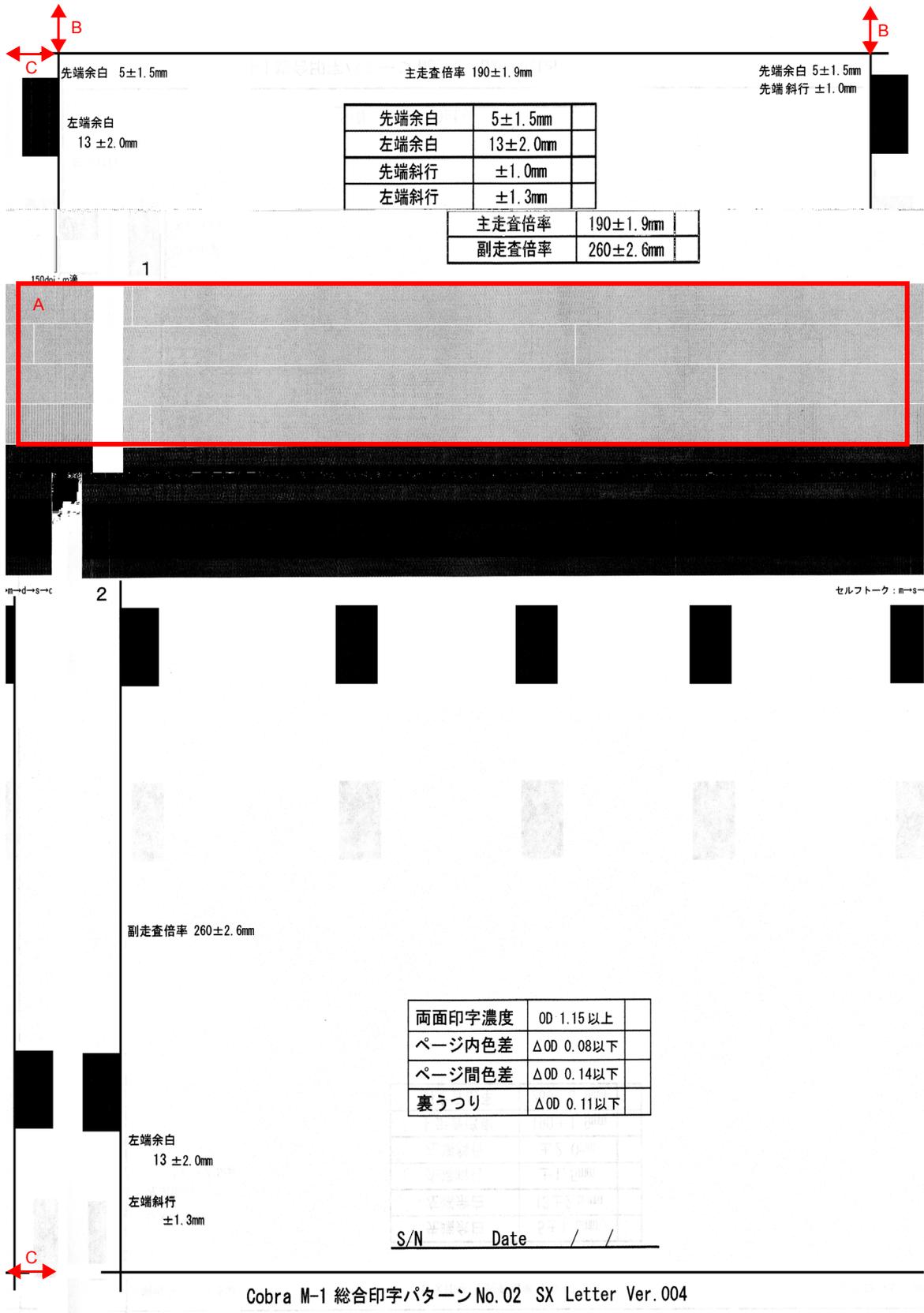


Fig. 4-7

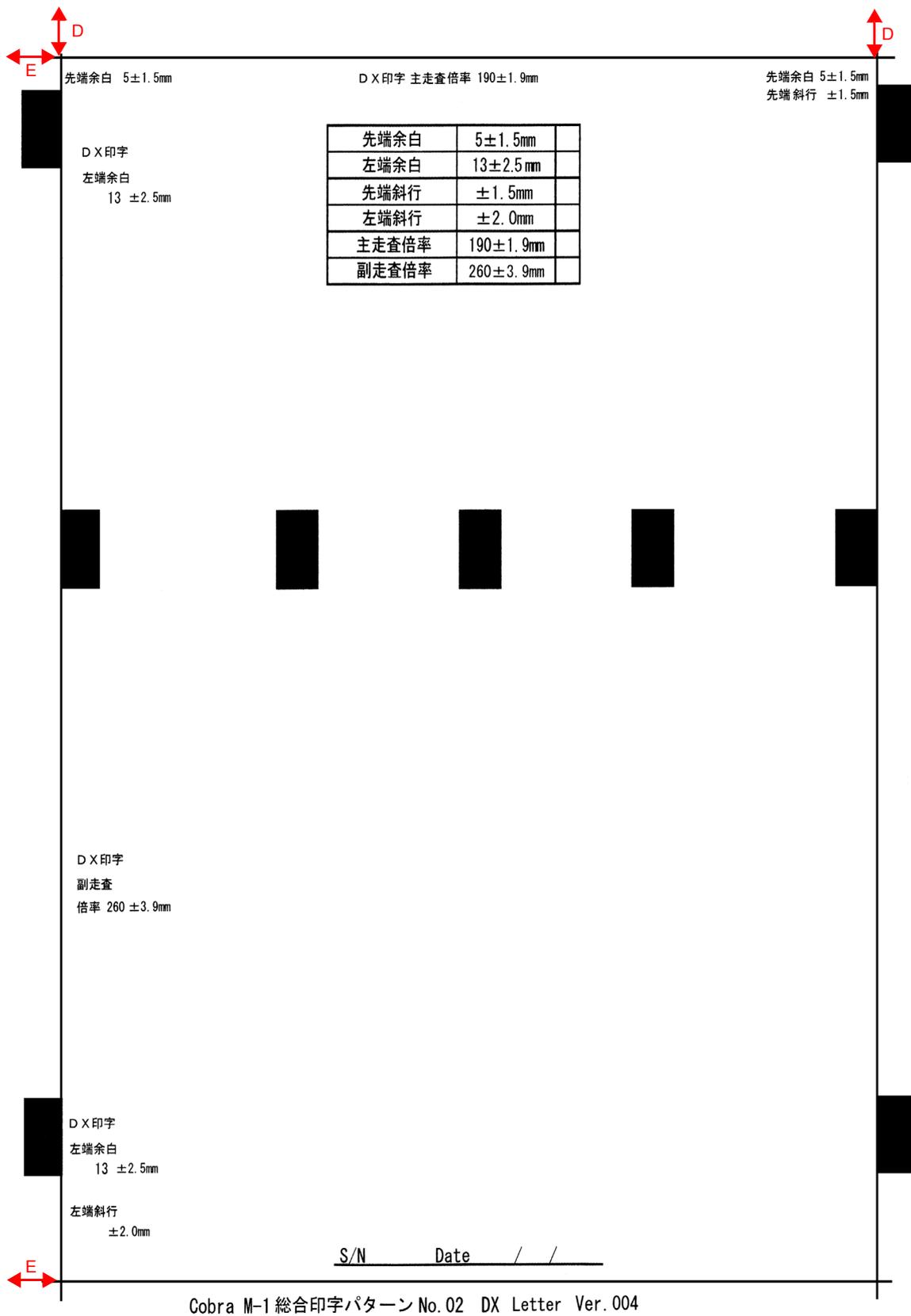


Fig. 4-8

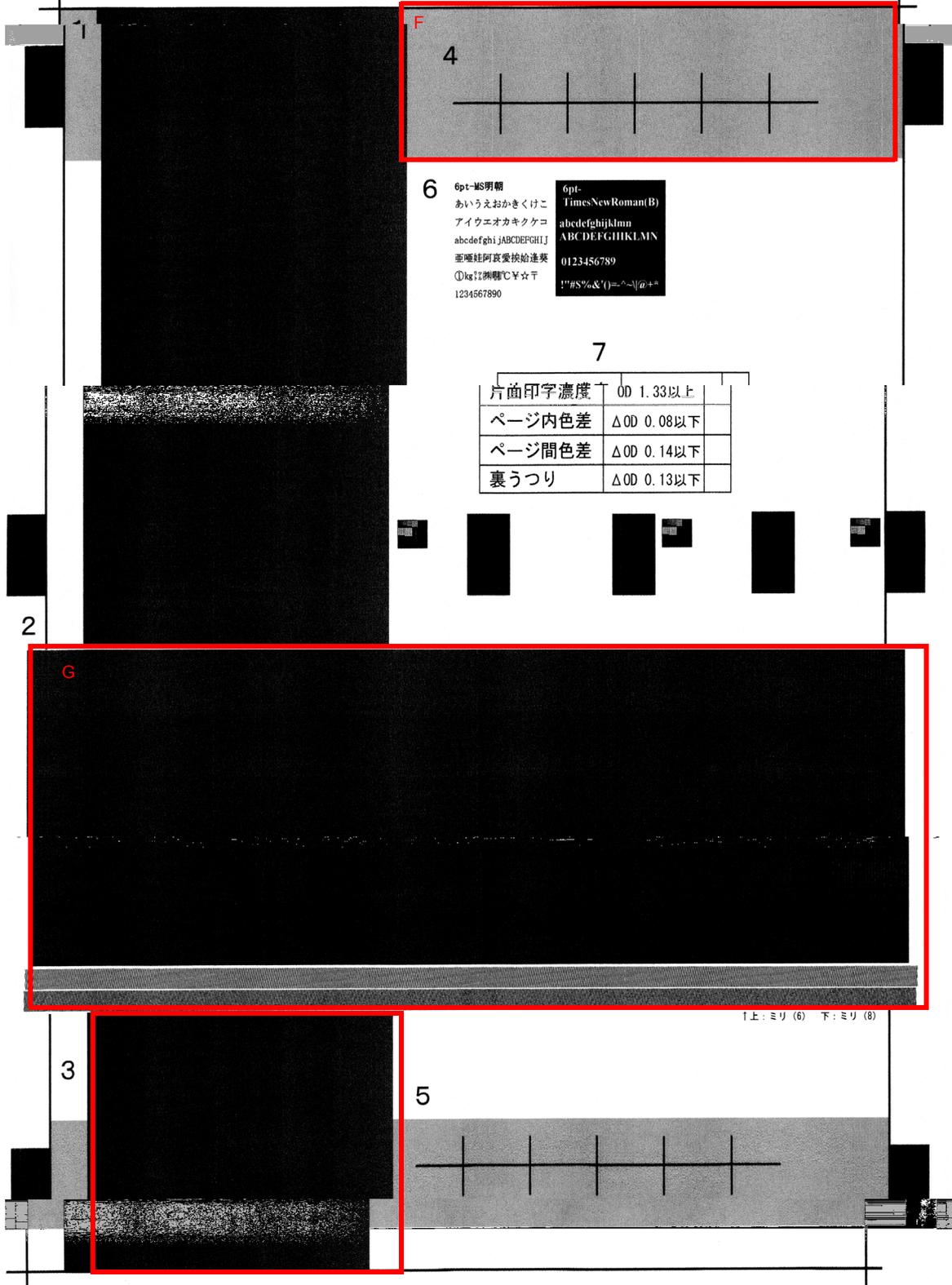


Fig. 4-9

2.7 Resetting of Each Head Counter

- (1) While the machine is in the ready state, press the **Go** and ▲ buttons at the same time. "Reset Menu" is displayed on the LCD.
- (2) Press the ▲ or ▼ button to select ink head or pre-coat head, and press the **OK** button. "1.Reset 2.Exit" is displayed on the LCD.
- (3) Press the **1** button. The machine displays "Accepted" on the LCD. The replacement counter of the ink head or pre-coat head increases, and the machine returns to the ready state.
- (4) Turn OFF the power of the machine.

3. WHEN REPLACING INK REFILL UNIT

<What to do when replacing the Ink refill unit>

■ Before replacement

- 3.1 Draining Ink from Tube

■ After replacement

Note:

As you check ink leak after the replacement, check the following without attaching the side cover L. After the check, attach the side cover L.

- 3.2 Supplying Ink and Checking Ink Leak
- 3.3 Resetting of Ink Refill Unit Counter
- 3.4 Attachment of Side Cover L

<What you need to prepare>

Nothing in particular

3.1 Draining Ink from Tube

- (1) Enter the maintenance mode, and press the **1** and **8** buttons in this order. "PlatenPosition" is displayed on the LCD.
- (2) Press the ▼ button several times until "Needle" is displayed on the LCD, and then press the ► button. "Insert" is displayed on the LCD.
- (3) Press the ► button to display "Remove" on the LCD and press the **OK** button. The data LED start blinking, and the needle is removed.

Note:

If the needle cannot be removed with the above maintenance mode, turn the gear shown in the figure below in the arrow direction and remove the needle.

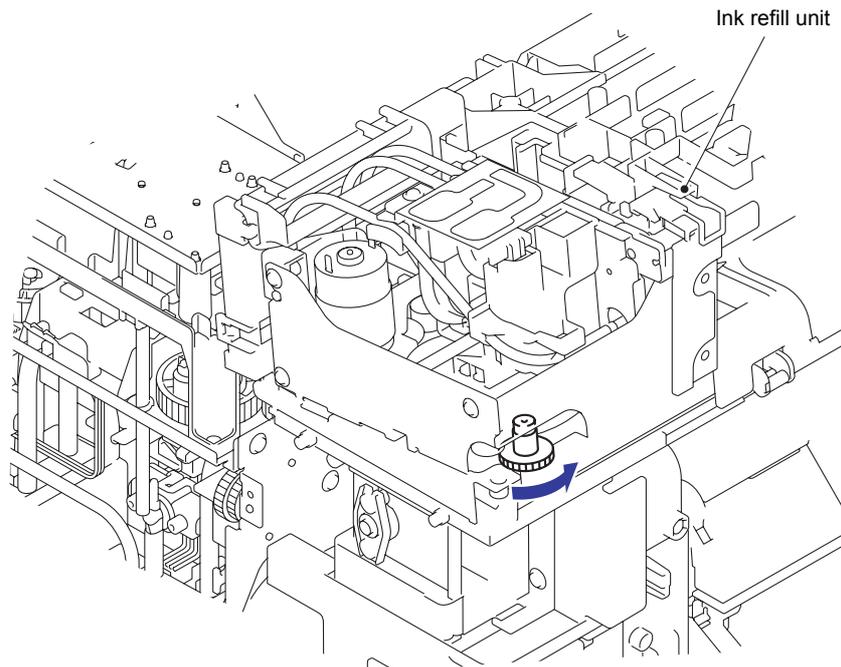


Fig. 4-10

- (4) Remove the ink cartridge.
- (5) Press the ▼ button several times until "Needle" is displayed on the LCD, and then press the ► button. The machine display "Insert" on the LCD and press the **OK** button.
- (6) Turn the power OFF and ON.
- (7) Enter the maintenance mode, and press the **1** and **7** buttons in this order. "Cartridge" is displayed on the LCD.
- (8) Press the ▲ button. "No Cartridge" is displayed on the LCD.
- (9) Press the **Go** button. "NORMAL_P ALL" is displayed on the LCD.
- (10) Press the **3** button. "POWER_P ALL" is displayed on the LCD.

- (11) Press the **Go** button. The machine starts draining the ink from the path of the Ink refill unit, displaying "EXECUTING" on the LCD.
If the ink cartridge is not removed when you press the **Go** button in step (8), the machine displays "Remove Cartridge" on the LCD. Remove the ink cartridge.

Note:

If the ink cartridge is not removed in this step, ink drips into the inside of the machine. Be sure to drain ink.

- (12) After a little while, the machine displays "COMPLETED" on the LCD and returns to the initial state of the maintenance mode.
- (13) Remove the 3 L-joints connected to the Ink refill unit and insert the L-joint and drain cap into each tube.

Note:

If ink drips into the supply unit during the removal of the tubes, an error occurs. If ink drips, be sure to wipe the ink drips.

3.2 Supplying Ink and Checking Ink Leak

- (1) Open the ink cartridge cover and turn ON the machine. If an ink cartridge is mounted, remove it.
- (2) Enter the maintenance mode, and press the **1** and **8** buttons in this order. "PlatenPosition" is displayed on the LCD.
- (3) Mount an ink cartridge, select "Needle" using the **▲** button, and press the **▶** button.
- (4) Select "INSERT" using the **▲** button, and press the **OK** button. The needle moves to the insertion position.
- (5) Select "InkSupply" using the **▲** button, and press the **▶** button.
- (6) Select "Supply (BK)" using the **▲** button, and press the **OK** button. The machine starts supplying ink. If leakage of ink is found, press the **Cancel** button to stop supplying ink and repair the location from which ink leaks.
- (7) When the machine finishes supplying ink, select "InkSupply" again using the **▲** button, and press the **▶** button.
- (8) Select "Supply (PRE)" using the **▲** button, and press the **OK** button. The machine starts supplying pre-coat ink. If leakage of ink is found, press the **Cancel** button to stop supplying pre-coat ink and repair the location from which ink leaks.
- (9) Turn the power OFF and ON.
- (10) Enter the maintenance mode, and press the **1** and **7** buttons in this order. "Cartridge" is displayed on the LCD.
- (11) Press the **Go** button. "NORMAL_P ALL" is displayed on the LCD.
- (12) Press the **3** button. "POWER_P ALL" is displayed on the LCD.
- (13) Press the **Go** button.
The machine displays "EXECUTING" on the LCD and starts supplying ink to the ink refill unit.
- (14) After a little while, the machine displays "COMPLETED" on the LCD and returns to the initial state of the maintenance mode.
- (15) Press the **9** button twice to return to the ready state.

3.3 Resetting of Ink Refill Unit Counter

- (1) While the machine is in the ready state, press the **Go** and ▲ buttons at the same time. "Reset Menu" is displayed on the LCD.
- (2) Press the ▲ or ▼ button to select ink refill unit, and press the **OK** button. "1.Reset 2.Exit" is displayed on the LCD.
- (3) Press the **1** button. The machine displays "Accepted" on the LCD. The replacement counter of the ink refill unit increases, and the machine returns to the ready state.
- (4) Turn OFF the power of the machine.

3.4 Attachment of Side Cover L

- (1) Attach the side cover L.

4. WHEN REPLACING SUB TANK ASSY

<What to do when replacing the Sub tank ASSY>

■ Before replacement

- 4.1 Draining Ink from Path Leading to Sub Tank ASSY
- 4.2 Removal of Supply Pump ASSY

■ After replacement

Note:

As you check ink leak after the replacement, check the following without attaching the side cover L. After the check, attach the side cover L.

- 4.3 Attachment of Supply Pump ASSY
- 4.4 Supply of Ink to Sub Tank ASSY and Check of Ink Leak
- 4.5 Missing Dot Check (Maintenance Mode: Code 68)
- 4.6 Resetting of Sub Tank ASSY Counter
- 4.7 Attachment of Side Cover L

<What you need to prepare>

Nothing in particular

4.1 Draining Ink from Path Leading to Sub Tank ASSY

- (1) Open the ink cartridge cover and remove the ink cartridge.
- (2) Enter the maintenance mode, and press the **1** and **7** buttons in this order. "Cartridge" is displayed on the LCD.
- (3) Press the **▲** button to display "No Cartridge" on the LCD and press the **Go** button. "NORMAL_P ALL" is displayed on the LCD.
- (4) Press the **▲** button to display "POWER_P ALL" on the LCD and press the **Go** button. Drain ink. When draining ink is completed, "COMPLETED" is displayed on the LCD, and the machine returns to the initial state of the maintenance mode.
- (5) Repeat the steps (2) to (4) again and execute draining ink.
- (6) Turn OFF the power and disassemble the machine. Insert a joint and drain cap into the locations where the tube is removed.

4.2 Removal of Supply Pump ASSY

- (1) Remove the supply pump ASSY while disassembling the sub tank ASSY.
- (2) Remove the supply pump ASSY from the sub tank ASSY, and wrap the joint of the tube in a clean, lint-free cloth.

4.3 Attachment of Supply Pump ASSY

- (1) After attaching a new sub tank ASSY, attach a new supply pump ASSY. Do not reuse the removed supply pump ASSY.

4.4 Supply of Ink to Sub Tank ASSY and Check of Ink Leak

- (1) Open the ink cartridge cover and turn ON the machine. If an ink cartridge is mounted, remove it.
- (2) Enter the maintenance mode, and press the **1** and **8** buttons in this order. "PlatenPosition" is displayed on the LCD.
- (3) Mount an ink cartridge, select "Needle" using the **▲** button, and press the **▶** button.
- (4) Select "INSERT" using the **▲** button, and press the **OK** button. The needle moves to the insertion position.
- (5) Select "InkSupply" using the **▲** button, and press the **▶** button.
- (6) Select "Supply (BK)" using the **▲** button, and press the **OK** button. The machine starts supplying ink. If leakage of ink is found, press the **Cancel** button to stop supplying ink and repair the location from which ink leaks.
- (7) When the machine finishes supplying ink, select "InkSupply" again using the **▲** button, and press the **▶** button.
- (8) Select "Supply (PRE)" using the **▲** button, and press the **OK** button. The machine starts supplying pre-coat ink. If leakage of ink is found, press the **Cancel** button to stop supplying pre-coat ink and repair the location from which ink leaks.
- (9) Turn the power OFF and ON.

4.5 Missing Dot Check (Maintenance Mode: Code 68)

- (1) Press the **6** and **8** buttons in this order in the initial state of the maintenance mode. The machine displays "Printing" on the LCD and starts printing the missing dot check pattern.
- (2) Check that all dots are printed in the missing dot check pattern.
- (3) If there is a missing dot(s), perform an appropriate purge operation in "Function mode 17" and print and check the pattern again.
- (4) If all dots are printed, the missing dot check is finished.
- (5) Press the **9** button twice. The maintenance mode exits from the maintenance mode and return to the ready state.

4.6 Resetting of Sub Tank ASSY Counter

- (1) While the machine is in the ready state, press the **Go** and **▲** buttons at the same time. "Reset Menu" is displayed on the LCD.
- (2) Press the **▲** or **▼** button to select sub tank ASSY, and press the **OK** button. "1.Reset 2.Exit" is displayed on the LCD.
- (3) Press the **1** button. The machine displays "Accepted" on the LCD. The replacement counter of the sub tank ASSY increases, and the machine returns to the ready state.
- (4) Turn OFF the power of the machine.

4.7 Attachment of Side Cover L

- (1) Attach the side cover L.

5. WHEN REPLACING SUPPLY PUMP ASSY

<What to do when replacing the Supply pump ASSY>

■ Before replacement

- 5.1 Draining Ink from Path Leading to Sub Tank ASSY

■ After replacement

Note:

As you check ink leak after the replacement, check the following without attaching the side cover L. After the check, attach the side cover L.

- 5.2 Supply of Ink to Sub Tank ASSY and Check of Ink Leak
- 5.3 Missing Dot Check (Maintenance Mode: Code 68)
- 5.4 Resetting of Supply Pump ASSY Counter
- 5.5 Attachment of Side Cover L

<What you need to prepare>

Nothing in particular

5.1 Draining Ink from Path Leading to Sub Tank ASSY

- (1) Open the ink cartridge cover and remove the ink cartridge.
- (2) Enter the maintenance mode, and press the **1** and **7** buttons in this order. "Cartridge" is displayed on the LCD.
- (3) Press the **▲** button to display "No Cartridge" on the LCD and press the **Go** button. "NORMAL_P ALL" is displayed on the LCD.
- (4) Press the **▲** button to display "POWER_P ALL" on the LCD and press the **Go** button. Drain ink. When draining ink is completed, "COMPLETED" is displayed on the LCD, and the machine returns to the initial state of the maintenance mode.
- (5) Repeat the steps (2) to (4) again and execute draining ink.
- (6) Turn OFF the power and disassemble the machine. Insert a joint and drain cap into the locations where the tube is removed.

5.2 Supply of Ink to Sub Tank ASSY and Check of Ink Leak

- (1) Set the ink cartridge in the machine.
- (2) Turn ON the power of the machine. The machine displays "*****" on the LCD and automatically starts supplying ink. Check that no ink is leaking from the junctions between the sub tank ASSY and the tubes while ink is being supplied. If an ink leak occurs, insert the tube further.
- (3) After a little while, the machine displays "*****" on the LCD and finishes draining ink from the head.

5.3 Missing Dot Check (Maintenance Mode: Code 68)

- (1) Press the **6** and **8** buttons in this order in the initial state of the maintenance mode. The machine displays "Printing" on the LCD and starts printing the missing dot check pattern.
- (2) Check that all dots are printed in the missing dot check pattern.
- (3) If there is a missing dot(s), perform an appropriate purge operation in "Function mode 17" and print and check the pattern again.
- (4) If all dots are printed, the missing dot check is finished.
- (5) Press the **9** button twice. The maintenance mode exits from the maintenance mode and return to the ready state.

5.4 Resetting of Supply Pump ASSY Counter

- (1) While the machine is in the ready state, press the **Go** and **▲** buttons at the same time. "Reset Menu" is displayed on the LCD.
- (2) Press the **▲** or **▼** button to select supply pump ASSY, and press the **OK** button. "1.Reset 2.Exit" is displayed on the LCD.
- (3) Press the **1** button. The machine displays "Accepted" on the LCD. The replacement counter of the supply pump ASSY increases, and the machine returns to the ready state.
- (4) Turn OFF the power of the machine.

5.5 Attachment of Side Cover L

- (1) Attach the side cover L.

6. WHEN REPLACING DRIVE SWITCHING UNIT

<What to do when replacing the Drive switching unit>

■ Before replacement

- Nothing in particular

■ After replacement

Note:

As you check ink leak after the replacement, check the following without attaching the side cover L. After the check, attach the side cover L.

- 6.1 Check of Each Sensor (Maintenance Mode: Code 32)
- 6.2 Adjustment of Waste Ink Box Sensor (Maintenance Mode: Code 19)
- 6.3 Supply of Water
- 6.4 Supply of Ink to Drive Switching Unit and Check of Ink Leak
- 6.5 Resetting of Drive Switching Unit Counter
- 6.6 Attachment of Side Cover L

<What you need to prepare>

A waste ink box that is not full of waste ink.

6.1 Check of Each Sensor (Maintenance Mode: Code 32)

- (1) Press the **3** and **2** buttons in this order in the initial state of the maintenance mode. The machine displays "YMTCSRCRCCDSSTBR" on the LCD, and the tone signals of 1100 Hz and 400 Hz are produced from the loudspeaker. Press the **OK** button to turn OFF the tone signals.
- (2) Press the **▼** button twice. "LWLKLGPCPPPD****" is displayed on the LCD.
- (3) Turn ON and OFF the platen cap position sensor (PC), platen print position sensor (PP), and platen drive switching sensor (PD) by hand to check that their status displayed on the LCD switches between ON and OFF.
- (4) If there is no problem with each sensor, press the **Cancel** button. If there is a problem, check the connection of each harness.

6.2 Adjustment of Waste Ink Box Sensor (Maintenance Mode: Code 19)

- (1) Press the **1** and **9** buttons in this order in the initial state of the maintenance mode. "PULL BOX" is displayed on the LCD.
- (2) Remove the waste ink box. "Insert BOX A" is displayed on the LCD.
- (3) Install a waste ink box which is not filled with waste. "FULL *.*V" is displayed on the LCD. (*.* is a voltage shown during measurement.)
- (4) Press the **Go** button. If the voltage shown on the LCD is within the range from 0.40 to 0.60 V, "LEAK *.*V" appears on the LCD. (*.* is a voltage shown during measurement.) If the voltage is outside the range, "Readjust" appears on the LCD. After 2 seconds, "FULL *.*V" automatically appears again. Using the volume shown in the figure below, adjust the voltage so that it becomes within the range from 0.40 to 0.60 V.

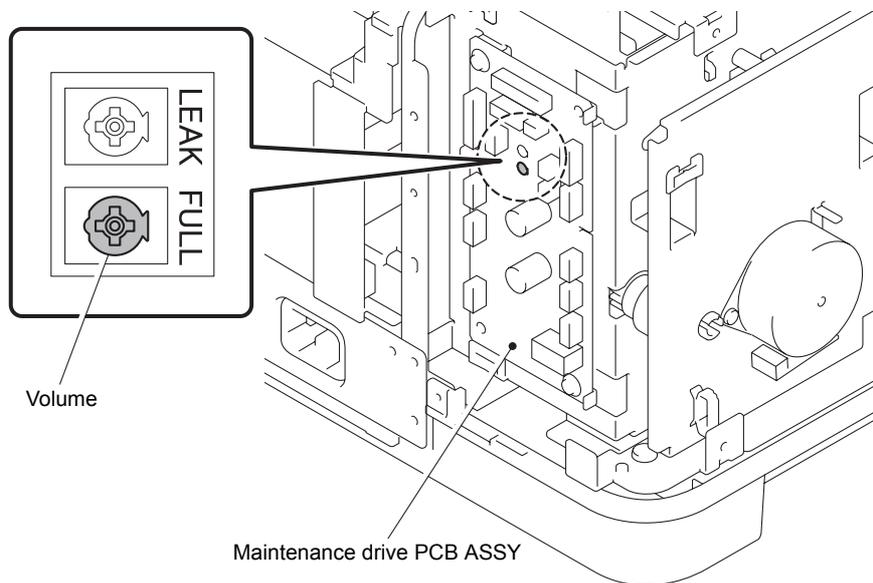


Fig. 4-11

- (5) Press the **Go** button. If the voltage shown on the LCD is within the range from 0.40 to 0.60 V, the machine displays "PLZ Power OFF" on the LCD and stores the history of executed adjustments in the EEPROM. If the voltage is outside the range, "Readjust" appears on the LCD. After 2 seconds, "FULL **. **V" automatically appears again. Using the volume shown in the figure below, adjust the voltage so that it becomes within the range from 0.40 to 0.60 V.

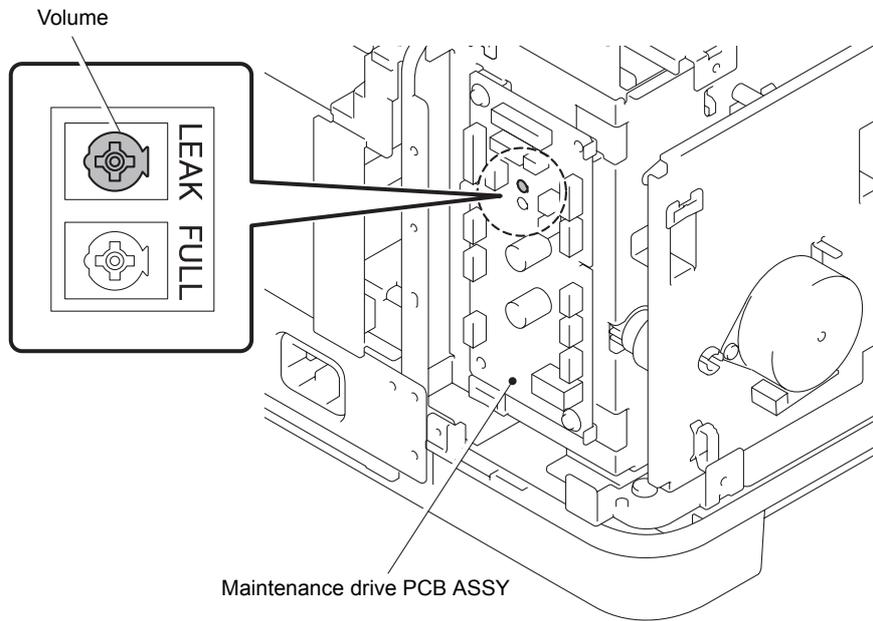


Fig. 4-12

- (6) Turn the power OFF and ON.
- (7) If you used any box other than the end user's waste ink box, replace it with the user's box waste ink box.

6.3 Supply of Water

- (1) Open the ink cartridge cover and turn ON the machine.
- (2) Enter the maintenance mode, and press the **1** and **8** buttons in this order. "PlatenPosition" is displayed on the LCD.
- (3) Set the ink cartridge in the machine.
- (4) Select "OptimizerSupply" using the ▲ button, and press the ► button.
- (5) Select "SUPPLY OPTIMIZER" using the ▲ button, and press the **OK** button. The machine starts supplying water.
- (6) When the machine finishes supplying water, turn the power OFF and ON.

6.4 Supply of Ink to Drive Switching Unit and Check of Ink Leak

- (1) Check that the ink cartridge is installed.
- (2) Press the **1** and **7** buttons in this order in the initial state of the maintenance mode. "Cartridge" is displayed on the LCD. If the machine displays "No Cartridge" on the LCD, press the ▼ button to display "Cartridge" on the LCD.
- (3) Press the **Go** button. "NORMAL_P ALL" is displayed on the LCD.
- (4) Press the **3** button to display "POWER_P ALL" on the LCD.
- (5) Press the **Go** button. The machine displays "EXECUTING" on the LCD and starts supplying ink.
- (6) Check that no ink is leaking from the junctions between the tubes while ink is being supplied.
- (7) When the machine finishes supplying ink, it displays "COMPLETED" on the LCD.
- (8) Press the **Go** button to return to the initial state of the maintenance mode.
- (9) Press the **9** button twice to return to the ready state.

6.5 Resetting of Drive Switching Unit Counter

- (1) While the machine is in the ready state, press the **Go** and ▲ buttons at the same time. "Reset Menu" is displayed on the LCD.
- (2) Press the ▲ or ▼ button to select drive switching unit, and press the **OK** button. "1.Reset 2.Exit" is displayed on the LCD.
- (3) Press the **1** button. The machine displays "Accepted" on the LCD. The replacement counter of the drive switching unit increases, and the machine returns to the ready state.
- (4) Turn OFF the power of the machine.

6.6 Attachment of Side Cover L

- (1) Attach the side cover L.

7. WHEN REPLACING ENGINE PCB ASSY

<What to do when replacing the Engine PCB ASSY>

■ Before replacement

- Nothing in particular

■ After replacement

- 7.1 Installing the Firmware
- 7.2 Adjustment of Waste Ink Box Sensor (Maintenance Mode: Code 19)
- 7.3 Input of Platen Adjustment Value (Maintenance Mode: Code 31)
- 7.4 Adjustment of Print Start Position (Maintenance Mode: Code 68)
- 7.5 Printing of All Check Patterns

<What you need to prepare>

- (1) A USB flash memory drive
- (2) A USB cable
- (3) Create a temporary folder on the C drive on the computer (Windows® XP or later).
- (4) Service setting tool (brusbn.zip)
Copy it into the temporary folder created on the C drive. Decompress the copied file and double click "brusbsn.exe" included in the extracted file.
- (5) The download utility (FILEDG32.EXE)
Copy it into the temporary folder created on the C drive.
- (6) The Brother maintenance USB printer driver (MaintenanceDriver.zip)
If the maintenance printer driver is not installed, copy it into the folder created on the C drive, decompress and install it.
- (7) The firmware
LZ4172_\$.djf (Engine head maintenance firmware)
- (8) All patterns data (pattern01.prn)
- (9) A waste ink box that is not full of waste ink.

7.1 Installing the Firmware

7.1.1 Firmware installation with a USB flash memory

- (1) Create a "FIRM" folder in a USB flash memory, and put the djf file of the engine head maintenance firmware into the folder. Put the text file with the name of "_@\$EX\$U0.001" outside the "FIRM" folder.
- (2) Insert the USB flash memory into the USB port on the back of the machine.
(If the port is covered with a black tape, peel it off and insert the USB flash memory.)
- (3) After a little while, the machine displays "Program Updating" on the LCD and automatically starts the installation.
- (4) When the machine displays "Update Completed" on the LCD, the installation is finished.
- (5) Remove the USB flash memory and turn the power OFF and ON.
- (6) Enter the maintenance mode, and press the **2** and **5** buttons in this order.
When the firmware version is displayed on the LCD, press the ▲ or ▼ button until "ENGM:Verx.xx" is displayed, and check if it is the same as the one of the installed firmware.

7.1.2 Firmware installation with a computer

- (1) Enter the maintenance mode.
- (2) Connect the machine to your computer using the USB cable.
- (3) Start "filedg32.exe" on the computer.
- (4) Drag and drop the engine head maintenance firmware file to Brother Maintenance USB Printer in the [filedg32] window.

Note:

Before using the firmware file, decompress it. As the file has a self-extracting format with the extension of ".exe", you can decompress it by double-clicking it.

The writing process is finished in 2 or 3 minutes, and the machine automatically reboots and returns to the ready state.

- (5) Disconnect the USB cable from the machine.
- (6) Enter the maintenance mode, and press the **2** and **5** buttons in this order.
When the firmware version is displayed on the LCD, press the ▲ or ▼ button until "ENGM:Verx.xx" is displayed, and check if it is the same as the one of the installed firmware.

7.2 Adjustment of Waste Ink Box Sensor (Maintenance Mode: Code 19)

Refer to [Chapter 4, "6.2 Adjustment of Waste Ink Box Sensor \(Maintenance Mode: Code 19\)"](#) and perform it.

7.3 Input of Platen Adjustment Value (Maintenance Mode: Code 31)

- (1) Check the platen barcode shown in the figure below.
Record all the three values in the barcode.

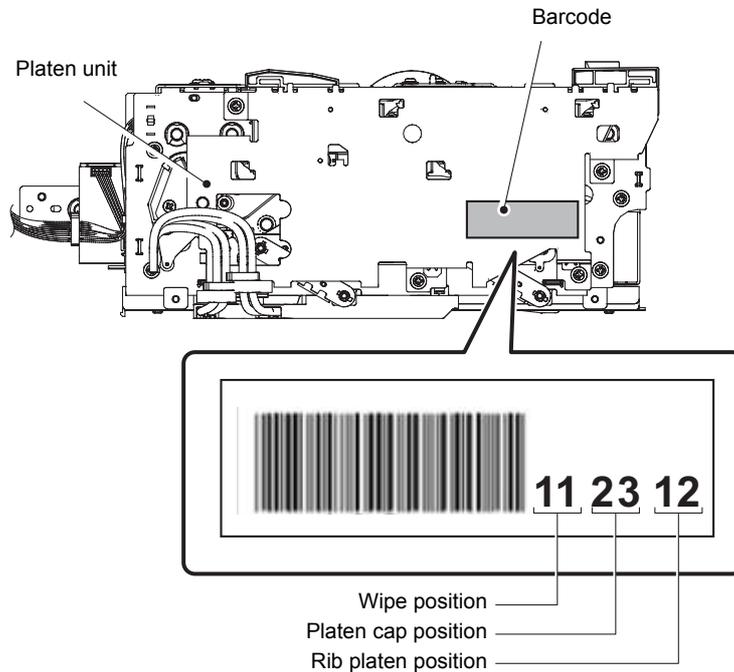


Fig. 4-13

- (2) Press the **3** and **1** buttons in this order in the initial state of the maintenance mode. Wait until "1.CAP PRSR CHK" appears on the LCD.
- (3) Press the ▼ button to display "6.PLATEN ADJ:00" on the LCD and press the **OK** button.
- (4) Enter the recorded value for the platen cap position using the ten-key pad. For example, press the **2** and **3** buttons in this order in the case of the above figure.
- (5) Press the **OK** button. The machine saves the platen cap position and returns to the initial state of the maintenance mode.
- (6) Press the **3** and **1** buttons again in this order. Wait until "1.CAP PRSR CHK" appears on the LCD.
- (7) Press the ▼ button to display "8.PLATEN WP-ADJ:00" on the LCD and press the **OK** button.
- (8) Enter the recorded value for the wipe position using the ten-key pad. For example, press the **1** button twice in the case of the above figure.
- (9) Press the **OK** button. The machine saves the wipe position and returns to the initial state of the maintenance mode.
- (10) Press the **3** and **1** buttons again in this order. Wait until "1.CAP PRSR CHK" appears on the LCD.
- (11) Press the ▼ button to display "9.RIBPLATEN ADJ:00" on the LCD and press the **OK** button.
- (12) Enter the recorded value for the rib platen position using the ten-key pad. For example, press the **1** and **2** buttons in this order in the case of the above figure.
- (13) Press the **OK** button. The machine saves the rib platen position and returns to the initial state of the maintenance mode.

7.4 Adjustment of Print Start Position (Maintenance Mode: Code 68)

Refer to [Chapter 4, "2.5 Adjustment of Print Start Position \(Maintenance Mode: Code 68\)"](#) and perform it.

7.5 Printing of All Check Patterns

Refer to [Chapter 4, "2.6 Printing of All Check Patterns"](#) and perform it.

8. WHEN REPLACING MAINTENANCE DRIVE PCB ASSY

<What to do when replacing the Maintenance drive PCB ASSY>

■ Before replacement

- Nothing in particular

■ After replacement

- 8.1 Adjustment of Waste Ink Box Sensor (Maintenance Mode: Code 19)

<What you need to prepare>

A waste ink box that is not full of waste ink.

8.1 Adjustment of Waste Ink Box Sensor (Maintenance Mode: Code 19)

Refer to [Chapter 4, "6.2 Adjustment of Waste Ink Box Sensor \(Maintenance Mode: Code 19\)"](#) and perform it.

9. WHEN REPLACING PLATEN UNIT

<What to do when replacing the Platen unit>

■ Before replacement

- Nothing in particular

■ After replacement

- 9.1 Input of Platen Adjustment Value (Maintenance Mode: Code 31)
- 9.2 Supply of Ink to Platen Unit and Check of Ink Leak
- 9.3 Resetting of Platen unit Counter

<What you need to prepare>

Nothing in particular

9.1 Input of Platen Adjustment Value (Maintenance Mode: Code 31)

Refer to [Chapter 4, "7.2 Input of Platen Adjustment Value \(Maintenance Mode: Code 31\)"](#) and perform it.

9.2 Supply of Ink to Platen Unit and Check of Ink Leak

- (1) Check that the ink cartridge is installed.
- (2) Press the **1** and **7** buttons in this order in the initial state of the maintenance mode. "Cartridge" is displayed on the LCD. If the machine displays "No Cartridge" on the LCD, press the **▼** button to display "Cartridge" on the LCD.
- (3) Press the **Go** button. "NORMAL_P ALL" is displayed on the LCD.
- (4) Press the **Go** button. The machine displays "EXECUTING" on the LCD and starts supplying ink.
- (5) Check that no ink is leaking from the junctions between the tubes while ink is being supplied.
- (6) When the machine finishes supplying ink, it displays "COMPLETED" on the LCD.
- (7) Press the **Go** button to return to the initial state of the maintenance mode.
- (8) Press the **9** button twice to return to the ready state.

9.3 Resetting of Platen Unit Counter

- (1) While the machine is in the ready state, press the **Go** and **▲** buttons at the same time. "Reset Menu" is displayed on the LCD.
- (2) Press the **▲** or **▼** button to select platen unit, and press the **OK** button. "1.Reset 2.Exit" is displayed on the LCD.
- (3) Press the **1** button. The machine displays "Accepted" on the LCD. The replacement counter of the platen unit increases, and the machine returns to the ready state.
- (4) Turn OFF the power of the machine.

10. WHEN REPLACING WASTE INK TRAY

<What to do when replacing the Waste ink box>

■ Before replacement

- Nothing in particular

■ After replacement

- 10.1 Adjustment of Waste Ink Box Sensor (Maintenance Mode: Code 19)
- 10.2 Counters Resetting for Waste Ink Box Leak Sensor

<What you need to prepare>

Nothing in particular

10.1 Adjustment of Waste Ink Box Sensor (Maintenance Mode: Code 19)

- (1) Refer to [Chapter 4, "6.2 Adjustment of Waste Ink Box Sensor"](#) and perform it.
- (2) Press the **9** button twice to return to the ready state.

10.2 Counters Resetting for Waste Ink Box Leak Sensor

- (1) While the machine is in the ready state, press the **Go** and **▲** buttons at the same time. "Reset Menu" is displayed on the LCD.
- (2) Press the **▲** or **▼** button to select Leak Sensor, and press the **OK** button. "1.Reset 2.Exit" is displayed on the LCD.
- (3) Press the **1** button. The machine displays "Accepted" on the LCD. The replacement counter of the waste ink box leak sensor increases, and the machine returns to the ready state.
- (4) Turn OFF the power of the machine.

11. WHEN REPLACING PF KIT/AIR FILTER/HUMIDIFY UNIT/WASTE INK BOX

<What to do when replacing the PF Kit/Air filter/Humidify unit/Waste ink box>

- Reset each counter of the periodical replacement parts.

(1) While the machine is in the ready state, press the **Go** and **▲** buttons at the same time. "Reset Menu" is displayed on the LCD.

(2) Press the **▲** or **▼** button to select the periodical replacement part you wish to reset, and press the **OK** button. "1.Reset 2.Exit" is displayed on the LCD.

The following shows the periodical replacement parts that can be reset.

- | | |
|------------------------------------|---|
| - PF Kit MP | - Air Filter Case (Air filter) |
| - PF Kit 1 | - Sub tank (Sub tank ASSY) |
| - PF Kit 2 | - CR frame Unit (Carriage frame) |
| - PF Kit 3 | - Platen(Platen frame) |
| - PF Kit 4 | - Ink Supply Unit (Ink refill unit) |
| - Waste Tank (Waste ink box) | - Drive Frame (Drive switching unit) |
| - PRINT HEAD BLACK (Ink head) | - Optimizer Unit (Humidify unit) |
| - Print Head Pre-C (Pre-coat head) | - Leak Sensor (Waste ink box leak sensor) |

(3) Press the **1** button. The machine displays "Accepted" on the LCD and returns to the ready state.

(4) Turn OFF the power of the machine.

12. NECESSARY OPERATION BEFORE RETURNING MACHINE

When you return the machine to us, be sure to perform the following operation. Otherwise, it might cause damage of parts and/or leakage of ink.

<Operations>

- 12.1 Draining Ink from Machine (Maintenance Mode:Code 17)
- 12.2 Packing

12.1 Draining Ink from Machine (Maintenance Mode: Code 17)

- (1) Press the **Menu**, **Go**, **Menu**, **1**, and **7** buttons in this order. "No Cartridge" is displayed on the LCD.
- (2) Open the ink cartridge cover, remove the ink cartridge, and then close the ink cartridge cover.
- (3) Press the **Go** button. "CONVEY_P ALL" is displayed on the LCD.
- (4) Press the **Go** button. The ink initial purge starts in the machine.
- (5) When the draining ink is finished, the machine displays "COMPLETED" on the LCD. Press the **Go** button. "PLEASE POWER OFF" is displayed on the LCD. If an error occurs during draining ink, reset the error with the following procedure and resume the operation from the step (1).
 - 1) Turn OFF and ON the power of the machine.
 - 2) Open the ink cartridge cover and mount the ink cartridge.
 - 3) Close the cartridge cover. The user initial purge starts automatically.
 - 4) Wait until initial purge is finished. (Approx. 17 min.)
- (6) Turn OFF the power of the machine.

Note:

Be sure not to turn ON the power from when the power is turned OFF to when the machine is packed. If the power is turned ON, there is a possibility that the carriage lock is released, and the machine is damaged during transportation. If the power is turned ON by mistake, lock the carriage with the following procedure.

- 1) Enter the maintenance mode, and press the **3** and **1** buttons in this order. "1.CAP PRSR CHK" is displayed on the LCD.
- 2) Press the **▲** or **▼** button to display "4.CARIG LOCK" on the LCD and press the **OK** button. The carriage lock operation will start.
- 3) When the carriage lock is finished, the machine returns to the initial state of the maintenance mode.
- 4) Turn the power OFF.

12.2 Packing

- (1) Place the bottom pad in the Carton bottom and then place the PE Bag of the machine. Hold and lift the machine with 2 workers and place it on the PE Bag. Wrap the machine with the PE Bag.



Fig. 4-14

- (2) Place the Carton in a way to cover the Carton bottom. The sides with the handles must come to the front and rear sides of the machine.

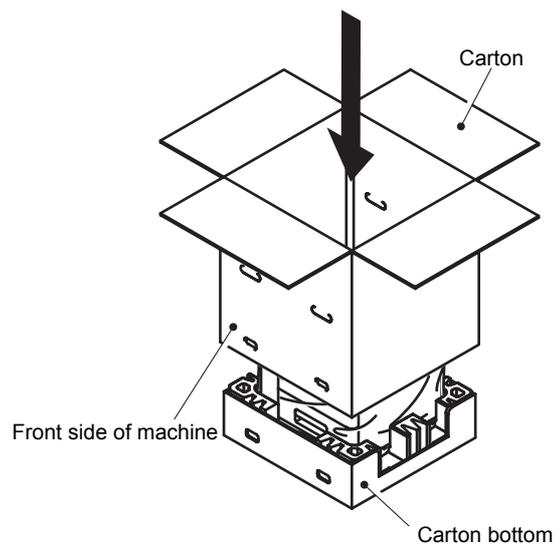


Fig. 4-15

- (3) Insert the 4 Carton joints into the holes at the lower side of the Carton, and rotate the lock of each Carton joint and insert it into the Carton joint.

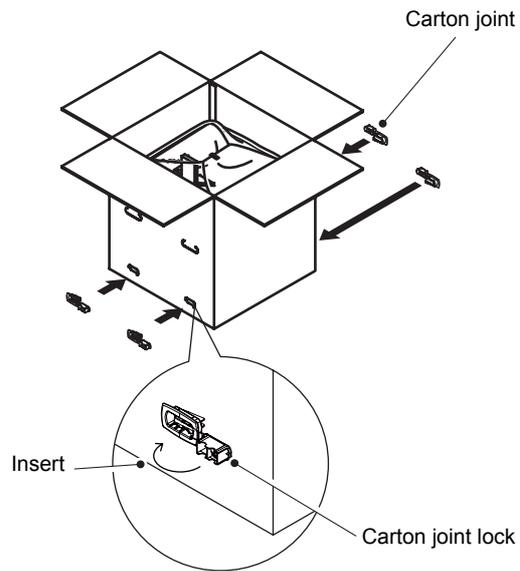


Fig. 4-16

- (4) Place the top Pads over the machine.

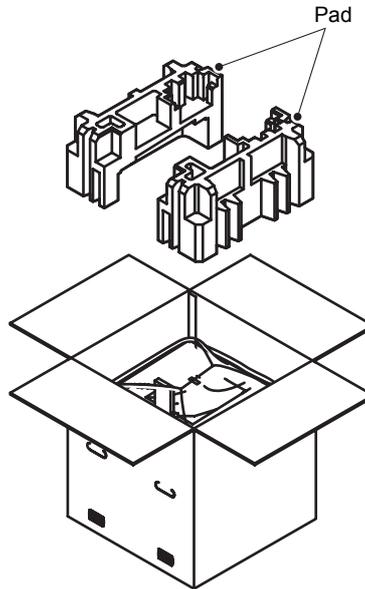


Fig. 4-17

- (5) Close the lid of the Carton and seal it with Packing tape. Wrap the 2 PP bands in the direction along the sides of the machine and secure the 2 PP bands in a way that the PP band stopper comes to the side face of the machine.

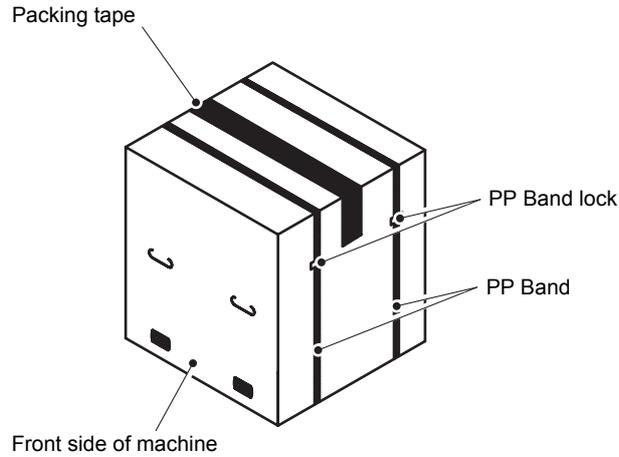


Fig. 4-18

- (6) Using the Double carton upper, Double carton bottom, Double carton spacer x2, and Carton joint, which are supplied with the product, double pack the packed machine as shown in the figure below.

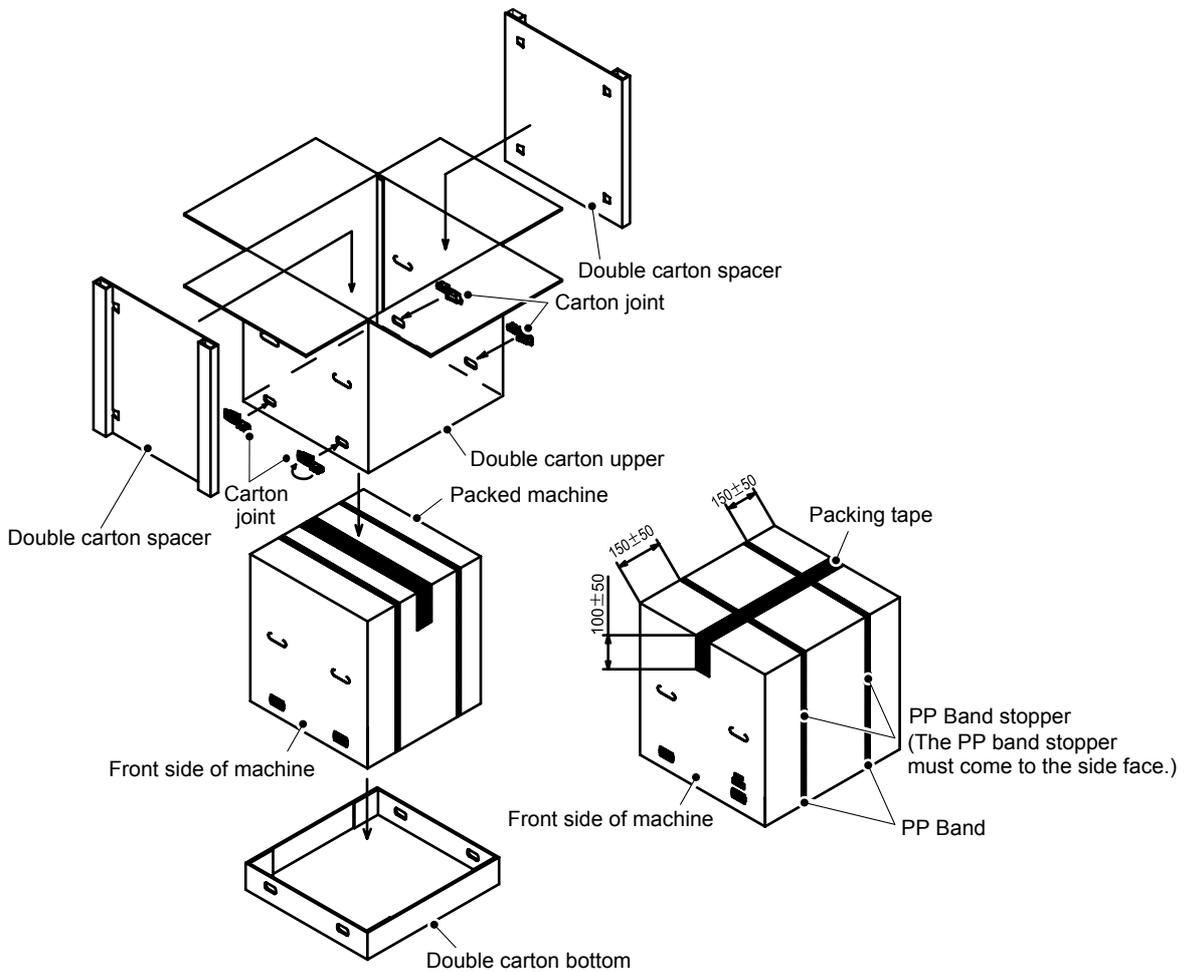


Fig. 4-19

CHAPTER 5 SERVICE FUNCTIONS

1. MAINTENANCE MODE

The maintenance mode is exclusively designed for the checking, setting and adjustments of the machine by using the buttons on the control panel.

By using the functions in the maintenance mode, you can perform operation check of sensors and print tests, display log information and error codes, or change the settings of worker switches (WSW).

Note:

Maintenance modes 17 and 18 are not included in the firmware of the products manufactured during an early stage. Be sure to upload the latest firmware first.

1.1 How to Enter the Maintenance Mode

<Operating procedure>

- (1) Press the **Menu** button and then the **Go** button while the machine is in the ready state. Next, press the **▲** button four times to enter the maintenance mode.
- (2) The machine displays "**■■ MAINTENANCE ■■**" on the LCD, indicating that it is placed in the initial state of the maintenance mode, a mode in which the machine is ready to accept entry from the buttons.
- (3) Directly enter the desired maintenance-mode function code using the ten-key pad.

1.2 How to Enter the End User-accessible Maintenance Mode

Basically, the maintenance-mode functions listed in the [next page](#) should be accessed by service personnel only. However, you can allow end users to access some of these under the guidance of service personnel by phone, for example.

The end user-accessible functions are **shaded** in the table given on the [next page](#). (codes [12](#), [25](#), [45](#), [49](#), [77](#), [80](#), [82](#) and [91](#))

<Operating procedure>

- (1) Press the **Menu**, **Go** and **0** buttons in this order when the machine is in the ready state. "0" is displayed on the LCD.
- (2) Directly enter the desired maintenance-mode function code using the ten-key pad.

When each of the user-accessible functions is completed, the machine automatically returns to the ready state. As for the codes [12](#), [25](#), [45](#), [49](#), [77](#), [80](#), [82](#) and [91](#), press the **Cancel** button to switch the machine return to the ready state.

1.3 List of Maintenance-mode Functions

Function code	Function	Refer to:
01	EEPROM parameter initialization	1.4.1(5-3)
09	Printing of test pattern	1.4.2(5-4)
10	Worker switch (WSW) setting	1.4.3(5-5)
12	Operation check of LCD	1.4.4(5-6)
13	Operational check of control panel button	1.4.5(5-7)
17	Purge operations	1.4.6(5-8)
18	Individual operation of each unit	1.4.7(5-10)
19	Adjustment of waste ink box sensor	1.4.8(5-14)
25	Software version check	1.4.9(5-16)
31	Carriage operations	1.4.10(5-18)
32	Operational check of sensors	1.4.11(5-20)
33	LAN connection status display	1.4.12(5-23)
40	EEPROM Dump Print	1.4.13(5-24)
41	USB storage memory formatting function	1.4.14(5-29)
45	Changing return value of USB No./ Adjusting of left-end print start position on second side in 2-sided printing	1.4.15(5-30)
49	Ink replacement purge inside head	1.4.16(5-31)
67	Continuous print test	1.4.17(5-32)
68	Print adjustment	1.4.18(5-34)
69	Frame pattern print (One-sided)	1.4.19(5-36)
70	Frame pattern print (Two-sided)	1.4.20(5-37)
74	Setting by country	1.4.21(5-38)
77	Printout of maintenance information	1.4.22(5-39)
78	Operational check of fans	1.4.23(5-41)
80	Display of device log information	1.4.24(5-42)
82	Display of device error codes	1.4.25(5-47)
91	EEPROM parameter initialization	1.4.1(5-3)
99	Exit from the maintenance mode	1.4.26(5-47)

*The functions shaded in the table above are user-accessible.

Memo:

Although you can select the function code 71, only the blank paper is output.

1.4 Detailed Description of Maintenance-mode Functions

1.4.1 EEPROM parameter initialization (Function code 01, 91)

<Function>

This function initializes the setting values of the operation parameters, user switches, and worker switches (WSW) registered in the EEPROM.

Entering function code 01 initializes almost all of the EEPROM areas, but entering 91 does not initialize some areas, as listed below.

Data item	Function code 01	Function code 91	
Printer switch	These will not be initialized.	These will not be initialized.	
Counter information			
Error History			
MAC Address	These will be initialized.		
Operation lock of the control panel password			
Secure Function Lock			
Worker switch			
User switches			These will be initialized.
LAN settings			
Emulation settings			

<Operating procedure>

- (1) Press the **0** and **1** buttons in this order in the initial state of the maintenance mode.
(Or press the **9** and **1** buttons in this order as necessary.)
- (2) The "PARAMETER INIT" is displayed on the LCD.
- (3) Upon completion of parameter initialization, the machine returns to the initial state of the maintenance mode.

1.4.4 Operational check of LCD (Function code 12)

<Function>

This function allows you to check whether the LCD on the control panel works normally.

<Operating procedure>

- (1) Press the **1** and **2** buttons in this order in the initial state of the maintenance mode. The LCD shows.
- (2) Each time you press the **Go** button, the LCD cycles through the displays as shown below.
- (3) Press **Cancel** button in any process of the display cycle. The machine returns to the initial state of the maintenance mode.

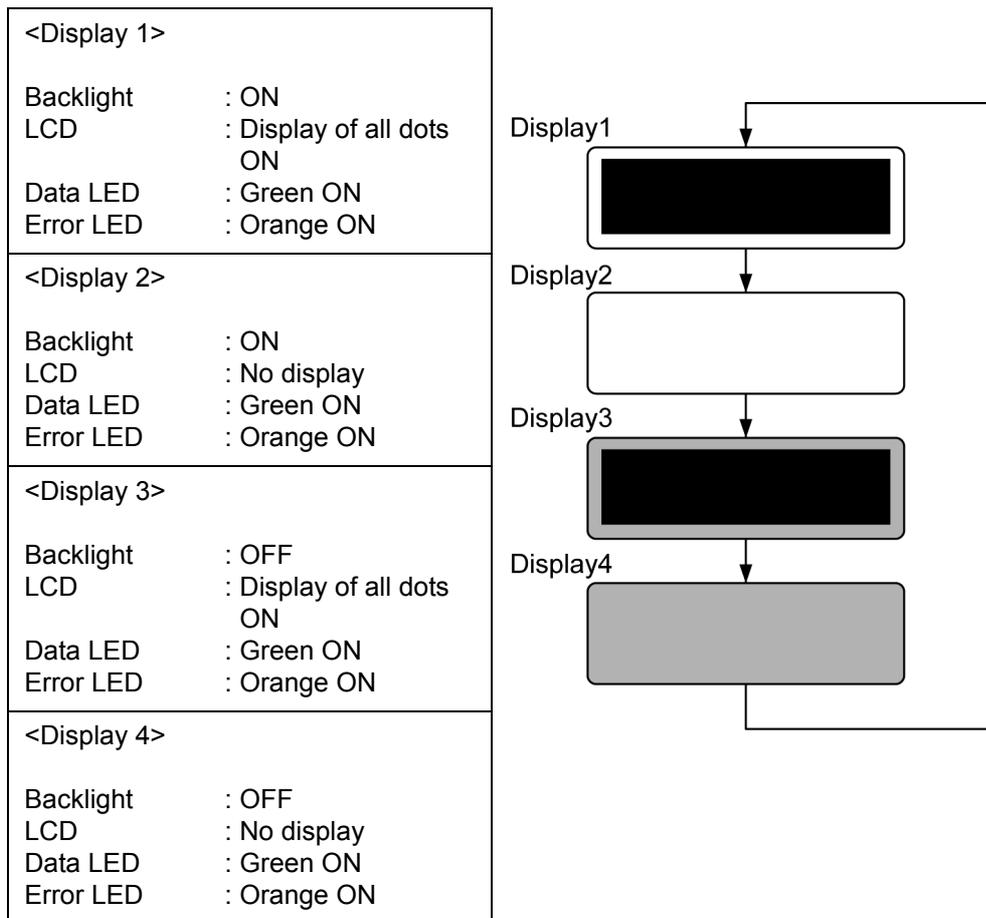


Fig. 5-2

1.4.5 Operational check of control panel button (Function code 13)

<Function>

This function allows you to check if the buttons on the control panel work properly.

<Operating procedure>

- (1) Press the **1** and **3** buttons in this order in the initial state of the maintenance mode. "00" is displayed on the LCD.
- (2) Press the buttons in the order designated in the illustration shown below. The LCD shows the corresponding number in decimal notation each time a button is pressed. Check that the displayed number is correct by referring to the illustration below.
If a button is pressed out of order, the machine displays the "INVALID OPERATE" on the LCD. If you press the **Cancel** button under this condition, the machine returns to the state as immediately before the buttons are pressed in the wrong order.
- (3) After the last number button is pressed, the machine returns to the initial state of the maintenance mode.
To cancel this operation and return to the machine to the initial state of the maintenance mode during the above procedure, press the **Cancel** button.



Fig. 5-3

1.4.6 Purge operations (Function code 17)

<Function>

This function allows you to separately perform each of the purge operations (normal purge, periodical reset purge, powerful purge, initial purge, user reset purge, and engine setting purge). As this function is used to remove ink, you can perform the function with no ink cartridge being installed.

<Operating procedure>

- (1) Press the **1** and **7** buttons in this order in the initial state of the maintenance mode. "Cartridge" is displayed on the LCD.
- (2) To use this function with the ink cartridge being installed, press the **Go** button while "Cartridge" is being displayed on the LCD. "NORMAL_P ALL" is displayed on the LCD. To use this function without the ink cartridge being installed, press the **▲** button to display "No Cartridge" on the LCD. Then press the **Go** button.
- (3) Press the **◀** or **▶** button to switch the head you wish to purge. The display on the LCD switches among "NORMAL_P ALL", "NORMAL_P FK", and "NORMAL_P FG".
(FK=Ink head, FG=Pre-coat head, AL=Both heads)
Press the **▲** or **▼** button to switch the type of purge you wish to perform. You can also directly enter a purge number from the ten-key pad to select the type of purge. Refer to the following list for information on the types of purge.

No.	LCD	Type of purge	Abbreviation
1	NORMAL_P	Normal purge	NP
2	tRESET_P	Periodical reset purge	RP
3	POWER__P	Powerful purge	PP
4	POWER2_P	Powerful purge 2	PP2
5	uINIT__P	User initial purge	uIP
6	uRESET_P	User recovery reset purge	PR2
7	eINIT__P	Engine initial purge	eIP
8	hFlow_P	Special powerful purge	HP
*	CONVEY_P	Purge for move (available only in No Cartridge mode)	CP

- (4) After displaying the type of purge you wish to perform, press the **Go** button.
- (5) If no ink cartridge is installed while the "Cartridge" is selected in the former step, the machine displays "Insert Cartridge" on the LCD. When you install the ink cartridge, the machine displays "EXECUTING" on the LCD and the purge operation is automatically started.
If the ink cartridge is installed while the "Cartridge" is selected, the machine displays "EXECUTING" on the LCD and the purge operation is automatically started.
If no ink cartridge is installed while "No Cartridge" is selected in the former step, the machine displays "EXECUTING" on the LCD and the purge operation is automatically started.
If the ink cartridge is installed while "No Cartridge" is selected, the machine displays "Remove Cartridge" on the LCD. In this case, remove the ink cartridge. When you remove it, the machine displays "EXECUTING" on the LCD and the purge operation is automatically started.

- (6) If the purge operation is normally, the machine displays "COMPLETED" on the LCD. To return the machine to the initial stage of the maintenance mode, press the **Go** button. If an error occurs in the purge operation, the machine displays "FAILED" on the LCD. If you press the **Go** button, the machine returns to the initial state of the maintenance mode. Remove the cause of the problem and restart from the beginning. Only when "Purge for move" is selected in step (3), the machine displays "PLEASE POWER OFF" on the LCD upon the successful completion of the purge operation. After confirming the indication of the message, turn OFF the power.

1.4.7 Individual operation of each unit (Function code 18)

<Function>

This function enables you to operate the platen, carriage, sub tank, and drive frame assembly separately. This is useful to identify the defective unit during troubleshooting and to check the operation after any of these units is replaced.

While the function code 18 is executed, a machine error is ignored. Therefore, even if the machine is in the error state, you can operate each unit forcibly.

<Operating procedure>

- (1) Press the **1** and **8** buttons in this order in the initial state of the maintenance mode. "PlatenPosition" is displayed on the LCD.
- (2) Enter the menu number of the operation item you want to execute in accordance with the table in the [next page](#).
For instance, if you select the CarriagePosition menu, press the **2** button first and then **▶** button. You can select the menu using the **▲** or **▼** button as well as numeric buttons. In this case, display the operation item on the LCD and press the **▶** button.
- (3) Then, enter the sub menu number of the operation item. If you select "HOME POSITION" in the CartridgePosition menu, press the **1** button and then **OK** button. You can select the sub menu using the **▲** or **▼** button as well as numeric buttons. In this case, display the operation item on the LCD and press the **OK** button.
The Data LED starts blinking, and the selected operation starts.
To cancel the operation, press the **Cancel** button. Pressing the **Cancel** button does not end the function code 18 itself and return to the standby state of the function code 18, but stops the ongoing operation. For instance, when you select "PRINT POSITION" of CarriagePosition and press the **Cancel** button during the operation, the carriage stops while it is moving to the print position.
- (4) When all the operation is finished, the Data LED is turned OFF.
- (5) When you finish checking the operation and end the function code 18, be sure to turn OFF the power or pull out the power plug. When you operate each unit individually, it might stop at an unusual position, damaging the product. To prevent the damage, you need to turn the power OFF and ON to return the unit to the home position.
There is another means to end the function code 18. Press the **◀** button to display "Really Quit?" on the LCD and press the **OK** button, then you can return to the initial state of the maintenance mode. When the head protection and machine cannot be recognized, "PleaseWait" is displayed on the LCD.
When you return to the initial state of the maintenance mode by displaying "Really Quit?" and pressing **OK** button, the machine cannot identify the operation state of each unit, and therefore it cannot perform the next operation, and, in the worst case scenario, the machine might get damaged. For this reason, there is a need to perform HOME POSITION/INITIAL POSITION of each unit or turn the power OFF and ON to return the unit to the original position first, and then return to the initial state of the maintenance mode.

<Supplementary information>

- Since errors are ignored while the function code 18 is functioning, errors are not displayed basically. When an error occurs, the error LED blinks, but the description of the error is not displayed. To check the details of the error, you need to end the function code 18 and returns to the initial state of the maintenance mode.
- When you forcibly stop the operation by pressing the **Cancel** button, the machine cannot find the position of the unit which is stopped by software, and it might be unable to move even if the operation is resumed because it cannot find the current position. In this case, you need to return the unit which is forcibly stopped to the home position and detect its position again.
- If you use the ink cartridge used for ink replenishment in the InkSupply mode, the used ink amount cannot be correctly detected, and error 2A might occur. For this reason, the use of end user's ink cartridges is prohibited. If you use an end user's ink cartridge and error 2A occurs, clear the error with the following procedure:
 - 1) While the machine is in the ready state, press the **Go** and **▲** buttons at the same time. "Reset Menu" is displayed on the LCD.
 - 2) Press the **▲** or **▼** button to select "Sub tank", and press the **OK** button. "1.Reset 2.Exit" is displayed on the LCD.
 - 3) Press the **1** button. The machine displays "Accepted" on the LCD and returns to the ready state.

Menu		Sub Menu		Operation
Key	LCD	Key	LCD	
1	PlatenPosition	1	HOME POSITION	Moves to the home position.
		2	PRINT POSITION	Moves to the print position.
		3	CAP POSITION	Moves to the cap position.
		4	GLASS WIPE POS	Moves to the glass wipe position.
		5	NOZZLE WIPE POS	Moves to the nozzle wipe position.
		6	ON (CW)	Turns ON the platen motor forcibly (in the direction of the print position) and automatically stops in 2 sec.
		7	ON (CCW)	Turns ON the platen motor forcibly (in the direction of the cap position) and automatically stops in 2 sec.
2	Carriage Position	1	HOME POSITION	Moves to the home position.
		2	PRINT POSITION	Moves to the print position.
		3	ON(CW)	Turns ON the carriage motor forcibly (in the direction of the up) and automatically stops in 500 ms.
		4	ON(CCW)	Turns ON the carriage motor forcibly (in the direction of the down) and automatically stops in 500 ms.

Menu		Sub Menu		Operation
Key	LCD	Key	LCD	
3	BlackWipe	1	HOME POSITION	Moves to the home position.
		2	INK DRAIN POS	Moves to the ink drain position.
		3	GLASS WIPE POS	Moves to the glass wipe ready position.
		4	NOZZLE WIPE POS	Moves to the nozzle wipe ready position.
		5	ON(CW)	Turns ON the ink wiper motor forcibly (In the direction of the ready position) and automatically stops in 2 sec.
		6	ON(CCW)	Turns ON the ink wiper motor forcibly (In the direction of the home position) and automatically stops in 2 sec.
4	PrecoatWipe	1	HOME POSITION	Moves to the home position.
		2	INK DRAIN POS	Moves to the ink drain position.
		3	GLASS WIPE POS	Moves to the glass wipe ready position.
		4	NOZZLE WIPE POS	Moves to the nozzle wipe ready position.
		5	ON(CW)	Turns ON the pre-coat wiper motor forcibly (In the direction of the ready position) and automatically stops in 2 sec.
		6	ON(CCW)	Turns ON the pre-coat wiper motor forcibly (In the direction of the home position) and automatically stops in 2 sec.
5	Cap	1	CAP POSITION	Moves to the cap position.
		2	UNCAP POSITION	Moves to the uncap position.
		3	ON	Turns ON the cap motor forcibly
6	SubtankValve	1	OPEN	Opens the sub tank valve.
		2	CLOSE	Closes the sub tank valve.
7	SubtankPump	1	ON(BK)	Turns ON the sub tank pump (Ink)
		2	ON(PRE)	Turns ON the sub tank pump (Precoat)
8	WastePump	1	ON	Turns ON the waste ink pump
9	Ventilation Valve	1	OPEN	Opens the air vent valve.
		2	CLOSE	Closes the air vent valve.
*	Optimizer Supply	1	SUPPLY OPTIMIZER	Turns ON the motor until optimizer becomes full.
		2	ON	Turns ON the motor forcibly and automatically stops in 2 sec.

Menu		Sub Menu		Operation
Key	LCD	Key	LCD	
0	InkSupply	1	SUPPLY(BK)	Opens the air vent valve until ink becomes full.
		2	SUPPLY(PRE)	Opens the air vent valve until pre-coat ink becomes full.
		3	ON(BK)	Turn ON the ink supply pump forcibly (Ink) and automatically stops in 2 sec.
		4	ON(PRE)	Turn ON the ink supply pump forcibly (Precoat) and automatically stops in 2 sec.
#	Needle	1	INSERT	Insert the needle
		2	REMOVE	Remove the needle
#+1 Press at the same time	MaintUnitPos	1	PRINT READY	Moves the maintenance unit to the print ready position.
		2	HEAD PROTECT	Moves the maintenance unit to the head protect position.
		3	INITIAL POSITION	Moves the maintenance unit to the initial position.
#+2 Press at the same time	WipeGlass Surface	1	BLACK	Wipes the glass face of ink (platen/drive of wipe)
		2	PRECOAT	Wipes the glass face of precoat ink (platen/drive of wipe)

1.4.8 Adjustment of waste ink box sensor (Function code 19)

<Function>

This function allows you to check the operation of the waste ink box sensor and adjust the output voltage of the waste ink box full sensor/waste ink box leak sensor. A waste ink box having ink less than full is necessary when adjusting the output voltage of the waste ink box full sensor/waste ink box leak sensor.

<Operating procedure>

- (1) Press the **1** and **9** buttons in this order in the initial state of the maintenance mode. "PULL BOX" is displayed on the LCD.
- (2) Remove the waste ink box. If the waste ink box sensor works normally, the machine displays "Insert BOX A" on the LCD. If the indication does not appear after removing the waste ink box, the waste ink box sensor may be faulty.
- (3) Install the waste ink box with waste ink less than full. When the waste ink box is installed, the machine measures the output voltage of the waste ink box full sensor and displays "FULL*. **V" on the LCD. If the displayed voltage is between 0.40 and 0.60 V, that means the voltage is within the normal range.
- (4) Press the **Go** button. If you press the **Go** button while the displayed voltage is within the normal range of 0.40 to 0.60 V, you go to step (6). If you press the **Go** button while the displayed voltage is outside the normal range, "Readjust" appears on the LCD and the second measurement is performed.

- (5) Afcae(bo3<7(d)-5.3(u)-6-6-6-6o)6(vonr th)-(4pæudispl.3(u)-6-6m21[(((4rnu)-6-4.8(rh)41.4(d)4vce mou L.8

- (7) After the second measurement, the machine displays the measured voltage on the LCD. Using the volume shown in the figure below, adjust the displayed voltage so that it becomes within the range of 0.40 to 0.60 V. After the adjustment, press the **Go** button.

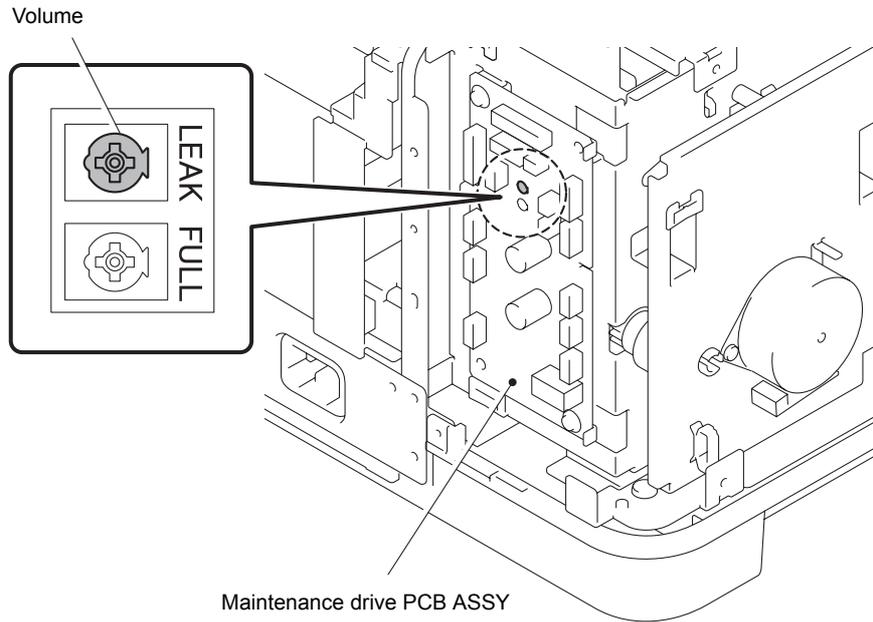


Fig. 5-5

- (8) The machine displays "PLZ Power OFF" on the LCD and stores the history of executed adjustments in the EEPROM. Turn the power off.

1.4.9 Software version check (Function code 25)

<Function>

This function allows you to check the version of each firmware and program and CheckSum information.

<Operating procedure>

- (1) Press the **2** and **5** buttons in this order in the initial state of the maintenance mode. The machine displays each of items described below on the LCD.
- (2) Press the **Go**, **▲** or **▼** button to check the next item.
- (3) To return the machine to the initial stage of the maintenance mode, press the **Cancel** button.

LCD	Description
MAIN:Ver1.00 (A)* ¹	Main firmware version information (A): Revision information
SUB1:Ver1.00 (P)* ^{1,2}	Sub firmware version information (P): Identifier of PCL/PS * ²
ENG:Ver1.00	Engine firmware version information
ENGM:Ver1.00	Engine (head maintenance) firmware version information
ENGB:Ver1.00	Engine (head maintenance) boot version information
NET:Ver1.00	Network program version information
PANEL:A09021211	Panel program version information
LIBRA:Ver2.05	Main libra firmware version information
LEO:Ver2.08	Engine leo firmware version information
GEMINI:Ver1.05	Engine Gemini firmware version information
LT1:Ver1.00	Optional tray 1 firmware version information
LT2:Ver1.00	Optional tray 2 firmware version information
LT3:Ver1.00	Optional tray 3 firmware version information
OT1:Ver1.00	Optional output tray firmware version information
LT1 B:Ver1.00	Optional tray 1 boot version information
LT2 B:Ver1.00	Optional tray 2 boot version information
LT3 B:Ver1.00	Optional tray 3 boot version information
OT1 B:Ver1.00	Optional output tray boot version information
B1112312359:1234* ¹	Boot firmware creation date
U1112312359:1234* ¹	Main firmware creation date
D1112312359:1234* ¹	Demo firmware creation date
P1112312359:1234* ¹	Sub firmware creation date
R1112312359:1234* ¹	Lip boot firmware creation date
ROM Check Sum	Check sum self-diagnosis function * ³

- *1 How to display the check sum information
Press the **OK** button when its version information is displayed on the LCD to display the check sum information. Press the **OK** button again to go back to the version information display. Press the **Go**, **▲** or **▼** button to check the next item.
- *2 (P) indicates that the firmware supports PCL/PS.
(G) indicates that the firmware is GDI compatible.
- *3 There are two types of check sum information which can be checked with this function. This function checks if these two types of check sum information are matched each other.
When you press the **OK** button while "ROM Check Sum" is displayed, check is automatically conducted for each ROM of each software part. When the check sum is matched, "OK" is displayed on the LCD. When all ROMs result in OK, "ROM Check Sum OK" is displayed at the end, and the operation is finished. When the check sum of any ROM is not matched, "NG" is displayed, and the display stops.

1.4.10 Carriage operations (Function code 31)

<Function>

This function allows you to perform the cap operation (cap and uncap), move the carriage to the position upon shipment, perform the lock operation of the carriage, and adjust the platen height.

<Operating procedure>

■ Cap operations

- (1) Press the **3** and **1** buttons in this order in the initial state of the maintenance mode. "1.CAP PRSR CHK" is displayed on the LCD.
- (2) Press the **OK** button. "Leak Check Start" is displayed on the LCD.
- (3) Press the **OK** button. The cap operation starts.
- (4) When the cap operation is finished, the machine returns to the initial state of the maintenance mode.

■ Uncap operations

- (1) Press the **3** and **1** buttons in this order in the initial state of the maintenance mode. "1.CAP PRSR CHK" is displayed on the LCD.
- (2) Press the **▲** button or **▼** button until "2. UNCAP PRSR CHK" is displayed on the LCD, and then press the **OK** button. "Leak Check Start" is displayed on the LCD.
- (3) Press the **OK** button. The uncap operation starts.
- (4) When the uncap operation is finished, the machine returns to the initial state of the maintenance mode.

■ Moving the carriage to the position upon shipment

- (1) Press the **3** and **1** buttons in this order in the initial state of the maintenance mode. "1.CAP PRSR CHK" is displayed on the LCD.
- (2) Press the **▲** button or **▼** button until "3.CARIG POS MOV" is displayed on the LCD, and then press the **OK** button. Moving the carriage to the position upon shipment.
- (3) When the carriage is back to the position upon shipment, the machine returns to the initial state of the maintenance mode.

■ Carriage lock operations

- (1) Press the **3** and **1** buttons in this order in the initial state of the maintenance mode. "1.CAP PRSR CHK" is displayed on the LCD.
- (2) Press the **▲** button or **▼** button until "4.CARIG LOCK" is displayed on the LCD, and then press the **OK** button. The carriage lock operation starts.
- (3) When the carriage lock operation is finished, the machine returns to the initial state of the maintenance mode.

■ Carriage unlock operations

- (1) Press the **3** and **1** buttons in this order in the initial state of the maintenance mode. "1.CAP PRSR CHK" is displayed on the LCD.
- (2) Press the **▲** button or **▼** button until "5.CARIG UNLOCK" is displayed on the LCD, and then press the **OK** button. The carriage unlock operation starts.
- (3) When the carriage unlock operation is finished, the machine returns to the initial state of the maintenance mode.

■ Adjustment of the height of the glass face at platen cap position

- (1) Press the **3** and **1** buttons in this order in the initial state of the maintenance mode. "1.CAP PRSR CHK" is displayed on the LCD.
- (2) Press the **▲** or **▼** button to display "6.PLATEN ADJ" on the LCD and press the **OK** button. "PLATEN ADJ:00" is displayed on the LCD.
- (3) Enter a 2-digit adjustment value from the ten-key keypad and press the **OK** button. (The range of the adjustment values is 00 to 30.)
- (4) Save the adjustment value and returns to the initial state of the maintenance mode.

■ Water pump operation check

- (1) Press the **3** and **1** buttons in this order in the initial state of the maintenance mode. "1.CAP PRSR CHK" is displayed on the LCD.
- (2) Press the **▲** or **▼** button to display "7.HUMID MTR CHK" on the LCD and press the **OK** button. "MOTOR LOCK OK" is displayed on the LCD, and the Water pump operation starts.
- (3) After checking the operation, press the **Cancel** button. The machine returns to the initial state of the maintenance mode.

■ Adjustment of the height of the glass face at platen wipe position

- (1) Press the **3** and **1** buttons in this order in the initial state of the maintenance mode. "1.CAP PRSR CHK" is displayed on the LCD.
- (2) Press the **▲** or **▼** button to display "8.PLATEN WP-ADJ" on the LCD and press the **OK** button. "PLATEN WP-ADJ:16" is displayed on the LCD.
- (3) Enter a 2-digit adjustment value from the ten-key keypad and press the **OK** button. (The range of the adjustment values is 00 to 22.)
- (4) Save the adjustment value and returns to the initial state of the maintenance mode.

■ Adjustment of rib-platen height

- (1) Press the **3** and **1** buttons in this order in the initial state of the maintenance mode. "1.CAP PRSR CHK" is displayed on the LCD.
- (2) Press the **▲** or **▼** button to display "9.RIBPLATEN ADJ" on the LCD and press the **OK** button. "RIBPLATEN ADJ:14" is displayed on the LCD.
- (3) Enter a 2-digit adjustment value from the ten-key keypad and press the **OK** button. (The range of the adjustment values is 00 to 28.)
- (4) Save the adjustment value and returns to the initial state of the maintenance mode.

1.4.11 Operational check of sensors (Function code 32)

<Function>

This function allows you to check each of the sensors.

<Operating procedure>

- (1) Press the **3** and **2** buttons in this order in the initial state of the maintenance mode.
The operating conditions of the sensors are displayed as defined in the table below.
- (2) When the machine enters the check mode, the speaker repeatedly makes a sound with the tones of 1,100 Hz and 400 Hz in turn. When you press the **OK** button, the tones from the speaker stop.
- (3) The LCD indication moves to the next term by pressing the **Go** button.

Given below is the relationship between the LCD indication, sensor name and sensor state.

LCD	Sensors	Sensing status (OK/NG)
YM	MP paper empty sensor	Paper not detected/detected
TC	Top cover sensor	Close/Open
SC	Chute cover sensor	Close/Open
RC	Back cover sensor	Close/Open
CC	Cartridge cover sensor	Close/Open
DS	2-sided size sensor	Letter/ A4
ST	Stack sensor	Less than full/Full
BR	Registration sensor	Paper not detected/detected
00	Tray1 paper size sensor	Paper size display/Other than specified size
01	Tray1 ID switch	ID setting value/ -
YT	Tray1 paper empty sensor	Paper not detected/detected
PT	Tray1 plate sensor	Paper pick-up position/Other than paper pick-up position
AP	Paper feed jam sensor	Paper not detected/detected
LW	Water full sensor	Less than full/Full
LK	Ink full sensor	Less than full/Full
LG	Pre-coat ink full sensor	Less than full/Full
PC	Platen cap sensor	Cap position/Other than cap position
PP	Platen print position sensor	Other than print position/Print position
PD	Platen drive switching sensor	Between home position and cap position/ Between printing position and home position
000	Waste ink box leak sensor	Voltage measurement value (Unit: 0.01 V)/ -
000	Sub tank leak sensor	Voltage measurement value (Unit: 0.01 V)/ -
000	Main PCB leak sensor	Voltage measurement value (Unit: 0.01 V)/ -
000	Waste ink box full sensor	Voltage measurement value (Unit: 0.01 V)/ -

LCD	Sensors	Sensing status (OK/NG)
VS	VSYNC sensor	Paper not detected/detected
SB	Switchback sensor	Paper not detected/detected
DJ	2-sided jam sensor	Paper not detected/detected
DE	2-sided paper feed sensor	Paper not detected/detected
EP	Paper eject sensor	Paper not detected/detected
PS	Print starting sensor	Paper not detected/detected
00 ^{*1}	Tray2 paper size sensor	Paper size display/Other than specified size
01 ^{*1}	Tray2 ID switch	ID setting value/ -
Y1 ^{*1}	Tray2 paper empty sensor	Paper not detected/detected
P1 ^{*1}	Tray2 plate sensor	Paper pick-up position/ Other than paper pick-up position
A1 ^{*1}	Tray2 jam sensor	Paper not detected/detected
00 ^{*1}	Tray3 paper size sensor	Paper size display/Other than specified size
01 ^{*1}	Tray3 ID switch	ID setting value/ -
Y2 ^{*1}	Tray3 paper empty sensor	Paper not detected/detected
P2 ^{*1}	Tray3 plate sensor	Paper pick-up position/ Other than paper pick-up position
A2 ^{*1}	Tray3 jam sensor	Paper not detected/detected
00 ^{*1}	Tray4 paper size sensor	Paper size display/Other than specified size
01 ^{*1}	Tray4 ID switch	ID setting value/ -
Y3 ^{*1}	Tray4 paper empty sensor	Paper not detected/detected
P3 ^{*1}	Tray4 plate sensor	Paper pick-up position/ Other than paper pick-up position
A3 ^{*1}	Tray4 jam sensor	Paper not detected/detected
EP ^{*1}	Optional output tray eject sensor	Paper not detected/detected
RC ^{*1}	Optional output tray back cover sensor	Close/Open
ST ^{*1}	Optional output tray stack sensor	Less than full/Full
SL ^{*1}	Optional output tray solenoid sensor	Standard output tray side/ Optional output tray side
WK	Ink head wiper sensor	Wiper home position/ Other than wiper home position
WG	Pre-coat head wiper sensor	Wiper home position/ Other than wiper home position
N1	Needle switch 1	Needle removal position/Needle insertion position
N2	Needle switch 2	Needle removal position/Needle insertion position
WB	Waste ink box sensor	Waste ink box detected/not detected
CL	Cover lock sensor	Unlock/Lock
CO	Carriage home position sensor	Carriage home position/Carriage home position

LCD	Sensors	Sensing status (OK/NG)
DO	Drive switching home position sensor	*2
DP	Drive switching position sensor	*2
HV	Air Valve home position sensor	*2
CP	Cap position sensor	*2
UP	Uncap position sensor	*2
SV	Sub tank valve sensor	*2
TMP	External temperature sensor	Temperature indication
HUM	External humidity sensor	Humidity indication
000	Ink head thermistor 1	Temperature indication
000	Ink head thermistor 2	Temperature indication
000	Pre-coat head VTEMP	Temperature indication
000	Pre-coat head thermistor 1	Temperature indication
000	Pre-coat head thermistor 2	Temperature indication
000	Pre-coat head VTEMP	Temperature indication

*1 Displayed only when each option is installed.

*2 You cannot make the sensor detect your intended status by changing the condition of the machine. The status detected in the ready state is defined as OK.

- (4) Change the detecting conditions to check that the indication on the LCD changes according to the sensor status. For instance, insert paper through the registration sensor, open the top cover or the back cover, jam paper at the paper outlet, insert paper from the MP tray, load paper tray, etc.
- (5) Press the **Cancel** button to return to the machine to the initial state of the maintenance mode.

1.4.12 LAN connection status display (Function code 33)

<Function>

This function allows you to check the status of the wired LAN connection.

<Operating procedure>

- (1) Press the **3** button twice in the initial state of the maintenance mode. The wired LAN connection status described in the table below is displayed on the LCD.
- (2) Press the **▲** or **▼** button to display the following items.
- (3) To return the machine to the initial stage of the maintenance mode, press the **Cancel** button.

LCD	LAN connection status
Active 100B-FD	100B-FD
Active 100B-HD	100B-HD
Active 10B-FD	10B-FD
Active 10B-HD	10B-HD
Inactive	Not connected.

1.4.13 EEPROM Dump Print (Function code 40)

<Function>

This function allows you to print the EEPROM logs described below.

<Operating procedure>

- (1) Press the **4** and **0** buttons in this order in the initial state of the maintenance mode. "E2PDUMP ENGN ALL" is displayed on the LCD.
- (2) Press the **▲** or **▼** button to select the information you wish to print.
- (3) Press the **OK** button. "E2DUMP PRINTING" is displayed on the LCD. The machine starts to print the EEPROM log.
- (4) Upon completion of EEPROM logs printing, the machine returns to the initial state of the maintenance mode.
- (5) If you press the **Cancel** button during printing, printing is interrupted and the machine returns to the initial state of the maintenance mode.

LCD	Description
E2PDUMP ENGN ALL	Print of all the values stored in the E2PROM of the engine control unit. (print of 4 pages)
E2PDUMP MAIN TOP	Print of the values stored in the E2PROM corresponding to the top 1 Kbytes of the main controller. (print of 1 page)
E2PDUMP MAIN BTM	Print of the values stored in the E2PROM corresponding to the last 1 Kbytes of the main controller. (print of 1 page)
E2PDUMP MAIN ALL	Print of all the values stored in the E2PROM of the main controller. (print of 4 pages)

■ ENGN ALL

E2PROM DUMP PRINT : ENGN ALL 4 / 4

```
OC00 : 08 3E 08 00 03 03 00 00 00 00 00 00 00 00 00 00
OC10 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
OC20 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
OC30 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
OC40 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
OC50 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
OC60 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
OC70 : 00 00 00
OC80 : 00 00 00
OC90 : 00 00 00
OCA0 : 00 00 00
OCB0 : 00 00 00
OCC0 : 00 00 00
OCD0 : 00 00 00
OCE0 : 00 00 00
OCF0 : 00 00 00
OD00 : 00 00 00
OD10 : 00 00 00
OD20 : 00 00 00
OD30 : 03 00 00
OD40 : 00 00 00
OD50 : 00 00 00
OD60 : 00 00 00
OD70 : 00 00 00
OD80 : 00 00 00
OD90 : 00 00 00
ODA0 : 00 00 00
ODB0 : 00 00 00
ODC0 : 00 00 00
ODD0 : 00 00 00
ODE0 : 00 00 00
ODF0 : 00 00 00
OE00 : 00 00 00
OE10 : 00 00 00
OE20 : 00 00 00
OE30 : 00 00 00
OE40 : 00 00 00
OE50 : 00 00 00
OE60 : 00 00 00
OE70 : 00 00 00
OE80 : 00 00 00
OE90 : 00 00 00
OEA0 : 00 00 00
OEB0 : 00 00 00
OEC0 : 00 00 00
OED0 : 00 00 00
OEE0 : 00 00 00
OEF0 : 00 00 00
OF00 : 00 00 00
OF10 : 00 00 00
OF20 : 00 00 00
OF30 : 00 00 00
OF40 : 00 00 00
OF50 : 00 00 00
OF60 : 00 00 00
OF70 : 00 00 00
OF80 : 00 00 00
OF90 : 00 00 00
OFA0 : 00 00 00
OFB0 : 00 00 00
OFC0 : 00 00 00
OFD0 : 00 00 00
OFE0 : 00 00 00
OFF0 : 00 00 00
```

E2PROM DUMP PRINT : ENGN ALL 3 / 4

```
0800 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0820 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0830 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0840 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0850 : 00 00
0860 : 00 00
0870 : 00 00
0880 : 00 00
0890 : 00 00
08A0 : 00 00
08B0 : 00 00
08C0 : 00 00
08D0 : 00 00
08E0 : 00 00
08F0 : 00 00
0900 : 00 00
0910 : 00 00
0920 : 00 00
0930 : 00 00
0940 : 00 00
0950 : 00 00
0960 : 00 00
0970 : 2F 00
0980 : 00 00
0990 : 00 00
09A0 : 00 00
09B0 : 00 00
09C0 : 00 00
09D0 : 00 00
09E0 : 00 00
09F0 : 00 00
0A00 : 00 00
0A10 : 00 00
0A20 : 00 00
0A30 : 00 00
0A40 : 00 00
0A50 : 00 00
0A60 : 00 00
0A70 : 00 00
0A80 : 00 00
0A90 : 00 00
0AA0 : 00 00
0AB0 : 00 00
0AC0 : 00 00
0AD0 : 01 01
0AE0 : 00 00
0AF0 : 00 00
0B00 : 00 00
0B10 : 00 00
0B20 : 00 00
0B30 : 00 00
0B40 : 00 00
0B50 : 00 00
0B60 : 00 00
0B70 : 30 30
0B80 : 00 00
0B90 : 30 30
0BA0 : 01 00
0BB0 : 00 00
0BC0 : 00 00
0BD0 : 00 00
0BE0 : 00 01
0BF0 : 66 92
```

E2PROM DUMP PRINT : ENGN ALL 2 / 4

```
0400 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0410 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0420 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0430 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0440 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0450 : 00 00
0460 : 00 00
0470 : 00 00
0480 : 00 00
0490 : 00 00
04A0 : 00 00
04B0 : 00 00
04C0 : 00 00
04D0 : 01 01
04E0 : 00 00
04F0 : 00 00
0500 : 00 00
0510 : 00 00
0520 : 00 00
0530 : 00 00
0540 : 00 00
0550 : 00 00
0560 : 00 00
0570 : 00 00
0580 : 00 00
0590 : 00 00
05A0 : 00 00
05B0 : 00 00
05C0 : 00 00
05D0 : 00 00
05E0 : 00 00
05F0 : 00 00
0600 : 00 00
0610 : 00 00
0620 : 00 00
0630 : 00 00
0640 : 00 00
0650 : 00 00
0660 : 00 00
0670 : 00 00
0680 : 00 00
0690 : 00 00
06A0 : 00 00
06B0 : 00 00
06C0 : 00 00
06D0 : 57 00
06E0 : 00 00
06F0 : 00 00
0700 : 00 00
0710 : 39 01
0720 : 00 00
0730 : 00 00
0740 : 00 EA
0750 : EA C8
0760 : F7 11
0770 : 00 00
0780 : 00 00
0790 : 00 00
07A0 : 00 00
07B0 : 00 00
07C0 : 00 00
07D0 : 00 00
07E0 : 00 00
07F0 : 00 00
```

E2PROM DUMP PRINT : ENGN ALL 1 / 4

S/N : U63183M1F000058
Print Date : 02/17/2004 20:40
MAC Address[Wired] : 00-1B-A9-93-4A-7D
MAC Address[Wireless] : 00-22-58-92-24-39
Dump Size : 4096

```
0000 : 5A FF 00 01 00 00 00 00 00 00 00 00 00 00 00 00
0010 : 00 00 00 00 00 00 00 00 00 00 00 00 00 05 00 0E
0020 : 4D FB 45 78 01 00 45 FB 47 78 01 00 00 00 00 00
0030 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0040 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0050 : 00 00 00 00 00 00 00 00 00 00 00 00 00 38 FB 3F 78
0060 : 01 00 41 FB 3C 78 01 00 41 FB 3C 78 01 00 38 FB
0070 : 3C 78 01 00 2F FB 3E 78 01 00 41 FB 3B 78 01 00
0080 : 38 FB 3D 78 01 00 38 FB 3C 78 01 00 00 00 00 00
0090 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00A0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00B0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00C0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00D0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00E0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00F0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0100 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0110 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0120 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0130 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0140 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0150 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0160 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0170 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0180 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0190 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01A0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01B0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01C0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01D0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01E0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01F0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0200 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0210 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0220 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0230 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0240 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0250 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0260 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0270 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0280 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0290 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
02A0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
02B0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
02C0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
02D0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
02E0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
02F0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0300 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0310 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0320 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0330 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0340 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0350 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0360 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0370 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0380 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0390 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03A0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03B0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03C0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03D0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03E0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03F0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

Fig. 5-6

■ MAIN TOP

E2PROM DUMP PRINT : MAIN TOP

1 / 1

S/N : U63183M1F000058
Print Date : 02/17/2004 20:41
MAC Address[Wired] : 00-1B-A9-93-4A-7D
MAC Address[Wireless] : 00-22-58-92-24-39
Dump Size : 1024

0000	:	0D 55 36 33 31 38 33 4D 31 46 30 30 30 30 35 38
0010	:	50 00 00 00 00 00 00 01 00 1B A9 93 4A 7D 1F 00
0020	:	1B A9 93 4A 7D 1F 51 60 00 00 00 02 00 00 65 00
0030	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0040	:	00 00 00 00 01 0D 00 00 00 00 00 00 00 00 00 00
0050	:	00 00 00 00 00 08 0A 00 54 22 07 00 00 49 00 12
0060	:	00 00 08 00 00 00 04 A4 10 18 03 02 00 22 01 1F
0070	:	1F 08 21 01 22 25 C1 C0 1F 00 10 09 01 05 05 00
0080	:	10 40 00 00 0F 00 00 20 00 00 00 00 00 00 00 00
0090	:	0F 00 E0 7C 7C 02 FA B0 16 06 2C 4C 67 00 14 58
00A0	:	9B 1A 66 04 42 23 8A E0 9F 28 20 0E 42 1A 14 21
00B0	:	00 69 80 A5 50 82 10 40 00 85 14 F0 00 07 74 09
00C0	:	02 02 10 00 00 00 00 00 80 00 48 01 00 00 00 00
00D0	:	00 00 00 04 00 20 28 28 14 14 28 28 14 0A 00 00
00E0	:	00 00 00 00 00 30 00 00 00 00 00 00 00 00 00 00
00F0	:	00 00 00 00 00 00 00 06 04 88 80 04 28 A2 0A
0100	:	08 0F 1E 00 C4 80 00 00 A0 00 08 15 39 00 0C 01
0110	:	E0 BC FE 03 00 D8 00 01 00 00 00 70 CC 00 00 00
0120	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0130	:	00 8D 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0140	:	0B 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0150	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0160	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0170	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0180	:	00 00 01 00 01 00 00 00 00 00 00 00 00 00 00 00
0190	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01A0	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01B0	:	00 00 00 00 00 34 00 00 00 00 00 00 00 00 00 00
01C0	:	00 0A 00 00 20 00 00 52 00 00 00 00 00 00 00 00
01D0	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01E0	:	00 00 00 00 00 00 00 00 5C 00 00 00 00 00 00 00
01F0	:	00 00 00 00 00 00 00 00 00 00 00 00 00 25 00 00
0200	:	37 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0210	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0220	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0230	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0240	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01
0250	:	00 00 00 00 00 01 00 03 00 03 00 01 00 00 00 00
0260	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0270	:	00 00 00 00 00 00 00 00 00 00 00 00 00 AA AA 00 34
0280	:	04 B2 04 9A 00 98 02 98 01 98 02 2F 02 20 01 73
0290	:	02 91 02 24 03 FA 02 0E 98 01 98 02 2F 02 20 01
02A0	:	73 02 91 02 24 03 91 02 24 03 98 02 0A 40 40 40
02B0	:	40 40 40 40 40 40 40 07 01 0D 2E 01 0C E4 00 EA
02C0	:	9D 00 EA 9D 00 C8 7D 00 C8 78 00 C8 78 00 C8 21
02D0	:	00 C7 FD 00 C7 FA 00 00 58 00 00 58 00 00 58 00
02E0	:	00 58 00 00 52 00 00 3E 00 00 3E 00 00 23 00 00
02F0	:	1C 00 00 1C 01 0D 2E 01 0C E4 00 EA 9D 00 EA 9D
0300	:	00 C8 7D 00 C8 78 00 C8 78 00 C8 2E 00 C8 21 00
0310	:	C8 21 00 00 58 00 00 58 00 00 58 00 00 58 00 00
0320	:	52 00 00 3E 00 00 3E 00 00 2D 00 00 23 00 00 23
0330	:	00 00 58 00 00 58 00 00 58 00 00 58 00 00 58 00
0340	:	00 58 00 00 58 00 00 58 00 00 58 00 00 58 1A 17
0350	:	15 15 18 18 18 16 15 15 25 2A 23 24 2A 27 28 29
0360	:	29 29 12 34 56 78 04 2D 53 AB 9C 00 01 06 00 09
0370	:	81 10 01 00 74 B2 02 04 00 00 00 00 00 00 00 00
0380	:	00 00 00 00 00 00 00 00 00 00 00 AA AA 00 00 00 00
0390	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03A0	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03B0	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03C0	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03D0	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03E0	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03F0	:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

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Fig. 5-7

■ MAIN BTM

E2PROM DUMP PRINT : MAIN BTM

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```
S/N : U63183M1F000058
Print Date : 02/17/2004 20:42
MAC Address[Wired] : 00-1B-A9-93-4A-7D
MAC Address[Wireless] : 00-22-58-92-24-39
Dump Size : 1024
0C00 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0C10 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0C20 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0C30 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0C40 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0C50 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0C60 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0C70 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0C80 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0C90 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0CA0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0CB0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0CC0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0CD0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0CE0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0CF0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0D00 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0D10 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0D20 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0D30 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0D40 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0D50 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0D60 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0D70 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0D80 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0D90 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0DA0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0DB0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0DC0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0DD0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0DE0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0DF0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E00 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E10 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E20 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E30 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E40 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E50 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E60 : 65 61 61 66 19 01 01 01 05 00 28 2A 75 2A D3 06
0E70 : 01 00 96 00 00 00 14 14 0B C4 0B C4 00 00 C8 00
0E80 : 02 66 1B 00 00 E0 00 00 6A 00 00 00 00 00 00 00
0E90 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0EA0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 61 02 4D 00
0EB0 : 00 00 00 00 61 00 C3 A9 83 01 BF 00 03 82 01 BF
0EC0 : 00 00 55 00 C0 00 00 55 00 C1 00 00 55 00 C2 00
0ED0 : 00 87 01 C2 00 03 87 01 C2 00 05 87 01 C2 00 04
0EE0 : 55 00 C3 00 00 55 00 BF 00 00 00 15 00 33 00 6D
0EF0 : 00 9B 00 00 00 00 00 00 4B 47 4B 4D 00 00 00 61
0F00 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0F10 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0F20 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0F30 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0F40 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0F50 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0F60 : 4D 41 52 4B 4F 4B 00 00 00 03 08 00 00 00 00 00
0F70 : 00 03 00 00 00 04 00 00 00 04 00 00 00 03 00 00
0F80 : 00 00 00 00 00 07 00 00 00 07 00 00 00 04 00 00
0F90 : 00 07 00 00 00 07 00 00 00 07 00 00 00 04 00 00
0FA0 : 00 00 00 00 00 04 00 00 00 04 00 00 00 03 00 00
0FB0 : 00 00 00 00 00 07 00 00 00 00 00 00 00 00 00 00
0FC0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0FD0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 04 00 00
0FE0 : 00 00 00 00 00 04 00 00 00 07 00 00 00 00 00 00
0FF0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 C3
```

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Fig. 5-8

1.4.14 USB storage memory formatting function (Function code 41)

<Function>

This function allows you to format the USB storage memory. You can delete the data by writing 0 in all the selectors without leaving information as much as possible.

<Operating procedure>

- (1) Press the **4** and **1** buttons in this order in the initial state of the maintenance mode. "STORAGE FORMAT" is displayed on the LCD.
- (2) Press the **OK** button. "FORMATTING..." is displayed on the LCD, and formatting of the USB storage memory starts.
- (3) When formatting is finished, "FORMAT END" is displayed on the LCD.
- (4) Press the **Cancel** button. The machine returns to the initial state of the maintenance mode.
- (5) Turn the power OFF and ON. After the power is turned OFF and ON, the functions related to the storage become available.

Note:

- Be sure not to turn OFF the power and take out and insert the USB storage memory connected to the main PCB during formatting.
- Formatting takes approx. 5 min although there is some difference depending on the USB storage memory.
- If a storage I/O error has occurred, when formatting is completed correctly, the error will be cleared.

1.4.15 Changing return value of USB No./ Adjusting of left-end print start position on second side in 2-sided printing (Function code 45)

■ Changing return value of USB No.

<Function>

When the OS of the computer is Windows Vista[®], and the computer is connected to a device through USB 2.0 full speed, the OS might fail to get the serial No. of the USB device depending on the computer and USB device. When the OS fails to get the serial No., the return value may continue to increase every time the device is connected to the computer. To avoid this problem, you can fix the return value of the USB No. to "0" by setting "USBNo. = ON". (This is the same function as "2.5 Changing Return Value of USB No." in this chapter.)

LCD	Description
USBNo. =ON	Returns the serial No. of the device. (default)
USBNo. =OFF	Returns "0".

*** is displayed at the end of the currently specified function in the LCD display.

<Operating procedure>

- (1) Press the **4** and **5** buttons in this order in the initial state of the maintenance mode. "USBNo." is displayed on the LCD.
- (2) Press the **OK** button. "USBNo.=ON" is displayed on the LCD.
- (3) When you press the **▲** or **▼** button to fix the return value of serial number to "0" or not to fix it to "0", display "USBNo. = ON" or "USBNo. = OFF", respectively.
- (4) Press the **OK** button. "Accepted" is displayed on the LCD, and the product returns to the initial state of the maintenance mode.
- (5) Turn the power switch of the machine OFF.

Note:

This function is enabled when the power of the machine is turned OFF and ON.

■ Adjusting left-end print start position on second side in 2-sided printing

<Function>

This function is to adjust the left-end print start position on the second side in the left and right direction if it is displaced in 2-sided printing.

The adjustable range is -100 to 750 (unit: 300 dpi) (The minus direction means the left direction.)

<Operating procedure>

- (1) Press the **4** and **5** buttons in this order in the initial state of the maintenance mode. "USBNo." is displayed on the LCD.
- (2) Press the **▲** or **▼** button to display "DX.XAdjust" on the LCD.
- (3) Press the **OK** button. "DX.XAdjust=***" is displayed on the LCD. (** represents the currently set value.)
- (4) To move the print start position to the left, press the **▼** button and decrease the value. To move the print start position to the right, press the **▲** button and increase the value.
- (5) Press the **OK** button. "Accepted" is displayed on the LCD, and the product returns to the initial state of the maintenance mode.

1.4.16 Ink replacement purge inside head (Function code 49)

<Function>

This is a purge operation performed when printing failure is not improved with the cleaning mode of the function due to the machine left for a long period with the AC cord being unplugged. Ink inside a head is replaced with this purge operation.

<Operating procedure>

- (1) Press the **4** and **9** buttons in this order in the initial state of the maintenance mode. "CLEANING ALL" is displayed on the LCD.
- (2) Press the ◀ or ▶ button to select the head to be cleaned.
Available modes to select are as follows.
CLEANING ALL: Clean both the ink head and pre-coat head.
CLEANING FK: Clean the ink head.
CLEANING FG: Clean the Pre-coat head
- (3) Press the **Go** button. "Cleaning" is displayed on the LCD and ink inside the head is replaced. When cleaning is finished, the machine automatically returns to the initial state of the maintenance mode.

1.4.17 Continuous print test (Function code 67)

<Function>

This function allows you to conduct the pick-up and delivery test as printing patterns.

<Operating procedure>

- (1) Press the **6** and **7** buttons in this order in the initial state of the maintenance mode. "SELECT: K 1%" is displayed on the LCD.
- (2) Referring to the table below (print pattern), press the ▲ or ▼ button to select the desired print pattern.
- (3) Press the **OK** button. "SELECT: A4" is displayed on the LCD.
- (4) Referring to the table below (paper size), press the ▲ or ▼ button to select the desired paper size.
- (5) Press the **OK** button. "SELECT: TRAY1" is displayed on the LCD.
- (6) Referring to the table on the [next page \(print type\)](#), press the ▲ or ▼ button to select the desired print type.
- (7) Press the **OK** button. "SELECT: OUTBIN1" is displayed on the LCD.
- (8) Referring to the table on the [next page \(Eject tray\)](#), press the ▲ or ▼ button to select the desired Eject stopper tray.
- (9) Press the **OK** button. "PAPER FEED TEST" is displayed on the LCD and the test pattern starts to be printed under the selected items for paper feed test.
- (10) If you press the **Cancel** button, printing of test pattern is interrupted and the machine returns to the initial state of the maintenance mode.

<Print pattern>

LCD	Description
SELECT: K 1%	1% intermittent pattern print (printing of 500 pages)
SELECT: K 5%	5% intermittent pattern print (printing of 500 pages)
SELECT: Lattice	Lattice print (Continuous print)

<Paper size>

LCD	Description
SELECT: A4	A4-size
SELECT: LETTER	Letter-size
SELECT: LEGAL	Legal-size
SELECT: A5	A5-size
SELECT: B5	B5-size
SELECT: A6	A6-size

* In the case of K1% and K5%, A4 and LETTER sizes only can be selected.

<Print type>

LCD	Description
SELECT: TRAY1	One-sided printing from the tray 1
SELECT: TRAY2	One-sided printing from the tray 2
SELECT: TRAY3	One-sided printing from the tray 3
SELECT: TRAY4	One-sided printing from the tray 4
SELECT: MP	One-sided printing from the MP tray
SELECT: TRAY1 DX	Two-sided printing from tray 1
SELECT: TRAY2 DX	Two-sided printing from tray 2
SELECT: TRAY3 DX	Two-sided printing from tray 3
SELECT: TRAY4 DX	Two-sided printing from tray 4
SELECT: MP DX	Two-sided printing from MP tray

Note:

Only lattice print is supported in two-sided printing. Other patterns are printed only on one-side of paper even if two-sided printing is specified.

<Eject tray>

LCD	Description
SELECT: OUTBIN1	Ejected to the standard output tray
SELECT: OUTBIN2	Ejected to the optional output tray

■ Print pattern

SELECT: K 1%

SELECT: K 5%

SELECT: Lattice

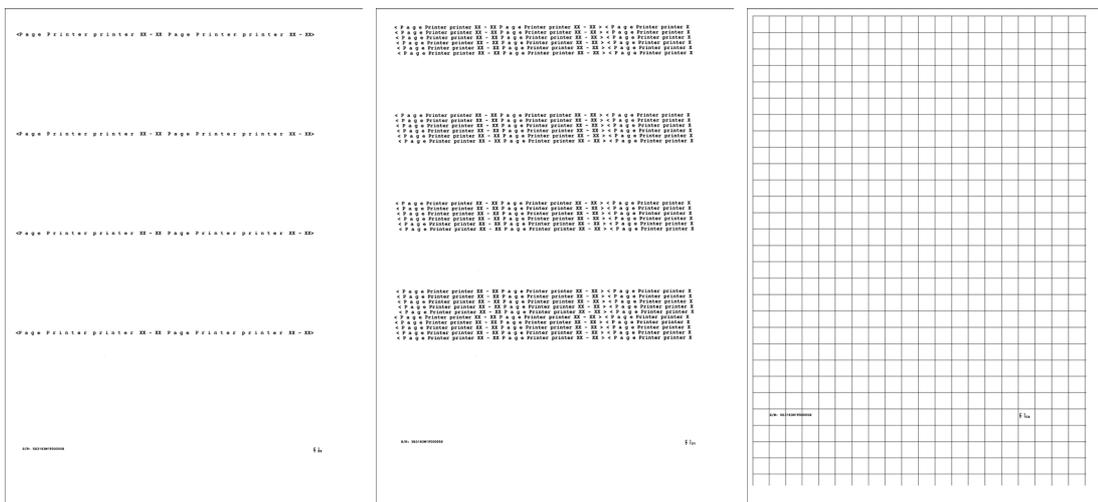


Fig. 5-10

1.4.18 Print adjustment (Function code 68)

<Function>

This function allows you to print the test patterns that are checked for missing dots, head inclination, and the print start position. Adjusting the inclination of a head or the relative position of the ink head/pre-coat head is unavailable under this function.

<Operating procedure>

Printing of the missing dot/head inclination patterns and head cleaning

- (1) Press the **6** and **8** buttons in this order in the initial state of the maintenance mode. "1.PIN CHK HD ADJ" is displayed on the LCD.
- (2) Press the **OK** button. "1.1 PRINT PTN FK" is displayed on the LCD.
- (3) Press the **OK** button.
If the ink cartridge is installed, the missing dot/head inclination patterns are printed.
If no ink cartridge is installed, the machine displays "Insert Cartridge" on the LCD. Install it and press the **OK** button. The missing dot and head inclination patterns are printed.
- (4) When the pattern printing is finished, the machine displays "1.1 PRINT PTN FK" on the LCD. Check the pattern for missing dots. If there is no problem, press the **Cancel** button. The machine returns to the initial state of the maintenance mode.
If there is a missing dot(s), go to step (5).
- (5) Press the **▲** or **▼** button to display "1.3 ADJUST FK" on the LCD and press the **OK** button. "PINCHK 1.OK 2.NG" is displayed on the LCD.
- (6) Press the **2** button. The machine starts cleaning the head while displaying "Cleaning" on the LCD.
- (7) When the head cleaning is finished, the machine displays "Print Retry" on the LCD. Press the **OK** button to display "1.1 PRINT PTN FK" on the LCD. Repeat the same procedure from step (3).
If the problem of missing dots remains after performing the head cleaning three time, during the fourth cleaning, the machine displays "Purge Count Over" on the LCD when you press the **2** button in step (6). Then the machine accepts no input from any button. In this case, turn the power OFF and take a different action to solve the problem.

Printing of the test pattern for the print start position and adjustments

- (1) Press the **6** and **8** buttons in this order in the initial state of the maintenance mode. "1.PIN CHK HD ADJ" is displayed on the LCD.
- (2) Press the **▲** or **▼** button to display "2. PRINT POS ADJ" on the LCD and press the **OK** button. "2.1 PRINT PTN" is displayed on the LCD.
- (3) Press the **OK** button.
If the ink cartridge is installed, the test pattern for the print start position is printed.
If no ink cartridge is installed, the machine displays "Insert Cartridge" on the LCD. Install it and press the **OK** button. The test pattern for the print start position is printed.
- (4) When print is completed, "2.1 PRINT PTN" is displayed on the LCD. To return the machine to the initial stage of the maintenance mode, press the **Cancel** button.

- (5) Measure the adjustment values for the print start position.

For the left margin adjustment, measure and record the distance between the left end of the pattern "A" and the left end of the paper. For the top margin adjustment, measure and record the distance between the top end of the pattern "A" and the top end of the paper.

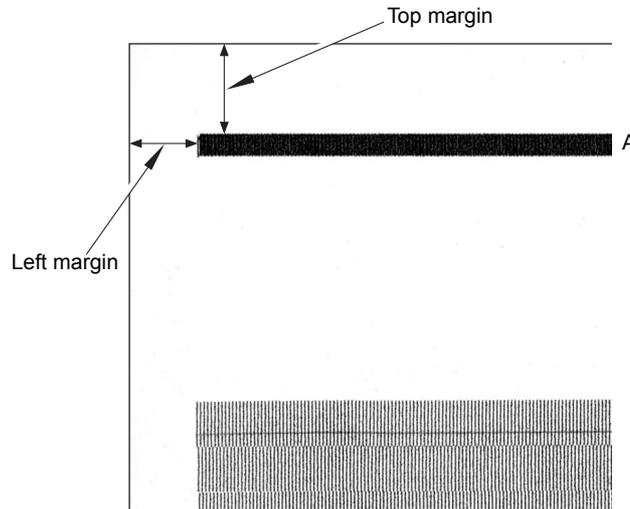


Fig. 5-11

- (6) Press the ▲ or ▼ button to display "2.2 ADJUST" on the LCD and press the **OK** button. "GRADCHK 1.OK 2.NG" is displayed on the LCD.
- (7) Press the **1** button. Display "LR Adjust=10.0" on the LCD to activate the "Input margin adjustment" screen.
- (8) Enter the left margin adjustment value first.

Pressing the ▼ button decreases the value displayed on the LCD, and pressing the ▲ button increases the value. For example, if the measured value is 11.0, press the ▲ button 10 times to display "LRAdjust=11.0" on the LCD and press the **OK** button. The left margin adjustment value is input and the machine displays "Edge Adjust=10.0" on the LCD.

- (9) Enter the top margin adjustment value.

Pressing the ▼ button decreases the value displayed on the LCD, and pressing the ▲ button increases the value. For example, if the measured value is 9.5, press the ▲ button 5 times to display "EdgeAdjust=9.5" on the LCD and press the **OK** button. The top margin adjustment value is input and the machine returns to the initial state of the maintenance mode.

1.4.19 Frame pattern print (One-sided) (Function code 69)

<Function>

This function allows you to print one page of the frame pattern of the external circumference in one-sided printing and check if there is any deviation or omission of print.

<Operating procedure>

Before starting the following procedure, set a letter-size paper on which test pattern is printed.

- (1) Press the **6** and **9** buttons in this order in the initial state of the maintenance mode. "PRINTING" is displayed on the LCD, and one page of the frame pattern (refer to the figure below) in one-sided printing.
- (2) When print is completed, "WAKU SX" is displayed on the LCD.

If printing fails, the following error indications are displayed and printing is cancelled. To print again, refer to the measures in the table below and remove the cause of the error. Then, press the **Go** button.

"WAKU SX" is displayed on the LCD, and press the **OK** button.

"PRINTING" is displayed on the LCD, and one page of the frame pattern is printed on one-side of paper.

- (3) To print the frame pattern again, press the **OK** button.
- (4) To return the machine to the initial stage of the maintenance mode, press the **Cancel** button.

LCD	Measure
Cover is Open	Close the front cover.
No Paper	Load paper and close the paper tray.
Jam Tray1	Remove jammed paper and close the paper tray.
Jam Rear	Remove jammed paper and close all covers.

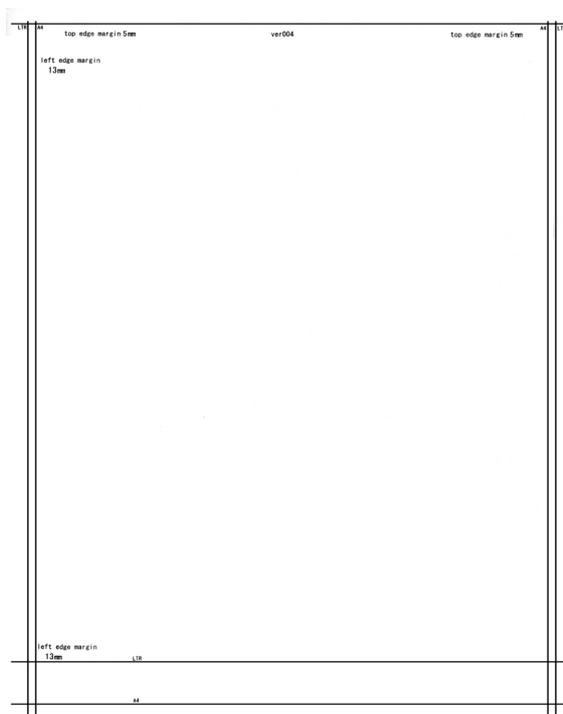


Fig. 5-12

1.4.20 Frame pattern print (Two-sided) (Function code 70)

<Function>

This function allows you to print one page of the frame pattern of the external circumference in two-sided printing and check if there is any deviation or omission of print.

<Operating procedure>

Before starting the following procedure, set a letter-size paper on which test pattern is printed.

- (1) Press the **7** and **0** buttons in this order in the initial state of the maintenance mode. "PRINTING" is displayed on the LCD, and one page of the frame pattern (refer to the figure below) in two-sided printing.
- (2) When print is completed, "WAKU DX" is displayed on the LCD.

If printing fails, the following error indications are displayed and printing is cancelled. To print again, refer to the measures in the table below and remove the cause of the error. Then, press the **Go** button.

"WAKU DX" is displayed on the LCD, and press the **OK** button.

"PRINTING" is displayed on the LCD, and one page of the frame pattern is printed on two side of paper.

- (3) To print the frame pattern again, press the **OK** button.
- (4) To return the machine to the initial stage of the maintenance mode, press the **Cancel** button.

LCD	Measure
Cover is Open	Close the front cover.
No Paper	Load paper and close the paper tray.
Jam Tray1	Remove jammed paper and close the paper tray.
Jam Rear	Remove jammed paper and close all covers.

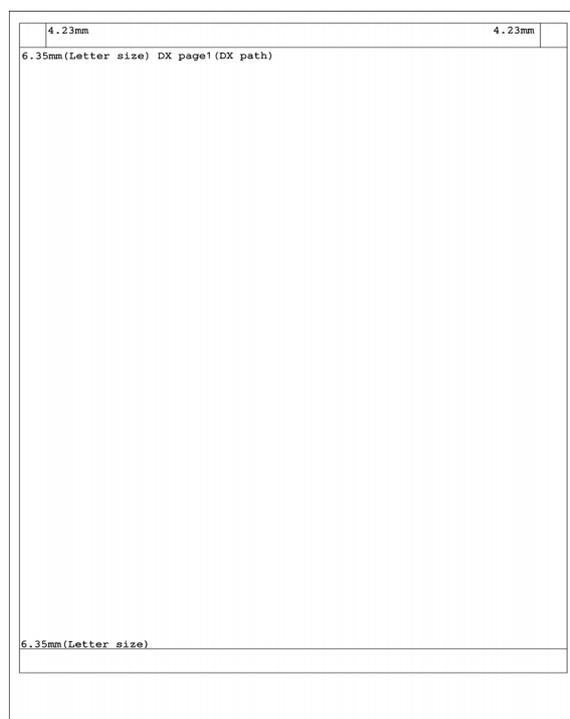


Fig. 5-13

1.4.21 Setting by country (Function code 74)

<Function>

This function allows you to customize the machine according to language, function settings, and worker switch settings.

<Operating procedure>

- (1) Press the **7** and **4** buttons in this order in the initial state of the maintenance mode. The present country code is displayed.
- (2) Enter the 4-digit country code you wish to set using the ten-key pad.
- (3) Press the **Go** button. The new setting is saved, and "PARAMETER INIT" is displayed on the LCD. After the setting is saved, the machine returns to the initial state of the maintenance mode.
- (4) If you press the **Cancel** button while setting the code, the machine returns to the initial state of the maintenance mode without saving the country code.

Note:

If there is a pause of more than one minute, the machine will automatically return to the initial state of the maintenance mode.

■ Setting by country code list

Country	HL-S7000DN
USA	0001
Brazil	0042
UK	0004
Australia	0006
New Zealand	0006
Japan	0047

1.4.22 Printout of maintenance information (Function code 77)

<Function>

This function allows you to print a list of all maintenance information including machine coverage information.

<Operating procedure>

- (1) Press the 7 button twice in the initial state of the maintenance mode. Maintenance information starts to be printed.
- (2) Upon completion of printing, the machine returns to the initial state of the maintenance mode.

```

MAINTENANCE Print Date:09/24/12
① HL-S7000DN series ② Serial No.=U63183J1F000030 ③ Model=8CY-101 ④ Country=0001 ⑤ SW CheckSum=78
⑥ EnginePCB SW CheckSum=FC
⑦ Main ROM:Ver.1.13 U1209181935 Sub ROM:Ver.1.08 1209182000 Boot ROM:B1111161122 RIPBoot ROM:1111161309
⑧ Engine Sub/Main/Boot ROM: 1.15/0.99/1.00 EPGA Libra/Gemini/Leo ROM: 2.05/1.05/2.08
⑨ LT1 Main/Boot ROM: 1.03/1.00 LT2 Main/Boot ROM: 1.03/1.00 LT3 Main/Boot ROM: 1.03/1.00
⑩ Opt.Output Main/Boot ROM: --/--/--
⑪ ROM ChkSum: B172 ⑫ RTC Check: OK ⑬ 51 00 00 65 01
⑭ USB Prod.ID: 0050 ⑮ RTC BackUp: OK ⑯ OK
⑰ RAM Size = 512Mbyte ⑱ Before BackUp: 00:00 ⑲ 00 00 00 00 00 00 00 00
⑳ After BackUp: 04:42 ㉑ 00 10 00 00 00 00 00 00 ㉒ 00 00 00 00 00

Remaining life of :
*Ink Cartridge ㉓ PF Kit MP: 100000 (100%) PF Kit 2: 200000 (100%)
㉔ Black(K): 36% ㉕ PF Kit 1: 198923 (100%) PF Kit 3: 200000 (100%)
㉖ Precoat: 7% ㉗ PF Kit 4: 199991 (100%)
㉘ Waste Tank: 93%

<Device Status>
㉙ Total Page Count: 1084
㉚ **Average Coverage(Total): 2.86%
㉛ **Average Coverage(Current)*: 2.19%

<Total Pages Printed>
㉜ Current Ink: 2779
㉝ Previously Used Ink: 0
㉞ DryWait: 0
㉟ MP Tray: 0 Tray 2: 0
㊱ Tray 1: 1077 Tray 3: 0
㊲ Duplex: 0 Tray 4: 9
㊳ Std.Output: 1084 Opt.Output: 0
㊴ A4/Letter: 1084 Envelope: 0
㊵ Legal/Folio: 0 A5: 0
㊶ B5/Executive: 0 Others: 0
㊷ Plain/Thin/Recycled: 1084
㊸ Thick/Bond: 0
㊹ Envelopes: 0 Hagaki: 0

<Dot Count>
Total (Printed/Purge/Flush/Waste Tank)
㊺ K:0000000538BD848 P:00000002BEE842D
㊻ K:0000006D54FA90 P:0000006D54FA90
㊼ K:000000BA6DF028 P:0000003A069584
㊽ K:000001EEC039E2 P:00000108C007E0
Current
㊾ K:00000B1E8120A5 P:0000099AE7147D

<Purge Count:A.FK/M.FK/A.FG/M.FG>
㊿ Total:00002/00000/00002/00000
eIP: 00000/00000/00000/00000
uIP: 00000/00000/00000/00000
RP : 00000/00000/00000/00000
NP : 00000/00000/00000/00000
RP2: 00000/00000/00000/00000
PP: 00000/00000/00000/00000
PP2: 00000/00000/00000/00000
NIP: 00000/00000/00000/00000
JP: 00000/00000/00000/00000
JPH: 00002/00000/00002/00000
StepUp: 000/000/000/000/000/000
DustP: 00000
㊿ <Uncap Flushing Count : 314>
㊿ <Flush Count : 1724>
㊿ tFL:2 Pd:0
㊿ <Refill Count> K:16 P:8
㊿ <Power On Time> Main/FK/FG
61(h)/652(s)/622(s)
㊿ <Power On Count: 12>
㊿ <Temperature/Humidity>
㊿ Temperature: 31 degrees(C) Humidity: 39%

```

Fig. 5-14

*1 The types of purge operations are shown below.

1.4.23 Operational check of fans (Function code 78)

<Function>

This function allows you to check the main fan for normal operation and to select rotating speed 100% or OFF.

<Operating procedure>

- (1) Press the **7** and **8** buttons in this order in the initial state of the maintenance mode. "Power Fan OFF" is displayed on the LCD.
- (2) Press the **Go** button. "Power Fan ON" is displayed on the LCD and the power fan operates. If you press the **Go** button again, "Power Fan OFF" is displayed on the LCD and the power fan stops operating. Each time you press the **Go** button, the power fan is switched between ON and OFF.
- (3) Press the **▲** button. "MistB Fan OFF" is displayed on the LCD and is switched to the Mist A check operation. Like the power fan, each time you press the **Go** button, the MistB fan is switched between ON and OFF.
- (4) Press the **▲** button. "MistA Fan OFF" is displayed on the LCD and is switched to the Mist B check operation. Like the power fan, each time you press the **Go** button, the MistA fan is switched between ON and OFF.
- (5) Press the **▲** button. "Power Fan OFF" is displayed on the LCD and return to step (2).
- (6) To return the machine to the initial stage of the maintenance mode, press the **Cancel** button.

If any one of the fans is faulty, "Error ***" is displayed on the LCD when the machine returns to the ready state.

** represents the code that corresponds to the fan for which error is detected.

Power fan: **

Mist A: 2206

Mist B: 2207

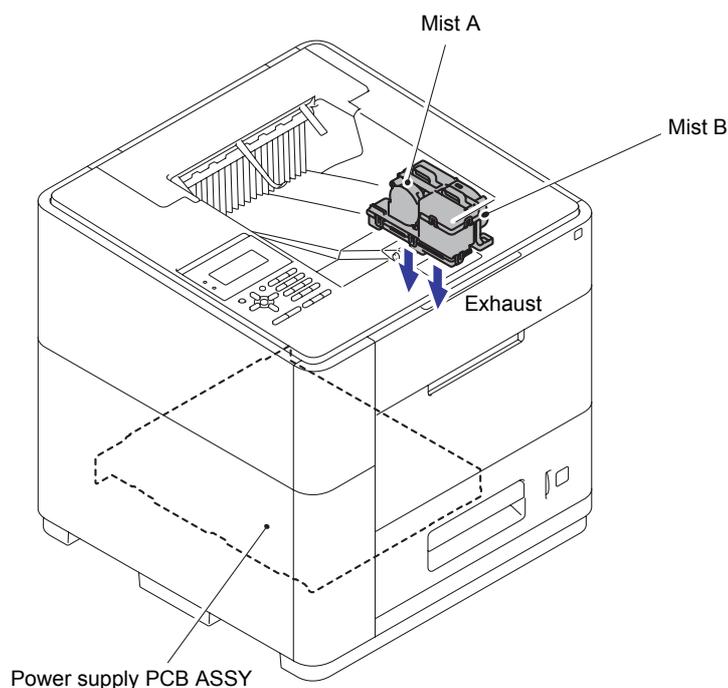


Fig. 5-15

1.4.24 Display of device log information (Function code 80)

<Function>

This function allows you to display log information on the LCD.

<Operating procedure>

- (1) Press the **8** and **0** buttons in this order in the initial state of the maintenance mode. "USB:*****" is displayed on the LCD.
(* represents the serial number of the machine.)
- (2) Each time you press the **Go** or **▲**, **▼** button, a different item is displayed.
- (3) To return the machine to the initial stage of the maintenance mode, press the **Cancel** button.

LCD	Description
USB:000G8J000166* ¹	Serial number
MAC:001BA9	MAC Address
PCB:911309123456	Main PCB serial number
KINK_RM:87%	Estimated remaining amount of ink
PINK_RM:67%	Estimated remaining amount of pre-coat ink
TTL_PG:00000000	Total of printed pages
KCVRGACC:4.32%	Average coverage rate with the ink cartridges that have been used
KCVRGUSI:4.32%	Average coverage rate with the ink cartridge in use
CRT_PG1:00000000	Number of purge operations performed for the ink cartridge in use
CRT_PG2:00000000	Number of purge operations performed for the previously used ink cartridge
DRYW_PG:00000000	Drying stop page count
MP_PG:00000000	Number of sheets printed from the MP tray
TR1_PG:00000000	Number of sheets printed from the tray 1
TR2_PG:00000000	Number of sheets printed from the tray 2
TR3_PG:00000000	Number of sheets printed from the tray 3
TR4_PG:00000000	Number of sheets printed from the tray 4
DX_PG:00000000	Number of sheets where two-sided are printed
SOTR_PG:00000000	Number of sheets ejected to the standard eject stopper tray
OOTR_PG:00000000	Number of sheets ejected to the optional output tray
A4+LTR:00000000	Total of pages printed on A4 and letter size paper
LG+FOL:00000000	Total of pages printed on legal and folio size paper
B5+EXE:00000000	Total of pages printed on B5 and EXE size paper
ENVLOP:00000000	Number of pages printed on envelopes
A5:00000000	Number of pages printed on A5 paper
OTHER:00000000	Total of pages printed on paper other than the above
PLTNRE:00000000	Total of pages printed on plain, thin, and recycled paper

LCD	Description
TKBD:00000000	Total of pages printed on thick and bond paper
ENVTYP:00000000	Total of pages printed on envelopes, envelopes (thick), and envelopes (thin)
HAGAKI:00000000	Number of pages printed on post card
KDOTPRINT_ACC:	Cumulative ink dot count for printing only
KDOTPURGE_ACC:	Cumulative ink dot count for purge operations only
KDOTFLUSH_ACC:	Cumulative ink dot count for flashing only
PDOTPRINT_ACC:	Cumulative ink dot count for print only
PDOTPURG_ACC:	Cumulative ink dot count for purge only
PDOTFLUSH_ACC:	Cumulative ink dot count for flashing only
WASTEDOTCNTK:	Amount of accumulated waste ink in the waste ink box
WASTEDOTCNTP:	Amount of accumulated waste pre-coat ink in the waste ink box
KDOT_USI:	Dot count with the ink cartridge in use
PDOT_USI:	Dot count with the Pre-coat cartridge in use
PURG_FK:	Cumulative pre-coat head purge count
PURG_FG:	Cumulative ink head purge count
eIP_FK: 0000000	Ink head ink initial purge count
eIP_FG: 0000000	Pre-coat head ink initial purge count
uIP_FK: 0000000	Ink head user ink initial purge count
uIP_FG: 0000000	Pre-coat head user ink initial purge count
RP_FK: 0000000	Ink head periodical purge count
RP_FG: 0000000	Pre-coat head periodical purge count
NP_FK: 0000000	Ink head normal purge count
NP_FG: 0000000	Pre-coat head normal purge count
RP2_FK: 0000000	Ink head reset purge count
RP2_FG: 0000000	Pre-coat head reset purge count
PP_FK: 0000000	Ink head powerful purge count
PP_FG: 0000000	Pre-coat head powerful purge count
PP2_FK: 0000000	Ink head powerful purge 2 count
PP2_FG: 0000000	Pre-coat head powerful purge 2 count
NIP_FK: 0000000	Ink head ink removal purge count
NIP_FG: 0000000	Pre-coat head ink removal purge count
JP_FK: 0000000	Ink head jam purge count
JP_FG: 0000000	Pre-coat head jam purge count
JPH_FK: 0000000	Humidification purge count after ink head jam
JPH_FG: 0000000	Humidification purge count after pre-coat head jam

LCD	Description
DUSTP:000000	Paper dust removal purge count
WIP_K:0000000000	Ink head wipe count
WIP_P:0000000000	Pre-coat head wipe count
FLUSH:0000000000	Cumulative flashing count
t_FLS:0000000000	Periodical flashing count
Fd:00000000	Powerful flashing count
REFIL_K:00000	Ink refill count
REFIL_P:00000	Pre-coat refill count
POWER:00000000	Total hours of current conduction of machine
PWRFK:0000000000	Total hours of current conduction of ink head
PWRFG:0000000000	Total hours of current conduction of pre-coat head
PWRCNT:00000000	Number of times that the power is turned ON
MACERR_**:0000 ^{*2}	Machine error history (Past 10 error history)
CRT_CH:000 ^{*3}	Number of times that the ink cartridge has been replaced
PFMP_PG:00000000	Number of pages where the MP paper feeding kit has been used
PFMP_CH:000 ^{*3}	Number of times that the MP paper feeding kit has been replaced
PFK1_PG:00000000	Number of pages where the paper feeding kit 1 has been used
PFK1_CH:000 ^{*3}	Number of times that the paper feeding kit 1 has been replaced
PFK2_PG:00000000	Number of pages where the paper feeding kit 2 has been used
PFK2_CH:000 ^{*3}	Number of times that the paper feeding kit 2 has been replaced
PFK3_PG:00000000	Number of pages where the paper feeding kit 3 has been used
PFK3_CH:000 ^{*3}	Number of times that the paper feeding kit 3 has been replaced
PFK4_PG:00000000	Number of pages where the paper feeding kit 4 has been used
PFK4_CH:000 ^{*3}	Number of times that the paper feeding kit 4 has been replaced
FK_CH:000	Number of times that the ink head has been replaced
FG_CH:000	Number of times that the pre-coat head has been replaced
WINK_CH:000	Number of times that the waste ink box has been replaced
SUBT_CH:000	Number of times that the sub tank ASSY has been replaced
CARR_CH:000	Number of times that the carriage unit has been replaced
PLA_CH:000	Number of times that the platen unit has been replaced
REFB_CH:000	Number of times that the ink refill unit has been replaced
HM_CH:000	Number of times that the humidify unit has been replaced
FILT_CH:000	Number of times that the filter case has been replaced
DRIV_CH:000	Number of times that the drive switching unit has been replaced
TTL_JAM:0000000	Total of jammed sheets

LCD	Description
MP_JAM:00000	Number of sheets jammed in the MP tray
IN_1_JAM:00000	Number of sheets jammed inside the machine
IN_2_JAM:00000	Number of sheets jammed inside the machine
IN_3_JAM:00000	Number of sheets jammed inside the machine
IN_4_JAM:00000	Number of sheets jammed inside the machine
IN_5_JAM:00000	Number of sheets jammed inside the machine
RE_2_JAM:00000	Number of sheets jammed in the paper eject section
RE_3_JAM:00000	Number of sheets jammed in the paper eject section
RE_4_JAM:00000	Number of sheets jammed in the paper eject section
RE_5_JAM:00000	Number of sheets jammed in the paper eject section
RE_6_JAM:00000	Number of sheets jammed in the paper eject section
DX_1_JAM:00000	Number of sheets jammed during two-sided printing
DX_2_JAM:00000	Number of sheets jammed during two-sided printing
DX_3_JAM:00000	Number of sheets jammed during two-sided printing
DX_4_JAM:00000	Number of sheets jammed during two-sided printing
DX_5_JAM:00000	Number of sheets jammed during two-sided printing
TR1_1_JAM:00000	Number of sheets jammed in the tray 1 (before paper pick-up)
TR1_2_JAM:00000	Number of sheets jammed in the tray 1 (after paper pick-up)
TR2_1_JAM:00000	Number of sheets jammed in the tray 2 (before paper pick-up)
TR2_2_JAM:00000	Number of sheets jammed in the tray 2 (after paper pick-up)
TR3_1_JAM:00000	Number of sheets jammed in the tray 3 (before paper pick-up)
TR3_2_JAM:00000	Number of sheets jammed in the tray 3 (after paper pick-up)
TR4_1_JAM:00000	Number of sheets jammed in the tray 4 (before paper pick-up)
TR4_2_JAM:00000	Number of sheets jammed in the tray 4 (after paper pick-up)
OOTR_1_JAM:00000	Number of sheets jammed in the optional output tray
OOTR_2_JAM:00000	Number of sheets jammed in the optional output tray
ENGERR**:000000 ^{*4}	Engine error history (Past 10 error history)
DEVSTATUS_**:00 ^{*5}	Design status history (Past 10 status history)

*1 You can change the serial number with the procedure given below.

- 1) Press the **9**, **4**, **7**, and **5** buttons in this order while the serial number is displayed. The cursor appears at the first digit of the serial number on the LCD, and editing mode is enabled.
- 2) Enter the number of the first digit of the serial number using the ten-key pad. The cursor moves to the second digit. Similarly, repeat the entering of the serial numbers of the 2nd to the last 15th digit.

<How to enter alphabets>

Keep pressing a corresponding key in the ten-key pad based on the table given below until the alphabet you want to enter is displayed.

Ten-key pad	Corresponding alphabet
2	2→A→B→C
3	3→D→E→F
4	4→G→H→I
5	5→J→K→L
6	6→M→N→O
7	7→P→Q→R→S
8	8→T→U→V
9	9→W→X→Y→Z

- 3) When you press the **OK** button, the serial number is written and the machine returns to the initial state of the maintenance mode.

*2 If you press the **OK** button while a machine error is displayed, the indication on the LCD changes into "PGCNT:*****". "*****" represents the total of sheets that had been printed under which the error occurred.

If you press the **OK** button again, the indication on the LCD changes to "TMP:000 HUM:000". The temperature and humidity under which the error occurred are displayed.

*3 If you press the **OK** button while the LCD displays the number of times that each part has been replaced, the indication changes to "DATE_XX:*****". "XX" represents the shortened characters for each part and "*****" represents the date on which the last replacement was made.

If you press the **OK** button again, the indication changes to "TLPG_XX: *****". "XX" represents the shortened characters for each part and "*****" represents the purge count under which the last replacement was made.

*4 If you press the **OK** button while the engine error is displayed, the indication on the LCD changes into "TM:***** BT:***". "TM" represents the period of time (minute) that has passed after the last occurrence of error. "BT" represents the number of time that the power has been turned ON.

*5 If you press the **OK** button while the history is displayed, the indication on the LCD changes into "PGCNT:*****". "*****" represents the total number of sheets that had been printed under which the error occurred.

1.4.25 Display of device error codes (Function code 82)

<Function>

This function displays an error code of the machine on the LCD.

<Operating procedure>

- (1) Press the **8** and **2** buttons in this order in the initial state of the maintenance mode. The LCD displays "MACHINE ERR XXXX" that is the latest device error code.
- (2) To return the machine to the initial stage of the maintenance mode, press the **Cancel** button.

1.4.26 Exit from the maintenance mode (Function code 99)

<Function>

This function allows you to exit from the maintenance mode.

<Operating procedure>

- (1) Press the **9** button twice in the initial state of the maintenance mode. The maintenance mode exits from the maintenance mode and return to the ready state.

2. OTHER SERVICE FUNCTION

2.1 Setting of ON/OFF of the Deep Sleep Mode

This function allows you to turn ON/OFF the Deep Sleep function to not to permit the machine to enter Deep Sleep.

<Operating procedure>

- (1) While the machine is in the ready state, press the ▲ or ▼ button to display "General Setup" on the LCD and press the **OK** button.
- (2) Press the ▲ or ▼ button to display "Ecology" on the LCD, and then press the **OK** button.
- (3) Press the ▲ or ▼ button to display "Sleep Time" on the LCD, and then press the **OK** button.
- (4) Press the **Cancel** and ▼ buttons at the same time while "*Min" is displayed on the LCD. "Deep Sleep" is displayed on the LCD.
- (5) Press the **OK** button. "On */Off" is displayed on the LCD.
(The option including "*" is the current setting.)
- (6) Press the ▲ or ▼ button to select ON or OFF by moving "*". Then, press the **Go** button.
- (7) "Accepted" is displayed on the LCD, and the machine returns to the ready state.

2.2 Setting of ON/OFF of the Sleep Mode

This function allows you to turn ON/OFF the Sleep function to not to permit the machine to enter Sleep.

<Operating procedure>

Switching the sleep mode from ON to OFF

- (1) While the machine is in the ready state, press the ▲ or ▼ button to display "General Setup" on the LCD and press the **OK** button.
- (2) Press the ▲ or ▼ button to display "Ecology" on the LCD, and then press the **OK** button.
- (3) Press the ▲ or ▼ button to display "Sleep Time" on the LCD, and then press the **OK** button.
- (4) Display "*Min" on the LCD by pressing the ▼ button. Press the **Cancel** and **Storage** buttons at the same time. "On */Off" is displayed on the LCD.
(The option including "*" is the current setting.)
- (5) Press the ▲ or ▼ button to select ON or OFF by moving "*". Then, press the **Go** button.
- (6) "Accepted" is displayed on the LCD, and the machine returns to the ready state.

Switching the sleep mode from OFF to ON

- (1) While the machine is in the ready state, press the ▲ or ▼ button to display "General Setup" on the LCD and press the **OK** button.
- (2) Press the ▲ or ▼ button to display "Ecology" on the LCD, and then press the **OK** button.
- (3) Press the ▲ or ▼ button to display "Sleep Time" on the LCD, and then press the **OK** button.
- (4) Press the ▲ or ▼ button to display "ON" on the LCD, and then press the **Go** button. "Accepted" is displayed on the LCD, and the machine returns to the ready state.

2.3 Reset for the Periodical Replacement Part

This function is used to reset the relevant part counter when the user replaced a periodical replacement part with the correct procedure, and also used to forcibly reset the relevant part counter when an error cannot be resolved because the user did not replace a consumable part with the correct procedure.

<Operating procedure>

- (1) While the machine is in the ready state, press the **Go** and ▲ buttons at the same time. "Reset Menu" is displayed on the LCD.
- (2) Press the ▲ or ▼ button to select the periodical replacement part to be reset, and press the **OK** button. "1.Reset 2.Exit" is displayed on the LCD.
- (3) Press the **1** button. "Accepted" is displayed on the LCD, and the machine returns to the ready state.

The periodical replacement parts that can be reset are as follows.

- | | |
|------------------------------------|---|
| - PF Kit MP | - Air Filter Case (Air filter) |
| - PF Kit 1 | - Sub tank (Sub tank ASSY) |
| - PF Kit 2 | - CR frame Unit (Carriage frame) |
| - PF Kit 3 | - Platen (Platen frame) |
| - PF Kit 4 | - Ink Supply Unit (Ink refill unit) |
| - Waste Tank (Waste ink box) | - Drive Frame (Drive switching unit) |
| - PRINT HEAD BLACK (Ink head) | - Optimizer Unit (Humidify unit) |
| - Print Head Pre-C (Pre-coat head) | - Leak Sensor (Waste ink box leak sensor) |

2.4 Deletion of User Setting Data

User setting data can be deleted at a time with the following procedure.

<Operating procedure>

- (1) While the machine is in the ready state, press the ▲ or ▼ button to display "Reset Menu" on the LCD and press the **OK** button.
- (2) Press the **Cancel** and ▲ buttons at the same time. "Setting Reset/Reset Printer/1.Reset 2.Exit" is displayed on the LCD.
- (3) When you press the **1** button, "Reboot OK?/1. Yes 2. No" is displayed on the LCD. When you press the **1** button again, "Please wait" is displayed on the LCD, the user setting data is deleted, and the machine returns to the ready state.

2.5 Changing Return Value of USB No./ Adjusting of Left-end Print Start Position on Second Side in 2-sided Printing

(This is the same function as the LCD model maintenance mode function "1.4.15 Not-disclosed-to-users functions (Function code 45)".)

■ Changing return value of USB No.

When the OS of the computer is Windows Vista[®], and the computer is connected to a device through USB 2.0 full speed, the OS might fail to get the serial No. of the USB device depending on the computer and USB device. When the OS fails to get the serial No., the return value may continue to increase every time the device is connected to the computer. To avoid this problem, you can fix the return value of the USB No. to "0" by setting "USBNo. = ON".

LCD	Description
USBNo.=ON	Returns the serial No. of the device. (default)
USBNo.=OFF	Returns "0".

"*" is displayed at the end of the currently specified function in the LCD display

<Operating procedure>

- (1) While the machine is in the ready state, press the **Go** and ▼ buttons at the same time. "USBNo." is displayed on the LCD.
- (2) Press the **OK** button. "USBNo.=ON" is displayed on the LCD.
- (3) When you press the ▲ or ▼ button to fix the return value of the serial number to "0" or not to fix it to "0", display "USBNo. = ON" or "USBNo. = OFF", respectively.
- (4) Press the **OK** button. "Accepted" is displayed on the LCD, and the machine returns to the ready state.
- (5) Turn the power OFF.

Note:

The new setting of this function becomes valid by turning OFF and ON the power of the machine after the setting.

■ Adjusting of left-end print start position on second side in 2-sided printing

<Function>

This function is to adjust the left-end print start position on the second side in the left and right direction if it is displaced in 2-sided printing.

The adjustable range is -100 to 750 (unit: 300 dpi) (The minus direction means the left direction.)

<Operating procedure>

- (1) While the machine is in the ready state, press the **Go** and ▼ buttons at the same time. "USBNo." is displayed on the LCD.
- (2) Press the ▲ or ▼ button to display "DX.XAdjust"
- (3) Press the **OK** button. "DX.XAdjust =**" is displayed on the LCD. (** represents the currently set value.)
- (4) To move the print start position to the left, press the ▼ button and decrease the value. To move the print start position to the right, press the ▲ button and increase the value.
- (5) Press the **OK** button. "Accepted" is displayed on the LCD, and the machine returns to the ready state.

2.6 Mode Where Engine Is Not Operating

<Function>

Mode where the machine is started without starting the engine. In this mode, printing is unavailable, but obtaining the error history and counter information is possible from the LCD by starting the machine with the main controller alone when the engine is experiencing trouble.

<Operating procedure>

- (1) While the power is OFF, press the **Go** and ◀ buttons at the same time to turn ON the power.
- (2) The machine is started without the engine being started.
- (3) Check the error history and counter information and turn the power OFF.

Note:

When the machine enters the mode where engine is not operating, 0 is displayed in all the counters retained by the engine PCB.

CHAPTER 7 PERIODICAL MAINTENANCE

1. PRECAUTIONS

To avoid creating secondary problems by mishandling, follow the warnings and precautions below during maintenance work.

Caution:

- Be careful not to lose screws, washers, or other parts removed.
- Be sure to apply grease to the gears and applicable positions specified in this chapter.
- When using soldering irons or other heat-generating tools, take care not to accidentally damage parts such as wires, PCBs and covers.
- Static electricity charged in your body may damage electronic parts. When transporting PCBs, be sure to wrap them in conductive sheets.
- When replacing the PCB and all the other related parts, put on a grounding wrist band and perform the job on a static mat. Also take care not to touch the conductor sections on the flat cables or on the wire harness.
- After disconnecting flat cables, check that each cable is not damaged at its end or shortcircuited.
- When connecting flat cables, do not insert them at an angle. After insertion, check that the cables are not at an angle.
- When connecting or disconnecting cable connectors, hold the connector body, not the cables. If the connector has a lock, release the connector lock first to release it.
- After a repair, check not only the repaired portion but also all connectors. Also check that other related portions are functioning properly before operational checks.
- After an assembly, recommend the operation of "dielectric strength voltage check" and "continuity check".

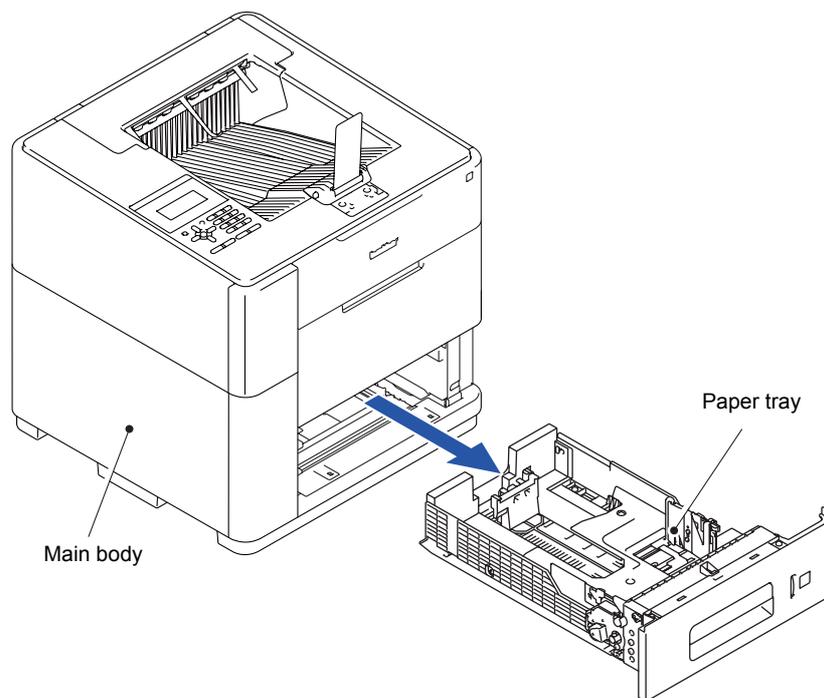
2. PERIODICAL REPLACEMENT PARTS

2.1 Procedures to Replace Periodical Replacement Parts

■ Preparation

Prior to proceeding with the disassembly procedure,

- (1) Unplug
 - the AC cord,
 - the USB cable, if connected, and
 - the LAN cable, if connected.
- (2) Remove
 - the Paper tray



2.1.1 Paper feeding kit 1

- (1) Open the Retard roller cover.

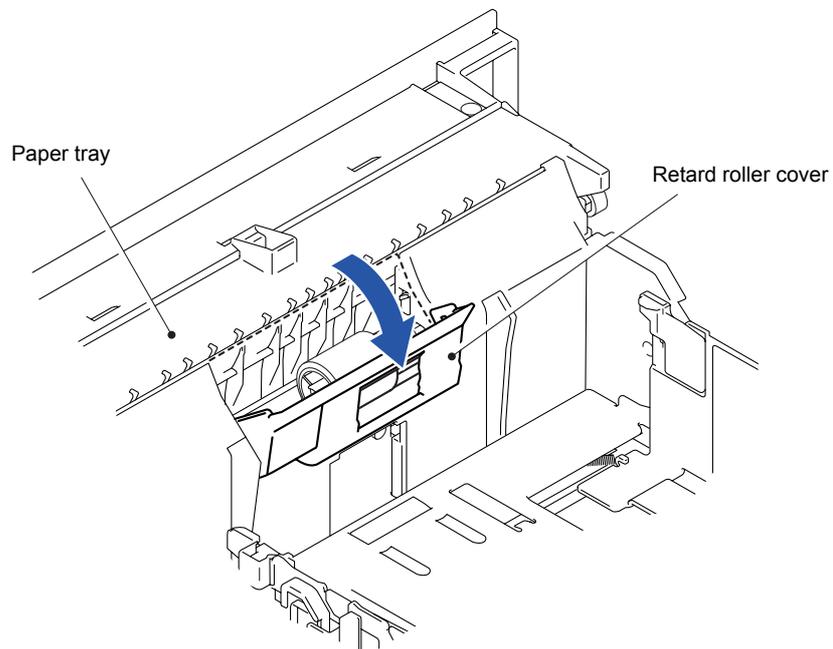


Fig. 7-1

- (2) Release the Hook of the Retard roller to remove the Retard roller from the Paper tray.

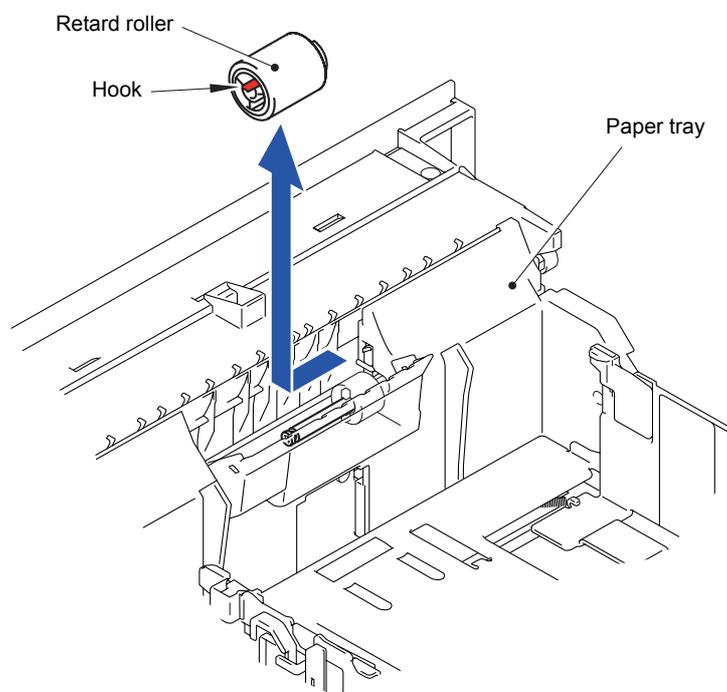


Fig. 7-2

- (3) Release the Hook to remove the Pick-up roller from the PF drive shaft.
- (4) Release the Hook to remove the Separation roller from the Paper feed shaft.

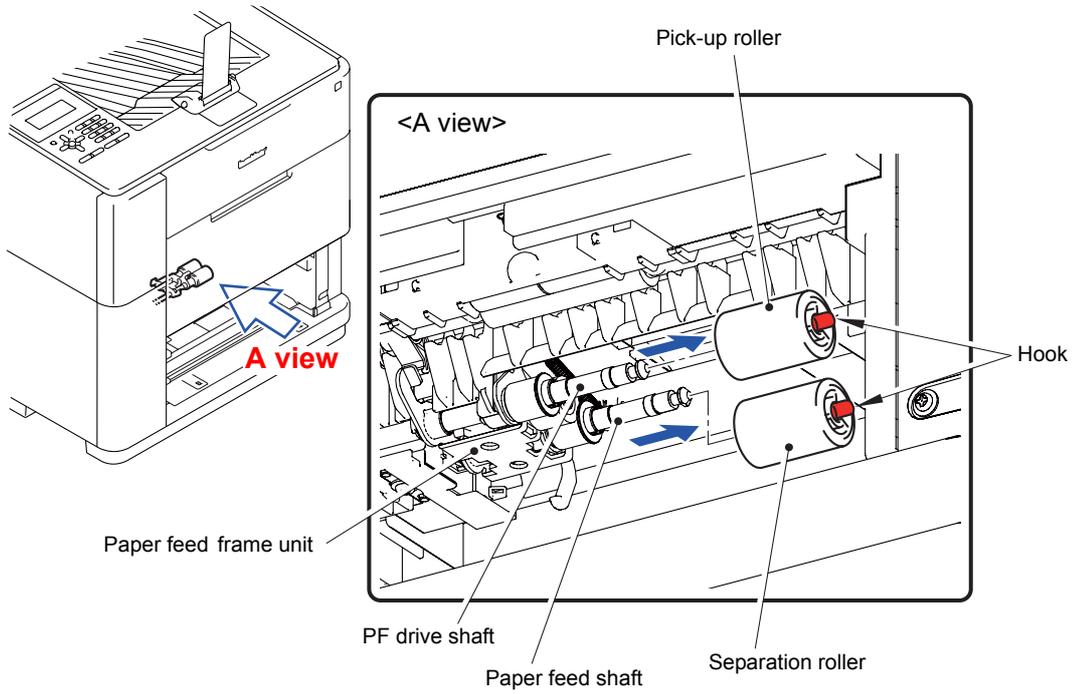


Fig. 7-3

2.1.2 MP paper feeding kit

- (1) Pull the Open lever and open the Top cover. Open the MP cover.

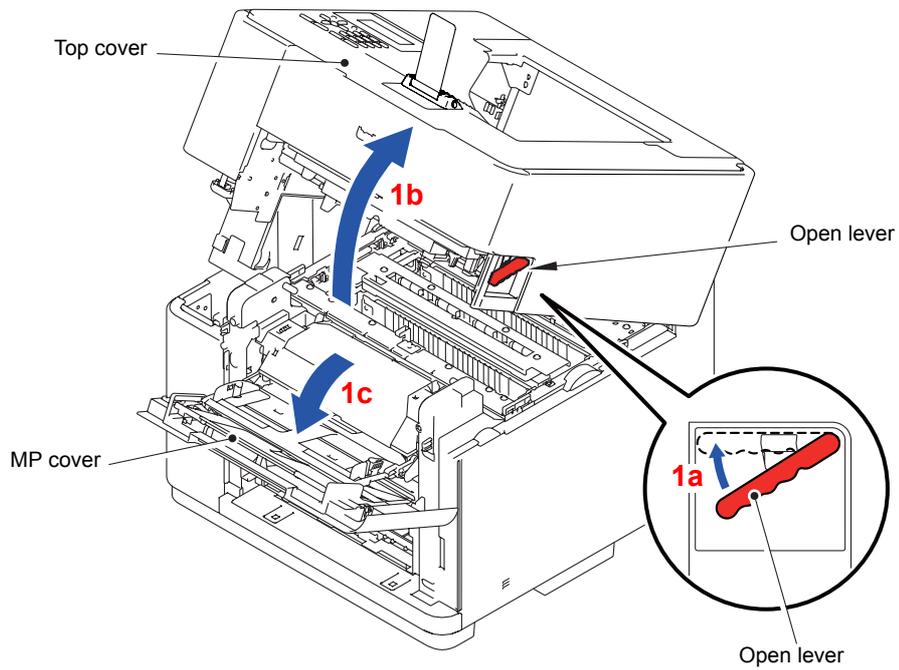


Fig. 7-4

- (2) Open the Regi outer chute.
- (3) Hold the "A" and rotate the Bearing R to the position shown in the figure.

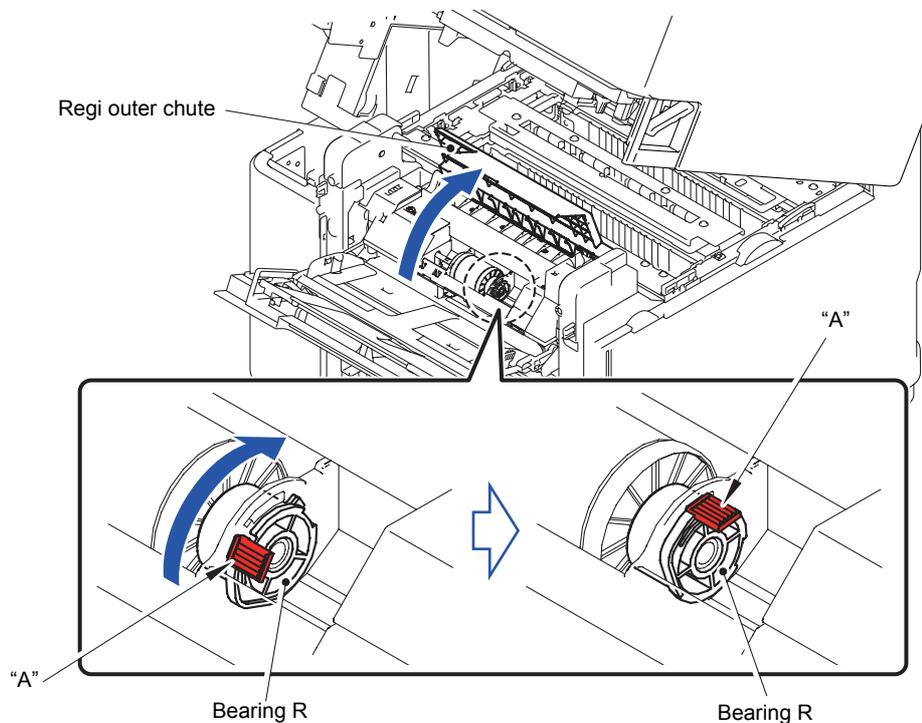


Fig. 7-5

- (4) Remove the Bearing R from the Paper pick-up roller ASSY.

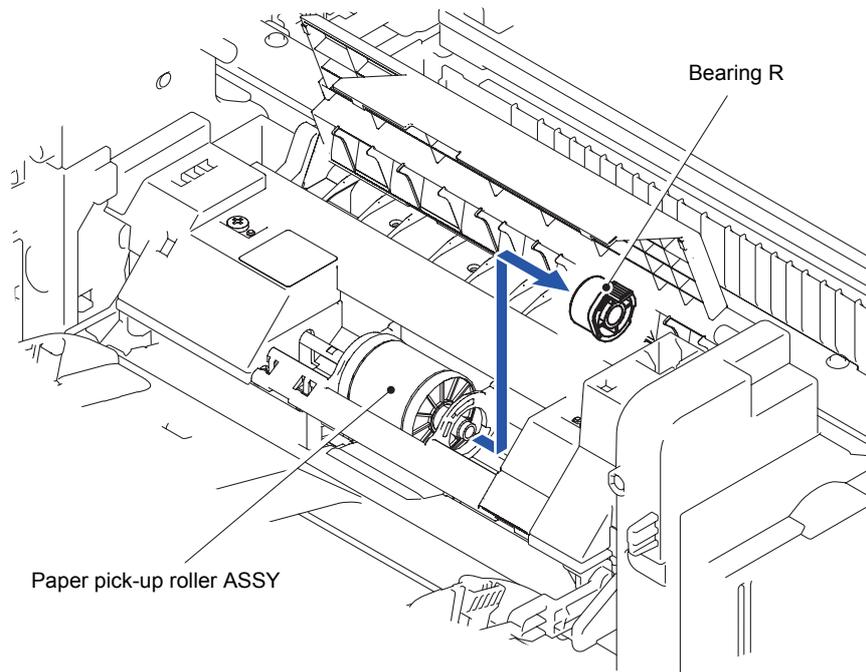


Fig. 7-6

- (5) Slide the Paper pick-up roller ASSY in the direction of the arrow 5 to remove from Bearing L.
- (6) Detach the Paper pick-up roller ASSY from the MP feed frame unit in the direction of the arrow 6a and then 6b.

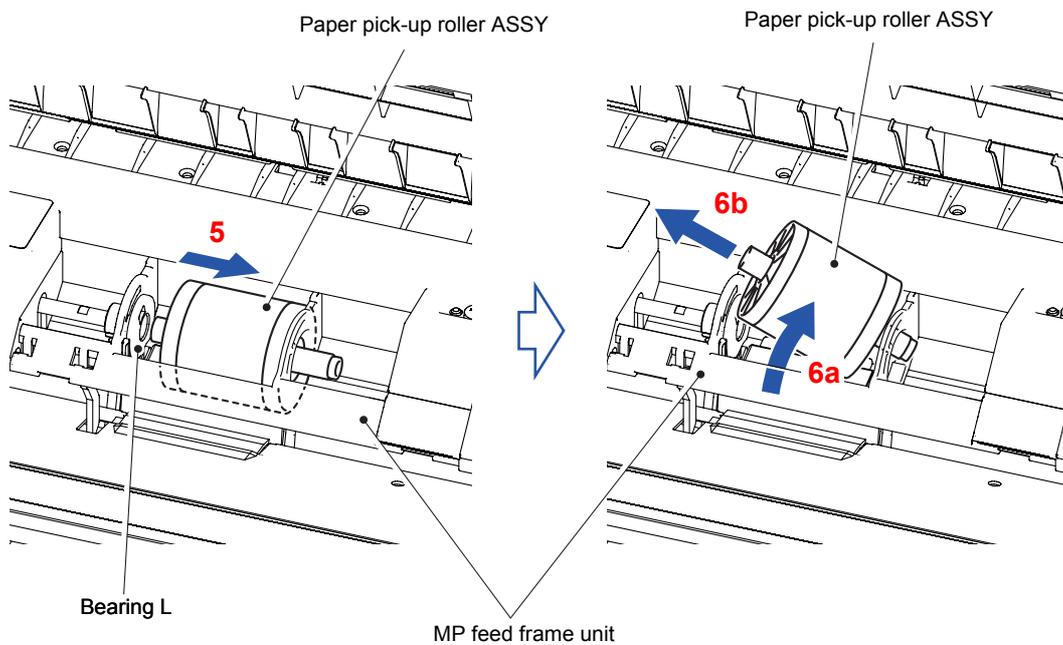


Fig. 7-7

(7) Remove the two Roller collars from the Paper pick-up roller.

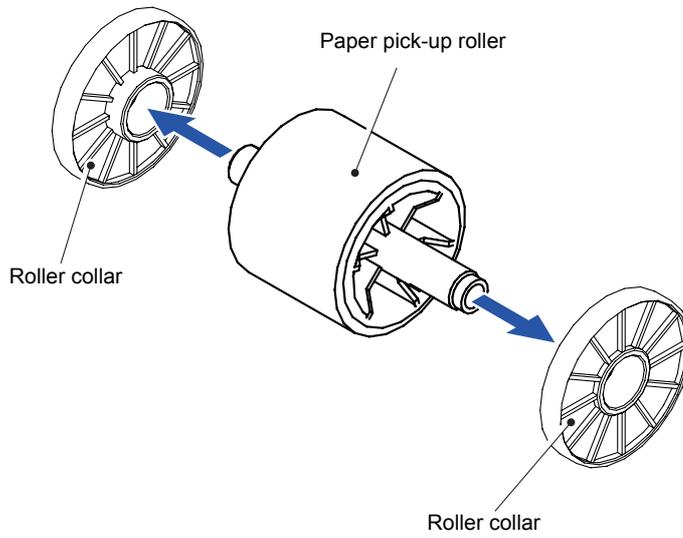


Fig. 7-8

(8) Remove the two Pins to remove the Separation plate ASSY from the MP feed frame unit.

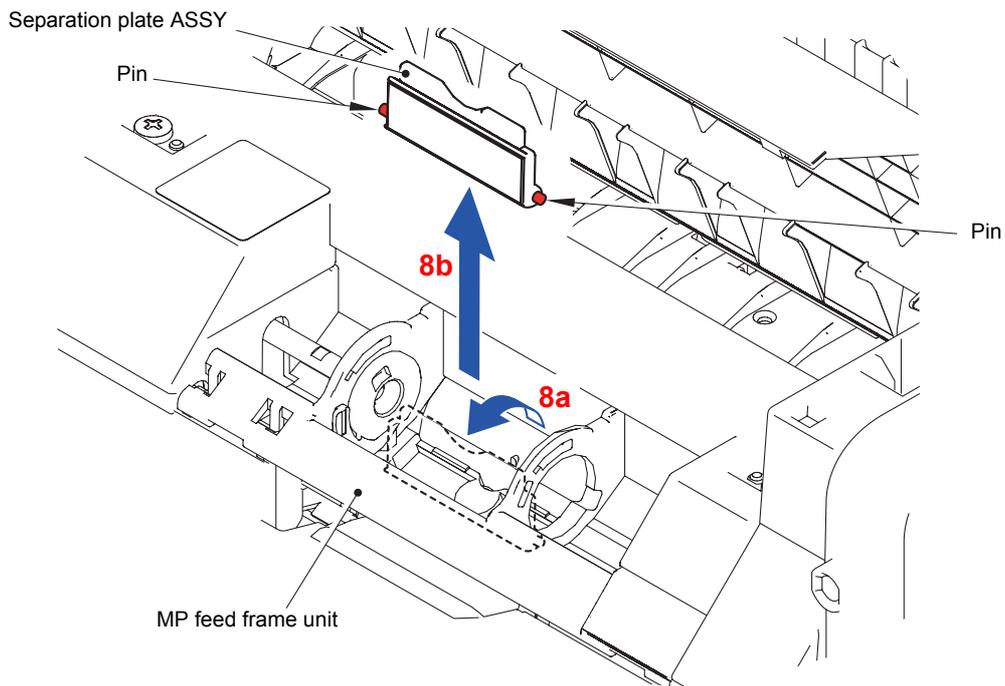


Fig. 7-9

APPENDIX 1 HOW TO USE EJECT TRAY A5/B5

(1) Fold the Eject tray A5/B5 as shown in the figure.

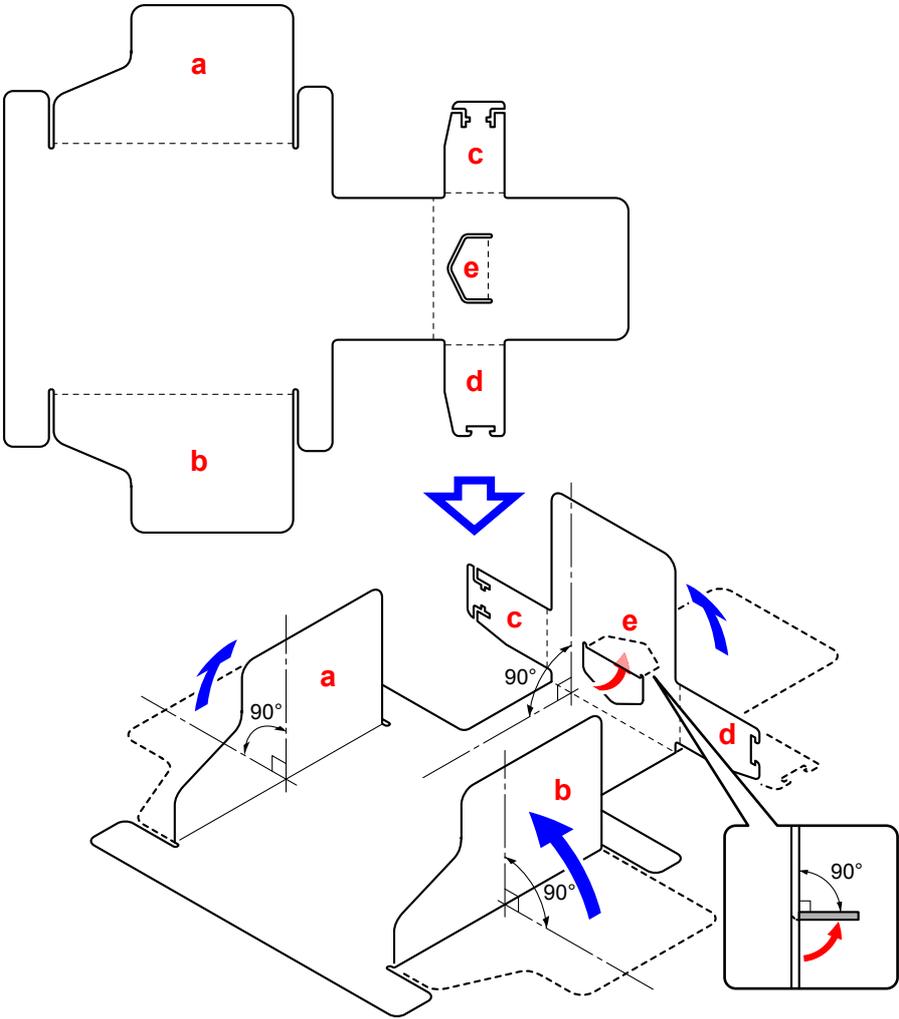


Fig. App 1-1

(2) Engage the Hooks of "c" and "d".

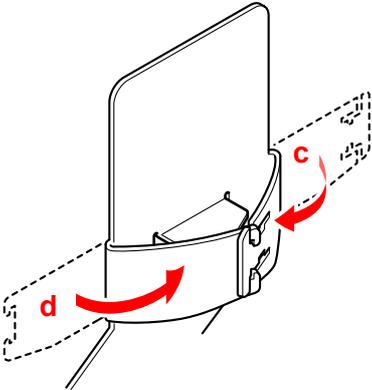


Fig. App 1-2