



# Brother Inkjet MFC SERVICE MANUAL

## MODELS:

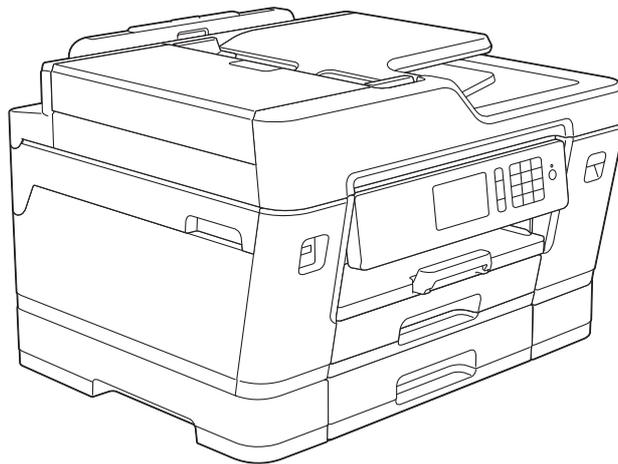
HL-J6000DW/J6100DW/T4000DW

MFC-J3530DW/J3930DW/J6530DW

MFC-J6535DW/J6545DW/J6730DW

MFC-J6930DW/J6935DW/J6945DW

MFC-J6947DW/T4500DW



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

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July 2016  
SM-FAX172  
8CH1\* (4)

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## Preface

This Service Manual is intended for use by service personnel and details the specifications, construction, and maintenance for the Brother machines noted on the front cover. It includes information required for troubleshooting and service--disassembly, reassembly, and lubrication--so that service personnel will be able to understand equipment function, repair the equipment in a timely manner and order spare parts as necessary.

To perform appropriate maintenance so that the machine is always in the best possible condition for the customer, service personnel must adequately understand and apply this manual.

The table below shows the functional comparison between the models covered by this manual.

	HL- J6000DW	HL- J6100DW	HL- T4000DW	MFC- J3530DW	MFC- J3930DW	MFC- J6530DW	MFC- J6535DW
Scan	---	---	---	Simplex	Duplex	Simplex	Simplex
LCD	2.7 inch	2.7 inch	2.7 inch	2.7 inch	3.7 inch	2.7 inch	3.7 inch
Manual Feed Slot	---	---	---	√	---	√	---
MP Tray	√	√	√	---	√	---	√
Lower Tray	√	√	---	---	√	---	---
3rd Tray	---	√	---	---	---	---	---
NFC	√	√	---	---	√	---	---
Document Size Sensor	---	---	---	---	---	---	√
Paper Remaining Sensor	√	√	---	---	---	---	---
Ink Cartridge	Simple	Simple	---	Regular	Regular	Regular	Regular
Ink Tank	---	---	√	---	---	---	---

	MFC- J6545DW	MFC- J6730DW	MFC- J6930DW	MFC- J6935DW	MFC- J6945DW	MFC- J6947DW	MFC- T4500DW
Scan	Simplex	Simplex	Duplex	Duplex	Duplex	Duplex	Simplex
LCD	3.7 inch	2.7 inch	3.7 inch	3.7 inch	3.7 inch	3.7 inch	2.7 inch
Manual Feed Slot	---	√	---	---	---	---	---
MP Tray	√	---	√	√	√	√	√
Lower Tray	---	√	√	√	√	√	---
3rd Tray	---	---	---	---	---	√	---
NFC	---	---	√	√	√	√	---
Document Size Sensor	√	---	---	√	√	√	---
Paper Remaining Sensor	---	---	---	√	√	√	---
Ink Cartridge	Simple	Regular	Regular	Regular	Simple	Simple	---
Ink Tank	---	---	---	---	---	---	√

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# SAFETY INFORMATION

## **WARNING**

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injuries.

## **CAUTION**

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injuries.

## **IMPORTANT**

IMPORTANT indicates a potentially hazardous situation which, if not avoided, may result in damage to property or loss of machine functionality.

## **NOTE**

NOTE specifies the operating environment, conditions for installation, or special conditions of use.



Prohibition icons indicate actions that must not be performed.



This icon indicates that flammable sprays must not be used.



This icon indicates that organic solvents such as alcohol and liquids must not be used.



Electrical Hazard icons alert you to possible electrical shocks.



Fire Hazard icons alert you to the possibility of fire.

## ***Italics***

Italicized typeface emphasizes an important point or refers you to a related topic.

## **NOTE**

The illustrations in this guide show MFC-J6930DW.

■ To use the machine safely



**WARNING**



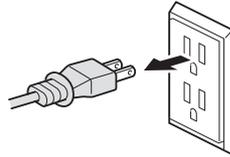
**ELECTRICAL HAZARDS**

*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 machine. Before you access the inside of the machine, including for routine maintenance such as cleaning, make sure you have unplugged the power cord from the AC power outlet, as well as any telephone/RJ-11 or Ethernet/RJ-45 cables from the machine.

**DO NOT** push objects of any kind into this machine through slots or openings in the cabinet, as 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.



Unplug the power plug regularly to clean it. Use a dry cloth to clean the root of the plug blades and between the blades. If the power plug is plugged into the outlet over a long period, dust accumulates around the plug blades, which may cause a short circuit, resulting in a fire.



DO NOT take apart or attempt to convert the machine. This may create a risk of fire or electrical shock. Such conduct may also be punished by the law.



If the machine has been dropped or the casing has been damaged, there may be the possibility of an electrical shock. Unplug the machine from the AC power outlet.



DO NOT drop any metallic hardware or any type of liquid on the power plug of the machine. It may cause an electrical shock or a fire.



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



This machine 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:

- DO NOT pull on the middle of the AC power cord; pulling on the middle may cause the cord to separate from the plug. Doing this might cause an electrical shock.
- DO NOT allow anything to rest on the power cord.
- DO NOT place this machine where people can walk on the cord.
- DO NOT place this machine in a position where the cord is stretched or strained, as it may become worn or frayed.
- DO NOT use the machine or handle the cord if the cord has become worn or frayed. If unplugging your machine, DO NOT touch the damaged/frayed part.



DO NOT use this machine during a thunderstorm.



Use caution when installing or modifying telephone lines. Never touch telephone wires or terminals that are not insulated unless the telephone line has been unplugged at the wall jack. Never install telephone wiring during a lightning storm. Never install a telephone wall jack in a wet location.

**FIRE HAZARDS**

*Failure to follow the warnings in this section may create the risk of a fire.*



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 machine. Doing so could cause a fire or electrical shock. Instead, use only a dry, lint-free cloth.

DO NOT use the machine near any medical electrical equipment. The radio wave emitted from the machine may affect medical electrical equipment and cause a malfunction, which may result in accident or injury.

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.



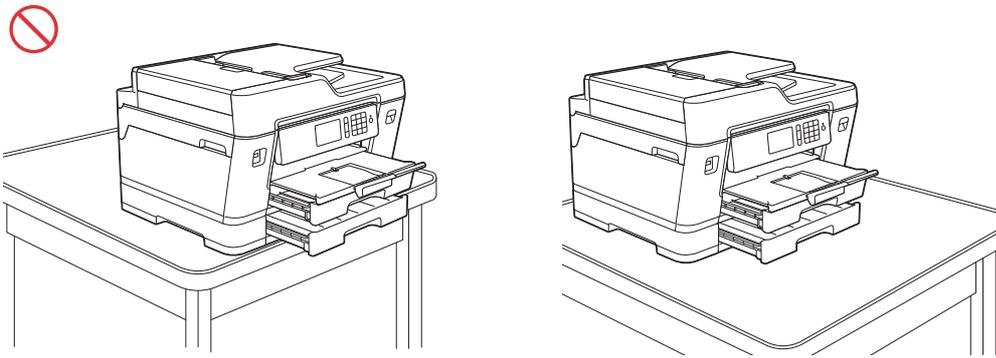
If the machine becomes unusually hot, releases smoke, generates any strong smells, or if you accidentally spill any liquid on it, immediately unplug the machine from the AC power outlet.

**! CAUTION**

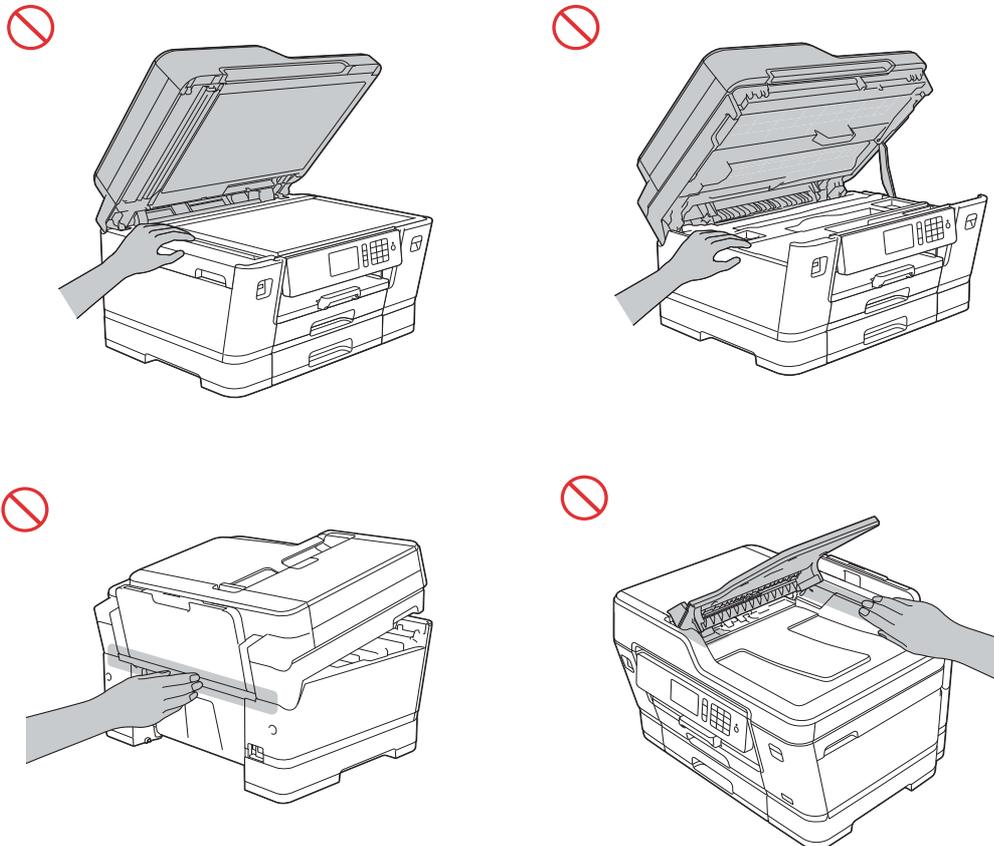
Wait until pages have exited the machine before picking them up. Failure to do this may cause injury to your fingers by trapping them in a roller.

DO NOT put your hand or any foreign objects into the ink insertion slot. Doing this may cause injury.

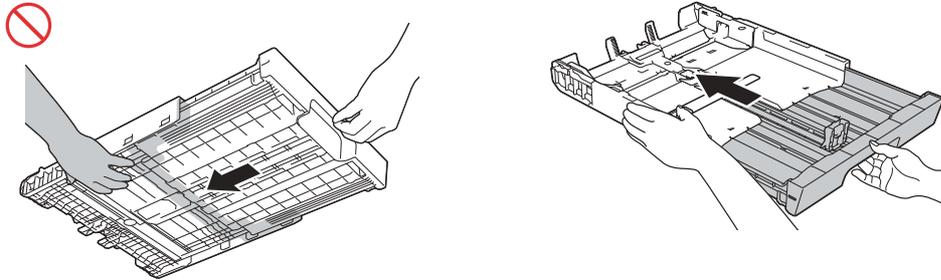
If the trays have been expanded to hold large paper such as Ledger, A3, Legal or Folio size paper, place the machine on a flat surface that can support both the machine and the trays. When the trays are expanded, they will protrude from the machine. Therefore, if someone hits the trays, the machine could fall and cause injury.



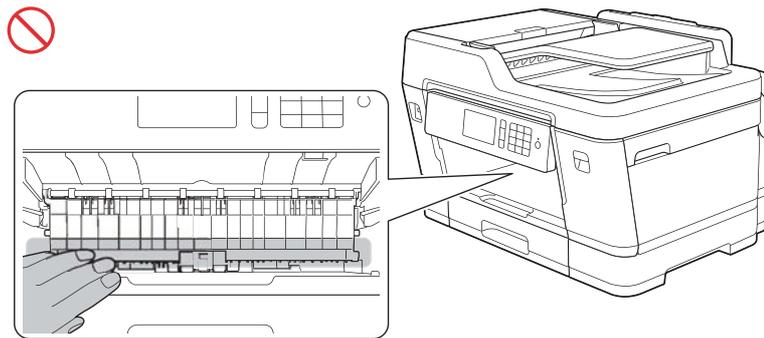
To prevent injuries, be careful not to put your fingers in the areas shown in the illustrations.



When changing the tray size from the Ledger, A3, Legal or Folio size to the original size, be careful not to pinch your fingers in the gaps or slots in the bottom of the tray. It may cause injury to you.



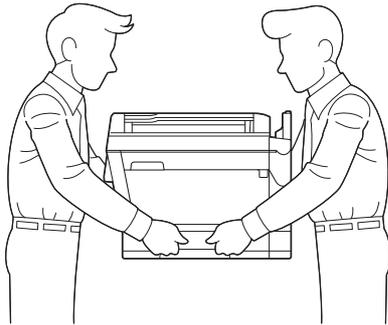
Be careful not to put your fingers in the areas shown in the illustrations. It may cause injury to you.



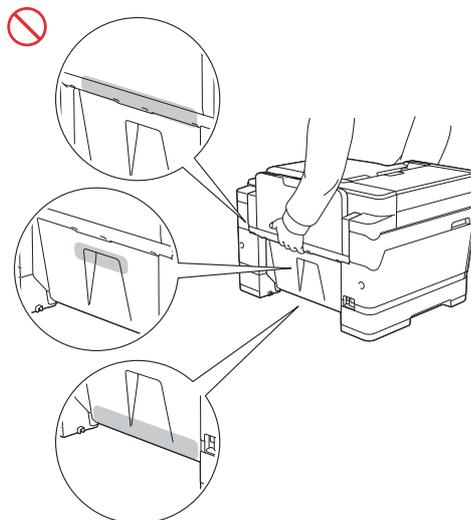
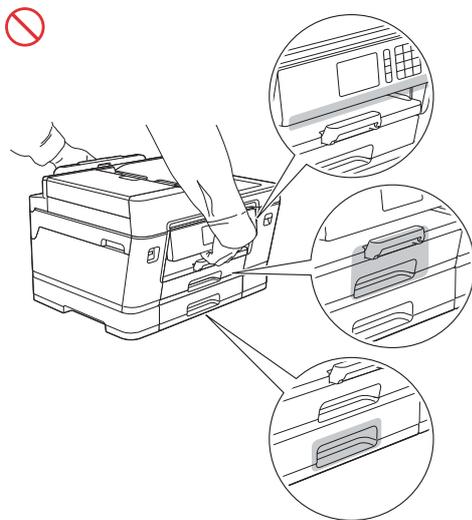
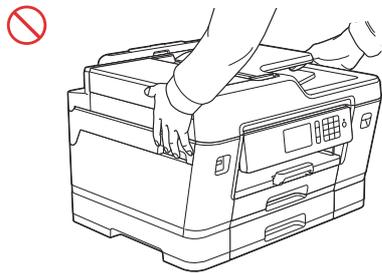
To prevent possible injuries, at least two people should lift the machine. One person should hold the front of the machine, and one person should hold the back, as shown in the illustration below.

Carry the machine by sliding your hands into the handhold indentations located on each side of the machine. Be careful not to trap your fingers when you put the machine down.

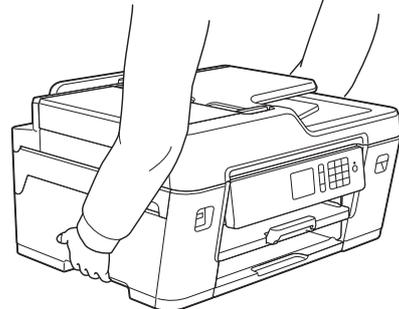
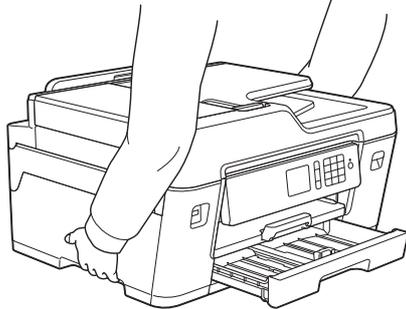
**DO NOT** carry the machine by holding the lower tray when it is installed. The lower tray could fall and cause injury to you.



DO NOT carry the machine by holding the areas shown in the illustrations. Doing this may cause the machine to slip out of your hands and may result in injury.



When carrying the machine, remove the trays if they have been expanded to hold large paper such as Ledger, A3, Legal or Folio size paper. The weight of the paper could cause the trays to fall and cause injury to you.



If the ink contacts your skin or gets into your eye or mouth, please follow these steps immediately:

- If your skin comes into contact with the ink, wash your skin with water and soap immediately.
- If the ink gets into your eye, rinse it with water immediately. If left as is, it may cause redness or mild inflammation of the eye. In case of any abnormality, consult with your doctor.
- If the ink gets into your mouth, spit it out, rinse your mouth, and consult your doctor immediately.
- Be careful not to get the ink in your eye when replacing the ink cartridge or refilling ink.
- Keep the ink cartridge or ink bottles out of the reach of children.
- DO NOT shake the ink cartridge. The ink may leak out if the cartridge is shaken or twirled.
- DO NOT take apart the ink cartridge. The cartridge cannot be used if it is taken apart. The ink may get in your eye or make contact with your skin if you take apart the cartridge.

When multiple devices, including this machine, are connected to a computer using USB cables, you may feel an electrical charge when you touch metal parts of the machine. Avoid touching them.

## **IMPORTANT**

- Disruption of power can wipe out information in the machine's memory.
- If the machine does not operate normally when the operating instructions are followed, adjust only those controls that are covered by the operating instructions. Incorrect adjustment of other controls may result in damage.
- DO NOT connect your machine to an AC power outlet controlled by wall switches, automatic timers or to the same circuit as a large appliance, such as an air conditioner, copier, shredder, or other equipment that requires a significant amount of electricity to operate. Operating this machine in conjunction with the other machine(s) could create an overvoltage, tripping your circuit breaker or blowing your fuse; or might disrupt the power supply. Disruption of the power supply may delete information from the machine's memory and repeated cycling of the power supply can damage the machine.

## Precautions for Troubleshooting and/or Disassembly/Assembly

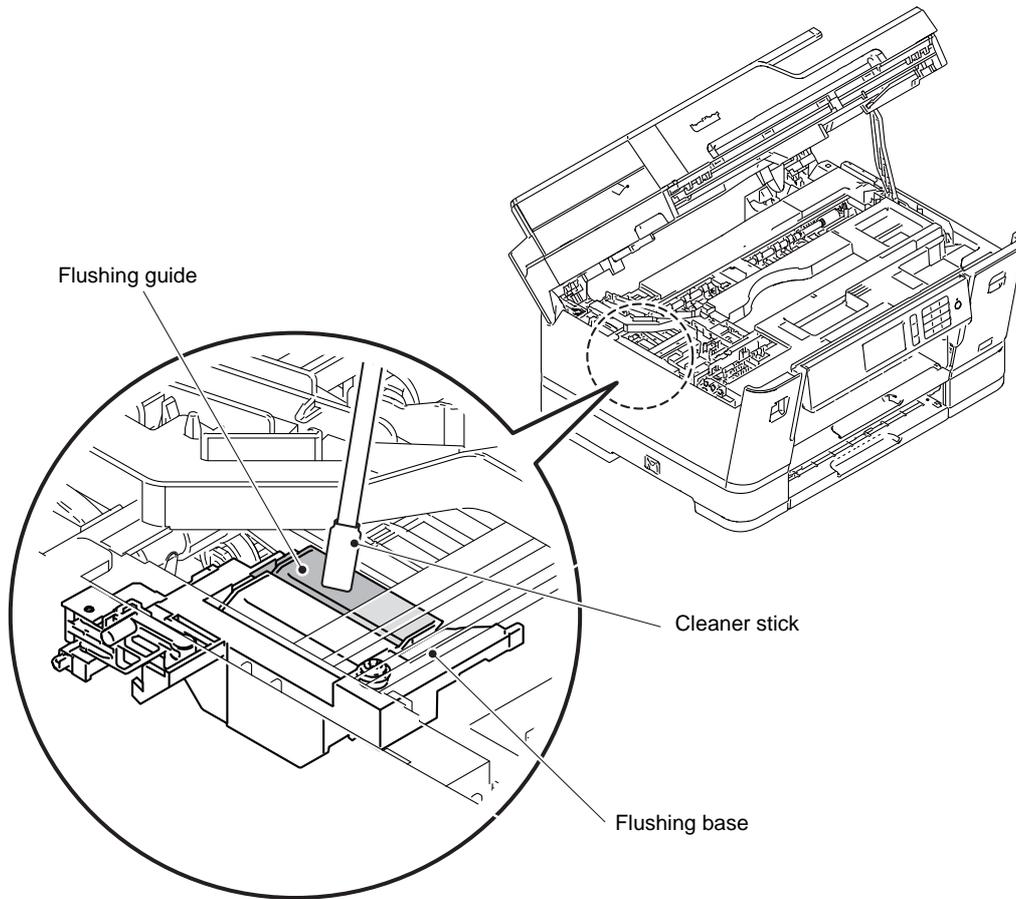
Be sure to observe the following warnings and precautions to prevent any secondary troubles from happening by mishandling the machine during troubleshooting and/or disassembly/assembly.

### ■ Precautions

Be sure to observe the following to prevent any secondary troubles from happening during troubleshooting and/or disassembly/assembly.

- (1) Power cord must be removed from their outlets before starting any removal of covers and PCBs, adjustments and conductivity test using a tester.
- (2) Be careful not to lose screws, washers, or other parts.
- (3) Apply grease to the points specified in [Chapter 3](#).
- (4) When using soldering irons and other heat-generating tools, take care not to damage the plastic parts such as wires, PCBs, and covers.
- (5) When disconnecting the connectors, hold the connector housings. Do not pull the lead wires.
- (6) After disconnecting flat cables, check that each cable is not damaged at its end or shortcircuited.
- (7) When connecting flat cables, do not insert them at an angle. After insertion, check again that the cables are not at an angle.
- (8) When connecting or disconnecting harnesses, hold the connector bodies not the cables. If the connector has a lock, always unlock it.
- (9) After repairs, check not only the repaired portion but also that the harnesses are routed properly. Also check that the other related portions function properly.
- (10) 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.
- (11) Once the head/carriage unit prints, it will start head locking operation after five seconds from the end of printing. The head locking operation will take five to ten seconds. NEVER unplug the power cord before the machine completes the head locking operation; doing so will make the head/carriage unit unusable and require replacement with a new head/carriage unit. When you receive the machine from the user or when you pack it for sending it back to the user, check the head locking state.
- (12) If ink gets on your skin or gets into your eyes or mouth, you need the following treatment.
  - If ink gets on your skin, wash it off immediately with soap and water.
  - If ink gets into your eyes, flush them immediately and thoroughly with water. If left untreated, the eyes may become bloodshot or mildly inflamed. If you feel any discomfort, consult a doctor immediately.
  - If ink gets into your mouth, immediately spit it out and consult a doctor.
- (13) Be sure to observe the warnings.
- (14) After completion of reassembly, it is recommended that the dielectric voltage withstand test and continuity test be conducted.
- (15) After repairing the defective section, be sure to check again if the repaired section works correctly.

- (16) Before packing the machine for sending it back to the user after repairs, be sure to clean the flushing guide with a cleaner stick as shown below to prevent ink splashing during transportation.



# CHAPTER 1 SPECIFICATIONS

This chapter lists the specifications of each model, which enables you to make a comparison of different models.

## 1 GENERAL

### 1.1 General

Model	HL-J6000DW/ J6100DW	HL-T4000DW	MFC-J3530DW/J3930DW/J6530DW/J6535DW/J6545DW/ J6730DW/J6930DW/J6935DW/J6945DW/J6947DW	MFC- T4500DW
Print Head	BHS13plus Head BK/C/M/Y: 420/420/420/ 420 nozzles	BHM17HT Head BK/C/M/Y: 420/420/420/ 420 nozzles	BHS13plus Head BK/C/M/Y: 420/420/420/420 nozzles	
Minimum Droplet Size	BK: 4 pl CMY: 1.5 pl	BK: 3 pl CMY: 1.5 pl	BK: 4 pl CMY: 1.5 pl	
Scanning Method	N/A		CIS	
CPU Speed	576 MHz			
Backup Clock	Yes (Up to 1 hour)			

### 1.2 Media Specification

Model	HL-J6000DW	HL-J6100DW	HL-T4000DW	
Media Sizes	Standard Tray	<Landscape> A4, LTR, EXE, B5 (JIS) <sup>*1</sup> <Portrait> A3, LGR, B4 (JIS) <sup>*1</sup> , LGL, Folio, A5, B6 (JIS) <sup>*1</sup> , A6, Photo (102 x 152 mm/4 x 6"), Index card (127 x 203 mm/5 x 8"), Photo-L (89 x 127 mm/3.5 x 5"), Photo-2L (127 x 178 mm/5 x 7"), C5, Com-10, DL Envelope, Monarch, Mexico Legal, India Legal, 16K (195 x 270 mm) <sup>*2</sup>		
	Lower Tray	<Landscape> A4, LTR <Portrait> A3, LGR, LGL, Folio, Mexico Legal, India Legal	N/A	
	3rd Tray	N/A	<Landscape> A4, LTR <Portrait> A3, LGR, LGL, Folio, Mexico Legal, India Legal	N/A
	Manual Feed Slot	N/A		
	MP Tray	<Landscape> A4, LTR, EXE, B5 (JIS) <sup>*1</sup> <Portrait> A3, LGR, B4 (JIS) <sup>*1</sup> , LGL, Folio, A5, B6 (JIS) <sup>*1</sup> , A6, Photo (102 x 152 mm/4 x 6"), Index card (127 x 203 mm/5 x 8"), Photo-L (89 x 127 mm/3.5 x 5"), Photo-2L (127 x 178 mm/5 x 7"), Com-10, DL Envelope, Monarch, C5, Mexico Legal, India Legal, 16K (195 x 270 mm) <sup>*2</sup>		
	Duplex Print	<PC Print> A3, LGR, B4(JIS) <sup>*1</sup> , LGL, Folio, A4, LTR, EXE, A5, B5(JIS) <sup>*1</sup> , B6(JIS) <sup>*1</sup> , Mexico Legal, India Legal, 16K (195x270mm) <sup>*2</sup>		
	ADF (width/length)	N/A		
Scanner Glass (width/length)	N/A			

<sup>\*1</sup> Only for Taiwan/China

<sup>\*2</sup> Only for China

Model	MFC-J3530DW	MFC-J3930DW	MFC-J6530DW	MFC-J6535DW	
Media Sizes	Standard Tray	<Landscape> A4, LTR, EXE, B5 (JIS) <sup>*1</sup> <Portrait> A3, LGR, B4 (JIS) <sup>*1</sup> , LGL, Folio, A5, B6 (JIS) <sup>*1</sup> , A6, Photo (102 x 152 mm/4 x 6"), Index card (127 x 203 mm/5 x 8"), Photo-L (89 x 127 mm/3.5 x 5"), Photo-2L (127 x 178 mm/5 x 7"), C5, Com-10, DL Envelope, Monarch, Mexico Legal, India Legal, 16K (195 x 270 mm) <sup>*2</sup>			
	Lower Tray	N/A	<Landscape> A4, LTR <Portrait> A3, LGR, B4 (JIS) <sup>*1</sup> , LGL, Folio, Mexico Legal, India Legal	N/A	
	3rd Tray	N/A			
	Manual Feed Slot	<Landscape> A4, LTR, EXE, B5 (JIS) <sup>*1</sup> <Portrait> A3, LGR, B4 (JIS) <sup>*1</sup> , LGL, Folio, A5, B6 (JIS) <sup>*1</sup> , A6, Photo (102 x 152 mm/4 x 6"), Index card (127 x 203 mm/5 x 8"), Photo-L (89 x 127 mm/3.5 x 5"), Photo-2L (127 x 178 mm/5 x 7"), C5, Com-10, DL Envelope, Monarch, Mexico Legal, India Legal, 16K (195 x 270 mm) <sup>*2</sup>	N/A	<Landscape> A4, LTR, EXE, <Portrait> A3, LGR, LGL, Folio, A5, A6, Photo (102 x 152 mm/4 x 6"), Index card (127 x 203 mm/5 x 8"), Photo-L (89 x 127 mm/3.5 x 5"), Photo-2L (127 x 178 mm/5 x 7"), C5, Com-10, DL Envelope, Monarch, Mexico Legal, India Legal	N/A
	MP Tray	N/A	<Landscape> A4, LTR, EXE, B5 (JIS) <sup>*1</sup> <Portrait> A3, LGR, B4 (JIS) <sup>*1</sup> , LGL, Folio, A5, B6 (JIS) <sup>*1</sup> , A6, Photo (102 x 152 mm/4 x 6"), Index card (127 x 203 mm/5 x 8"), Photo-L (89 x 127 mm/3.5 x 5"), Photo-2L (127 x 178 mm/5 x 7"), Com-10, DL Envelope, Monarch, C5, Mexico Legal, India Legal, 16K (195 x 270 mm) <sup>*2</sup>	<Landscape> A4, LTR, EXE <Portrait> A3, LGR, LGL, Folio, A5, A6, Photo (102 x 152 mm/4 x 6"), Index card (127 x 203 mm/5 x 8"), Photo-L (89 x 127 mm/3.5 x 5"), Photo-2L (127 x 178 mm/5 x 7"), Com-10, DL Envelope, Monarch, C5, Mexico Legal, India Legal	
	Duplex Print	<PC Print> A3, LGR, B4 (JIS) <sup>*1</sup> , LGL, Folio, A4, LTR, EXE, A5, B5 (JIS) <sup>*1</sup> , B6 (JIS) <sup>*1</sup> , Mexico Legal, India Legal, 16K (195 x 270 mm) <sup>*2</sup> <Copy> A3, LGR, LGL, Folio, A4, LTR, EXE <sup>*3</sup> , A5, Mexico Legal, India Legal			
	ADF (width/length)	105/148 mm to 297/431.8 mm (4.1/5.8" to 11.7/17.0")			
	Scanner Glass (width/length)	up to 297/431.8 mm (up to 11.7/17.0")			

\*1 Only for Hong Kong/Taiwan/China

\*2 Only for China

\*3 Only for US area

Model	MFC-J6545DW	MFC-J6730DW	MFC-J6930DW	MFC-J6935DW	
Media Sizes	Standard Tray	<Landscape> A4, LTR, EXE <Portrait> A3, LGR, LGL, Folio, A5, A6, Photo (102 x 152 mm/4 x 6"), Index card (127 x 203 mm/5 x 8"), Photo-L (89 x 127 mm/3.5 x 5"), Photo-2L (127 x 178 mm/5 x 7"), C5, Com-10, DL Envelope, Monarch, Mexico Legal, India Legal			
	Lower Tray	N/A	<Landscape> A4, LTR <Portrait> A3, LGR, LGL, Folio, Mexico Legal, India Legal		
	3rd Tray	N/A			
	Manual Feed Slot	N/A	<Landscape> A4, LTR, EXE, <Portrait> A3, LGR, LGL, Folio, A5, A6, Photo (102 x 152 mm/4 x 6"), Index card (127 x 203 mm/5 x 8"), Photo-L (89 x 127 mm/3.5 x 5"), Photo-2L (127 x 178 mm/5 x 7"), C5, Com-10, DL Envelope, Monarch, Mexico Legal, India Legal	N/A	
	MP Tray	<Landscape> A4, LTR, EXE <Portrait> A3, LGR, LGL, Folio, A5, A6, Photo (102 x 152 mm/4 x 6"), Index card (127 x 203 mm/5 x 8"), Photo-L (89 x 127 mm/3.5 x 5"), Photo-2L (127 x 178 mm/5 x 7"), Com-10, DL Envelope, Monarch, C5, Mexico Legal, India Legal	N/A	<Landscape> A4, LTR, EXE <Portrait> A3, LGR, LGL, Folio, A5, A6, Photo (102 x 152 mm/4 x 6"), Index card (127 x 203 mm/5 x 8"), Photo-L (89 x 127 mm/3.5 x 5"), Photo-2L (127 x 178 mm/5 x 7"), Com-10, DL Envelope, Monarch, C5, Mexico Legal, India Legal	
	Duplex Print	<PC Print> A3, LGR, LGL, Folio, A4, LTR, EXE, A5, Mexico Legal, India Legal <Copy> A3, LGR, LGL, Folio, A4, LTR, EXE <sup>*1</sup> , A5, Mexico Legal, India Legal			
	ADF (width/length)	105/148 mm to 297/431.8 mm (4.1/5.8" to 11.7/17.0")			
	Scanner Glass (width/length)	up to 297/431.8 mm (up to 11.7/17.0")			

\*1 Only for US area

Model		MFC-J6945DW	MFC-J6947DW	MFC-T4500DW
Media Sizes	Standard Tray	<Landscape> A4, LTR, EXE, B5 (JIS) <sup>*1</sup> <Portrait> A3, LGR, B4 (JIS) <sup>*1</sup> , LGL, Folio, A5, B6 (JIS) <sup>*1</sup> , A6, Photo (102 x 152 mm/4 x 6"), Index card (127 x 203 mm/5 x 8"), Photo-L (89 x 127 mm/3.5 x 5"), Photo-2L (127 x 178 mm/5 x 7"), C5, Com-10, DL Envelope, Monarch, Mexico Legal, India Legal, 16K (195 x 270 mm) <sup>*2</sup>		
	Lower Tray	<Landscape> A4, LTR <Portrait> A3, LGR, LGL, Folio, Mexico Legal, India Legal		N/A
	3rd Tray	N/A	<Landscape> A4, LTR <Portrait> A3, LGR, LGL, Folio, Mexico Legal, India Legal	N/A
	Manual Feed Slot	N/A		
	MP Tray	<Landscape> A4, LTR, EXE, B5 (JIS) <sup>*1</sup> <Portrait> A3, LGR, B4 (JIS) <sup>*1</sup> , LGL, Folio, A5, B6 (JIS) <sup>*1</sup> , A6, Photo (102 x 152 mm/4 x 6"), Index card (127 x 203 mm/5 x 8"), Photo-L (89 x 127 mm/3.5 x 5"), Photo-2L (127 x 178 mm/5 x 7"), Com-10, DL Envelope, Monarch, C5, Mexico Legal, India Legal, 16K (195 x 270 mm) <sup>*2</sup>		
	Duplex Print	<PC Print> A3, LGR, B4 (JIS) <sup>*1</sup> , LGL, Folio, A4, LTR, EXE, A5, B5 (JIS) <sup>*1</sup> , B6 (JIS) <sup>*1</sup> , Mexico Legal, India Legal, 16K (195 x 270 mm) <sup>*2</sup> <Copy> A3, LGR, LGL, Folio, A4, LTR, EXE <sup>*3</sup> , A5, Mexico Legal, India Legal		
	ADF (width/length)	105/148 mm to 297/431.8 mm (4.1/5.8" to 11.7/17.0")		
Scanner Glass (width/length)	up to 297/431.8 mm (up to 11.7/17.0")			

\*1 Only for Taiwan/China

\*2 Only for China

\*3 Only for US area

Model		HL-J6000DW	HL-J6100DW	HL-T4000DW
Media Weights	Standard Tray	64-220 g/m <sup>2</sup> (17-58 lb.)		
	Lower Tray	64-120 g/m <sup>2</sup> (17-32 lb.)		N/A
	3rd Tray	N/A	64-120 g/m <sup>2</sup> (17-32 lb.)	N/A
	Manual Feed Slot	N/A		
	MP Tray	64-220 g/m <sup>2</sup> (17-58 lb.)		
	Duplex Print	64-120 g/m <sup>2</sup> (17-32 lb.)		
	ADF	N/A		
Media Types	Standard Tray	Plain, Inkjet, Glossy, Recycled		
	Lower Tray	Plain, Recycled		N/A
	3rd Tray	N/A	Plain, Recycled	N/A
	Manual Feed Slot	N/A		
	MP Tray	Plain, Inkjet, Glossy, Recycled		
	Duplex Print	Plain, Recycled		
	ADF	N/A		

Model		MFC-J3530DW	MFC-J3930DW	MFC-J6530DW	MFC-J6535DW
Media Weights	Standard Tray	64-220 g/m <sup>2</sup> (17-58 lb.)			
	Lower Tray	N/A	64-120 g/m <sup>2</sup> (17-32 lb.)	N/A	
	3rd Tray	N/A			
	Manual Feed Slot	64-220 g/m <sup>2</sup> (17-58 lb.)	N/A	64-220 g/m <sup>2</sup> (17-58 lb.)	N/A
	MP Tray	N/A	64-220 g/m <sup>2</sup> (17-58 lb.)	N/A	64-220 g/m <sup>2</sup> (17-58 lb.)
	Duplex Print	64-120 g/m <sup>2</sup> (17-32 lb.)			
	ADF	64-90 g/m <sup>2</sup> (17-24 lb.)			
Media Types	Standard Tray	Plain, Inkjet, Glossy, Recycled			
	Lower Tray	N/A	Plain, Recycled	N/A	
	3rd Tray	N/A			
	Manual Feed Slot	Plain, Inkjet, Glossy, Recycled	N/A	Plain, Inkjet, Glossy, Recycled	N/A
	MP Tray	N/A	Plain, Inkjet, Glossy, Recycled	N/A	Plain, Inkjet, Glossy, Recycled
	Duplex Print	Plain, Recycled			
	ADF	Plain, Recycled			

Model		MFC-J6545DW	MFC-J6730DW	MFC-J6930DW	MFC-J6935DW
Media Weights	Standard Tray	64-220 g/m <sup>2</sup> (17-58 lb.)			
	Lower Tray	N/A	64-120 g/m <sup>2</sup> (17-32 lb.)		
	3rd Tray	N/A			
	Manual Feed Slot	N/A	64-220 g/m <sup>2</sup> (17-58 lb.)	N/A	
	MP Tray	64-220 g/m <sup>2</sup> (17-58 lb.)	N/A	64-220 g/m <sup>2</sup> (17-58 lb.)	
	Duplex Print	64-120 g/m <sup>2</sup> (17-32 lb.)			
	ADF	64-90 g/m <sup>2</sup> (17-24 lb.)			
Media Types	Standard Tray	Plain, Inkjet, Glossy, Recycled			
	Lower Tray	N/A	Plain, Recycled		
	3rd Tray	N/A			
	Manual Feed Slot	N/A	Plain, Inkjet, Glossy, Recycled	N/A	
	MP Tray	Plain, Inkjet, Glossy, Recycled	N/A	Plain, Inkjet, Glossy, Recycled	
	Duplex Print	Plain, Recycled			
	ADF	Plain, Recycled			

Model		MFC-J6945DW	MFC-J6947DW	MFC-T4500DW
Media Weights	Standard Tray	64-220 g/m <sup>2</sup> (17-58 lb.)		
	Lower Tray	64-120 g/m <sup>2</sup> (17-32 lb.)		N/A
	3rd Tray	N/A	64-120 g/m <sup>2</sup> (17-32 lb.)	N/A
	Manual Feed Slot	N/A		
	MP Tray	64-220 g/m <sup>2</sup> (17-58 lb.)		
	Duplex Print	64-120 g/m <sup>2</sup> (17-32 lb.)		
	ADF	64-90 g/m <sup>2</sup> (17-24 lb.)		
Media Types	Standard Tray	Plain, Inkjet, Glossy, Recycled		
	Lower Tray	Plain, Recycled		N/A
	3rd Tray	N/A	Plain, Recycled	N/A
	Manual Feed Slot	N/A		
	MP Tray	Plain, Inkjet, Glossy, Recycled		
	Duplex Print	Plain, Recycled		
	ADF	Plain, Recycled		

### 1.3 Paper Handling

Model	HL-J6000DW	HL-J6100DW	HL-T4000DW
Paper Input (sheets)	Standard Tray	250 (80 g/m <sup>2</sup> )	
	Lower Tray	250 (80 g/m <sup>2</sup> )	N/A
	3rd Tray	N/A	250 (80 g/m <sup>2</sup> )
	Manual Feed Slot	N/A	
	MP Tray	100 (80 g/m <sup>2</sup> )	
	ADF	N/A	
Output Paper Capacity (sheets)	100 (Up to A4/LTR, 80 g/m <sup>2</sup> ), 50 (Over A4/LTR, 80 g/m <sup>2</sup> )		
Auto Paper Low Detection	Standard Tray / Lower Tray	Standard Tray / Lower Tray / 3rd Tray	N/A
Document Scan Size Sensor	N/A		

Model	MFC-J3530DW	MFC-J3930DW	MFC-J6530DW	MFC-J6535DW	
Paper Input (sheets)	Standard Tray	250 (80 g/m <sup>2</sup> )			
	Lower Tray	N/A	250 (80 g/m <sup>2</sup> )	N/A	
	3rd Tray	N/A			
	Manual Feed Slot	1 (Plain: 120 g/m <sup>2</sup> Glossy: thickness 0.25 mm)	N/A	1 (Plain: 120 g/m <sup>2</sup> Glossy: thickness 0.25 mm)	N/A
	MP Tray	N/A	100 (80 g/m <sup>2</sup> )	N/A	100 (80 g/m <sup>2</sup> )
	ADF	50 (80 g/m <sup>2</sup> ) (face up) *sort copy up to 30	50 (80 g/m <sup>2</sup> ) (face up)	50 (80 g/m <sup>2</sup> ) (face up) *sort copy up to 30	
Output Paper Capacity (sheets)	100 (Up to A4/LTR, 80 g/m <sup>2</sup> ), 50 (Over A4/LTR, 80 g/m <sup>2</sup> )				
Auto Paper Low Detection	N/A				
Document Scan Size Sensor	N/A			Yes	

Model	MFC-J6545DW	MFC-J6730DW	MFC-J6930DW	MFC-J6935DW	
Paper Input (sheets)	Standard Tray	250 (80 g/m <sup>2</sup> )			
	Lower Tray	N/A	250 (80 g/m <sup>2</sup> )		
	3rd Tray	N/A			
	Manual Feed Slot	N/A	1 (Plain: 120 g/m <sup>2</sup> Glossy: thickness 0.25 mm)	N/A	
	MP Tray	100 (80 g/m <sup>2</sup> )	N/A	100 (80 g/m <sup>2</sup> )	
	ADF	50 (80 g/m <sup>2</sup> ) (face up) *sort copy up to 30		50 (80 g/m <sup>2</sup> ) (face up)	
Output Paper Capacity (sheets)	100 (Up to A4/LTR, 80 g/m <sup>2</sup> ), 50 (Over A4/LTR, 80 g/m <sup>2</sup> )				
Auto Paper Low Detection	N/A			Standard Tray / Lower Tray	
Document Scan Size Sensor	Yes	N/A		Yes	

Model		MFC-J6945DW	MFC-J6947DW	MFC-T4500DW
Paper Input (sheets)	Standard Tray	250 (80 g/m <sup>2</sup> )		
	Lower Tray	250 (80 g/m <sup>2</sup> )		N/A
	3rd Tray	N/A	250 (80 g/m <sup>2</sup> )	N/A
	Manual Feed Slot	N/A		
	MP Tray	100 (80 g/m <sup>2</sup> )		
	ADF	50 (80 g/m <sup>2</sup> ) (face up)		50 (80 g/m <sup>2</sup> ) (face up) *sort copy up to 30
Output Paper Capacity (sheets)		100 (Up to A4/LTR, 80 g/m <sup>2</sup> ), 50 (Over A4/LTR, 80 g/m <sup>2</sup> )		
Auto Paper Low Detection		Standard Tray / Lower Tray	Standard Tray / Lower Tray / 3rd Tray	N/A
Document Scan Size Sensor		Yes		N/A

## 1.4 LCD Panel

Model		HL-J6000DW/J6100DW/T4000DW MFC-J3530DW/J6530DW/J6730DW/T4500DW	MFC-J3930DW/J6535DW/J6545DW/J6930DW/ J6935DW/J6945DW/J6947DW
LCD	Type & Size	2.7 inch TFT	3.7 inch TFT
	Touch-Panel	Yes	

## 1.5 Memory

Model	HL-J6000DW/ J6100DW	HL-T4000DW	MFC-J3530DW/J6530DW/ J6535DW/J6545DW/ J6730DW/T4500DW	MFC-J3930DW/ J6930DW	MFC-J6935DW/ J6945DW/ J6947DW
Memory Capacity (physical: Mbytes)	512 MB	128 MB	128 MB	256 MB	512 MB
Memory Backup (with Flash memory)	N/A		Yes		

## 1.6 Interface

Model		HL-J6000DW/J6100DW MFC-J3930DW/J6930DW/J6935DW/ J6945DW/J6947DW	HL-T4000DW MFC-J3530DW/J6530DW/J6535DW/ J6545DW/J6730DW/T4500DW
Host Interface		Hi-Speed USB 2.0	
LAN		Yes	
Wireless LAN		Yes	
NFC		Yes	N/A
PictBridge		N/A	
USB flash memory		Yes	
Acceptable Media Cards	Memory Stick Duo	N/A	
	Memory Stick Extended High Capacity	N/A	
	Memory Stick Pro/Pro Duo/Micro	N/A	
	SD Memory Card	N/A	
	SDHC Memory Card	N/A	
	SDXC Memory Card	N/A	
	MultiMedia Card	N/A	
	MultiMedia Card plus	N/A	
MultiMedia Card mobile	N/A		

## 1.7 Others

Model		HL-J6000DW	HL-J6100DW	HL-T4000DW
Operating Environment Temperature (Best Print Quality)		10-35 (20-33) degrees centigrade		
Operating Environment Humidity (Best Print Quality)		20-80 (20-80) %		
Power Consumption (Operating/ Standby/Sleep mode/Off)	US area	N/A		19/4.5/1.2/0.04 w
	Europe		21/5.5/0.9/0.04 w	N/A
	Asia/Oceania	N/A		20/5.0/1.2/0.04 w <sup>*1</sup>
	China	N/A		20/5.0/1.2/0.04 w
Machine Noise (Operating)		50 dBA		
Machine Dimensions		W575 x D477 x H379 mm (W22.6 x D18.8 x H14.9 inch)	W575 x D477 x H449 mm (W22.6 x D18.8 x H17.7 inch)	W575 x D477 x H310 mm (W22.6 x D18.8 x H12.2 inch)
Machine Weight		19.5 kg (43.0 lb)	23.2 kg (51.1 lb)	16.0 kg (35.3 lb) (For US area) 16.1 kg (35.5 lb) (Except for US area)

<sup>\*1</sup> As for Taiwan, refer to US area

Model	MFC-J3530DW	MFC-J3930DW	MFC-J6530DW	MFC-J6535DW	
Operating Environment Temperature (Best Print Quality)	10-35 (20-33) degrees centigrade				
Operating Environment Humidity (Best Print Quality)	20-80 (20-80) %				
Power Consumption (Operating/Standby/Sleep mode/Off)	US area	N/A		27/5.5/1.4/0.04 w	27/5.5/1.5/0.04 w
	Europe	27/6.0/1.6/0.04 w	29/6.5/1.7/0.04 w	27/6.0/1.6/0.04 w	N/A
	Asia/Oceania	27/6.0/1.6/0.04 w	29/6.5/1.7/0.04 w <sup>*1</sup>	27/6.0/1.6/0.04 w	N/A
	China	27/6.0/1.6/0.04 w	29/6.5/1.7/0.04 w	N/A	
Machine Noise (Operating)	50 dBA				
Machine Dimensions	W575 x D477 x H305 mm (W22.6 x D18.8 x H12.0 inch)	W575 x D477 x H374.5 mm (W22.6 x D18.8 x H14.7 inch)	W575 x D477 x H305 mm (W22.6 x D18.8 x H12.0 inch)		
Machine Weight	19.6 kg (43.2 lb)	23.6 kg (52.0 lb)	19.4 kg (42.8 lb) (For US area) 19.6 kg (43.2 lb) (Except for US area)	19.9 kg (43.9 lb)	

Model	MFC-J6545DW	MFC-J6730DW	MFC-J6930DW	MFC-J6935DW	
Operating Environment Temperature (Best Print Quality)	10-35 (20-33) degrees centigrade				
Operating Environment Humidity (Best Print Quality)	20-80 (20-80) %				
Power Consumption (Operating/Standby/Sleep mode/Off)	US area	27/5.5/1.5/0.04 w	28/6.0/1.6/0.04 w	28/5.5/1.6/0.04 w	29/6.0/1.6/0.04 w
	Europe	N/A		29/6.5/1.7/0.04 w	
	Asia/Oceania	N/A	28/6.0/1.6/0.04 w	29/6.5/1.7/0.04 w	
	China	N/A			
Machine Noise (Operating)	50 dBA				
Machine Dimensions	W575 x D477 x H310 mm (W22.6 x D18.8 x H12.2 inch)	W575 x D477 x H374.5 mm (W22.6 x D18.8 x H14.7 inch)			
Machine Weight	20.1 kg (44.3 lb)	23.0 kg (50.7 lb)	23.4 kg (51.6 lb) (For US area) 23.6 kg (52.0 lb) (Except for US area)	23.5 kg (51.8 lb) (For US area) 23.7 kg (52.2 lb) (Except for US area)	

<sup>\*1</sup> As for Taiwan, refer to MFC-J6930DW for US area

Model		MFC-J6945DW	MFC-J6947DW	MFC-T4500DW
Operating Environment Temperature (Best Print Quality)		10-35 (20-33) degrees centigrade		
Operating Environment Humidity (Best Print Quality)		20-80 (20-80) %		
Power Consumption (Operating/Standby/Sleep mode/Off)	US area	29/6.0/1.5/0.04 w	N/A	27/5.0/1.4/0.04 w <sup>*2</sup>
	Europe	29/6.5/1.6/0.04 w		N/A
	Asia/Oceania	29/6.5/1.6/0.04 w	N/A	28/6.0/1.5/0.04 w <sup>*1</sup>
	China	N/A		28/6.0/1.5/0.04 w
Machine Noise (Operating)		50 dBA		
Machine Dimensions		W575 x D477 x H379 mm (W22.6 x D18.8 x H14.9 inch)	W575 x D477 x H449 mm (W22.6 x D18.8 x H17.7 inch)	W575 x D477 x H310 mm (W22.6 x D18.8 x H12.2 inch)
Machine Weight		24.1 kg (53.1 lb) (For US area) 24.2 kg (53.4 lb) (Except for US area)	27.9 kg (61.5 lb)	20.4 kg (45.0 lb) (For US area) 20.5 kg (45.2 lb) (Except for US area)

<sup>\*1</sup> As for Taiwan, refer to US area

<sup>\*2</sup> As for Argentina and Chile, refer to Asia/Oceania

## 2 FAX

Model		HL-J6000DW/ J6100DW/ T4000DW	MFC-J3530DW/J3930DW/J6530DW/J6535DW/J6545DW/ J6730DW/J6930DW/J6935DW/J6945DW/J6947DW	MFC-T4500DW
Modem Speed (bps)		N/A	33,600 (FAX)	
Transmission Speed		N/A	Approx. 3 sec (ITU-T Test Chart #1, MMR)	
ITU-T Group		N/A	Super G3	
COLOR FAX	Document (Send/Receive)	N/A	Yes/Yes (ITU-T color FAX)	N/A
	Memory (Send/Receive)	N/A		

## 3 PRINTER

Model	All models
Print Speed ESAT (mono/color) (based on ISO/IEC 24734)	22/20 ipm
Draft Print Speed (mono/color) * Paper feeding time is included.	35/27 ppm
Resolution (horizontal x vertical)	Up to 1,200 x 4,800 dpi
Auto Duplex Print	Yes (Up to A3/LGR)

## 4 COPY

Model		HL-J6000DW/ J6100DW/ T4000DW	MFC-J3530DW/ J6530DW/ J6535DW/ J6730DW	MFC-J3930DW/ J6930DW/ J6935DW	MFC-J6545DW/ T4500DW	MFC-J6945DW/ J6947DW
Copy Speed ESAT (based on ISO/IEC 24735) (mono/color)		N/A	12/9 ipm		15/11 ipm	
Copy Speed FCOT (based on ISO/ IEC 24735 Annex D)		N/A	6/6 sec			
Resolution (horizontal x vertical)	Mono	N/A	Print: Max. 1,200 x 4,800 dpi Scan: Max. 600 x 600 dpi (FB/ADF)			
	Color	N/A	Print: Max. 1,200 x 4,800 dpi Scan: Max. 600 x 600 dpi (FB)/Max. 300 x 600 dpi (ADF)			
Auto Duplex Copy		N/A		Yes	N/A	Yes

## 5 SCANNER

Model		HL-J6000DW/ J6100DW/ T4000DW	MFC-J3530DW/J6530DW/ J6535DW/J6545DW/J6730DW/ T4500DW	MFC-J3930DW/J6930DW/ J6935DW/J6945DW/J6947DW
Scan speed (Mono/Color) Multiple sheets (based on ISO/ IEC17991)		N/A	A4 portrait: 18/18 ipm A4 landscape: 11/11 ipm A3: 8/8 ipm	
Scan speed (Duplex) (Mono/Color) Multiple sheets (based on ISO/ IEC17991)		N/A		A4 portrait: 36/36 ipm A4 landscape: 22/22 ipm A3: 16/16 ipm
Resolution (horizontal x vertical)	Optical	N/A	FB: 1,200 x 2,400 dpi (Mono) / 1,200 x 1,200 dpi (Color) ADF: 600 x 600 dpi (Mono) / 300 x 600 dpi (Color)	
	Interpolated	N/A	For Windows Vista/7/8/8.1/10, up to 19,200 x 19,200 dpi with Scanner Utility	

## 6 SOFTWARE

Model		HL-J6000DW/J6100DW/T4000DW MFC-J6545DW/J6945DW/J6947DW/T4500DW	MFC-J3530DW/J3930DW/J6530DW/J6535DW/ J6730DW/J6930DW/J6935DW
Driver Support OS Version	Windows	Windows 7 SP1/8/8.1/10 Server 2008/2008 R2/2012/2012 R2/2016	Windows Vista/7/8/8.1/10 Windows Server 2008/2008 R2/2012/2012 R2
	Macintosh	OS X v10.11.6, macOS v10.12.x/10.13.x	OS X v10.9.5/10.10.x/10.11.x

## 7 NETWORK

### 7.1 Network

Model	HL-J6000DW/J6100DW/T4000DW MFC-J6545DW/T4500DW	MFC-J3530DW/J3930DW/J6530DW/ J6535DW/J6730DW/J6930DW/J6935DW	MFC-J6945DW/ J6947DW
Internet FAX (Firmware) (versionT37)	N/A	Yes (Download)	Yes

### 7.2 Wired

Model	HL-J6000DW/J6100DW/T4000DW MFC-J6545DW/J6945DW/J6947DW/ T4500DW	MFC-J3530DW/J3930DW/J6530DW/ J6535DW/J6730DW/J6930DW/J6935DW
Model Name (Ethernet)	Embedded (NC-420h)	Embedded (NC-380h)
Network Connection (Ethernet)	Ethernet 10/100BASE-TX Auto Negotiation	

### 7.3 Wireless

Model	HL-J6000DW/J6100DW/T4000DW MFC-J6545DW/J6945DW/J6947DW/ T4500DW	MFC-J3530DW/J3930DW/J6530DW/ J6535DW/J6730DW/J6930DW/J6935DW
Model Name (Wireless)	Embedded (NC-430w)	Embedded (NC-390w)
Network Connection (Wireless)	IEEE 802.11b/g/n (Infrastructure) IEEE 802.11g/n (Wi-Fi Direct)	
Wireless Security	WEP 64/128 bit, WPA-PSK (TKIP/AES), WPA2-PSK (TKIP/AES) * Wi-Fi Direct supports WPA2-PSK (AES) only	
Setup Support Utility	AOSS	N/A
	WPS (Wifi Protected Setup)	Yes

## 8 SUPPLIES/OPTIONS

Model		HL-J6000DW/ J6100DW/ MFC- J6947DW	HL- T4000DW/ MFC- T4500DW	MFC-J3530DW/ J3930DW/ J6530DW/ J6730DW/ J6930DW	MFC- J6535DW/ J6935DW	MFC-J6545DW/J6945DW
Ink Cartridge Yield @ ISO pattern (Pages)	Bundled Cartridge (BK/CL)	2,250/975	N/A	357/357 (Except for China) 2,400/975 (For China)	2,400/975	MFC-J6545DW/J6945DW: 4,000/3,700 (For U.S.A. and Canada) 2,250/975 (Except for U.S.A. and Canada) MFC-J6545DW XL: 1 set of 4,000/3,700 and 1 set of 5,100/3,750
	Supply High Yield Cartridge (BK/CL)	3,000/1,500	N/A	550/550 (Except for China) N/A (For China)	550/550 (For Europe) N/A (Except for Europe)	3,000/1,500
	Supply Super High Yield Cartridge (BK/CL)	6,000/5,000	N/A	3,000/1,500		6,000/5,000
Ink Bottle Yield @ ISO pattern (Pages)	Bundled Bottle (BK/CL)	N/A	5,850/ 4,250	N/A		
	Supply High Yield Bottle (BK/CL)	N/A	6,500/ 5,000	N/A		
Storage Condition of Ink Cartridge		(Temperature) Normal condition: -20 to 40°C (Humidity) Normal condition: 20 to 80% * At the temperature of 40 to 50°C and the humidity of 80 to 95%: Up to 5 days * At the temperature of 40 to 60°C and the humidity of Non control condition: Up to 5 days				

## 9 SERVICE INFORMATION

Model	All models
Monthly Volume	Up to 30,000 pages
Machine Life	100,000 pages or 5 years
MTBF (Mean Time Between Failures)	4,000 hours
MTTR (Mean Time To Be Repaired)	30 minutes

## 10 PAPER

### 10.1 Paper

#### Paper type and size for each operation

Paper Type	Paper Size		Usage				
			Fax	Copy	Direct Print		Printer
					JPEG Print	PDF Print <sup>*1</sup>	
Cut-Sheet	Ledger	11 x 17 in. (279.4 x 431.8 mm)	Yes	Yes	Yes	Yes	Yes
	Letter	8 1/2 x 11 in. (215.9 x 279.4 mm)	Yes	Yes	Yes	Yes	Yes
	A3	11.7 x 16.5 in. (297 x 420 mm)	Yes	Yes	Yes	Yes	Yes
	A4	8.3 x 11.7 in. (210 x 297 mm)	Yes	Yes	Yes	Yes	Yes
	Legal	8 1/2 x 14 in. (215.9 x 355.6 mm)	Yes	Yes	---	Yes	Yes
	Mexico legal	8.5 x 13.38 in. (215.9 x 339.85 mm)	Yes	Yes	---	Yes	Yes
	India legal	8.46 x 13.58 in. (215 x 345 mm)	Yes	Yes	---	Yes	Yes
	Folio	8 1/2 x 13 in. (215.9 x 330.2 mm)	Yes	Yes	---	Yes	Yes
	16K <sup>*2</sup>	7.7 x 10.6 in. (195 x 270 mm)	---	---	---	---	Yes
	Executive	7 1/4 x 10 1/2 in. (184.1 x 266.7 mm)	---	Yes	---	Yes	Yes
	JIS B4 <sup>*2</sup>	10.1 x 14.3 in. (257 x 364 mm)	---	---	---	---	Yes
	JIS B5 <sup>*2</sup>	7.2 x 10.1 in. (182 x 257 mm)	---	---	---	---	Yes
	JIS B6 <sup>*2</sup>	5.04 x 7.17 in. (128 x 182 mm)	---	---	---	---	Yes
	A5	5.8 x 8.3 in. (148 x 210 mm)	---	Yes	---	Yes	Yes
A6	4.1 x 5.8 in. (105 x 148 mm)	---	Yes	---	Yes	Yes	
Cards	Photo	4 x 6 in. (10 x 15 cm)	---	Yes	Yes	---	Yes
	Photo L	3 1/2 x 5 in. (9 x 13 cm)	---	---	---	---	Yes
	Photo 2L	5 x 7 in. (13 x 18 cm)	---	---	Yes	---	Yes
	Index Card	5 x 8 in. (13 x 20 cm)	---	---	--	---	Yes
Envelopes	C5 Envelope	6.4 x 9 in. (162 x 229 mm)	---	---	---	---	Yes
	DL Envelope	4.3 x 8.7 in. (110 x 220 mm)	---	---	---	---	Yes
	Com-10	4 1/8 x 9 1/2 in. (104.7 x 241.3 mm)	---	---	---	---	Yes
	Monarch	3 7/8 x 7 1/2 in. (98.4 x 190.5 mm)	---	---	---	---	Yes

<sup>\*1</sup> PDF Print is available only for HL-J6000DW/J6100DW, MFC-J6935DW/J6945DW/J6947DW.

<sup>\*2</sup> Supported only in some countries.

#### Paper weight and thickness

Paper Type		Weight	Thickness
Cut-Sheet	Plain Paper, Recycled Paper	17 to 32 lb (64 to 120 g/m <sup>2</sup> )	3 to 6 mil (0.08 to 0.15 mm)
	Inkjet Paper	17 to 53 lb (64 to 200 g/m <sup>2</sup> )	3 to 10 mil (0.08 to 0.25 mm)
	Glossy Paper <sup>*1,2</sup>	Up to 58 lb (Up to 220 g/m <sup>2</sup> )	Up to 10 mil (Up to 0.25 mm)
Cards	Photo Card <sup>*1,2,3</sup>	Up to 53 lb (Up to 200 g/m <sup>2</sup> )	Up to 10 mil (Up to 0.25 mm)
	Index Card	Up to 32 lb (Up to 120 g/m <sup>2</sup> )	Up to 6 mil (Up to 0.15 mm)
Envelopes		20 to 25 lb (80 to 95 g/m <sup>2</sup> )	Up to 20 mil (Up to 0.52 mm)

<sup>\*1</sup> BP71 69 lb (260 g/m<sup>2</sup>) paper is specially designed for Brother inkjet machines.

<sup>\*2</sup> Up to 12 mil (Up to 0.3 mm) for MP Tray.

<sup>\*3</sup> Up to 58 lb (Up to 220 g/m<sup>2</sup>) for MP Tray.

## Paper capacity of the paper trays

	Paper size	Paper types	No. of sheets
Standard Tray	<Landscape> Letter, Executive, A4, JIS B5* <sup>1</sup> <Portrait> Ledger, A3, JIS B4* <sup>1</sup> , JIS B6* <sup>1</sup> , Legal, Mexico Legal, India Legal, Folio, A5, A6, Envelopes (C5, Com-10, DL, Monarch), Photo, Photo L, Photo 2L, Index Card, 16K* <sup>1</sup>	Plain Paper, Recycled Paper	250* <sup>2</sup>
		Inkjet Paper	20
		Glossy Paper, Photo	20
		Index Card	30
		Envelopes	10
Lower Tray	<Landscape> Letter, A4 <Portrait> Ledger, A3, JIS B4* <sup>1</sup> , Legal, Mexico Legal, India Legal, Folio	Plain Paper, Recycled Paper	250* <sup>2</sup>
MP Tray * <sup>3</sup>	<Landscape> Letter, Executive, A4, JIS B5* <sup>1</sup> <Portrait> Ledger, A3, JIS B4* <sup>1</sup> , JIS B6* <sup>1</sup> , Legal, Mexico Legal, India Legal, Folio, A5, A6, Envelopes (C5, Com-10, DL, Monarch), Photo, Photo L, Photo 2L, Index Card, 16K* <sup>1</sup>	Plain Paper, Recycled Paper	100* <sup>2</sup>
		Inkjet Paper	20 (Up to Letter/A4) 5 (Over Letter/A4)
		Glossy Paper, Photo	20 (Up to Letter/A4) 5 (Over Letter/A4)
		Index Card	50
		Envelopes	20 (Up to Letter/A4) 5 (Over Letter/A4)
Manual Feed Slot	<Landscape> Letter, Executive, A4, JIS B5* <sup>1</sup> <Portrait> Ledger, A3, JIS B4* <sup>1</sup> , JIS B6* <sup>1</sup> , Legal, Mexico Legal, India Legal, Folio, A5, A6, Envelopes (C5, Com-10, DL, Monarch), Photo, Photo L, Photo 2L, Index Card, 16K* <sup>1</sup>	Plain Paper, Recycled Paper, Inkjet Paper, Glossy Paper, Photo and Envelopes	1
3rd Tray	<Landscape> Letter, A4 <Portrait> Ledger, A3, JIS B4* <sup>1</sup> , Legal, Mexico Legal, India Legal, Folio	Plain Paper, Recycled Paper	250* <sup>2</sup>

\*<sup>1</sup> Supported only in some countries.

\*<sup>2</sup> When using plain paper 20 lb (80 g/m<sup>2</sup>).

\*<sup>3</sup> MP tray is recommended for glossy paper.

## Recommended print media

### Brother paper

Paper Type	Item
Premium Plus Glossy Photo - Ledger - Letter - 4" x 6"	BP71GLGR BP71GLTR BP71GP20
Plain Inkjet - Ledger - A3 Plain - A3 Glossy Photo - A3 Inkjet (Matte) - A4 Plain - A4 Glossy Photo - A4 Inkjet (Matte) - 10 x 15 cm Glossy Photo	BP60PLGR (U.S.A. only) BP60PA3 BP71GA3 BP60MA3 BP60PA BP71GA4 BP60MA BP71GP

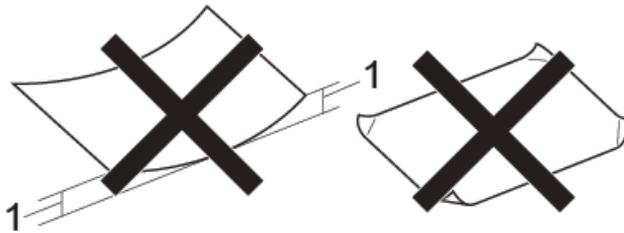
## Handle and Use Print Media

- Store paper in its original packaging and keep it sealed. Keep the paper flat and away from moisture, direct sunlight and heat.
- Avoid touching the shiny (coated) side of the photo paper.

## IMPORTANT

DO NOT use the following kinds of paper:

- Damaged, curled, wrinkled, or irregularly shaped



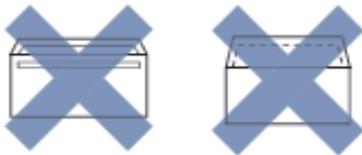
1: 0.08 in.(2mm) or greater curl may cause jams to occur.

- Extremely shiny or highly textured
- Paper that cannot be arranged uniformly when stacked
- Paper made with a short grain

DO NOT use envelopes that:

- Are loosely constructed
- Have windows
- Are embossed (have raised writing on them)
- Have clasps or staples
- Are pre-printed on the inside
- Are self-adhesive
- Have double flaps

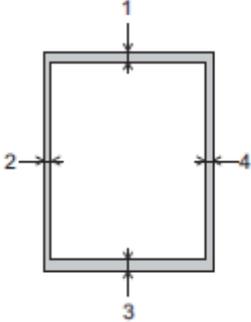
### Self-adhesive Double flaps



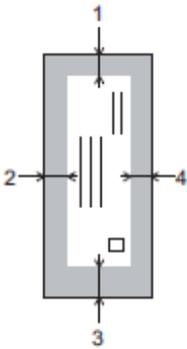
## 10.2 Unprintable Area

The unprintable area depends on the settings in the application you are using. The figures below show the unprintable areas on cut-sheet paper and envelopes. The machine can print in the shaded areas of cut-sheet paper only when the Borderless print feature is available and turned on.

**Cut-Sheet Paper**



**Envelopes**



	Top (1)	Left (2)	Bottom (3)	Right (4)
Cut-Sheet	0.12 in. (3 mm)	0.12 in. (3 mm)	0.12 in. (3 mm)	0.12 in. (3 mm)
Envelopes	0.47 in. (12 mm)	0.12 in. (3 mm)	0.47 in. (12 mm)	0.12 in. (3 mm)

**Note:** The Borderless print feature is not available for envelopes, 2-sided printing and some paper sizes, such as Legal and Executive.

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# CHAPTER 2 TROUBLESHOOTING

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## 1 INTRODUCTION

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This section gives the service personnel some of the troubleshooting procedures to be followed if an error or malfunction occurs with the machine. It is impossible to anticipate all of the possible problems which may occur in future and determine the troubleshooting procedures, so this section covers some sample problems. However, those samples will help service personnel pinpoint and repair other defective elements if he/she analyzes and examines them well.

### 1.1 Precautions

For precautions in a check based on troubleshooting, see "Precautions for Troubleshooting and/or Disassembly/Assembly". (Refer to [page: x](#))

### 1.2 Initial Check

Prior to proceeding to the troubleshooting procedures, make the following initial checks:

#### **Environmental conditions**

- (1) The machine is placed on a flat, firm surface.
- (2) The machine is used in clean environment with temperature (10 to 35 degree-C) and humidity (20 to 80 %.)
- (3) The machine is not exposed to direct sunlight, excessive heat, moisture, or dust.
- (4) The machine is transported in level.

#### **Power requirements**

- (1) The power requirements described in label of the machine is supplied. Its variation is within +/-10% of the rated voltage.
- (2) All cables and harnesses are firmly connected.
- (3) The fuses are not blown.

#### **Recording paper**

- (1) A recommended type of paper is being used (refer to [Chapter 1, Section 10 "PAPER"](#))
- (2) The recording paper is not dampened.

#### **Consumable Parts**

- (1) Ink cartridge (4 colors) is correctly set, or ink is properly refilled.

#### **Head/carriage unit**

- (1) Repeat purge action (maintenance code 76) for a couple of times. (Refer to [Chapter 5, Section 1.3.28 "Purge Operation \(Maintenance mode 76\)"](#).)

#### **Others**

- (1) Low temperature  
Motor may not run correctly due to excessive load for each drive in low temperature environment. Warm the room temperature in such case.

## **Cleaning**

(1) Use a soft dry lint-free cloth.

### **WARNING**

DO NOT use flammable solvent such as alcohol, benzene, thinner to clean the body of the machine. DO NOT use near by.



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## 2 OVERVIEW

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### 2.1 Cross-section Drawings

#### 2.1.1 Document scanning

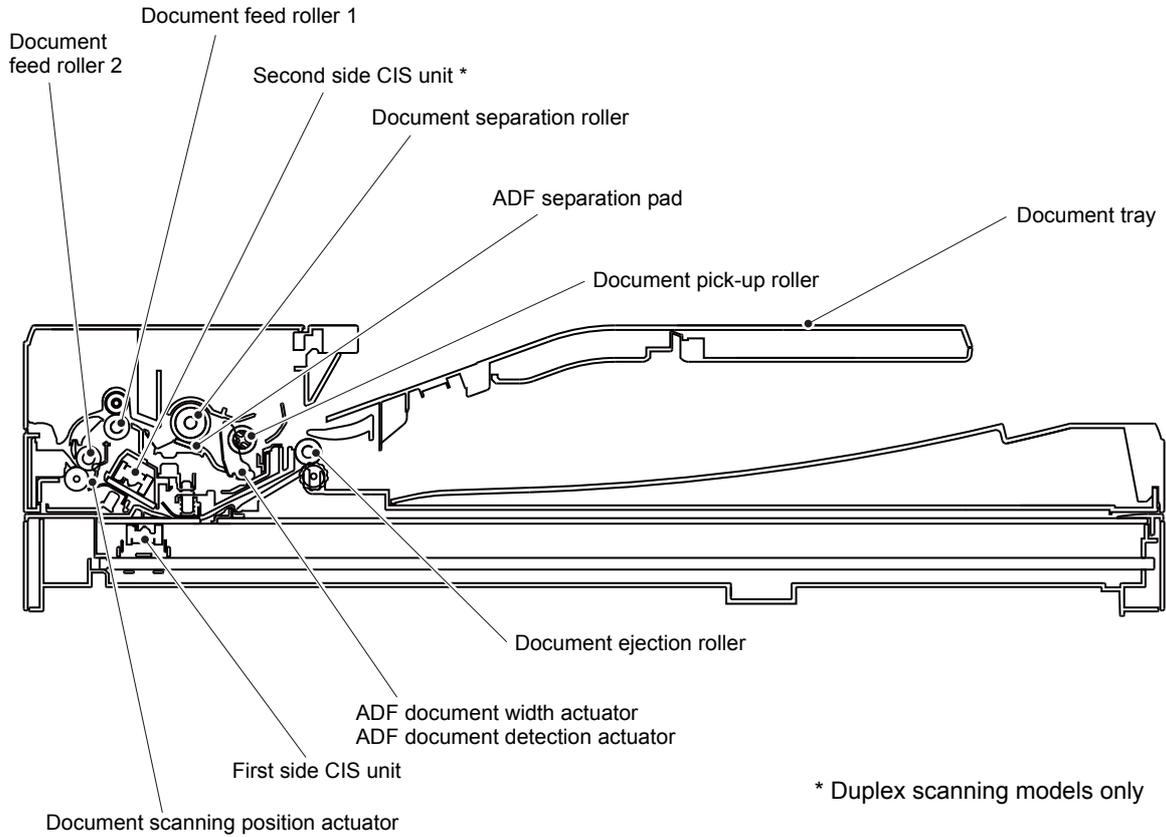


Fig. 2-1

## 2.1.2 Printer part

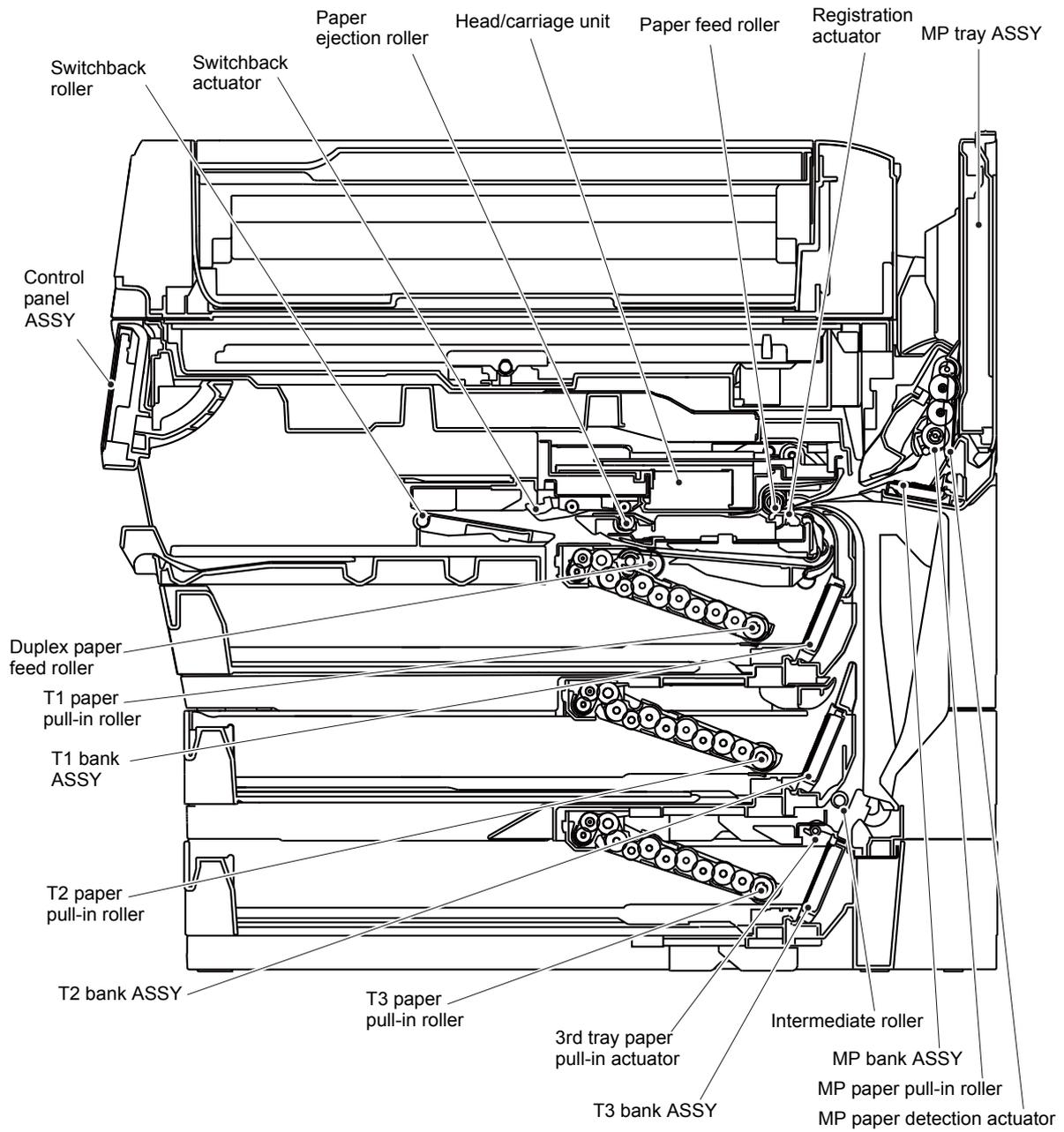


Fig. 2-2

## 2.2 Document Feeding Path/Recording Paper Feeding Path

### 2.2.1 Document Feeding Path

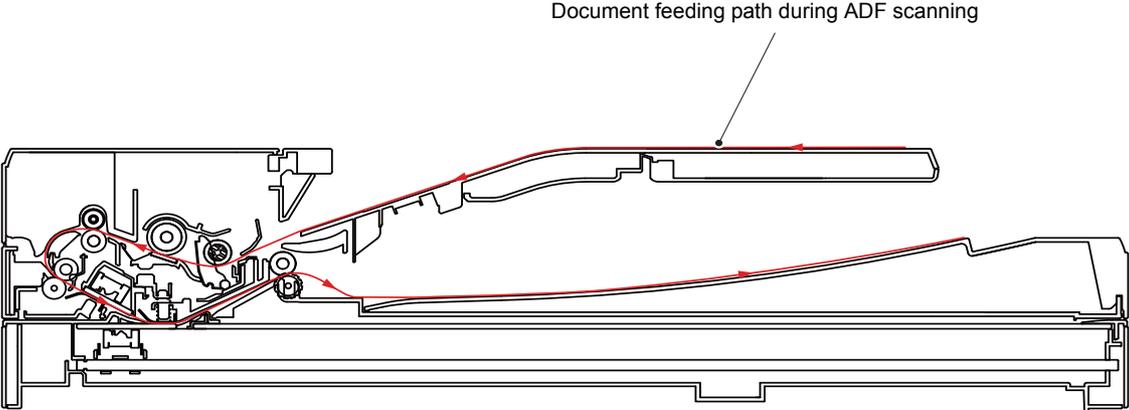


Fig. 2-3

### 2.2.2 Recording Paper Feeding Path

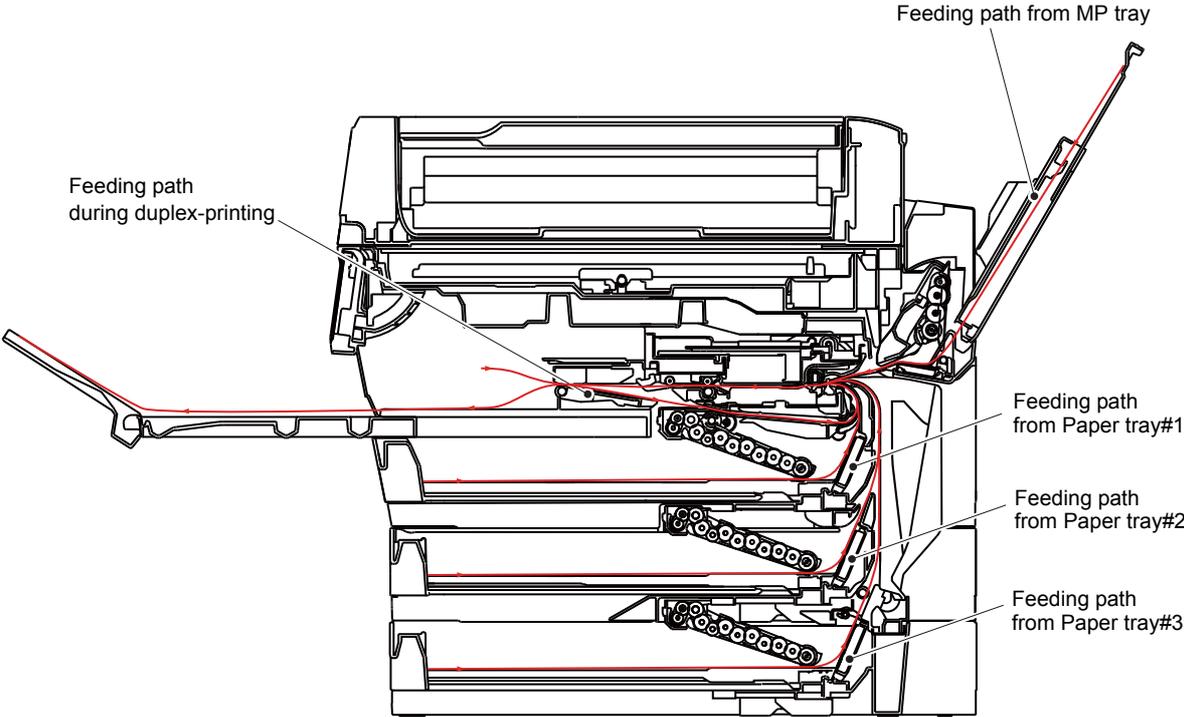


Fig. 2-4

## 2.3 Parts Names and Functions

### ■ Document scanning and feeding

Parts Names	Functions
ADF document detection actuator	This detects whether documents are set on the document tray.
ADF document width actuator	Identify the document size.
Document pick-up roller	This pulls documents loaded in the document tray into the ADF.
Document separation roller ADF separation pad	This separates documents sent by the document pick-up roller in single sheet.
Document feed roller 1, 2	This feeds a document to the CIS unit.
Document scanning position actuator	This detects the leading edge and the ending edge of the document, adjusting the scanning position on the first side and second side.  This detects paper jamming in the ADF.
Document ejection roller	This ejects the scanned document to the document ejection tray.

### ■ Printing and paper feeding

Parts Names	Functions
T1/T2 paper pull-in roller	This feeds the recording paper from the paper tray #1#2 to the paper feed roller. After the registration actuator detects the leading edge of the paper, it pushes the recording paper against the reverse-rotating or stopped paper feed roller, and correct inclination of the paper.
Registration actuator	This detects the leading edge of recording paper, controlling the printing start position. This detect the leading edge/ending edge of recording paper, identifying the recording paper size. This detects paper jamming in the rear.
Paper feed roller	This reverses the rotation or stops when correcting inclination of the paper with the T1/T2 paper pull-in roller, the duplex paper feed roller and the intermediate roller. It feeds the recording paper to the printing start position after correction.
Paper ejection roller	This feeds printed recording paper to the switchback roller.

Parts Names	Functions
Switchback actuator	<p>This detects whether the printed recording papers are ejected.</p> <p>This detects the ending edge of recording paper after printing the first side when duplex-printing, adjusting timing to reverse the switchback roller rotation.</p> <p>This detects paper jamming in the ejector.</p>
Switchback roller	<p>This ejects the recording paper to the output paper tray. During duplex-printing, after feeding some of the recording papers printed in the first side to the switchback roller, its rotation is reversed to feed the recording paper to the duplex-printing path.</p>
Duplex paper feed roller	<p>During duplex-printing, this feeds the recording paper that are fed in the duplex paper path to the paper feed roller.</p> <p>After the registration actuator detects the leading edge of the paper, it pushes the recording paper against the stopping paper feed roller, and corrects inclination of the paper.</p>
MP paper pull-in roller	<p>This feeds the recording paper from the MP tray to the paper feed roller.</p> <p>After the registration actuator detects the leading edge of the paper, it pushes the recording paper against the stopping or reverse-rotating paper feed roller, and corrects inclination of the paper.</p>
MP paper detection actuator	<p>This detects whether the recording paper are set on the MP tray.</p>
T3 paper pull-in roller	<p>This feeds the recording paper from the paper tray #3 to the Intermediate roller.</p> <p>After the 3rd tray paper pull-in actuator detects the leading edge of the paper, it pushes the recording paper against the reverse-rotating or stopped intermediate roller, and corrects inclination of the paper.</p>
Intermediate roller	<p>This feeds the recording paper from the T3 paper pull-in roller to the paper feed roller.</p> <p>After the registration actuator detects the leading edge of the paper, it pushes the recording paper against the reverse-rotating or stopped paper feed roller, and corrects inclination of the paper.</p>
3rd tray paper pull-in actuator	<p>This detects the leading edge of recording paper and switches drive from the T3 paper pull-in roller to intermediate roller.</p>

## 2.4 Block Diagram

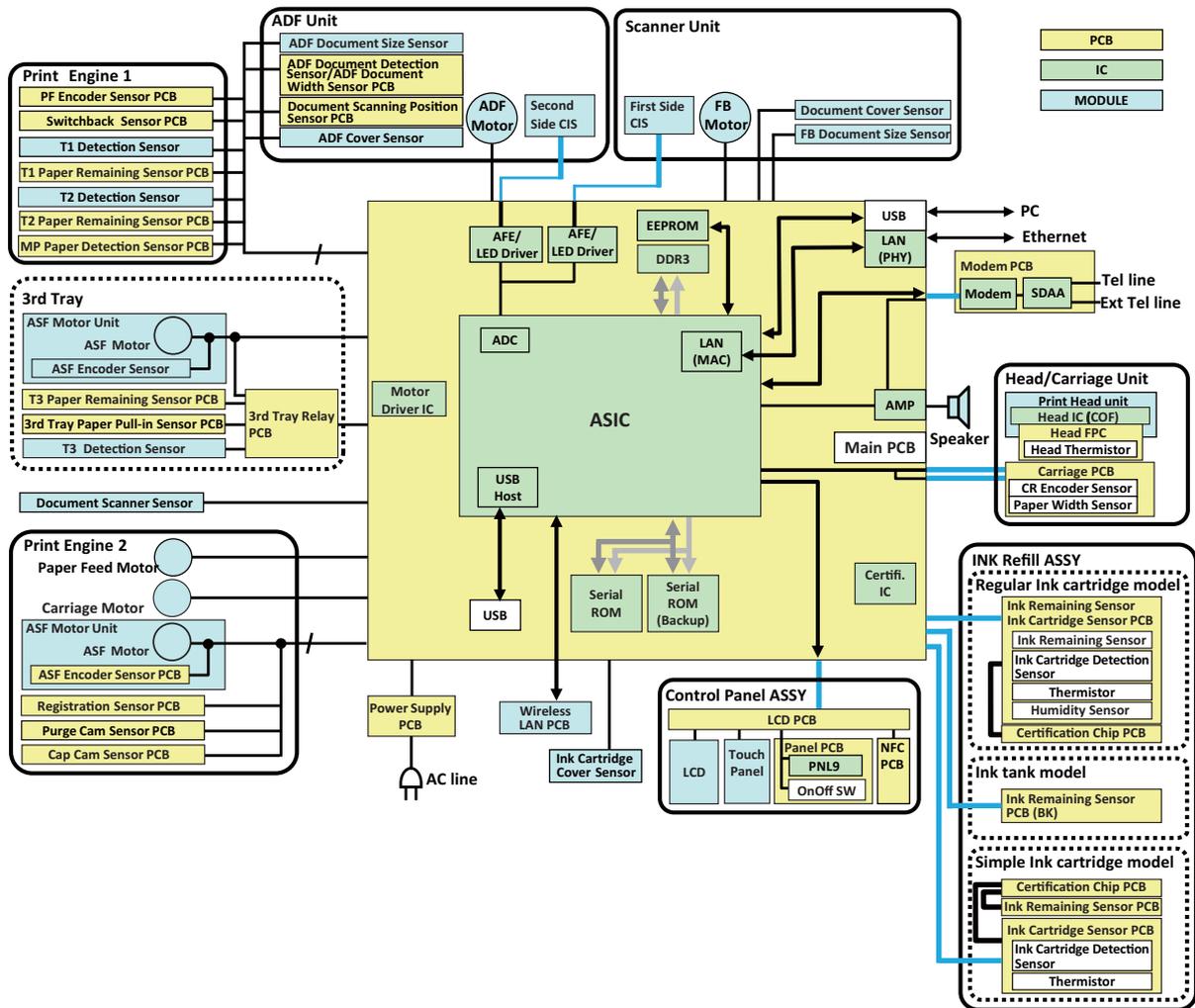


Fig. 2-5



### 3 ERROR INDICATION

To help the user or the service personnel promptly locate the cause of a problem (if any), the machine incorporates the self-diagnostic functions which display error messages for equipment errors.

#### 3.1 Error Code

Error Code	Contents	Refer to page:
0D00	Paper jam during duplex-printing - The recording papers are fed in reverse on the platen when switchback drive is started, triggering switchback sensor as paper feeding condition.	2-25
0E00	Defective during duplex-printing - Switchback sensor detects paper feed condition at out of specified timing during switchback.	2-25
1300	Defective during duplex-printing - Registration sensor detects paper feed condition at out of specified timing during switchback.	2-26
1500	Paper jam during duplex ejecting - Recording paper is not able to be ejected since it is longer than 840 mm when ejecting the paper. (The registration sensor stays in the paper feeding condition during ejecting.)	2-26
1700	Recording paper size error (duplex-printing/duplex-copying) - Paper width is narrower than 95.5 mm (detection by paper width sensor) - Paper length is longer than 461.8 mm (detection by registration sensor) - Paper length is shorter than 143.5 mm (detection by registration sensor)	2-27
1800	Paper jam during duplex-printing - Registration sensor does not detect paper feed within specified pulse numbers in the second side paper re-feed.	2-27
2000	Cannot identify a black ink cartridge. - The ink cartridge detection sensor and the ink remaining sensor are detecting.	2-28
2001	Cannot identify a yellow ink cartridge. - The ink cartridge detection sensor and the ink remaining sensor are detecting.	2-28
2002	Cannot identify a cyan ink cartridge. - The ink cartridge detection sensor and the ink remaining sensor are detecting.	2-28
2003	Cannot identify a magenta ink cartridge. - The ink cartridge detection sensor and the ink remaining sensor are detecting.	2-28
2100	Black ink cartridge side IC chip relation defective - Detecting setting wrong color	2-28
2101	Yellow ink cartridge side IC chip relation defective - Detecting setting wrong color	2-28
2102	Cyan ink cartridge side IC chip relation defective - Detecting setting wrong color	2-28
2103	Magenta ink cartridge side IC chip relation defective - Detecting setting wrong color	2-28

Error Code	Contents	Refer to page:
2200	Black ink cartridge side IC chip relation defective - It is judged as incompatible ink cartridge is loaded.	2-29
2201	Yellow ink cartridge side IC chip relation defective - It is judged as incompatible ink cartridge is loaded.	2-29
2202	Cyan ink cartridge side IC chip relation defective - It is judged as incompatible ink cartridge is loaded.	2-29
2203	Magenta ink cartridge side IC chip relation defective - It is judged as incompatible ink cartridge is loaded.	2-29
2300	Black ink cartridge side IC chip relation defective - It is judged as optional ink cartridge has been loaded before the initial installation is started.	2-29
2301	Yellow ink cartridge side IC chip relation defective - It is judged as optional ink cartridge has been loaded before the initial installation is started.	2-29
2302	Cyan ink cartridge side IC chip relation defective - It is judged as optional ink cartridge has been loaded before the initial installation is started.	2-29
2303	Magenta ink cartridge side IC chip relation defective - It is judged as optional ink cartridge has been loaded before the initial installation is started.	2-29
2400	Black ink cartridge side IC chip relation defective - Identification no match - Judging as incompatible ink cartridge	2-30
2401	Yellow ink cartridge side IC chip relation defective - Identification no match - Judging as incompatible ink cartridge	2-30
2402	Cyan ink cartridge side IC chip relation defective - Identification no match - Judging as incompatible ink cartridge	2-30
2403	Magenta ink cartridge side IC chip relation defective - Identification no match - Judging as incompatible ink cartridge	2-30
2500	Cannot communicate with black ink cartridge IC chip (ink cartridge side.)	2-30
2501	Cannot communicate with yellow ink cartridge IC chip (ink cartridge side.)	2-30
2502	Cannot communicate with cyan ink cartridge IC chip (ink cartridge side.)	2-30
2503	Cannot communicate with magenta ink cartridge IC chip (ink cartridge side.)	2-30
2600	Black ink cartridge reaches its replacement period. Black ink reaches its refill period. - After judging as no ink by the ink remaining sensor, ink discharged for specified times.	2-31
2601	Yellow ink cartridge reaches its replacement period. - After judging as no ink by the ink remaining sensor, ink discharged for specified times.	2-31
2602	Cyan ink cartridge reaches its replacement period. - After judging as no ink by the ink remaining sensor, ink discharged for specified times.	2-31
2603	Magenta ink cartridge reaches its replacement period. - After judging as no ink by the ink remaining sensor, ink discharged for specified times.	2-31
2700	Black ink cartridge will reach its replacement period. Black ink will reach its refill period soon. - After judging as no ink by the ink remaining sensor, ink discharged for less than specified times.	2-31

Error Code	Contents	Refer to page:
2A00	No black ink cartridge loaded. - Detected by the ink cartridge detection sensor.	2-32
2A01	No yellow ink cartridge loaded. - Detected by the ink cartridge detection sensor.	2-32
2A02	No cyan ink cartridge loaded. - Detected by the ink cartridge detection sensor.	2-32
2A03	No magenta ink cartridge loaded. - Detected by the ink cartridge detection sensor.	2-32
2B00	Black ink cartridge ink remaining counter error	2-32
2B01	Yellow ink cartridge ink remaining counter error	2-32
2B02	Cyan ink cartridge ink remaining counter error	2-32
2B03	Magenta ink cartridge ink remaining counter error	2-32
2E00	Cannot communicate with ink cartridge IC chip (machine body side.)	2-33
2F00	Ink cartridge cover sensor detects opened cover state.	2-33
3000	Carriage does not move. - Detected by the CR encoder sensor.	2-33
3100	Carriage cannot detect origin. - Detected by the CR encoder sensor.	2-34
3200	Head capping is unable.	2-34
3500	Abnormal stop of head/carriage unit being driven - Causes other than paper jam when ink is not discharging	2-35
3800	Abnormal stop of head/carriage unit being driven - Caused by paper jam when ink is not discharging	2-35
3B00	Abnormal stop of head/carriage unit being driven - Causes other than paper jam when ink is discharging	2-35
3C00	Abnormal stop of head/carriage unit being driven - Caused by paper jam when ink is discharging	2-36
3E00	Defective occurs in the ASF motor, carriage motor or paper feed motor.	2-36
3F00	Carriage motor cannot stop.	2-37
4000	Casing internal thermistor defective - Casing internal thermistor detects -20 degree-C or less, or 80 degree-C or more when power is ON.	2-37
4200	Head voltage does not turn OFF.	2-37
4300	Head thermistor defective - Head thermistor detects -20 degree-C or less, or 80 degree-C or more when power is ON.	2-38
4400	Head driver IC detects abnormal temperature during operation or stand-by.	2-38
4600	Purge count or flushing count overflow.	2-38
4800	Head flat cable detected to be not correctly inserted.	2-38
4900	Head voltage does not raise.	2-39
4C00	ASIC thermistor error - The ASIC thermistor detected a temperature of -21 degree-C or less, or 125 degree-C or greater, when the machine was turned on.	2-39

Error Code	Contents	Refer to page:
4C01	Compound IC thermistor error - The compound IC thermistor detected a temperature of -21 degree-C or less, or 125 degree-C or greater, when the machine was turned on.	2-39
4E00	Head voltage remains ON and does not turn OFF even after 15 minutes have passed.	2-39
4F00	Head voltage drops too quick.	2-40
5000	The purge cam switch is not switching ON/OFF.	2-40
5200	Failed to detect the origin of the purge cam.	2-40
5A00	Abnormal stop of purge cam being driven	2-40
5B00	Pump of maintenance unit stopped abnormally during exhaustion/suction.	2-40
5D00	Excessive current protection activated for the head driver IC during purge cam operation.	2-40
5E00	Excessive current protection activated for the head driver IC during pump operation.	2-40
6700	T1 detection sensor detects no paper tray #1 state.	2-41
6701	T2 detection sensor detects no paper tray #2 state.	2-41
6702	T3 detection sensor detects no paper tray #3 state.	2-41
6F00	ASF motor cannot stop.	2-42
6F01	ASF encoder sensor cannot detect rotation of the ASF motor.	2-42
7000	Failed to detect ON/OFF of the purge cam.	2-42
7200	Failed to detect the origin of the purge cam.	2-42
7500	Cap cam cannot shift to head capping position.	2-42
7600	Cap cam cannot shift to head uncapping position.	2-42
7A00	Purge cam rotation error (capping CW)	2-42
7D00	Current protection activated for the cap driver IC.	2-42
7E00	Head property information not input.	2-42
8000	Recording paper size error (during FAX/list printing) (Only the models with single tray) The registration sensor and paper width sensor detect that the size of the loaded recording paper does not match the recording paper size setting.	2-43
8001	Paper tray #1 recording paper size error (during FAX/list printing) (Only the models with multiple trays) The registration sensor and paper width sensor detect that the size of the loaded recording paper does not match the recording paper size setting.	2-43
8002	Paper tray #2 recording paper size error (during FAX/list printing) (Only the models with multiple trays) The registration sensor and paper width sensor detect that the size of the loaded recording paper does not match the recording paper size setting.	2-43
8003	Paper tray #3 recording paper size error (during FAX/list printing) (Only the models with multiple trays) The registration sensor and paper width sensor detect that the size of the loaded recording paper does not match the recording paper size setting.	2-43
8004	MP tray recording paper size error (during FAX/list printing) (Only the models with multiple trays) The registration sensor and paper width sensor detect that the size of the loaded recording paper does not match the recording paper size setting.	2-43

Error Code	Contents	Refer to page:
8101	Recording paper size error (during FAX/list printing) (Only the models with single tray) The registration sensor and paper width sensor detect recording paper smaller than the setting size.	2-43
8102	Recording paper size error (during PC printing) (Only the models with single tray) The registration sensor and paper width sensor detect recording paper smaller than the setting size.	2-43
8103	Recording paper size error (during copy printing) (Only the models with single tray) The registration sensor and paper width sensor detect recording paper smaller than the setting size.	2-43
8104	Paper tray #1 recording paper size error (during FAX/list printing) (Only the models with multiple trays) The registration sensor and paper width sensor detect recording paper smaller than the setting size.	2-43
8105	Paper tray #2 recording paper size error (during FAX/list printing) (Only the models with multiple trays) The registration sensor and paper width sensor detect recording paper smaller than the setting size.	2-43
8106	Paper tray #3 recording paper size error (during FAX/list printing) (Only the models with multiple trays) The registration sensor and paper width sensor detect recording paper smaller than the setting size.	2-44
8107	MP tray recording paper size error (during FAX/list printing) (Only the models with multiple trays) The registration sensor and paper width sensor detect recording paper smaller than the setting size.	2-44
8108	Paper tray #1 recording paper size error (during PC printing) (Only the models with multiple trays) The registration sensor and paper width sensor detect recording paper smaller than the setting size.	2-44
8109	Paper tray #2 recording paper size error (during PC printing) (Only the models with multiple trays) The registration sensor and paper width sensor detect recording paper smaller than the setting size.	2-44
810A	Paper tray #3 recording paper size error (during PC printing) (Only the models with multiple trays) The registration sensor and paper width sensor detect recording paper smaller than the setting size.	2-44
810B	MP tray recording paper size error (during PC printing) (Only the models with multiple trays) The registration sensor and paper width sensor detect recording paper smaller than the setting size.	2-44
810C	Paper tray #1 recording paper size error (during copy printing) (Only the models with multiple trays) The registration sensor and paper width sensor detect recording paper smaller than the setting size.	2-44
810D	Paper tray #2 recording paper size error (during copy printing) (Only the models with multiple trays) The registration sensor and paper width sensor detect recording paper smaller than the setting size.	2-44
810E	Paper tray #3 recording paper size error (during copy printing) (Only the models with multiple trays) The registration sensor and paper width sensor detect recording paper smaller than the setting size.	2-44
810F	MP tray recording paper size error (during copy printing) (Only the models with multiple trays) The registration sensor and paper width sensor detect recording paper smaller than the setting size.	2-45
8110	The paper size and paper type of each tray set during print setting are different from before printing. This error occurs when the paper tray #1 has been specified as a pickup tray with the highest priority and plain paper has been specified as the paper type in auto tray switching print.	2-46

Error Code	Contents	Refer to page:
8111	The paper size and paper type of each tray set during print setting are different from before printing. This error occurs when the MP tray or manual feed slot has been specified as a pickup tray with the highest priority and plain paper has been specified as the paper type in auto tray switching print.	2-46
8112	The paper size and paper type of each tray set during print setting are different from before printing. This error occurs when the paper tray #1 has been specified as a pickup tray with the highest priority and inkjet paper has been specified as the paper type in auto tray switching print.	2-46
8113	The paper size and paper type of each tray set during print setting are different from before printing. This error occurs when the MP tray or manual feed slot has been specified as a pickup tray with the highest priority and inkjet paper has been specified as the paper type in auto tray switching print.	2-46
8114	The paper size and paper type of each tray set during print setting are different from before printing. This error occurs when the paper tray #1 has been specified as a pickup tray with the highest priority and Glossy paper has been specified as the paper type in auto tray switching print.	2-46
8115	The paper size and paper type of each tray set during print setting are different from before printing. This error occurs when the MP tray or manual feed slot has been specified as a pickup tray with the highest priority and Glossy paper has been specified as the paper type in auto tray switching print.	2-46
8116	The paper size and paper type of each tray set during print setting are different from before printing. This error occurs when the paper tray #2 has been specified as a pickup tray with the highest priority and plain paper has been specified as the paper type in auto tray switching print.	2-46
8120	Recording paper size error (during PC printing/Copy/AirPrint printing) The registration sensor and paper width sensor detect that the size of the loaded recording paper does not match the recording paper size setting.	2-45
8200	Paper jam - Paper width sensor cannot detect leading edge or width of recording papers.	2-47
8400	Paper jam - Registration sensor stays in paper feeding state even after completion of paper ejection action.	2-47
8700	Paper jam - Switchback sensor stays in paper feeding state even after completion of paper ejection action.	2-48
8800	Paper jam - Switchback sensor cannot detect paper feeding state even papers are fed during printing.	2-48
8900	Paper width sensor cannot detect origin specified on the paper feed roller.	2-49
8F00	Paper feed motor cannot stop.	2-49
8F01	PF encoder sensor cannot detect rotation of the paper feed motor.	2-49
9F00	3rd tray paper feed motor cannot stop.	2-50

Error Code	Contents	Refer to page:
9F01	3rd tray paper feed motor encoder sensor cannot detect rotation of the 3rd tray paper feed motor.	2-50
A000	Time out occurred during data transfer for second side document scanning.	2-50
A100	Document scanner sensor detects that document scanner is open.	2-50
A200	Document scanning position sensor detects length of document 900 mm or more.	2-51
A300	Document detection sensor detects that document is pulled out during document scanning. Or, the document scanning position sensor cannot detect document within specified time.	2-51
A400	ADF cover sensor detects that ADF cover is open.	2-52
A500	Level of CIS scan result is detected as abnormal during the first side fax sending. (During the first sending)	2-52
A600	Level of CIS scan result is detected as abnormal during the first side fax sending. (After retrying)	2-52
A700	Type of cis unit and CIS type input value does not match.	2-52
AC00	Level of CIS scan result is detected as abnormal during the second side fax sending. (During the first sending)	2-53
AD00	The required number of pixels of the scanning data is not output, and it does not finish normally.	2-53
AF00	CIS positioning abnormal (Home position cannot be found)	2-54
BC00	Level of CIS scan result is detected as abnormal during the second side fax sending. (After retrying)	2-53
BF00	Document scanning position sensor detects that the document's length does not fit duplex scanning.	2-54
D100	Modem PCB initialization failed.	2-54
D200	SDAA communication failure	2-54
D800	Touch panel initialization failed.	2-55
E200	Wired LAN MAC address not registered.	2-55
E300	Wireless LAN connection error	2-55
E600	Main PCB EEPROM write error	2-55
E900	NFC PCB initialization failed.	2-55
EC00	A USB device out of the specifications is inserted to the USB terminal, and consequently over current flows.	2-56
F000	Flash file system error	2-56
F001	Flash ROM read problem	2-56
FD00	Firmware verification during the self test fails.	2-56
FD01	System resource error	2-56
FE00	ROM data acquisition error	2-56

## 3.2 Error Messages

Error Message	State	Error Code	Reference
Black and White Print Only Replace Ink B&W Print Only	Ink cartridge reaches its replacement period. After judging as no ink by the ink remaining sensor, ink discharged for specified times. The amount of remaining ink in one or more of the ink tanks (except black) is low.	2600 2601 2602 2603	2-31
Cannot Detect	Cannot identify a ink cartridge.	2000 2001 2002 2003	2-28
	Ink cartridge side IC chip relation defective - Identification no match - Judging as incompatible ink cartridge	2400 2401 2402 2403	2-30
Cannot Detect Ink Volume	A cartridge with an incorrect remaining ink (a cartridge which has been refilled repeatedly) is loaded.	---	4.10.6
Comm. Error	Poor telephone line quality caused a communication error.	---	4.9.3
Connection Error	Other devices are trying to connect to the Wi-Fi Direct network at the same time.	---	4.5.1
Connection Failed	The machine and the mobile device cannot communicate.	---	4.5.1
Cover is Open	Document scanner sensor detects that document scanner is open.	A100	2-50
	Ink cartridge cover sensor detects opened cover state.	2F00	2-33
Data Remaining in Memory	The memory is full and data cannot be processed.	---	4.10.4
Disconnected	The destination FAX machine stopped.	---	4.9
Document Jam/too Long	Document scanning position sensor detects length of document 900 mm or more.	A200	2-51
	Document detection sensor detects that document is pulled out during document scanning. Or, the document scanning position sensor cannot detect document within specified time.	A300	2-51
High Temperature	It is detected that the head temperature is higher than the setting.	4300	2-38
	It is detected that the machine temperature is higher than the setting.	4000	2-37
Hub is Unusable	A USB hub or a USB device with a built-in hub has been set.	---	4.10.2
Ink absorber Pad Full	Purge count or flushing count overflow.	4600	2-38
Ink Low	The ink cartridge will reach its replacement period. Ink will reach its refill period.	2700	2-31
Install Ink	Ink cartridge side IC chip relation defective - It is judged as optional ink cartridge has been loaded before the initial installation is started.	2300 2301 2302 2303	2-29

Error Message	State	Error Code	Reference
Jam Front/Rear Jam Front Jam Rear Jam MP Tray Jam Front/MP Tray Jam Tray2 Jam Tray3 Paper Jam Repeat Jam (XX) Repetitive Paper Jams	Paper jam during duplex-printing The recording papers are fed in reverse on the platen when switchback drive is started, triggering switchback sensor as paper feeding condition.	0D00	2-25
	Defective during duplex-printing Switchback sensor detects paper feed condition at out of specified timing during switchback.	0E00	2-25
	Defective during duplex-printing Registration sensor detects paper feed condition at out of specified timing during switchback.	1300	2-26
	Paper jam during duplex ejecting Recording paper is not able to be ejected since it is longer than 840 mm when ejecting the paper.	1500	2-26
	Paper jam during duplex-printing Registration sensor does not detect paper feed within specified pulse numbers in the second side paper re-feed.	1800	2-27
	Carriage cannot detect origin. Detected by the CR encoder sensor.	3100	2-34
	Abnormal stop of head/carriage unit being driven Caused by paper jam when ink is not discharging	3800	2-35
	Abnormal stop of head/carriage unit being driven Caused by paper jam when ink is discharging	3C00	2-36
	Paper jam Paper width sensor cannot detect leading edge or width of recording papers.	8200	2-47
	Paper jam Registration sensor stays in paper feeding state even after completion of paper ejection action.	8400	2-47
	Paper jam Switchback sensor stays in paper feeding state even after completion of paper ejection action.	8700	2-48
	Paper jam Switchback sensor cannot detect paper feeding state even papers are fed during printing.	8800	2-48
	Low Temperature	It was detected that the head temperature is the specified value or less.	4300
It was detected that the machine temperature is the specified value or less.		4000	2-37
Machine Error	SDAA communication failure	D200	2-54
Media is Full	The memory in the media slot is full, or there are 999 or more files.		
No Caller ID	There is no caller ID information.		

Error Message	State	Error Code	Reference
No Cartridge	No ink cartridge loaded. Detected by the ink cartridge detection sensor.	2A00 2A01 2A02 2A03	2-32
	Cannot communicate with ink cartridge IC chip (ink cartridge side.)	2500 2501 2502 2503	2-30
No Device	When configuring the Wi-Fi Direct network, the machine cannot find the mobile device.	---	4.5.1
No File	The external memory in the media drive does not contain a .JPGfile.	---	4.10.3
No Paper Fed Repetitive No Paper Fed	It is detected that there is no recording paper in the valid trays for printing.	---	4.2.1 4.2.2 4.2.3
No Response/Busy	The dialled number does not answer or is busy.	---	4.9.3
Out of Fax Memory Out of Memory	The memory becomes full.	---	4.10.4
Paper size Mismatch Wrong Tray Settings	The size of the paper loaded in the tray does not match the specified print size.	8101 8102 8103 8104 8105 8107 8108 8109 810B 810C 810D 810F 8110 8111 8112 8113 8114 8115 8120	2-43 2-44 2-45 2-46
Paper Tray not detected Paper Tray #1 not detected Paper Tray #2 not detected Paper Tray #3 not detected	Paper tray detection sensor detects no paper tray state.	6700 6701 6702	2-41
Replace Ink Refill Ink	Ink cartridge reaches its replacement period. After judging as no ink by the ink remaining sensor, ink discharged for specified times. The amount of remaining ink in one or more of the ink tanks is low.	2600 2601 2602 2603	2-31
Sending Error Wrong Document Size Settings	The size of the document does not match the specified scanning document size.		
The maximum number of devices are already connected using Wi-Fi Direct.	The maximum number of mobile devices are already connected to the Wi-Fi Direct network when the machine is the Group Owner (G/O).	---	4.5.1

Error Message	State	Error Code	Reference
Touchscreen Initialization (Init.) Failed	The touch panel was touched before completing initialization of the touch panel when the power was turned ON.	D800	2-55
Unable to Clean XX Unable to Initialize XX Unable to Print XX	Detects some problem in printing. (Refer to the error code XX.)		
Unable to Scan XX	Detects some problem in scanning. (Refer to the error code XX.)		
Unusable Device (Disconnect device from front connector & turn machine off & then on) (Please disconnect USB device.)	A USB device out of the specifications is inserted to the USB terminal, and consequently over current flows.	EC00	2-56
	An unsupported USB device is connected.	---	4.10.8
Wrong Ink Cartridge	Ink cartridge side IC chip relation defective - It is judged as incompatible ink cartridge is loaded.	2200 2201 2202 2203	2-29
Wrong Ink Color	Ink cartridge side IC chip relation defective - Detecting setting wrong color	2100 2101 2102 2103	2-28

### 3.3 Communications Error

Code 1	Code 2	Cause	Refer to page:
10	07	No paper when document transmission is called	4.9.3 "A communications error occurs"
10	08	Wrong fax number sent	
11	01	No dial tone detected before start of dialing	
11	02	Busy tone detected before dialing	
11	03	2nd dial tone not detected	
11	05	No loop current detected	
11	06	Busy tone detected after dialing or called	
11	07	No response from the calling station in sending	
11	10	Unobtainable tone detected after dialing	
11	11	No response after sending Fax2 net command	
13	12	NG response signal is received after sending Fax2 net command	
17	07	No response from the calling station in receiving	
20	01	Unable to detect a flag field	
20	02	Carrier termination lasts for 200 msec	
20	03	Termination command (consecutive "1" of 7 bits or more)	
20	04	Overrun detected	
20	05	A frame for 3 seconds or more received	
20	06	CRC error in answerback	
20	07	Echo command received	
20	08	Invalid command received	
20	09	Command ignored once for document setting or for dumping-out at turn-around transmission	
20	0A	T5 time-out error	
20	0B	CRP received	
20	0C	EOR and NULL received	
20	0D	While command send bit of FIF in ON, no corresponding command is received	
20	0E	EOR Command received	
32	01	Remote terminal only with V.29 capability in 2,400 or 4,800 bps transmission.	
32	02	Remote terminal not ready for polling.	

Code 1	Code 2	Cause	Refer to page:
32	10	Remote terminal not equipped with password function, or password function switch is OFF.	4.9.3 "A communications error occurs"
32	11	Remote terminal not equipped with or not ready for confidential mailbox function.	
32	12	Remote terminal not equipped with or not ready for relay function.	
32	13	No confidential mail in the remote terminal.	
32	14	The available memory space of the remote terminal is less than that required for reception of the confidential or relay broad-casting instruction.	
32	16	Remote terminal not equipped with SEP function.	
32	17	Remote terminal not equipped with SUB function.	
32	18	Remote terminal not equipped with color function.	
40	02	Illegal coding system requested.	
40	03	Illegal recording width requested.	
40	05	ECM requested although not allowed.	
40	06	Polled while not ready.	
40	07	No document to send when polled.	
40	08	There is no data in the box No. specified by F code communication.	
40	10	Nation code or manufacturer code not coincident.	
40	11	Group number not registered in relay broad-casting commanded, or commanded total broad-casting number exceeds maximum broadcast enabled number.	
40	12	Retrieval while not in retrieval stand-by.	
40	13	Received polling from other maker products during confidential polling stand-by.	
40	17	Invalid resolution selected.	
40	18	Retrieval is commanded although remote retrieval of F code is not available.	
40	19	Remote registration is commanded although remote registration of F code is not available.	
40	20	Invalid full-color mode requested.	
50	01	Vertical resolution capability changed after compensation of background color.	
63	01	Password plus "lower 4 digits of telephone number" not coincident.	

Code 1	Code 2	Cause	Refer to page:
63	02	Password not coincident.	4.9.3 "A communications error occurs"
63	03	Polling ID not coincident.	
63	04	Commanded confidential ID and MailBox ID not coincident.	
63	05	Relay broad-casting ID not coincident.	
63	06	Commanded Retrieval ID and MailBox Retrieval ID not coincident.	
63	09	There is no box No. specified by F code communication.	
63	10	SID frame is not sent at the time of remote registration to bulletin board using F code.	
63	11	PWD frame is not sent at the time of remote retrieval of confidential data using F code.	
63	12	Password specified by F code does not match.	
74	XX	DCN received.	
80	01	Fallback impossible.	
90	01	Unable to detect video signals or commands within 6 seconds after CFR is transmitted.	
90	02	Received PPS containing invalid page count or block count.	
A0	03	Error correction sequence not terminated even at the final transmission speed for fallback.	
A0	11	Receiving buffer empty (5 seconds time-out.)	
A0	12	Receive buffer full during operation except receiving into memory.	
A0	13	Decoding error continued on 500 lines or more.	
A0	14	Decoding error continued for 15 seconds or more.	
A0	15	Timeout: 13 seconds or more for one-line transmission.	
A0	16	RTC not detected and carrier off detected for 6 seconds.	
A0	17	RTC detected but command not detected for 60 seconds or more.	
A0	19	No image data to be sent.	
A0	20	Continue Color FAX receiving impossible (ink remaining low.)	
A8	01	Receive RTN or PIN or ERR (sending side.)	
A9	01	Send RTN or PIN or ERR (receiving side.)	

Code 1	Code 2	Cause	Refer to page:
AA	18	Receive buffer full during receiving into memory.	4.9.3 "A communications error occurs"
B0	02	Unable to receive the next-page data.	
B0	03	Unable to receive polling even during turn-around transmission due to call reservation.	
B0	04	PC interface error	
BF	01	Communication canceled by depressing stop key before confirming FAX communication.	
BF	02	Communication canceled by depressing stop key after confirming FAX communication.	
C0	01	No common modulation mode or polling failed.	
C0	02	Unable to detect JM.	
C0	03	Unable to detect CM.	
C0	04	Unable to detect CJ.	
C0	10	V. 34 negotiation or training not finished.	
C0	11	Modem error detected during V. 34 negotiation or training.	
C0	20	Modem error detected during sending of commands.	
C0	21	Modem error detected during receiving of commands.	
C0	22	Control channel connection time-out.	
C0	30	Modem error detected during sending of image signals.	
C0	31	Modem error detected during receiving of image signals.	
E0	01	Failed to detect 1,300 Hz signal in burn-in operation.	
E0	02	Failed to detect PB signals in burn-in operation.	
E0	03	Command not detected from RS232C in burn-in.	

---

## 4 TROUBLESHOOTING

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### 4.1 Error Cause and Solutions

#### ■ Error Code 0D00

Paper jam during duplex-printing

- The recording papers are fed in reverse on the platen when switchback drive is started, triggering switchback sensor as paper feeding condition.

< User Check >

- Remove the jammed paper.
- Check whether the recording paper being used is within the specification.
- Check that recording paper are not curled, wrinkled or wet.
- Check that recording paper is loaded correctly in the tray.
- Check that Output paper tray is set correctly (not inserted halfway).

Step	Cause	Solution
1	Foreign materials in the duplex print paper path	Remove foreign materials.
2	Switchback outer paper guide not mounted in place	Set the switchback outer paper guide into place.
3	Switchback actuator caught on the surrounding parts	Set the switchback frame ASSY into place.
4	Switchback sensor defective	Replace the switchback sensor PCB.
5	Main PCB defective	Replace the main PCB.

#### ■ Error Code 0E00

Defective during duplex-printing

- Switchback sensor detects paper feed condition at out of specified timing during switchback.

< User Check >

- Check whether the recording paper being used is within the specification.
- Check that Output paper tray is set correctly (not inserted halfway).

Step	Cause	Solution
1	Switchback actuator caught on the surrounding parts	Set the switchback frame ASSY into place.
2	Switchback sensor defective	Replace the switchback sensor PCB.
3	Main PCB defective	Replace the main PCB.

■ Error Code 1300

Defective during duplex-printing

- Registration sensor detects paper feed condition at out of specified timing during switchback.

< User Check >

- Check that recording paper is not loaded in the MP tray and/or manual feed slot.
- Check whether the recording paper being used is within the specification.
- Check that Output paper tray is set correctly (not inserted halfway).

Step	Cause	Solution
1	Registration actuator caught on the surrounding parts	Set the registration actuator into place.
2	Switchback actuator caught on the surrounding parts	Set the switchback frame ASSY into place.
3	Registration sensor defective	Replace the registration sensor PCB.
4	Main PCB defective	Replace the main PCB.

■ Error Code 1500

Paper jam during duplex ejecting

- Recording paper is not able to be ejected since it is longer than 840 mm when ejecting the paper. (The registration sensor stays in the paper feeding condition during ejecting.)

< User Check >

- Remove the jammed paper.
- Check whether the recording paper being used is within the specification.

Step	Cause	Solution
1	Foreign materials in the recording paper path	Remove foreign materials.
2	Registration actuator caught on the surrounding parts	Set the registration actuator into place.
3	Main PCB defective	Replace the main PCB.

■ Error Code 1700

Recording paper size error (duplex-printing/duplex-copying)

- Paper width is narrower than 95.5 mm (detection by paper width sensor)
- Paper length is longer than 461.8 mm (detection by registration sensor)
- Paper length is shorter than 143.5 mm (detection by registration sensor)

< User Check >

- Check whether the recording paper being used is within the specification.
- Check that dark recording paper is not used.

Step	Cause	Solution
1	CR encoder strip stained	Clean the CR encoder strip.
2	PF encoder disk stained	Clean the PF encoder disk and flushing guide. (refer to "Precautions for Troubleshooting and/or Disassembly/Assembly")
3	Registration actuator caught on the surrounding parts	Set the registration actuator into place.
4	Switchback actuator caught on the surrounding parts	Set the switchback frame ASSY into place.
5	CR encoder strip defective	Replace the CR encoder strip.
6	PF encoder disk defective	Replace the PF encoder disk.
7	Registration sensor defective	Replace the registration sensor PCB.
8	Paper width sensor defective	Replace the carriage PCB ASSY.
9	Paper feed motor defective	Replace the paper feed motor.
10	Main PCB defective	Replace the main PCB.

■ Error Code 1800

Paper jam during duplex-printing

- Registration sensor does not detect paper feed within specified pulse numbers in the second side paper re-feed.

< User Check >

- Remove the jammed paper.
- Check whether the recording paper being used is within the specification.
- Check that recording paper are not curled, wrinkled or wet.
- Check that Output paper tray is set correctly (not inserted halfway).

Step	Cause	Solution
1	Foreign materials in the duplex print paper path	Remove foreign materials.
2	Registration actuator caught on the surrounding parts	Set the registration actuator into place.
3	Switchback actuator caught on the surrounding parts	Set the switchback frame ASSY into place.
4	Registration sensor defective	Replace the registration sensor PCB.
5	Switchback roller defective	Replace the switchback roller.
6	Drive frame ASSY defective	Replace the maintenance unit.
7	Main PCB defective	Replace the main PCB.

■ Error Code 2000

Cannot identify a black ink cartridge.

- The ink cartridge detection sensor and the ink remaining sensor are detecting.

Error Code 2001

Cannot identify a yellow ink cartridge.

- The ink cartridge detection sensor and the ink remaining sensor are detecting.

Error Code 2002

Cannot identify a cyan ink cartridge.

- The ink cartridge detection sensor and the ink remaining sensor are detecting.

Error Code 2003

Cannot identify a magenta ink cartridge.

- The ink cartridge detection sensor and the ink remaining sensor are detecting.

< User Check >

- Check if incompatible ink cartridge is loaded.
- Reload the ink cartridge.
- Replace the ink cartridge.

Step	Cause	Solution
1	Each ink cartridge sensor or ink cartridge IC chip PCB defective	Replace the ink refill ASSY.
2	Main PCB defective	Replace the main PCB.

■ Error Code 2100

Black ink cartridge side IC chip relation defective

- Detecting setting wrong color

Error Code 2101

Yellow ink cartridge side IC chip relation defective

- Detecting setting wrong color

Error Code 2102

Cyan ink cartridge side IC chip relation defective

- Detecting setting wrong color

Error Code 2103

Magenta ink cartridge side IC chip relation defective

- Detecting setting wrong color

< User Check >

- Check if incompatible ink cartridge is loaded.
- Reload the ink cartridge.
- Replace the ink cartridge.
- Set ink cartridge at position for correct color.

Step	Cause	Solution
1	Ink cartridge IC chip PCB defective	Replace the ink refill ASSY.
2	Main PCB defective	Replace the main PCB.

■ Error Code 2200

Black ink cartridge side IC chip relation defective  
- It is judged as incompatible ink cartridge is loaded.

Error Code 2201

Yellow ink cartridge side IC chip relation defective  
- It is judged as incompatible ink cartridge is loaded.

Error Code 2202

Cyan ink cartridge side IC chip relation defective  
- It is judged as incompatible ink cartridge is loaded.

Error Code 2203

Magenta ink cartridge side IC chip relation defective  
- It is judged as incompatible ink cartridge is loaded.

< User Check >

- Check if incompatible ink cartridge is loaded.
- Reload the ink cartridge.
- Replace the ink cartridge.

Step	Cause	Solution
1	Ink cartridge IC chip PCB defective	Replace the ink refill ASSY.
2	Main PCB defective	Replace the main PCB.

■ Error Code 2300

Black ink cartridge side IC chip relation defective  
- It is judged as optional ink cartridge has been loaded before the initial installation is started.

Error Code 2301

Yellow ink cartridge side IC chip relation defective  
- It is judged as optional ink cartridge has been loaded before the initial installation is started.

Error Code 2302

Cyan ink cartridge side IC chip relation defective  
- It is judged as optional ink cartridge has been loaded before the initial installation is started.

Error Code 2303

Magenta ink cartridge side IC chip relation defective  
- It is judged as optional ink cartridge has been loaded before the initial installation is started.

< User Check >

- Check if optional ink cartridge or incompatible ink cartridge is loaded.
- Reload the ink cartridge.
- Replace with the starter ink cartridge.

Step	Cause	Solution
1	Ink cartridge IC chip PCB defective	Replace the ink refill ASSY.
2	Main PCB defective	Replace the main PCB.

■ Error Code 2400

Black ink cartridge side IC chip relation defective  
 - Identification no match or judging as incompatible ink cartridge

Error Code 2401

Yellow ink cartridge side IC chip relation defective  
 - Identification no match or judging as incompatible ink cartridge

Error Code 2402

Cyan ink cartridge side IC chip relation defective  
 - Identification no match or judging as incompatible ink cartridge

Error Code 2403

Magenta ink cartridge side IC chip relation defective  
 - Identification no match or judging as incompatible ink cartridge

< User Check >

- Check if incompatible ink cartridge is loaded.
- Reload the ink cartridge.
- Replace the ink cartridge.

Step	Cause	Solution
1	Ink cartridge IC chip PCB defective	Replace the ink refill ASSY.
2	Main PCB defective	Replace the main PCB.

■ Error Code 2500

Cannot communicate with black ink cartridge IC chip (ink cartridge side.)

Error Code 2501

Cannot communicate with yellow ink cartridge IC chip (ink cartridge side.)

Error Code 2502

Cannot communicate with cyan ink cartridge IC chip (ink cartridge side.)

Error Code 2503

Cannot communicate with magenta ink cartridge IC chip (ink cartridge side.)

< User Check >

- Check if incompatible ink cartridge is loaded.
- Reload the ink cartridge.

Step	Cause	Solution
1	Ink sensor flat cable connection failure	Reconnect the ink sensor flat cable.
2	Ink cartridge IC chip PCB defective	Replace the ink refill ASSY.
3	Main PCB defective	Replace the main PCB.

■ Error Code 2600

Black ink cartridge reaches its replacement period.

Black ink reaches its refill period.

- After judging as no ink by the ink remaining sensor, ink discharged for specified times.

Error Code 2601

Yellow ink cartridge reaches its replacement period.

- After judging as no ink by the ink remaining sensor, ink discharged for specified times.

Error Code 2602

Cyan ink cartridge reaches its replacement period.

- After judging as no ink by the ink remaining sensor, ink discharged for specified times.

Error Code 2603

Magenta ink cartridge reaches its replacement period.

- After judging as no ink by the ink remaining sensor, ink discharged for specified times.

Error Code 2700

Black ink cartridge will reach its replacement period.

Black ink will reach its refill period soon.

- After judging as no ink by the ink remaining sensor, ink discharged for less than specified times.

< User Check >

- Replace the ink cartridge.
- Refill ink.

Step	Cause	Solution
1	Ink remaining sensor defective	Replace the ink refill ASSY.
2	Main PCB defective	Replace the main PCB.

■ Error Code 2A00

No black ink cartridge loaded.

- Detected by the ink cartridge detection sensor.

Error Code 2A01

No yellow ink cartridge loaded.

- Detected by the ink cartridge detection sensor.

Error Code 2A02

No cyan ink cartridge loaded.

- Detected by the ink cartridge detection sensor.

Error Code 2A03

No magenta ink cartridge loaded.

- Detected by the ink cartridge detection sensor.

< User Check >

- Check if incompatible ink cartridge is loaded.
- Reload the ink cartridge.
- Replace the ink cartridge.

Step	Cause	Solution
1	Ink cartridge detection sensor or ink cartridge IC chip PCB defective	Replace the ink refill ASSY.
2	Main PCB defective	Replace the main PCB.

■ Error Code 2B00

Black ink cartridge ink remaining counter error

Error Code 2B01

Yellow ink cartridge ink remaining counter error

Error Code 2B02

Cyan ink cartridge ink remaining counter error

Error Code 2B03

Magenta ink cartridge ink remaining counter error

< User Check >

- Check if incompatible ink cartridge is loaded.
- Replace the ink cartridge.

Step	Cause	Solution
1	Ink cartridge IC chip PCB defective	Replace the ink refill ASSY.
2	Main PCB defective	Replace the main PCB.

■ Error Code 2E00

Cannot communicate with ink cartridge IC chip (machine body side.)

Step	Cause	Solution
1	Main PCB defective	Replace the main PCB.

■ Error Code 2F00

Ink cartridge cover sensor detects opened cover state.

< User Check >

- Close the ink cartridge cover.

Step	Cause	Solution
1	Ink cartridge cover sensor harness connection failure	Reconnect the ink cartridge cover sensor harness.
2	Ink cartridge cover defective	Replace the ink cartridge cover.
3	Ink cartridge cover sensor defective	Replace the ink cartridge cover sensor ASSY.
4	Main PCB defective	Replace the main PCB.

■ Error Code 3000

Carriage does not move.

- Detected by the CR encoder sensor.

< User Check >

- Remove the jammed paper in platen part.

Step	Cause	Solution
1	Foreign materials in the engine unit	Remove foreign materials.
2	CR encoder strip out of place	Set the CR encoder strip into place.
3	CR timing belt out of place	Set the CR timing belt into place.
4	Head cover out of place	Set the head cover into place.
5	Carriage motor harness connection failure	Reconnect the carriage motor harness.
6	Carriage flat cable connection failure	Reconnect the carriage flat cable.
7	CR encoder strip stained	Clean the CR encoder strip.
8	CR encoder strip defective	Replace the CR encoder strip.
9	CR encoder sensor defective	Replace the carriage PCB ASSY.
10	Carriage motor defective	Replace the carriage motor.
11	Main PCB defective	Replace the main PCB.

■ Error Code 3100

Carriage cannot detect origin.

- Detected by the CR encoder sensor.

< User Check >

- Remove the jammed paper in platen part.

Step	Cause	Solution
1	Foreign materials around the maintenance unit	Remove foreign materials.
2	Foreign materials around the flushing box	Remove foreign materials.
3	Switching lever guide out of place	Set the switching lever guide into place.
4	CR encoder strip stained	Clean the CR encoder strip.
5	Flushing box not mounted in place	Set the flushing box into place.
6	CR guide rail not mounted in place	Set the CR guide rail into place.
7	Platen not mounted in place	Set the platen into place.
8	Maintenance unit not mounted in place	Set the maintenance unit into place.
9	Head/carriage unit not mounted in place	Set the head/carriage unit into place.
10	CR encoder strip defective	Replace the CR encoder strip.
11	CR encoder sensor defective	Replace the carriage PCB ASSY.
12	Switching lever guide defective Maintenance unit defective	Replace the maintenance unit.
13	Main PCB defective	Replace the main PCB.

■ Error Code 3200

Head capping is unable.

< User Check >

- Remove the jammed paper in platen part.

Step	Cause	Solution
1	Foreign materials around the maintenance unit	Remove foreign materials.
2	Switching lever guide out of place	Set the switching lever guide into place.
3	CR encoder strip defective	Replace the CR encoder strip.
4	Switching lever guide defective Maintenance unit defective	Replace the maintenance unit.
5	Main PCB defective	Replace the main PCB.

■ Error Code 3500

Abnormal stop of head/carriage unit being driven.

- Causes other than paper jam when ink is not discharging.

Step	Cause	Solution
1	Foreign materials in the engine unit	Remove foreign materials.
2	CR encoder strip stained	Clean the CR encoder strip.
3	Switching lever guide out of place	Set the switching lever guide into place.
4	CR encoder strip defective	Replace the CR encoder strip.
5	CR encoder sensor defective	Replace the carriage PCB ASSY.
6	Maintenance unit defective	Replace the maintenance unit.
7	Main PCB defective	Replace the main PCB.

■ Error Code 3800

Abnormal stop of head/carriage unit being driven.

- Caused by paper jam when ink is not discharging.

< User Check >

- Remove the jammed paper in platen part.

Step	Cause	Solution
1	Foreign materials in the engine unit	Remove foreign materials.
2	CR encoder strip stained	Clean the CR encoder strip.
3	Switching lever guide out of place	Set the switching lever guide into place.
4	CR encoder strip defective	Replace the CR encoder strip.
5	CR encoder sensor defective	Replace the carriage PCB ASSY.
6	Maintenance unit defective	Replace the maintenance unit.
7	Main PCB defective	Replace the main PCB.

■ Error Code 3B00

Abnormal stop of head/carriage unit being driven.

- Causes other than paper jam when ink is discharging.

Step	Cause	Solution
1	Foreign materials in the engine unit	Remove foreign materials.
2	CR encoder strip stained	Clean the CR encoder strip.
3	CR encoder strip defective	Replace the CR encoder strip.
4	CR encoder sensor defective	Replace the carriage PCB ASSY.
5	Main PCB defective	Replace the main PCB.

■ Error Code 3C00

Abnormal stop of head/carriage unit being driven.

- Caused by paper jam when ink is discharging.

< User Check >

- Remove the jammed paper in platen part.

Step	Cause	Solution
1	Foreign materials in the engine unit	Remove foreign materials.
2	CR encoder strip stained	Clean the CR encoder strip.
3	CR encoder strip defective	Replace the CR encoder strip.
4	CR encoder sensor defective	Replace the carriage PCB ASSY.
5	Main PCB defective	Replace the main PCB.

■ Error Code 3E00

Defective occurs in the ASF motor, carriage motor or paper feed motor.

Step	Cause	Solution
1	Foreign materials in the recording paper path	Remove foreign materials.
2	Foreign materials in the maintenance unit	Remove foreign materials.
3	Foreign materials around paper feed roller belt	Remove foreign materials.
4	Foreign materials around paper ejection roller belt	Remove foreign materials.
5	Foreign materials in the engine unit	Remove foreign materials.
6	Maintenance unit not mounted in place	Set the maintenance unit into place.
7	Flushing box not mounted in place	Set the flushing box into place.
8	CR guide rail not mounted in place	Set the CR guide rail into place.
9	Platen not mounted in place	Set the platen into place.
10	Head/carriage unit not mounted in place	Set the head/carriage unit into place.
11	CR encoder strip defective	Replace the CR encoder strip.
12	PF encoder disk defective	Replace the PF encoder disk.
13	PF encoder sensor defective	Replace the PF encoder sensor.
14	CR encoder sensor defective	Replace the carriage PCB ASSY.
15	Carriage motor defective	Replace the carriage motor.
16	Paper feed motor defective	Replace the paper feed motor.
17	ASF motor defective	Replace the maintenance unit.
18	Main PCB defective	Replace the main PCB.

■ Error Code 3F00

Carriage motor cannot stop.

Step	Cause	Solution
1	Carriage motor harness connection failure	Reconnect the carriage motor harness.
2	CR encoder strip stained	Clean the CR encoder strip.
3	CR encoder strip defective	Replace the CR encoder strip.
4	CR encoder sensor defective	Replace the carriage PCB ASSY.
5	Carriage motor defective	Replace the carriage motor.
6	Main PCB defective	Replace the main PCB.

■ Error Code 4000

Casing internal thermistor defective

- Casing internal thermistor detects -20 degree-C or less, or 80 degree-C or more when power is ON.

Step	Cause	Solution
1	Casing internal thermistor defective	Replace the ink refill ASSY.
2	Main PCB defective	Replace the main PCB.

■ Error Code 4200

Head voltage does not turn OFF.

< User Check >

- They may occur due to lower surrounding temperature. Use in warmer surrounding temperature.

Step	Cause	Solution
1	Head flat cable connection failure	Reconnect the head flat cable.
2	Carriage flat cable connection failure	Reconnect the carriage flat cable.
3	Carriage PCB defective	Replace the carriage PCB ASSY.
4	Head defective	Replace the head/carriage unit.
5	Power supply PCB defective	Replace the power supply PCB.
6	Main PCB defective	Replace the main PCB.

■ Error Code 4300

Head thermistor defective

- Head thermistor detects -20 degree-C or less, or 80 degree-C or more when power is ON.

Step	Cause	Solution
1	Carriage flat cable connection failure	Reconnect the carriage flat cable.
2	Head thermistor defective	Replace the head/carriage unit.
3	Main PCB defective	Replace the main PCB.

■ Error Code 4400

Head driver IC detects abnormal temperature during operation or stand-by.

Step	Cause	Solution
1	Carriage flat cable connection failure	Reconnect the carriage flat cable.
2	Head property information not input	Input the head property information (refer to Chapter 5, Section 1.3.24 "Updating of Head Property Information and Backup/Restoration of Head Calibration Data (Maintenance mode 68)")
3	Head thermistor defective Head defective	Replace the head/carriage unit.
4	Main PCB defective	Replace the main PCB.

■ Error Code 4600

Purge count or flushing count overflow.

Step	Cause	Solution
1	Ink absorber box or flushing box full.	Replace ink absorber box or flushing box, resetting purge counter or flushing counter.
2	Main PCB defective	Replace the main PCB.

■ Error Code 4800

Head flat cable detected to be not correctly inserted.

Step	Cause	Solution
1	Carriage flat cable connection failure	Reconnect the carriage flat cable.
2	Head flat cable connection failure	Reconnect the head flat cable.
3	Carriage PCB defective	Replace the carriage PCB ASSY.
4	Head defective	Replace the head/carriage unit.
5	Main PCB defective	Replace the main PCB.

- Error Code 4900  
Head voltage does not raise.

< User Check >

- They may occur due to lower surrounding temperature. Use in warmer surrounding temperature.

Step	Cause	Solution
1	Head flat cable connection failure	Reconnect the head flat cable.
2	Carriage flat cable connection failure	Reconnect the carriage flat cable.
3	Carriage PCB defective	Replace the carriage PCB ASSY.
4	Head defective	Replace the head/carriage unit.
5	Power supply PCB defective	Replace the power supply PCB.
6	Main PCB defective	Replace the main PCB.

- Error Code 4C00  
ASIC thermistor error.  
- The ASIC thermistor detected a temperature of -21 degree-C or less, or 125 degree-C or greater, when the machine was turned on.

Error Code 4C01

Compound IC thermistor error.

- The compound IC thermistor detected a temperature of -21 degree-C or less, or 125 degree-C or greater, when the machine was turned on.

Step	Cause	Solution
1	Head flat cable connection failure	Reconnect the head flat cable.
2	Carriage flat cable connection failure	Reconnect the carriage flat cable.
3	Carriage PCB defective	Replace the carriage PCB ASSY.
4	Head defective	Replace the head/carriage unit.
5	Power supply PCB defective	Replace the power supply PCB.
6	Main PCB defective	Replace the main PCB.

- Error Code 4E00  
Head voltage remains ON and does not turn OFF even after 15 minutes have passed.

Step	Cause	Solution
1	Carriage PCB defective	Replace the carriage PCB ASSY.
2	Head defective	Replace the head/carriage unit.
3	Main PCB defective	Replace the main PCB.

- Error Code 4F00  
Head voltage drops too quick.

< User Check >

- They may occur due to lower surrounding temperature. Use in warmer surrounding temperature.

Step	Cause	Solution
1	Head flat cable connection failure	Reconnect the head flat cable.
2	Carriage flat cable connection failure	Reconnect the carriage flat cable.
3	Carriage PCB defective	Replace the carriage PCB ASSY.
4	Head defective	Replace the head/carriage unit.
5	Power supply PCB defective	Replace the power supply PCB.
6	Main PCB defective	Replace the main PCB.

- Error Code 5000  
The purge cam switch is not switching ON/OFF.

Error Code 5200  
Failed to detect the origin of the purge cam.

Step	Cause	Solution
1	Foreign materials in the maintenance unit	Remove foreign materials.
2	Purge cam switch harness connection failure	Reconnect the purge cam switch harness.
3	Maintenance unit defective	Replace the maintenance unit.
4	Main PCB defective	Replace the main PCB.

- Error Code 5A00  
Abnormal stop of purge cam being driven

Error Code 5B00  
Pump of maintenance unit stopped abnormally during exhaustion/suction.

Error Code 5D00  
Excessive current protection activated for the head driver IC during purge cam operation.

Error Code 5E00  
Excessive current protection activated for the head driver IC during pump operation.

Step	Cause	Solution
1	Foreign materials in the maintenance unit	Remove foreign materials.
2	Ink supply tubes bent	Replace the ink refill ASSY.
3	Maintenance unit defective	Replace the maintenance unit.
4	Main PCB defective	Replace the main PCB.

■ Error Code 6700

T1 detection sensor detects no paper tray #1 state.

< User Check >

- Set paper tray #1.

Step	Cause	Solution
1	T1 detection actuator caught on the surrounding parts	Set the T1 detection actuator into place.
2	T1 detection sensor harness connection failure	Reconnect the T1 detection sensor harness.
3	Paper tray #1 defective	Replace the paper tray ASSY #1.
4	Main PCB defective	Replace the main PCB.

■ Error Code 6701

T2 detection sensor detects no paper tray #2 state.

< User Check >

- Set paper tray #2.

Step	Cause	Solution
1	T2 detection actuator caught on the surrounding parts	Set the T2 detection actuator into place.
2	T2 detection sensor harness connection failure	Reconnect the T2 detection sensor harness.
3	Paper tray #2 defective	Replace the paper tray ASSY #2.
4	Main PCB defective	Replace the main PCB.

■ Error Code 6702

T3 detection sensor detects no paper tray #3 state.

< User Check >

- Set paper tray #3.

Step	Cause	Solution
1	T3 detection actuator caught on the surrounding parts	Set the T3 detection actuator into place.
2	3rd tray relay harness connection failure	Reconnect the 3rd tray relay harness.
3	T3 detection sensor harness connection failure	Reconnect the T3 detection sensor harness.
4	Paper tray #3 defective	Replace the paper tray ASSY #3.
5	3rd tray relay PCB defective	Replace the 3rd tray relay PCB.
6	Main PCB defective	Replace the main PCB.

■ Error Code 6F00

ASF motor cannot stop.

Error Code 6F01

ASF encoder sensor cannot detect rotation of the ASF motor.

Step	Cause	Solution
1	ASF encoder sensor harness connection failure	Reconnect the ASF encoder sensor harness.
2	ASF motor harness connection failure	Reconnect the ASF motor harness.
3	Maintenance unit defective	Replace the maintenance unit.
4	Main PCB defective	Replace the main PCB.

■ Error Code 7000

Failed to detect ON/OFF of the purge cam.

Error Code 7200

Failed to detect the origin of the purge cam.

Error Code 7500

Cap cam cannot shift to head capping position.

Error Code 7600

Cap cam cannot shift to head uncapping position.

Error Code 7A00

Purge cam rotation error (capping CW)

Error Code 7D00

Current protection activated for the cap driver IC.

Step	Cause	Solution
1	Foreign materials in the maintenance unit	Remove foreign materials.
2	Purge cam sensor harness connection failure	Reconnect the purge cam sensor harness.
3	ASF motor harness connection failure	Reconnect the ASF motor harness.
4	Maintenance unit defective	Replace the maintenance unit.
5	Main PCB defective	Replace the main PCB.

■ Error Code 7E00

Head property information not input.

Step	Cause	Solution
1	Head property information not input	Input the head property information (refer to <a href="#">Chapter 5, Section 1.3.24 "Updating of Head Property Information and Backup/Restoration of Head Calibration Data (Maintenance mode 68)"</a> )
2	Main PCB defective	Replace the main PCB.

■ Error Code 8000

Recording paper size error (during FAX/list printing) (Only the models with single tray)

The registration sensor and paper width sensor detect that the size of the loaded recording paper does not match the recording paper size setting.

Error Code 8001

Paper tray #1 recording paper size error (during FAX/list printing) (Only the models with multiple trays)

The registration sensor and paper width sensor detect that the size of the loaded recording paper does not match the recording paper size setting.

Error Code 8002

Paper tray #2 recording paper size error (during FAX/list printing) (Only the models with multiple trays)

The registration sensor and paper width sensor detect that the size of the loaded recording paper does not match the recording paper size setting.

Error Code 8003

Paper tray #3 recording paper size error (during FAX/list printing) (Only the models with multiple trays)

The registration sensor and paper width sensor detect that the size of the loaded recording paper does not match the recording paper size setting.

Error Code 8004

MP tray recording paper size error (during FAX/list printing) (Only the models with multiple trays)

The registration sensor and paper width sensor detect that the size of the loaded recording paper does not match the recording paper size setting.

Error Code 8101

Recording paper size error (during FAX/list printing) (Only the models with single tray)

The registration sensor and paper width sensor detect recording paper smaller than the setting size.

Error Code 8102

Recording paper size error (during PC printing) (Only the models with single tray)

The registration sensor and paper width sensor detect recording paper smaller than the setting size.

Error Code 8103

Recording paper size error (during copy printing) (Only the models with single tray)

The registration sensor and paper width sensor detect recording paper smaller than the setting size.

Error Code 8104

Paper tray #1 recording paper size error (during FAX/list printing) (Only the models with multiple trays)

The registration sensor and paper width sensor detect recording paper smaller than the setting size.

Error Code 8105

Paper tray #2 recording paper size error (during FAX/list printing) (Only the models with multiple trays)

The registration sensor and paper width sensor detect recording paper smaller than the setting size.

**Error Code 8106**

Paper tray #3 recording paper size error (during FAX/list printing) (Only the models with multiple trays)

The registration sensor and paper width sensor detect recording paper smaller than the setting size.

**Error Code 8107**

MP tray recording paper size error (during FAX/list printing) (Only the models with multiple trays)

The registration sensor and paper width sensor detect recording paper smaller than the setting size.

**Error Code 8108**

Paper tray #1 recording paper size error (during PC printing) (Only the models with multiple trays)

The registration sensor and paper width sensor detect recording paper smaller than the setting size.

**Error Code 8109**

Paper tray #2 recording paper size error (during PC printing) (Only the models with multiple trays)

The registration sensor and paper width sensor detect recording paper smaller than the setting size.

**Error Code 810A**

Paper tray #3 recording paper size error (during PC printing) (Only the models with multiple trays)

The registration sensor and paper width sensor detect recording paper smaller than the setting size.

**Error Code 810B**

MP tray recording paper size error (during PC printing) (Only the models with multiple trays)

The registration sensor and paper width sensor detect recording paper smaller than the setting size.

**Error Code 810C**

Paper tray #1 recording paper size error (during copy printing) (Only the models with multiple trays)

The registration sensor and paper width sensor detect recording paper smaller than the setting size.

**Error Code 810D**

Paper tray #2 recording paper size error (during copy printing) (Only the models with multiple trays)

The registration sensor and paper width sensor detect recording paper smaller than the setting size.

**Error Code 810E**

Paper tray #3 recording paper size error (during copy printing) (Only the models with multiple trays)

The registration sensor and paper width sensor detect recording paper smaller than the setting size.

#### Error Code 810F

MP tray recording paper size error (during copy printing) (Only the models with multiple trays)

The registration sensor and paper width sensor detect recording paper smaller than the setting size.

#### Error Code 8120

Recording paper size error (during PC printing/Copy/AirPrint printing)

The registration sensor and paper width sensor detect that the size of the loaded recording paper does not match the recording paper size setting.

#### < User Check >

- Check that the recording paper of the specified size is used.
- Check that recording paper is loaded in correct direction in the tray.
- Check that dark recording paper is not used.
- Clean the platen.

Step	Cause	Solution
1	Registration actuator caught on the surrounding parts	Set the registration actuator into place.
2	CR encoder strip stained	Clean the CR encoder strip.
3	PF encoder disk stained	Clean the PF encoder disk and flushing guide. (refer to "Precautions for Troubleshooting and/or Disassembly/Assembly")
4	CR encoder strip defective	Replace the CR encoder strip.
5	PF encoder disk defective	Replace the PF encoder disk.
6	Paper width sensor defective	Replace the carriage PCB ASSY.
7	PF encoder sensor defective	Replace the PF encoder sensor PCB.
8	Registration sensor defective	Replace the registration sensor PCB.
9	Carriage motor defective	Replace the carriage motor.
10	Paper feed motor defective	Replace the paper feed motor.
11	Maintenance unit defective	Replace the maintenance unit.
12	Main PCB defective	Replace the main PCB.

■ Error Code 8110

The paper size and paper type of each tray set during print setting are different from before printing. This error occurs when the paper tray #1 has been specified as a pickup tray with the highest priority and plain paper has been specified as the paper type in auto tray switching print.

Error Code 8111

The paper size and paper type of each tray set during print setting are different from before printing. This error occurs when the MP tray or manual feed slot has been specified as a pickup tray with the highest priority and plain paper has been specified as the paper type in auto tray switching print.

Error Code 8112

The paper size and paper type of each tray set during print setting are different from before printing. This error occurs when the paper tray #1 has been specified as a pickup tray with the highest priority and inkjet paper has been specified as the paper type in auto tray switching print.

Error Code 8113

The paper size and paper type of each tray set during print setting are different from before printing. This error occurs when the MP tray or manual feed slot has been specified as a pickup tray with the highest priority and inkjet paper has been specified as the paper type in auto tray switching print.

Error Code 8114

The paper size and paper type of each tray set during print setting are different from before printing. This error occurs when the paper tray #1 has been specified as a pickup tray with the highest priority and Glossy paper has been specified as the paper type in auto tray switching print.

Error Code 8115

The paper size and paper type of each tray set during print setting are different from before printing. This error occurs when the MP tray or manual feed slot has been specified as a pickup tray with the highest priority and Glossy paper has been specified as the paper type in auto tray switching print.

Error Code 8116

The paper size and paper type of each tray set during print setting are different from before printing. This error occurs when the paper tray #2 has been specified as a pickup tray with the highest priority and plain paper has been specified as the paper type in auto tray switching print.

< User Check >

- Check that the paper size in the tray is the same as the paper size in the print setting.

Step	Cause	Solution
1	Main PCB defective	Replace the main PCB.

■ Error Code 8200

Paper jam.

- Paper width sensor cannot detect leading edge or width of recording papers.

< User Check >

- Check whether the recording paper being used is within the specification.
- Check that dark recording paper is not used.
- Clean the platen.
- Remove the jammed paper in jam clear cover part.

Step	Cause	Solution
1	Foreign materials in the feeding path	Remove foreign materials.
2	Paper feeding path parts out of place	Set the paper feeding path parts into place.
3	Paper feed roller stained	Clean the paper feed roller.
4	Paper width sensor defective	Replace the carriage PCB ASSY.
5	Paper feed roller defective	Replace the paper feed roller.
6	Main PCB defective	Replace the main PCB.

■ Error Code 8400

Paper jam.

- Registration sensor stays in paper feeding state even after completion of paper ejection action.

< User Check >

- Remove the jammed paper in platen part.

Step	Cause	Solution
1	Foreign materials in the feeding path	Remove foreign materials.
2	Registration actuator caught on the surrounding parts	Set the registration actuator into place.
3	Switchback actuator caught on the surrounding parts	Set the switchback frame ASSY into place.
4	Paper feed roller, paper ejection roller or switchback roller stained	Clean the related rollers.
5	Paper feed roller, paper ejection roller or switchback roller defective	Replace related rollers.
6	PF encoder sensor defective	Replace the PF encoder sensor PCB.
7	Maintenance unit defective	Replace the maintenance unit.
8	Main PCB defective	Replace the main PCB.

■ Error Code 8700

Paper jam.

- Switchback sensor stays in paper feeding state even after completion of paper ejection action.

< User Check >

- Remove the jammed paper in front part.
- The paper tray is not set correctly.

Step	Cause	Solution
1	Foreign materials in the feeding path	Remove foreign materials.
2	Switchback actuator caught on the surrounding parts	Set the switchback frame ASSY into place.
3	Switchback outer paper guide not mounted in place	Set the switchback outer paper guide into place.
4	Paper feed roller or switchback roller stained	Clean the paper feed roller or switchback roller.
5	Paper feed roller or switchback roller defective	Replace the paper feed roller or switchback roller.
6	PF encoder sensor defective	Replace the PF encoder sensor PCB.
7	Maintenance unit defective	Replace the maintenance unit.
8	Main PCB defective	Replace the main PCB.

■ Error Code 8800

Paper jam.

- Switchback sensor cannot detect paper feeding state even papers are fed during printing.

< User Check >

- Remove the jammed paper in platen part and front part.

Step	Cause	Solution
1	Foreign materials in the feeding path	Remove foreign materials.
2	Switchback actuator caught on the surrounding parts	Set the switchback frame ASSY into place.
3	Switchback sensor harness connection failure	Reconnect the switchback sensor harness.
4	Paper feed roller or paper ejection roller stained	Clean the paper feed roller or paper ejection roller.
5	Paper feed roller or paper ejection roller defective	Replace the paper feed roller or paper ejection roller.
6	PF encoder sensor defective	Replace the PF encoder sensor PCB.
7	Maintenance unit defective	Replace the maintenance unit.
8	Main PCB defective	Replace the main PCB.

■ Error Code 8900

Paper width sensor cannot detect origin specified on the paper feed roller.

Step	Cause	Solution
1	PF encoder disk stained	Clean the PF encoder disk and flushing guide. (refer to "Precautions for Troubleshooting and/or Disassembly/Assembly")
2	PF home position detection lever out of place	Set the PF home position detection lever into place.
3	Paper width sensor or carriage PCB defective	Replace the carriage PCB ASSY.
4	Main PCB defective	Replace the main PCB.

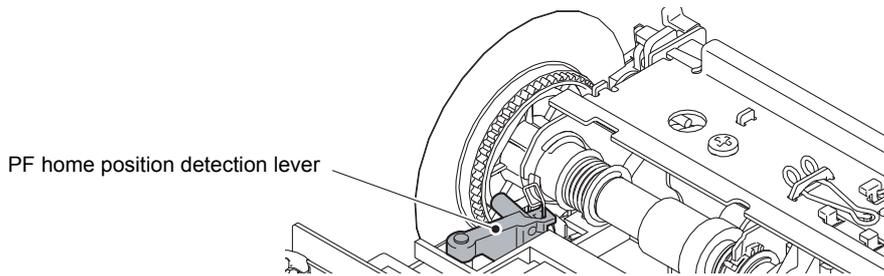


Fig. 2-7

■ Error Code 8F00

Paper feed motor cannot stop.

Step	Cause	Solution
1	Paper feed roller belt out of place	Set the paper feed roller belt into place.
2	PF encoder sensor defective	Replace the PF encoder sensor.
3	PF encoder disk defective	Replace the PF encoder disk.
4	Paper feed motor defective	Replace the paper feed motor.
5	Main PCB defective	Replace the main PCB.

■ Error Code 8F01

PF encoder sensor cannot detect rotation of the paper feed motor.

Step	Cause	Solution
1	PF encoder sensor harness connection failure	Reconnect the PF encoder sensor harness.
2	PF motor harness connection failure	Reconnect the PF motor harness.
3	PF encoder sensor defective	Replace the PF encoder sensor PCB.
4	PF encoder disk defective	Replace the PF encoder disk.
5	Paper feed motor defective	Replace the paper feed motor.
6	Main PCB defective	Replace the main PCB.

- Error Code 9F00  
3rd tray paper feed motor cannot stop.

Error Code 9F01

3rd tray paper feed motor encoder sensor cannot detect rotation of the 3rd tray paper feed motor.

Step	Cause	Solution
1	3rd tray paper feed motor harness connection failure	Reconnect the 3rd tray paper feed motor harness.
2	3rd tray paper feed motor defective	Replace the 3rd tray paper feed motor.
3	3rd tray relay PCB defective	Replace the 3rd tray relay PCB.
4	Main PCB defective	Replace the main PCB.

- Error Code A000

Time out occurred during data transfer for second side document scanning.

Step	Cause	Solution
1	Second side CIS flat cable connection failure	Reconnect the second side CIS flat cable.
2	Second side CIS unit defective	Replace the second side CIS unit.
3	Main PCB defective	Replace the main PCB.

- Error Code A100

Document scanner sensor detects that document scanner is open.

< User Check >

- Close the document scanner.

Step	Cause	Solution
1	Document scanner sensor harness connection failure	Reconnect the document scanner sensor harness.
2	Document scanner unit boss broken	Replace the document scanner unit.
3	Main PCB defective	Replace the main PCB.

■ Error Code A200

Document scanning position sensor detects length of document 900 mm or more.

< User Check >

- Check whether the scanned document is longer than the specified limit.
- Remove the jammed document.

Step	Cause	Solution
1	Document scanning position actuator caught on the surrounding parts	Set the document scanning position actuator into place.
2	Document scanning position sensor defective	Replace the document scanning position sensor PCB.
3	ADF motor defective Document feed roller worn out	Replace the ADF unit.
4	Main PCB defective	Replace the main PCB.

■ Error Code A300

Document detection sensor detects that document is pulled out during document scanning. Or, the document scanning position sensor cannot detect document within specified time.

< User Check >

- Remove the jammed document.

Step	Cause	Solution
1	Foreign materials in the document feeding path	Remove foreign materials.
2	Document detection actuator caught on the surrounding parts	Set the document detection actuator into place.
3	Document scanning position actuator out of place	Set the document scanning position actuator into place.
4	Document scanning position sensor harness connection failure	Reconnect the document scanning position sensor harness.
5	Document scanning position sensor defective	Replace the document scanning position sensor PCB.
6	Document pick-up roller worn out	Replace the document separation roller ASSY.
7	ADF motor defective	Replace the ADF unit.
8	Main PCB defective	Replace the main PCB.

■ Error Code A400

ADF cover sensor detects that ADF cover is open.

< User Check >

- Close the ADF cover.

Step	Cause	Solution
1	ADF cover sensor harness connection failure	Reconnect the ADF cover sensor harness.
2	ADF cover boss broken	Replace the ADF cover.
3	ADF cover sensor defective	Replace the ADF unit.
4	Main PCB defective	Replace the main PCB.

■ Error Code A500

Level of CIS scan result is detected as abnormal during the first side fax sending. (During the first sending)

Error Code A600

Level of CIS scan result is detected as abnormal during the first side fax sending. (After retrying)

Step	Cause	Solution
1	White level data failure	Acquire white/black level data. (refer to <a href="#">Chapter 5, Section 1.3.15 "Acquisition of White/Black Level Data (Maintenance mode 55)"</a> )
2	White reference film of document scanner unit stained	Clean the white reference film of document scanner unit.
3	First side CIS unit defective	Replace the first side CIS unit.
4	White reference film of document scanner unit damaged, broken	Replace the document scanner unit.
5	Main PCB defective	Replace the main PCB.

■ Error Code A700

Type of CIS unit and CIS type input value does not match.

Step	Cause	Solution
1	First side or second side CIS type input value error	Automatically identify the first side or second side CIS type input value. (refer to <a href="#">Chapter 5, Section 1.3.19 "Checking of CIS Travel and Specifying of CIS Type (Maintenance mode 59)"</a> )
2	Main PCB defective	Replace the main PCB.

■ Error Code AC00

Level of CIS scan result is detected as abnormal during the second side fax sending. (During the first sending)

Error Code BC00

Level of CIS scan result is detected as abnormal during the second side fax sending. (After retrying)

Step	Cause	Solution
1	White level data failure	Acquire white/black level data. (refer to <a href="#">Chapter 5, Section 1.3.15 "Acquisition of White/Black Level Data (Maintenance mode 55)"</a> )
2	White reference film of document pressure bar of ADF stained	Clean the white reference film of document pressure bar of ADF.
3	Second side CIS unit defective	Replace the second side CIS unit.
4	White reference film of document pressure bar of ADF damaged, broken	Replace the ADF unit.
5	Main PCB defective	Replace the main PCB.

■ Error Code AD00

The required number of pixels of the scanning data is not output, and it does not finish normally.

Step	Cause	Solution
1	White level data failure	Carry out maintenance 55 to obtain white/black level data.
2	First side or second side CIS flat cable connection failure	Reconnect the first side or second side CIS flat cable.
3	First side or second side CIS unit defective	Replace the first side or second side CIS unit.
4	Main PCB defective	Replace the main PCB.

■ Error Code AF00

CIS positioning abnormal (Home position cannot be found)

Step	Cause	Solution
1	Scanner belt out of place	Set the scanner belt into place.
2	Scanner motor harness connection failure	Reconnect the scanner motor harness.
3	First side CIS flat cable connection failure	Reconnect the first side CIS flat cable.
4	Black reference film stained	Clean document cover glass at black reference film.
5	First side CIS flat cable defective	Replace the first side CIS flat cable.
6	First side CIS unit defective	Replace the first side CIS unit.
7	Scanner motor defective	Replace the document scanner unit.
8	Main PCB defective	Replace the main PCB.

■ Error Code BF00

Document scanning position sensor detects that the document's length does not fit duplex scanning.

< User Check >

- Check whether the document scanned is longer than the specified limit.
- Remove the jammed document.

Step	Cause	Solution
1	Document scanning position actuator caught on the surrounding parts	Set the document scanning position actuator into place.
2	Document scanning position sensor defective	Replace the document scanning position sensor PCB.
3	Document feed roller worn out	Replace the ADF unit.
4	Main PCB defective	Replace the main PCB.

■ Error Code D100

Modem PCB initialization failed.

Error Code D200

SDAA communication failure

Step	Cause	Solution
1	Modem PCB harness connection failure	Reconnect the modem PCB harness.
2	Modem PCB defective	Replace the modem PCB.
3	Main PCB defective	Replace the main PCB.

- Error Code D800  
Touch panel initialization failed.

Step	Cause	Solution
1	Touch panel defective	Replace the touch panel.
2	Main PCB defective	Replace the main PCB.

- Error Code E200  
Wired LAN MAC address not registered.

Step	Cause	Solution
1	Main PCB defective	Replace the main PCB.

- Error Code E300  
Wireless LAN connection error

Step	Cause	Solution
1	Wireless LAN PCB connection failure	Reconnect the wireless LAN PCB.
2	Wireless LAN PCB defective	Replace the wireless LAN PCB.
3	Main PCB defective	Replace the main PCB.

- Error Code E600  
Main PCB EEPROM write error

Step	Cause	Solution
1	Main PCB defective	Replace the main PCB.

- Error Code E900  
NFC PCB initialization failed.

Step	Cause	Solution
1	NFC PCB harness connection failure	Reconnect the NFC PCB harness.
2	NFC PCB defective	Replace the NFC PCB.
3	LCD PCB defective	Replace the LCD PCB.
4	Main PCB defective	Replace the main PCB.

■ Error Code EC00

A USB device out of the specifications is inserted to the USB terminal, and consequently over current flows.

< User Check >

- Remove the inserted USB device.

Step	Cause	Solution
1	Main PCB defective	Replace the main PCB.

■ Error Code F000

Flash file system error

Error Code F001

Flash ROM read problem

Error Code FD00

Firmware verification during the self test fails.

Error Code FD01

System resource error

Error Code FE00

ROM data acquisition error

< User Check >

- Turn the power OFF and ON.

Step	Cause	Solution
1	Program malfunctioning	Re-load the firmware.
2	Main PCB defective	Replace the main PCB.

## 4.2 Recording Paper Feeding Problems

Problems related to paper feeding are end user recoverable if following the User Check items.

If the same problem occurs, follow each procedure in the order of the number described in the Step column in the tables below.

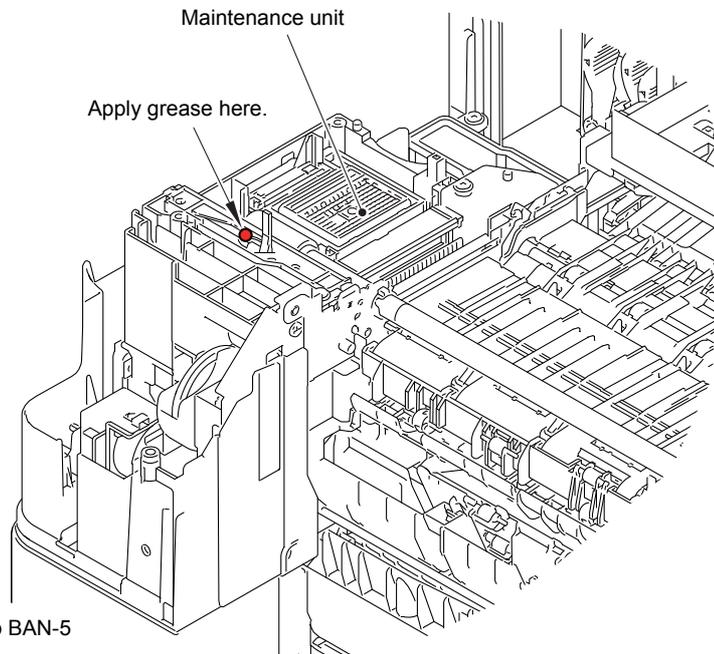
### 4.2.1 Paper is not fed from paper tray

< User Check >

- Check that setting of tray selection is not fixed to MP Tray/Manual feed slot.
- Check that recording paper is loaded correctly in the paper tray.
- Check that the paper smaller than the specified size is not loaded.
- Adjust the paper guide to match the recording paper size.
- Try reversing the recording paper in the paper tray, or rotating direction of the paper for 180 degrees.
- Check thickness of recording paper is within tolerance of each type.
- Check that the number of recording paper loaded in the paper tray is within specified volume.
- Clean the paper pull-in roller.

Step	Cause	Solution
1	Paper pull-in roller not mounted in place	Set the paper pull-in roller into place.
2	CR encoder strip stained	Clean the CR encoder strip.
3	PF encoder disk stained	Clean the PF encoder disk and flushing guide. (refer to "Precautions for Troubleshooting and/or Disassembly/Assembly")
4	Bank ASSY out of place	Set the bank ASSY into place.
5	The grease of the switching lever guide of the maintenance unit is not enough	Apply the grease for the switching lever guide of the maintenance unit. (refer to Fig. 2-8 (2-58))
6	ASF motor harness connection failure	Reconnect the ASF motor harness.
7	3rd tray paper feed motor harness connection failure	Reconnect the 3rd tray paper feed motor harness.
8	Registration actuator out of place	Set the registration actuator into place.
9	3rd tray paper pull-in actuator out of place	Set the 3rd tray paper pull-in actuator into place.
10	Paper feeding path parts out of place	Set the feeding path parts into place.
11	Paper pull-in roller worn out	Replace the T1 Paper pull-in roller L/R, paper feed arm frame ASSY, T2 Paper pull-in roller L/R, LT frame ASSY or T3 Paper pull-in roller L/R.
12	CR encoder strip defective	Replace the CR encoder strip.
13	CR encoder sensor defective	Replace the carriage PCB ASSY.

Step	Cause	Solution
14	PF encoder disk defective	Replace the PF encoder disk.
15	Registration sensor defective	Replace the registration sensor PCB ASSY.
16	3rd tray paper pull-in sensor defective	Replace the 3rd tray paper pull-in sensor.
17	Paper feed motor defective	Replace the paper feed motor.
18	3rd tray paper feed motor defective	Replace the 3rd tray paper feed motor.
19	ASF motor/Switching lever guide defective	Replace the maintenance unit.
20	Main PCB defective	Replace the main PCB.



Lubricant type: Permalub BAN-5  
Lubricant amount: 3.0 mm diameter ball

**Fig. 2-8**

#### 4.2.2 Paper is not fed from manual feed slot

< User Check >

- Check that recording paper is loaded correctly in the manual feed slot.
- Check thickness of recording paper is within tolerance of each type.
- Check only a single recording paper enters.

Step	Cause	Solution
1	Paper feed motor harness connection failure	Reconnect the paper feed motor harness.
2	Registration actuator out of place	Set the registration actuator into place.
3	Paper feeding path parts out of place	Set the paper feeding path parts into place.
4	Registration sensor defective	Replace the registration sensor PCB ASSY.
5	Paper feed motor defective	Replace the paper feed motor.
6	Manual paper tray ASSY defective	Replace the manual paper tray ASSY.
7	Main PCB defective	Replace the main PCB.

#### 4.2.3 Paper is not fed from MP tray

< User Check >

- Check that recording paper is loaded correctly in the MP tray.
- Check thickness of recording paper is within tolerance of each type.
- Check that setting of tray selection is not fix to the paper tray.
- Check that the paper smaller than the specified size is not loaded.
- Adjust the paper guide to match the recording paper size.
- Try reversing the recording paper in the MP tray, or rotating direction of the paper for 180 degrees.
- Check that the number of recording paper loaded in the MP tray is within specified volume.
- Clean the MP paper pull-in roller.
- Check that there is no foreign material in the MP tray.

Step	Cause	Solution
1	Paper feed motor harness connection failure	Reconnect the paper feed motor harness.
2	MP paper detection sensor harness connection failure	Reconnect the MP paper detection sensor harness.
3	MP paper detection actuator out of place	Set the MP paper detection actuator into place.
4	MP paper detection sensor defective	Replace the MP paper detection sensor PCB ASSY.
5	Paper feeding path parts out of place	Set the paper feeding path parts into place.
6	Paper feed motor defective	Replace the paper feed motor.
7	ASF motor defective	Replace the maintenance unit.
8	MP drive gear broken MP paper pull-in roller worn out	Replace the MP tray ASSY.
9	Main PCB defective	Replace the main PCB.

#### 4.2.4 Two or more sheets of paper are fed from the paper tray.

< User Check >

- Check that recording paper is loaded correctly in the paper tray.
- Check that the number of recording paper loaded in paper tray is within specified volume.
- Try reversing the recording paper in paper tray, or rotating direction of the paper for 180 degrees.
- Check thickness of recording paper is within tolerance of each type.
- Shuffle recording papers thoroughly and then reload them in the paper tray.

Step	Cause	Solution
1	Bank ASSY worn out	Replace the bank ASSY.
2	Base pad worn out	Replace the base pad.
3	Paper pull-in roller defective	Replace the T1 Paper pull-in roller L/R, paper feed arm frame ASSY, T2 Paper pull-in roller L/R, LT frame ASSY or T3 Paper pull-in roller L/R.
4	Paper tray defective	Replace the paper tray ASSY.

#### 4.2.5 Two or more sheets of paper are fed from the MP tray.

< User Check >

- Check that recording paper is loaded correctly in the MP tray.
- Check that the number of recording paper loaded in the MP tray is within specified volume.
- Try reversing the recording paper in the MP tray, or rotating direction of the paper for 180 degrees.
- Check thickness of recording paper is within tolerance of each type.
- Shuffle recording papers thoroughly and then reload them in the MP tray.

Step	Cause	Solution
1	Base pad worn out Bank ASSY worn out Friction pad worn out	Replace the MP tray ASSY.

#### 4.2.6 Paper feeding at an angle

< User Check >

- Check that recording paper is loaded correctly in the tray.
- Adjust the paper guide to match the recording paper size.
- Check thickness of recording paper is within tolerance of each type.
- Check if too much paper is loaded in the paper tray.
- Clean the paper pull-in roller.

Step	Cause	Solution
1	Bank ASSY out of place	Set the bank ASSY into place.
2	Paper feeding path parts out of place	Set the paper feeding path parts into place.
3	Main PCB defective	Replace the main PCB.

#### 4.2.7 Recording paper jam

##### ■ Paper jam around the paper tray

< User Check >

- Check that recording paper is loaded correctly in the paper tray.
- Check that the paper tray is inserted all the way to the back end.
- Adjust the paper guide to match the recording paper size.
- Check that the paper smaller than the specified size is not loaded.
- Check thickness of recording paper is within tolerance of each type.
- Check that the number of recording paper loaded in the paper tray is within specified volume.
- Check that the jam clear cover is securely closed.
- Clean the related rollers.

Step	Cause	Solution
1	Foreign materials in the recording paper path	Remove foreign materials.
2	Bank ASSY out of place	Set the bank ASSY into place.
3	Platen foam drift	Set the platen foam into place.
4	Jam clear cover not mounted in place	Set the jam clear cover into place.
5	CR guide rail not mounted in place	Set the CR guide rail into place.
6	Platen ASSY not mounted in place	Set the platen ASSY into place.
7	Platen spring not mounted in place	Set the platen spring into place.
8	Jam clear cover damaged, broken	Replace the jam clear cover.
9	Platen ASSY damaged, broken	Replace the platen ASSY.
10	Registration sensor defective	Replace the registration sensor PCB ASSY.
11	Paper tray defective	Replace the paper tray ASSY.
12	Main PCB defective	Replace the main PCB.

■ Paper jam around MP tray/manual feed slot

< User Check >

- Check that recording paper is loaded correctly in the MP tray/manual feed slot.
- Adjust the paper guide to match the recording paper size.
- Check that the paper smaller than the specified size is not loaded.
- Check thickness of recording paper is within tolerance of each type.
- Check that the number of recording paper loaded in the MP tray/manual feed slot is within specified volume.
- Clean the related rollers.

Step	Cause	Solution
1	Foreign materials in the recording paper path	Remove foreign materials.
2	Platen foam drift	Set the platen foam into place.
3	CR guide rail not mounted in place	Set the CR guide rail into place.
4	Platen ASSY not mounted in place	Set the platen ASSY into place.
5	Platen spring not mounted in place	Set the platen spring into place.
6	Platen ASSY damaged, broken	Replace the platen ASSY.
7	Registration sensor defective	Replace the registration sensor PCB ASSY.
8	MP paper detection sensor defective	Replace the MP paper detection sensor PCB ASSY.
9	MP tray/Manual paper tray ASSY defective	Replace the MP tray ASSY/manual paper tray ASSY.
10	Main PCB defective	Replace the main PCB.

## ■ Paper jam around the platen

< User Check >

- Check that recording paper is loaded correctly in the tray.
- Adjust the paper guide to match the recording paper size.
- Check that the paper smaller than the specified size is not loaded.
- Check thickness of recording paper is within tolerance of each type.
- Clean the related rollers.

Step	Cause	Solution
1	Foreign materials in the recording paper path	Remove foreign materials.
2	CR encoder strip stained	Clean the CR encoder strip.
3	PF encoder disk stained	Replace the PF encoder disk.
4	CR encoder strip out of place	Set the CR encoder strip into place.
5	Platen foam drift	Set the platen foam into place.
6	Bank ASSY out of place	Set the bank ASSY into place.
7	Head/carriage unit head unlocked	Set the head lock in lock position.
8	Switchback inner paper guide not mounted in place	Set the switchback inner paper guide into place.
9	Switchback outer paper guide not mounted in place	Set the switchback outer paper guide into place.
10	Switchback roller belt out of place	Set the switchback roller belt into place.
11	Paper ejection roller belt out of place	Set the paper ejection roller belt into place.
12	CR guide rail not mounted in place	Set the CR guide rail into place.
13	Corrugate plate not mounted in place	Set the corrugate plate into place.
14	Platen ASSY not mounted in place	Set the platen ASSY into place.
15	Platen spring not mounted in place	Set the platen spring into place.
16	CR encoder strip defective	Replace the CR encoder strip.
17	PF encoder disk defective	Replace the PF encoder disk.
18	PF encoder sensor defective	Replace the PF encoder sensor PCB ASSY.
19	DX paper guide ASSY not mounted in place	Set the DX paper guide ASSY into place.
20	Platen ASSY damaged, broken	Replace the platen ASSY.
21	Registration sensor PCB defective	Replace the registration sensor PCB ASSY.
22	Paper width sensor defective	Replace the carriage PCB ASSY.
23	Main PCB defective	Replace the main PCB.

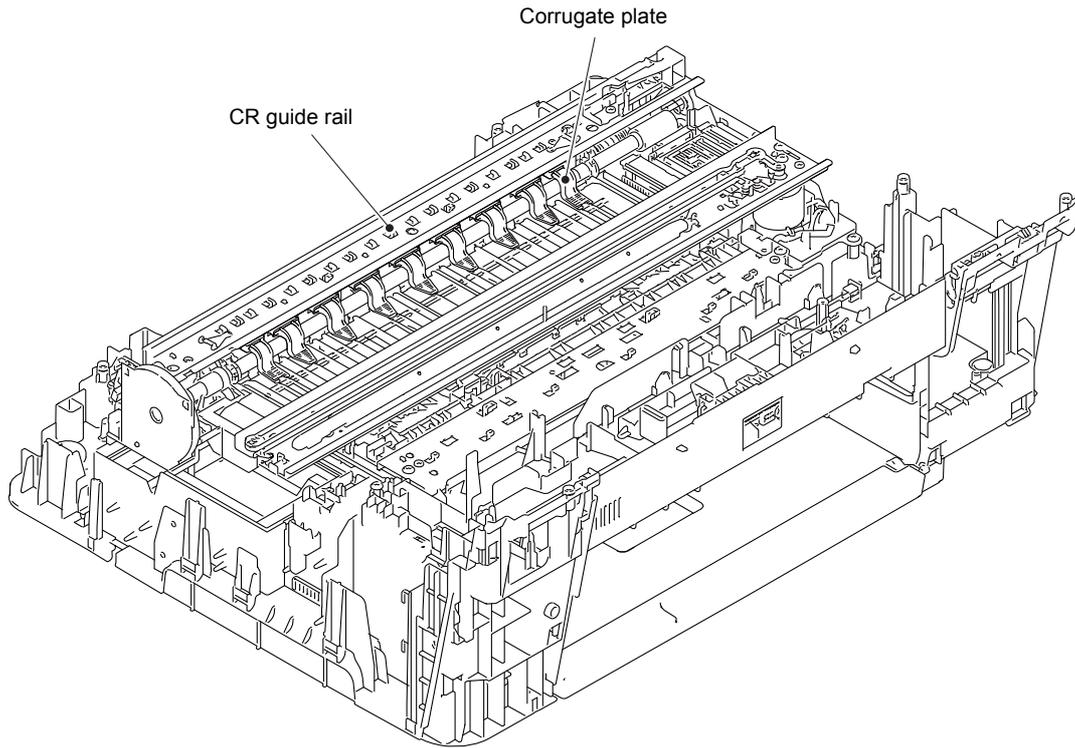


Fig. 2-9

■ Paper jam around paper ejection parts

< User Check >

- Clean the related rollers.
- Check that the number of recording paper on the output paper tray is within the maximum ejecting paper volume.
- Check that the output paper tray is pulled out in accordance with the recording paper size.

Step	Cause	Solution
1	Foreign materials in the recording paper path	Remove foreign materials.
2	Switchback inner paper guide not mounted in place	Set the switchback inner paper guide into place.
3	Switchback outer paper guide not mounted in place	Set the switchback outer paper guide into place.
4	Switchback sensor defective	Replace the switchback sensor PCB.
5	Paper ejection roller belt out of place	Set the paper ejection roller belt into place.
6	Main PCB defective	Replace the main PCB.

**■ Paper jam during duplex printing**

< User Check >

- Adjust the paper guide to match the recording paper size.
- Check that the paper smaller than the specified size is not loaded.
- Check thickness of recording paper is within tolerance of each type.
- Clean the related rollers.
- Check that Output paper tray is set correctly (not inserted halfway).

Step	Cause	Solution
1	Foreign materials in the recording paper path	Remove foreign materials.
2	Switchback inner paper guide not mounted in place	Set the switchback inner paper guide into place.
3	Switchback outer paper guide not mounted in place	Set the switchback outer paper guide into place.
4	Switchback roller belt out of place	Set the switchback roller belt into place.
5	Paper ejection roller belt out of place	Set the paper ejection roller belt into place.
6	DX paper guide ASSY not mounted in place	Set the DX paper guide ASSY into place.
7	DX roller holder not mounted in place	Set the DX roller holder into place.
8	Main PCB defective	Replace the main PCB.

**4.2.8 Prints only single side of the paper when duplex-printing**

< User Check >

- Set the driver settings to duplex-printing.
- Check if the recording papers are not overlapping each other. Shuffle the papers thoroughly in the case of overlapping.

Step	Cause	Solution
1	Switching lever guide defective	Replace the maintenance unit.
2	Main PCB defective	Replace the main PCB.

**4.2.9 “No Paper Fed” is displayed**

< User Check >

- Load recording paper in the target paper tray.

Step	Cause	Solution
1	Paper remaining sensor harness connection failure	Reconnect the paper remaining sensor harness.
2	Paper remaining actuator caught on the surrounding parts	Set the paper remaining actuator into place.
3	Main PCB defective	Replace the main PCB.

### 4.3 Print-image Problems

#### 4.3.1 Defective images

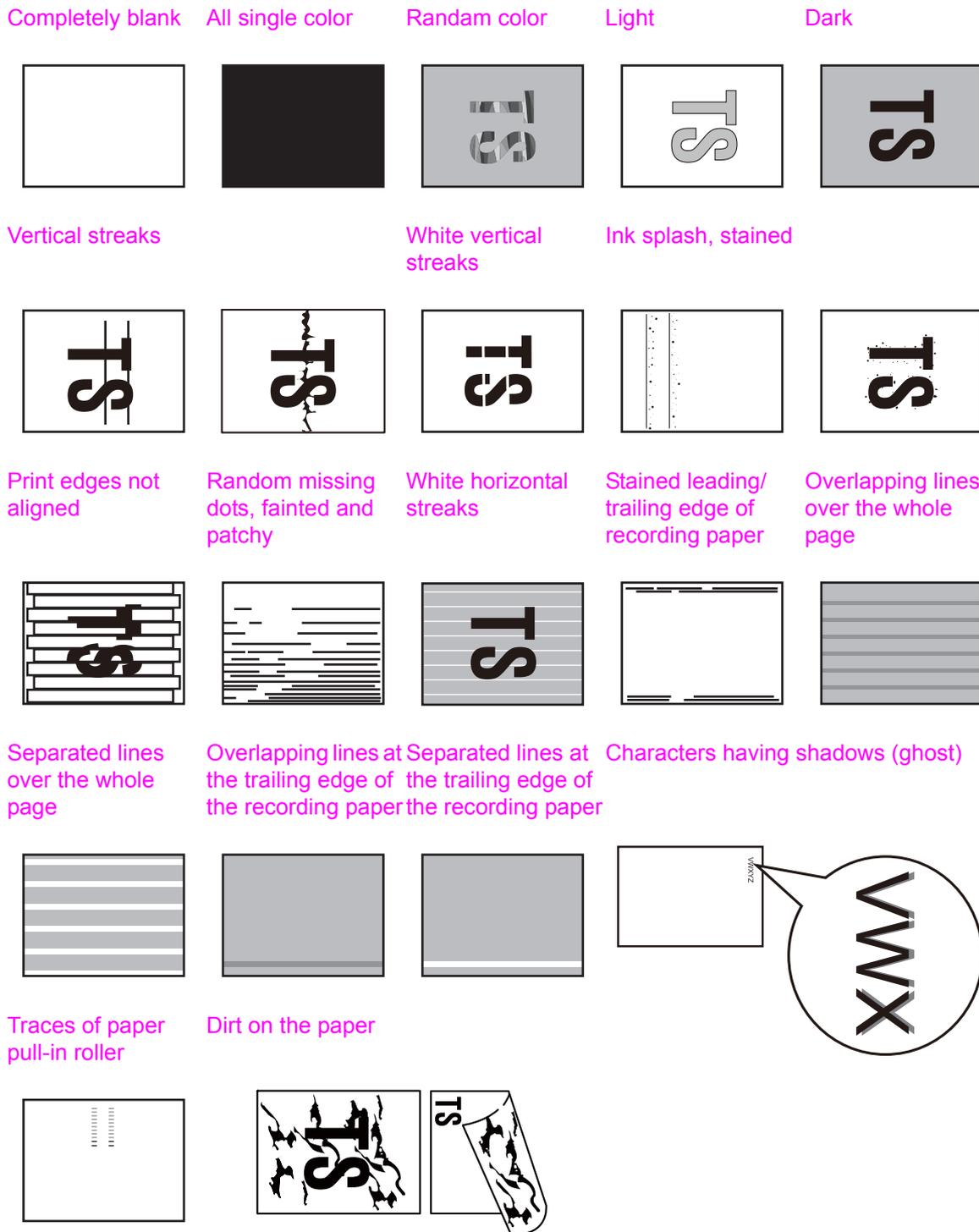


Fig. 2-10

### 4.3.2 Print-image problems

Problems related to defective image are end user recoverable if following the User Check items.

If the same problem occurs, follow each procedure in the order of the number described in the Step column in the tables below.

#### ■ Completely blank



< User Check >

- Check if there is enough remaining ink.
- Carry out head cleaning.
- Replace the ink cartridge.
- Refill ink.

Step	Cause	Solution
1	Wrong head property information	Input the head property information (refer to <a href="#">Chapter 5, Section 1.3.24 "Updating of Head Property Information and Backup/Restoration of Head Calibration Data (Maintenance mode 68)"</a> )
2	Head flat cable connection failure	Reconnect the head flat cable.
3	Carriage flat cable connection failure	Reconnect the carriage flat cable.
4	Non-discharge of ink from head	Perform the recommended purge procedures. (refer to the recommended procedures in <a href="#">Chapter 5, Section 1.3.28 "Purge Operation (Maintenance mode 76)"</a> )
5	Ink supply tubes bent	Replace the ink refill ASSY.
6	Carriage PCB defective	Replace the carriage PCB ASSY.
7	Maintenance unit defective	Replace the maintenance unit.
8	Head defective	Replace the head/carriage unit.
9	Main PCB defective	Replace the main PCB.

#### ■ All single color

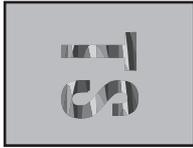


< User Check >

- Check that ink cartridge is loaded correctly.
- Check that ink is refilled correctly.

Step	Cause	Solution
1	Carriage PCB defective	Replace the carriage PCB ASSY.
2	Head defective	Replace the head/carriage unit.
3	Main PCB defective	Replace the main PCB.

■ Random color



< User Check >

- Check that ink cartridge is loaded correctly.
- Check that ink is refilled correctly.
- Carry out head cleaning.

Step	Cause	Solution
1	Maintenance unit stained	Clean the maintenance unit. (refer to the figure below.)
2	Wrong head property information	Input the head property information. (refer to Chapter 5, Section 1.3.24 "Updating of Head Property Information and Backup/ Restoration of Head Calibration Data (Maintenance mode 68)")
3	Head calibration uncompleted	Write the head calibration data. (refer to Chapter 5, Section 1.3.2 "Creating of Head Calibration Data and Writing it into Flash ROM (Maintenance mode 02)")
4	Non-discharge of ink from head	Perform the recommended purge procedures. (refer to the recommended procedures in Chapter 5, Section 1.3.28 "Purge Operation (Maintenance mode 76)".
5	Carriage PCB defective	Replace the carriage PCB ASSY.
6	Head defective	Replace the head/carriage unit.
7	Maintenance unit defective	Replace the maintenance unit.
8	Main PCB defective	Replace the main PCB.

<Cleaning of the maintenance unit>

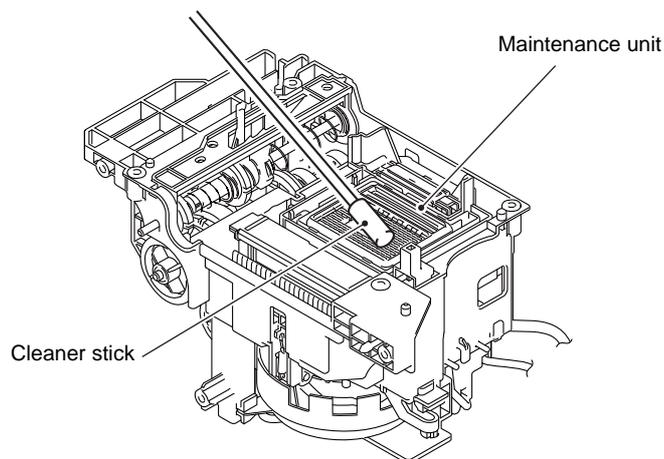
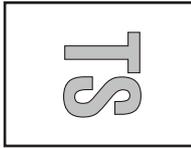


Fig. 2-11

■ Light



< User Check >

- Check whether the recording paper being used is within the specification.
- Check whether the paper type setting is correct.
- Carry out head cleaning.
- Replace the ink cartridge.
- Refill ink.

Step	Cause	Solution
1	Maintenance unit stained	Clean the maintenance unit. (refer to Fig. 2-11 (2-68))
2	Wrong head property information	Input the head property information. (refer to Chapter 5, Section 1.3.24 "Updating of Head Property Information and Backup/Restoration of Head Calibration Data (Maintenance mode 68)")
3	Head calibration uncompleted	Write the head calibration data. (refer to Chapter 5, Section 1.3.2 "Creating of Head Calibration Data and Writing it into Flash ROM (Maintenance mode 02)")
4	Non-discharge of ink from head	Perform the recommended purge procedures. (refer to the recommended procedures in Chapter 5, Section 1.3.28 "Purge Operation (Maintenance mode 76)".
5	Carriage PCB defective	Replace the carriage PCB ASSY.
6	Maintenance unit defective	Replace the maintenance unit.
7	Head defective	Replace the head/carriage unit.
8	Main PCB defective	Replace the main PCB.

■ Dark

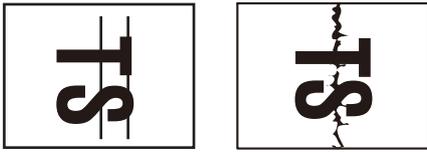


< User Check >

- Check whether the paper type setting is correct.

Step	Cause	Solution
1	Maintenance unit stained	Clean the maintenance unit. (refer to Fig. 2-11 (2-68))
2	Wrong head property information	Input the head property information. (refer to Chapter 5, Section 1.3.24 "Updating of Head Property Information and Backup/Restoration of Head Calibration Data (Maintenance mode 68)")
3	Head calibration uncompleted	Write the head calibration data. (refer to Chapter 5, Section 1.3.2 "Creating of Head Calibration Data and Writing it into Flash ROM (Maintenance mode 02)")
4	Carriage PCB defective	Replace the carriage PCB ASSY.
5	Maintenance unit defective	Replace the maintenance unit.
6	Head defective	Replace the head/carriage unit.
7	Main PCB defective	Replace the main PCB.

■ Vertical streaks



< User Check >

- Check whether the recording paper being used is within the specification.
- Clean the related rollers by printing blank paper.
- Clean the platen.

Step	Cause	Solution
1	Foreign materials in the CR guide rail	Remove foreign materials.
2	Recording paper path contaminated	Clean the recording paper path.
3	CR encoder strip stained	Clean the CR encoder strip.
4	Carriage flat cable not mounted in place	Set the carriage flat cable into place.
5	Ink supply tubes not mounted in place	Set the ink supply tubes into place.
6	CR encoder strip defective	Replace the CR encoder strip.

■ White vertical streaks

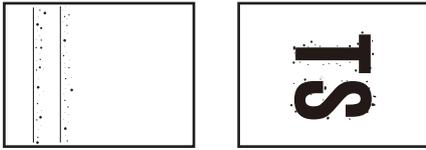


< User Check >

- Carry out head cleaning.

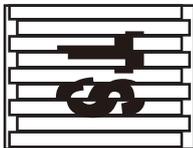
Step	Cause	Solution
1	Foreign materials in the CR guide rail	Remove foreign materials.
2	CR encoder strip stained	Clean the CR encoder strip.
3	Non-discharge of ink from head	Perform the recommended purge procedures. (refer to the recommended procedures in <a href="#">Chapter 5, Section 1.3.28 "Purge Operation (Maintenance mode 76)"</a> ).
4	CR encoder strip defective	Replace the CR encoder strip.
5	Carriage motor defective	Replace the carriage motor ASSY.
6	Head defective	Replace the head/carriage unit.

■ Ink splash, stained



Step	Cause	Solution
1	Maintenance unit stained	Clean the maintenance unit. (refer to <a href="#">Fig. 2-11 (2-68)</a> )
2	Platen stained	Clean the platen.
3	Wrong head property information	Input the head property information. (refer to <a href="#">Chapter 5, Section 1.3.24 "Updating of Head Property Information and Backup/Restoration of Head Calibration Data (Maintenance mode 68)"</a> )
4	Carriage PCB defective	Replace the carriage PCB ASSY.
5	Maintenance unit defective	Replace the maintenance unit.
6	Head defective	Replace the head/carriage unit.
7	Main PCB defective	Replace the main PCB.

■ Print edges not aligned



< User Check >

- Check whether the recording paper being used is within the specification.
- Perform the printing position adjustment.

Step	Cause	Solution
1	Vertical print lines not aligned	Adjust vertical print line alignment. (refer to <a href="#">Chapter 5, Section 1.3.22 "Adjustment of Software Correction for Inclination/Corrugation/Ruled Lines (Maintenance mode 65)"</a> )
2	Head inclination is not correctly adjusted.	Adjust the head inclination. (refer to <a href="#">Chapter 4, Section 2.4 "Adjust head inclination"</a> )
3	CR encoder strip stained	Clean the CR encoder strip.
4	CR encoder strip defective	Replace the CR encoder strip.
5	Carriage PCB defective	Replace the carriage PCB ASSY.
6	Head defective	Replace the head/carriage unit.
7	Main PCB defective	Replace the main PCB.

## ■ Random missing dots, faded and patchy

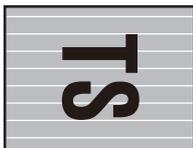


< User Check >

- Carry out head cleaning.
- Replace the ink cartridge.
- Refill ink.

Step	Cause	Solution
1	Maintenance unit stained	Clean the maintenance unit. (refer to <a href="#">Fig. 2-11 (2-68)</a> )
2	Non-discharge of ink from head	Perform the recommended purge procedures. (refer to the recommended procedures in <a href="#">Chapter 5, Section 1.3.28 "Purge Operation (Maintenance mode 76)"</a> ).
3	Carriage PCB defective	Replace the carriage PCB ASSY.
4	Maintenance unit defective	Replace the maintenance unit.
5	Head defective	Replace the head/carriage unit.
6	Main PCB defective	Replace the main PCB.

## ■ White horizontal streaks



< User Check >

- Carry out head cleaning.
- Replace the ink cartridge.
- Refill ink.

Step	Cause	Solution
1	Paper feeding correction not updated	Update paper feed correction. (refer to <a href="#">Chapter 5, Section 1.3.18 "Updating of Paper Feeding Correction Values (Maintenance mode 58)"</a> )
2	Head inclination is not correctly adjusted.	Adjust the head inclination. (refer to <a href="#">Chapter 4, Section 2.4 "Adjust head inclination"</a> )
3	PF encoder disk stained	Clean the PF encoder disk and flushing guide. (refer to <a href="#">"Precautions for Troubleshooting and/or Disassembly/Assembly"</a> )
4	Non-discharge of ink from head	Perform the recommended purge procedures. (refer to the recommended procedures in <a href="#">Chapter 5, Section 1.3.28 "Purge Operation (Maintenance mode 76)"</a> ).
5	PF encoder disk defective	Replace the PF encoder disk.
6	Carriage PCB defective	Replace the carriage PCB ASSY.
7	Maintenance unit defective	Replace the maintenance unit.
8	Head defective	Replace the head/carriage unit.
9	Main PCB defective	Replace the main PCB.

■ **Stained leading/trailing edge of recording paper**



< User Check >

- Check whether the recording paper being used is within the specification.

Step	Cause	Solution
1	Maintenance unit stained	Clean the maintenance unit. (refer to <a href="#">Fig. 2-11 (2-68)</a> )
2	Paper feeding correction not updated	Update paper feed correction. (refer to <a href="#">Chapter 5, Section 1.3.18 "Updating of Paper Feeding Correction Values (Maintenance mode 58)"</a> )
3	Platen defective	Replace the platen.
4	Head defective	Replace the head/carriage unit.

■ **Overlapping lines over the whole page**



< User Check >

- Carry out head cleaning.

Step	Cause	Solution
1	Head inclination is not correctly adjusted.	Adjust the head inclination. (refer to <a href="#">Chapter 4, Section 2.4 "Adjust head inclination"</a> )
2	Head calibration uncompleted	Write the head calibration data. (refer to <a href="#">Chapter 5, Section 1.3.2 "Creating of Head Calibration Data and Writing it into Flash ROM (Maintenance mode 02)"</a> )
3	Paper feeding correction not updated	Update paper feed correction. (refer to <a href="#">Chapter 5, Section 1.3.18 "Updating of Paper Feeding Correction Values (Maintenance mode 58)"</a> )
4	PF encoder disk stained	Clean the PF encoder disk and flushing guide. (refer to <a href="#">"Precautions for Troubleshooting and/or Disassembly/Assembly"</a> )
5	PF encoder disk defective	Replace the PF encoder disk.
6	Head defective	Replace the head/carriage unit.
7	Main PCB defective	Replace the main PCB.

■ Separated lines over the whole page



< User Check >

- Carry out head cleaning.

Step	Cause	Solution
1	Head inclination is not correctly adjusted.	Adjust the head inclination. (refer to <a href="#">Chapter 4, Section 2.4 "Adjust head inclination"</a> )
2	Head calibration uncompleted	Write the head calibration data. (refer to <a href="#">Chapter 5, Section 1.3.2 "Creating of Head Calibration Data and Writing it into Flash ROM (Maintenance mode 02)"</a> )
3	Paper feeding correction not updated	Update paper feed correction. (refer to <a href="#">Chapter 5, Section 1.3.18 "Updating of Paper Feeding Correction Values (Maintenance mode 58)"</a> )
4	PF encoder disk stained	Clean the PF encoder disk and flushing guide. (refer to <a href="#">"Precautions for Troubleshooting and/or Disassembly/Assembly"</a> )
5	Non-discharge of ink from head	Perform the recommended purge procedures. (refer to the recommended procedures in <a href="#">Chapter 5, Section 1.3.28 "Purge Operation (Maintenance mode 76)"</a> ).
6	PF encoder disk defective	Replace the PF encoder disk.
7	Head defective	Replace the head/carriage unit.
8	Main PCB defective	Replace the main PCB.

■ Overlapping lines at the trailing edge of the recording paper



< User Check >

- Carry out head cleaning.

Step	Cause	Solution
1	Paper feeding correction not updated	Update paper feed correction. (refer to <a href="#">Chapter 5, Section 1.3.18 "Updating of Paper Feeding Correction Values (Maintenance mode 58)"</a> )
2	PF encoder disk stained	Clean the PF encoder disk and flushing guide. (refer to <a href="#">"Precautions for Troubleshooting and/or Disassembly/Assembly"</a> )
3	PF encoder disk defective	Replace the PF encoder disk.
4	Main PCB defective	Replace the main PCB.

■ Separated lines at the trailing edge of the recording paper

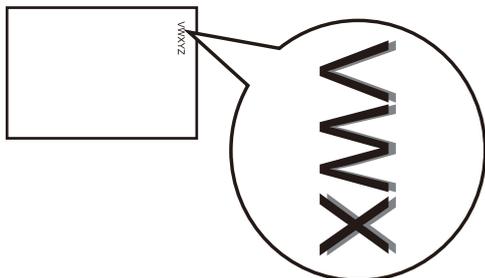
< User Check >

- Carry out head cleaning.



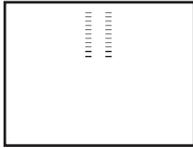
Step	Cause	Solution
1	Paper feeding correction not updated	Update paper feed correction. (refer to <a href="#">Chapter 5, Section 1.3.18 "Updating of Paper Feeding Correction Values (Maintenance mode 58)"</a> )
2	PF encoder disk stained	Clean the PF encoder disk and flushing guide. (refer to <a href="#">"Precautions for Troubleshooting and/or Disassembly/Assembly"</a> )
3	Non-discharge of ink from head	Perform the recommended purge procedures. (refer to the recommended procedures in <a href="#">Chapter 5, Section 1.3.28 "Purge Operation (Maintenance mode 76)"</a> ).
4	PF encoder disk defective	Replace the PF encoder disk.
5	Main PCB defective	Replace the main PCB.

■ Characters having shadows (ghost)



Step	Cause	Solution
1	Paper feeding correction not updated	Update paper feed correction. (refer to <a href="#">Chapter 5, Section 1.3.18 "Updating of Paper Feeding Correction Values (Maintenance mode 58)"</a> )
2	Vertical print lines not aligned	Adjust vertical print line alignment.(refer to <a href="#">Chapter 5, Section 1.3.22 "Adjustment of Software Correction for Inclination/Corrugation/ Ruled Lines (Maintenance mode 65)"</a> )
3	PF encoder disk stained	Clean the PF encoder disk and flushing guide. (refer to <a href="#">"Precautions for Troubleshooting and/or Disassembly/Assembly"</a> )
4	CR encoder strip stained	Clean the CR encoder strip.
5	PF encoder disk defective	Replace the PF encoder disk.
6	CR encoder strip defective	Replace the CR encoder strip.
7	Head defective	Replace the head/carriage unit.
8	Main PCB defective	Replace the main PCB.

## ■ Traces of paper pull-in roller

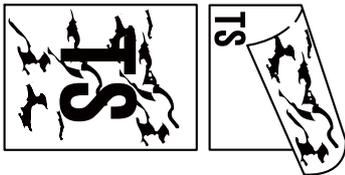


< User Check >

- Check whether the recording paper being used is within the specification.
- Clean the paper pull-in roller.
- Clean the MP paper pull-in roller.

Step	Cause	Solution
1	Paper pull-in roller defective	Replace the T1 Paper pull-in roller L/R, paper feed arm frame ASSY, T2 Paper pull-in roller L/R, LT frame ASSY or T3 Paper pull-in roller L/R.
2	MP paper pull-in roller defective	Replace the MP tray ASSY.

## ■ Dirt on the paper



< User Check >

- Check whether the recording paper being used is not folded.
- Check whether the recording paper being used is within the specification.
- Clean the related rollers by printing blank paper.
- Clean the platen.

Step	Cause	Solution
1	Maintenance unit stained	Clean the maintenance unit. (refer to <a href="#">Fig. 2-11 (2-68)</a> )
2	Paper feed roller stained	Replace the paper feed roller.
3	Paper ejection roller stained	Replace the paper ejection roller.
4	Switchback roller stained	Replace the switchback roller.
5	Intermediate roller stained	Replace the intermediate roller.
6	Foreign materials in the reverse side of the head	Remove foreign materials.

## 4.4 Software-related Problems

The end user can solve problems pertaining to software, (for instance, print cannot be made from a computer although test print and printer setting print can be made from the machine) by following the User Check items. If the same problem occurs, 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 if USB cable or LAN cable is not broken.
- Check if the correct product is selected if the interface switching device is in use.
- Check the driver settings.
- Reset to the factory default (refer to the user's guide.)

Step	Cause	Solution
1	Main PCB defective	Replace the main PCB.

## 4.5 Network Problems

### 4.5.1 Cannot make a print through network connection

< User Check >

- Check items in the network setting guide.
- Carry out network reset (refer to the user's guide.)

Step	Cause	Solution
1	Wireless LAN PCB connector connection failure	Reconnect the wireless LAN PCB ASSY.
2	Wireless LAN PCB defective	Replace the wireless LAN PCB ASSY.
3	Main PCB defective	Replace the main PCB.

## 4.6 Control Panel Problems

### 4.6.1 No display on LCD/Incorrect display on LCD

Step	Cause	Solution
1	Panel flat cable connection failure	Reconnect the panel flat cable.
2	LCD flat cable connection failure	Reconnect the LCD flat cable.
3	Breakage of panel flat cable	Replace the panel flat cable.
4	LCD PCB defective	Replace the LCD PCB.
5	LCD defective	Replace the LCD ASSY.
6	Control panel ASSY defective	Replace the control panel ASSY.
7	AC cord ASSY or power supply PCB defective	Replace the AC cord ASSY or power supply PCB ASSY.
8	Main PCB defective	Replace the main PCB.

### 4.6.2 No display on LED

Step	Cause	Solution
1	Panel flat cable connection failure	Reconnect the panel flat cable.
2	Breakage of panel flat cable	Replace the panel flat cable.
3	Panel PCB defective	Replace the panel PCB ASSY.
4	LCD PCB defective	Replace the LCD PCB.
5	Control panel ASSY defective	Replace the control panel ASSY.
6	AC cord ASSY or power supply PCB defective	Replace the AC cord ASSY or power supply PCB ASSY.
7	Main PCB defective	Replace the main PCB.

### 4.6.3 The control panel does not work

Step	Cause	Solution
1	Panel flat cable connection failure	Reconnect the panel flat cable.
2	Panel PCB defective	Replace the panel PCB ASSY.
3	LCD PCB defective	Replace the LCD PCB.
4	Key defective	Replace the control panel ASSY.
5	Main PCB defective	Replace the main PCB.

#### 4.6.4 Touch panel inoperative

Step	Cause	Solution
1	Panel flat cable connection failure	Reconnect the panel flat cable.
2	Touch panel flat cable connection failure	Reconnect the touch panel flat cable.
3	Adjustment slippage of the touch panel	Perform the touch panel adjustment. (refer to <a href="#">Chapter 5, Section 1.3.30 "Adjustment of Touch Panel (Maintenance mode 78)"</a> )
4	LCD PCB defective	Replace the LCD PCB.
5	Touch panel defective	Replace the touch panel.
6	Control panel ASSY defective	Replace the control panel ASSY.
7	Main PCB defective	Replace the main PCB.

## 4.7 Document Feeding Problems

### 4.7.1 Document can not be fed

< User Check >

- Check that document is loaded all the way to the end correctly in the document tray.
- Check that the number of documents loaded in the document tray is within specified volume.

Step	Cause	Solution
1	Foreign materials in adjacent area of the document pick-up roller	Remove foreign materials.
2	Document pick-up roller stained	Clean the document pick-up roller.
3	Document detection actuator not mounted in place	Set the document detection actuator into place.
4	ADF motor harness connection failure	Reconnect the ADF motor harness.
5	ADF document detection sensor harness connection failure	Reconnect the ADF document detection sensor harness.
6	Document pick-up roller worn out	Replace the document separation roller ASSY.
7	ADF document detection sensor defective	Replace the ADF document detection sensor/ ADF document width sensor PCB.
8	ADF motor defective Document feed gear, document separation roller gear broken	Replace the ADF unit.
9	Main PCB defective	Replace the main PCB.

### 4.7.2 Document double feeding

< User Check >

- Check whether a document thinner than the specified one is used..

Step	Cause	Solution
1	ADF separation pad worn out	Replace the ADF separation pad holder ASSY.

### 4.7.3 Document jam

#### ■ Document jam in adjacent area of ADF cover or in paper ejector part

< User Check >

- Check that document is loaded correctly in the document tray.
- Adjust the document guide to match the document size.
- Check that the document shorter than the specified size is not loaded.
- Check that thickness of the document is 64 to 90 g/m<sup>2</sup>.
- Check that the number of documents loaded in the document tray is within specified volume.
- Close the ADF cover securely.

Step	Cause	Solution
1	Foreign materials in adjacent area of ADF cover	Remove foreign materials.
2	ADF cover sensor harness connection failure	Reconnect the ADF cover sensor harness.
3	ADF cover ASSY not mounted in place	Set the ADF cover ASSY into place.
4	Lower doc chute ASSY not mounted in place	Set the lower doc chute ASSY into place.
5	ADF separation pad holder ASSY not mounted in place	Set the ADF separation pad holder ASSY into place.
6	ADF separation pad spring not mounted in place	Set the ADF separation pad spring into place.
7	Document scanning position actuator not mounted in place	Set the document scanning position actuator into place.
8	ADF cover ASSY damaged, broken	Replace the ADF cover ASSY.
9	ADF separation pad holder ASSY defective	Replace the ADF separation pad holder ASSY.
10	Lower doc chute ASSY damaged, broken ADF separation pad spring defective Ejection film damaged, broken	Replace the ADF unit.
11	Main PCB defective	Replace the main PCB.

## ■ Document jam inside ADF

< User Check >

- Check that document is loaded correctly in the document tray.
- Adjust the document guide to match the document size.
- Check that the document shorter than the specified size is not loaded.
- Check that thickness of the document is 64 to 90 g/m<sup>2</sup>.

Step	Cause	Solution
1	Foreign materials inside ADF	Remove foreign materials.
2	Document pressure bar not mounted in place	Set the document pressure bar into place.
3	Lower doc chute ASSY not mounted in place	Set the lower doc chute ASSY into place.
4	Document scanning position sensor harness connection failure	Reconnect the document scanning position sensor harness.
5	Document scanning position actuator not mounted in place	Set the document scanning position actuator into place.
6	Second side CIS glass not mounted in place	Set the second side CIS glass into place.
7	Document scanning position sensor defective	Replace the document scanning position sensor PCB ASSY.
8	The ADF hinges are deformed, and the document cover cannot be closed properly.	Replace the ADF hinge.
9	Feeding path in ADF unit damaged, broken	Replace the ADF unit.
10	Feeding path inside document scanner unit damaged, broken	Replace the document scanner unit.
11	Main PCB defective	Replace the main PCB.

#### 4.7.4 Wrinkles on documents

< User Check >

- Check that the document guide is correctly set to the document size.
- Check that documents are not curled.
- Check that document is loaded all the way to the end correctly in the document tray.
- Check that the number of documents loaded in the document tray is within specified volume.

Step	Cause	Solution
1	Document separation roller worn out	Replace the document separation roller ASSY.
2	Each paper feed roller worn out	Replace the ADF unit.

#### 4.7.5 Document size not correctly detected

< User Check >

- Check that documents are within specified size.

Step	Cause	Solution
1	Document scanning position actuator caught on the surrounding parts	Set the document scanning position actuator into place.
2	Document scanning position sensor defective	Replace the document scanning position sensor PCB ASSY.
3*	ADF document size sensor defective	Replace the ADF document support.
4*	FB document size sensor defective	Replace the document scanner unit.
5	Main PCB defective	Replace the main PCB.

\* Document size sensor model only

## 4.8 Scanned-image Problems

### 4.8.1 Defective images

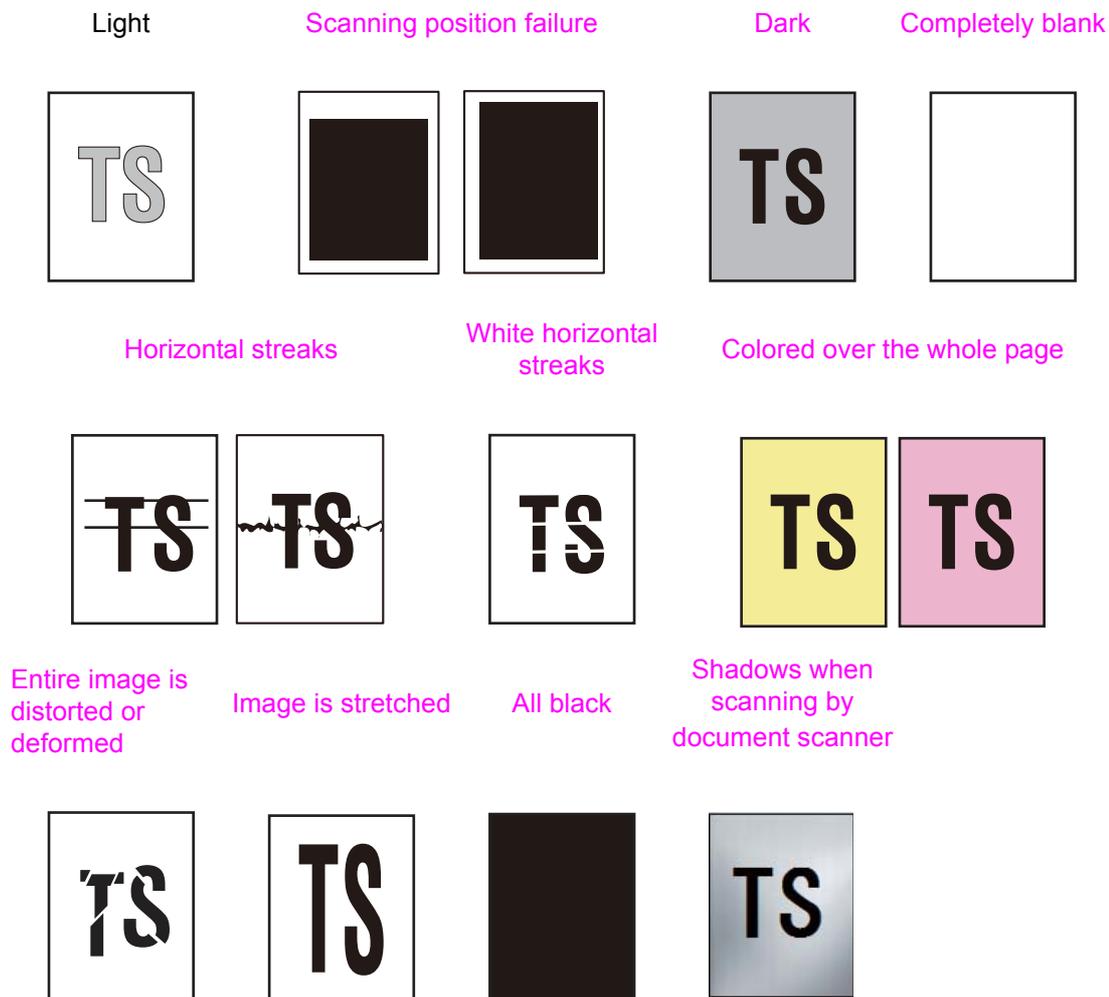
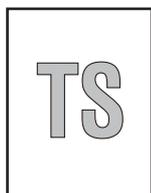


Fig. 2-12

### 4.8.2 Troubleshooting from image defect

#### ■ Light

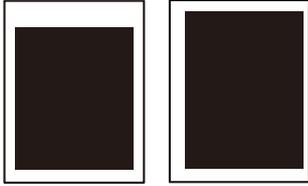


< User Check >

- Check if the contrast is set to "Light."
- Clean document cover glass or ADF glass.
- Clean the document pressure bar.

Step	Cause	Solution
1	White level correction data failure	Carry out maintenance 55.
2	First side or second side CIS unit defective	Replace the first side or second side CIS unit.
3	Main PCB defective	Replace the main PCB.

■ Scanning position failure



< User Check >

- Check that the document is placed correctly on the document cover.

(1) ADF

Step	Cause	Solution
1	Scanning start position out of alignment	Carry out maintenance 54 to adjust the scanning start position.
2	Document scanning position actuator caught on the surrounding parts	Set the document scanning position actuator into place.
3	Second side CIS unit defective	Replace the second side CIS unit.

(2) Document scanner unit

Step	Cause	Solution
1	Scanning start position out of alignment	Carry out maintenance 54 to adjust the scanning start position.
2	First side CIS unit defective	Replace the first side CIS unit.

■ Dark



< User Check >

- Check if the contrast is set to "Dark."

Step	Cause	Solution
1	White level correction data failure	Carry out maintenance 55.
2	First side or second side CIS unit defective	Replace the first side or second side CIS unit.
3	Main PCB defective	Replace the main PCB.

■ **Completely blank**

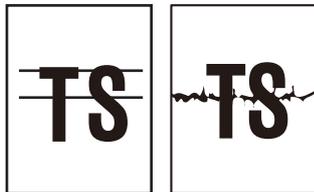


< User Check >

- Check that documents are not reversed.
- Check that they are set in the ADF unit securely.

Step	Cause	Solution
1	White level correction data failure	Carry out maintenance 55.
2	First side or second side CIS flat cable connection failure	Reconnect the first side or second side CIS flat cable.
3	First side or second side CIS flat cable defective	Replace the first side or second side CIS flat cable.
4	First side or second side CIS unit defective	Replace the first side or second side CIS unit.
5	Main PCB defective	Replace the main PCB.

■ **Horizontal streaks**



< User Check >

- Clean the document cover glass or second side CIS glass.
- Clean the document pressure bar.

Step	Cause	Solution
1	Foreign materials on CIS lens	Remove foreign materials.
2	First side or second side CIS unit defective	Replace the first side or second side CIS unit.
3	White reference film of document pressure bar of ADF cover damaged, broken (in the case of problem in second side)	Replace the ADF unit.
4	White reference film of document scanner unit damaged, broken (in the case of problem in first side)	Replace the document scanner unit.

■ **White horizontal streaks**

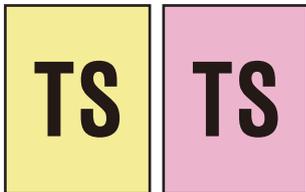


< User Check >

- Clean the document cover glass or second side CIS glass.
- Clean the document pressure bar.

Step	Cause	Solution
1	White reference film of document scanner unit stained (in the case of problem in first side)	Clean the white reference film of document scanner unit.
2	White reference film of document pressure bar of ADF stained (in the case of problem in second side)	Clean the white reference film of document pressure bar of ADF.
3	First side or second side CIS unit defective	Replace the first side or second side CIS unit.
4	White reference film of document scanner unit damaged, broken (in the case of problem in first side)	Replace the document scanner unit.
5	White reference film of document pressure bar of ADF damaged, broken (in the case of problem in second side)	Replace the ADF unit.

■ **Colored over the whole page**



< User Check >

- Clean the document cover glass or second side CIS glass.
- Clean the document pressure bar.

Step	Cause	Solution
1	White level correction data failure	Carry out maintenance mode 55.
2	First side or second side CIS unit defective	Replace the first side or second side CIS unit.
3	Main PCB defective	Replace the main PCB.

■ **Entire image is distorted or deformed**



Step	Cause	Solution
1	CIS type mismatches	Carry out maintenance mode 59 to rewrite firmware.
2	Ink refill ASSY defective	Replace the ink refill ASSY.

■ Image is stretched



(1) ADF

Step	Cause	Solution
1	ADF motor defective	Replace the ADF unit.

(2) Document scanner unit

Step	Cause	Solution
1	FB motor defective	Replace the document scanner unit.

■ All black

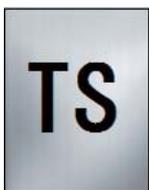


< User Check >

- Install the latest firmware.

Step	Cause	Solution
1	White level correction data failure	Carry out maintenance 55.
2	First side or second side CIS flat cable connection failure	Reconnect the first side or second side CIS flat cable.
3	First side or second side CIS flat cable defective	Replace the first side or second side CIS flat cable.
4	First side or second side CIS unit defective	Replace the first side or second side CIS unit.
5	Main PCB defective	Replace the main PCB.

■ Shadows when scanning by document scanner



< User Check >

- Check that the document cover is firmly closed.
- Clean the document cover glass.

Step	Cause	Solution
1	The ADF hinges are deformed, and the document cover cannot be closed properly.	Replace the ADF hinge.
2	First side CIS unit defective	Replace the first side CIS unit.
3	Dirt on the document cover glass	Replace the document scanner unit.
4	Main PCB defective	Replace the main PCB.

## 4.9 Fax Problems

### 4.9.1 No faxes can be sent

< User Check >

- Check that the line cord is inserted correctly into the socket.
- Check that the dialing function setting (tone/pulse) is correct.
- Check that the phone cord is not connected to EXT terminal.

Step	Cause	Solution
1	Modem PCB harness connection failure	Reconnect the modem PCB harness.
2	Control panel ASSY defective	Replace the control panel ASSY.
3	Modem PCB defective	Replace the modem PCB ASSY.
4	First side or second side CIS unit defective	Replace the first side or second side CIS unit.
5	Main PCB defective	Replace the main PCB.

### 4.9.2 No faxes can be received

< User Check >

- Check that the line cord is inserted correctly into the socket.
- Check if the receiving mode setting is correct.
- Check that the phone cord is not connected to EXT terminal.

Step	Cause	Solution
1	Modem PCB harness connection failure	Reconnect the modem PCB harness.
2	Modem PCB defective	Replace the modem PCB ASSY.
3	Main PCB defective	Replace the main PCB.

### 4.9.3 A communications error occurs

< User Check >

- Change the "compatibility" of the function menu to see if the error is cleared.
- Check that there is no noise source around this machine body.

Step	Cause	Solution
1	Modem PCB harness connection failure	Reconnect the modem PCB harness.
2	Modem PCB defective	Replace the modem PCB ASSY.
3	Main PCB defective	Replace the main PCB.

## 4.10 Other Problems

### 4.10.1 The machine cannot be powered ON

< User Check >

- Insert the power cord securely.

Step	Cause	Solution
1	Panel flat cable connection failure	Reconnect the panel flat cable.
2	LCD flat cable connection failure	Reconnect the LCD flat cable.
3	LCD defective	Replace the LCD.
4	LCD PCB defective	Replace the LCD PCB ASSY.
5	Panel PCB defective	Replace the panel PCB ASSY.
6	Control panel ASSY defective	Replace the control panel ASSY.
7	AC cord ASSY or power supply PCB defective	Replace the AC cord ASSY or power supply PCB ASSY.
8	Main PCB defective	Replace the main PCB.

### 4.10.2 USB flash memory does not function

< User Check >

- Check if the USB flash memory is inserted correctly.
- Check that USB flash memory is compatible.
- Check that data form is compatible.
- Format the USB flash memory.
- Load the latest firmware.
- Disconnect and insert again the power cord.

Step	Cause	Solution
1	Front cover L not mounted in place	Set the front cover L into place in the case the USB flash memory won't be inserted smoothly.
2	Main PCB defective	Replace the main PCB.

### 4.10.3 Data of USB flash memory does not read

< User Check >

- Check that USB flash memory is compatible.
- Check that data form is compatible.
- Format the USB flash memory.
- Load the latest firmware.

Step	Cause	Solution
1	Main PCB defective	Replace the main PCB.

#### 4.10.4 Internal memory errors

< User Check >

- Delete saved print data and fax data.
- Disconnect and insert again the power cord.

Step	Cause	Solution
1	Main PCB defective	Replace the main PCB.

#### 4.10.5 Security Function Lock related problems

< User Check >

- Ask administrator to release security function lock.
- Delete the personal information to unlock the security function lock.

Step	Cause	Solution
1	Main PCB defective	Replace the main PCB.

#### 4.10.6 Ink cartridge related problems

< User Check >

- Check if incompatible ink cartridge is loaded.
- Reload the ink cartridge.
- Check if ink cartridge has been already set before instruction for ink cartridge setting during initial installation.

Step	Cause	Solution
1	Ink sensor flat cable connection failure	Reconnect the ink sensor flat cable.
2	Each ink cartridge sensor defective	Replace the ink refill ASSY.
3	Main PCB defective	Replace the main PCB.

#### 4.10.7 Noise comes from machine

Step	Cause	Solution
1	Foreign materials in the recording paper path	Remove foreign materials.
2	Foreign materials around the maintenance unit	Remove foreign materials.
3	CR encoder strip stained	Clean the CR encoder strip.
4	PF encoder disk stained	Clean the PF encoder disk.
5	Looseness of the CR timing belt	Re-hook the CR timing belt properly.
6	Looseness of the switchback roller belt	Re-hook the switchback roller belt properly.
7	Looseness of the paper feed roller belt	Re-hook the paper feed roller belt properly.
8	Looseness of the paper ejection roller belt	Re-hook the paper ejection roller belt properly.
9	Looseness of the 3rd tray paper feed belt	Re-hook the 3rd tray paper feed belt properly.
10	Looseness of the CIS drive belt	Re-hook the CIS drive belt properly.
11	Paper feed motor not mounted in place	Set the paper feed motor into place.
12	Carriage motor not mounted in place	Set the carriage motor into place.
13	3rd tray paper feed motor not mounted in place	Set the 3rd tray paper feed motor into place.
14	CR encoder strip defective	Replace the CR encoder strip.
15	PF encoder disk defective	Replace the PF encoder disk.
16	Maintenance unit defective	Replace the maintenance unit.
17	ADF unit defective	Replace the ADF unit.
18	Document scanner unit defective	Replace the document scanner unit.

#### 4.10.8 “Unusable Device” is displayed

< User Check >

- Disconnect the unsupported USB device.

Step	Cause	Solution
1	Main PCB defective	Replace the main PCB.

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## **CHAPTER 3 DISASSEMBLY AND ASSEMBLY**

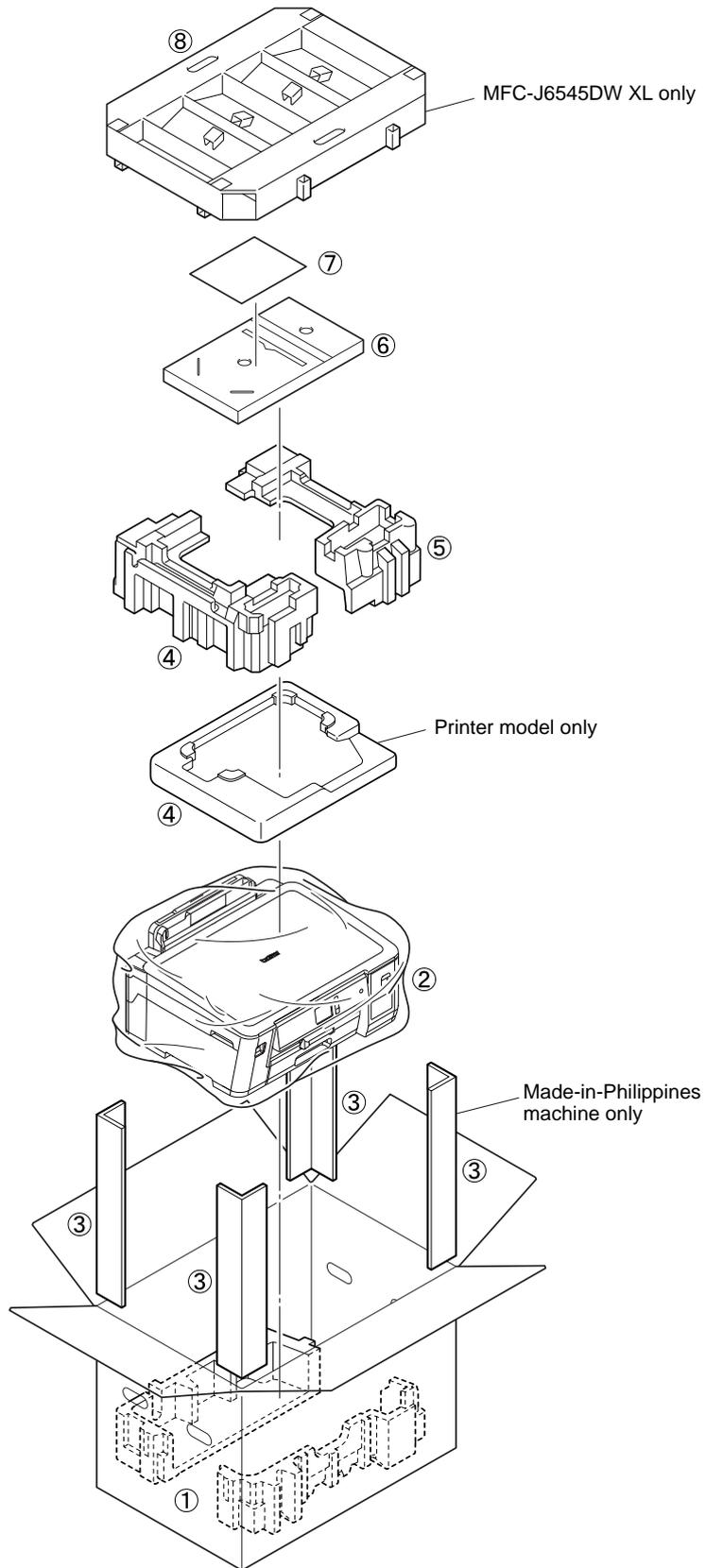
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### **1 PRECAUTIONS BEFORE PROCEEDING**

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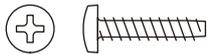
See "Precautions for Troubleshooting and/or Disassembly/Assembly" at the end of SAFETY INFORMATION. (Refer to page: [x](#))

## 2 PACKING



### 3 SCREW CATALOGUE

#### TAPTITE BIND B

TAPTITE BIND B M3x10	
TAPTITE BIND B M3x14	
TAPTITE BIND B M4x12	
TAPTITE BIND B M4x12 M9	

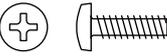
#### TAPTITE CUP B

TAPTITE CUP B M2.6x10	
TAPTITE CUP B M3x8	
TAPTITE CUP B M3x10	
TAPTITE CUP B M3x12	
TAPTITE CUP B M4x12	

#### TAPTITE CUP S

TAPTITE CUP S M3x6	
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#### SCREW BIND

SCREW BIND M2x12	
SCREW BIND M3x6	
SCREW BIND M3x10	

#### SCREW CUP

SCREW CUP M3x6	
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#### SCREW PAN (S/P WASHER)

SCREW PAN (S/P WASHER) M3x6	
SCREW PAN (S/P WASHER) M3.5x6	

## 4 SCREW TORQUE LIST

Location of screw	Screw type	Q'ty	Tightening N•m (kgf•cm)
MP tray ASSY	TAPTITE CUP B M4x12	2	0.70±0.10 (7±1)
MP tray cover (India model)	TAPTITE CUP B M3x10	2	0.45±0.05 (4.5±0.5)
Top cover ASSY	TAPTITE BIND B M4x12	2	0.70±0.10 (7±1)
FB hinge	TAPTITE BIND B M4x12	6	0.80±0.10 (8±1)
ADF FG wire	SCREW BIND M3x6	1	0.35±0.05 (3.5±0.5)
ADF document size sensor FG wire			
FB FG wire	SCREW BIND M3x6	1	0.35±0.05 (3.5±0.5)
Document scanner unit	TAPTITE BIND B M4x12	2	0.70±0.10 (7±1)
Document scanner side cover L	TAPTITE CUP B M3x10	1	0.50±0.05 (5±0.5)
Document scanner side cover R	TAPTITE CUP B M3x10	1	0.50±0.05 (5±0.5)
ADF unit	TAPTITE BIND B M4x12 M9	2	0.80±0.10 (8±1)
ADF front cover	TAPTITE CUP B M3x10	4	0.50±0.05 (5±0.5)
ADF separation pad holder ASSY	TAPTITE CUP B M3x10	1	0.40±0.05 (4±0.5)
ADF document size sensor FG wire 1	TAPTITE CUP B M3x10	1	0.50±0.10 (5±1)
ADF document size sensor FG wire 2			
ADF unit	TAPTITE CUP B M2.6x10	3	0.30±0.05 (3±0.5)
Document cover top ASSY	TAPTITE CUP B M3x10	6	0.40±0.05 (4±0.5)
	TAPTITE CUP B M3x12	2	0.40±0.05 (4±0.5)
Document cover base	TAPTITE BIND B M3x14	2	0.50±0.10 (5±1)
ADF hinge	TAPTITE CUP B M3x10	6	0.40±0.05 (4±0.5)
Exit support plate	TAPTITE CUP B M3x10	1	0.50±0.05 (5±0.5)
Lower doc chute ASSY	TAPTITE CUP B M3x10	2	0.40±0.05 (4±0.5)
Scanner top cover ASSY	TAPTITE CUP B M2.6x10	4	0.30±0.05 (3±0.5)
Document cover sensor	TAPTITE CUP B M3x10	1	0.50±0.10 (5±1)
Front cover L	TAPTITE BIND B M4x12	1	0.60±0.05 (6±0.5)
Upper cover	TAPTITE BIND B M4x12	6	0.60±0.05 (6±0.5)
FG wire TP	SCREW CUP M3x6	1	0.35±0.05 (3.5±0.5)
Tilt cover (screwed to Tilt holder and Lower cover)	TAPTITE CUP B M3x10	1	0.35±0.05 (3.5±0.5)
Tilt cover (screwed to Tilt holder)	TAPTITE CUP B M3x10	1	0.65±0.05 (6.5±0.5)
Tilt hook	TAPTITE CUP B M3x8	2	0.35±0.05 (3.5±0.5)
Panel lower cover	TAPTITE CUP B M2.6x10	3	0.30±0.05 (3±0.5)
Main PCB shield	SCREW CUP M3x6	2	0.35±0.05 (3.5±0.5)
Main PCB	SCREW CUP M3x6	1	0.35±0.05 (3.5±0.5)
	TAPTITE CUP B M3x10	1	0.35±0.05 (3.5±0.5)
Upper modem frame	SCREW CUP M3x6	1	0.35±0.05 (3.5±0.5)
Modem PCB	SCREW CUP M3x6	1	0.35±0.05 (3.5±0.5)
Lower side cover R	TAPTITE CUP B M3x10	2	0.35±0.05 (3.5±0.5)

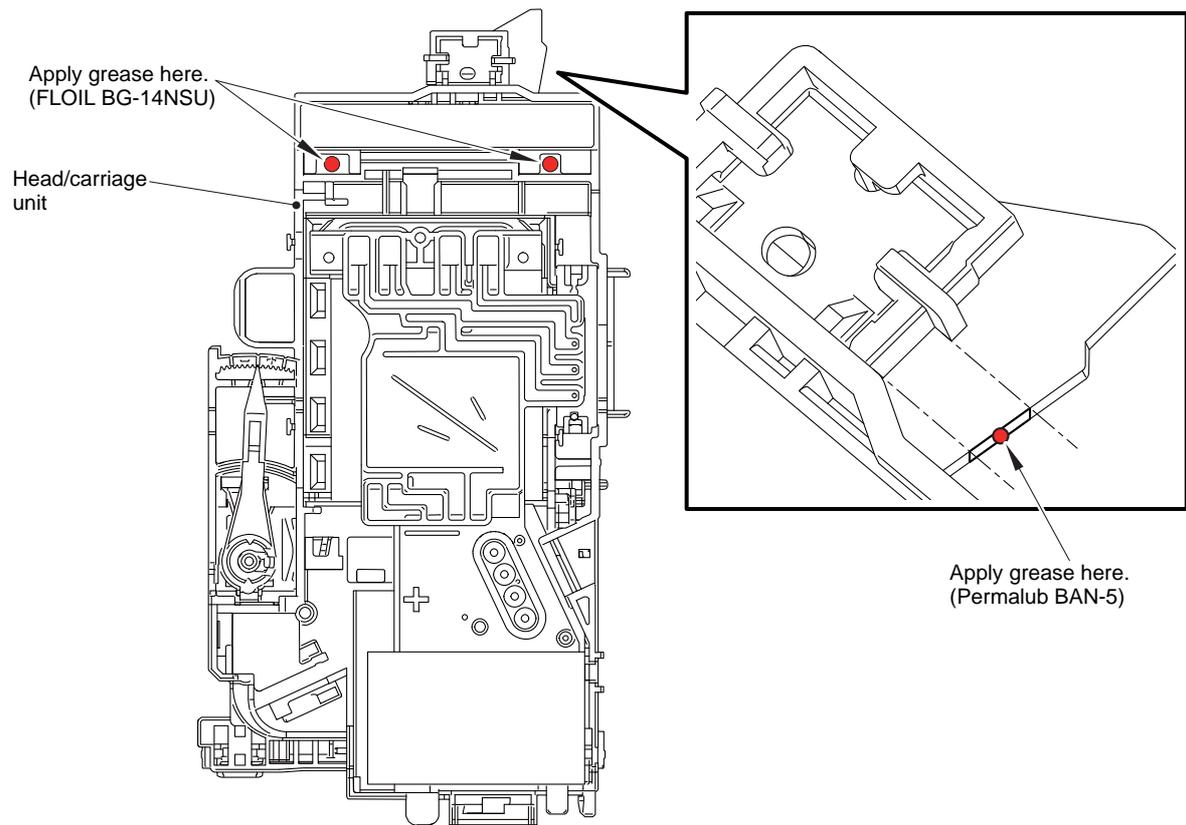
Location of screw	Screw type	Q'ty	Tightening N•m (kgf•cm)
Ink ABS upper box ASSY	TAPTITE CUP B M3x10	2	0.35±0.05 (3.5±0.5)
Main PCB earth frame	SCREW CUP M3x6	2	0.35±0.05 (3.5±0.5)
Main PCB earth frame R	SCREW CUP M3x6	2	0.35±0.05 (3.5±0.5)
Modem PCB frame	TAPTITE CUP B M3x10	2	0.35±0.05 (3.5±0.5)
Main PCB earth frame R2	SCREW CUP M3x6	1	0.40±0.10 (4±1)
T2 FG wire	SCREW BIND M3x6	1	0.35±0.05 (3.5±0.5)
PF FG wire			
Engine FG wire	SCREW BIND M3x6	1	0.35±0.05 (3.5±0.5)
Main PCB frame	TAPTITE CUP B M3x10	1	0.35±0.05 (3.5±0.5)
	SCREW CUP M3x6	1	0.35±0.05 (3.5±0.5)
CR frame ASSY	TAPTITE CUP B M3x10	2	0.55±0.05 (5.5±0.5)
CR guide rail	TAPTITE CUP B M3x10	2	0.55±0.05 (5.5±0.5)
Maintenance unit	< Made-in-China machine > TAPTITE CUP B M3x10	1	0.35±0.05 (3.5±0.5)
	< Made-in-Philippines machine > TAPTITE BIND B M4x12	1	0.70±0.10 (7±1)
	SCREW BIND M3x6	2	0.60±0.10 (6±1)
Paper feed arm frame ASSY	SCREW BIND M3x10	1	0.5±0.1 (5±1)
	TAPTITE CUP B M3x10	1	0.5±0.1 (5±1)
Lower tray unit	TAPTITE BIND B M4x12	1	0.70±0.10 (7±1)
Tank case support	TAPTITE CUP B M3x10	1	0.35±0.05 (3.5±0.5)
Ink refill ASSY	TAPTITE CUP B M3x10	2	0.35±0.05 (3.5±0.5)
Ink absorber box (with Lower tray)	TAPTITE CUP B M3x10	2	0.50±0.05 (5±0.5)
Ink absorber box (without Lower tray)		4	0.35±0.05 (3.5±0.5)
CR frame ASSY	TAPTITE CUP B M3x10	1	0.55±0.05 (5.5±0.5)
	TAPTITE CUP S M3x6	1	0.65±0.1 (6.5±1)
Motor plate	SCREW BIND M3x6	2	0.75±0.10 (7.5±1)
Carriage motor	SCREW BIND M3x6	2	0.75±0.10 (7.5±1)
Lower tray unit	TAPTITE BIND B M4x12	3	0.70±0.10 (7±1)
LT frame ASSY	TAPTITE CUP B M3x10	3	0.50±0.05 (5±0.5)
Idle gear holder frame LT ASSY	SCREW CUP M3x6	1	0.60±0.10 (6±1)
Bank chute LT	TAPTITE BIND B M3x10	2	0.50±0.05 (5±0.5)
Power supply unit	TAPTITE CUP B M3x10	1	0.35±0.05 (3.5±0.5)
Power supply PCB ASSY	SCREW CUP M3x6	3	0.40±0.10 (4±1)
AC cord FG wire	SCREW PAN (S/P WASHER) M3.5x6	1	0.45±0.05 (4.5±0.5)
Switchback frame ASSY	TAPTITE CUP B M3x10	2	0.35±0.05 (3.5±0.5)
	SCREW BIND M3x6	2	0.70±0.10 (7±1)
Encoder cover	SCREW BIND M3x6	2	0.60±0.10 (6±1)
Encoder sensor holder	SCREW BIND M2x12	2	0.15±0.05 (1.5±0.5)
CR guide rail	SCREW BIND M3x6	2	0.65±0.05 (6.5±0.5)

Location of screw	Screw type	Q'ty	Tightening N•m (kgf•cm)
Paper feed motor plate	SCREW PAN (S/P WASHER) M3x6	1	0.30±0.10 (3±1)
	SCREW PAN (S/P WASHER) M3x6 (Screws to be tightened after the PF roller belt is mounted.)	1	0.60±0.10 (6±1)
Frame base ASSY	TAPTITE CUP B M3x10	4	0.35±0.05 (3.5±0.5)
Flushing box	TAPTITE CUP B M3x10	2	0.35±0.05 (3.5±0.5)
Paper feed arm frame ASSY	TAPTITE CUP B M3x10	2	0.35±0.05 (3.5±0.5)
Tray FG wire	TAPTITE CUP B M3x10	1	0.35±0.05 (3.5±0.5)
Lower cover frame	TAPTITE CUP B M3x10	3	0.35±0.05 (3.5±0.5)
3rd tray unit	TAPTITE BIND B M4x12	6	0.70±0.10 (7±1)
3rd tray relay PCB	TAPTITE CUP B M3x10	2	0.50±0.05 (5±0.5)
3rd tray sensor holder ASSY	SCREW PAN (S/P WASHER) M3x6	2	0.65±0.05 (6.5±0.5)
3rd tray earth frame B	SCREW CUP M3x6	1	0.65±0.05 (6.5±0.5)
3rd pressure roller ASSY	SCREW CUP M3x6	1	0.65±0.05 (6.5±0.5)
3rd tray earth frame A	TAPTITE CUP B M3x10	1	0.50±0.05 (5±0.5)
3rd tray frame ASSY	TAPTITE CUP B M3x10	1	0.50±0.05 (5±0.5)
3rd tray idle gear frame	TAPTITE CUP B M3x10	2	0.50±0.05 (5±0.5)
	SCREW CUP M3x6	1	0.65±0.05 (6.5±0.5)
3rd tray motor frame	SCREW CUP M3x6	2	0.65±0.05 (6.5±0.5)
3rd tray paper feed motor	SCREW BIND M3x6	2	0.65±0.05 (6.5±0.5)
3rd lower cover frame	TAPTITE CUP B M3x10	4	0.50±0.05 (5±0.5)

## 5 LUBRICATION

Lubricant type (manufacturer)	Lubrication points		Lubricant amount
FLOIL BG-14NSU (Kanto Kasei)	Head/carriage unit	2	1.0 mm diameter ball
Permalub BAN-5 (Nippeco)		1	1.5 mm diameter ball
FLOIL BG-14NSU (Kanto Kasei)	CR guide rail and CR frame (top face)	56	2.0 mm diameter ball
	CR frame (inner side of the rear upright edge and inner side of the front upright edge)	66	2.0 mm diameter ball
	CR frame (bottom face)	2	1.0 mm diameter ball
FLOIL BG-10KS (Kanto Kasei)	Paper ejection roller	4	1.0 mm diameter ball
Permalub BAN-5 (Nippeco)	Paper feed roller	2 x Twice	2.0 mm diameter ball
		1	1.0 mm diameter ball
FLOIL BG-10KS (Kanto Kasei)	Paper pull-in roller holder	2	2.0 mm diameter ball
	Platen	6	1.0 mm diameter ball
	3rd tray sensor holder	7	2.0 mm diameter ball
Permalub BAN-5 (Nippeco)	Intermediate roller bushing	1	2.0 mm diameter ball
FLOIL BG-10KS (Kanto Kasei)	< India model only > Paper tray ASSY #1	4	1.5 mm diameter ball
	< India model only > Output paper tray	4	1.5 mm diameter ball
	< India model only > ADF document support	1	1.5 ~ 2.0 mm diameter ball

## ■ Head/carriage unit

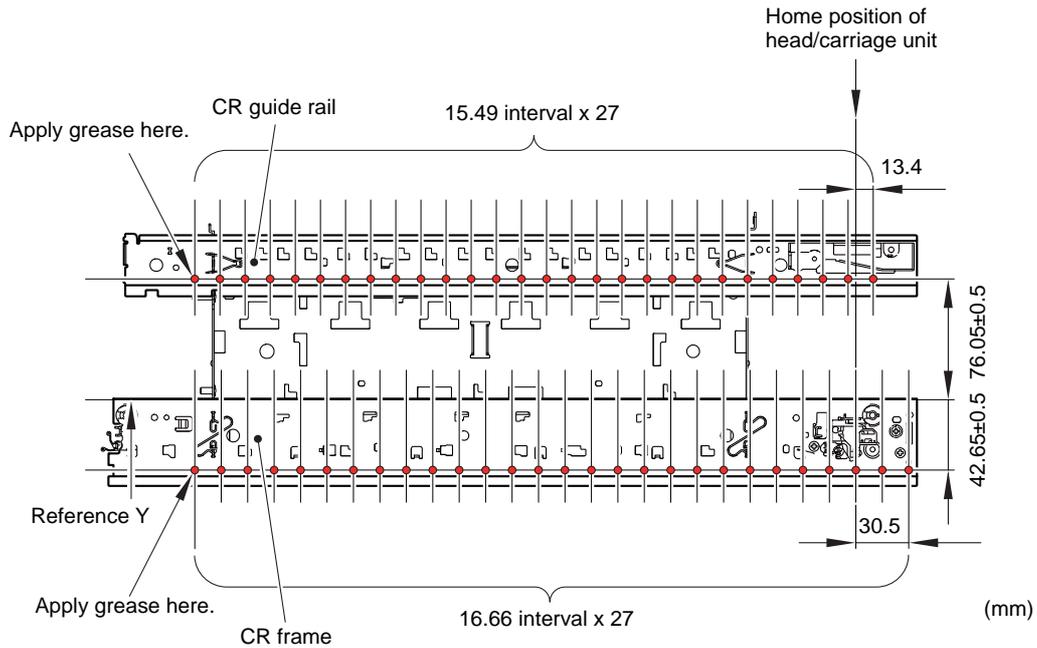


### ■ CR guide rail and CR frame (top face)

Apply a 2 mm diameter ball of grease (FLOIL BG-14NSU) to each of the 56 lubrication points below.

#### Lubrication procedure

- (1) Move the head/carriage unit to the left end of its travel.
- (2) Before applying grease, wipe dust or dirt off the lubrication area with an alcohol soaked cloth.
- (3) Move the head/carriage unit from the left to the right ends of its travel to spread the applied grease on the CR guide rail and CR frame.

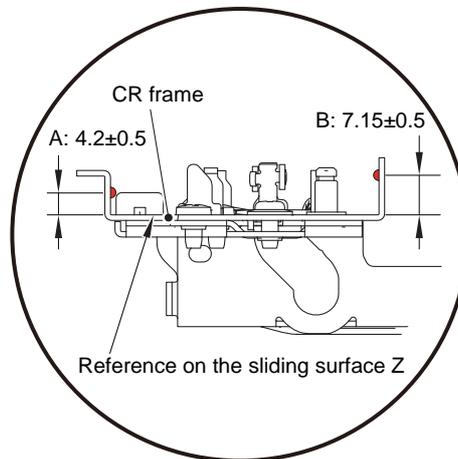
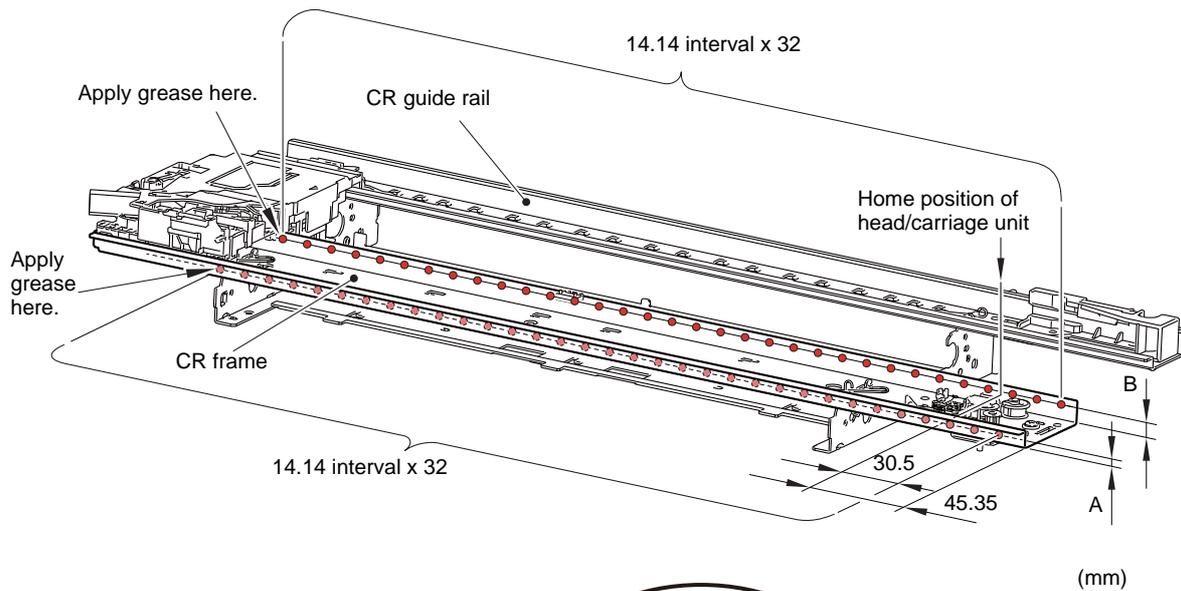


### ■ CR frame (inner sides of the front and rear upright edges)

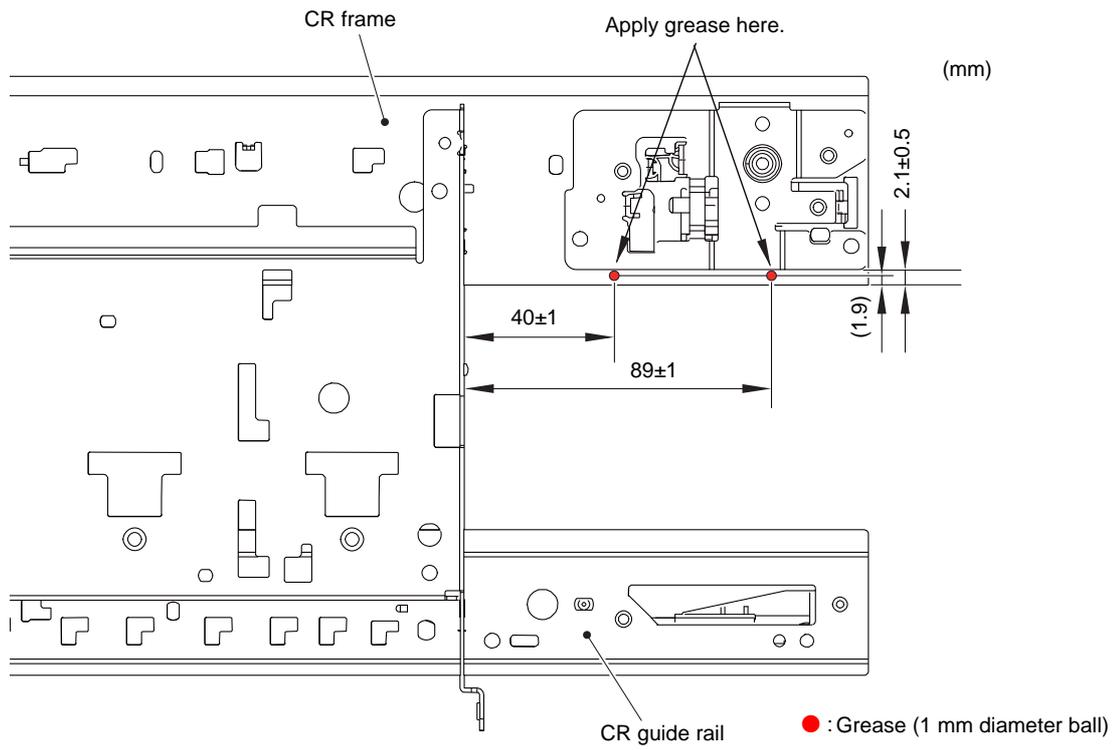
Apply a 2 mm diameter ball of grease (FLOIL BG-14NSU) to each of the 66 lubrication points below.

#### Lubrication procedure

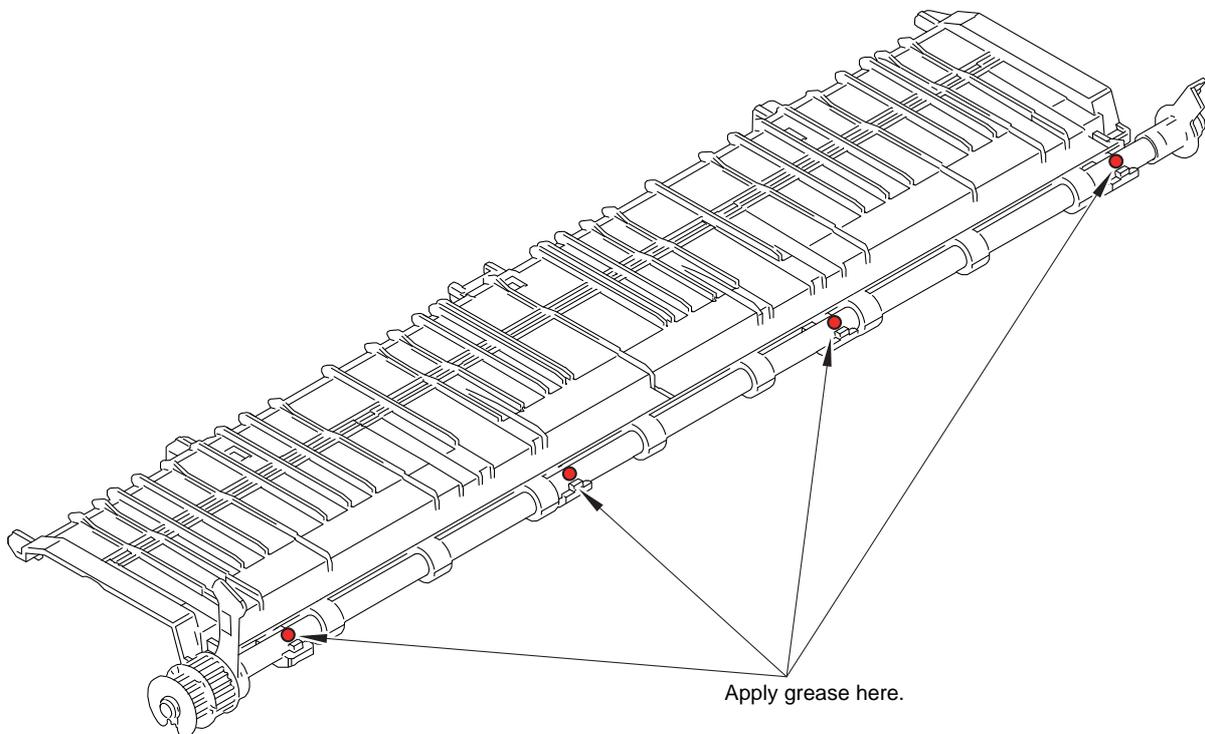
- (1) Move the head/carriage unit to the left end of its travel.
- (2) Before applying grease, wipe dust or dirt off the lubrication area with an alcohol soaked cloth.
- (3) Move the head/carriage unit from the left to the right ends of its travel to spread the applied grease on the CR guide rail and CR frame.



## ■ CR frame (bottom face)



## ■ Paper ejection roller

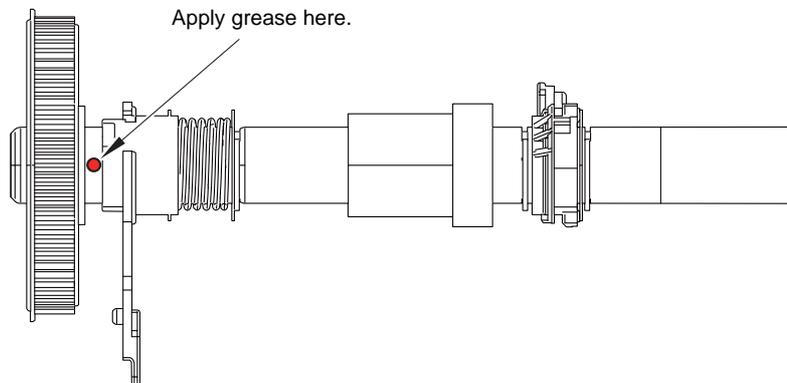
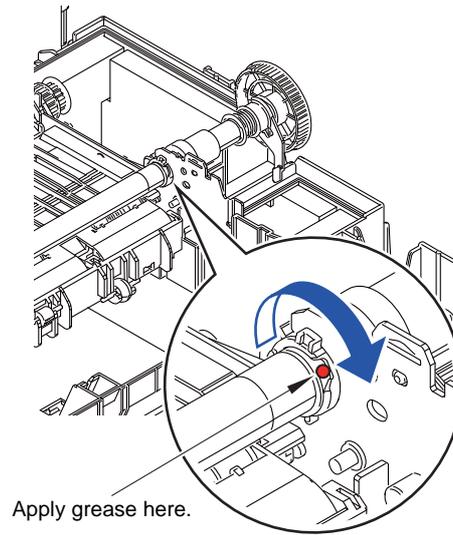
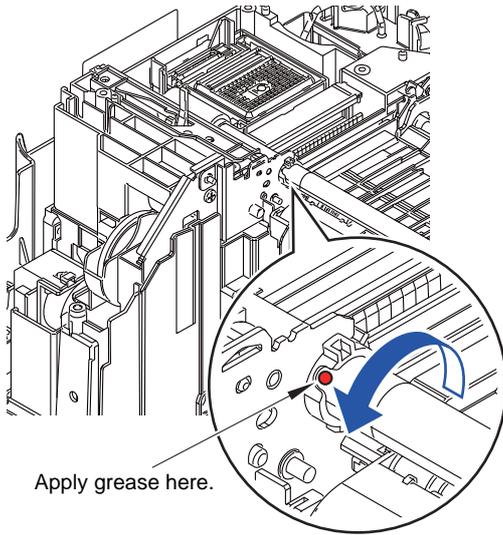


## ■ Paper feed roller

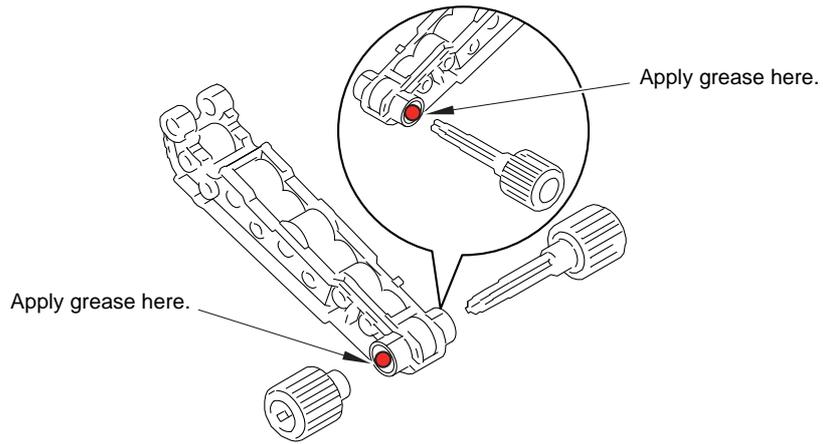
Apply grease to the positions shown in the figure below twice while rotating the roller.

### Lubrication procedure

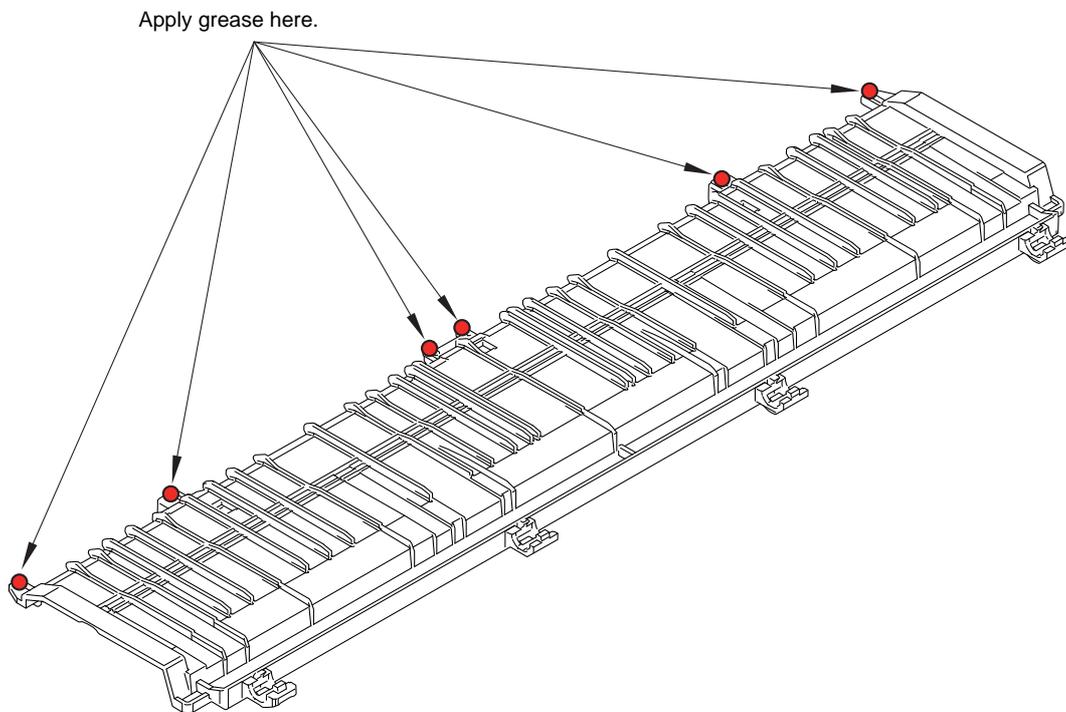
- (1) Apply grease to the points shown in the figure below.
- (2) Rotate the paper feed roller by 360 degrees in the direction of the arrow, and then apply grease to the same positions again.
- (3) After applying grease, rotate the paper feed roller by 360 degrees again.



■ Paper pull-in roller holder

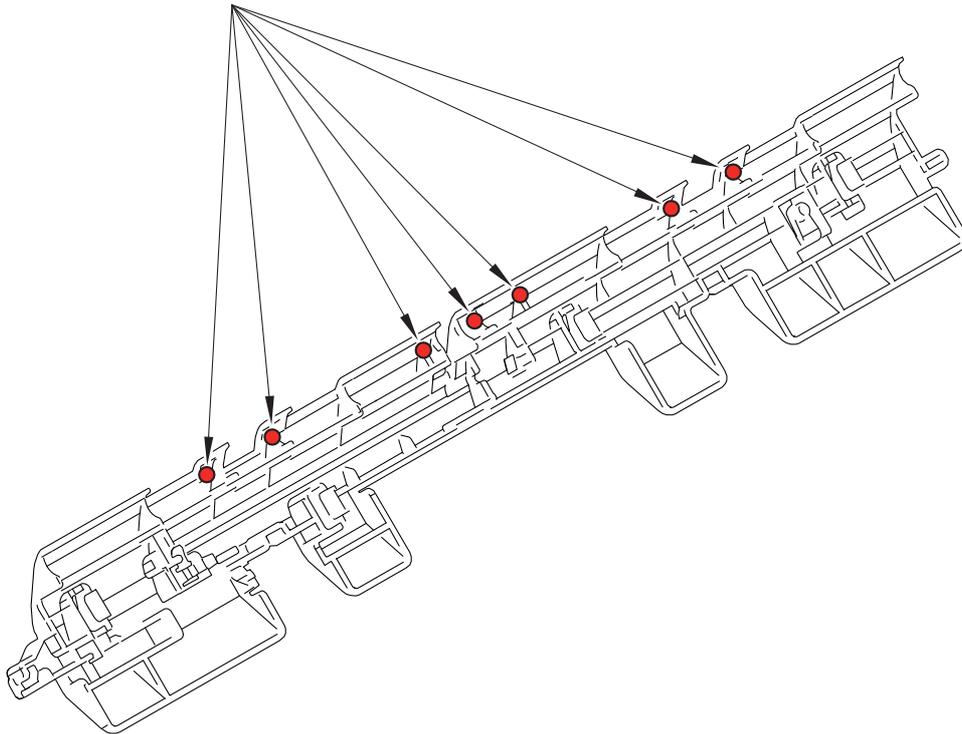


■ Platen

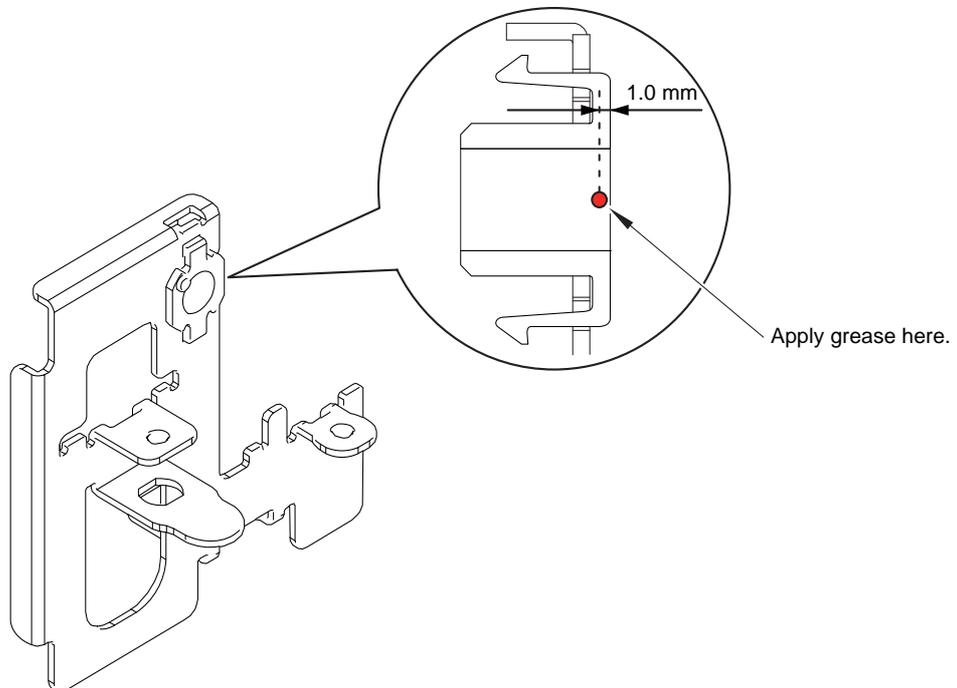


■ 3rd tray sensor holder

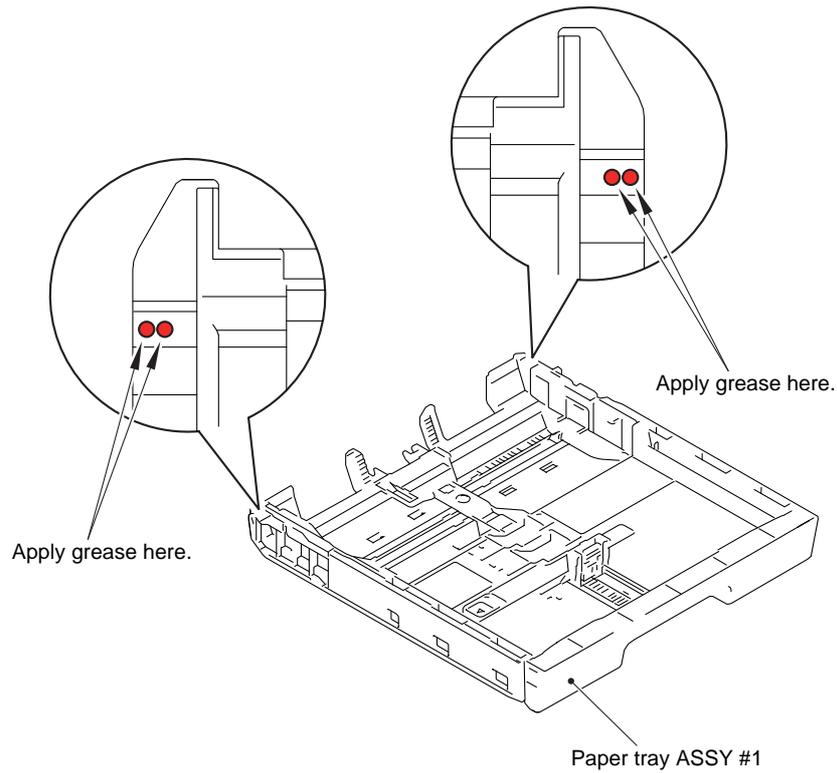
Apply grease here.



■ Intermediate roller bushing R



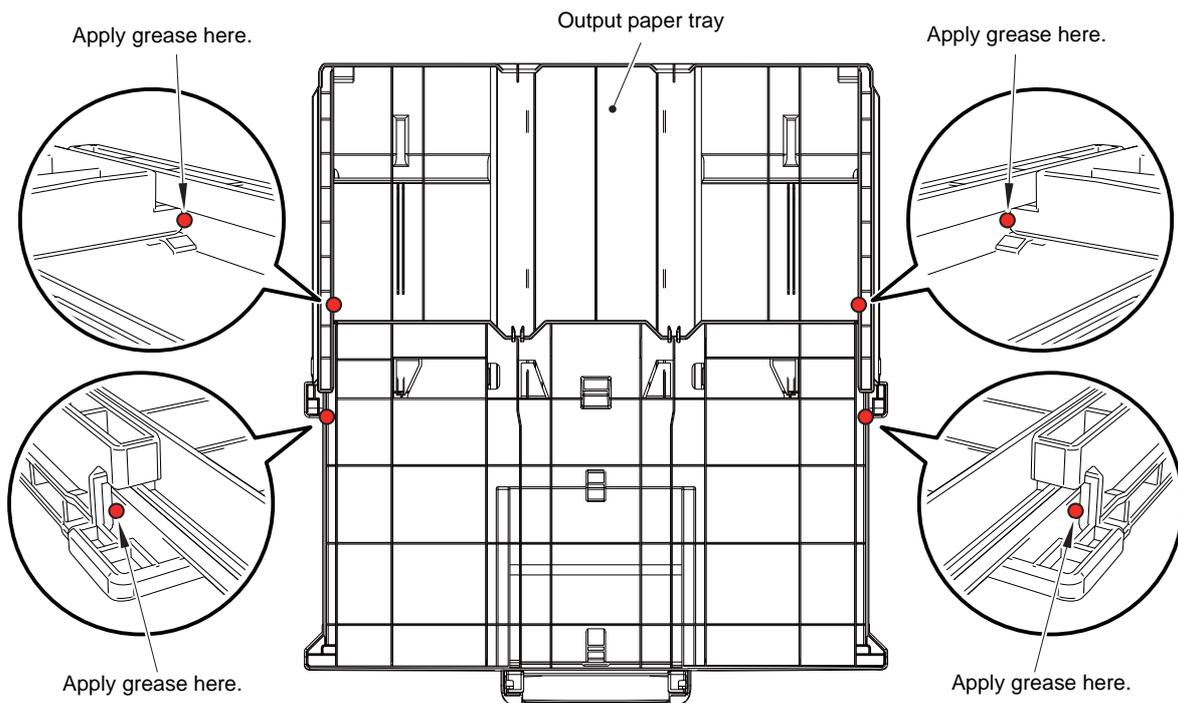
■ < India model only > Paper tray ASSY #1



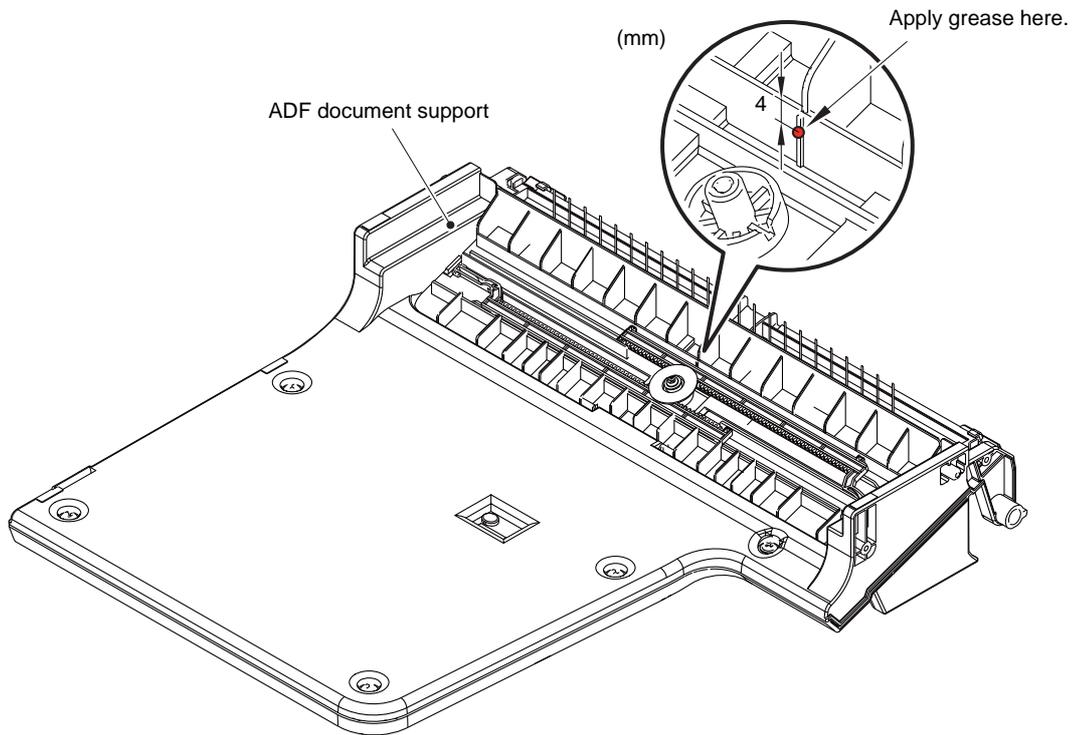
■ < India model only > Output paper tray

Lubrication procedure

- (1) Completely open the tray and then turn it over. Apply grease to the four locations shown in the figure below.
- (2) Open and close the tray one time to spread grease.



■ < India model only > ADF document support



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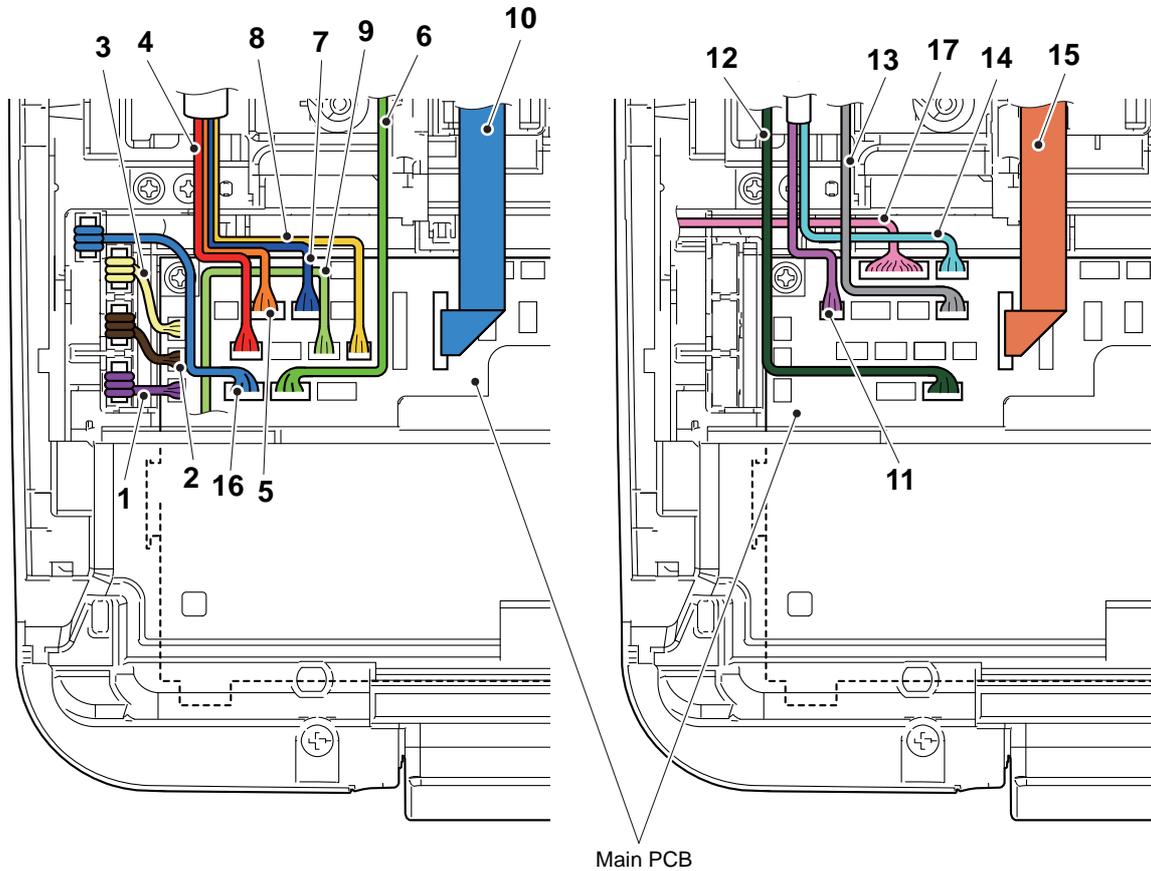
## 6 OVERVIEW OF GEARS

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There is no overview of gears.

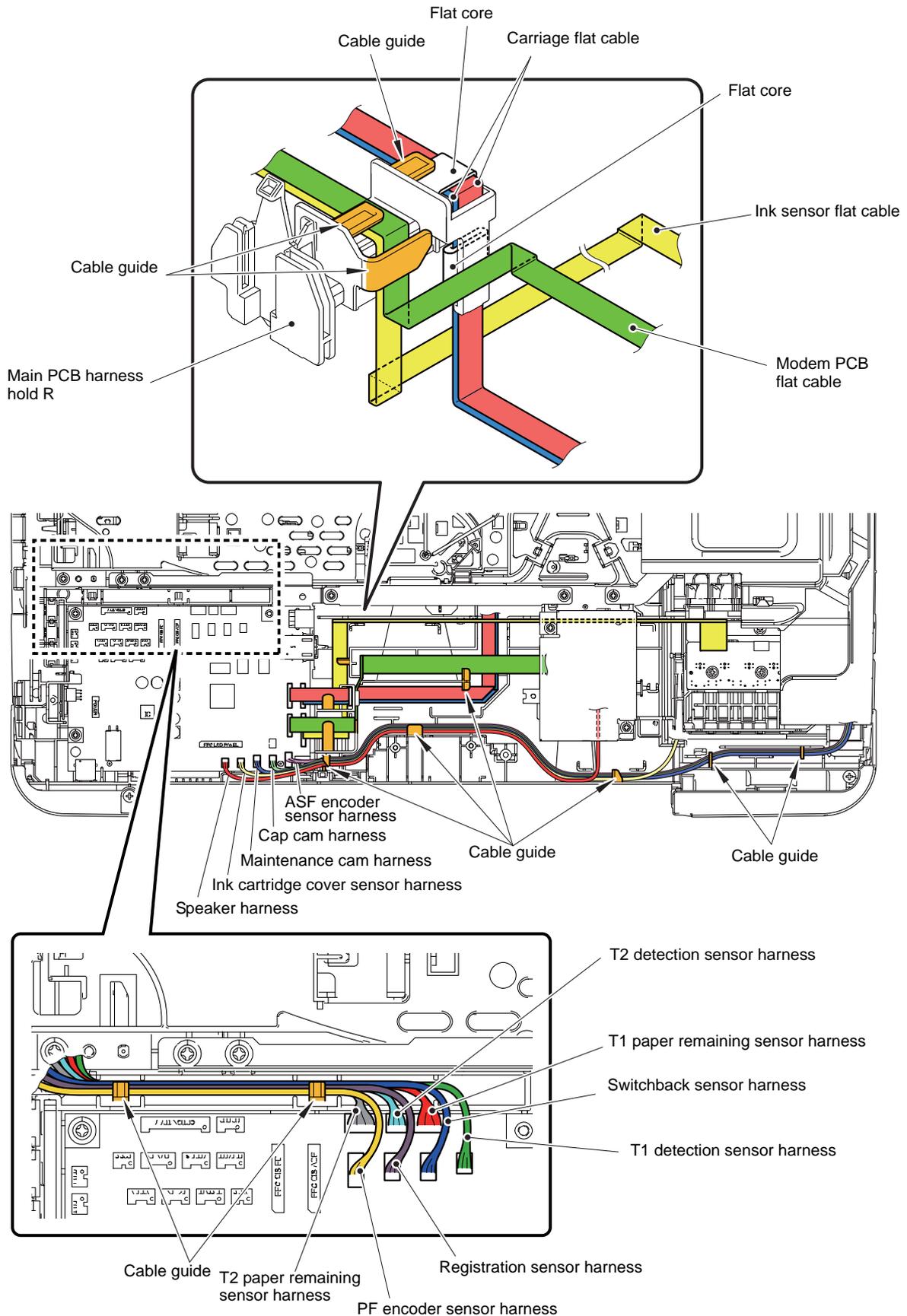
## 7 ROUTING OF HARNESES AND INK SUPPLY TUBES

### 1 Main PCB

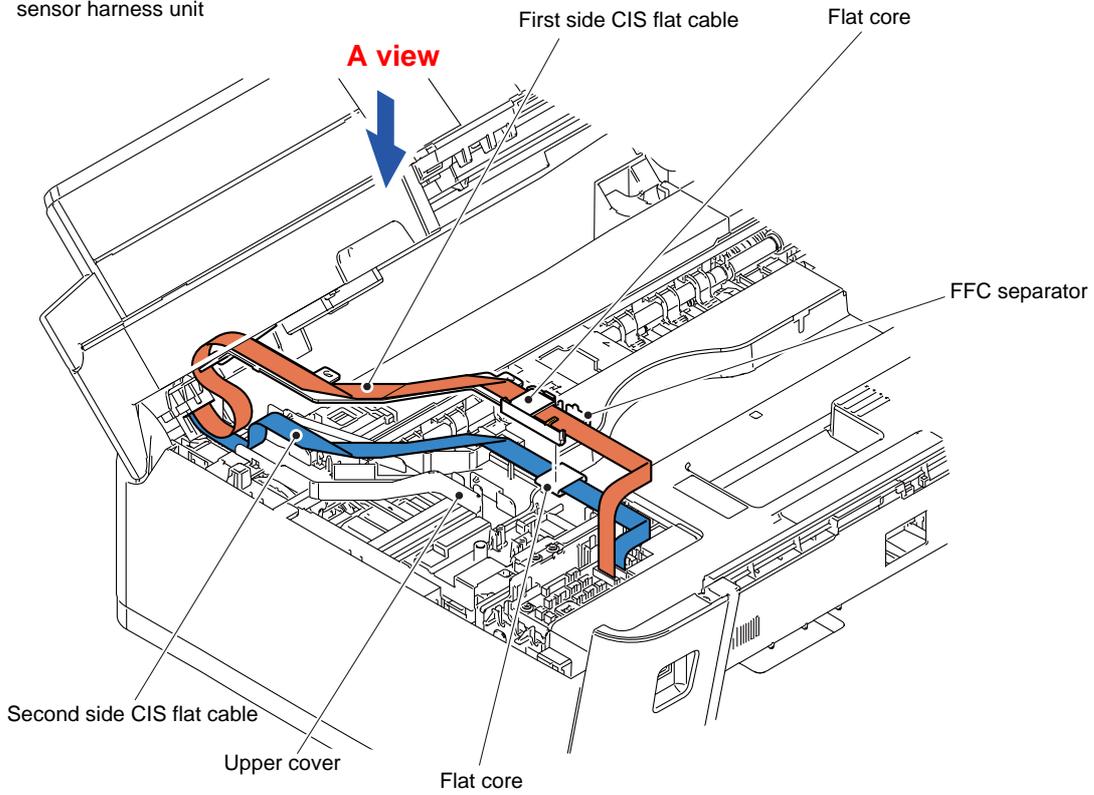
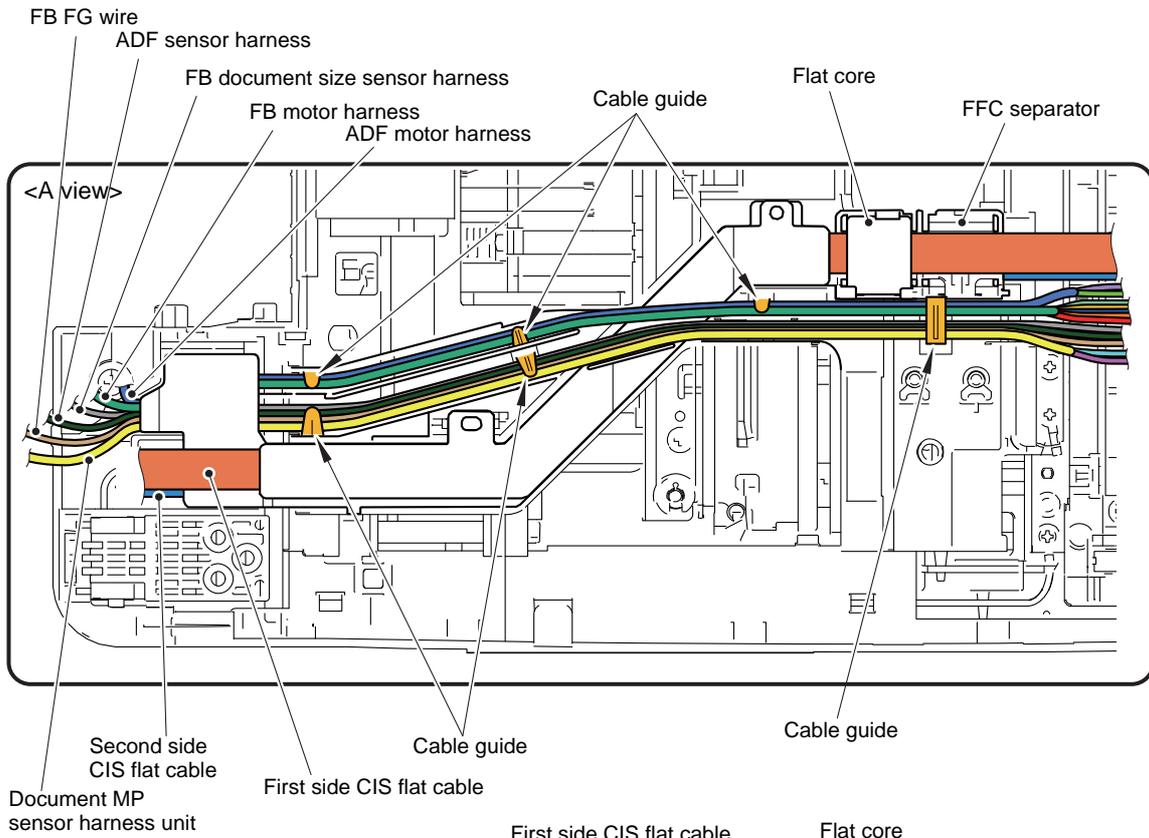


No.	Harness name
1	PF motor harness
2	ASF motor harness
3	Carriage motor harness
4	ADF document size sensor harness
5	ADF document detection/width sensor harness
6	ADF motor harness
7	Document scanning position sensor harness
8	ADF cover sensor harness
9	Document scanner sensor harness
10	Second side CIS flat cable
11	Document cover sensor harness
12	FB motor harness
13	FB document size sensor harness
14	MP paper detection sensor harness
15	First side CIS flat cable
16	3rd tray paper feed motor harness
17	3rd tray relay harness

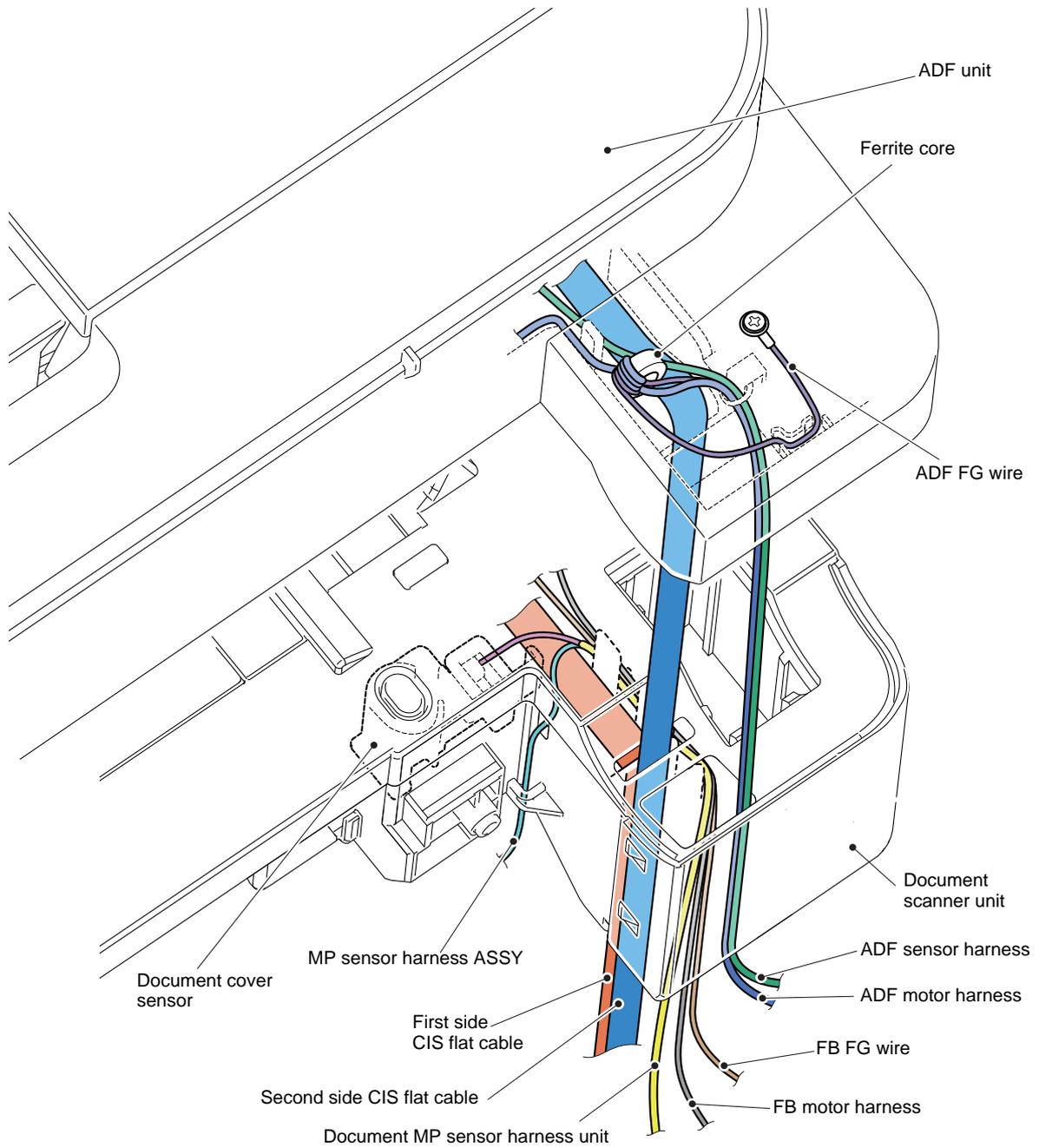
## 2 Main PCB/Modem PCB



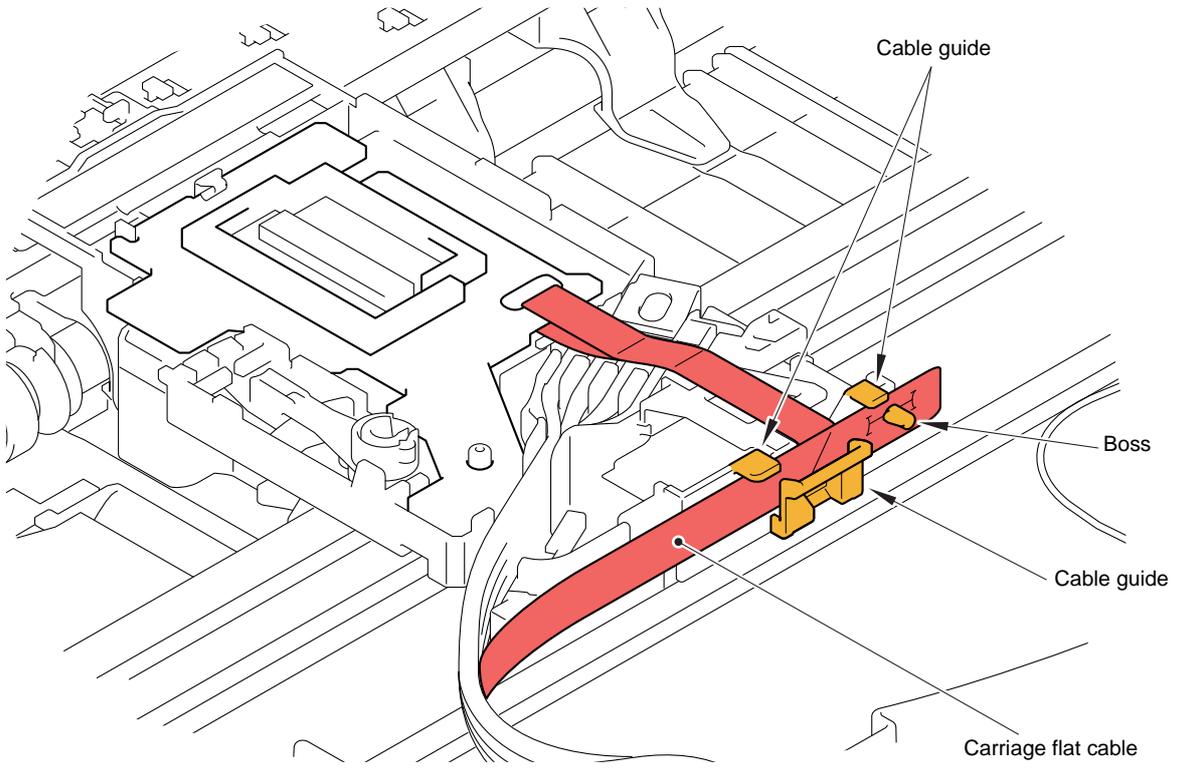
### 3 Scanner harness holder



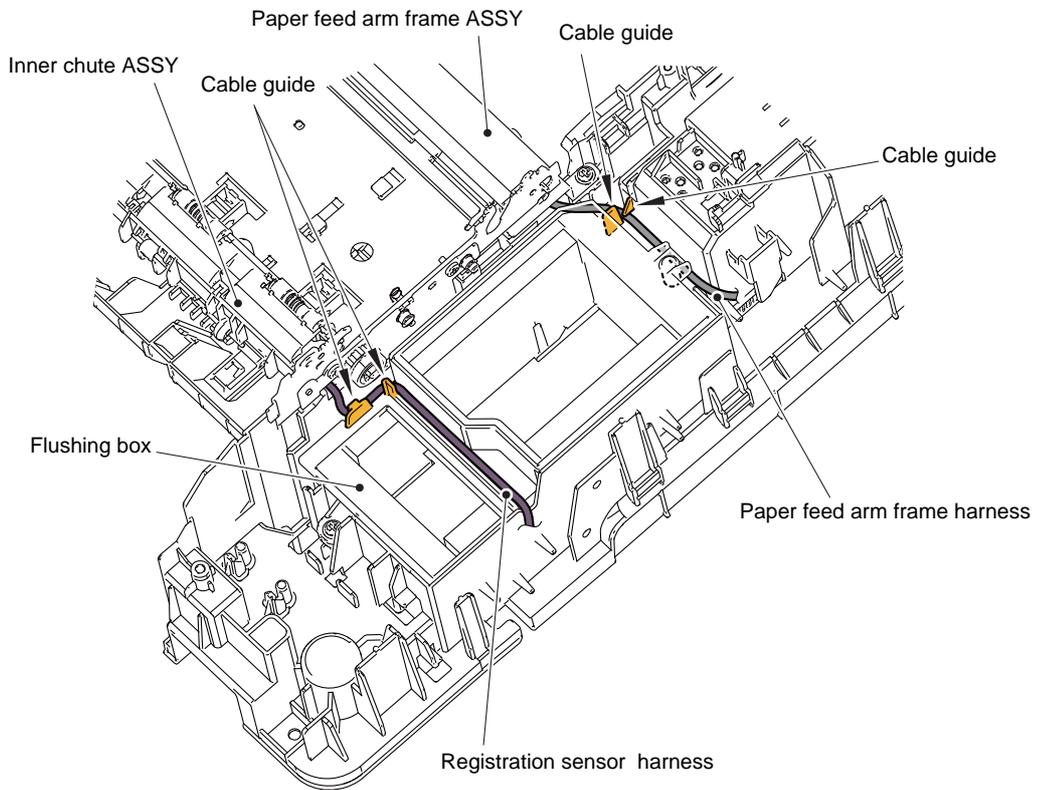
## 4 ADF unit/Document scanner unit



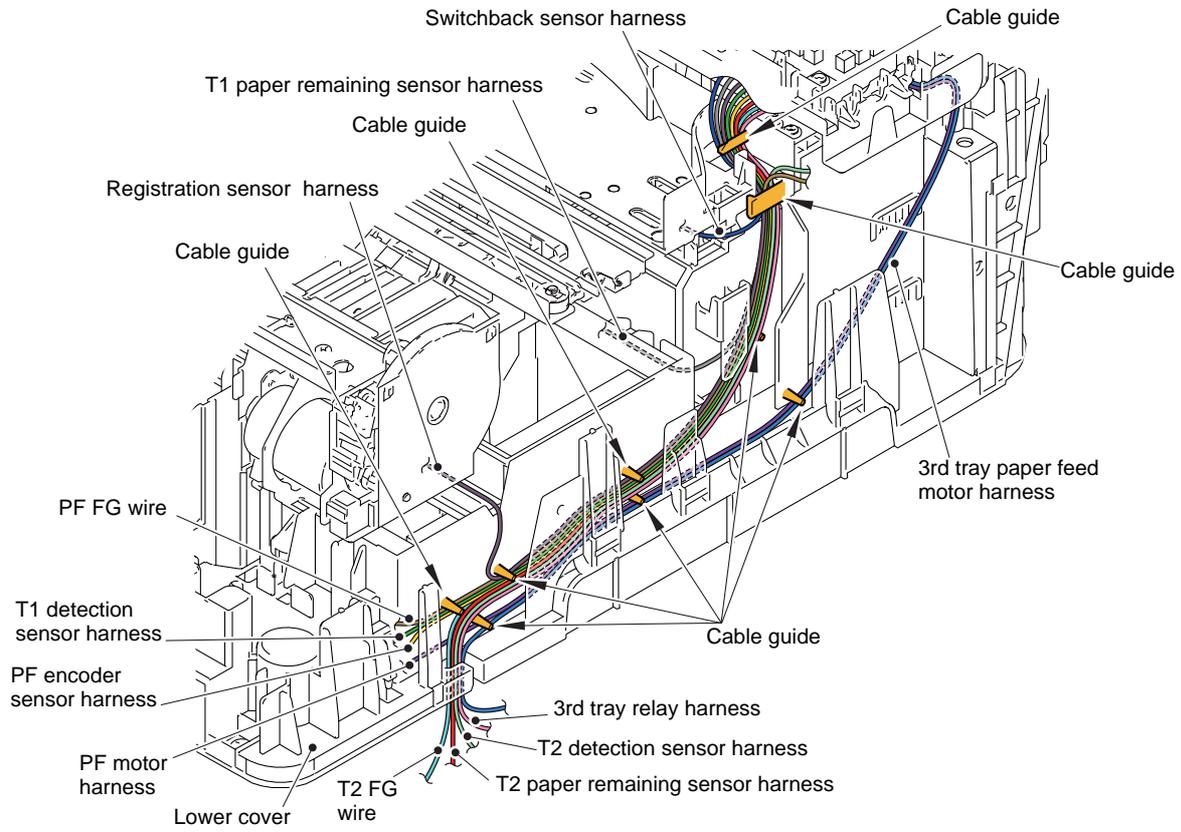
**5 Head/carriage unit**



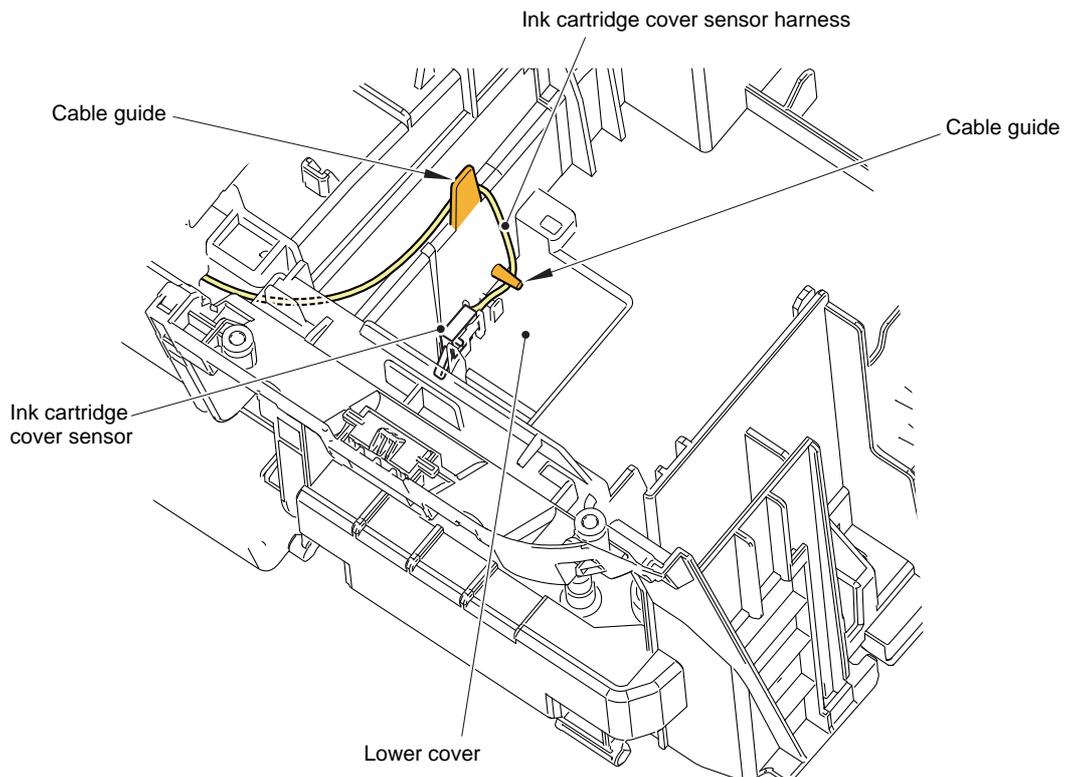
**6 Paper feed arm frame ASSY**



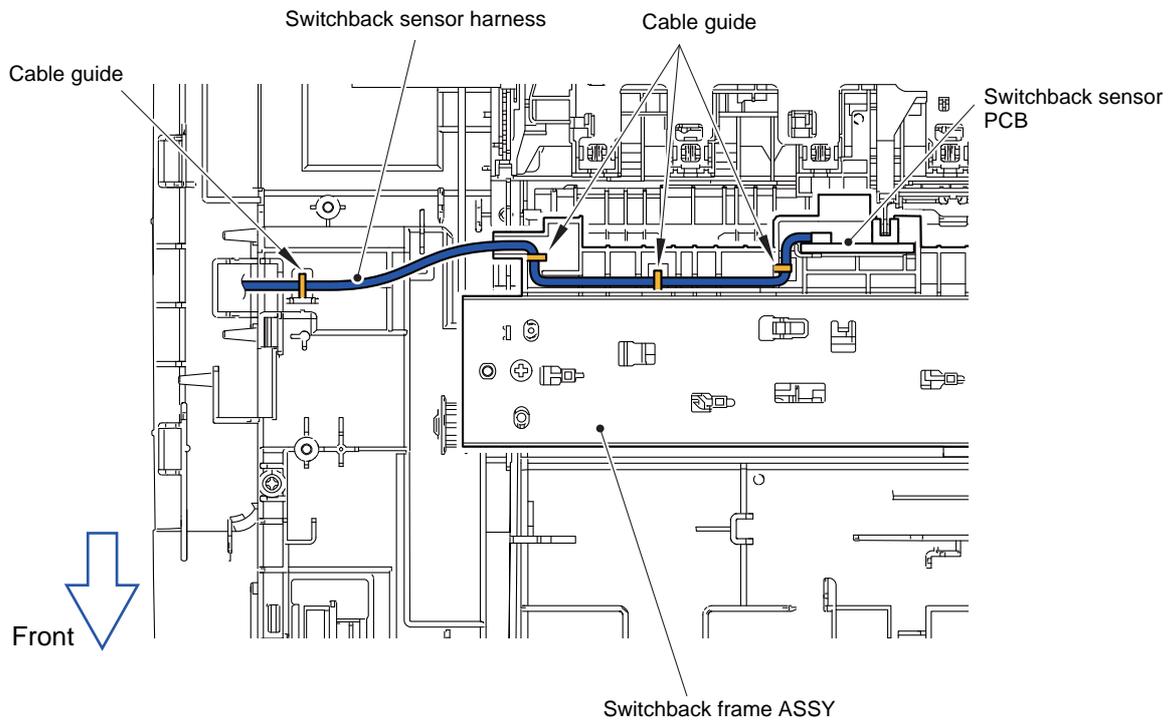
## 7 Lower cover L



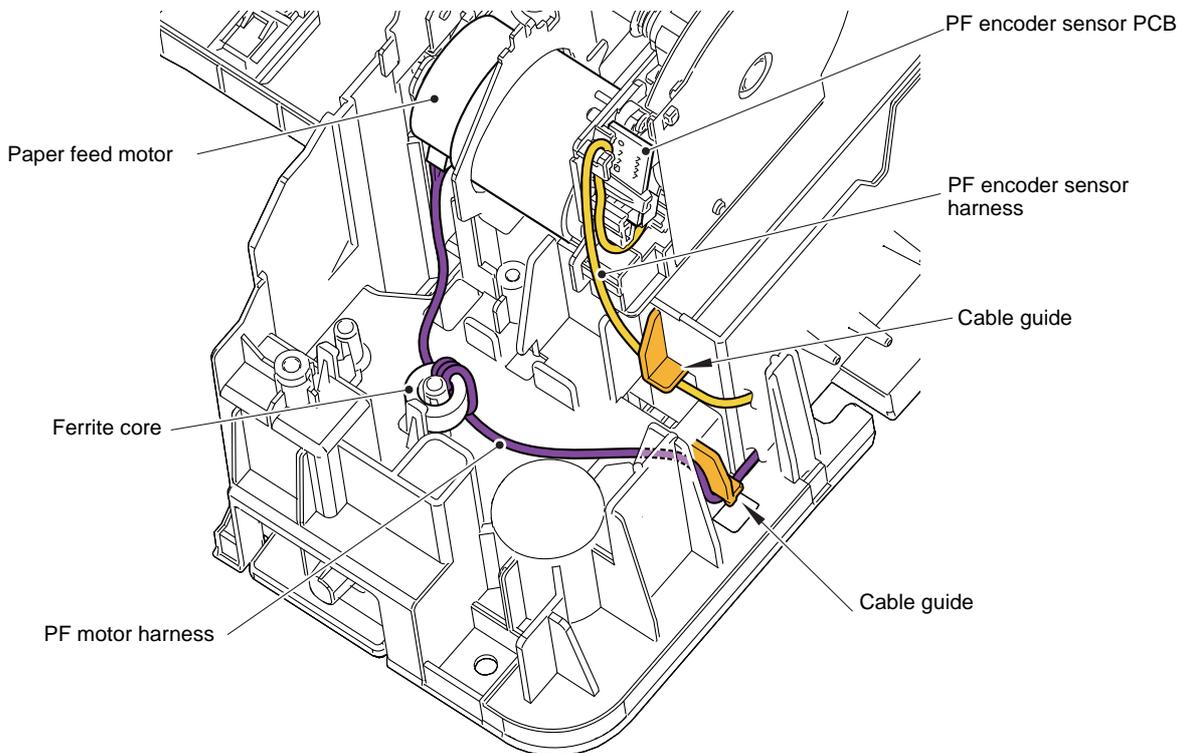
## 8 Ink cartridge cover sensor



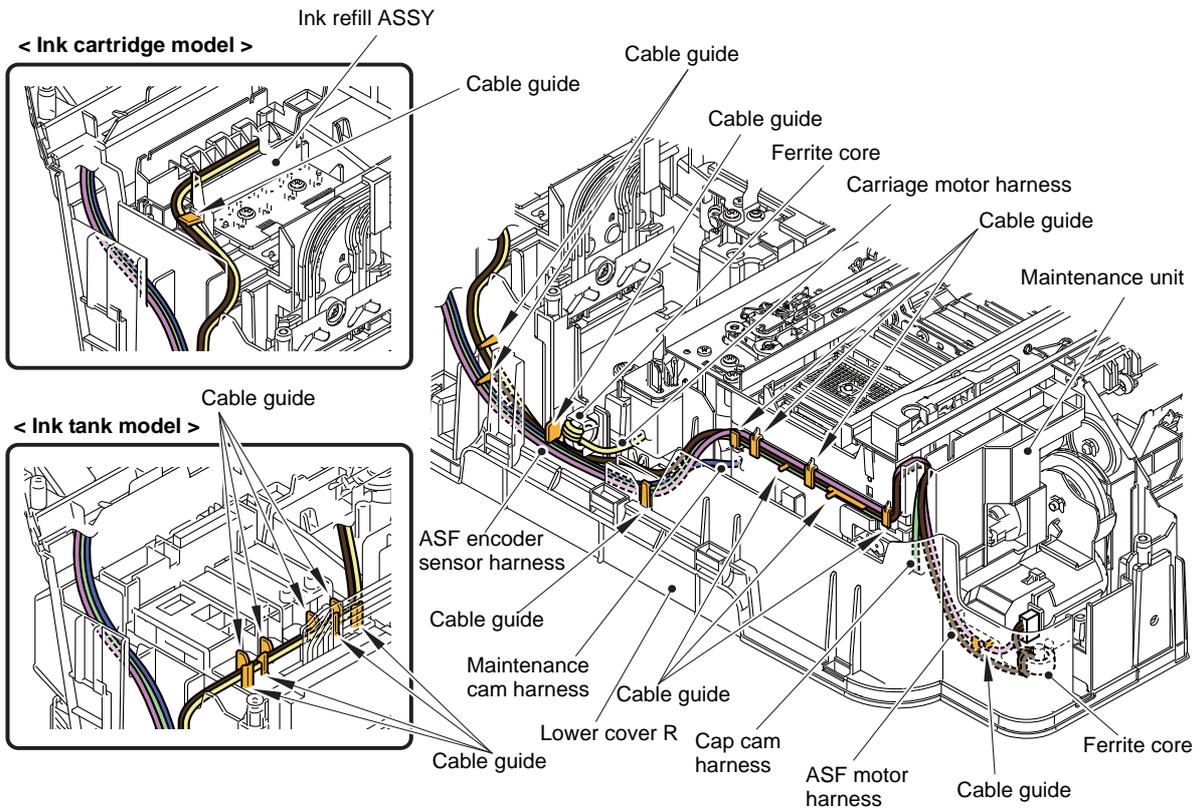
## 9 Switchback sensor PCB



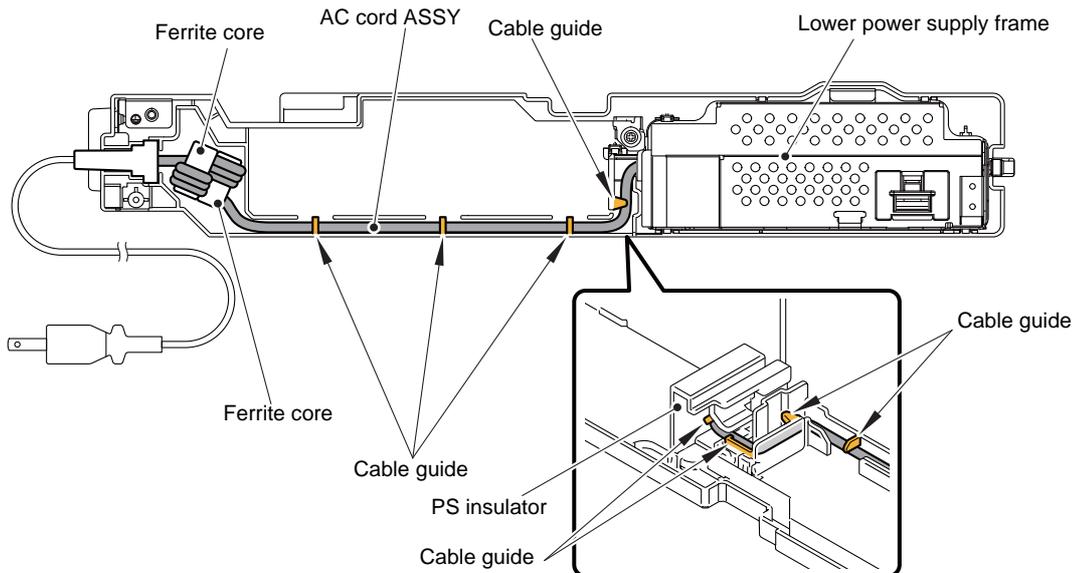
## 10 Paper feed motor



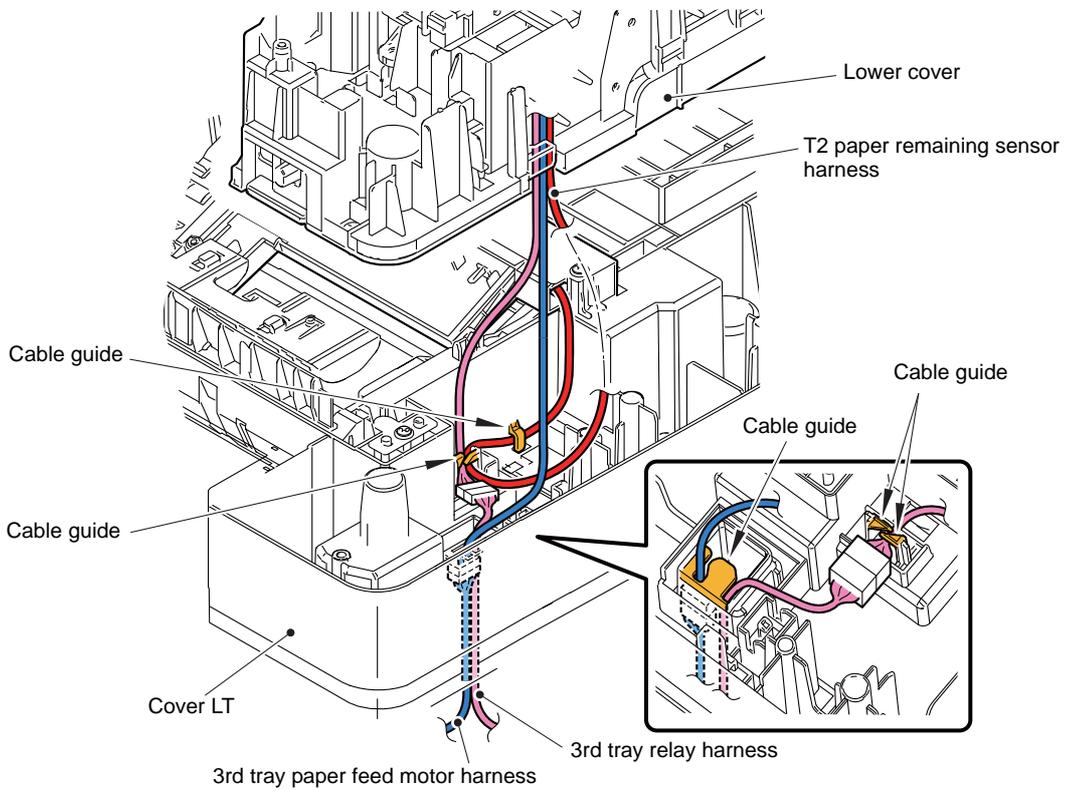
## 11 Lower cover R



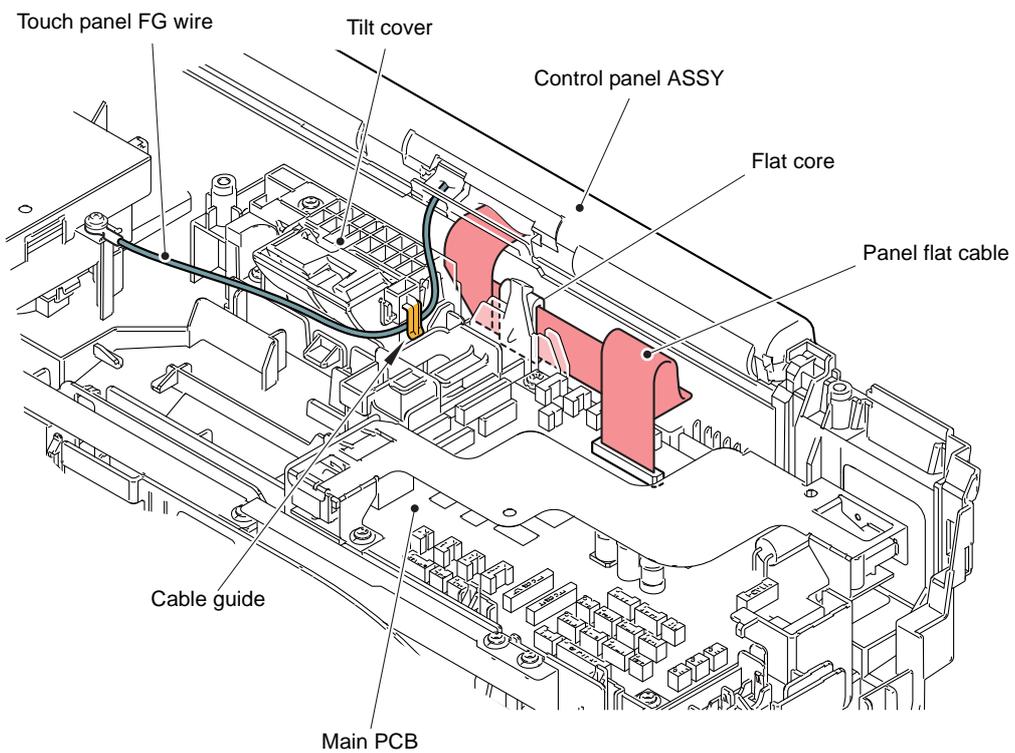
## 12 Power supply PCB ASSY



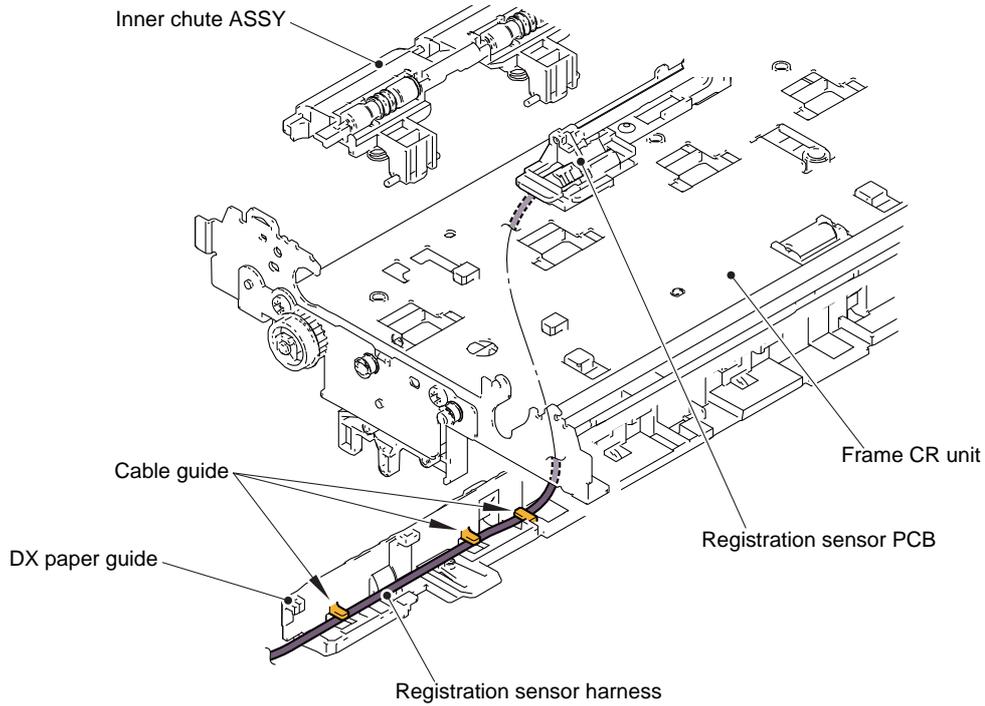
### 13 Lower tray



### 14 Control panel ASSY

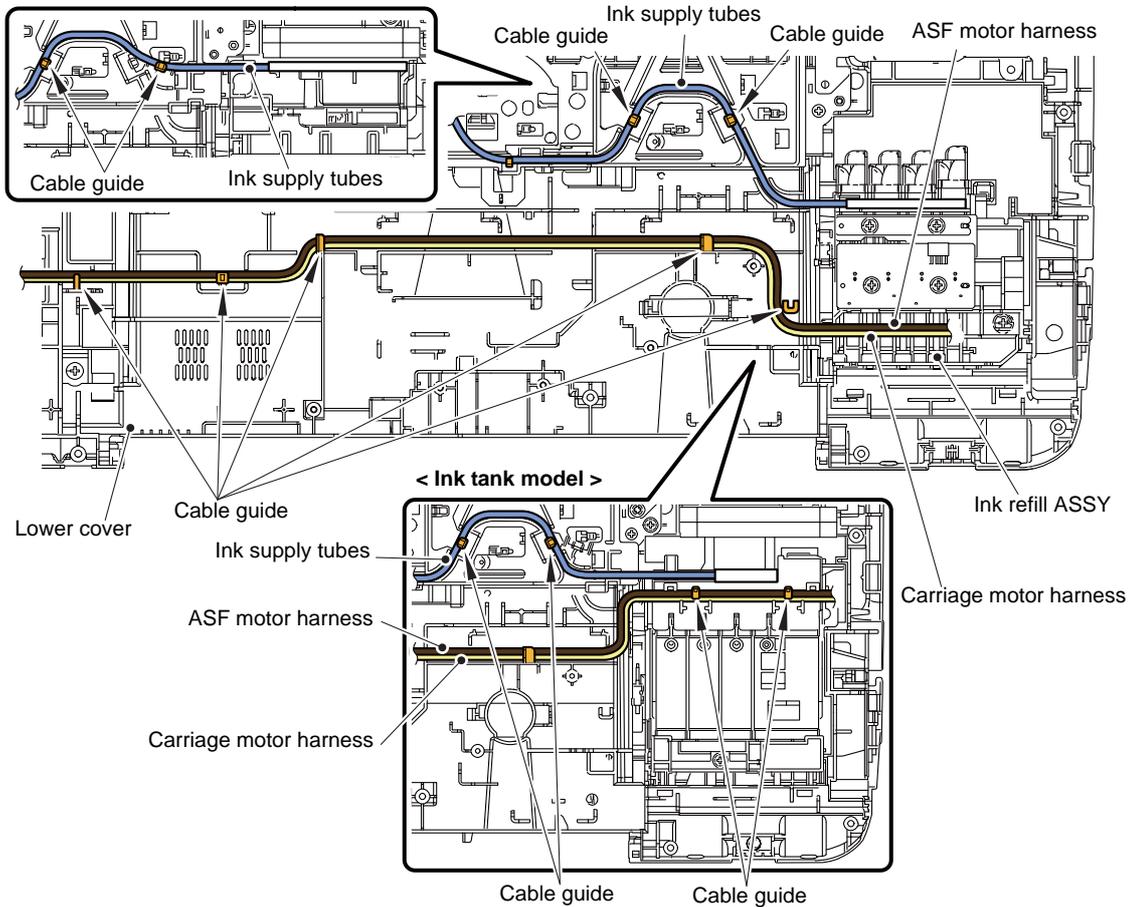


## 15 Registration sensor harness

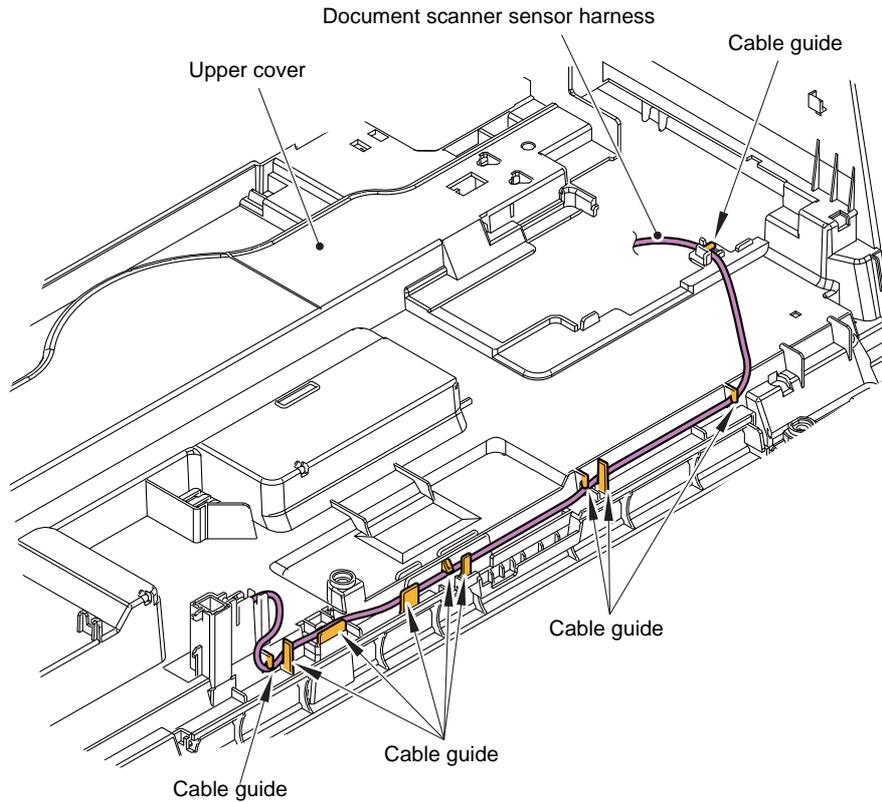


## 16 Ink refill ASSY

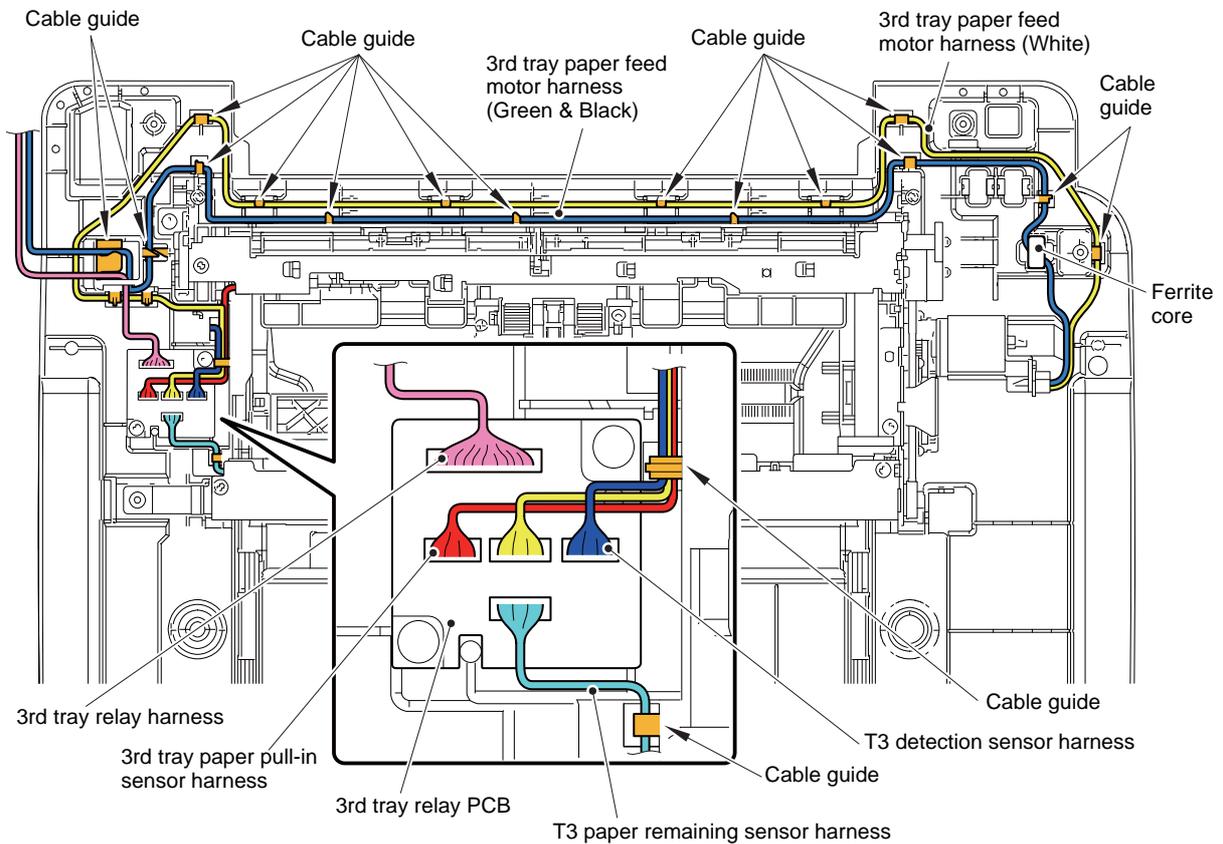
< Simple Ink cartridge model >



## 17 Upper cover

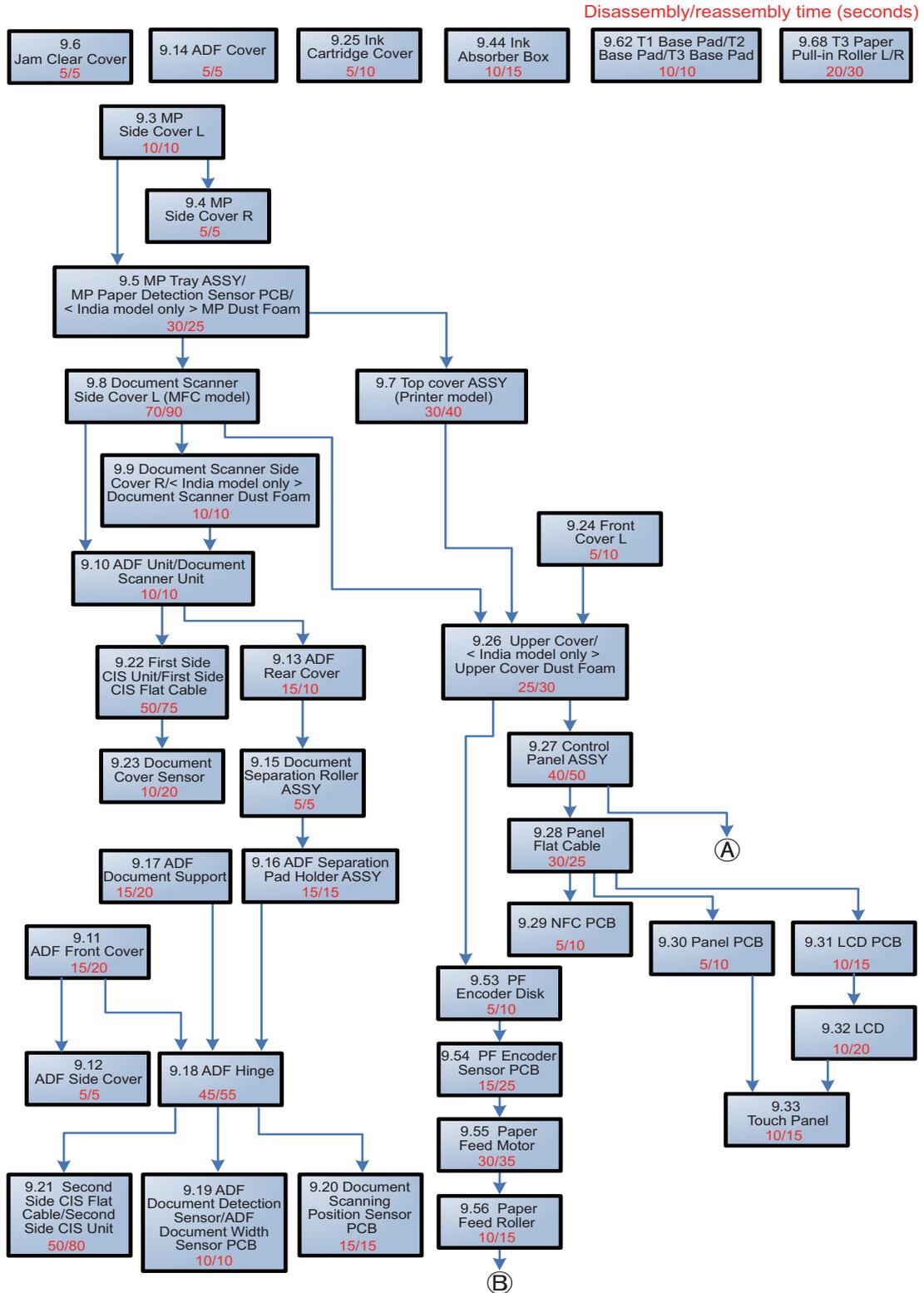


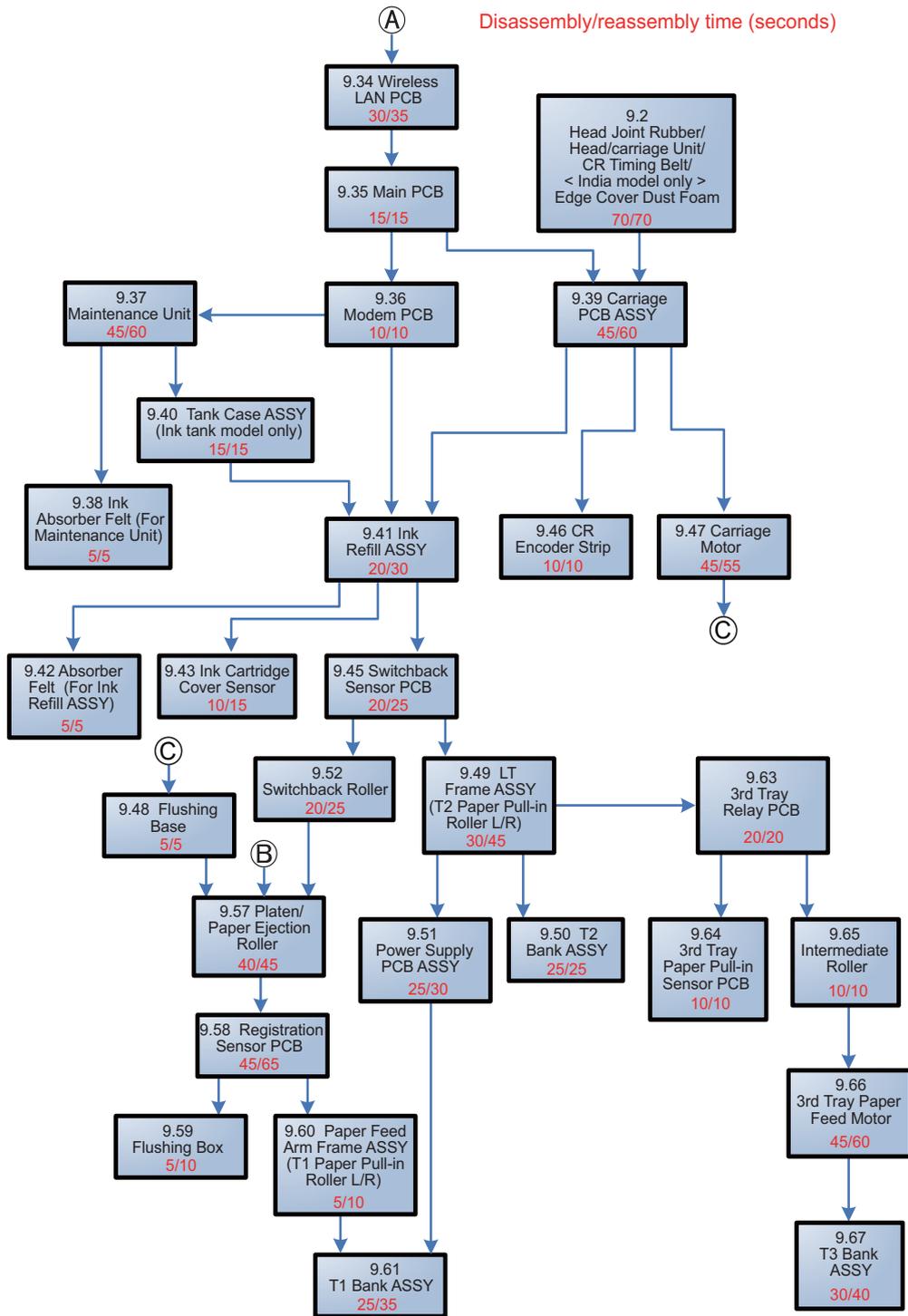
## 18 3rd tray relay PCB



## 8 DISASSEMBLY FLOW

### ■ Disassembly flowchart





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## 9 DISASSEMBLY PROCEDURE

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### 9.1 Preparation

#### [ 1 ] < MFC model only > Transferring Received FAX Data

When the machine at the user site requires to be repaired, unplugging the power cord from the electrical outlet for sending the machine for repair will lose received FAX data if left in the machine.

To prevent such data loss, the service personnel should instruct end users (e.g., by telephone) to transfer data in the machine to another fax machine or PC using the procedure below.

**Note:** The number of files that can be transferred at a time is 99. To transfer 100 files or more, carry out the following procedure more than one time.

**Tip:** If there are both color and monochrome data in a file to be transferred, the monochrome data will be transferred first. If the receiver machine does not support the color function, the sender machine cannot transfer color data, resulting in an error.

#### Transferring faxes to another fax machine

##### ■ Operating Procedure

- (1) Press the **X** key to interrupt the error (if displayed) temporarily.
- (2) Press . Press **ALL settings**.
- (3) Press **Service**.
- (4) Press **Data Transfer**.
- (5) Press **Fax Transfer**.

If a fax number entry screen appears, there are faxes in the machine's memory. Then enter the fax number to which faxes should be forwarded.

- (6) Press the **Fax Start** key.

#### Transferring faxes to a PC

##### ■ Operating Procedure

The following procedure uses the fax machine and your PC.

- (1) Press the **X** key to interrupt the error (if displayed) temporarily.
- (2) Start  Brother Utilities.
- (3) Select your model name.
- (4) Click **PC FAX** in the navigation bar, and then click **Receive**.
- (5) Read and confirm the instructions on your computer.

## [ 2 ] Backing up Machine Information and Head Calibration Data (when the main PCB is to be replaced)

Before starting repair, the service personnel should back up the following machine information, user setting information and head calibration data into a USB flash memory.

- Machine information (Preset values, count values, error information, machine specifications data, etc.)
- User setting information (telephone directory, password, station ID, transfer information, telephone area code, user settings, etc.)
- Other data (Received fax data, ICM/OGM data, etc.)

Note that the following information cannot be backed up.

- MAC address
- Call and caller ID records
- Activity report
- Fax data to be sent (by delayed-timer, redialing, and polling)

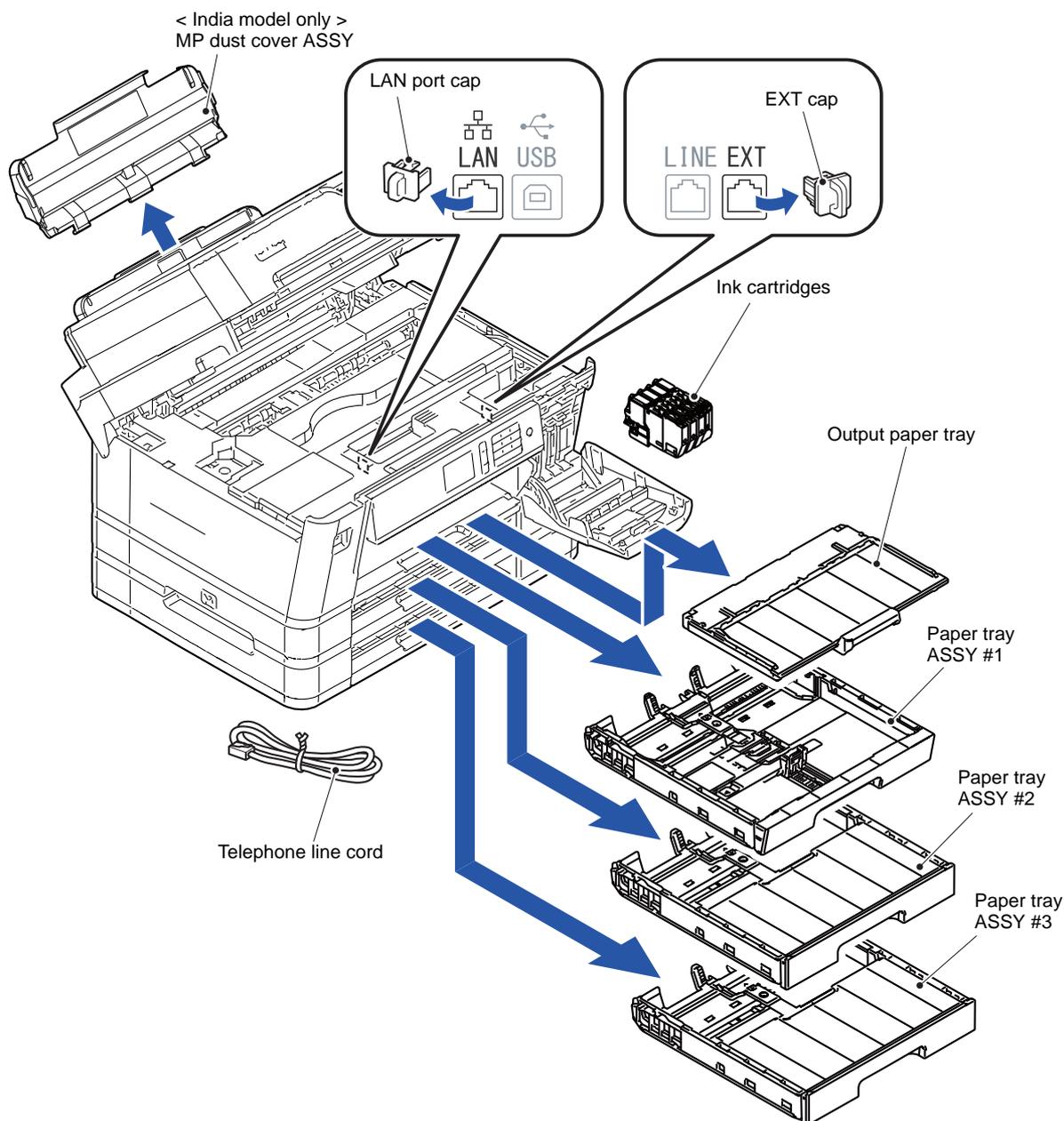
### ■ Operating Procedure

Back up the machine information, user setting information and other information, referring to [Chapter 5, Section 1.3.12 "Backup of Machine Information \(Maintenance mode 46\)."](#) and [Chapter 5, Section 1.3.24 "Updating of Head Property Information and Backup/Restoration of Head Calibration Data \(Maintenance mode 68\)."](#)

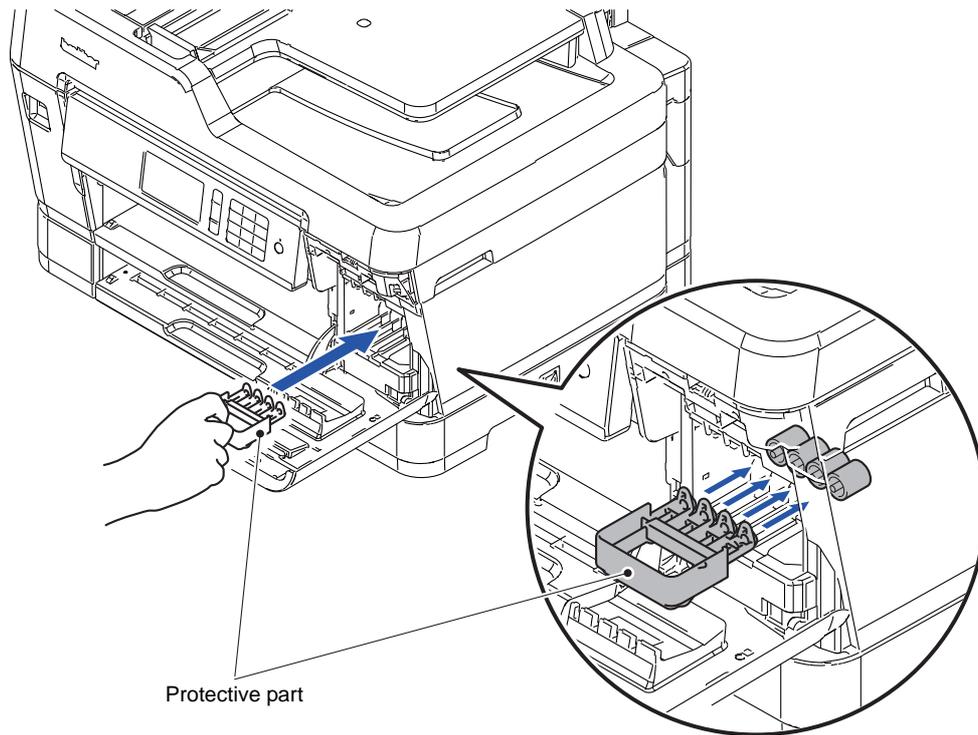
### [ 3 ] Disconnecting Cables, Removing Accessories, and Setting the Protective Part

Before starting disassembly, perform the following procedure.

- (1) Disconnect the following:
  - Telephone line cord, if connected
  - USB cable, if connected
  - LAN cable, if connected
  - USB flash memory, if connected
- (2) Remove the following:
  - Output paper tray
  - Paper tray ASSY #1
  - Paper tray ASSY #2
  - Paper tray ASSY #3
  - Ink cartridges
  - LAN port cap
  - EXT cap
  - **< India model only > MP dust cover ASSY**



- (3) < Regular Ink cartridge model only >  
Set the Protective part.



## 9.2 Head Joint Rubber/Head/carriage Unit/CR Timing Belt/ < India model only > Edge Cover Dust Foam

- (1) Plug the Power cord into an electrical outlet.
- (2) Press the power switch to turn on the power.

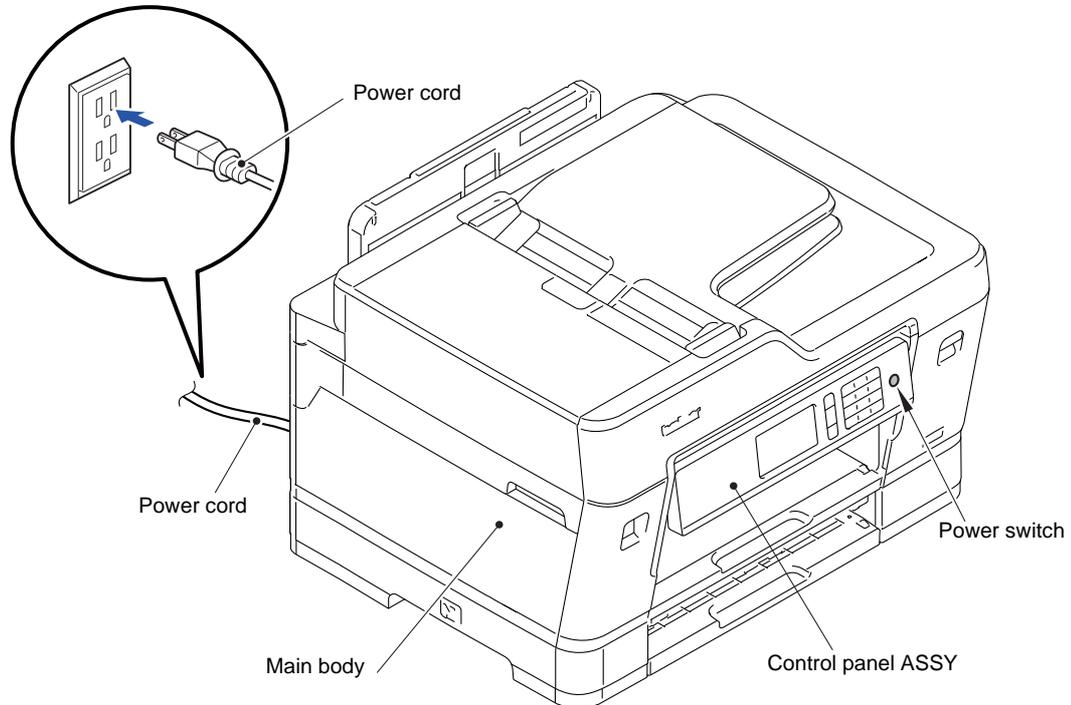


Fig. 3-1

- (3) Open the Document scanner unit.
- (4) Hold down the **Stop** key, and the Head/carriage unit automatically moves to the position shown in the figure.
- (5) Pull out the Power cord from the electrical outlet.

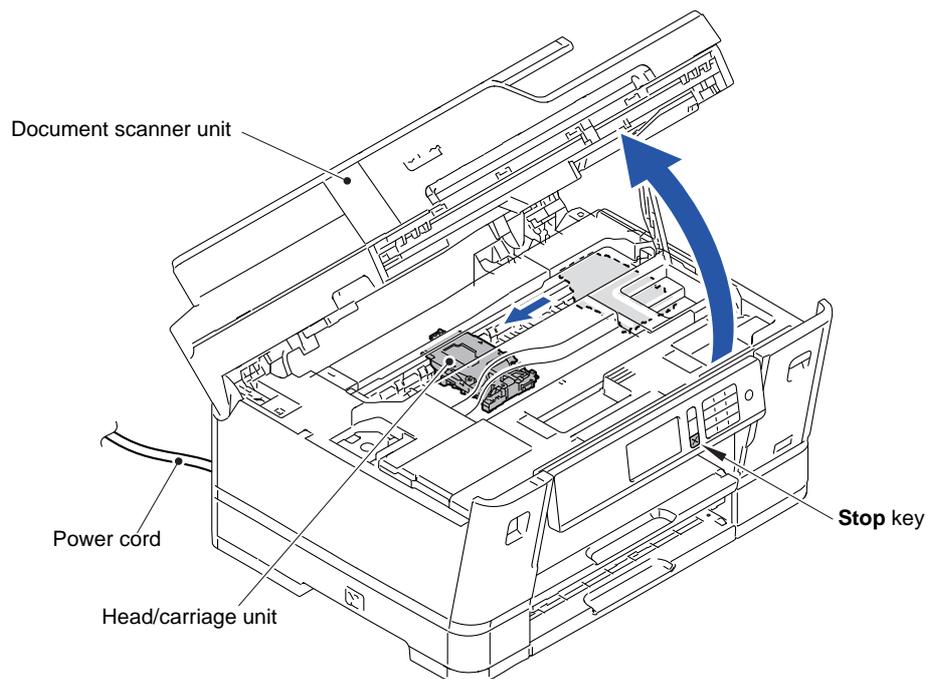


Fig. 3-2

(6) Release the seven Hooks and remove the Harness cover from the Upper cover.

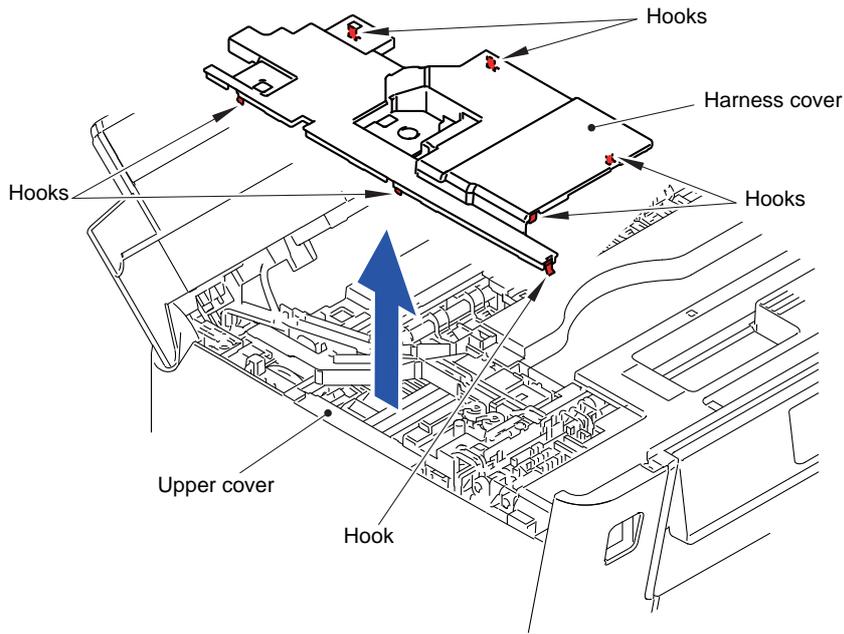


Fig. 3-3

(7) Release the Hook A first, and then release the other four Hooks and remove the Edge cover from the Upper cover.

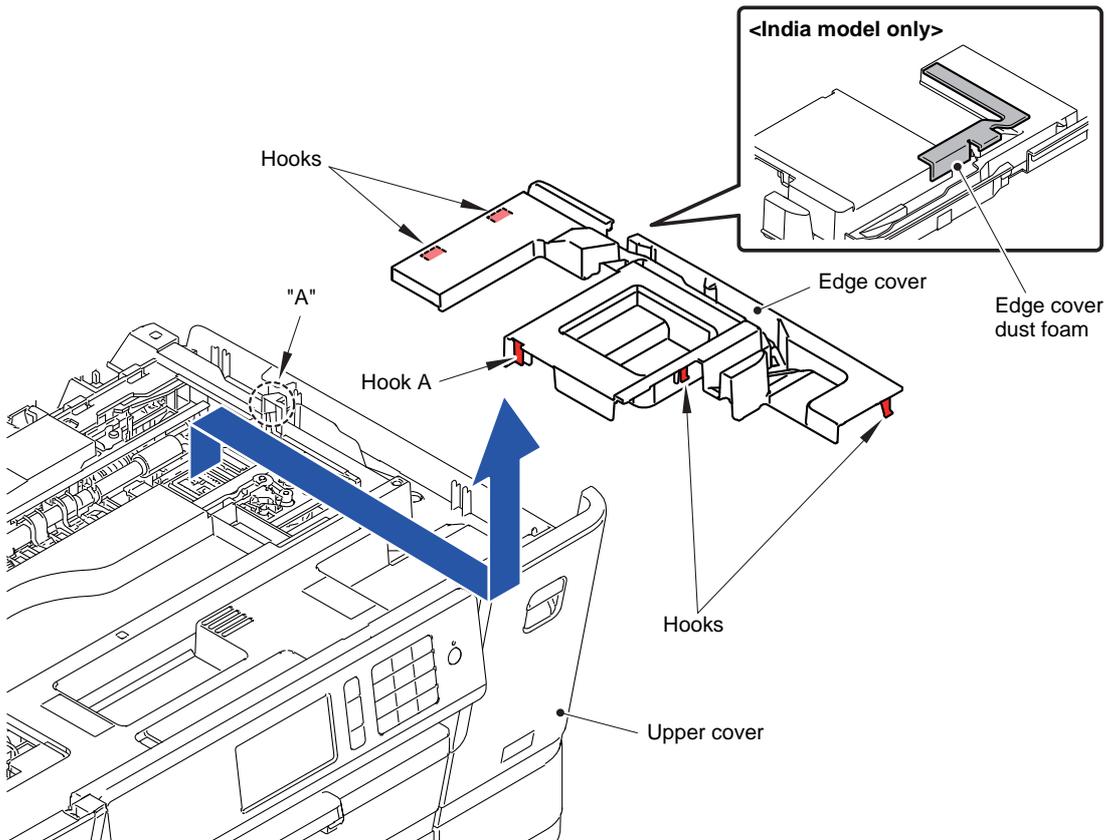
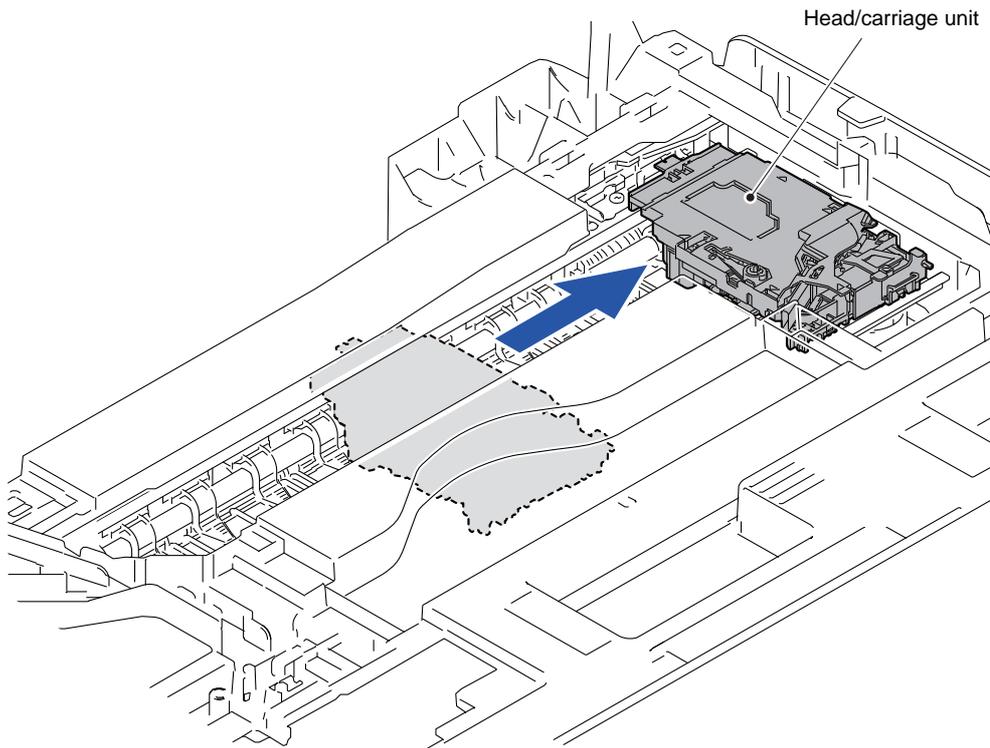


Fig. 3-4

**Note:** < India model only >

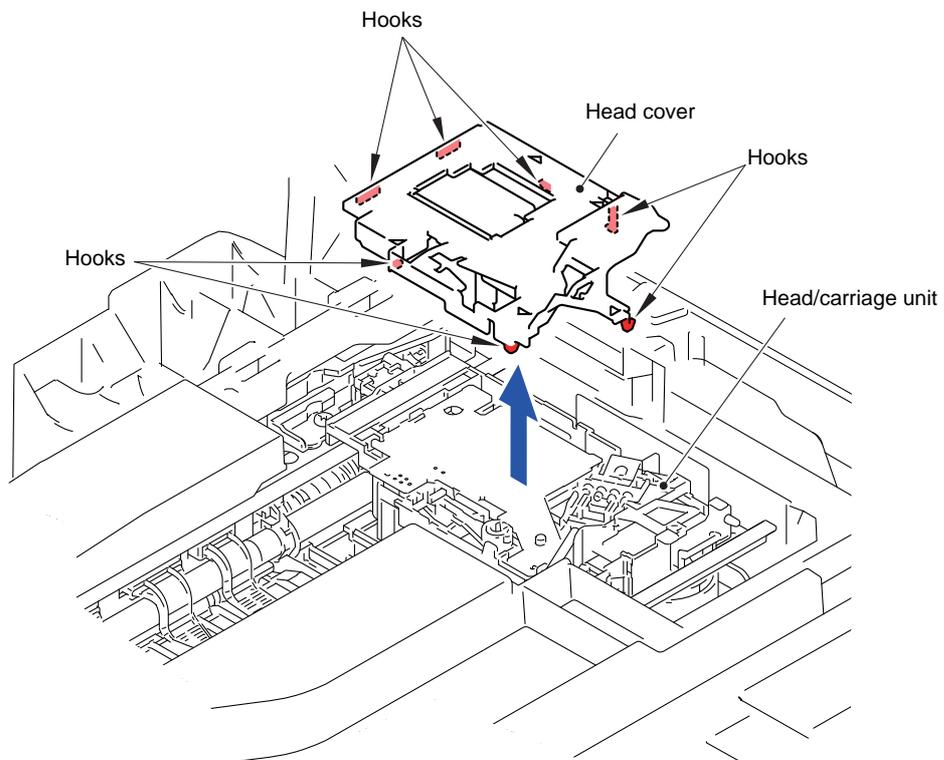
The Edge cover dust foam, which is also affixed to the Upper cover at the section "A," will be broken when the Edge cover is removed, and needs to be replaced with a new one.

(8) Manually slide the Head/carriage unit to the position shown in the figure.



**Fig. 3-5**

(9) Release the seven Hooks and remove the Head cover from the Head/carriage unit.



**Fig. 3-6**

- (10) Release the Lock of the connector and disconnect the Flat cable from the Carriage PCB ASSY.

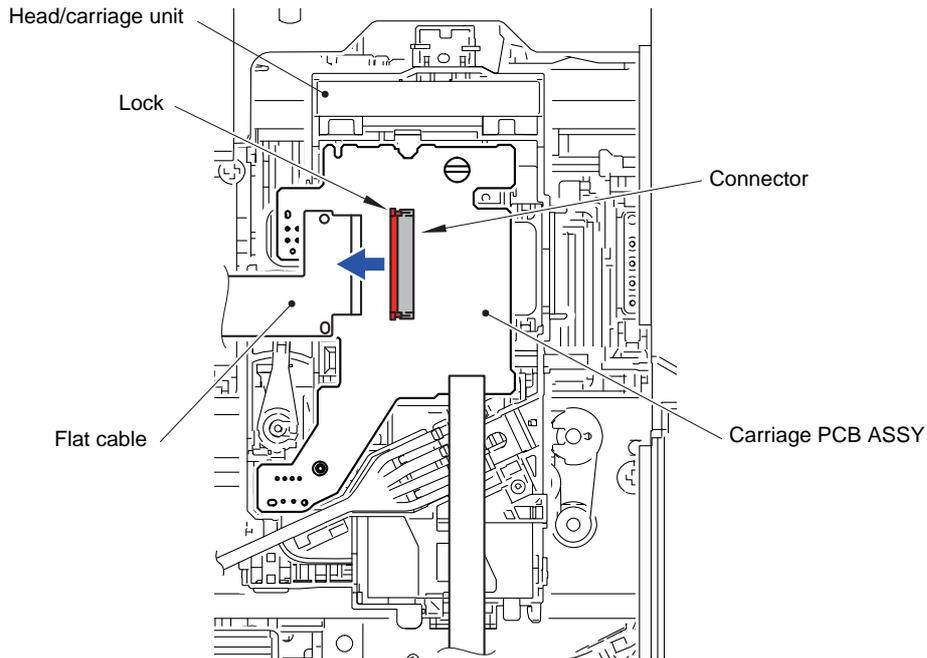


Fig. 3-7

- (11) Release the Lock spring which secures the Carriage PCB ASSY.
- (12) Remove the Carriage PCB ASSY from the Head/carryage unit. Release the Hook of the Tube binder and remove the Flat cable of the Carriage PCB ASSY from the Boss of the Head/carryage unit.

**Note:** The Carriage PCB ASSY is not removed completely. Put the Carriage PCB ASSY out of the way and perform work.

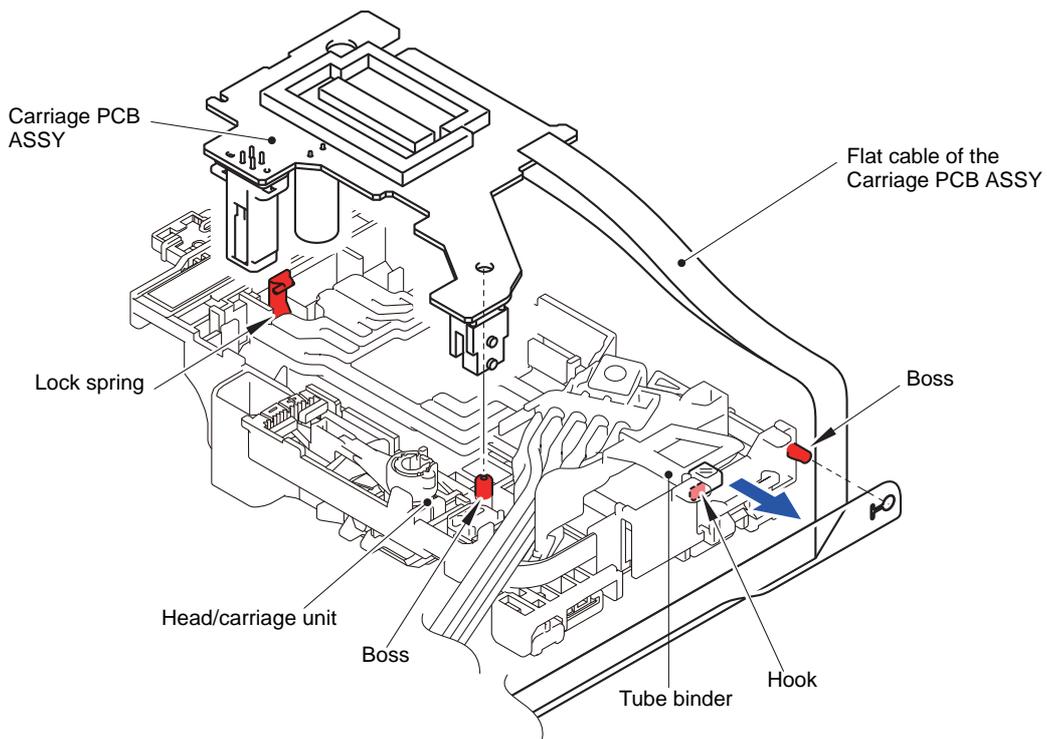


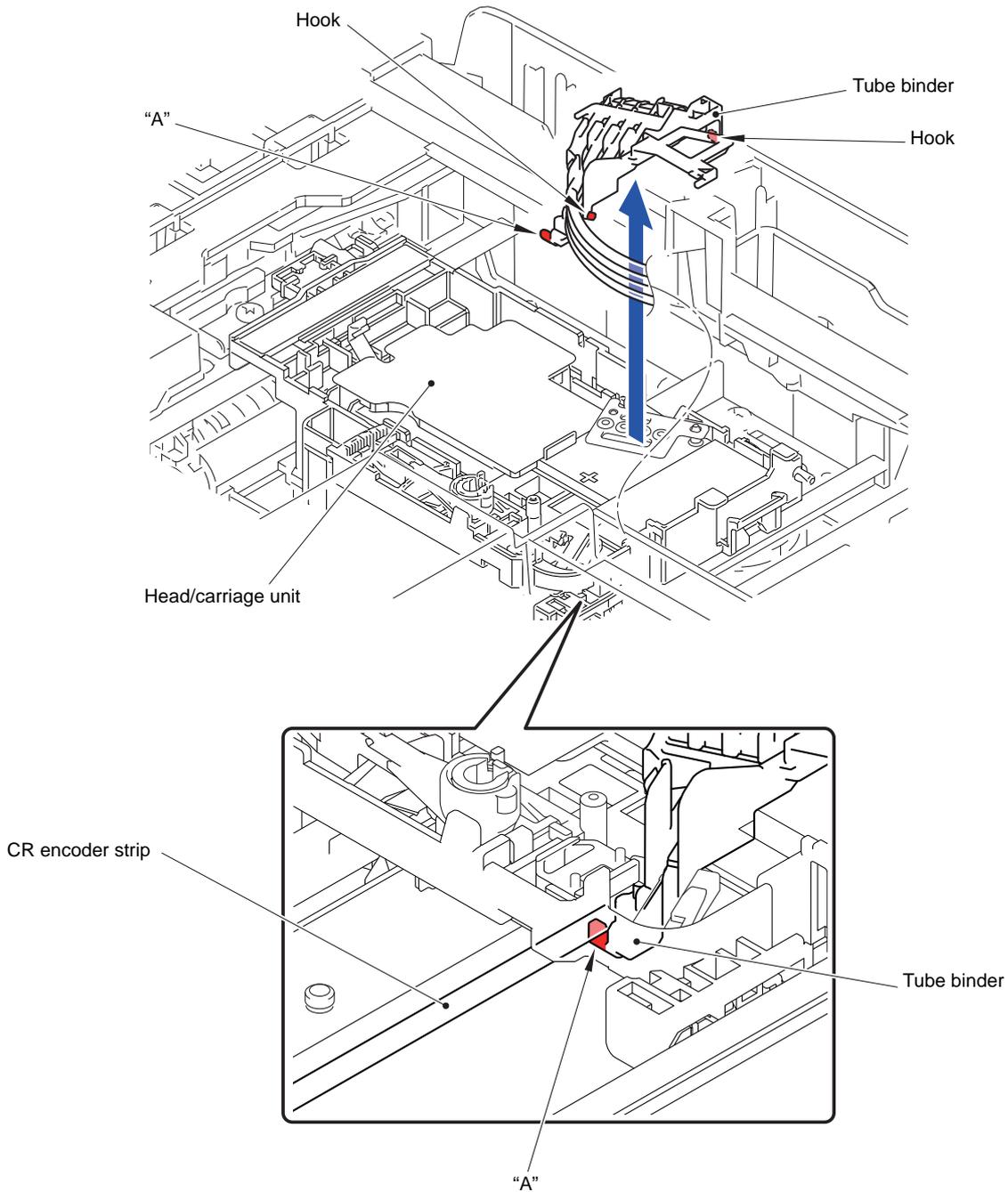
Fig. 3-8



(14) Release the two Hooks and remove the Tube binder from the Head/carriage unit.

**Note:** After removal of the Head joint, immediately wrap the Head joint in a clean, lintfree cloth and keep it higher than the Ink refill ASSY to prevent ink remaining in the Ink supply tubes from leaking and the machine from getting stained with leaked ink.

**Assembling Note:** Pass the section "A" of the Tube binder beneath the CR encoder strip to prevent it from coming into contact with the CR encoder strip.



**Fig. 3-10**

(15) Remove the Head joint rubber from the Head/carriage unit.

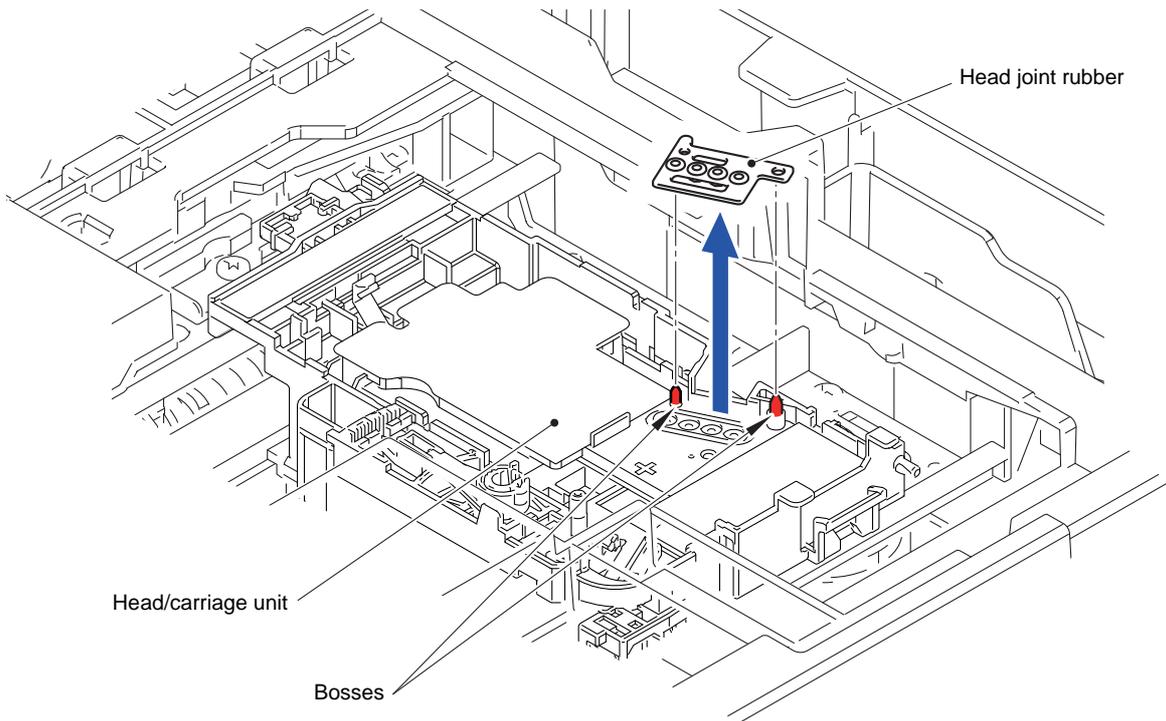


Fig. 3-11

(16) Remove the Plastic retaining ring from the Idle pulley.

(17) Remove the Idle pulley from the CR frame ASSY.

**Note:** Be careful not to lose the Washer which easily comes off from the Idle pulley.

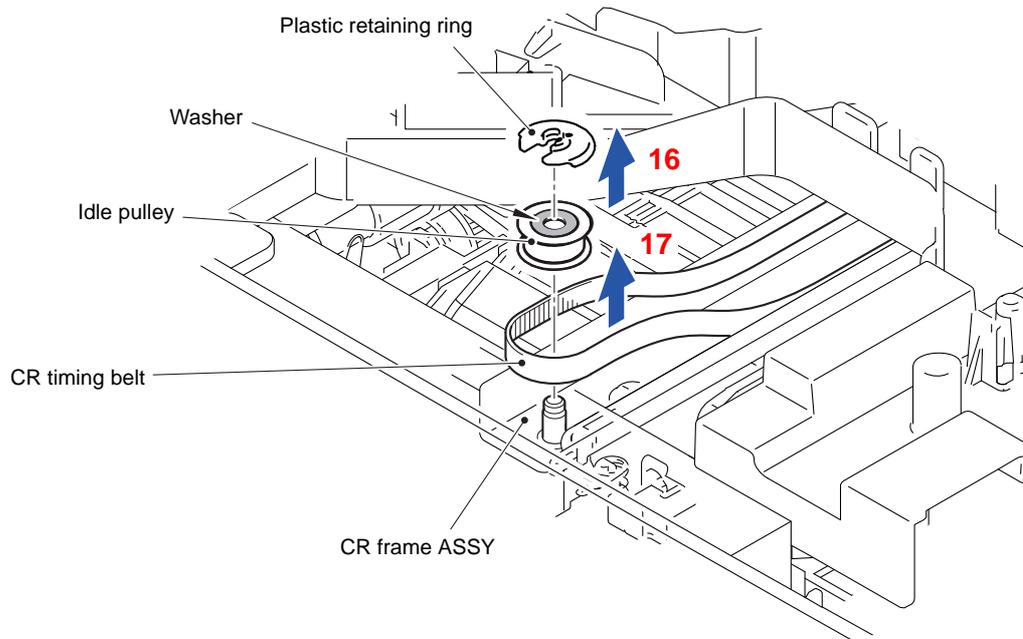


Fig. 3-12

(18) Remove the CR timing belt from the CR motor pulley.

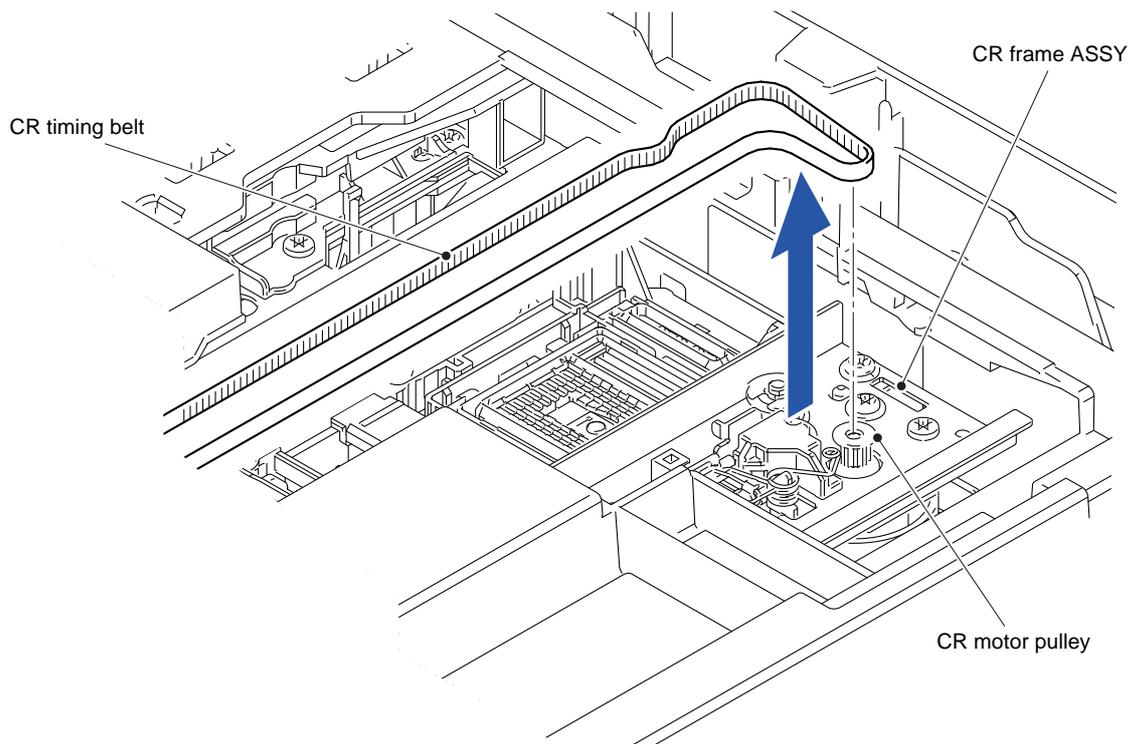


Fig. 3-13

(19) As shown below, loosely tie the CR timing belt in a bundle on the Head/carriage unit.

(20) Move the two Locks in the direction of the arrow.

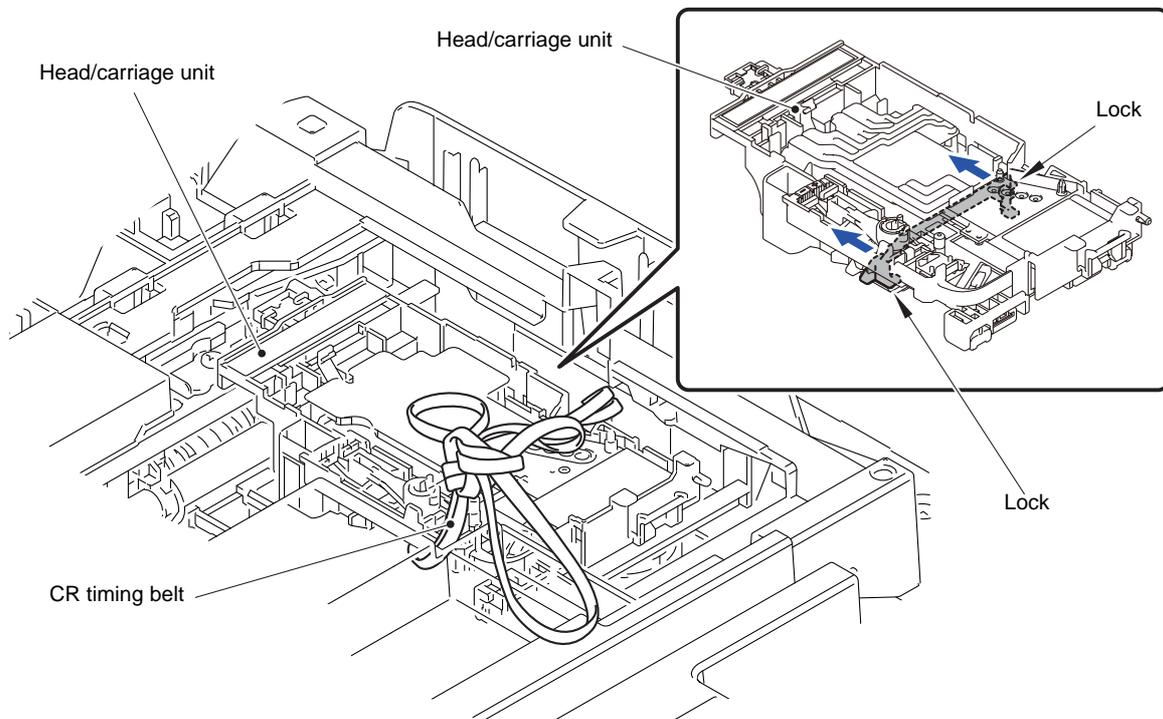
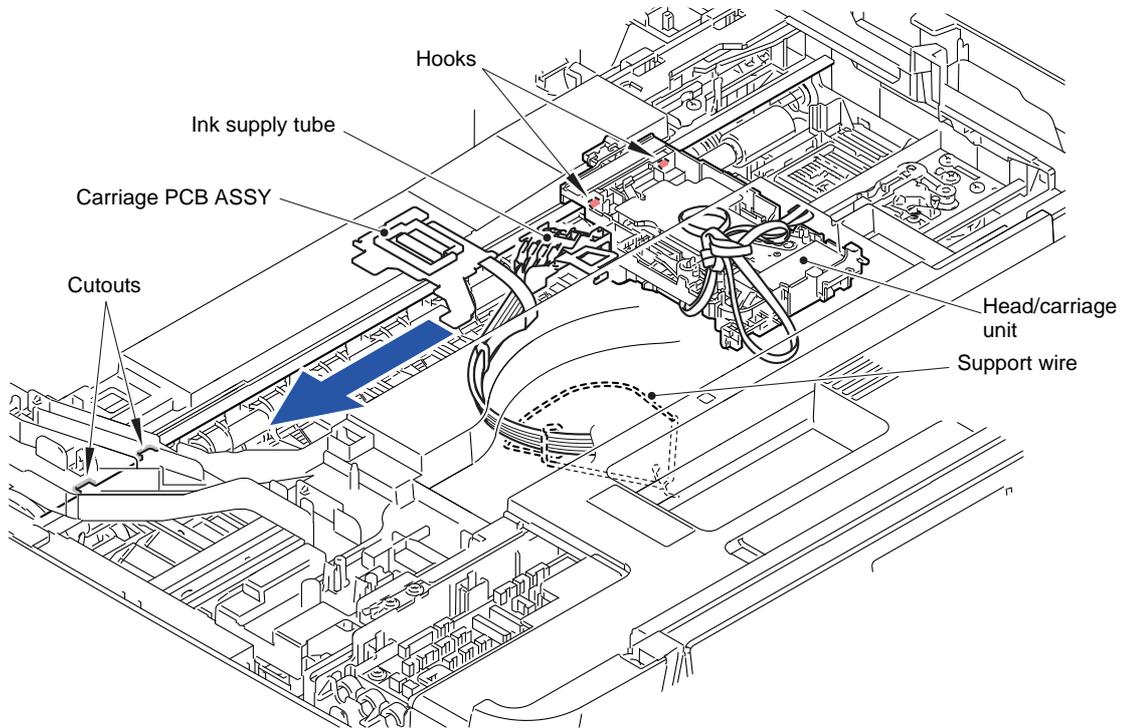


Fig. 3-14

(21) Slide the Head/carriage unit in the arrow direction (until the two hooks of the Head/carriage unit are aligned with the cutouts of the CR guide rail).

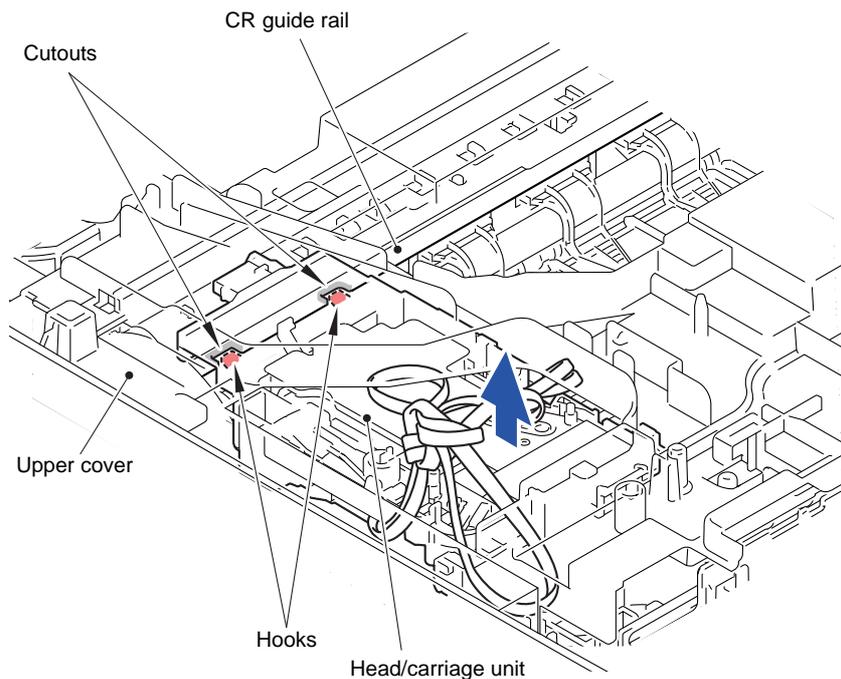
**Note:** Sliding the Flat cable of the Carriage PCB ASSY and Ink supply tube to the left together with the Head/carriage unit may prevent the Head/carriage unit from getting caught with the Support wire.



**Fig. 3-15**

(22) Lift the Head/carriage unit from the cutouts of the CR guide rail as high as it can be removed.

**Note:** The Head/carriage unit cannot be lifted too much because there is the Upper cover.



**Fig. 3-16**

(23) Move the Head/carriage unit to the position shown in the figure and remove it from the opening of the Upper cover.

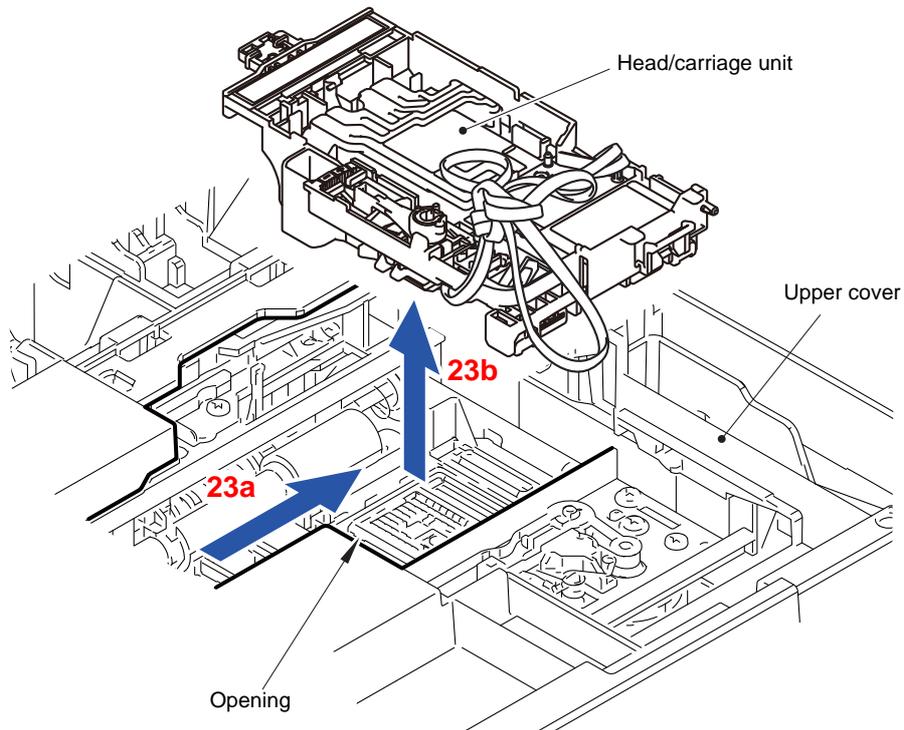


Fig. 3-17

(24) Close the Document scanner unit.

(25) Remove the CR timing belt from the Head/carriage unit.

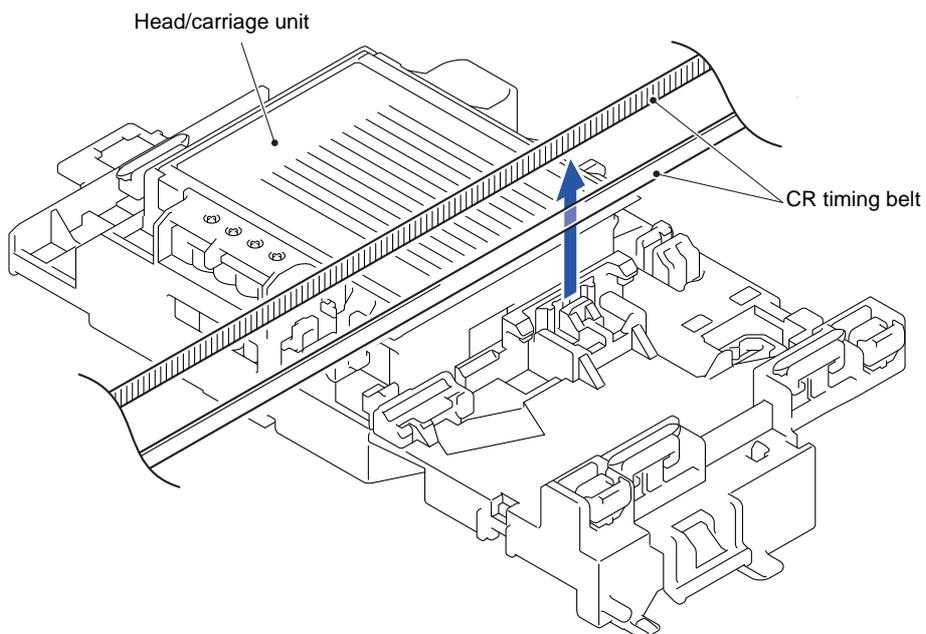
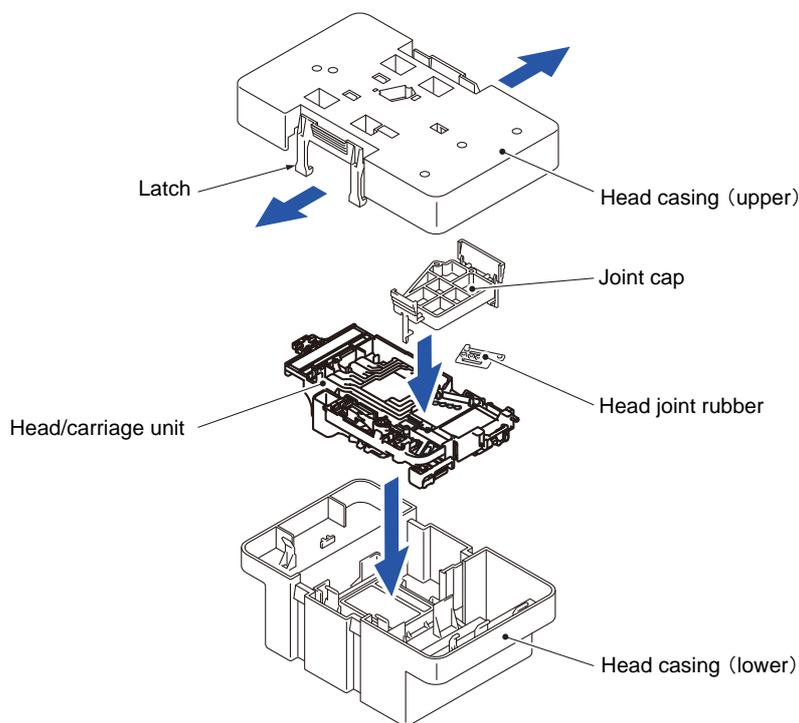


Fig. 3-18

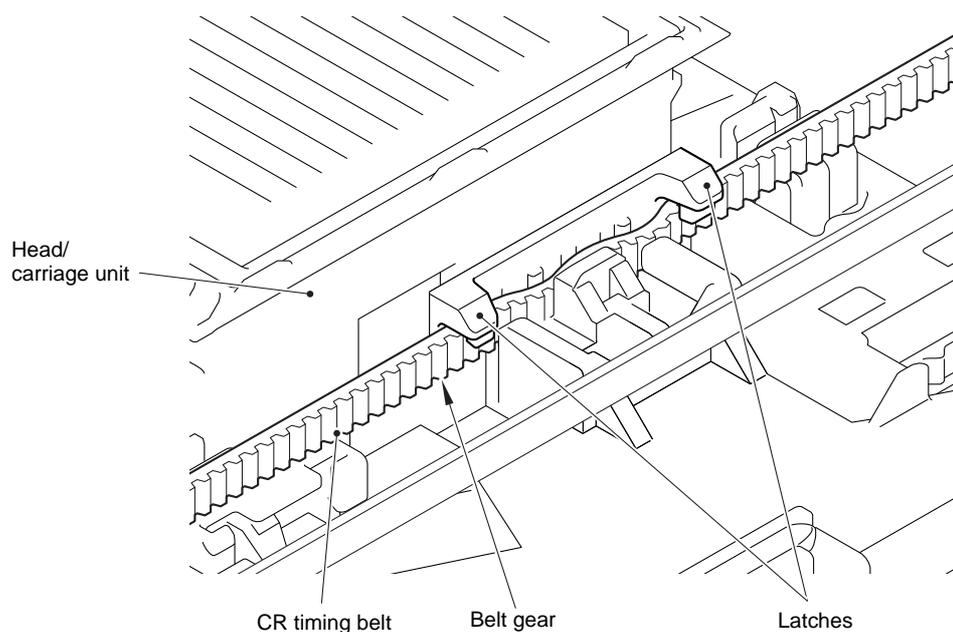
**Note:** When storing the removed Head/carriage unit for a long period, store the unit in a Head casing as shown below. Leaving it out of the casing causes the head nozzles and ink supply ports to dry up so that the Head/carriage unit can no longer provide the original performance.



**Fig. 3-19**

**Assembling Note:** Mount the Head/carriage unit, using the following steps.

- 1) When mounting a new Head/carriage unit, apply lubricant to the unit, as specified in [Section 5 "LUBRICATION"](#) of this chapter.
- 2) When mounting the CR timing belt, insert it into the Head/carriage unit so that the toothed side faces inwards as shown below and make sure that the upper and lower edges of the belt are fitted in the Latches.



**Fig. 3-20**

### 9.3 MP Side Cover L

(1) Open the Paper support ASSY.

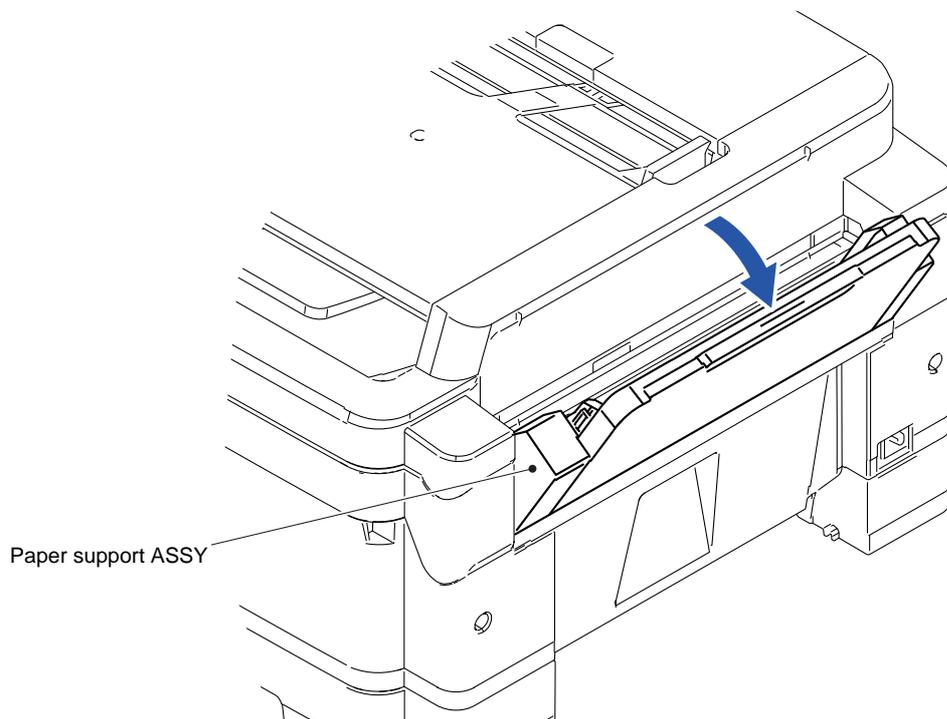


Fig. 3-21

(2) Release the two Hooks and remove the Paper support ASSY from the Main body.

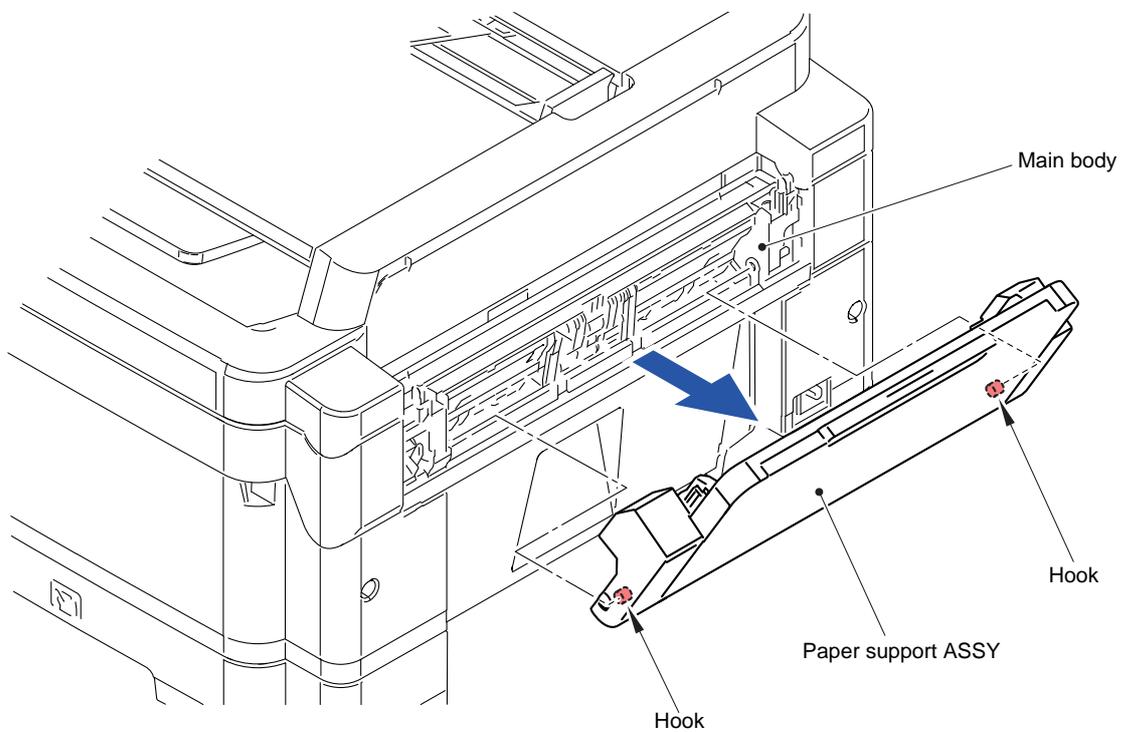


Fig. 3-22

- (3) Release the three Hooks and remove the MP side cover L from the Paper support ASSY.

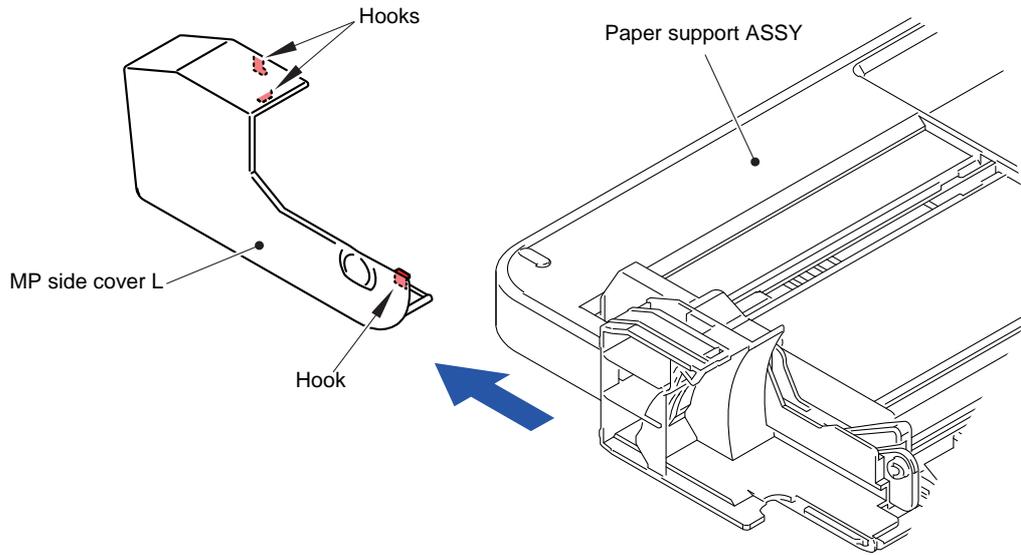


Fig. 3-23

#### 9.4 MP Side Cover R

- (1) Release the three Hooks and remove the MP side cover R from the Paper support ASSY.

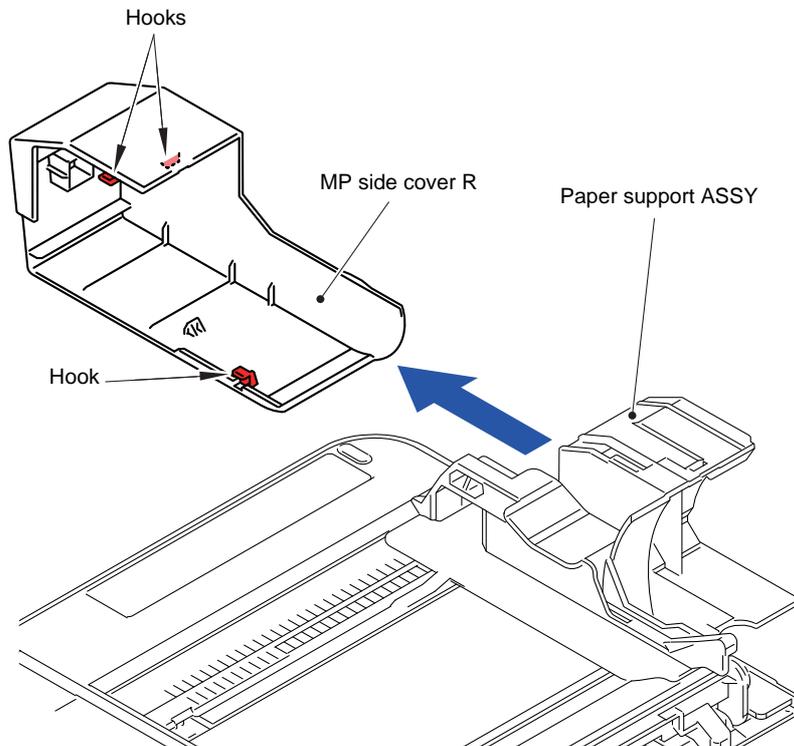


Fig. 3-24

## 9.5 MP Tray ASSY/MP Paper Detection Sensor PCB/ < India model only > MP Dust Foam

(1) Remove the MP drive shaft from the MP drive gear holder 3.

**Note:** Be careful not to lose the MP drive gear which easily comes off from the MP drive gear holder 3.

**Assembling Note:** When mounting the MP drive shaft, insert it into the MP drive gear and MP drive gear holder 3.

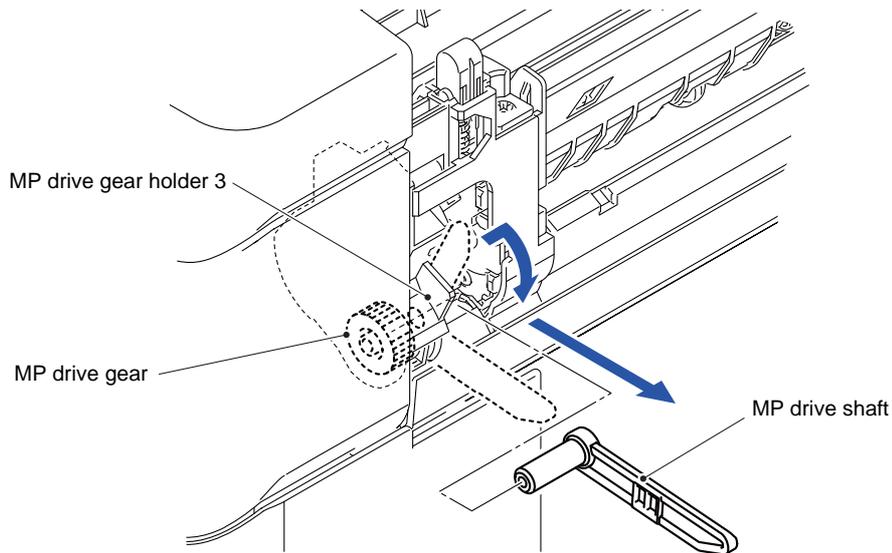


Fig. 3-25

(2) Remove the two screws (TAPTITE CUP B M4x12).

(3) Release the two Pins and remove the MP tray ASSY from the Main body.

**Note:** A harness is connected to the MP tray ASSY from the Main body, and therefore be careful not to pull the MP tray ASSY too much when you remove it.

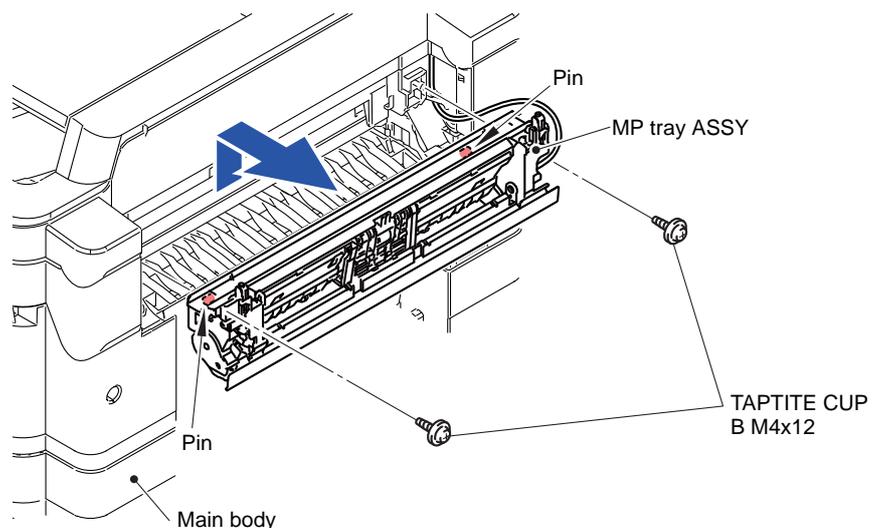


Fig. 3-26

- (4) < India model only >  
Remove the two screws (TAPTITE CUP B M3 x 10), peel off the MP dust foam, release the two Hooks, and remove the MP tray cover from the MP tray ASSY.

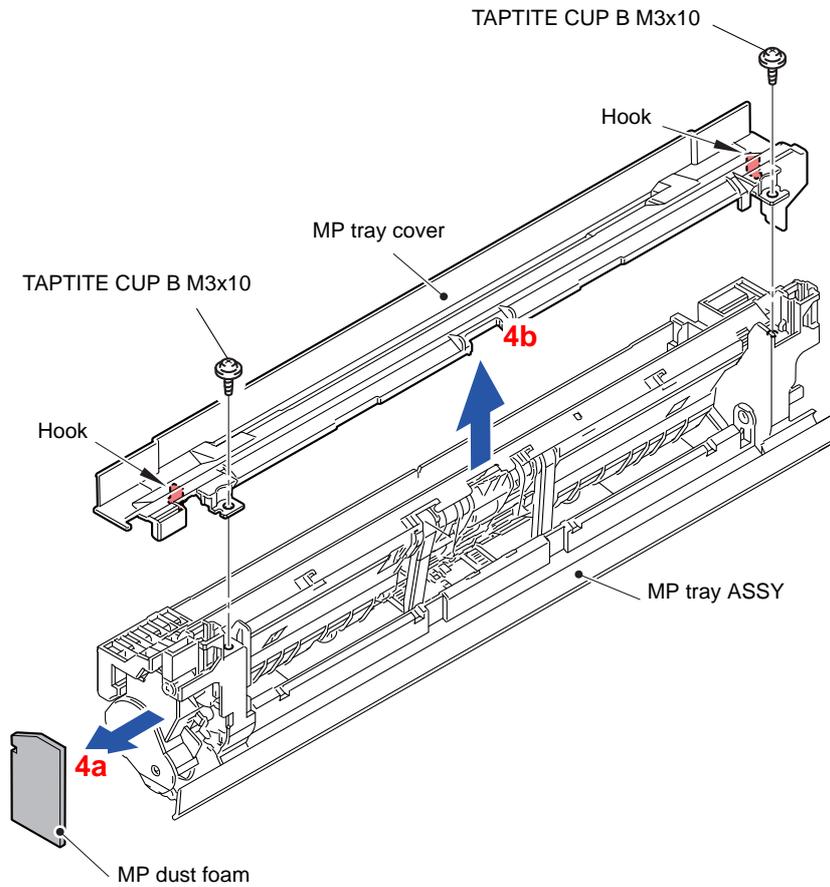


Fig. 3-27

**Note:** Once removed, the MP dust foam should be replaced with a new one.

- (5) While holding down the Paper actuator MP, release the one Hook and remove the MP sensor holder.

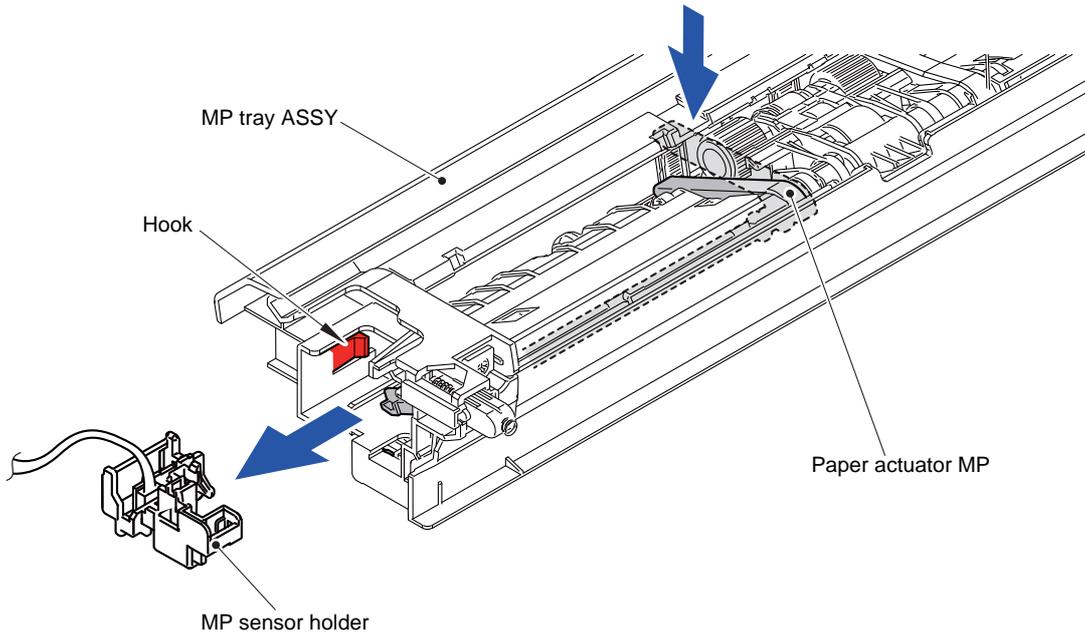


Fig. 3-28

- (6) Release the two Hooks and remove the MP paper detection sensor PCB from the MP sensor holder.  
(7) Disconnect the Connector from the MP paper detection sensor PCB.

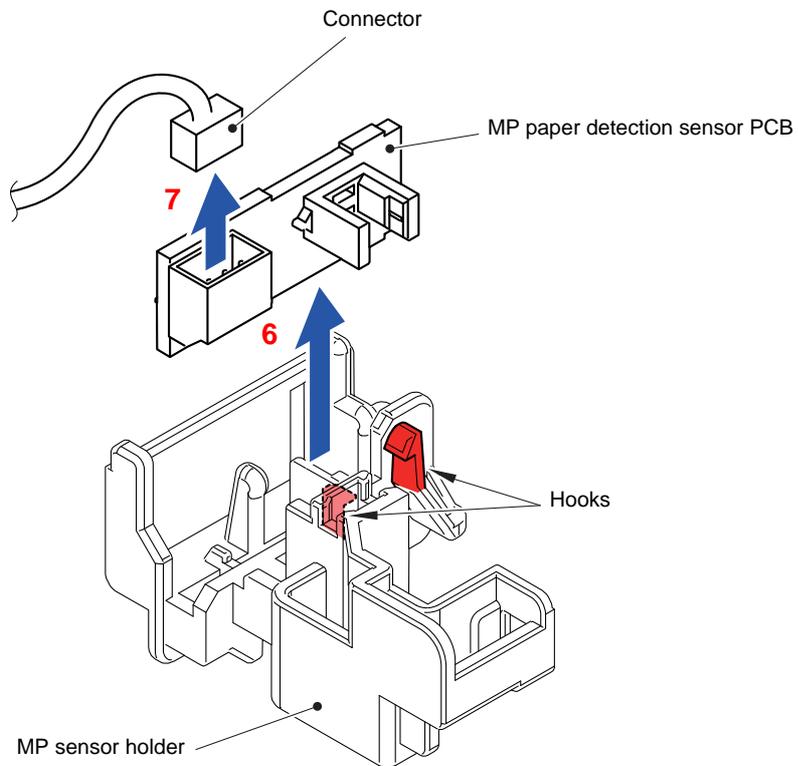


Fig. 3-29

## 9.6 Jam Clear Cover

- (1) Open the Jam clear cover.
- (2) Release the two Pins and remove the Jam clear cover from the Main body.

**Note:** When replacing the Jam clear cover, be sure to remove the serial number label attached on the old cover and attach it to the new cover.

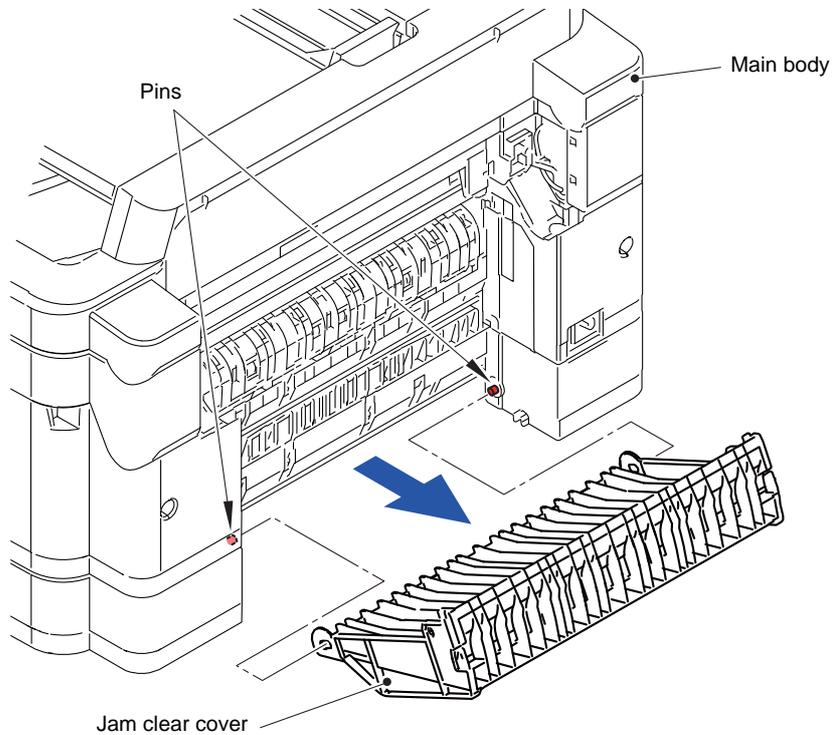


Fig. 3-30

## 9.7 Top Cover ASSY (Printer model)

- (1) Open the Top cover ASSY half way.

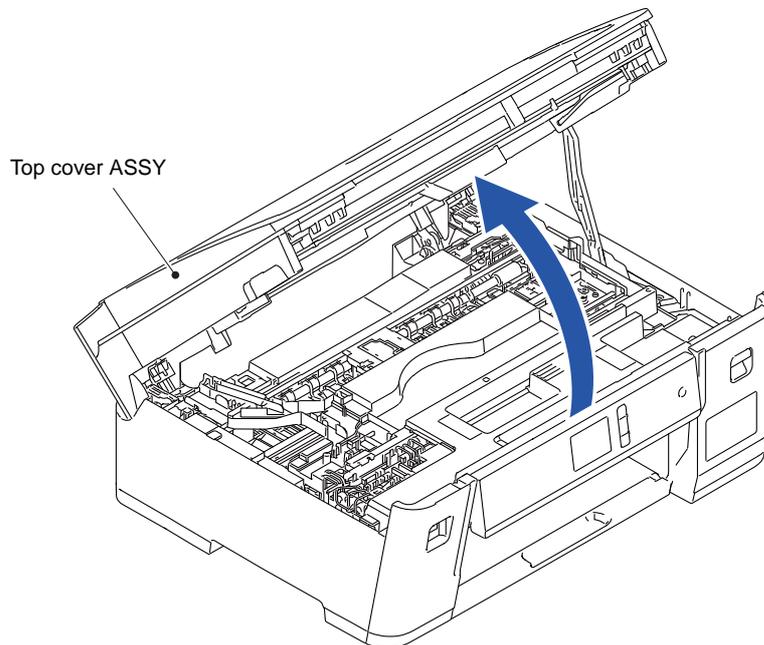


Fig. 3-31

- (2) Release the two Hooks of the FB stopper from the Upper cover.
- (3) Release the Hook and remove the FB stopper from the Top cover ASSY.

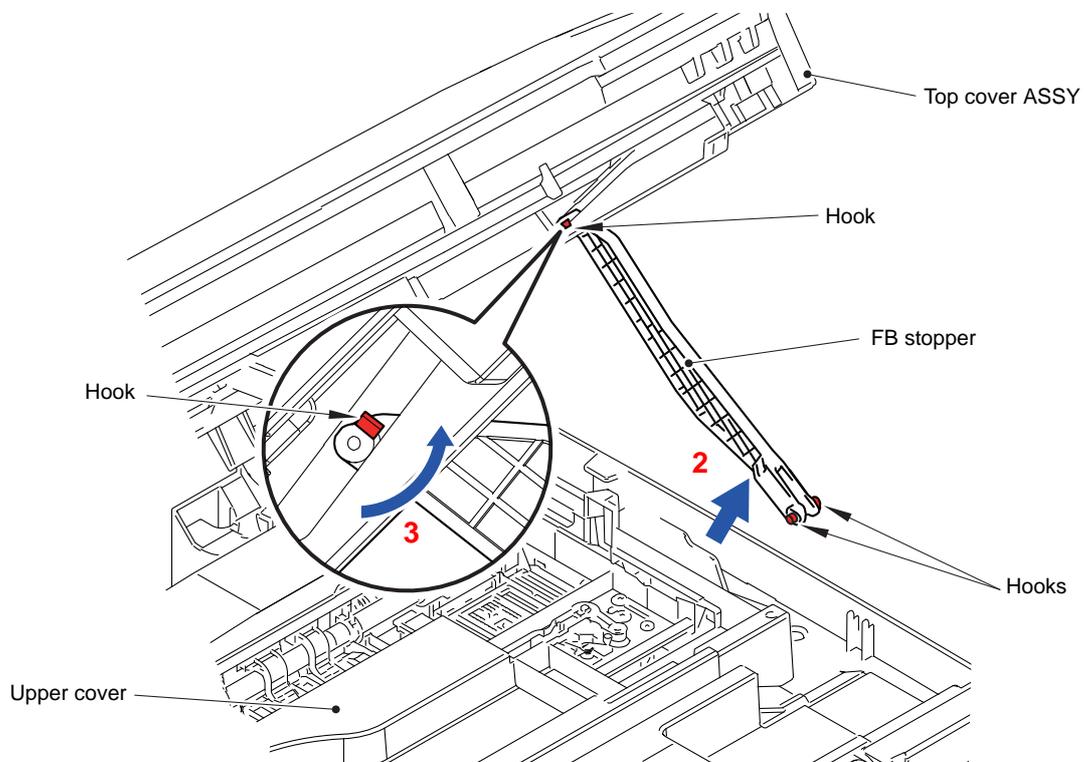


Fig. 3-32

(4) Disconnect the Connector from the Main PCB.

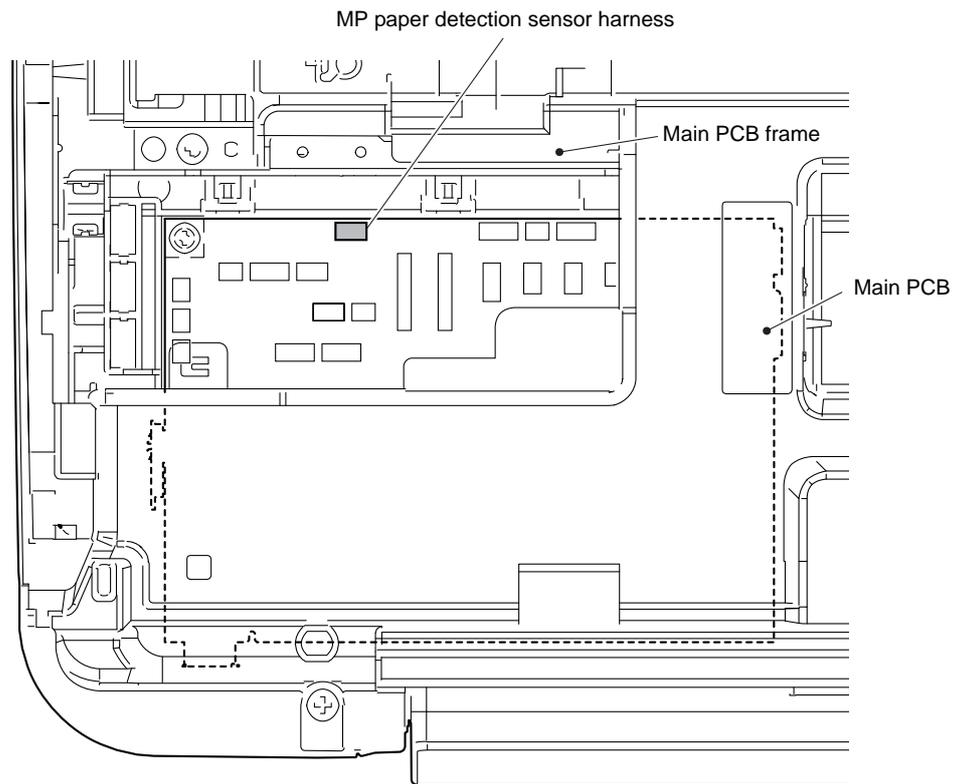


Fig. 3-33

(5) Remove the two screws (TAPTITE BIND B M4x12) from the Main body.

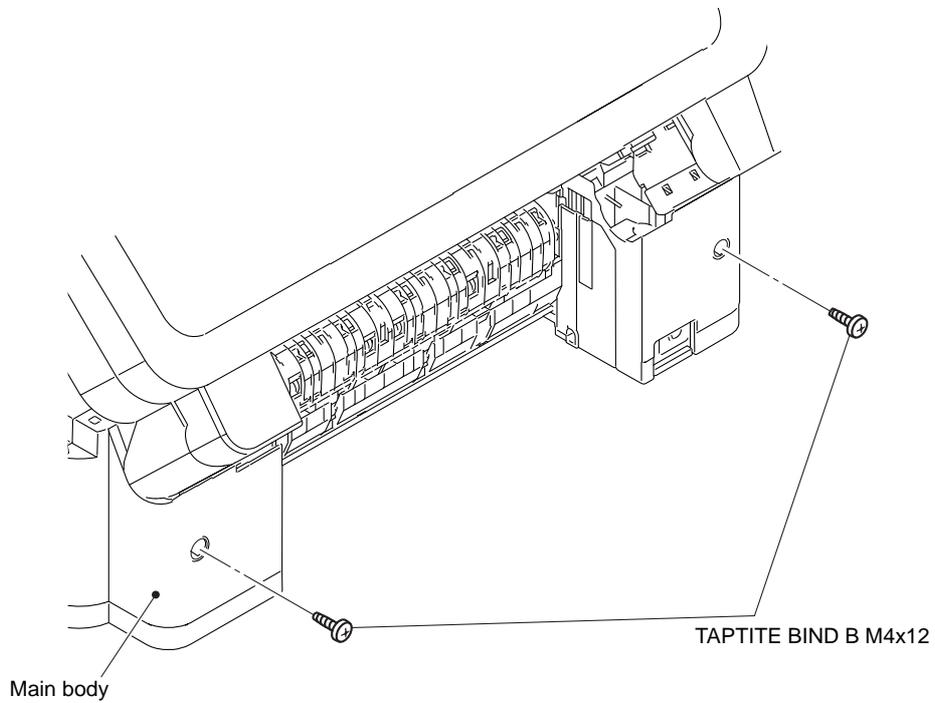
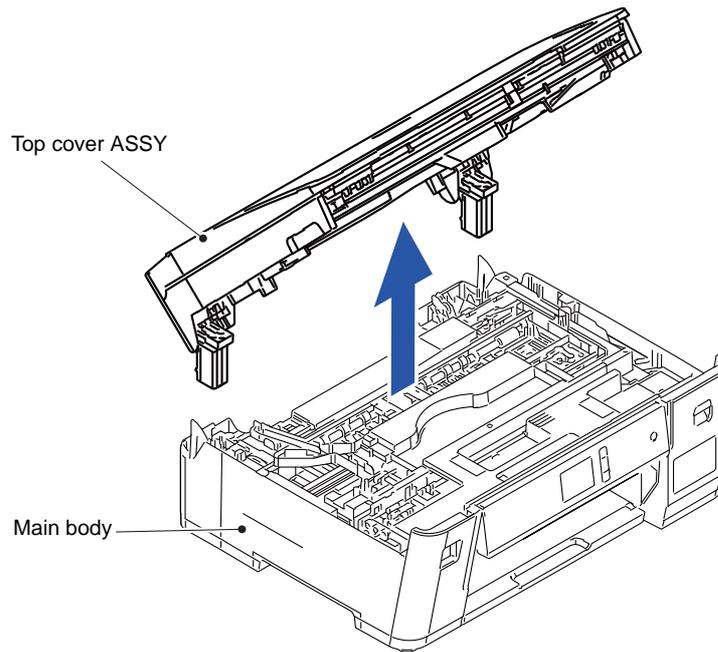


Fig. 3-34

(6) Lift and remove the Top cover ASSY from the Main body.



**Fig. 3-35**

(7) Remove the three screws (TAPTITE BIND B M4x12) each from the left and right FB hinges to remove them from the Top cover ASSY.

**Note:** After removing the Top cover ASSY, go to "9.24. Front Cover L" .

## 9.8 Document Scanner Side Cover L (MFC model)

- (1) Open the Document scanner unit half way.

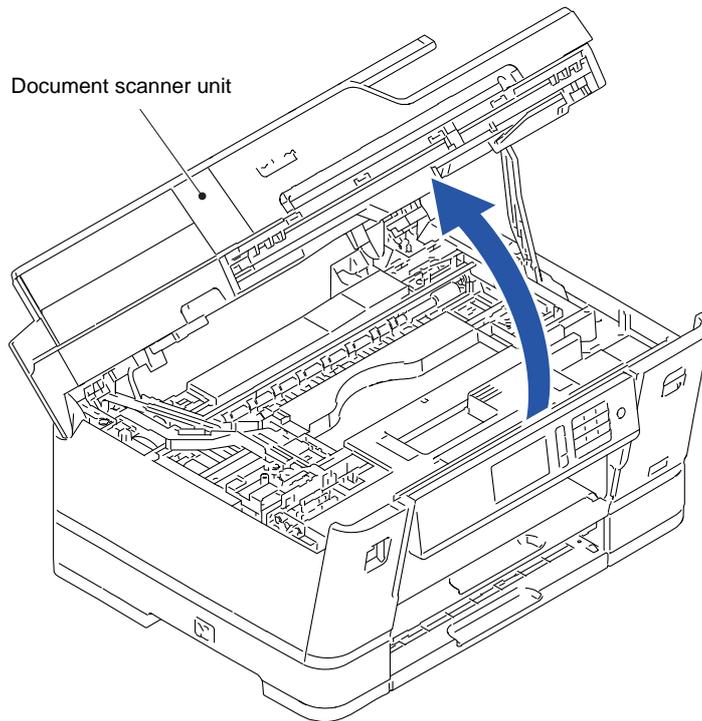


Fig. 3-36

- (2) Release the two Hooks of the FB stopper from the Upper cover.
- (3) Release the Hook and remove the FB stopper from the Document scanner unit.

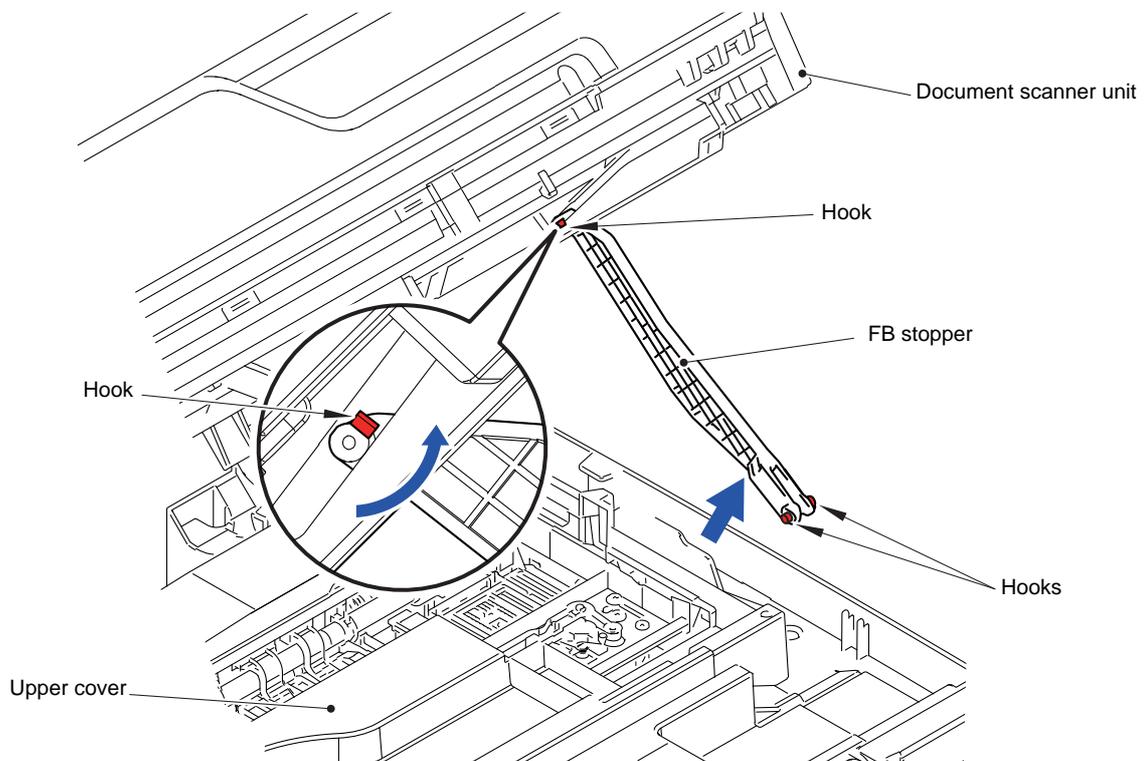
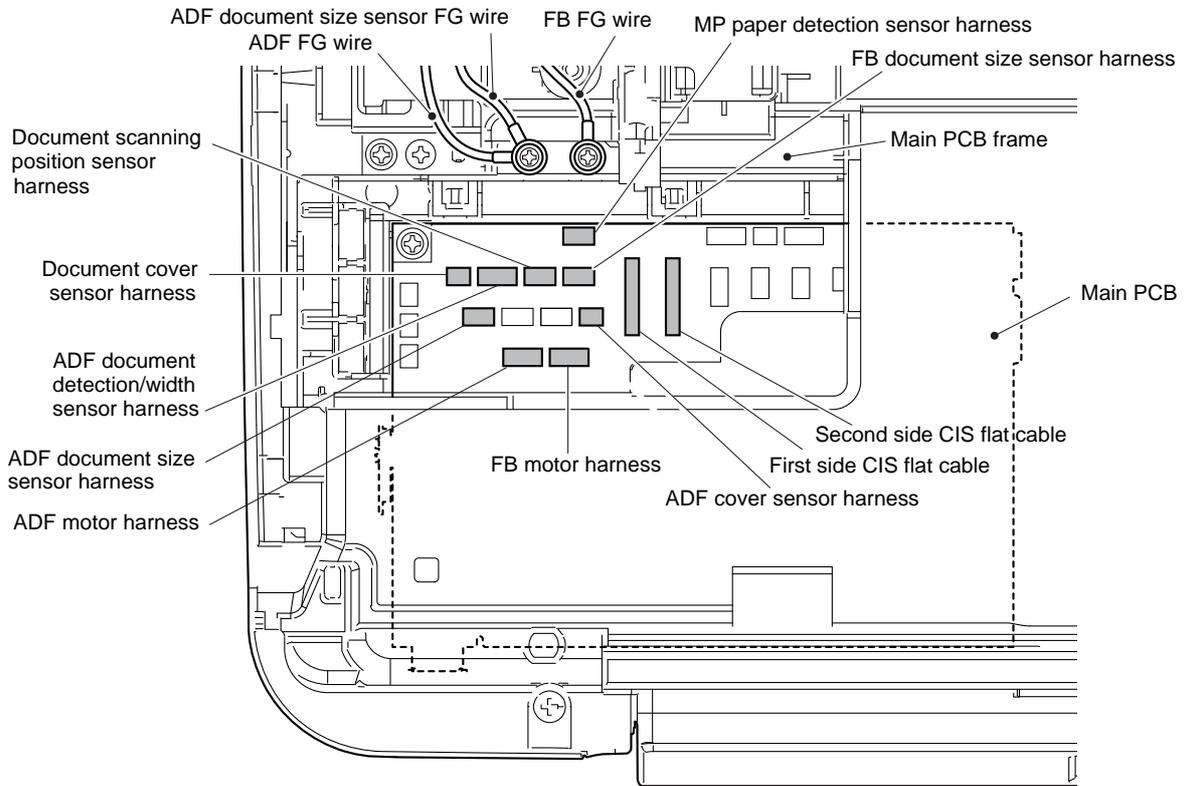


Fig. 3-37

- (4) Disconnect the nine Connectors from the Main PCB.
- (5) Disconnect the two Flat cables from the Main PCB.
- (6) Remove the screw (SCREW BIND M3x6) and remove the ADF FG wire and ADF document size sensor FG wire from the Main PCB frame.
- (7) Remove the screw (SCREW BIND M3x6) and remove the FB FG wire from the Main PCB frame.



**Fig. 3-38**

- (8) Release all the wiring of the Document scanner unit and ADF unit harnesses.
- (9) Release the two Hooks and remove the FFC separator B from the Upper cover.

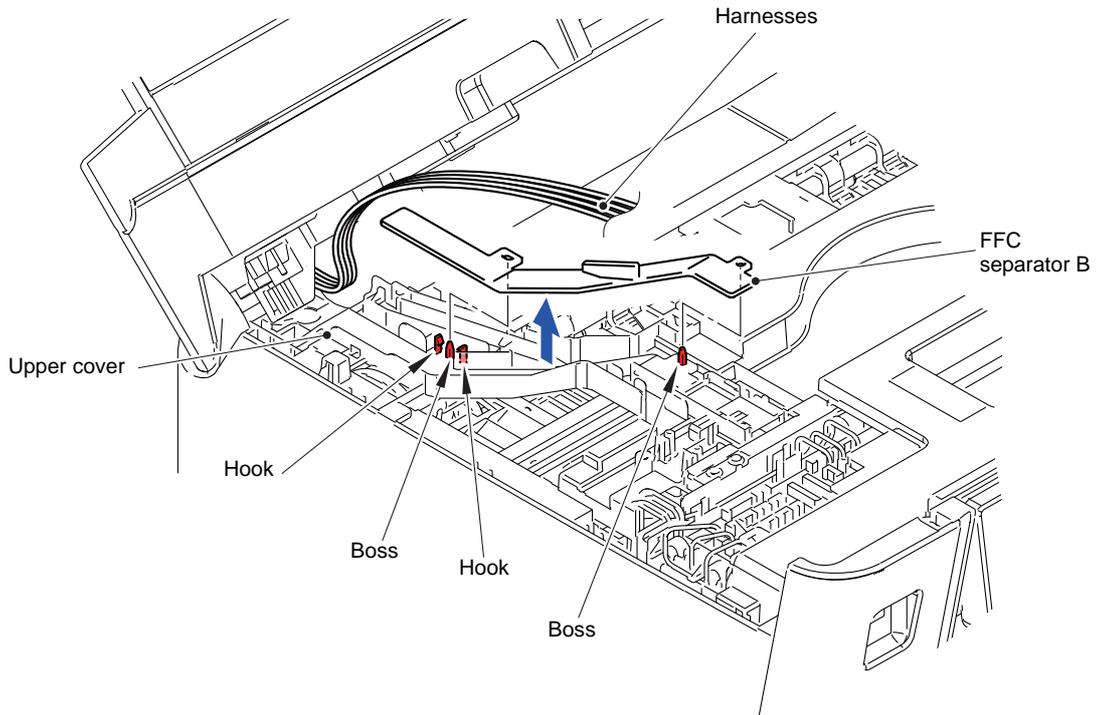


Fig. 3-39

- (10) Release the two Hooks and remove the FFC separator A from the Upper cover.
- (11) Remove the First side CIS flat cable from the Flat core on the FFC separator A.
- (12) Remove the Second side CIS flat cable from the Flat core under the FFC separator A.

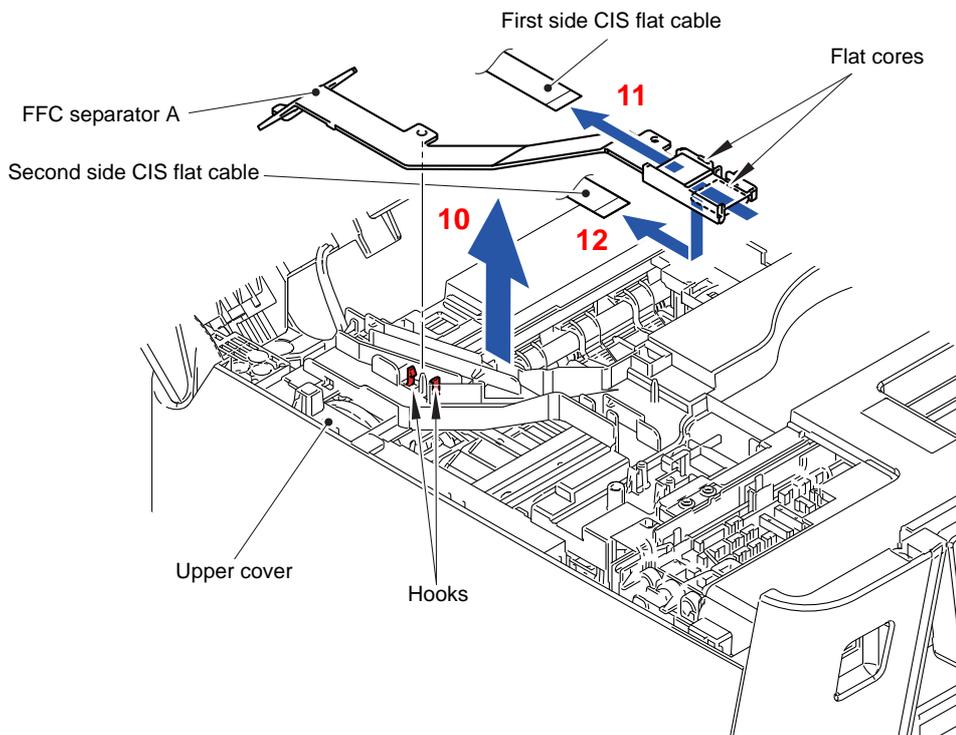


Fig. 3-40

(13) Remove the two screws (TAPTITE BIND B M4x12) from the Main body.

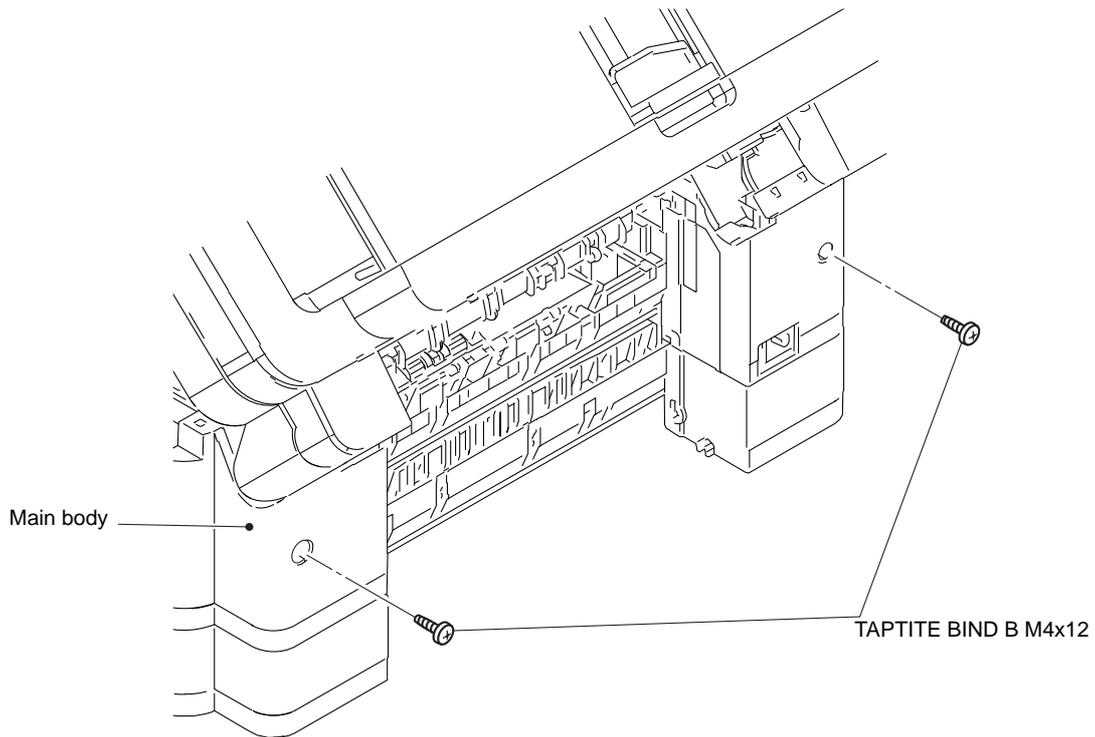


Fig. 3-41

(14) Lift and remove the Document scanner unit from the Main body.

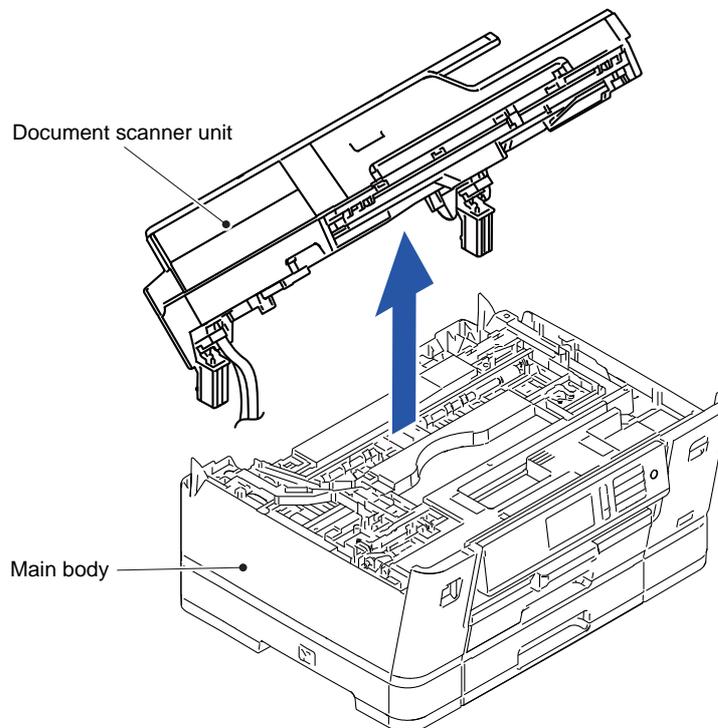


Fig. 3-42

(15) Remove the three screws (TAPTITE BIND B M4x12) each from the left and right FB hinges to remove them from the Document scanner unit

- (16) Remove the screw (TAPTITE CUP B M3x10) from the Document scanner side cover L.
- (17) Insert a flat screwdriver into the cutout and release the section "A" and section "B".
- (18) Slide the Document scanner side cover L in the direction of the arrow and release the Hooks.

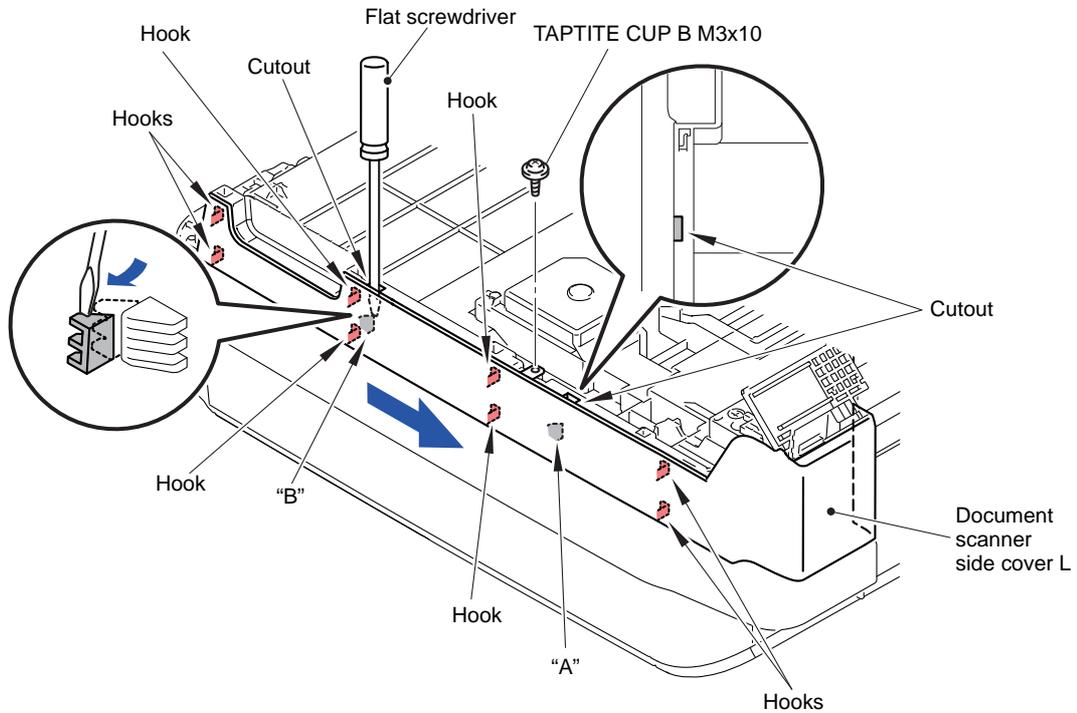


Fig. 3-43

- (19) Release the two Hooks and remove the Document scanner side cover L from the Document scanner unit.

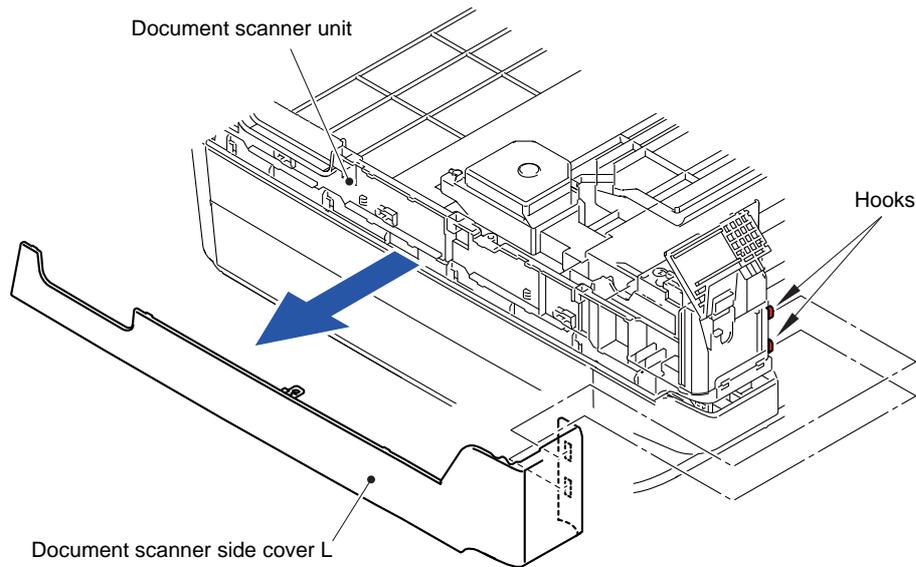


Fig. 3-44

Routing of harnesses: See "3 Scanner harness holder".

## 9.9 Document Scanner Side Cover R/ India model only > Document Scanner Dust Foam

(1) < India model only >

Peel off the Document scanner dust foam from the Document scanner unit.

**Note:** Once removed, the Document scanner dust foam should be replaced with a new one.

(2) Remove the screw (TAPTITE CUP B M3x10) from the Document scanner side cover R.

(3) Insert a flat screwdriver into the cutout and release the section "A" and section "B".

(4) Slide the Document scanner side cover R in the direction of the arrow and release the eight Hooks.

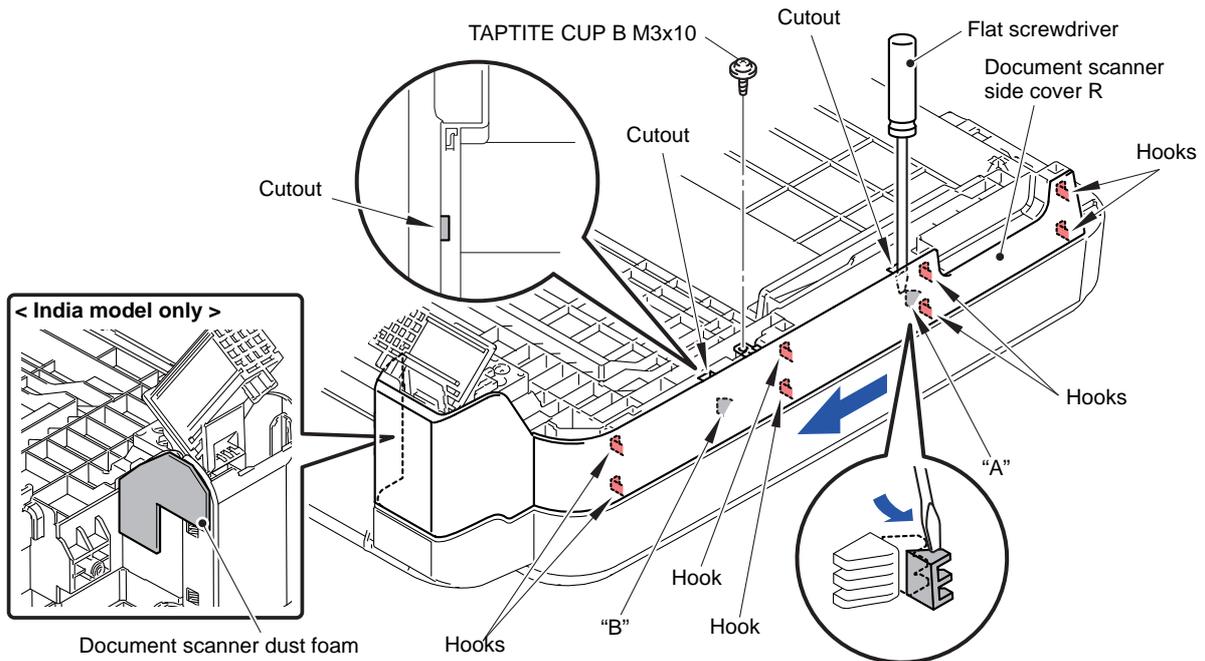


Fig. 3-45

(5) Release the two Hooks and remove the Document scanner side cover R from the Document scanner unit.

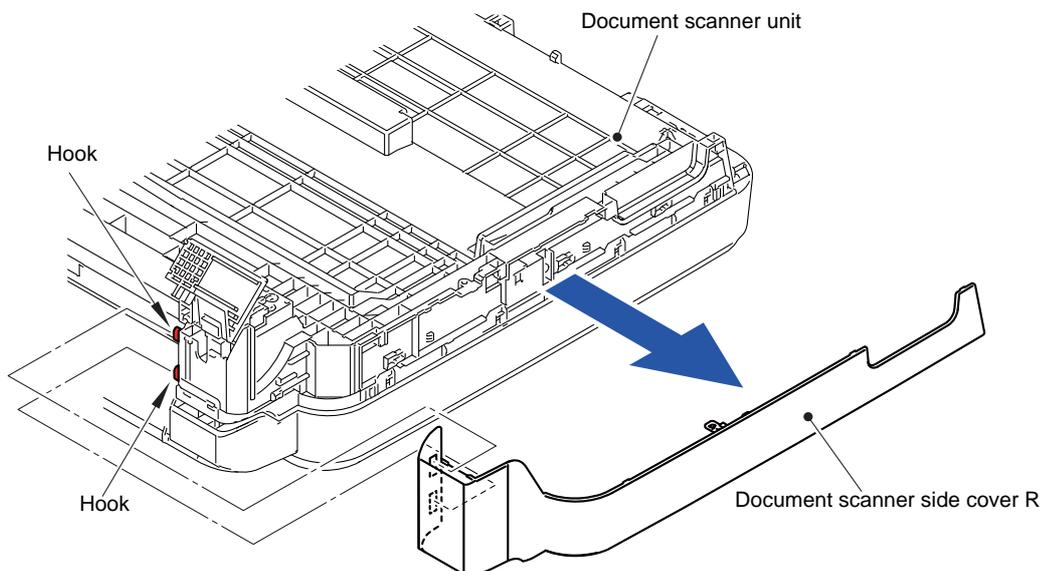


Fig. 3-46

## 9.10 ADF Unit/Document Scanner Unit

- (1) Turn the Document scanner unit right side up.
- (2) Remove the two screws (TAPTITE BIND B M4x12 M9) from the Document scanner unit.
- (3) While pushing the Lock lever of the Document scanner unit, open the ADF unit.

**Note:** If you lift the ADF unit in the step (4) without fully opened, it is dangerous because the ADF hinges are unexpectedly and abruptly opened with a strong force.

- (4) Remove the ADF unit from the Document scanner unit.

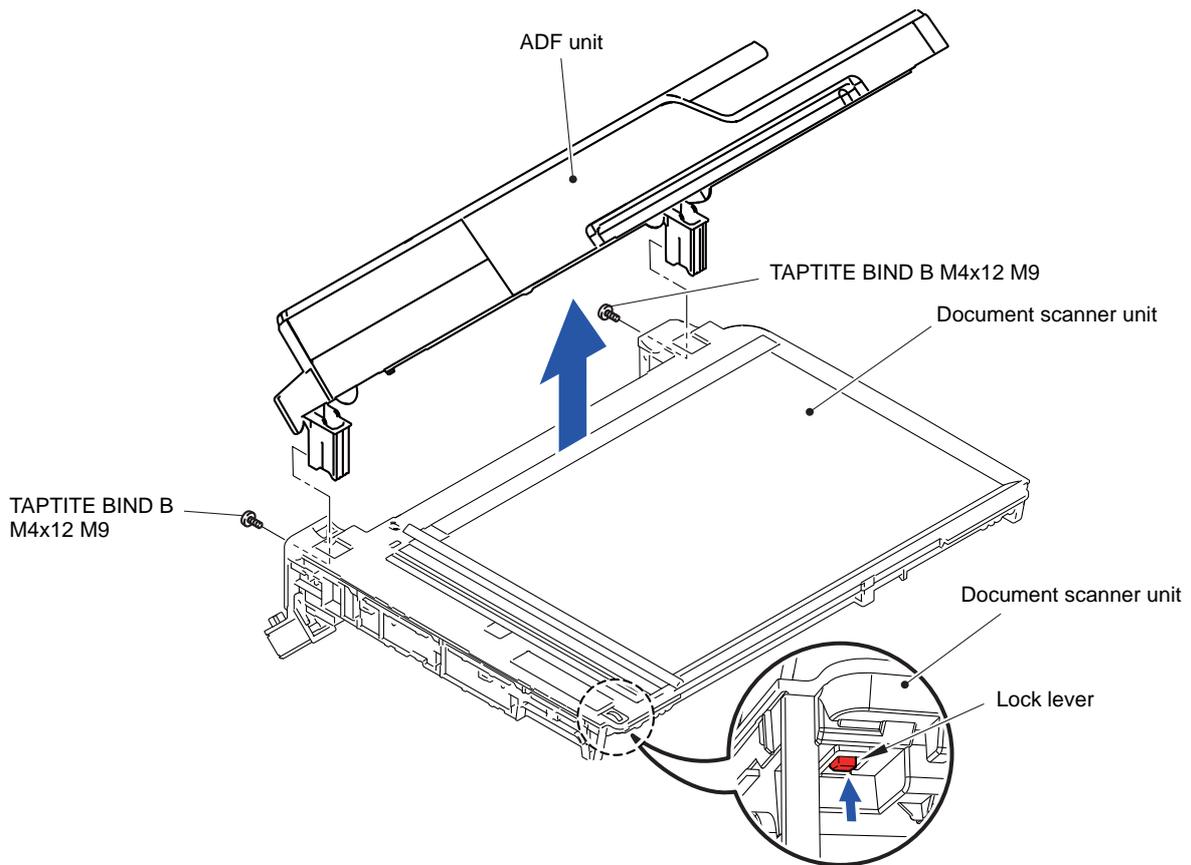


Fig. 3-47

### 9.11 ADF Front Cover

- (1) Turn the ADF unit upside down.
- (2) Remove the four screws (TAPTITE CUP B M3x10) from the ADF front cover.
- (3) Release the two Bosses and remove the ADF front cover from the ADF unit.

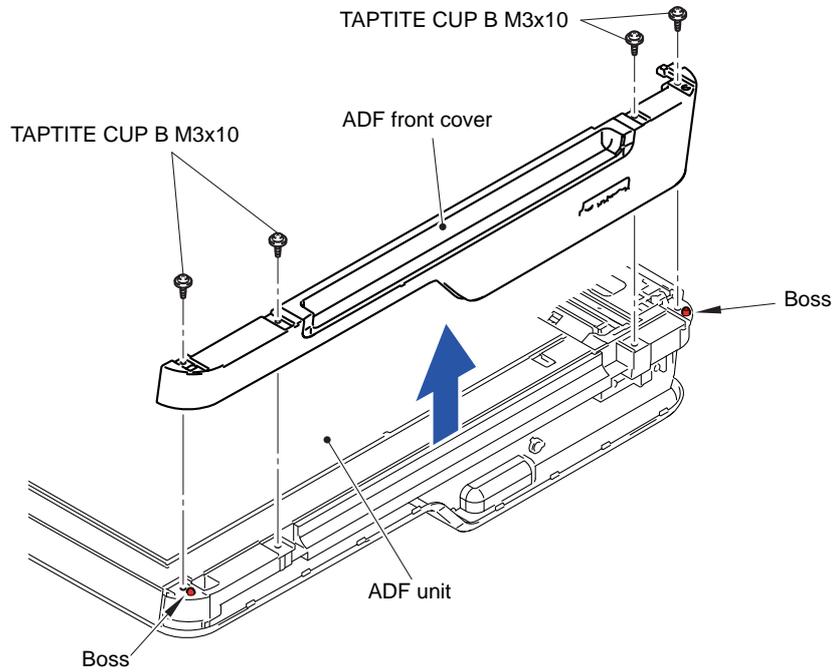


Fig. 3-48

### 9.12 ADF Side Cover

- (1) Slide the ADF side cover in the direction of the arrow and remove the ADF unit.

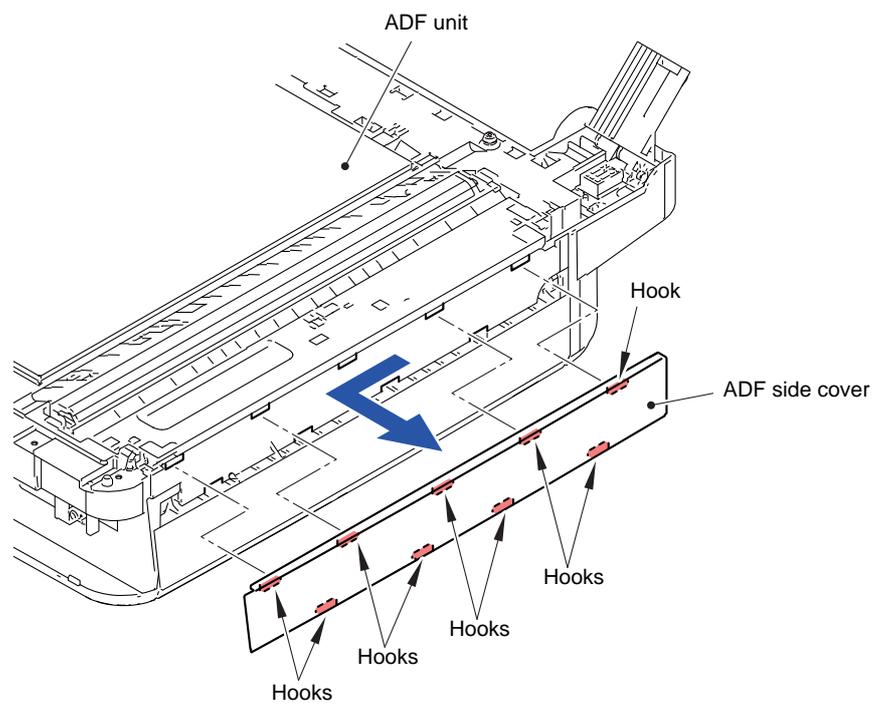


Fig. 3-49

### 9.13 ADF Rear Cover

- (1) Open the ADF cover ASSY.
- (2) Release the seven Hooks and remove the ADF rear cover from the ADF unit.

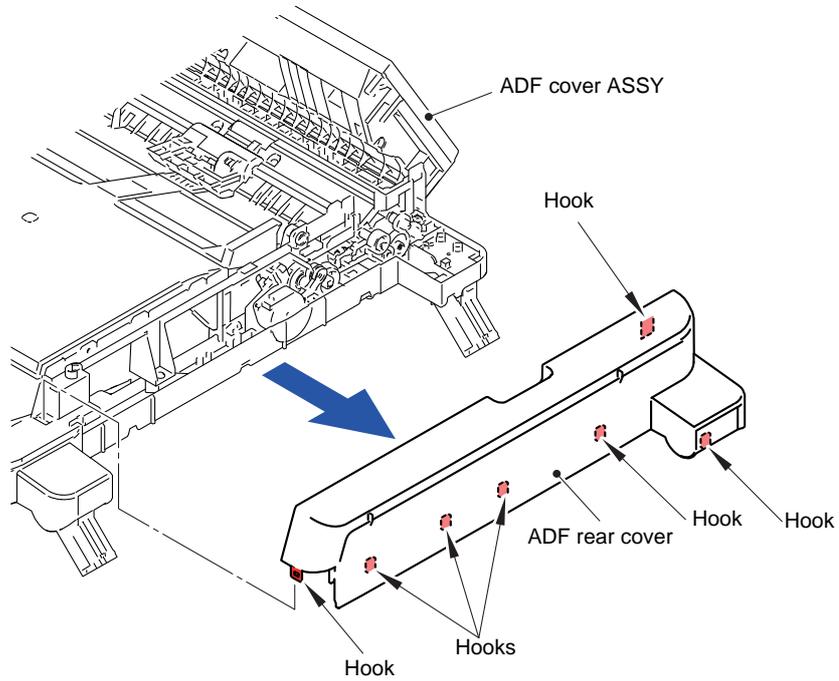


Fig. 3-50

### 9.14 ADF Cover

- (1) Release the two Pins and remove the ADF cover from the ADF unit.

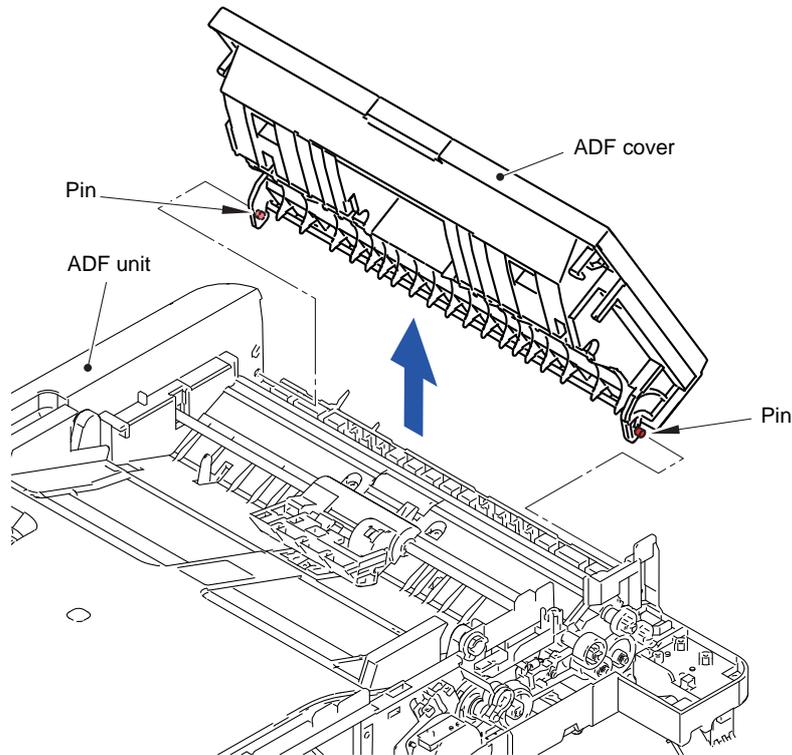


Fig. 3-51

## 9.15 Document Separation Roller ASSY

- (1) Turn the Bushing of the Document separation roller ASSY in the direction of the arrow 1a to unlock it.

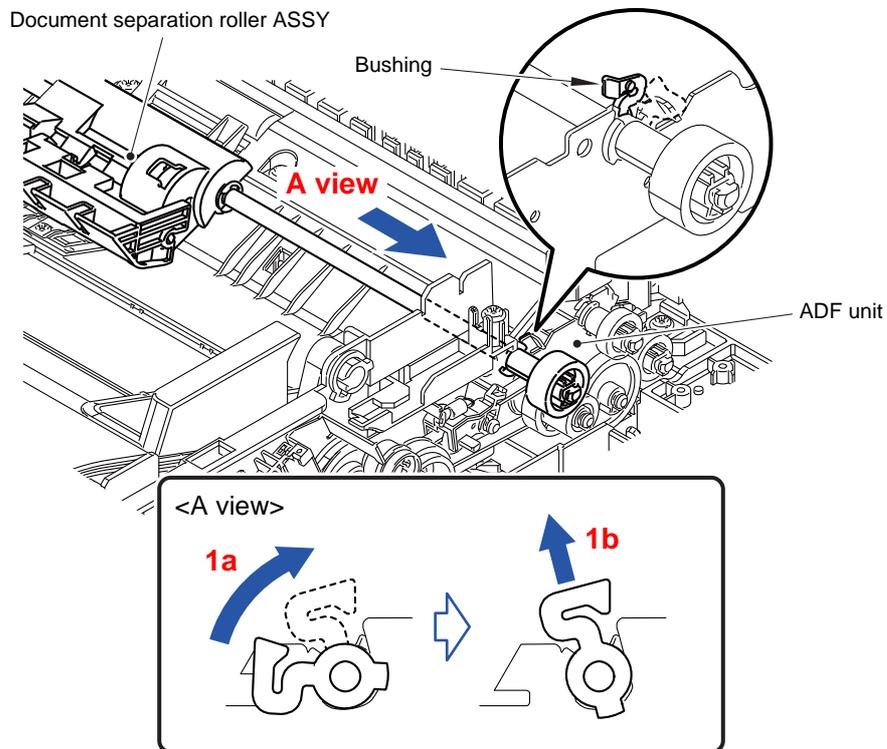


Fig. 3-52

- (2) Remove the Document separation roller ASSY from the ADF unit.

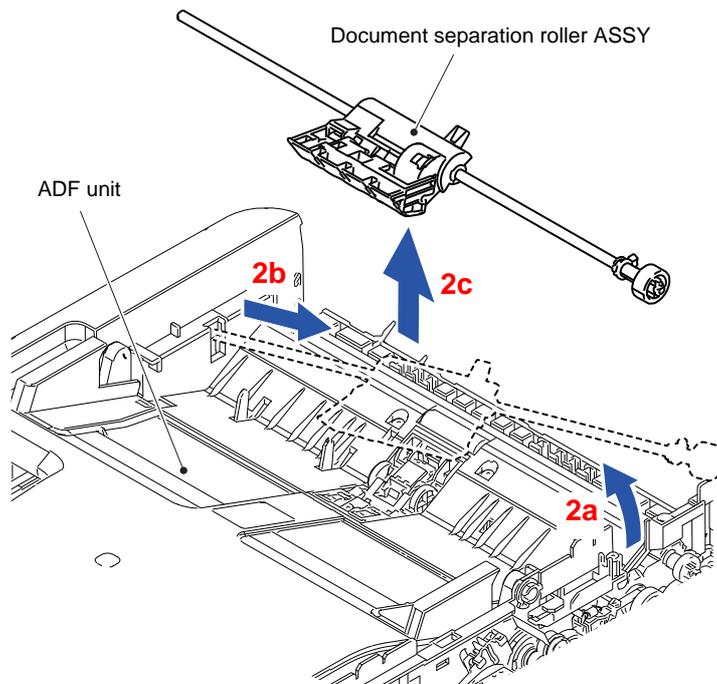


Fig. 3-53

## 9.16 ADF Separation Pad Holder ASSY

- (1) Remove the screw (TAPTITE CUP B M3x10) from the ADF separation pad holder ASSY.
- (2) Release the two Hooks and remove the ADF separation pad holder ASSY from the ADF unit.

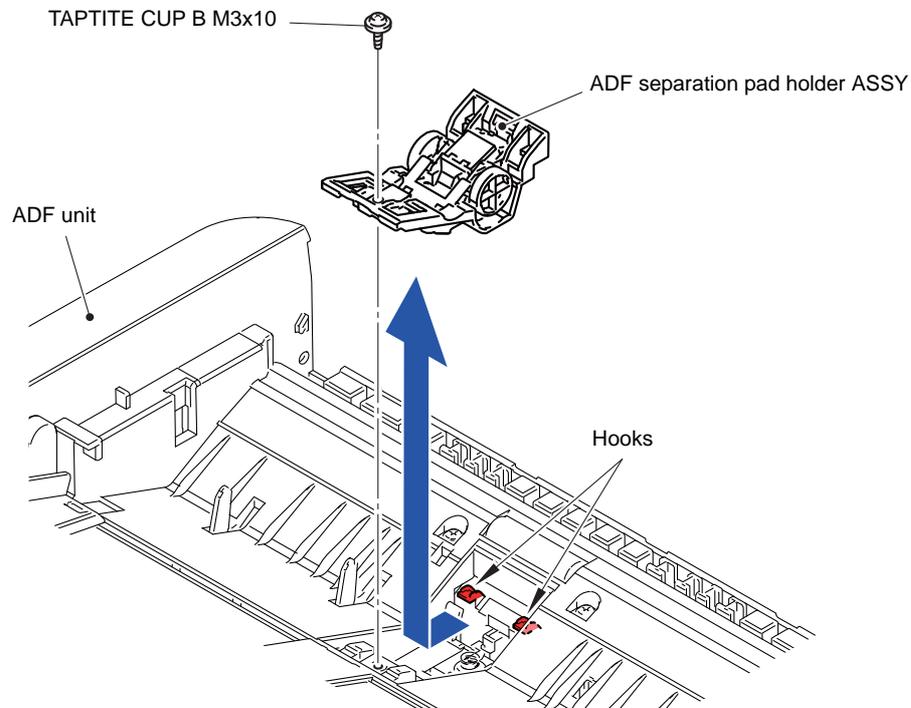


Fig. 3-54

## 9.17 ADF Document Support

- (1) Remove the screw (TAPTITE CUP B M3x10) and remove the ADF document size FG wire 1 and ADF document size FG wire 2.
- (2) Disconnect the Connector from the ADF document size harness unit.

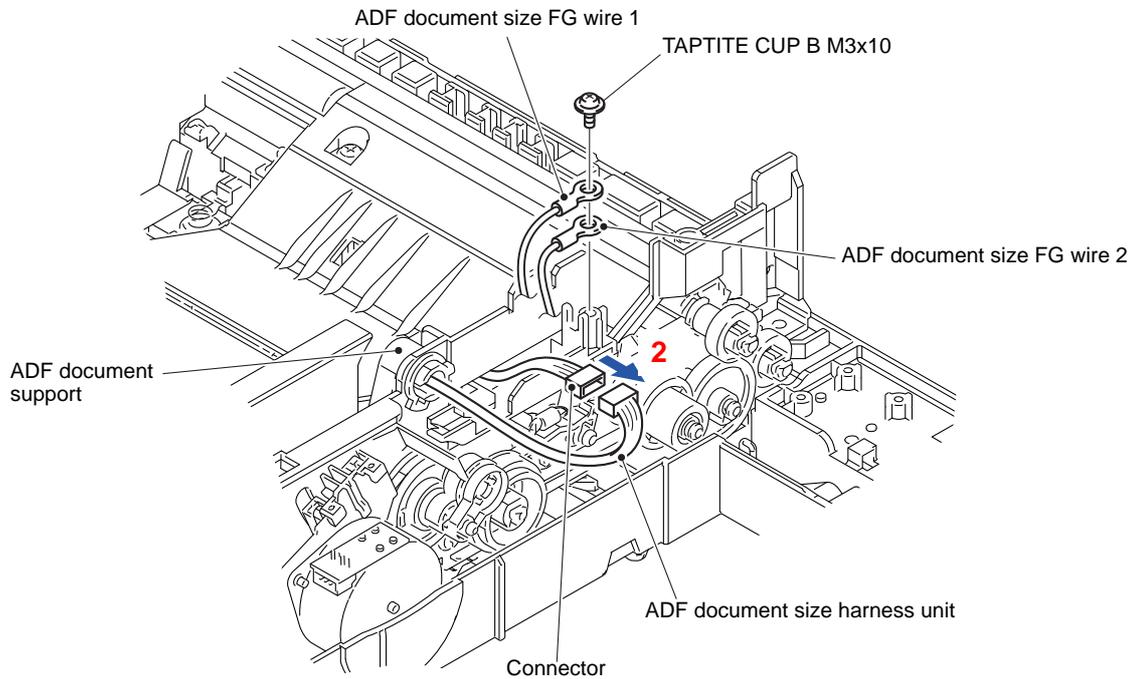


Fig. 3-55

- (3) Release the two Pins and turn the ADF document support to the position shown in the figure.
- (4) Release the two Bushings. While removing the Harness, remove the ADF document support from the ADF unit.

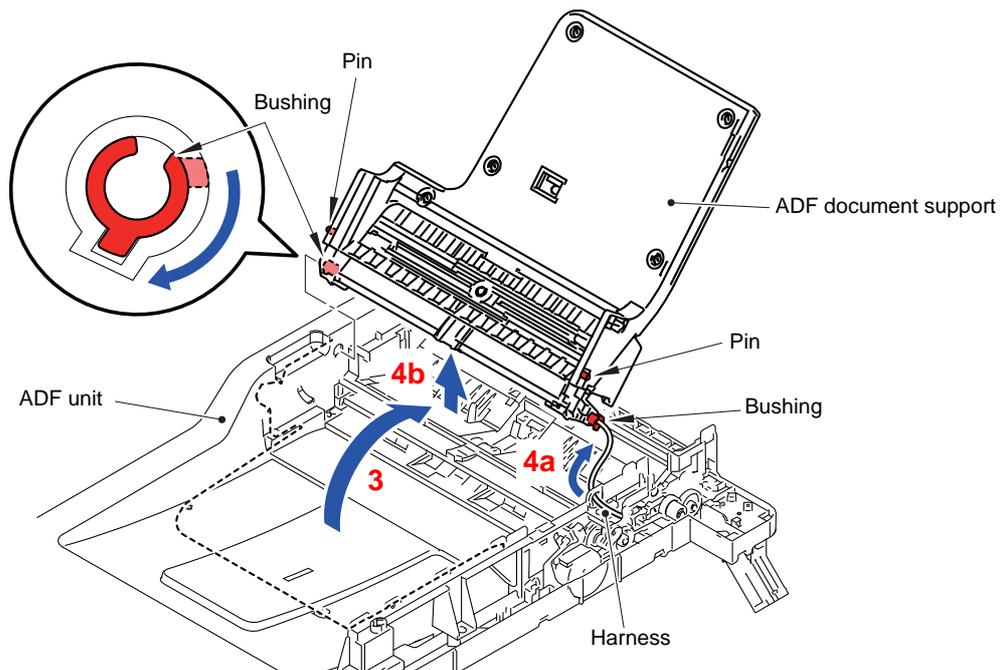
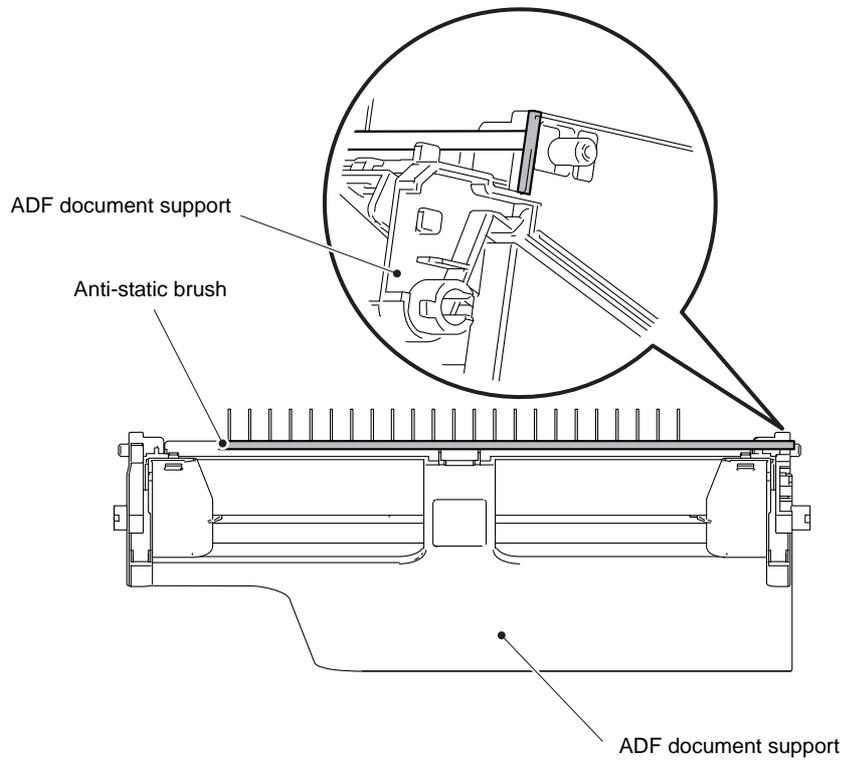


Fig. 3-56

**Assembling Note:** When mounting a new ADF document support, be sure to attach the anti-static brush as shown in the figure below.

< Where to attach the Anti-static brush >



**Fig. 3-57**

## 9.18 ADF Hinge

- (1) Turn the ADF unit upside down.
- (2) Remove the three screws (TAPTITE CUP B M2.6x10) from the ADF unit.

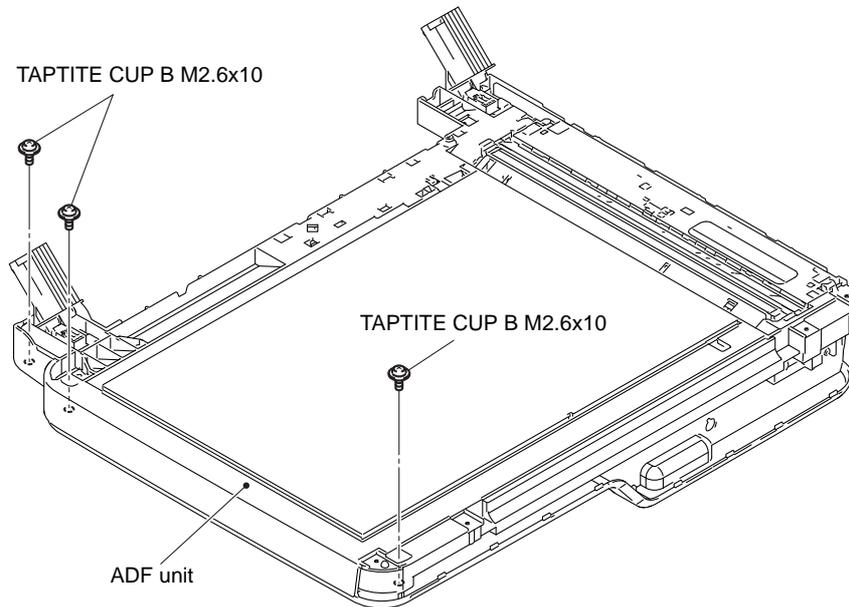


Fig. 3-58

- (3) Turn the ADF unit right side up.
- (4) Remove the six screws (TAPTITE CUP B M3x10), the two screws (TAPTITE CUP B M3x12) and remove the Document cover top ASSY from the ADF unit.

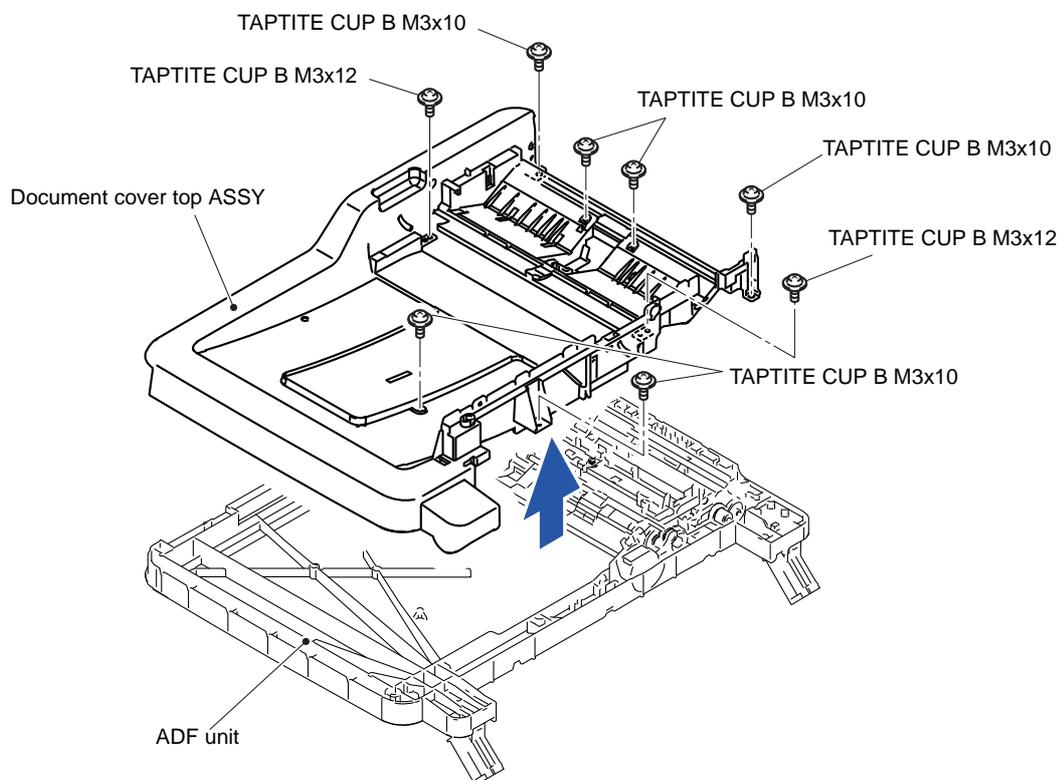


Fig. 3-59

- (5) Remove the screw (TAPTITE BIND B M3x14) from the Document cover base.  
**Assembling Note:** Be sure to mount the ADF FG wire.

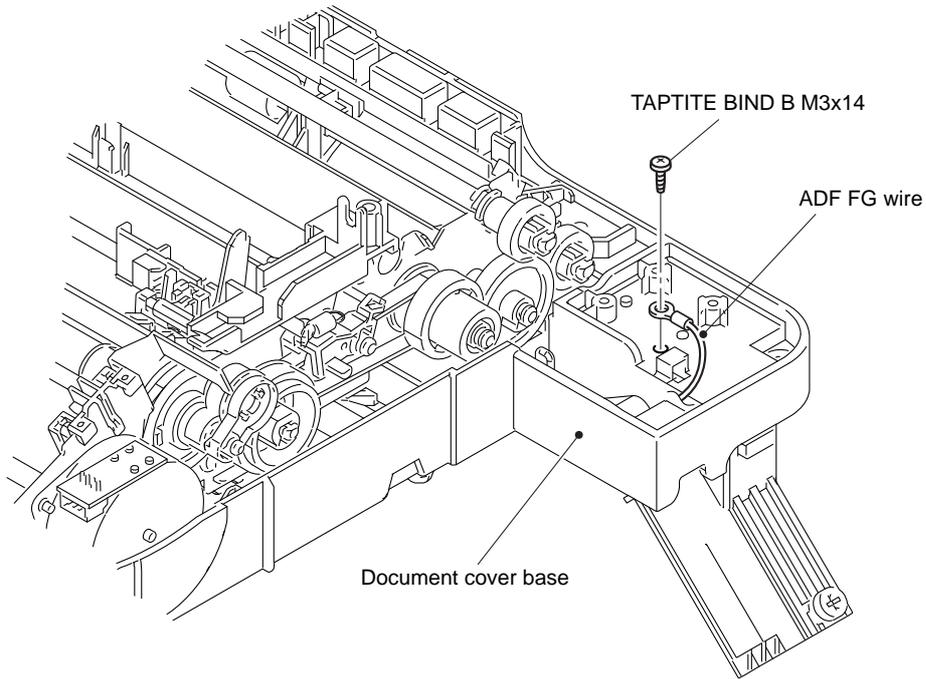


Fig. 3-60

- (6) Turn the ADF unit upside down.  
(7) Remove the three screws (TAPTITE CUP B M3x10) and remove the ADF hinge from the Document cover base.  
(8) In the same way, remove the R side as well using the steps (5) to (7).

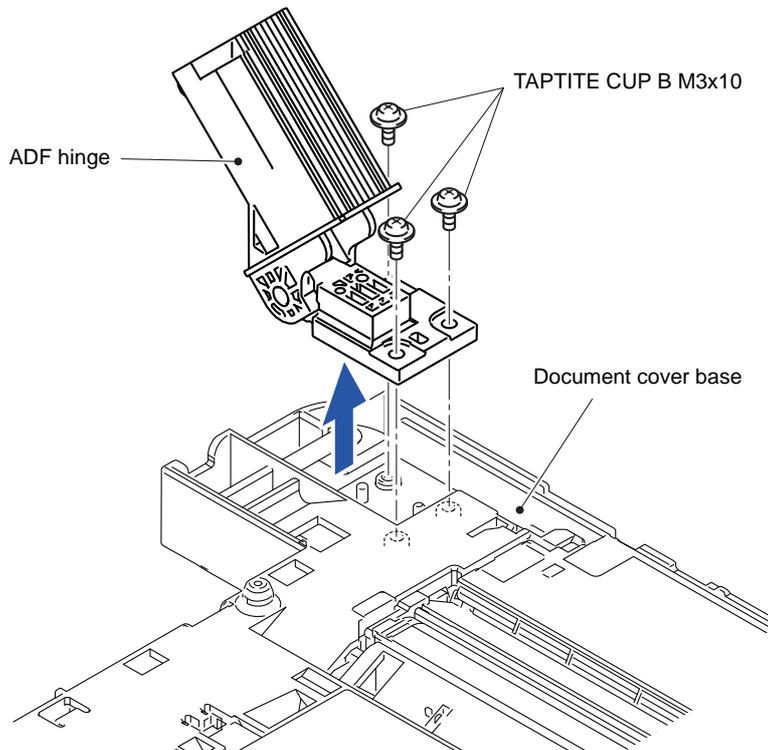


Fig. 3-61

### 9.19 ADF Document Detection Sensor/ADF Document Width Sensor PCB

- (1) Turn the ADF unit right side up.
- (2) Push the Lock arm in the direction of the arrow 2a and remove the ADF document detection sensor/ADF document width sensor PCB from the Lower doc chute ASSY.
- (3) Disconnect the Connector from the ADF document detection sensor/ADF document width sensor PCB.

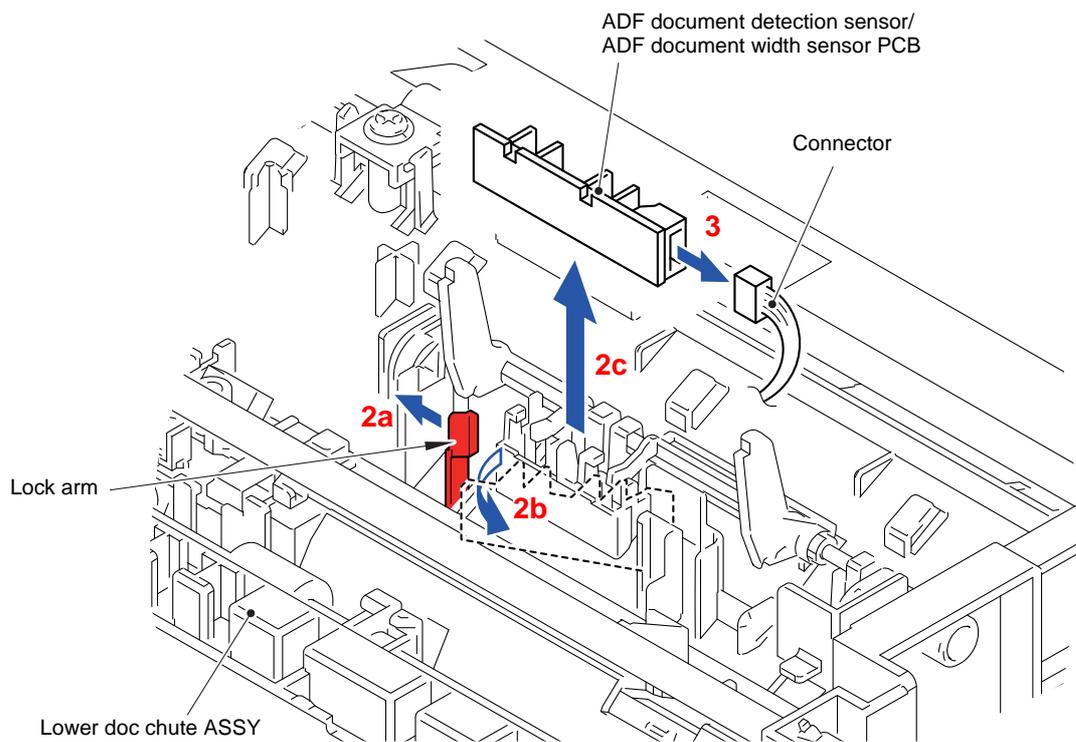


Fig. 3-62

## 9.20 Document Scanning Position Sensor PCB

- (1) Turn the Bushing of the Document feed roller 1 in the direction of the arrow 1a to unlock it.
- (2) Remove the Document feed roller 1 from the Lower doc chute ASSY.

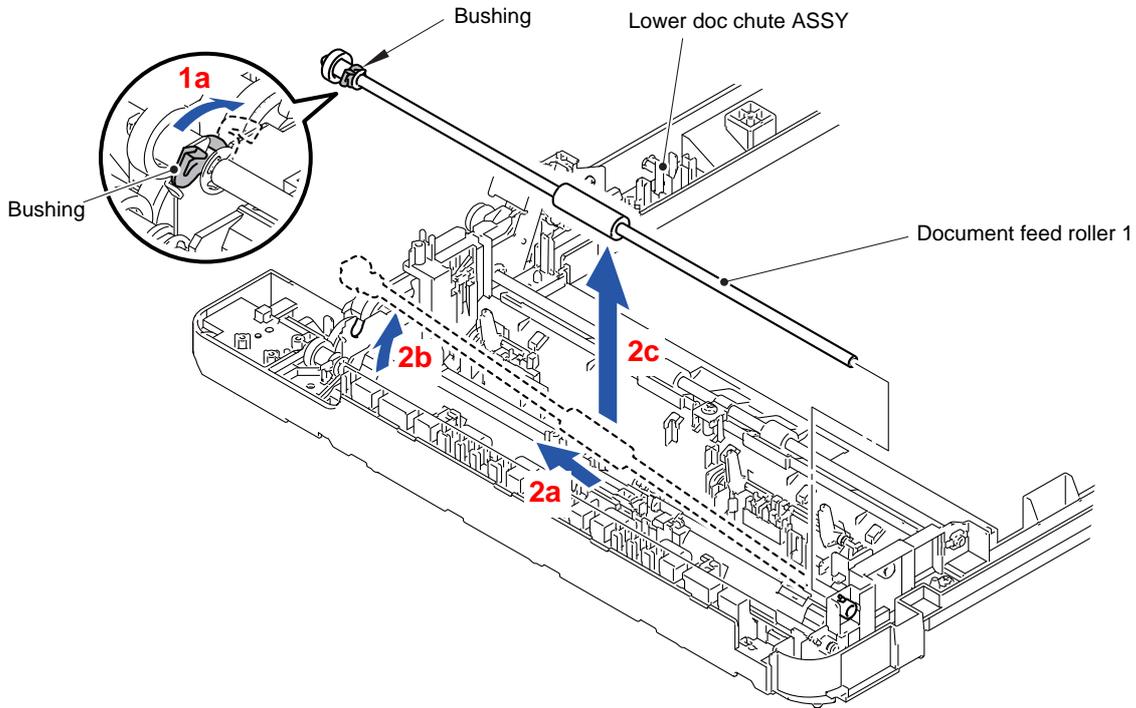


Fig. 3-63

- (3) Keep the Actuator R at the position shown in the figure.
- (4) Push the Lock arm in the direction of the arrow 4a and release the Hook. Remove the Document scanning position sensor PCB from the Lower doc chute ASSY.
- (5) Disconnect the Connector from the Document scanning position sensor PCB.

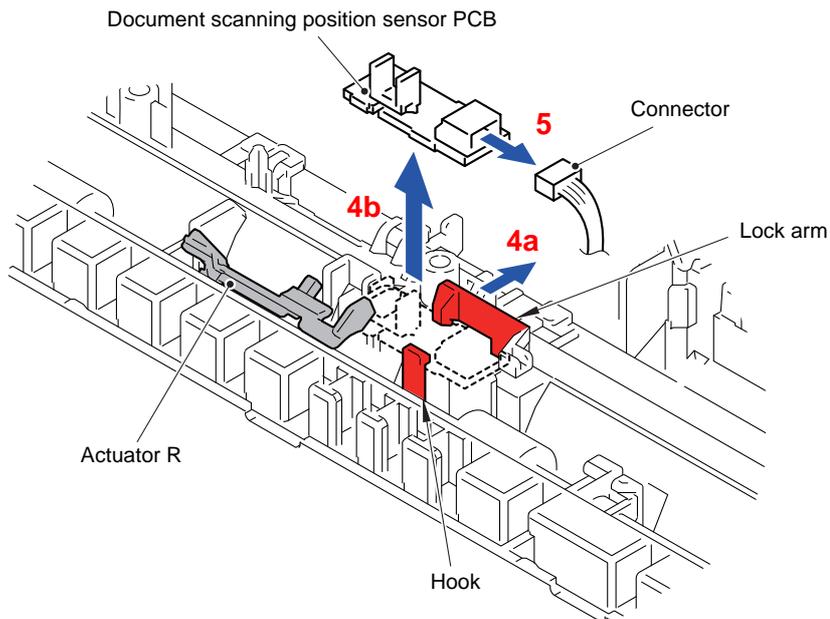


Fig. 3-64

## 9.21 Second Side CIS Flat Cable/Second Side CIS Unit

- (1) Turn the ADF unit upside down.
- (2) Remove the screw (TAPTITE CUP B M3x10) from the Exit support plate.
- (3) Slightly flip the Document sponge which is fixed with double-sided adhesive tape and remove the Exit support plate from the ADF unit.

**Note:** When you flip the Document sponge, be careful not to crease and/or stain the Document sponge.

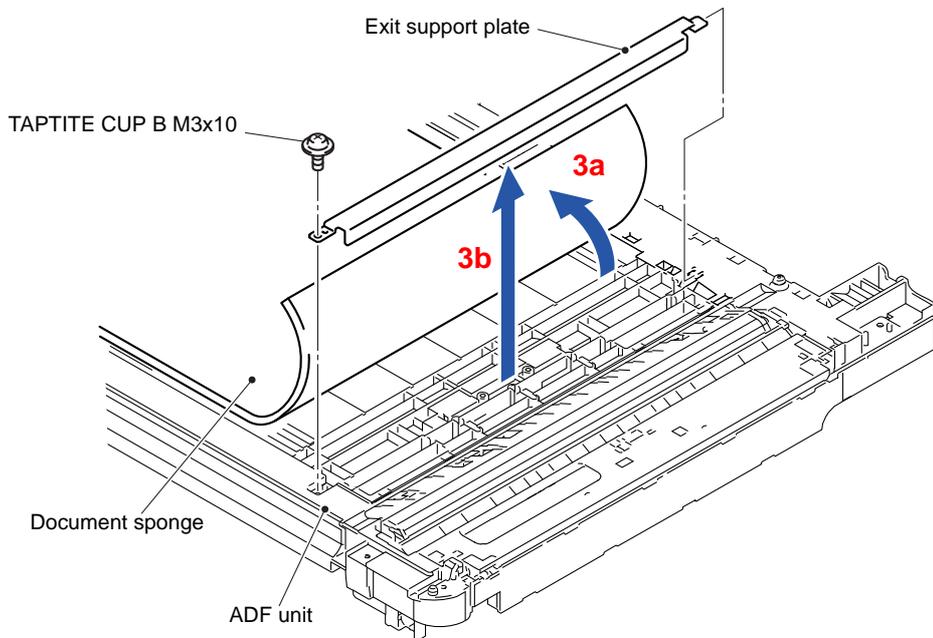


Fig. 3-65

- (4) Turn the ADF unit right side up.
- (5) Remove the two screws (TAPTITE CUP B M3x10) from the Lower doc chute ASSY.

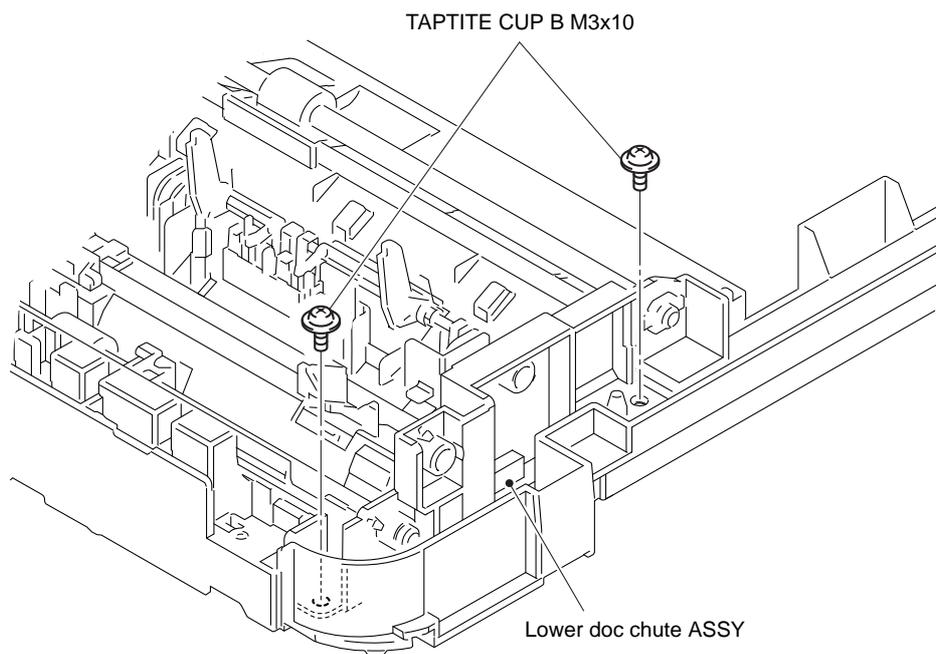


Fig. 3-66

- (6) Disconnect the Second side CIS flat cable from the Second side CIS unit.

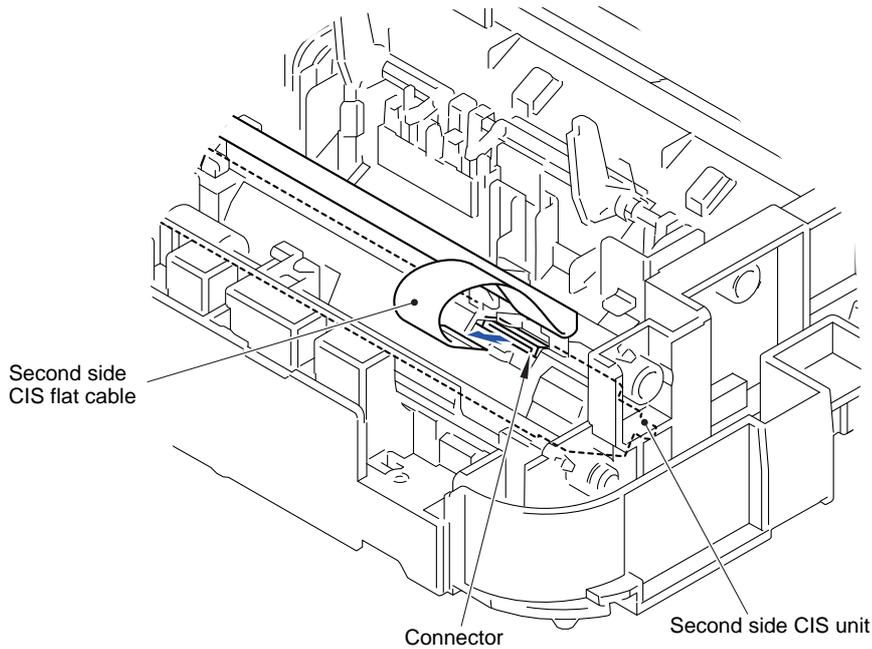


Fig. 3-67

- (7) Slightly lift the Lower doc chute ASSY and remove the four double-sided adhesive tapes.
- (8) Remove the tape attached to the Flat cores and pull out the Second side CIS flat cable from the two Flat cores, Lower doc chute ASSY and Document cover base ASSY.

**Note:** Skip this step when you replace the Second side CIS unit only without replacing the Second side CIS flat cable.

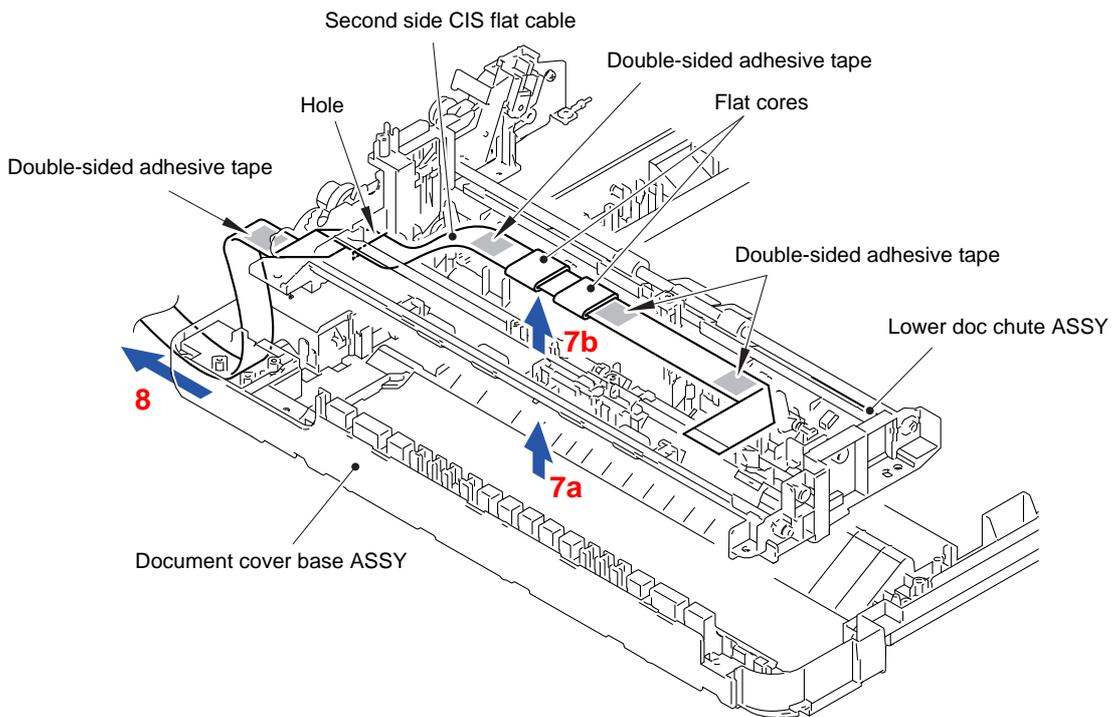


Fig. 3-68

**Assembling Note:** Assemble a new Second side CIS flat cable by bending the Second side CIS flat cable and affixing the Double-sided adhesive tape as shown in the figure below.

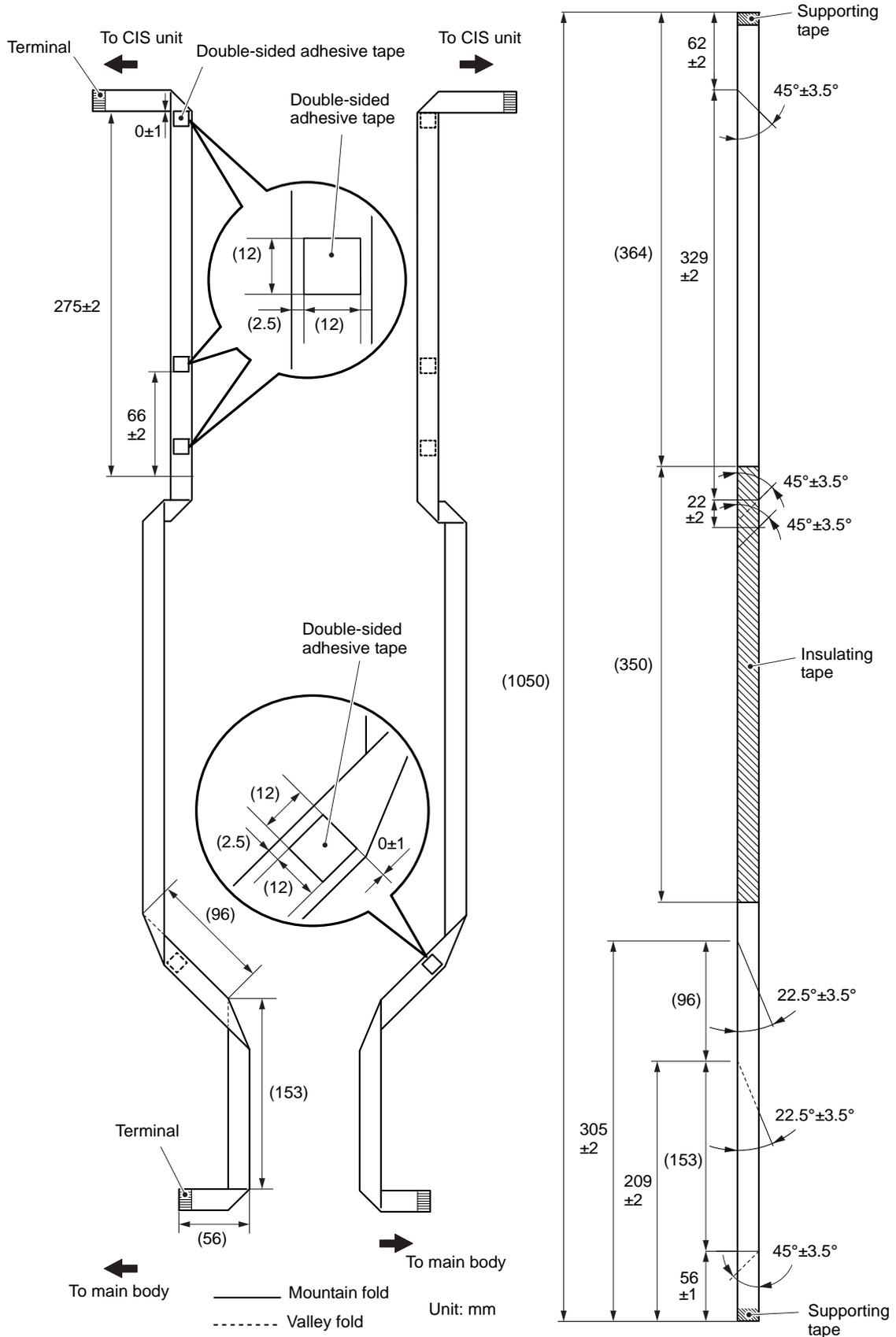
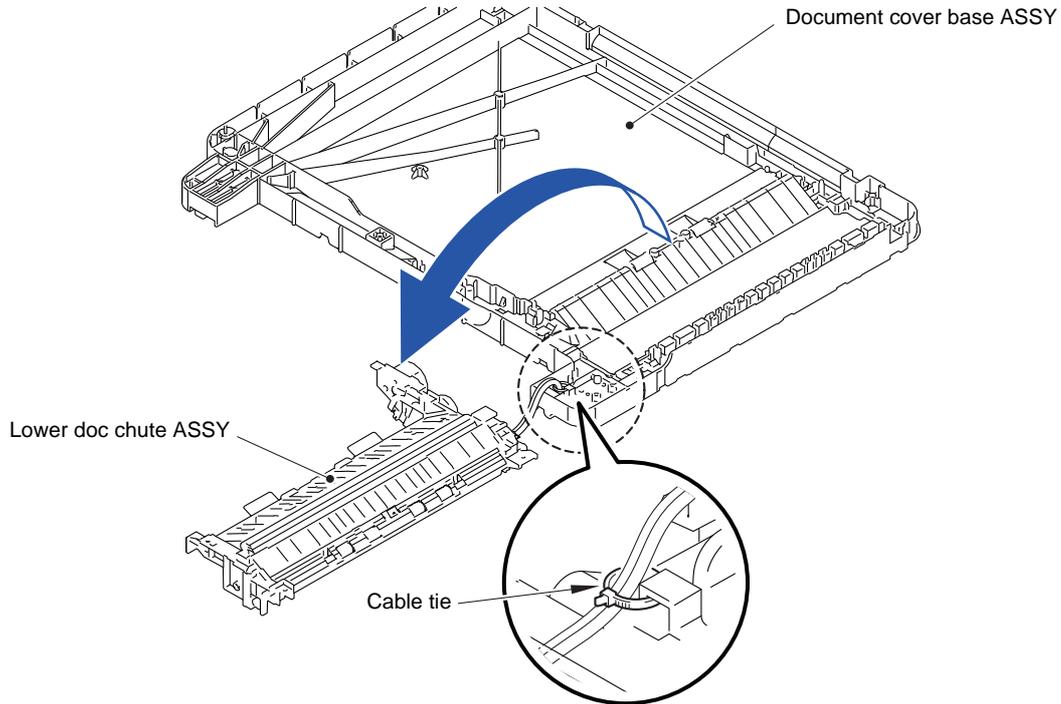


Fig. 3-69

(9) Place the Lower doc chute ASSY and Document cover base ASSY as shown in the figure.

**Note:** Perform this step without cutting the Cable tie.

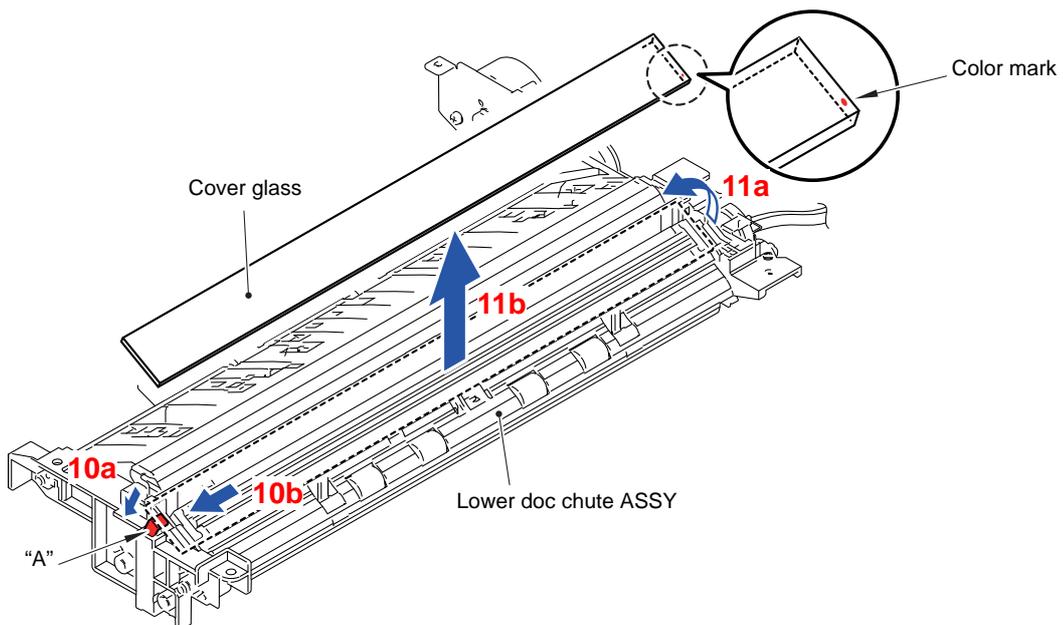


**Fig. 3-70**

(10) While pressing the section "A" in the direction of the arrow 10a, slide the Cover glass in the direction of the arrow 10b.

(11) Remove the Cover glass from the Lower doc chute ASSY in the order of the arrow 11a and arrow 11b.

**Assembling Note:** When mounting the Cover glass, mount it as the red mark comes to the position shown in the figure.



**Fig. 3-71**

- (12) Remove the Second side CIS unit from the Lower doc chute ASSY.
- (13) Remove the CIS spacer from the Second side CIS unit.

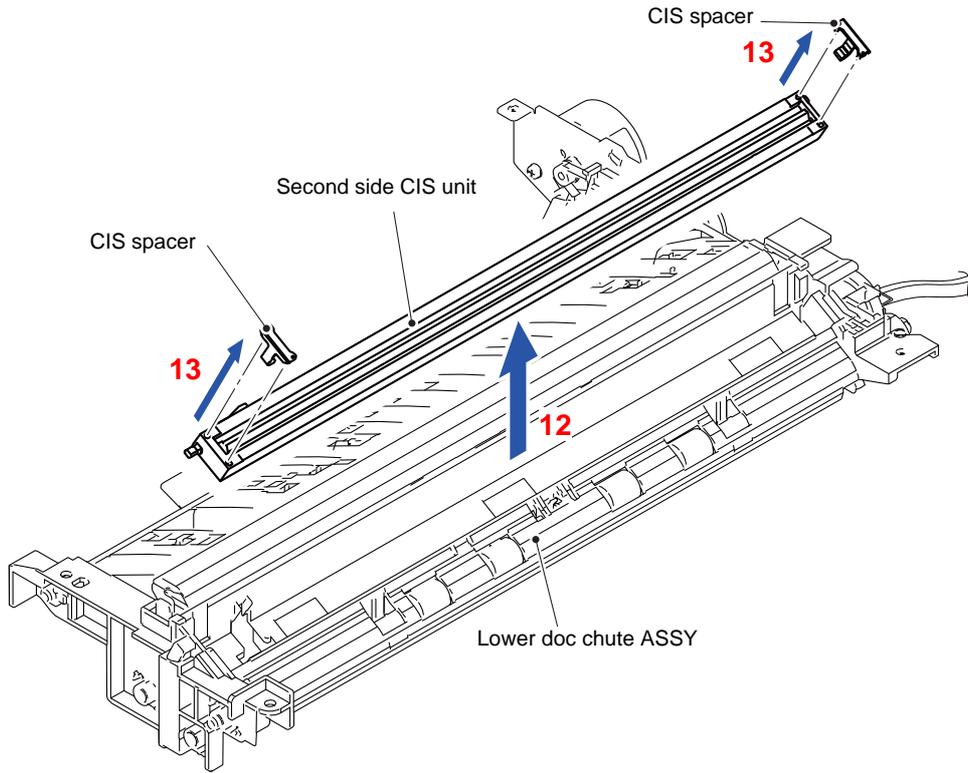


Fig. 3-72

**9.22 First Side CIS Unit/First Side CIS Flat Cable**

- (1) Turn the Document scanner unit upside down.
- (2) Remove the four screws (TAPTITE CUP B M2.6x10).

**Assembling Note:** When tightening the screw (TAPTITE CUP B M2.6x10), tighten them in the order shown in the figure.

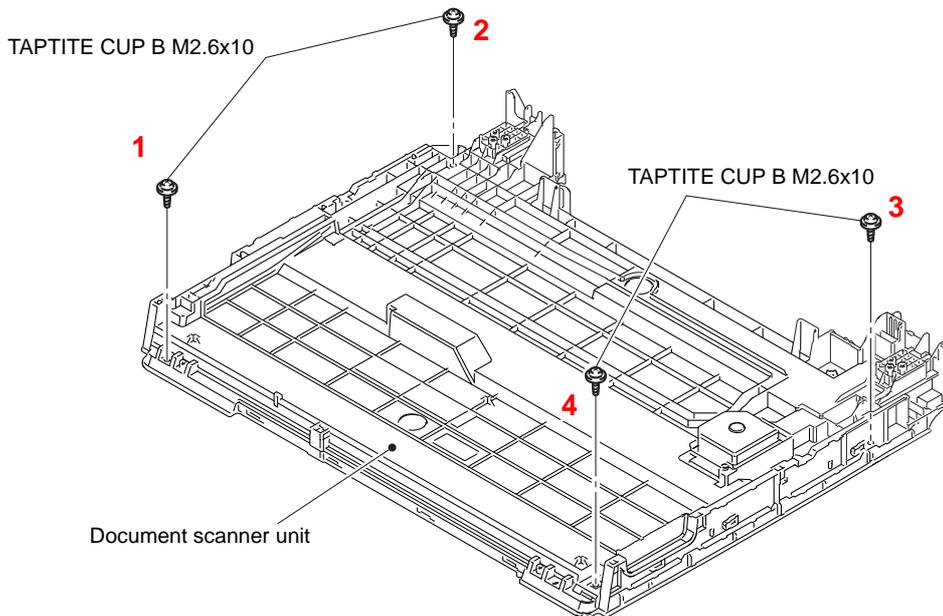


Fig. 3-73

- (3) Turn the Document scanner unit right side up.
- (4) Release the four Hooks and lift the rear of the Scanner top cover ASSY as shown in the figure.
- (5) Release the four front Hooks.
- (6) While holding down the Lock lever, remove the Scanner top cover ASSY from the Scanner base.

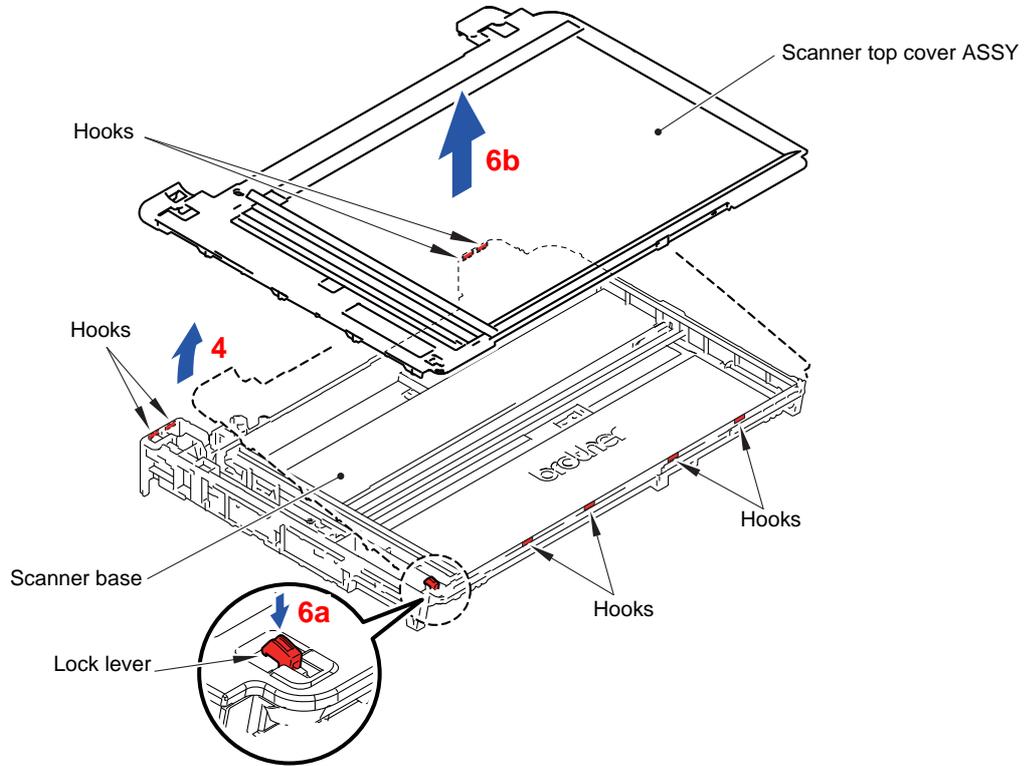


Fig. 3-74

**Note:** Be careful not to lose the Lock lever. If the Lock lever comes off, mount it as shown in the figure.

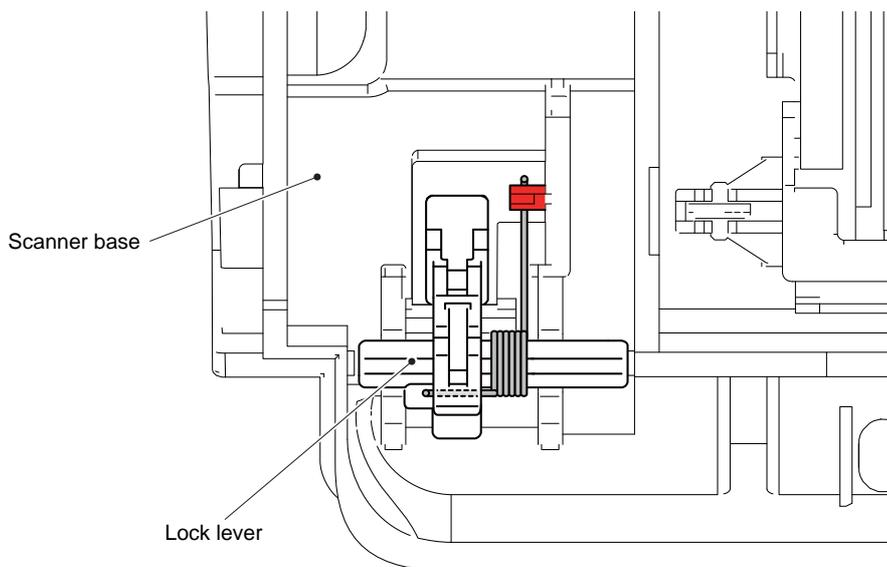
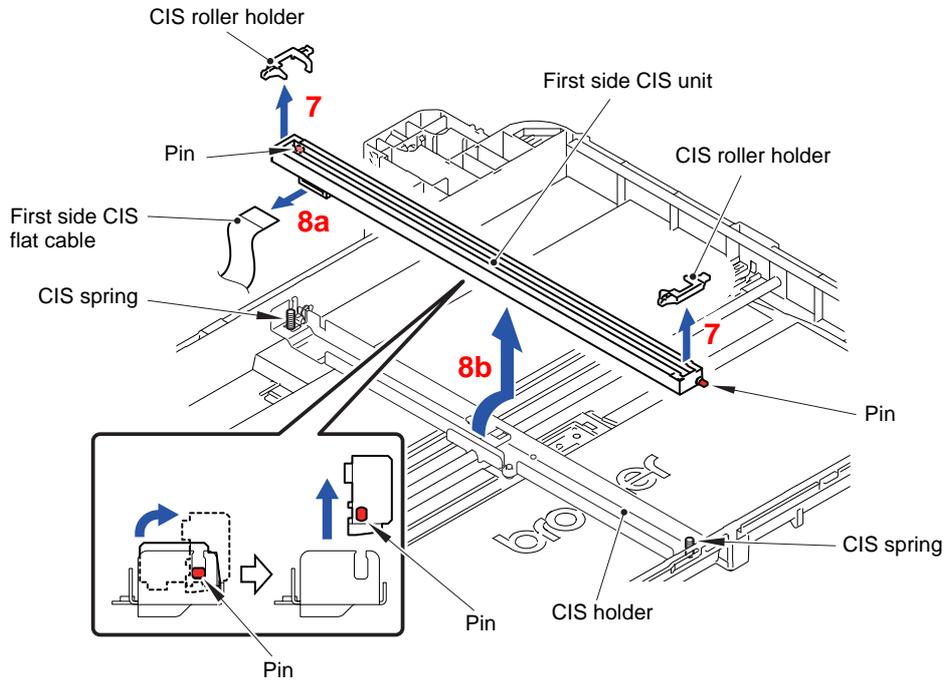


Fig. 3-75

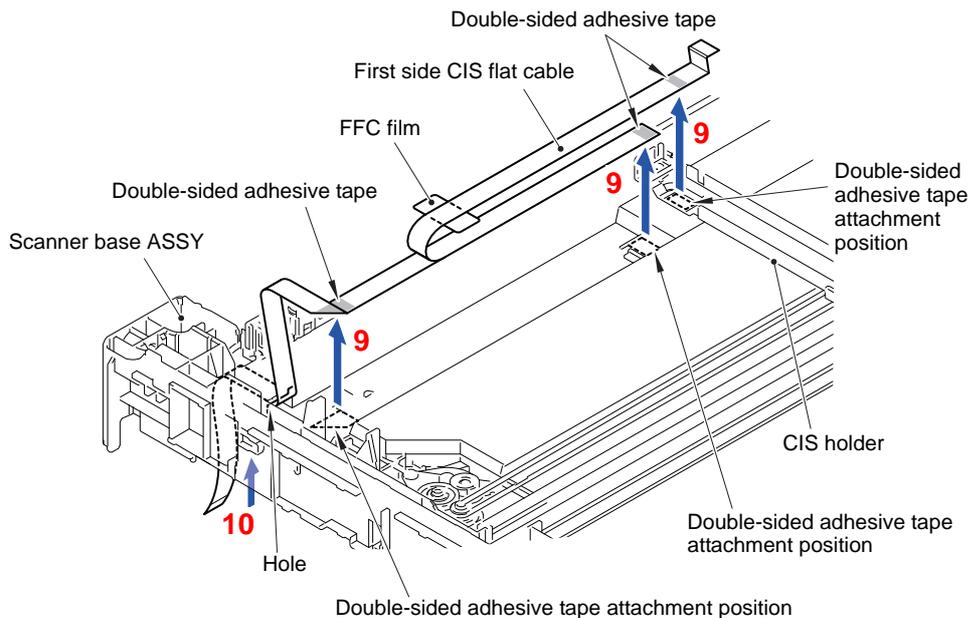
- (7) Remove the two CIS roller holder from the First side CIS unit.
- (8) Disconnect the First side CIS flat cable from the First side CIS unit and remove the First side CIS unit from the CIS holder.

**Note:** When removing the First side CIS unit, be careful not to lose the CIS spring.



**Fig. 3-76**

- (9) Peel off the First side CIS flat cable which is secured at three locations with the Double-sided adhesive tape from the Scanner base ASSY.
- (10) Pull out the First side CIS flat cable from the Hole of the Scanner base ASSY.
- (11) Peel off the FFC film which is secured with Double-sided adhesive tape from the First side CIS flat cable.



**Fig. 3-77**

**Assembling Note:** Assemble a new First side CIS flat cable by bending the First side CIS flat cable and affixing the Double-sided adhesive tape as shown in the figure below.

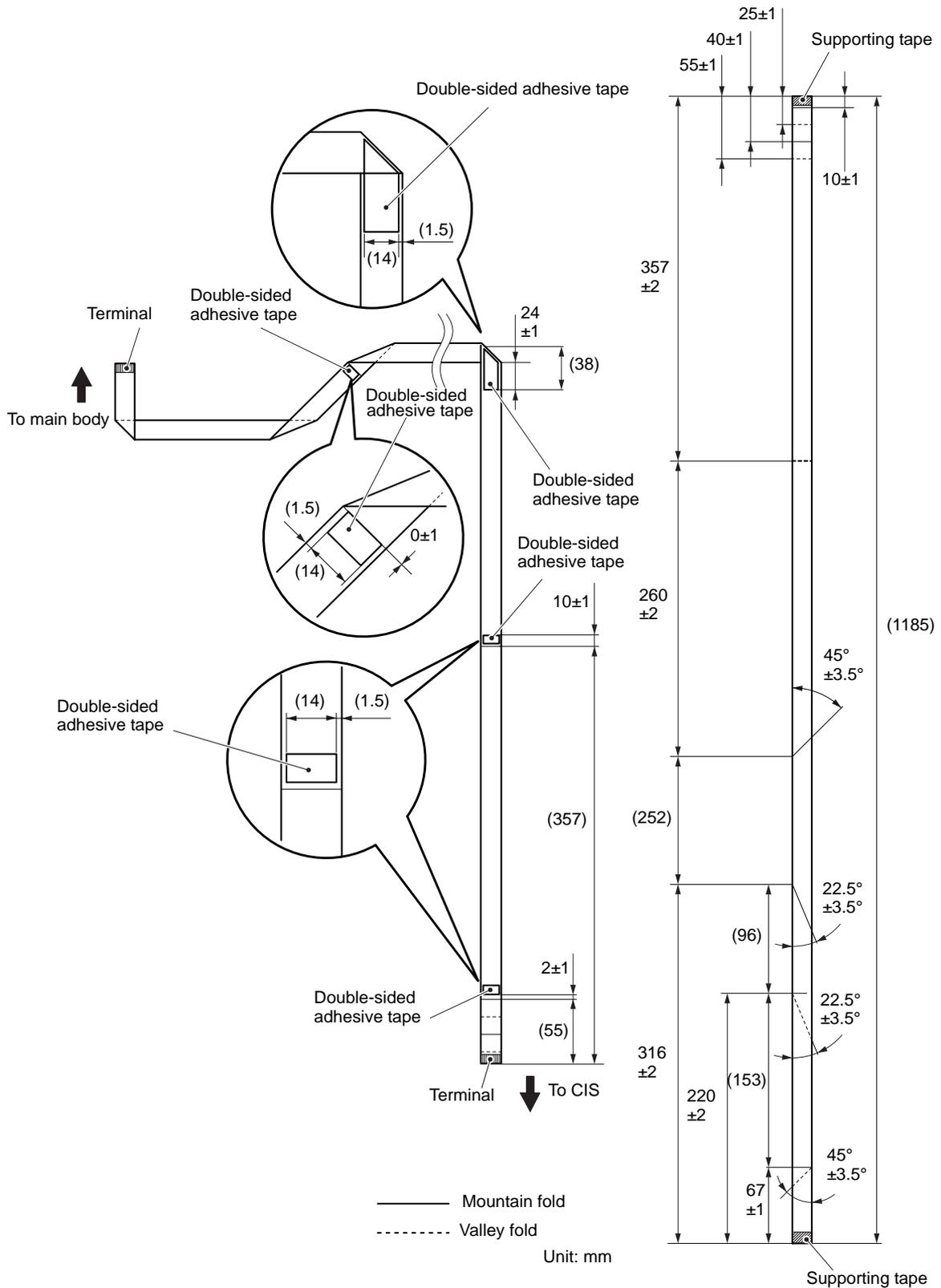


Fig. 3-78

Routing of harnesses: See "4 ADF unit/Document scanner unit".

### 9.23 Document Cover Sensor

- (1) Release the wiring of the Document MP sensor harness unit.
- (2) Remove the screw (TAPTITE CUP B M3x10) and remove the Document cover sensor from the Scanner base.

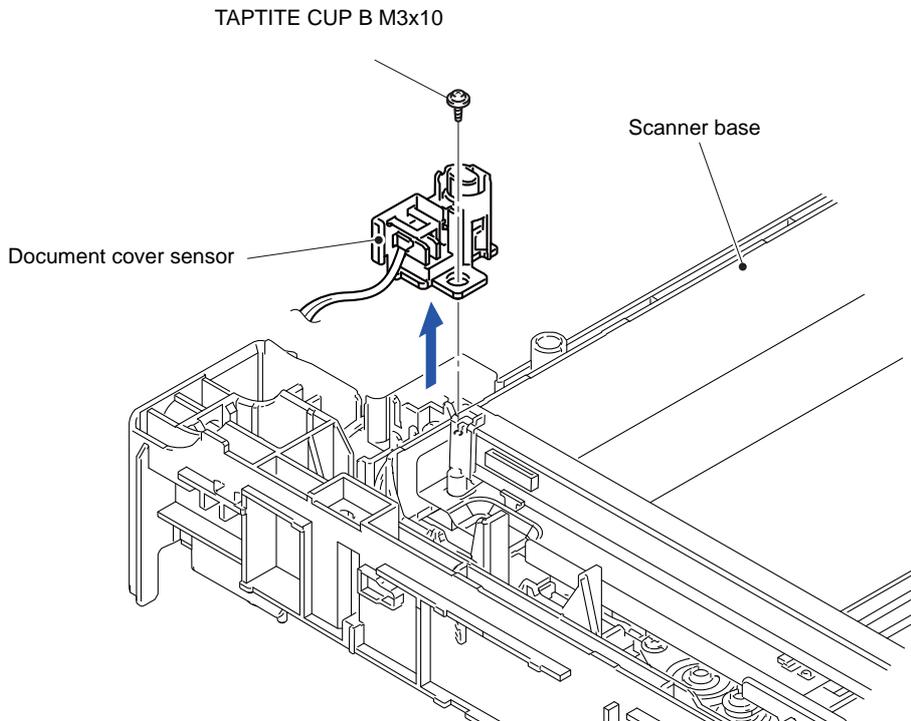


Fig. 3-79

### 9.24 Front Cover L

- (1) Remove the screw (TAPTITE BIND B M4x12).
- (2) Release the five Hooks and remove the Front cover L from the Lower cover.

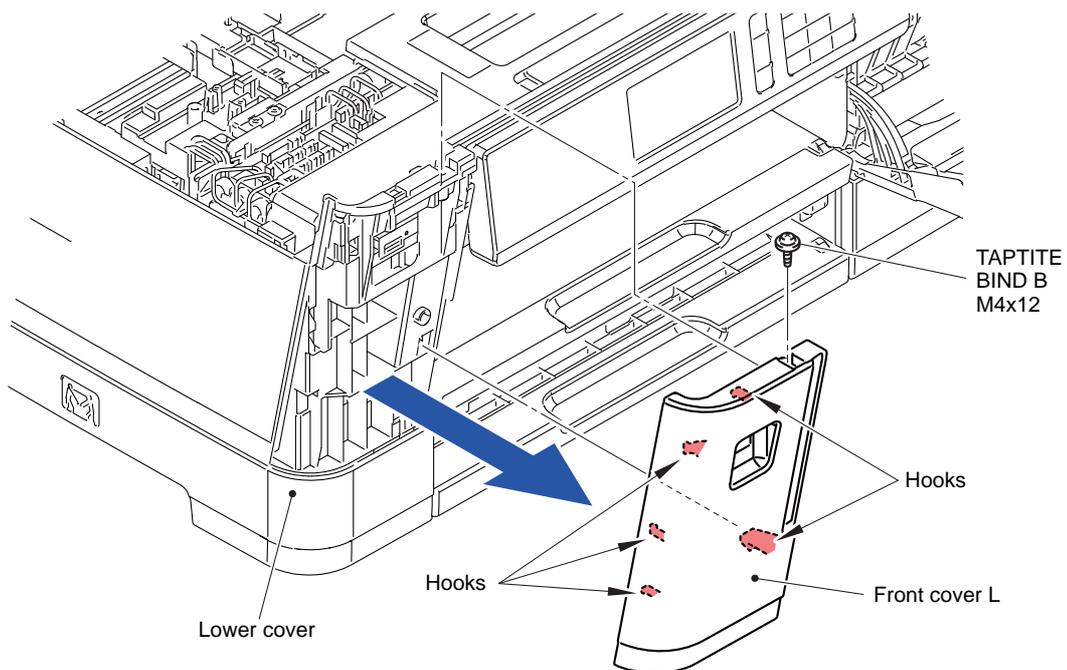


Fig. 3-80

## 9.25 Ink Cartridge Cover

- (1) Open the Ink cartridge cover.
- (2) Release the two Pins and remove the Ink cartridge cover from the Main body.

**Note:** When replacing the Ink cartridge cover, be sure to remove the serial number label attached inside the old cover and attach it to the new cover.

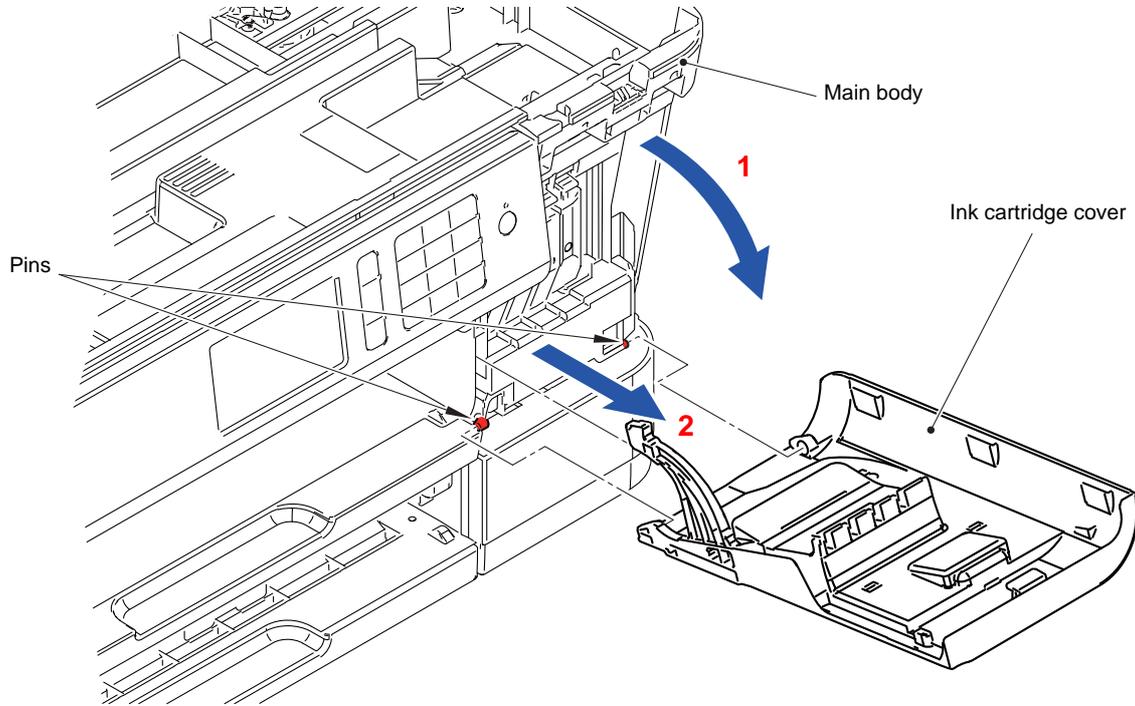


Fig. 3-81

## 9.26 Upper Cover/< India model only > Upper Cover Dust Foam

- (1) Disconnect the Connector of the Document scanner sensor harness from the Main PCB.

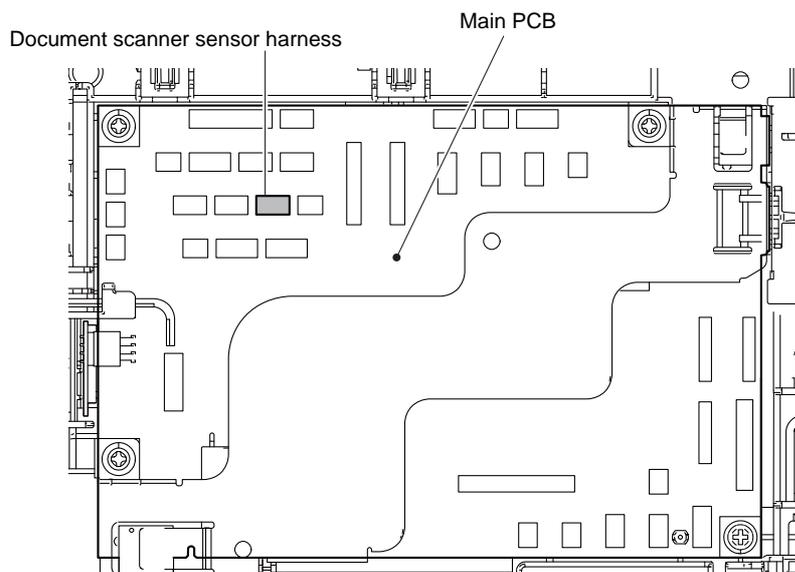


Fig. 3-82

- (2) < India model only > Peel off the Upper cover dust foam from the Upper cover.  
**Note:** Once removed, the Upper cover dust foam should be replaced with a new one.
- (3) Remove the six screws (TAPTITE BIND B M4x12) and remove the Upper cover from the Lower cover.

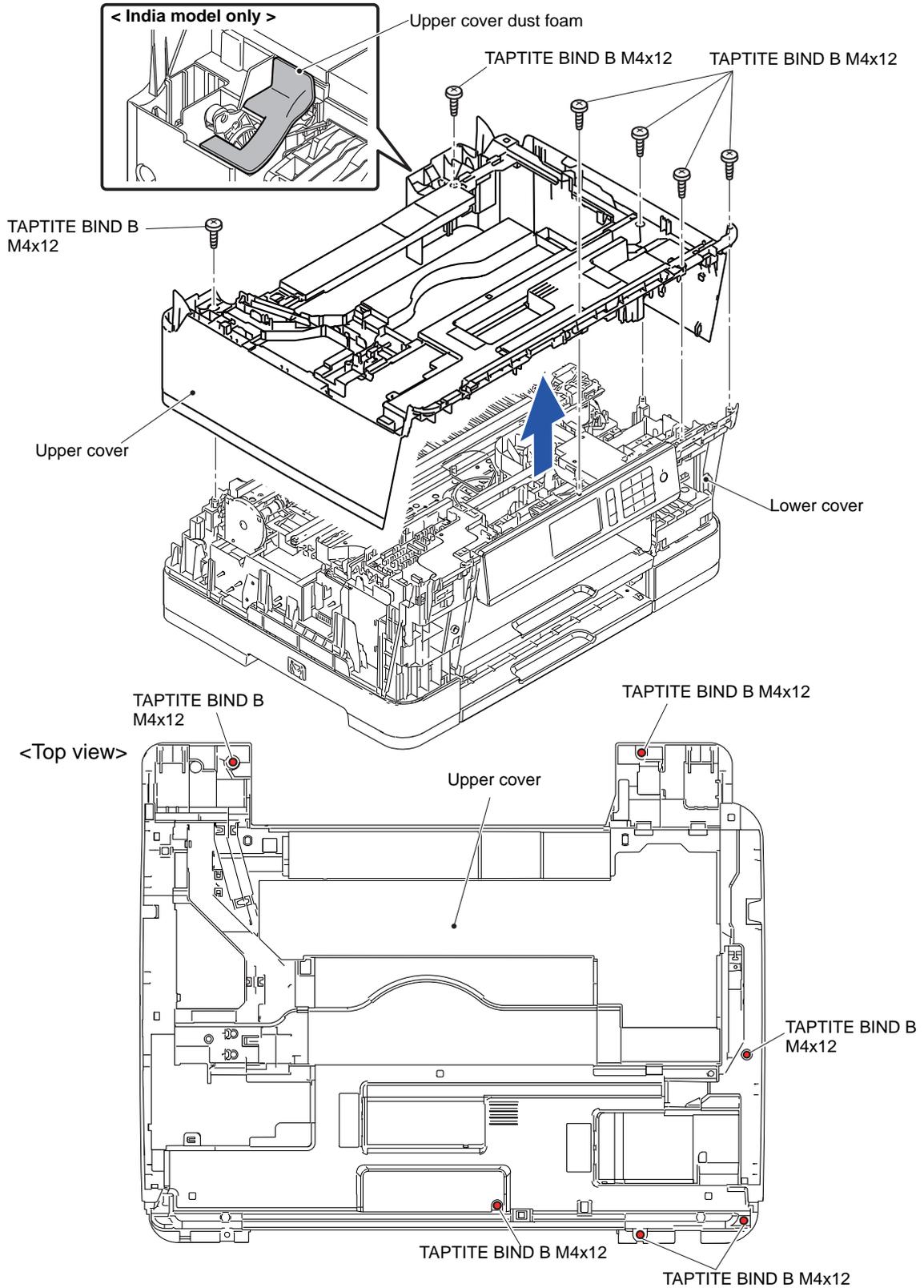
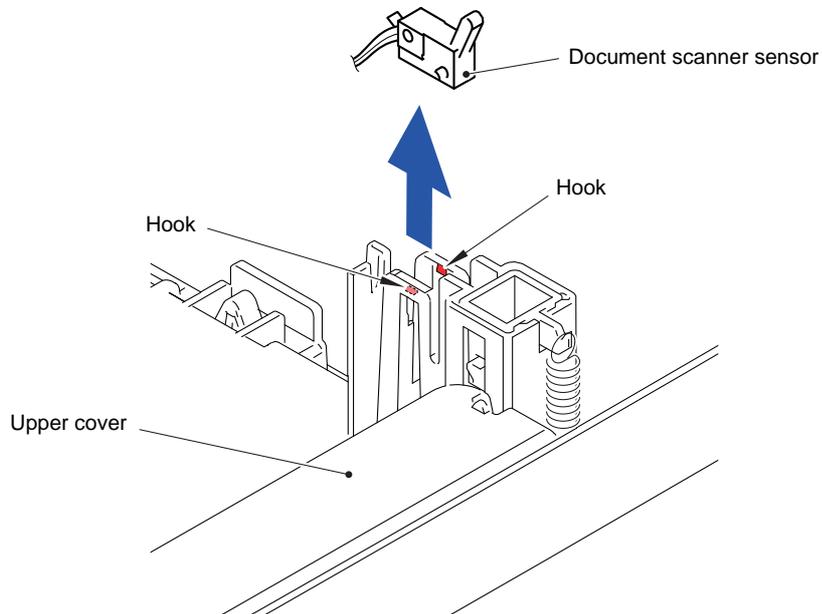


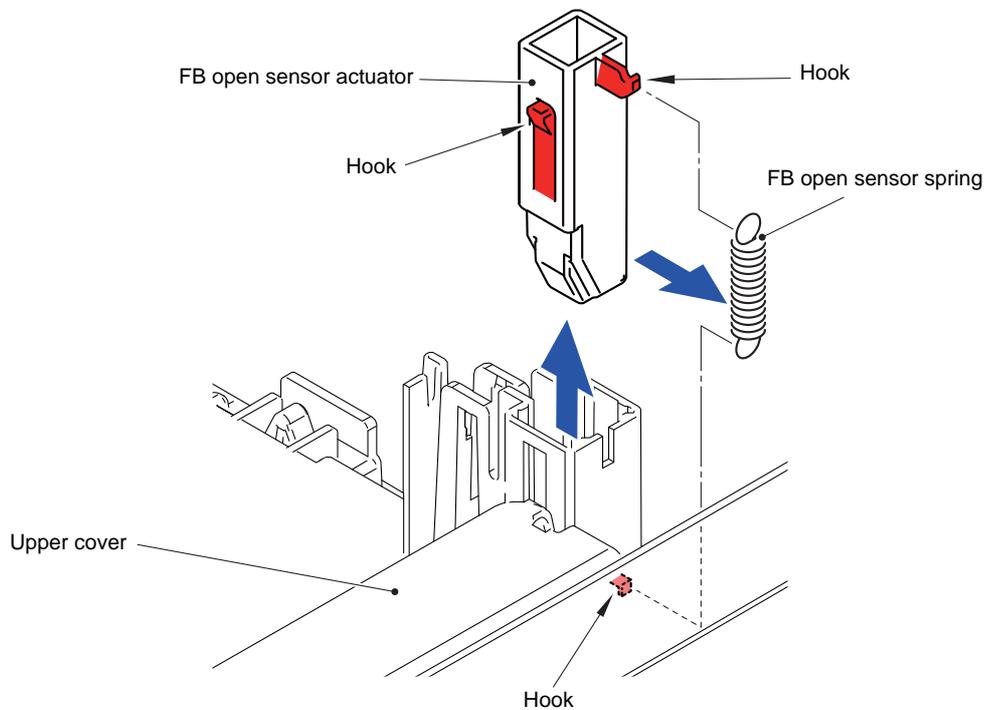
Fig. 3-83

- (4) Turn the Upper cover upside down.
- (5) Release the wiring of the Document scanner sensor.
- (6) Release the two Hooks and remove the Document scanner sensor from the Upper cover.



**Fig. 3-84**

- (7) Remove the FB open sensor spring from the Hook of the FB open sensor actuator and the Hook of the Upper cover.
- (8) Release the Hook and remove the FB open sensor actuator from the Upper cover.



**Fig. 3-85**

**Routing of harnesses:** See “[17 Upper cover](#)”.

## 9.27 Control Panel ASSY

- (1) Remove the screw (SCREW CUP M3x6) and remove the FG wire TP from the Modem PCB frame.

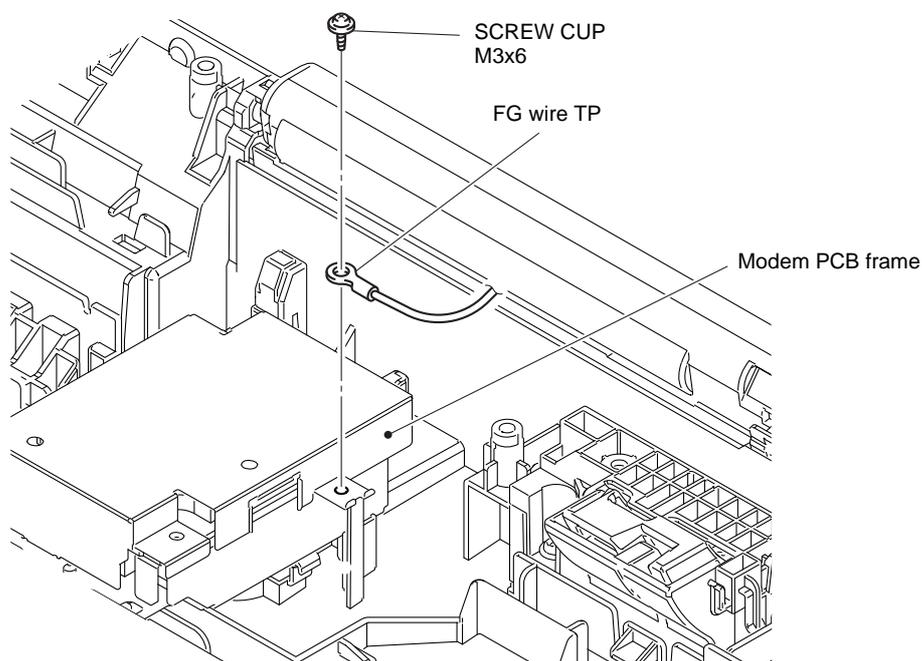


Fig. 3-86

- (2) Release the Lock of the connector (CN11) and remove the Panel flat cable from the Main PCB.

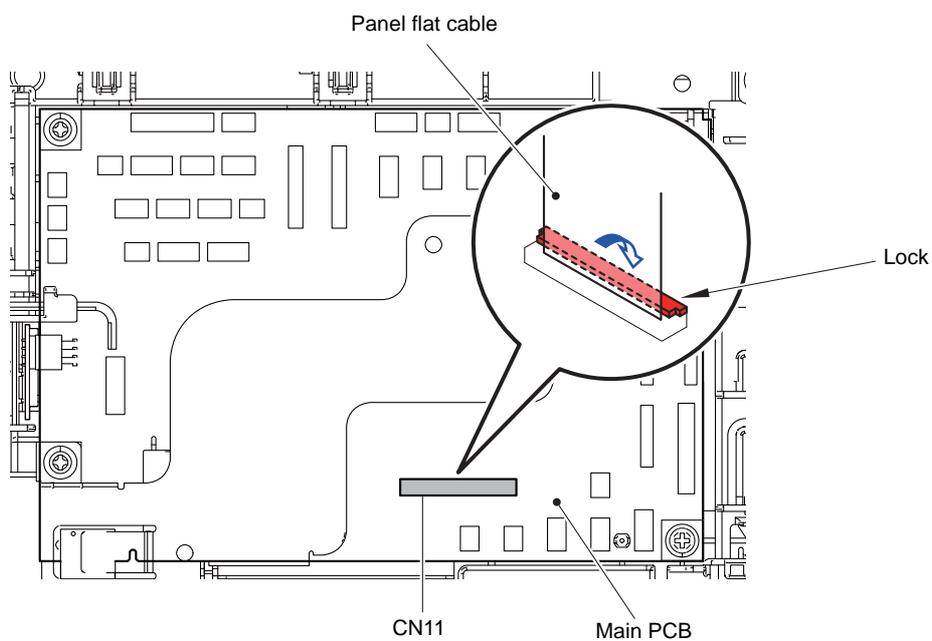


Fig. 3-87

- (3) Remove the Flat core from the Lower cover and pull out the Panel flat cable from the Flat core.
- (4) Remove the two screws (TAPTITE CUP B M3x10), release the wiring of the FG wire TP from the Tilt cover and remove the Tilt cover from the Tilt holder.

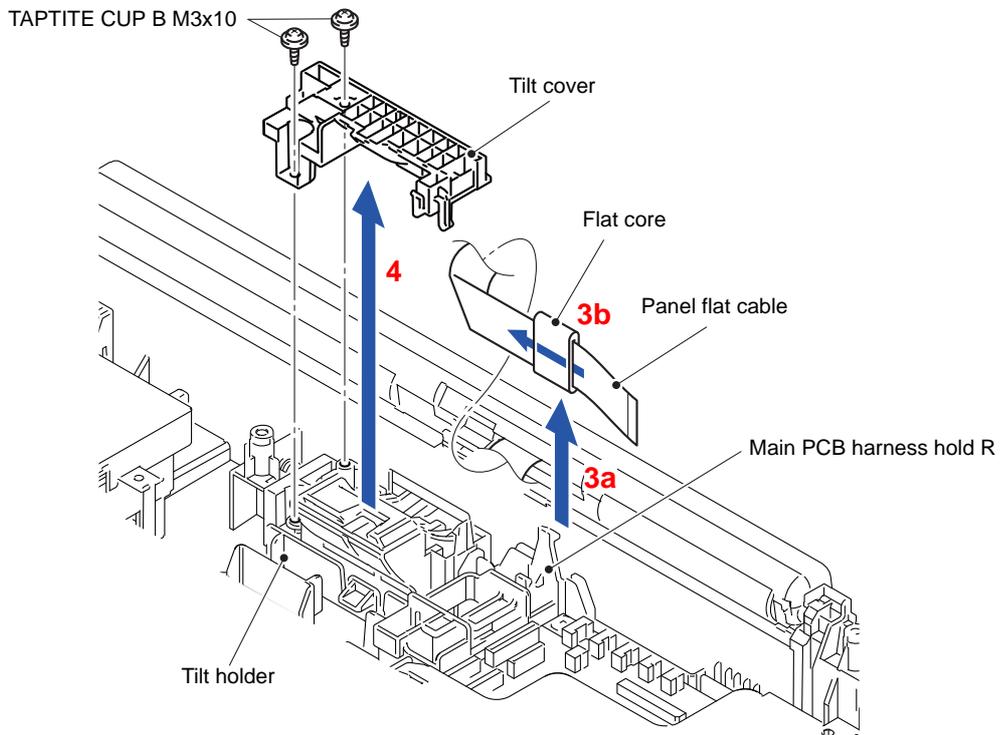


Fig. 3-88

- (5) Tilt the Control panel ASSY in the direction of the arrow.
- (6) Push the Tilt ratch in the direction of the arrow until clicks.

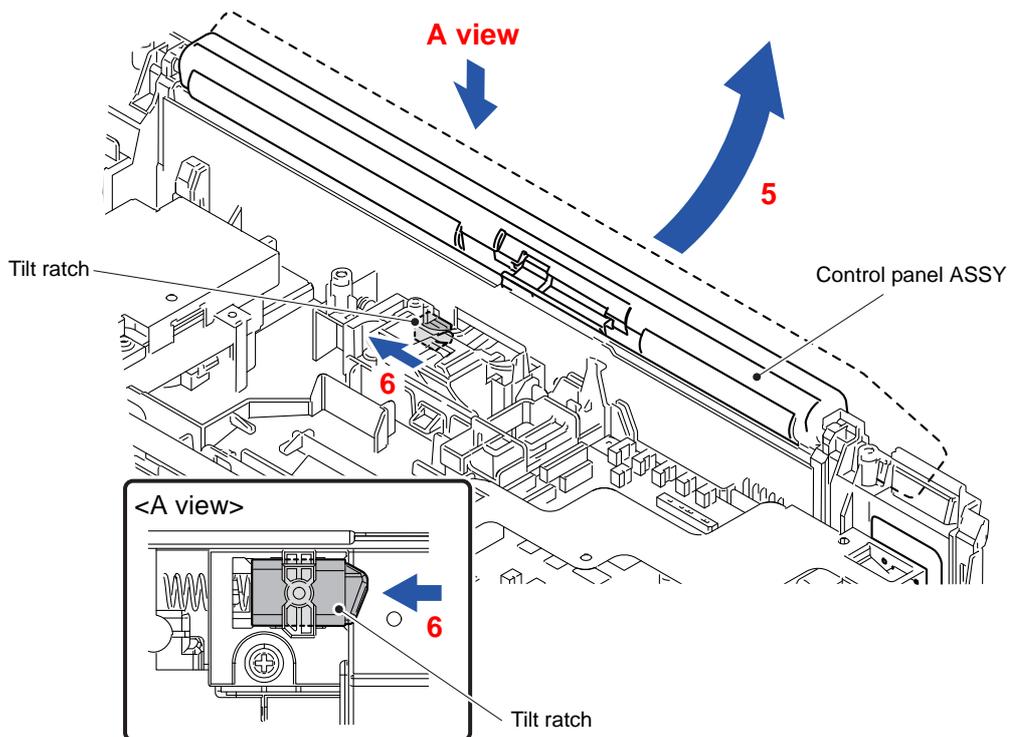


Fig. 3-89

- (7) Release the two Pins on the left-side of the Control panel ASSY in the direction of the arrow.
- (8) Release the two Pins on the right-side of the Control panel ASSY from the Lower cover.

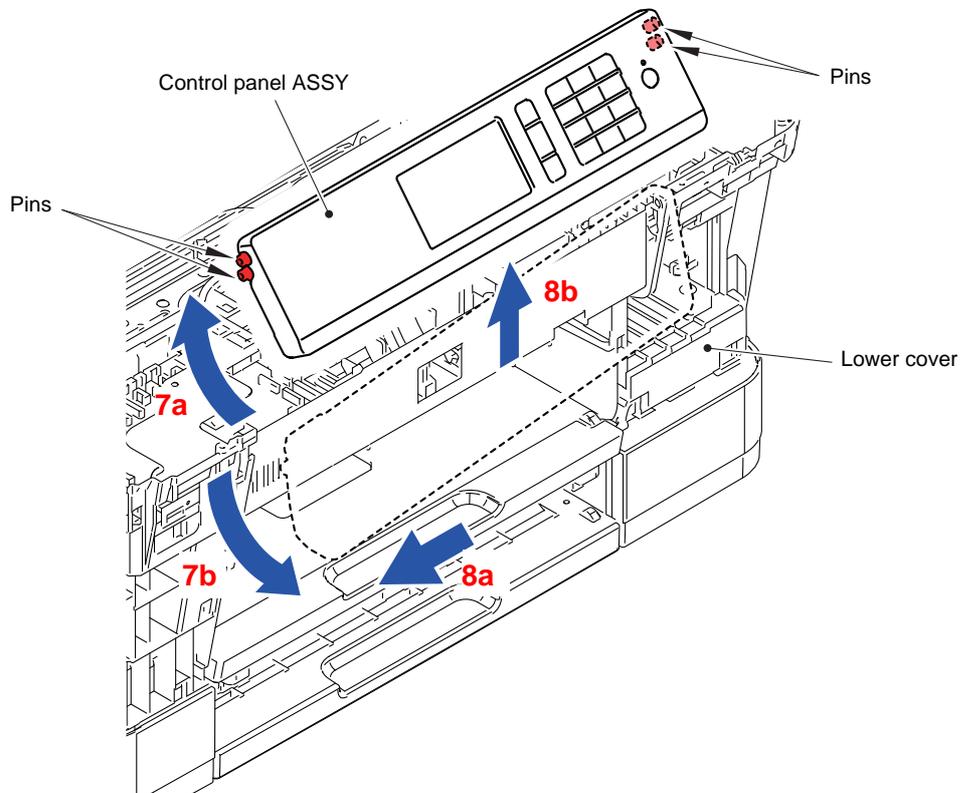


Fig. 3-90

- (9) Remove the two screws (TAPTITE CUP B M3x8) and remove the Tilt hook from the Control panel ASSY.

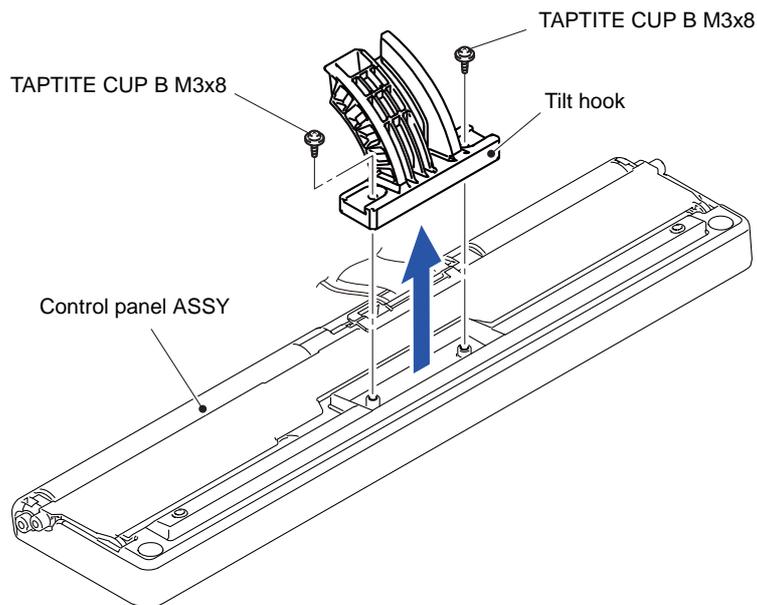


Fig. 3-91

Routing of harnesses: See “14 Control panel ASSY”.

## 9.28 Panel Flat Cable

- (1) Remove the three screws (TAPTITE CUP B M2.6x10).
- (2) Release the fourteen Hooks and remove the Panel lower cover from the Panel upper cover.

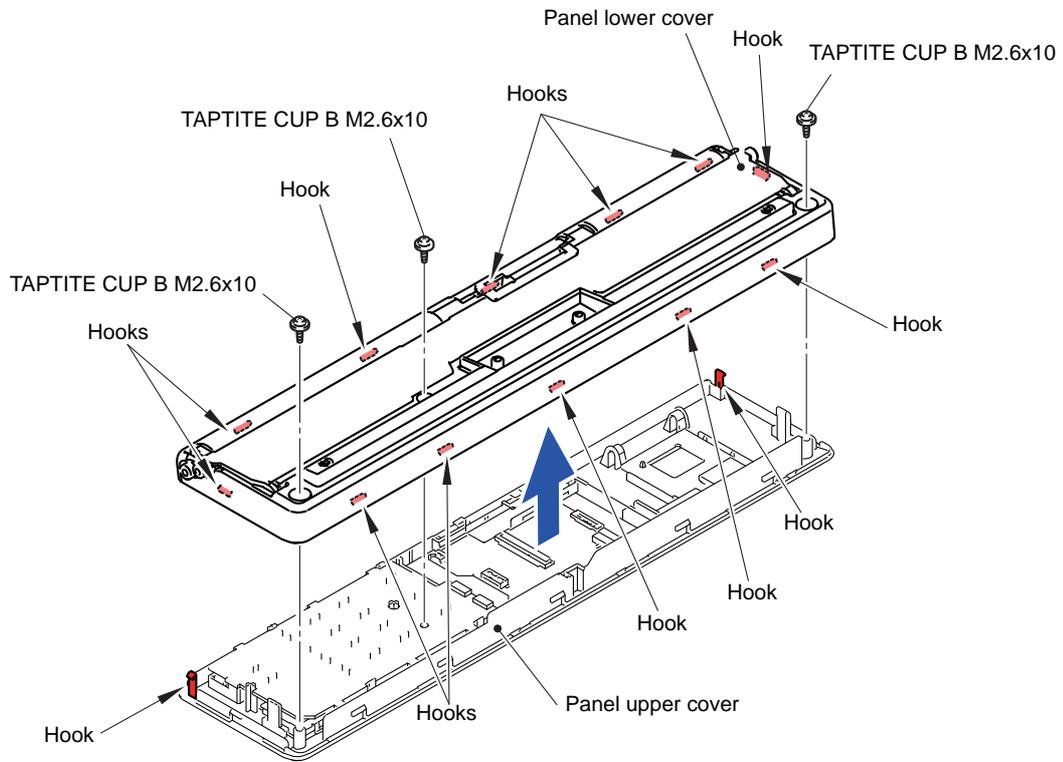


Fig. 3-92

- (3) Release the Lock of the Connector and remove the Panel flat cable from the LCD PCB.
- (4) < 3.7 inch LCD model >  
Pull out the Panel flat cable from the LCD frame sheet.

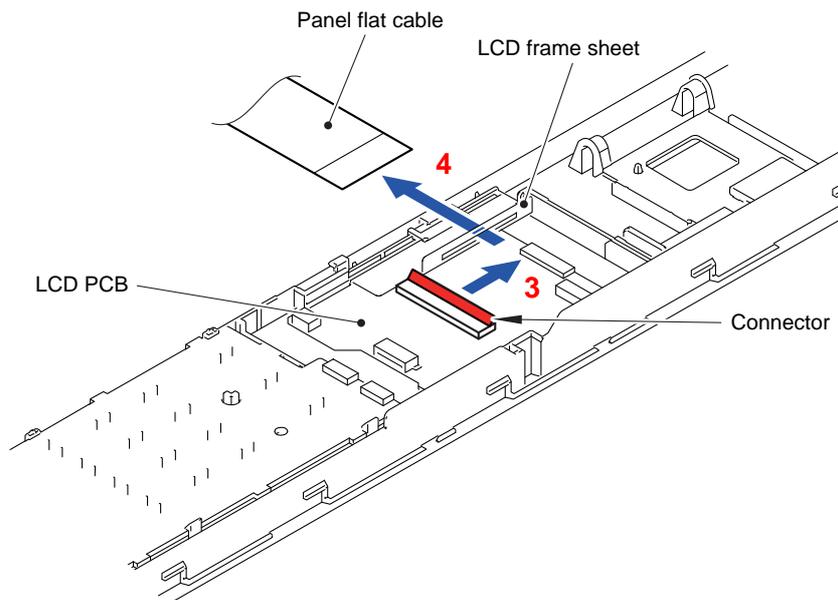
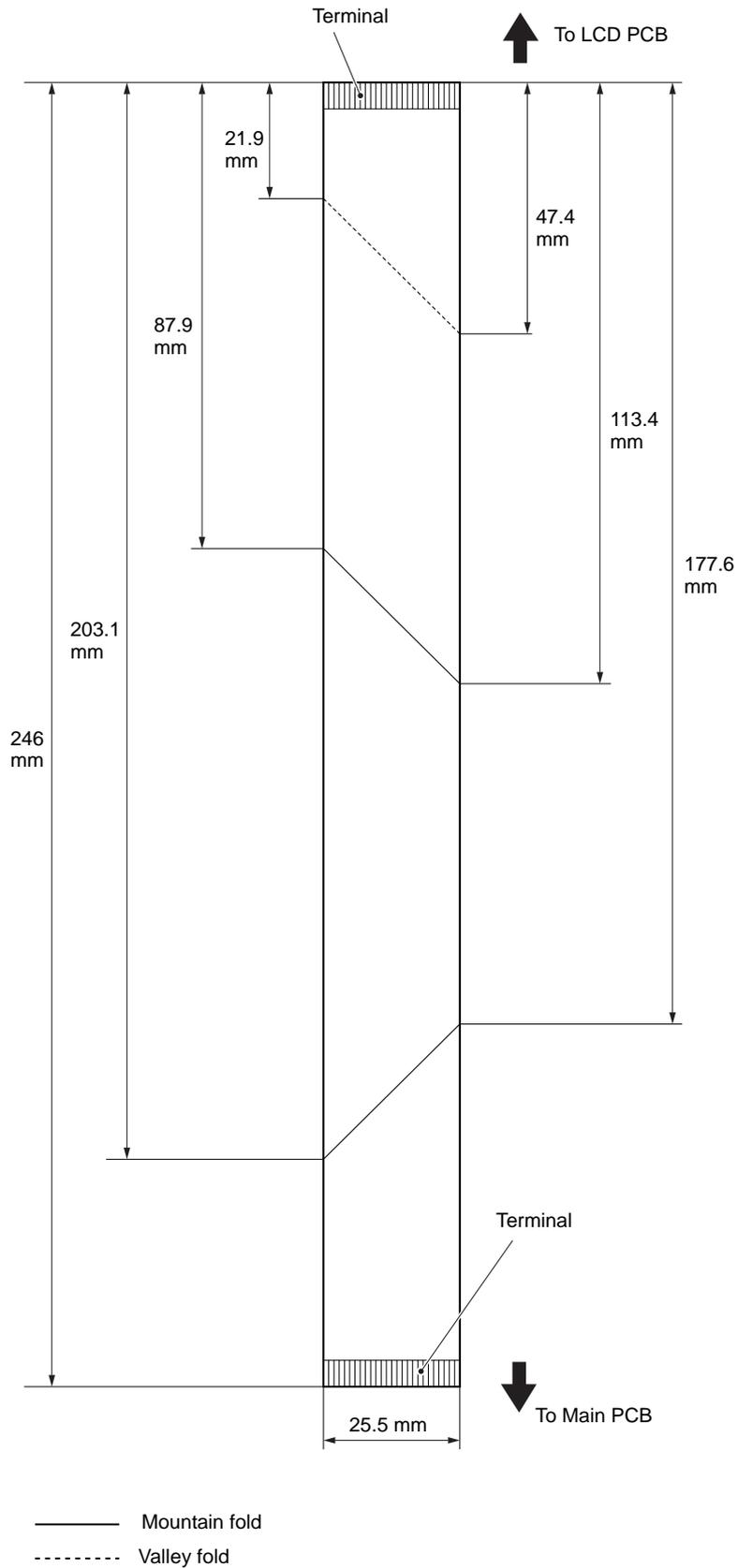


Fig. 3-93

**Assembling Note:** See the figure below for the Panel flat cable folding position.



**Fig. 3-94**

### 9.29 NFC PCB

- (1) Release the Lock and remove the NFC flat cable from the LCD PCB.
- (2) While holding down the two Hooks in the direction of the arrow 2a, remove the NFC PCB from the Panel upper cover.

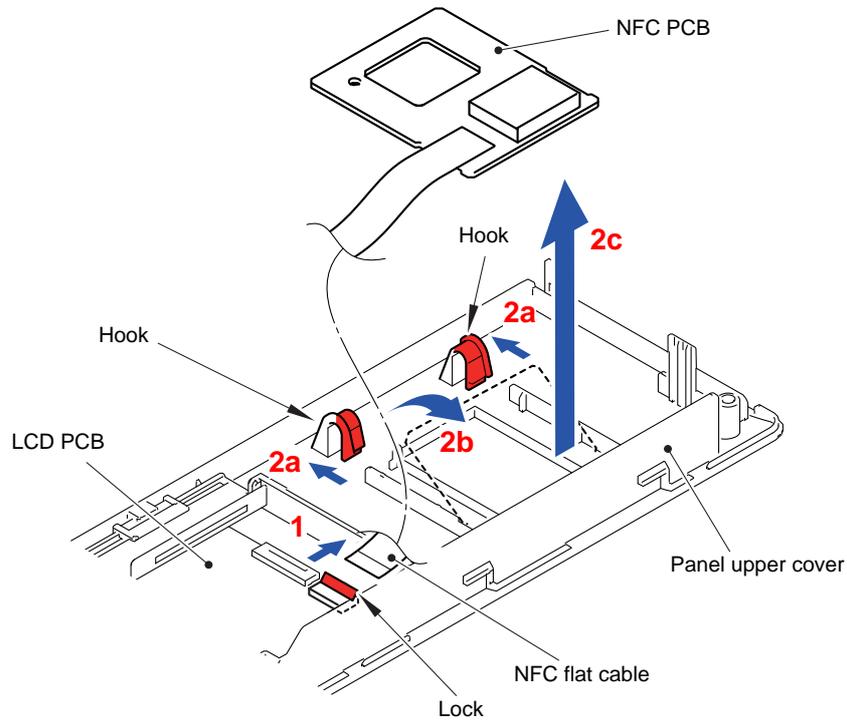


Fig. 3-95

### 9.30 Panel PCB

- (1) Disconnect the Panel PCB flat cable from the Connector of the Panel PCB.
- (2) Release the four Hooks and remove the Panel PCB from the Key holder ASSY.

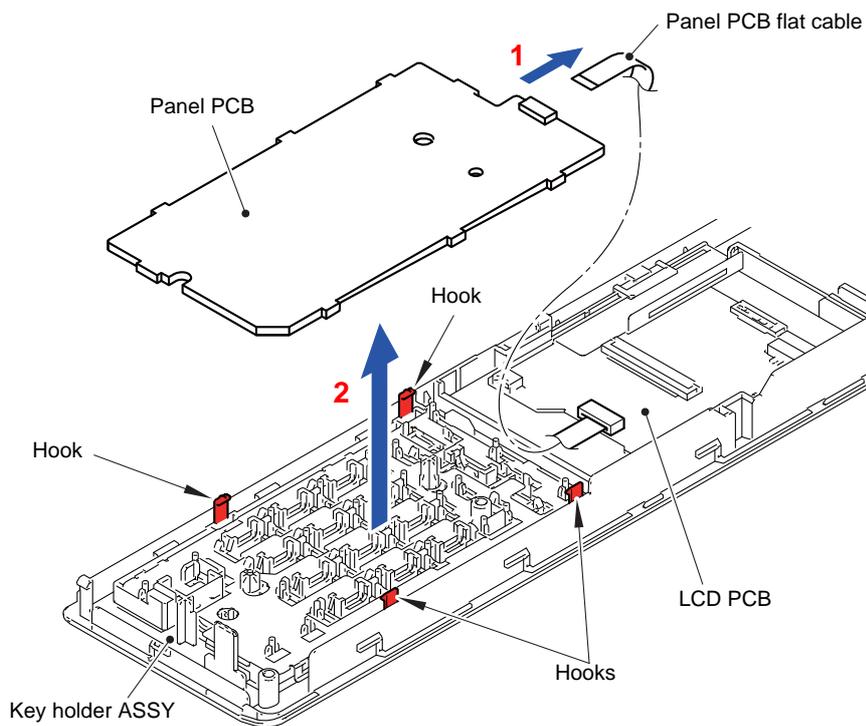


Fig. 3-96

### 9.31 LCD PCB

< 3.7 inch LCD model >

- (1) Disconnect the three Flat cables from the LCD PCB.
- (2) Remove the LCD PCB from the LCD holder.

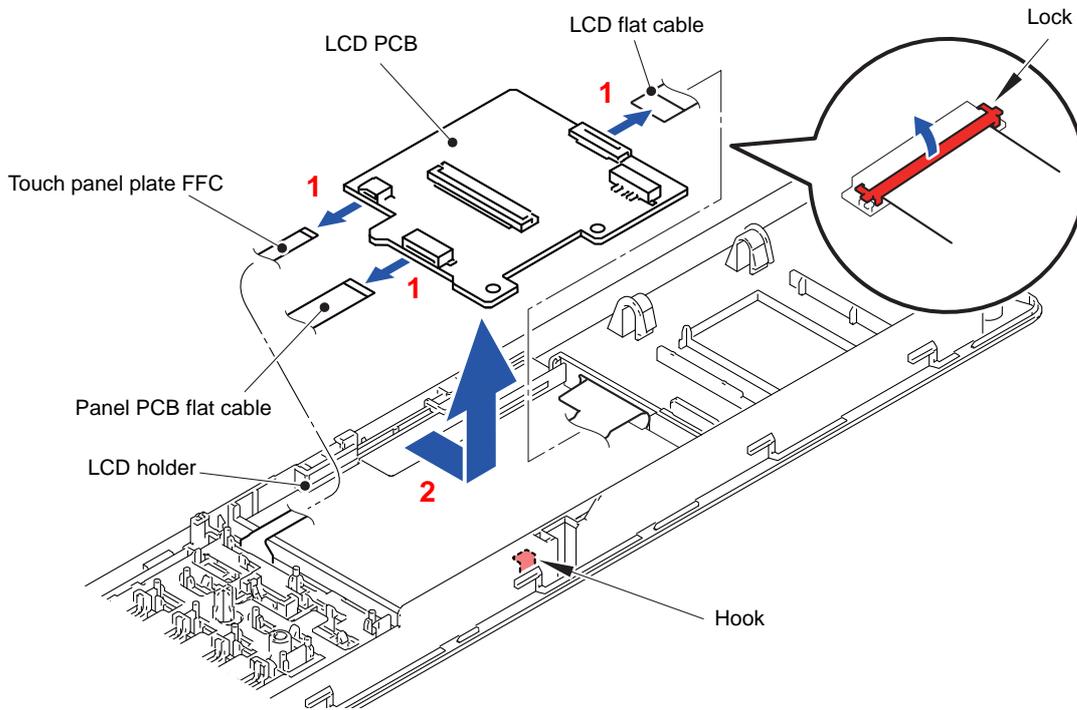


Fig. 3-97

< 2.7 inch LCD model >

- (1) Disconnect the three Flat cables from the LCD PCB.
- (2) Release the Hook and remove the LCD PCB from Panel upper cover.

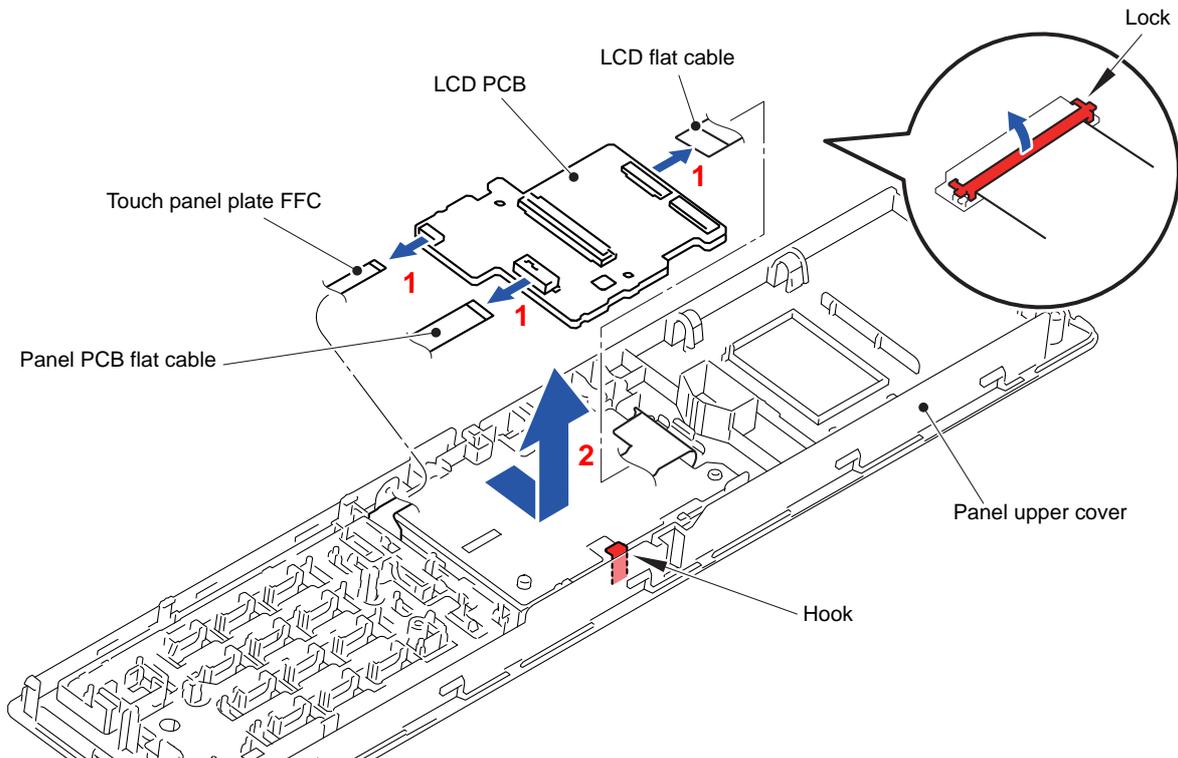


Fig. 3-98

## 9.32 LCD

< 3.7 inch LCD model >

(1) Release the three Hooks and remove the LCD holder from the Panel upper cover.

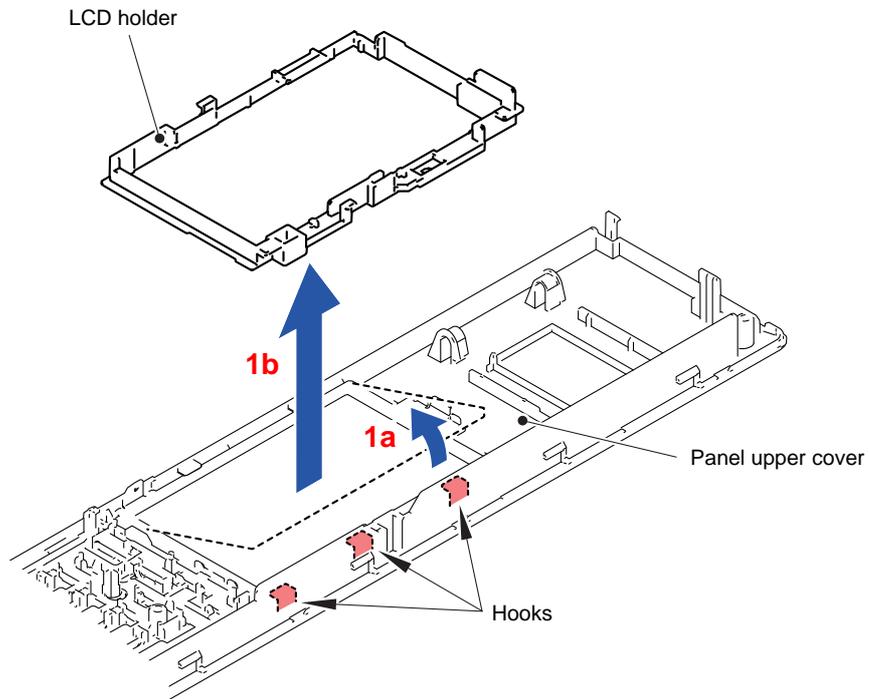


Fig. 3-99

(2) Remove the LCD and LCD frame sheet from the Panel upper cover.

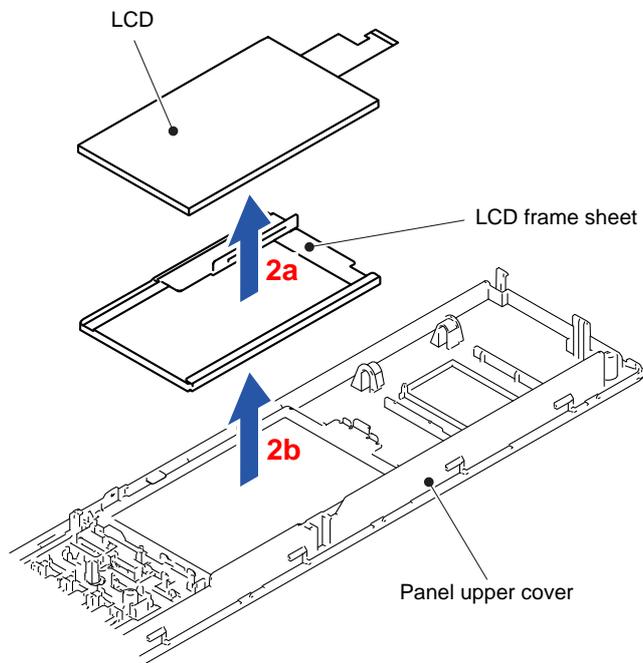


Fig. 3-100

< 2.7 inch LCD model >

(1) Release the five Hooks and remove the Antistatic plate from the Key holder ASSY.

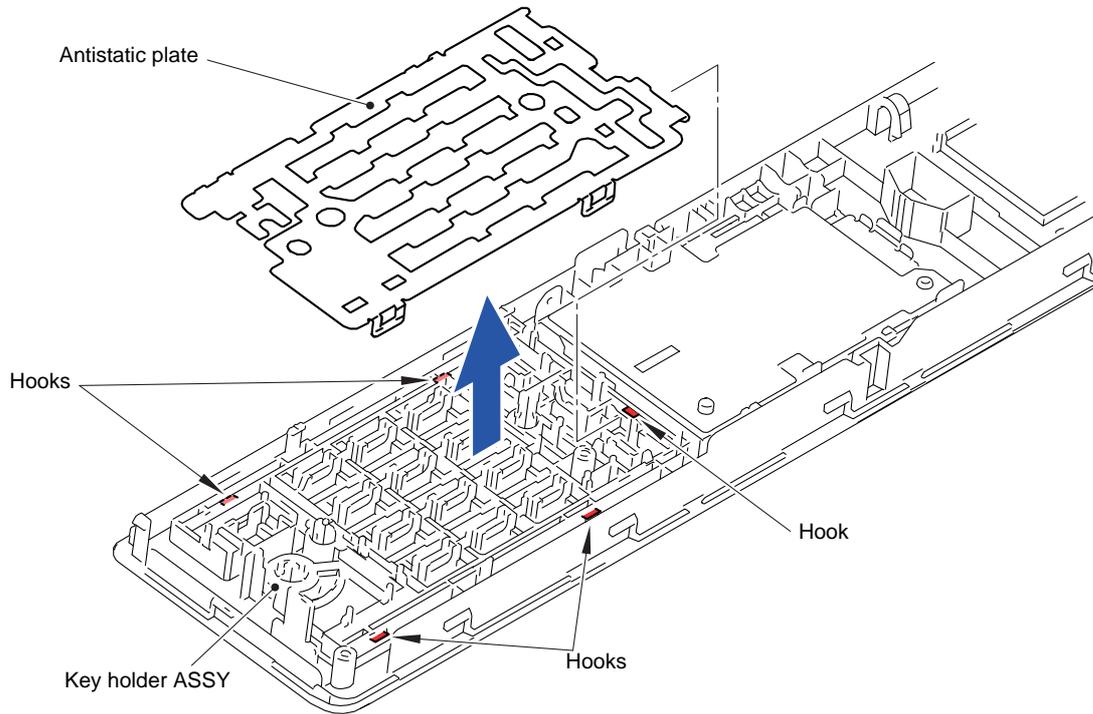


Fig. 3-101

(2) Remove the LCD back film from the Touch panel plate.

(3) Release the Hook and remove the Touch panel plate from the Panel upper cover.

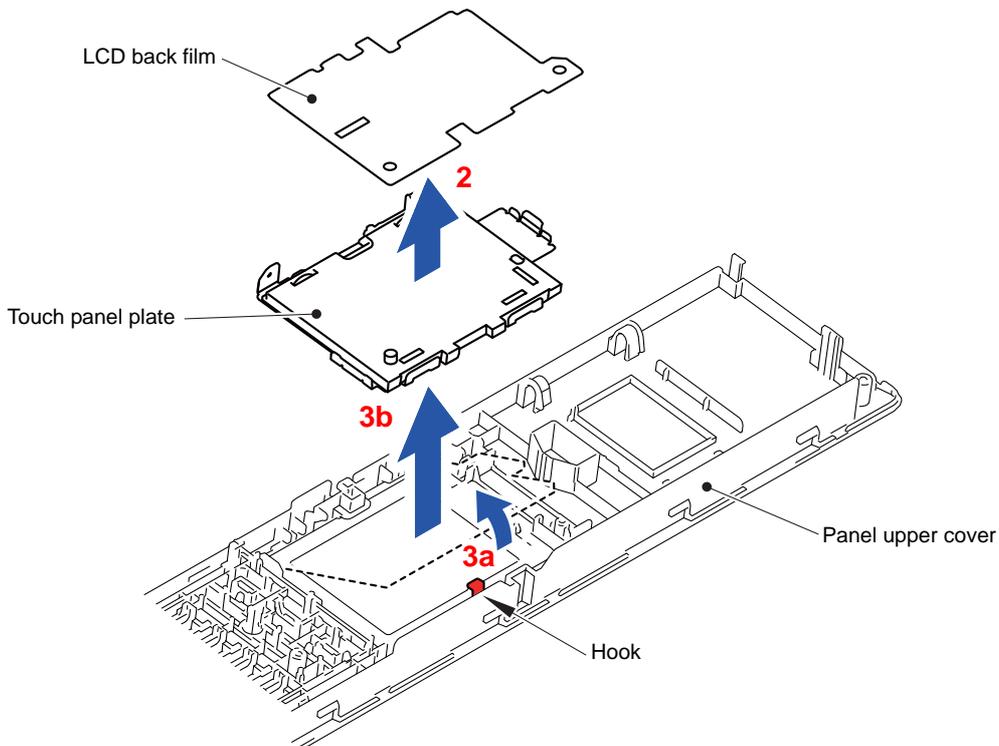
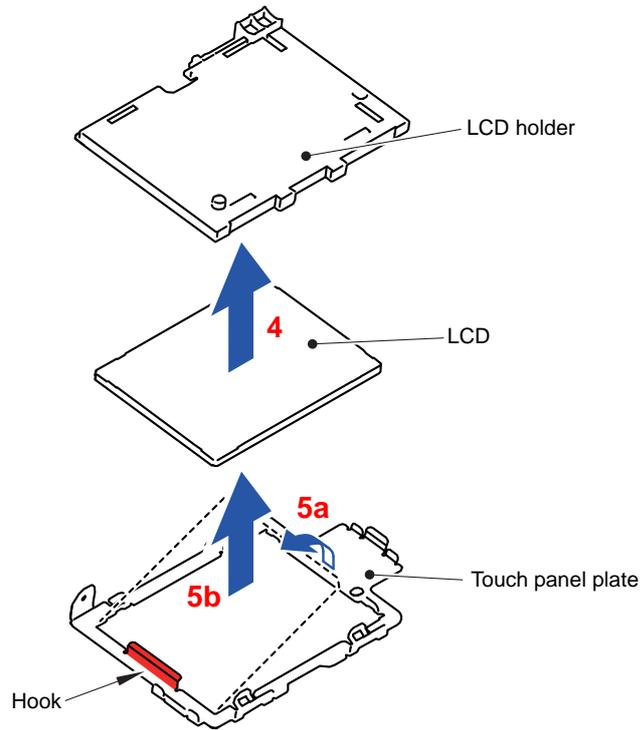


Fig. 3-102

- (4) Remove the LCD holder from the Touch panel plate.
- (5) Release the Hook and remove the LCD from the Touch panel plate.



**Fig. 3-103**

### 9.33 Touch Panel

< 3.7 inch LCD model >

(1) Release the five Hooks and remove the Antistatic plate from the Key holder ASSY.

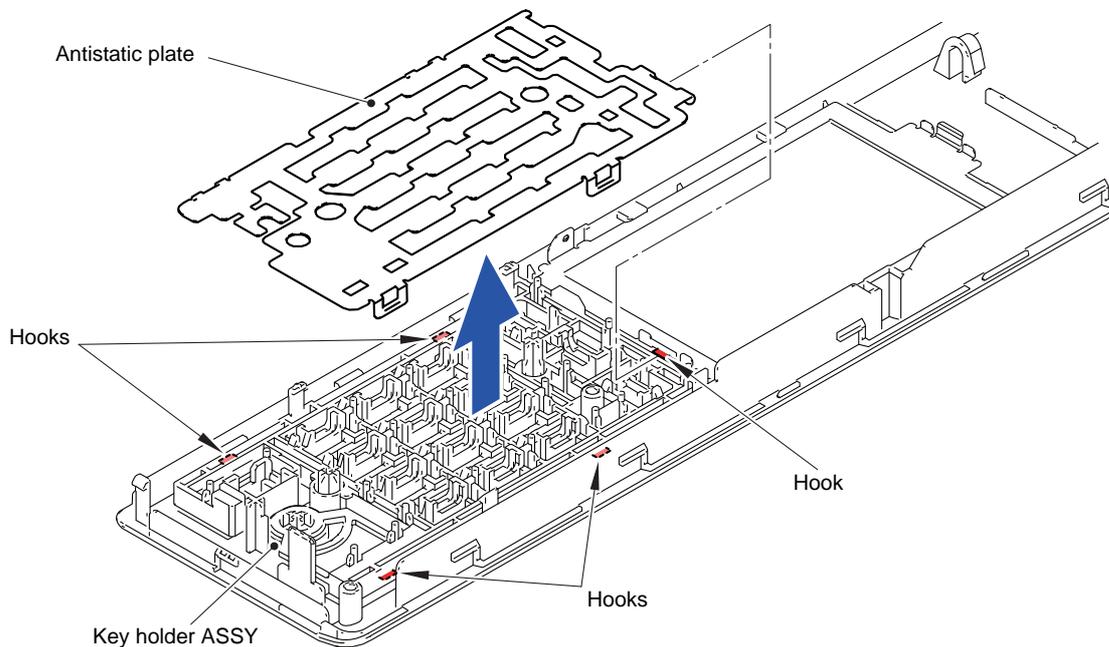


Fig. 3-104

(2) Remove the Touch panel plate from the Panel upper cover.

(3) Remove the Touch panel from the Panel upper cover.

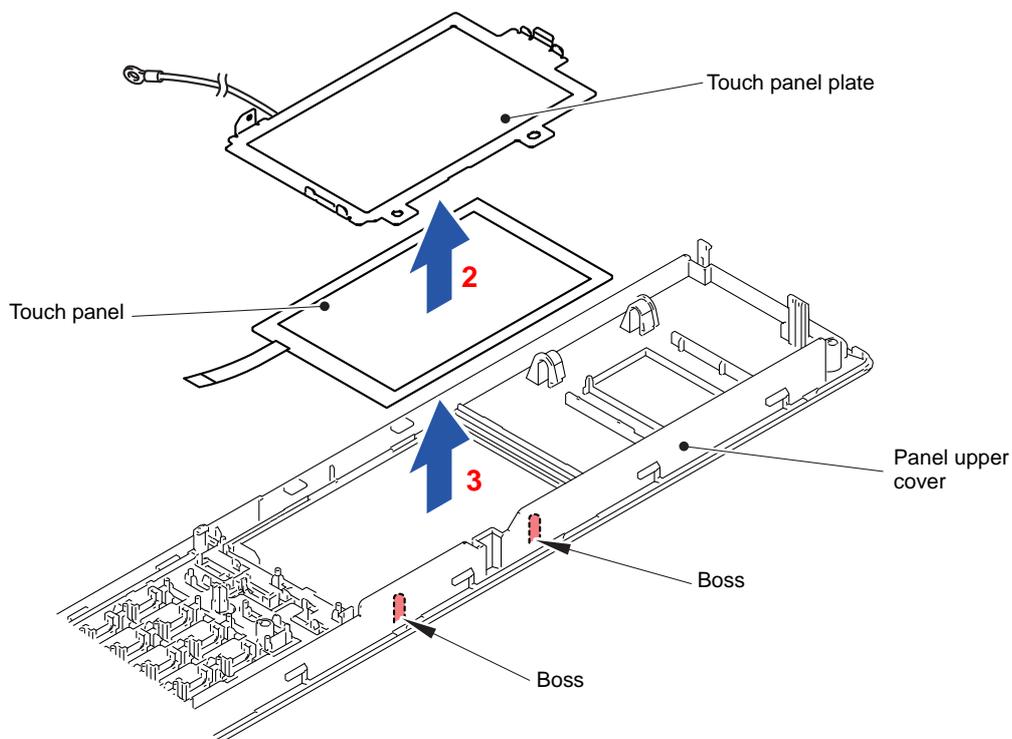
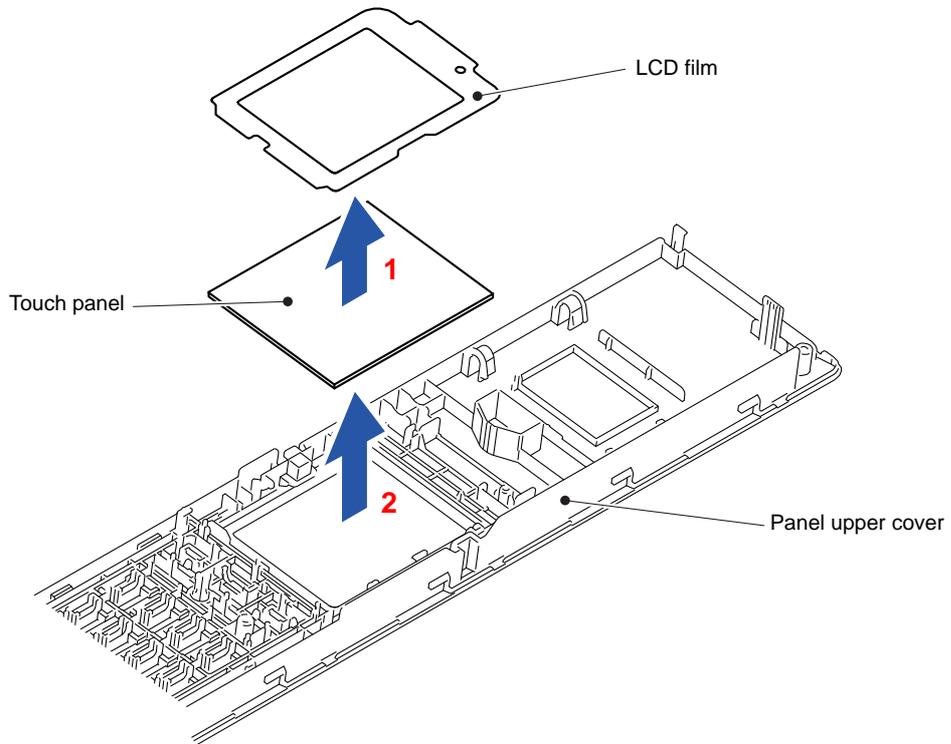


Fig. 3-105

< 2.7 inch LCD model >

- (1) Remove the LCD film.
- (2) Remove the Touch panel from the Panel upper cover.



**Fig. 3-106**

### 9.34 Wireless LAN PCB

- (1) Remove the two screws (SCREW CUP M3x6) and remove the Main PCB shield from the Main PCB.

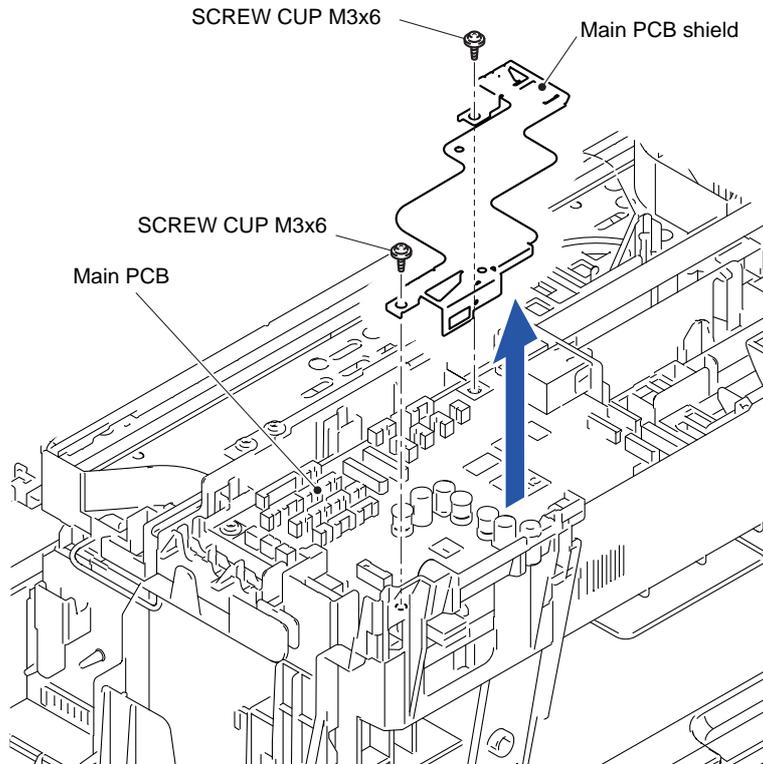


Fig. 3-107

- (2) Disconnect all the Connectors of the harness attached to the Main PCB harness hold L from the Main PCB.

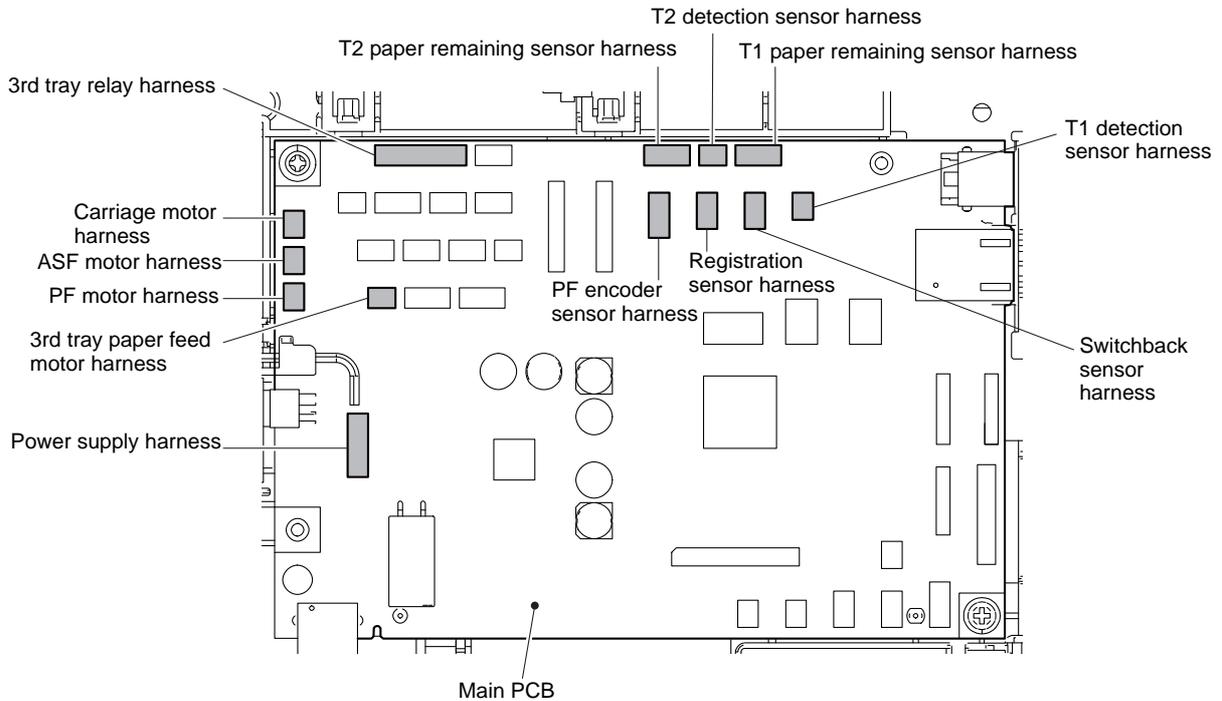


Fig. 3-108

- (3) Release all the wiring attached to the Main PCB harness hold L.
- (4) Release the three Hooks and remove the Main PCB harness hold L from the Lower cover.

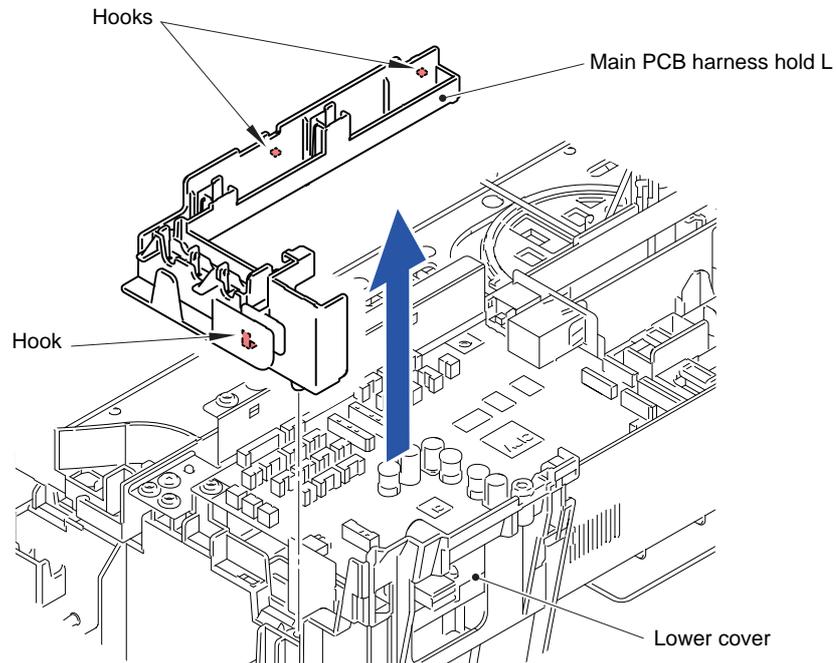


Fig. 3-109

- (5) Remove the Wireless LAN PCB from the Connector (CN15) of the Main PCB.

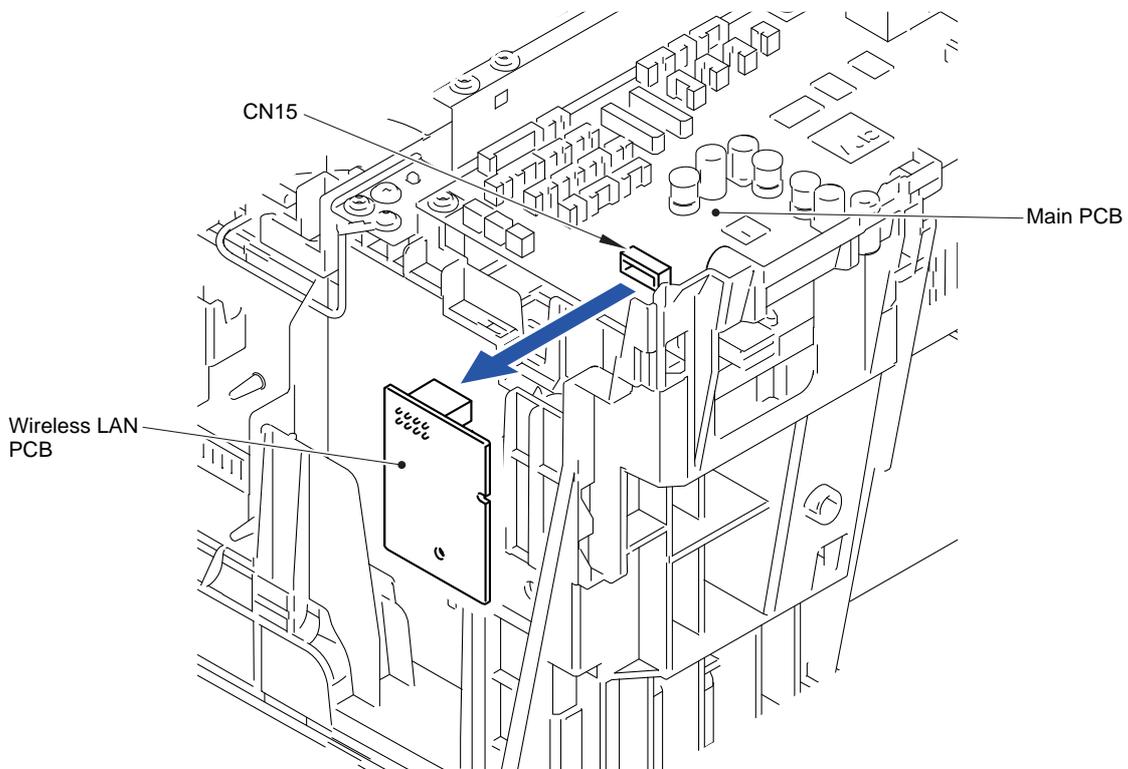


Fig. 3-110

Routing of harnesses: See “**1** Main PCB”, “**2** Main PCB/Modem PCB”.

### 9.35 Main PCB

- (1) Disconnect the five Connectors from the Main PCB.
- (2) Disconnect the four Flat cables from the Main PCB.

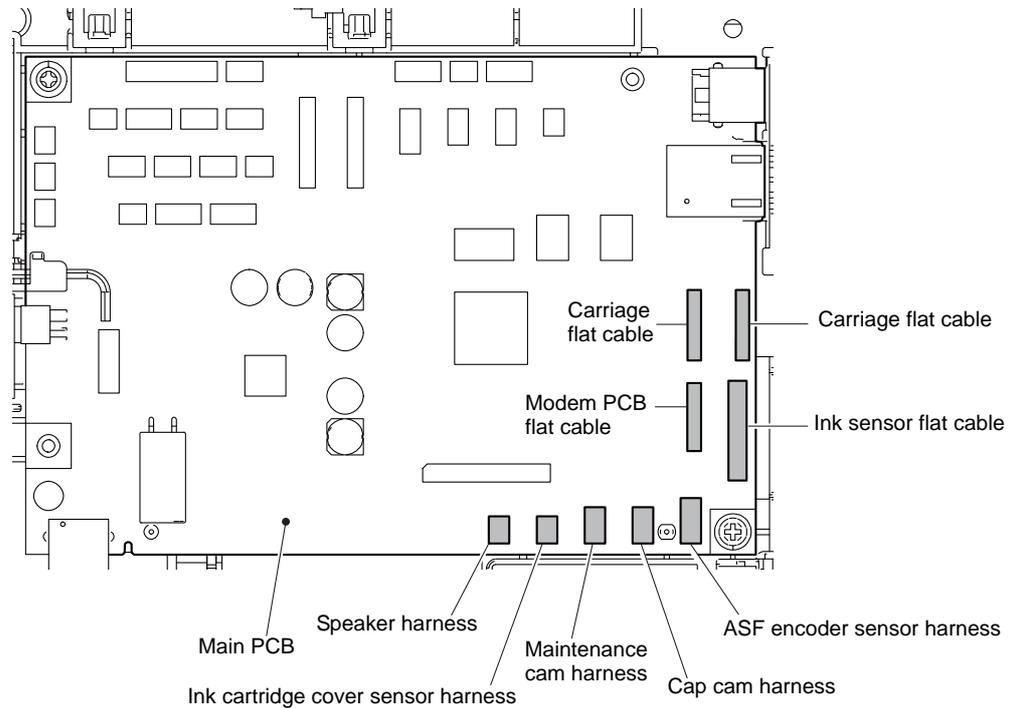


Fig. 3-111

- (3) Remove the two screws (SCREW CUP M3x6 and TAPTITE CUP B M3x10) and remove the Main PCB from the Main PCB frame.

**Note:** When removing the Main PCB, if heat dissipation rubber is mounted on the back side of the Main PCB, remove it from the Main PCB and mount it to the Main PCB frame.

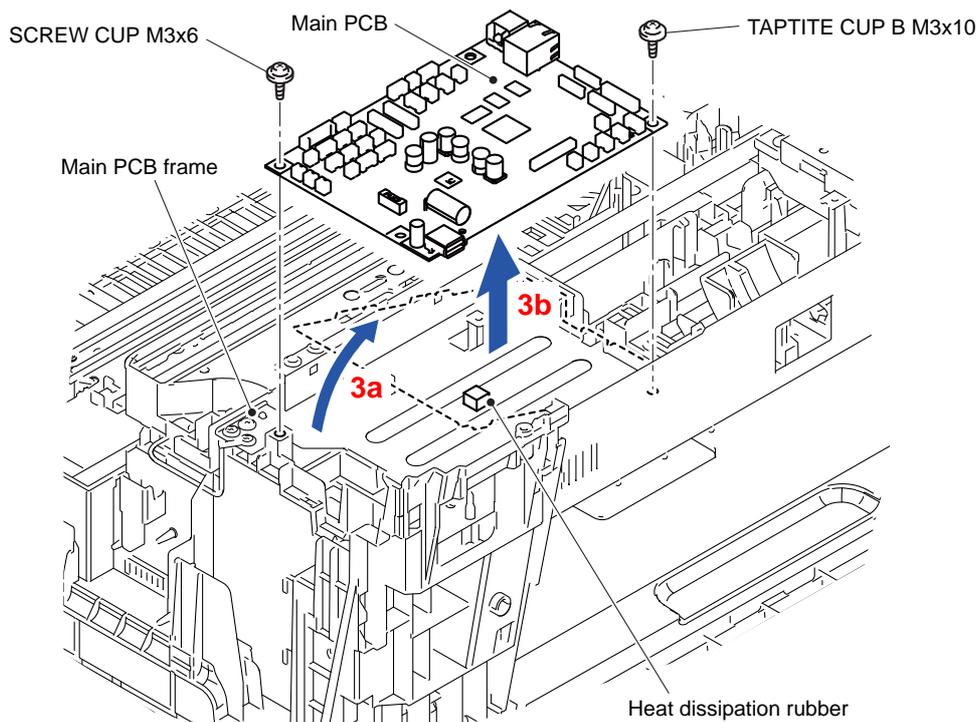


Fig. 3-112

### 9.36 Modem PCB

- (1) Remove the screw (SCREW CUP M3x6) and remove the Upper modem frame from the Modem PCB.

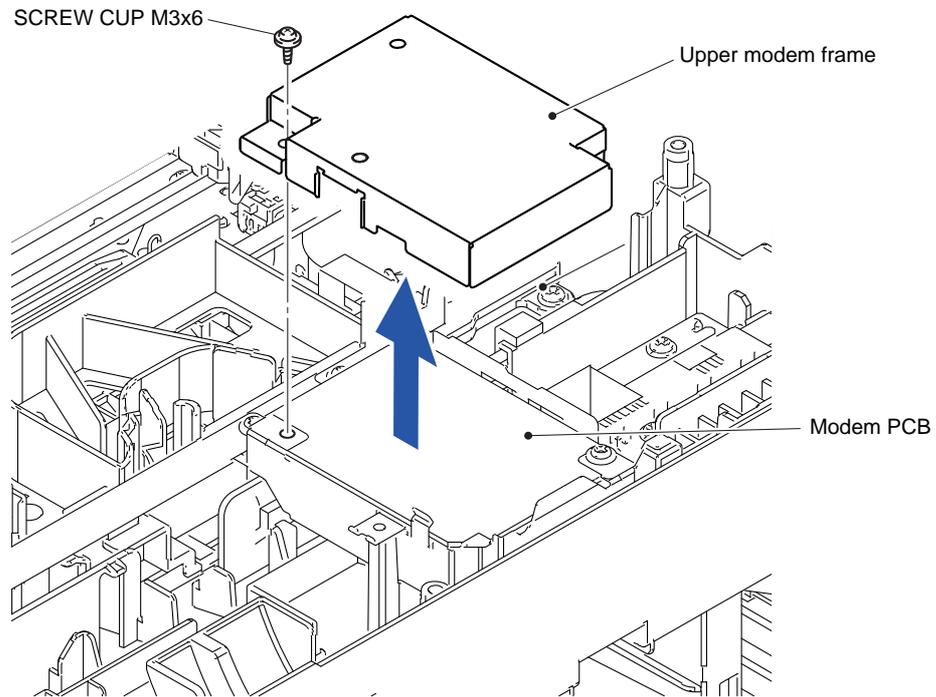


Fig. 3-113

- (2) Release the wiring of the flat cable of the Modem PCB.
- (3) Remove the screw (SCREW CUP M3x6) and remove the Modem PCB from the Modem PCB frame.

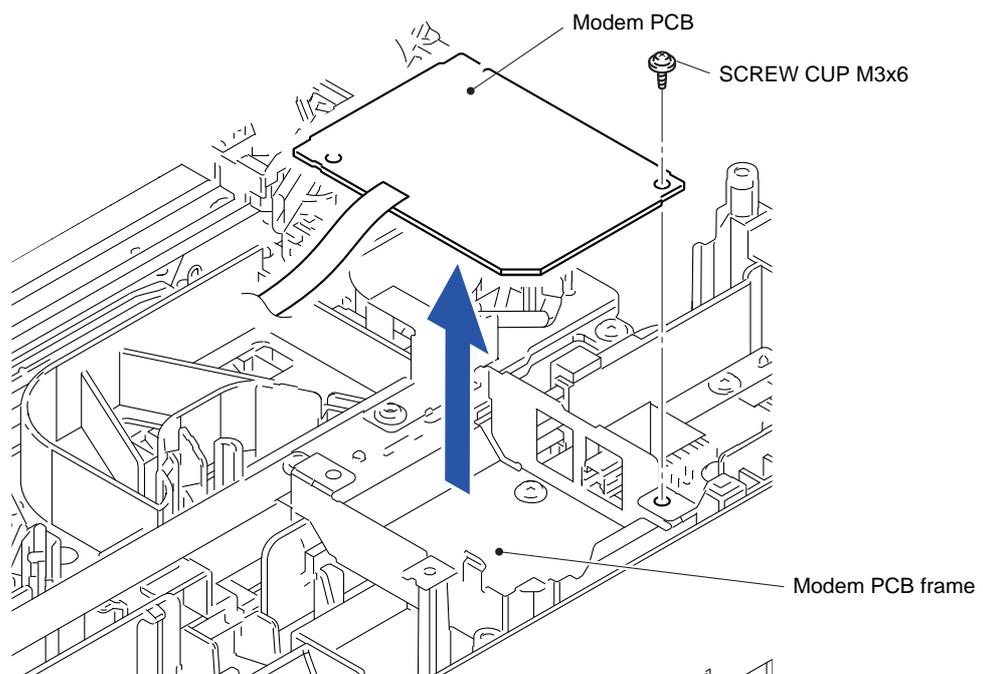


Fig. 3-114

Routing of harnesses: See “[2 Main PCB/Modem PCB](#)”.

### 9.37 Maintenance Unit

- (1) Remove the two screws (TAPTITE CUP B M3x10), release the ferrite core and the wiring attached to the Lower side cover R and remove the Lower side cover R from the Lower cover.

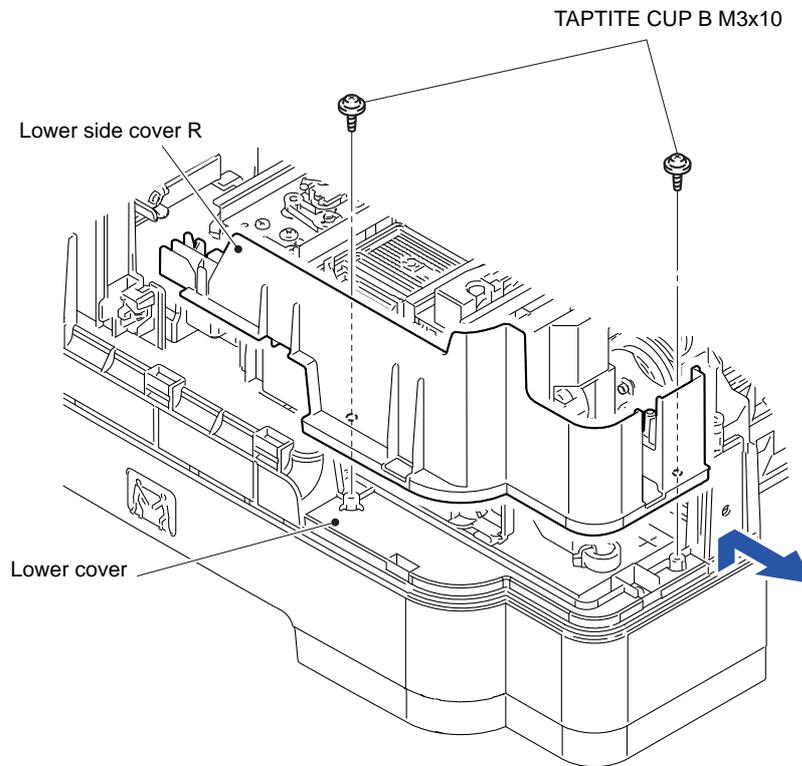


Fig. 3-115

- (2) Remove the Air vent tube and Drain tube from the Ink ABS upper box ASSY.

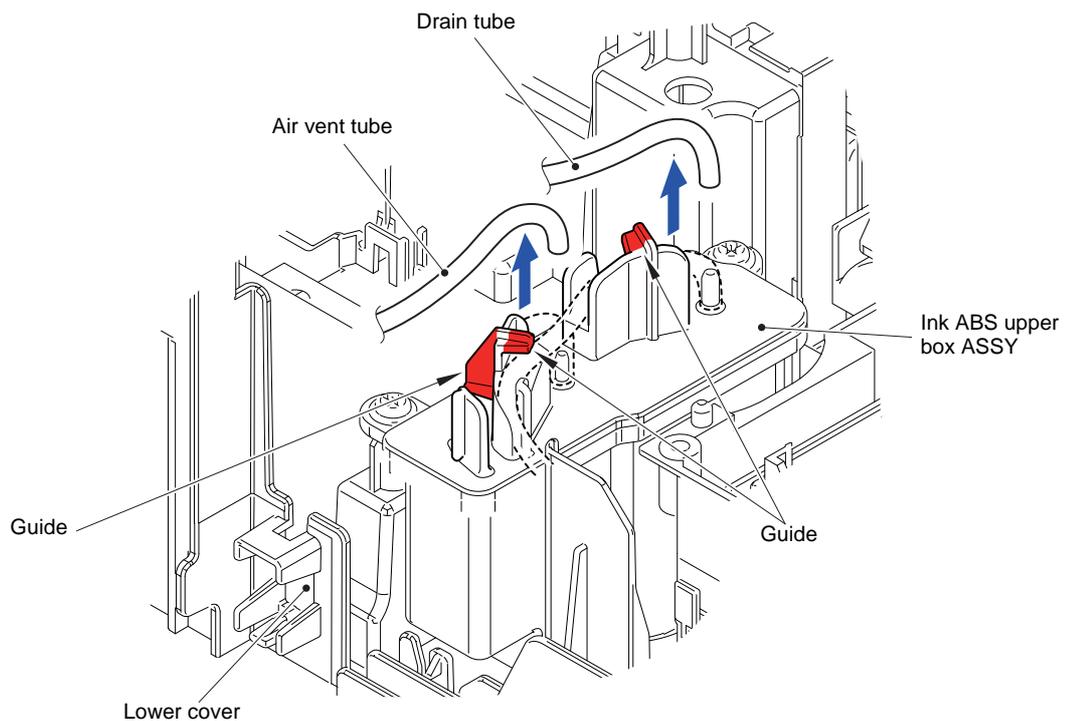
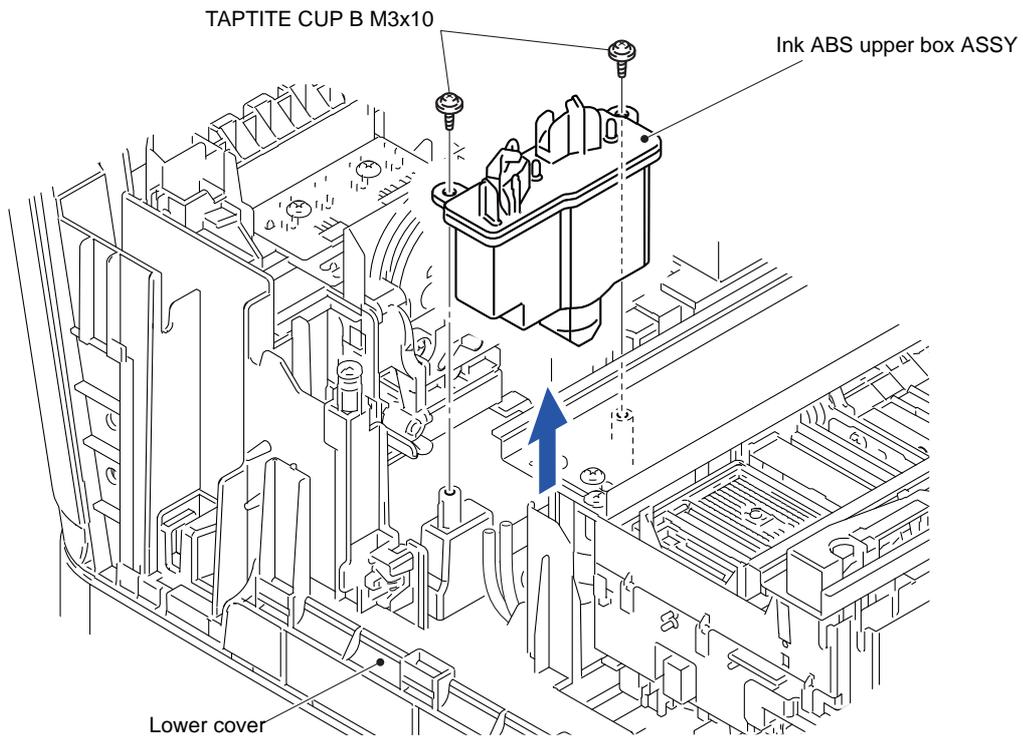


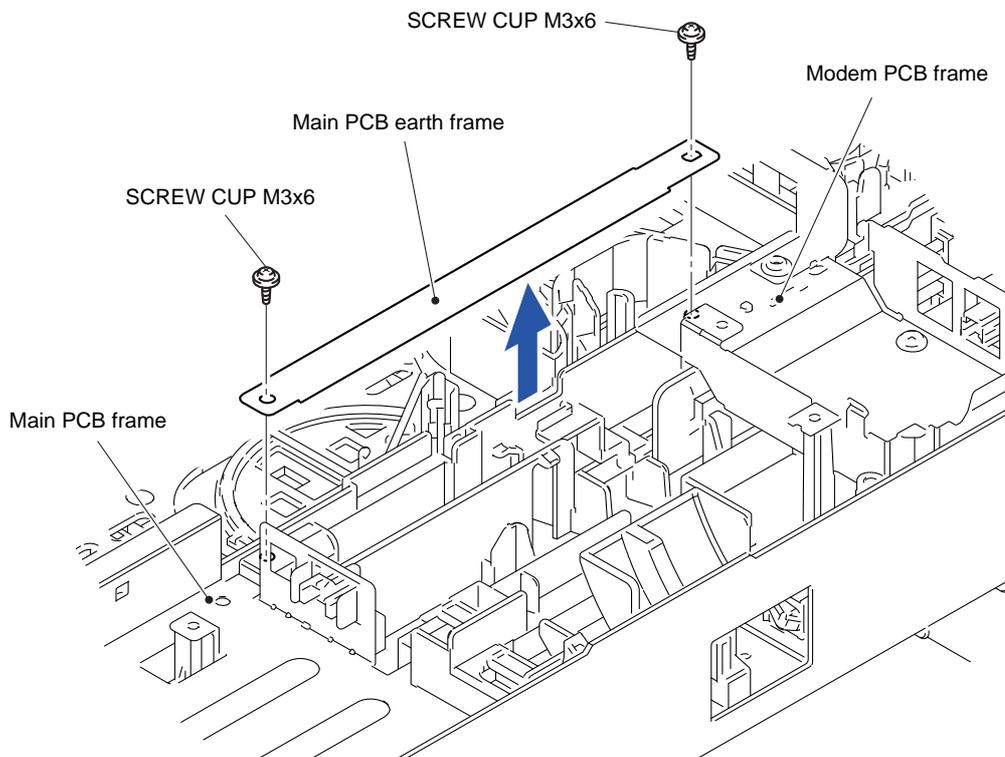
Fig. 3-116

- (3) Remove the two screws (TAPTITE CUP B M3x10) and remove the Ink ABS upper box ASSY from the Lower cover.



**Fig. 3-117**

- (4) Remove the two screws (SCREW CUP M3x6) and remove the Main PCB earth frame from the Main PCB frame and Modem PCB frame.



**Fig. 3-118**

- (5) Remove the two screws (SCREW CUP M3x6) and remove the Main PCB earth frame R from the Modem PCB frame.
- (6) Remove the two screws (TAPTITE CUP B M3x10) and remove the Modem PCB frame from the Lower cover.

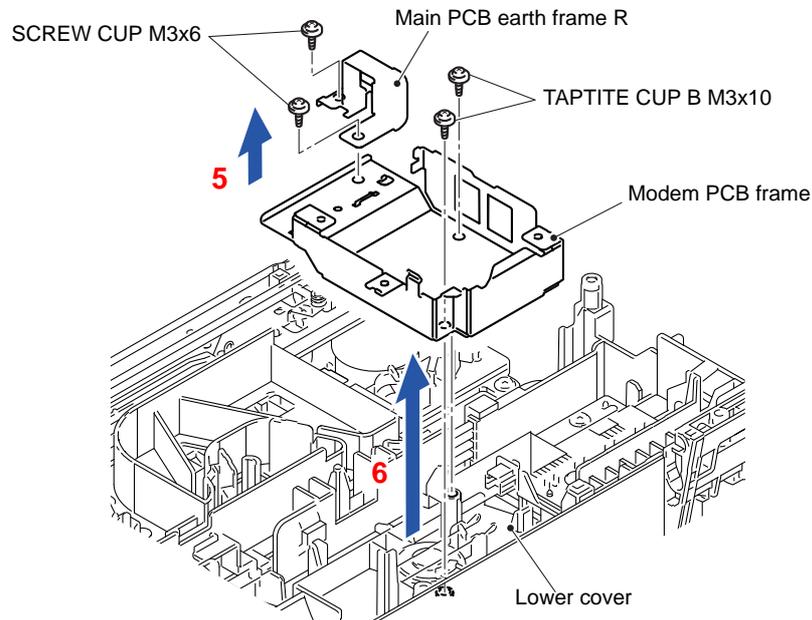


Fig. 3-119

- (7) Remove the screw (SCREW CUP M3x6) and remove the Main PCB earth frame R2 from the Lower cover.

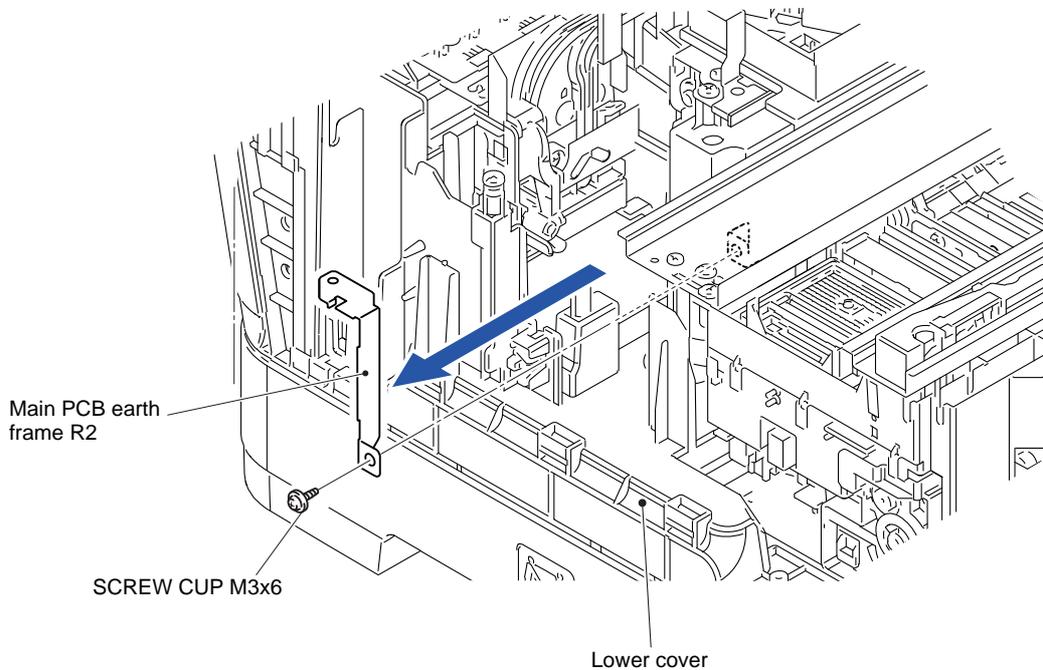


Fig. 3-120

- (8) Release the two Hooks and release the Main PCB harness hold R from the Main PCB frame.

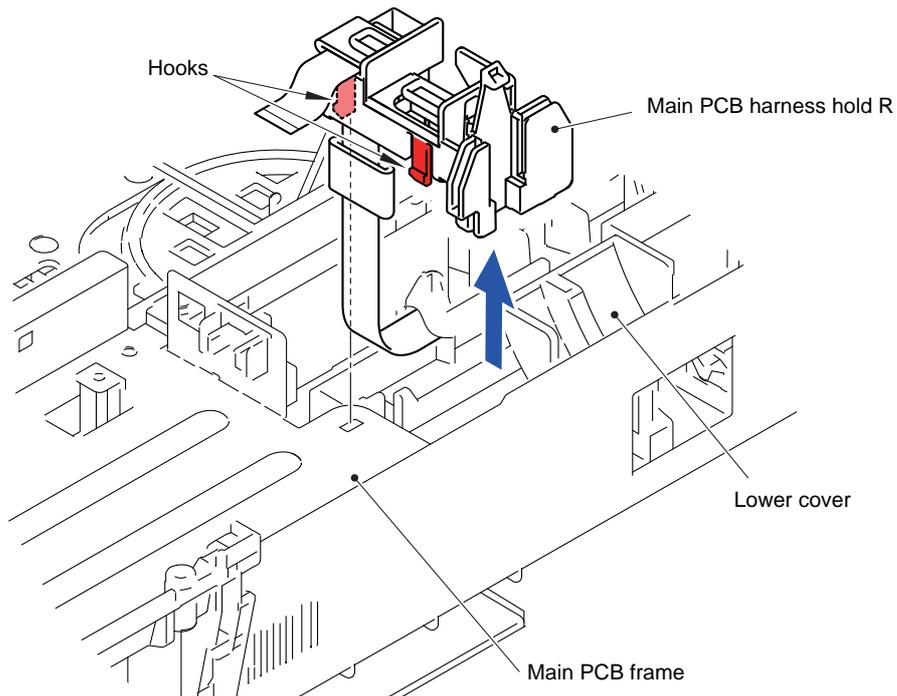


Fig. 3-121

- (9) Remove the screw (SCREW BIND M3x6) and remove the T2 FG wire and PF FG wire from the Main PCB frame.
- (10) Remove the screw (SCREW BIND M3x6) and remove the Engine FG wire from the Main PCB frame.
- (11) Remove the two screws (SCREW CUP M3x6 and TAPTITE CUP B M3x10) and remove the Main PCB frame from the Main body.

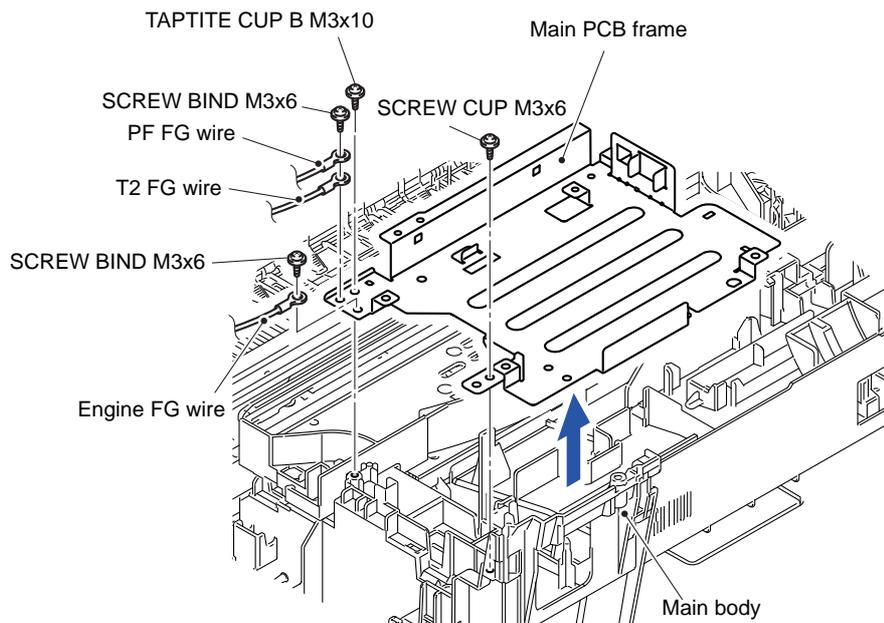


Fig. 3-122

(12) Release the wiring of the Maintenance unit.

(13) Remove the two screws (TAPTITE CUP B M3x10) from the CR frame ASSY.

**Assembling Note:** When assembling the two screws (TAPTITE CUP B M3 x 10), temporarily remove the screw in step (3) of "9.47 Carriage Motor" first. Then, assemble the two screws in the order as shown in the figure, and lastly reassemble the temporarily removed screw.

(14) Remove the two screws (TAPTITE CUP B M3x10) from the CR guide rail.

**Assembling Note:** When assembling the two screws (TAPTITE CUP B M3 x 10), assemble them in the order as shown in the figure.

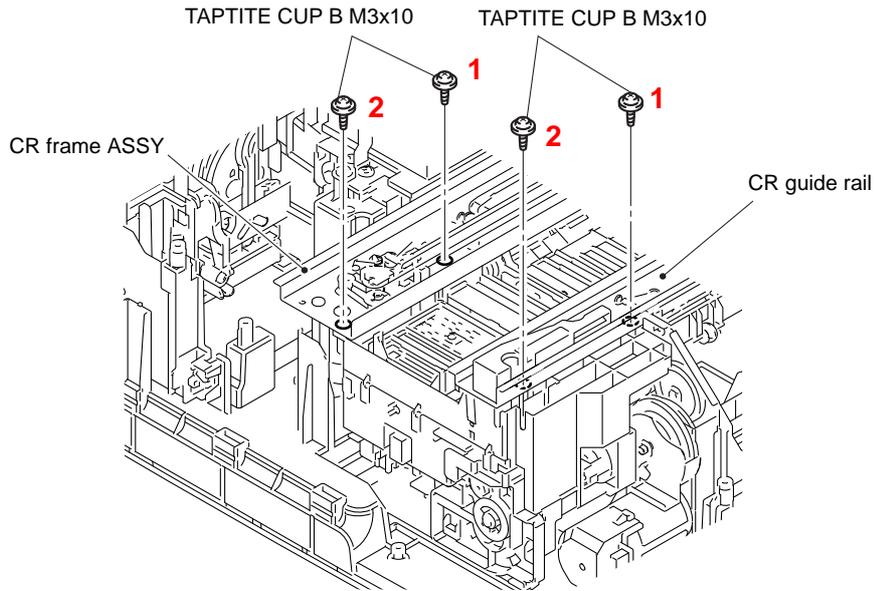


Fig. 3-123

(15) Remove the screw (<Made-in-China machine> TAPTITE CUP B M3x10, <Made-in-Philippines machine> TAPTITE BIND B M4x12) and the two screws (SCREW BIND M3x6) from the Maintenance unit.

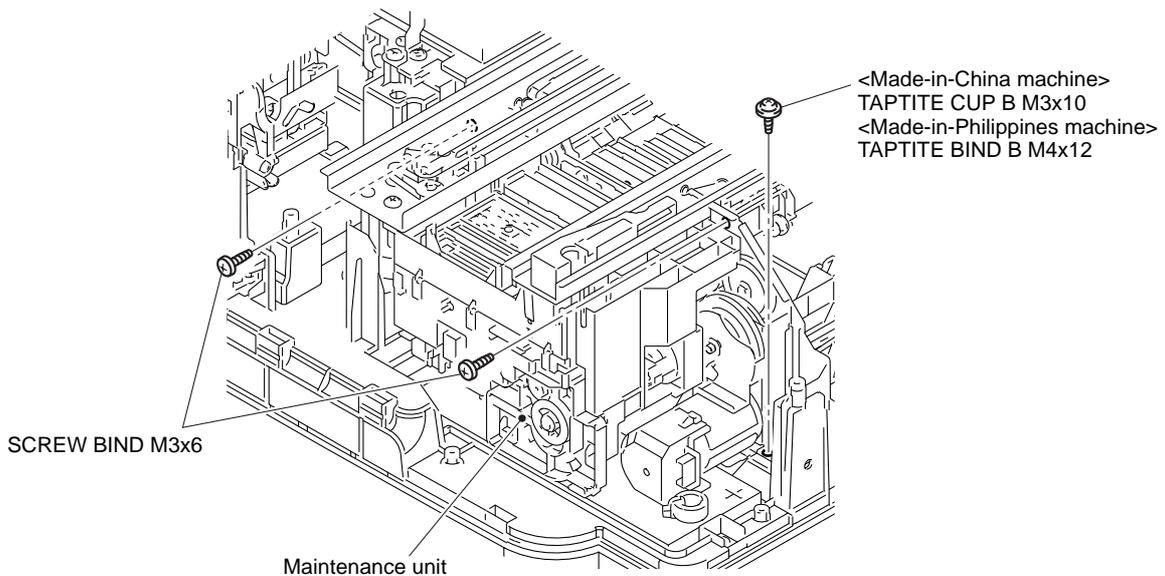


Fig. 3-124

- (16) Remove the two screws (SCREW BIND M3x10 and TAPTITE CUP B M3x10) from the Paper feed arm frame ASSY.
- (17) Slide the section "A" of the Shaft slide ASSY in the arrow direction to move the shaft.

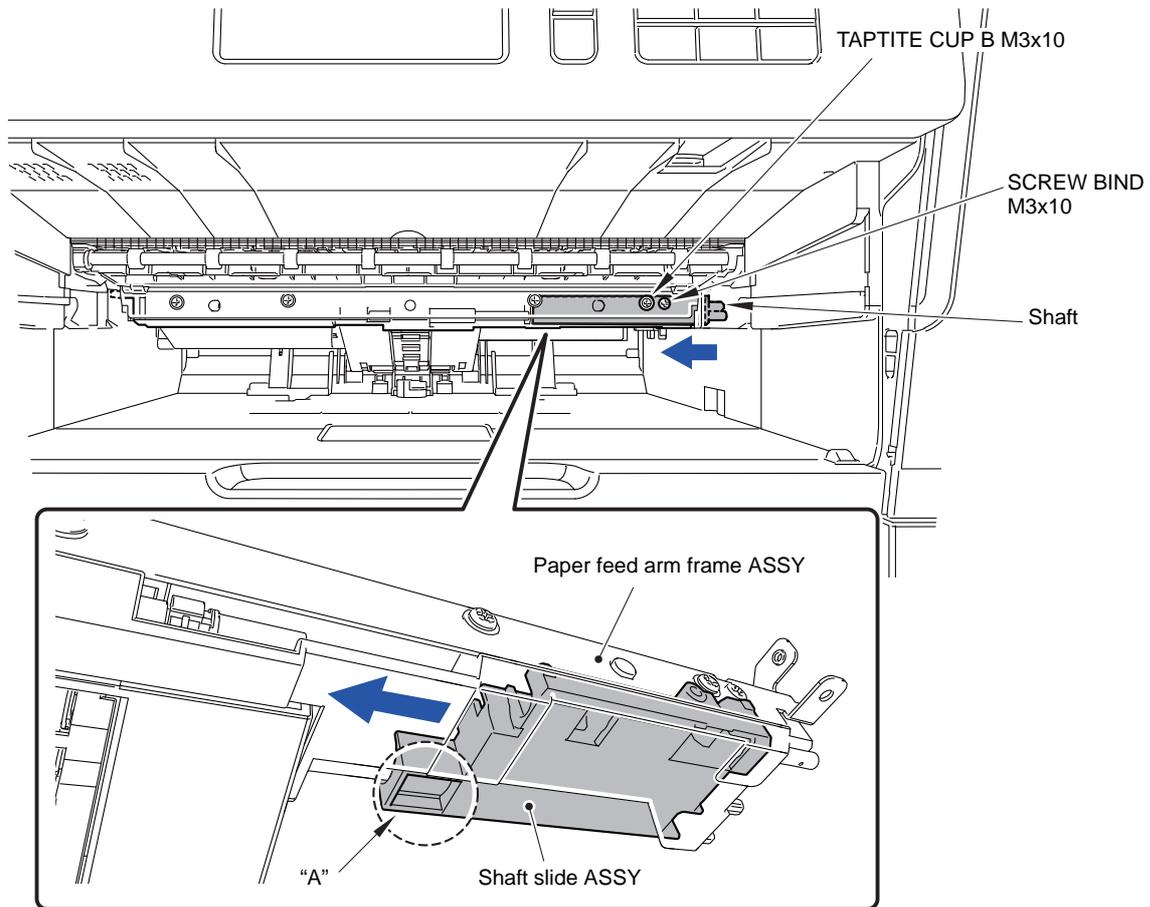


Fig. 3-125

(18) < Model with Lower tray only >

Remove the screw (TAPTITE BIND B M4x12) from the Lower cover and lift the Maintenance unit and Lower cover slightly.

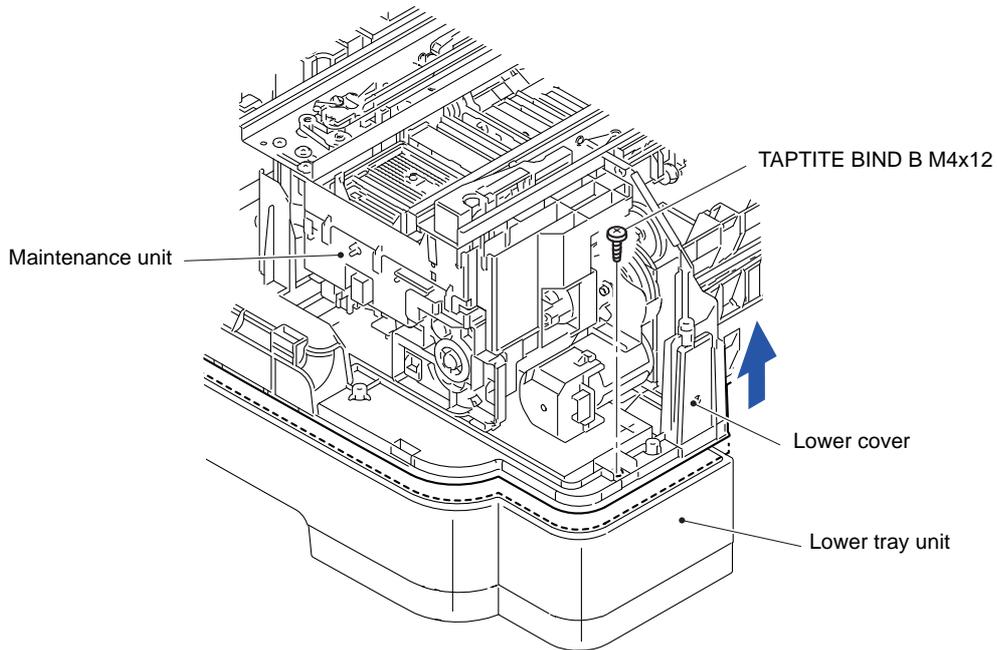


Fig. 3-126

(19) Release the Hook and push down the lever of the ASF drive frame in the arrow direction. Slide the Maintenance unit in the arrow direction and remove it from the Lower cover.

**Note:** Be careful not to damage the lever of the ASF drive frame of the Maintenance unit when removing it.

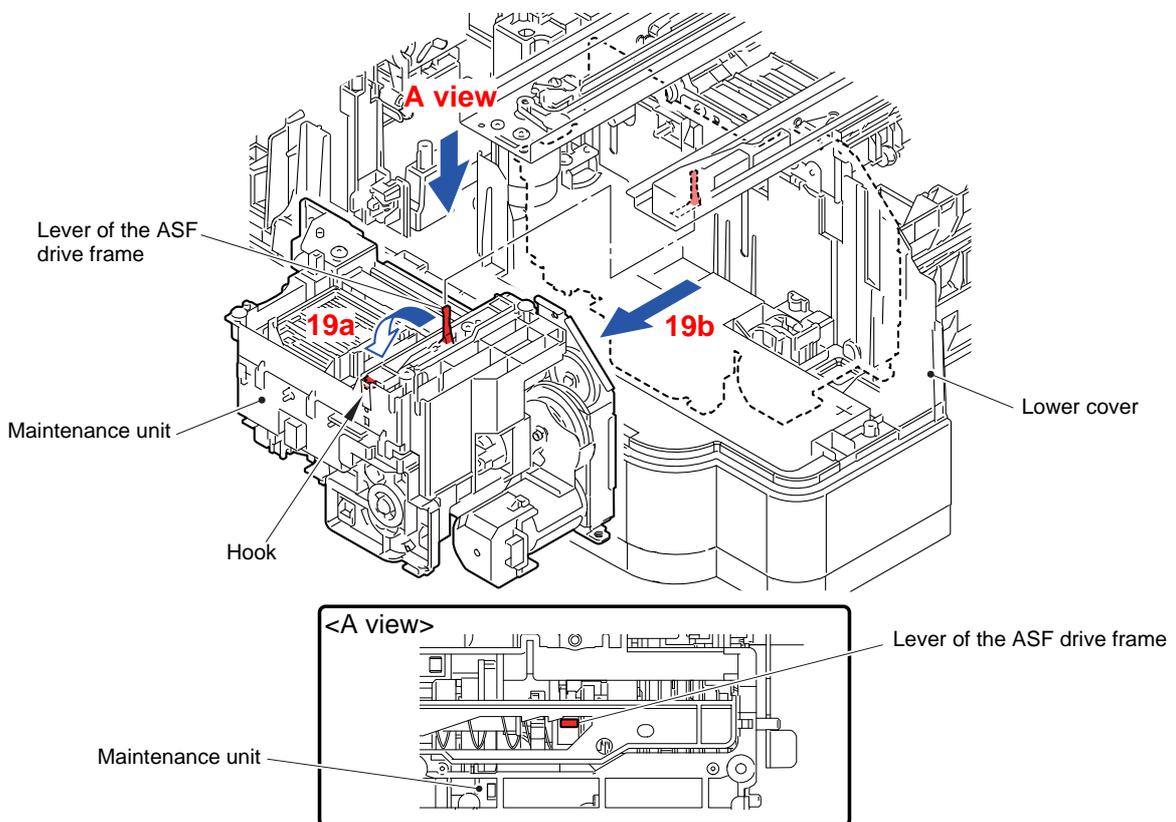
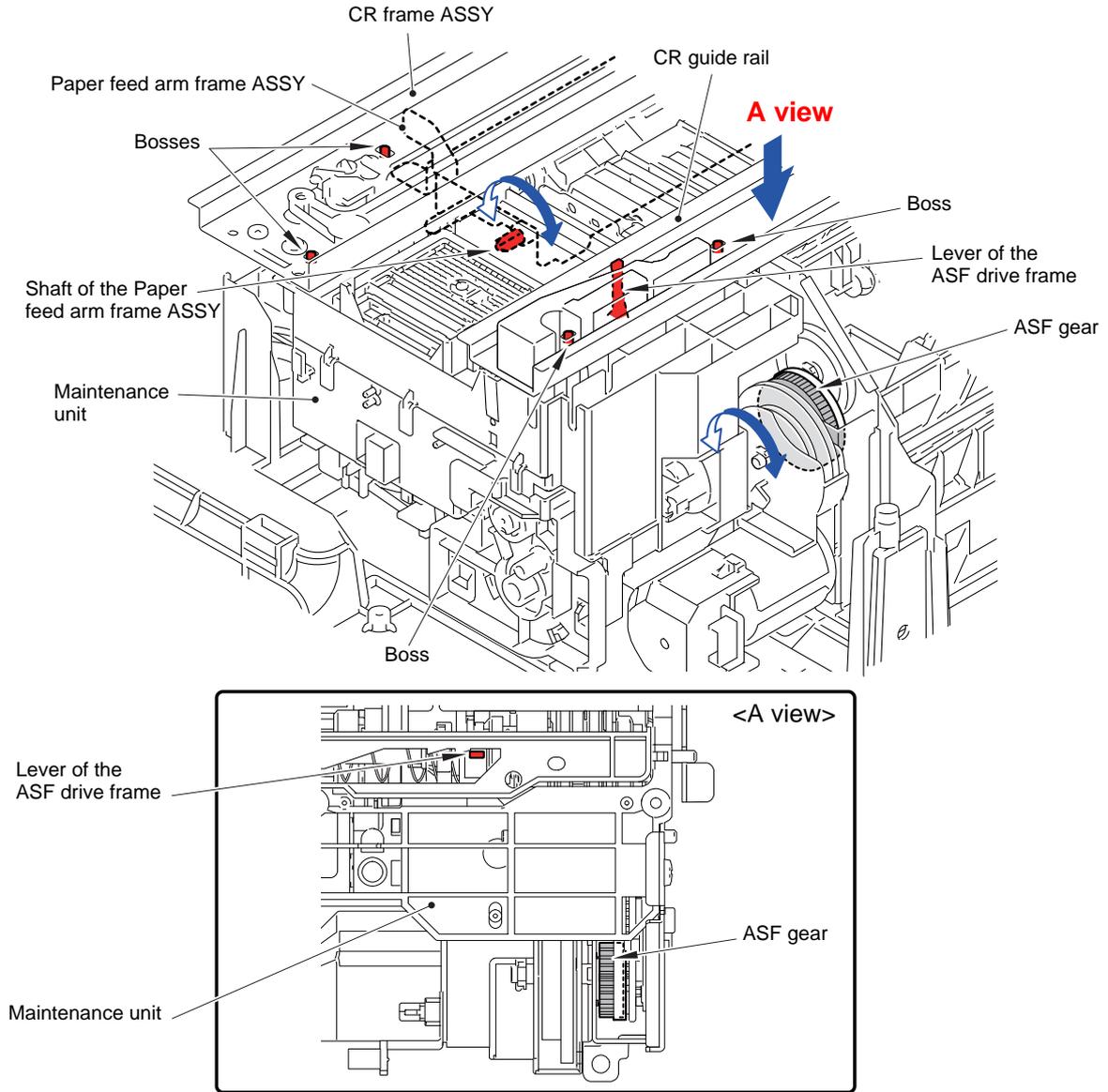


Fig. 3-127

**Assembling Note:**

- Check that the lever of the ASF drive frame is located at the position shown in the figure.
- Fit the Bosses of the Maintenance unit into the CR frame ASSY and CR guide rail properly.
- Turn the ASF gear and check that the shaft of the Paper feed arm frame ASSY turns.



**Fig. 3-128**

**Routing of harnesses:** See “**11** Lower cover R”, “**16** Ink refill ASSY”.

### 9.38 Ink Absorber Felt (For Maintenance Unit)

- (1) Remove the Ink absorber felt (For maintenance unit) from the Lower cover.

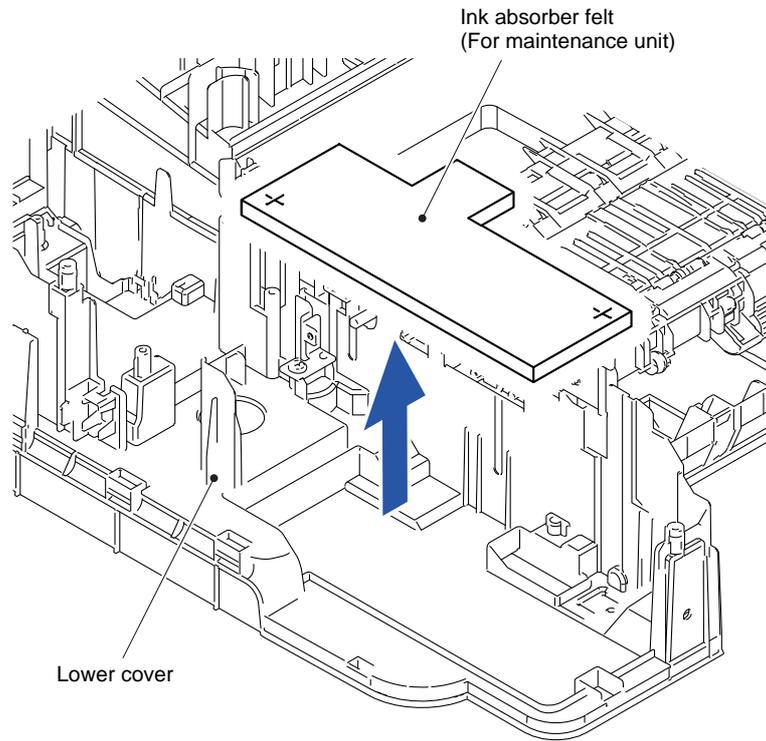


Fig. 3-129

### 9.39 Carriage PCB ASSY

- (1) Remove the two Flat cores from the Main PCB harness hold R, and pull out the Flat cables of the Carriage PCB ASSY from the Flat cores.

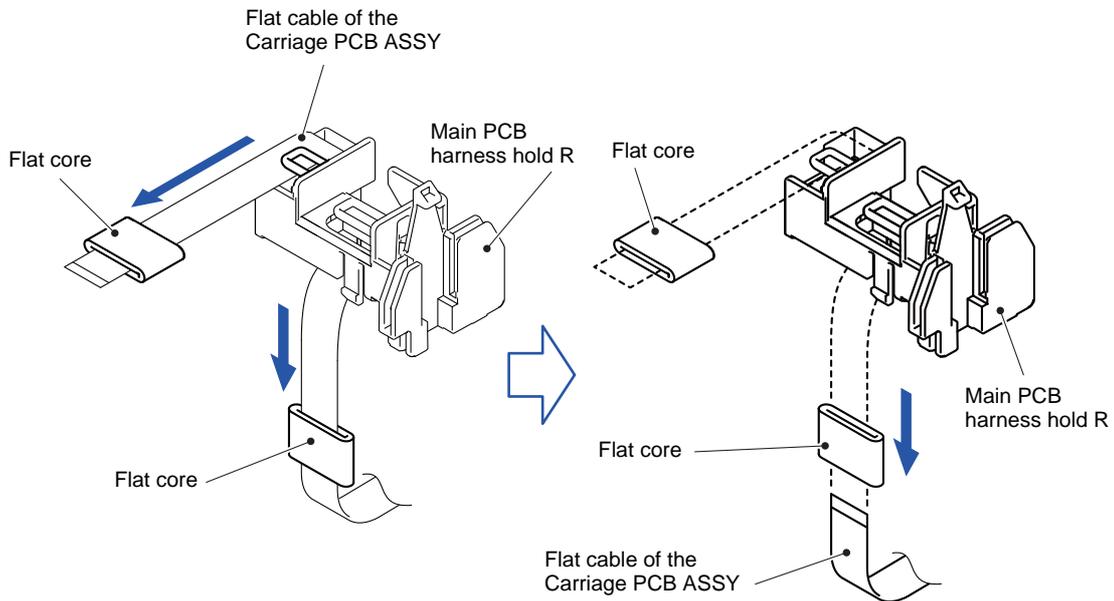


Fig. 3-130

- (2) Release the wiring of the Flat cable of the Carriage PCB ASSY and pull it out from the Tube clamp.

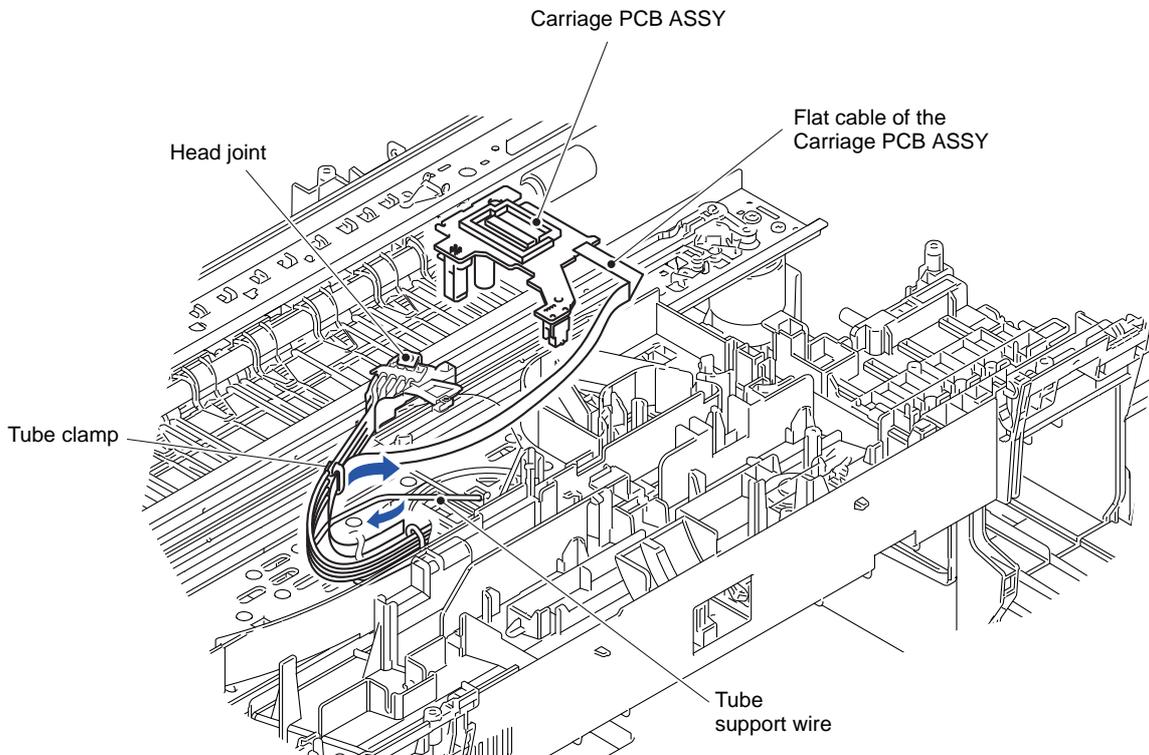
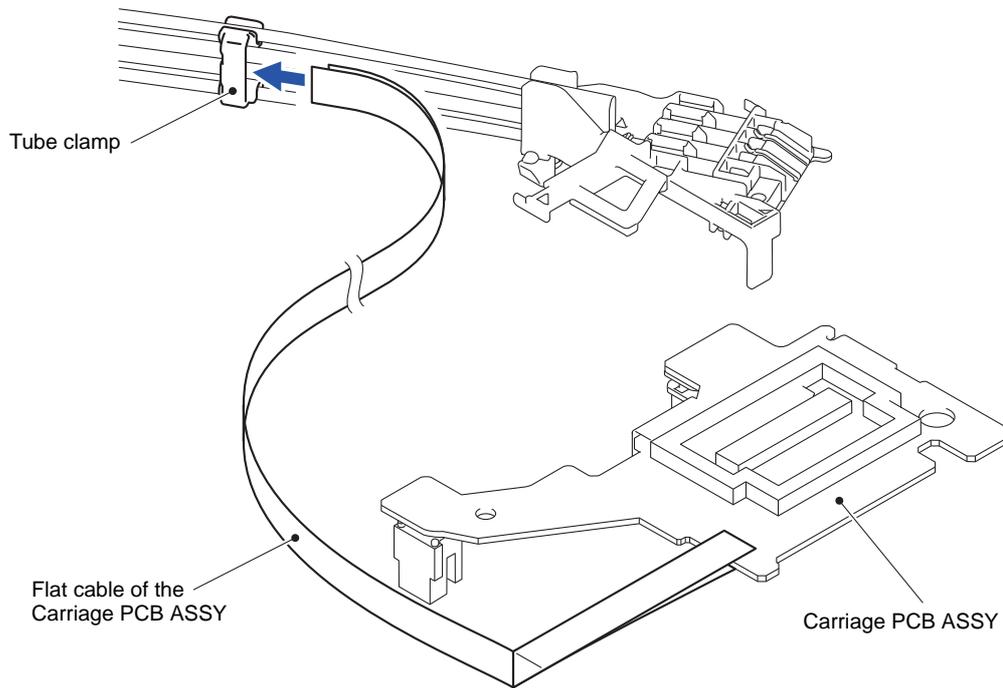


Fig. 3-131

**Assembling Note:** When assembling the Flat cable of the Carriage PCB ASSY, be careful about the front side and reverse side of the Flat cable.



**Fig. 3-132**

**Routing of harnesses:** See “[2 Main PCB/Modem PCB](#)”, “[5 Head/carriage unit](#)”.

## 9.40 Tank Case ASSY (Ink tank model only)

- (1) When there is ink remaining in the Tank case ASSY, tilt the machine forward and use the Ink extraction syringe to remove the remaining ink.

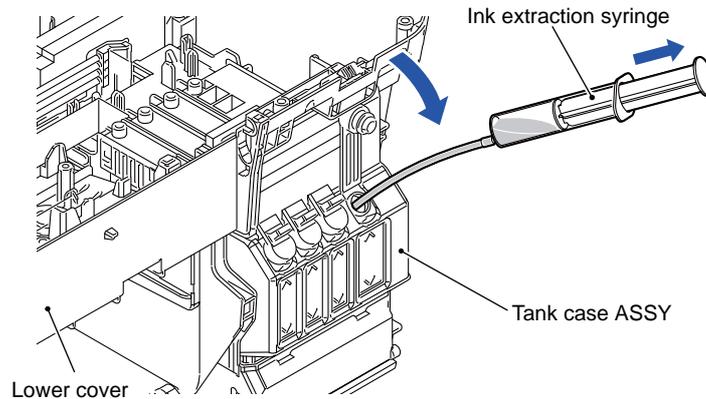


Fig. 3-133

- (2) Remove the screw (TAPTITE CUP B M3x10), and remove the Tank case support.

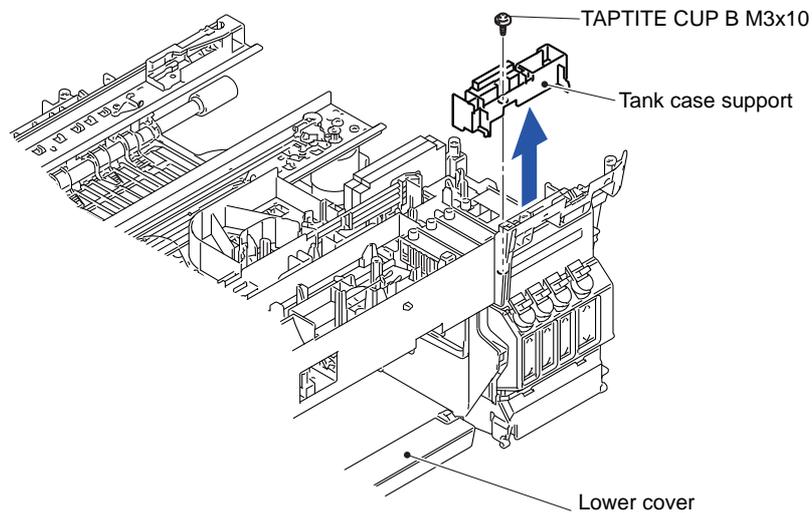


Fig. 3-134

- (3) Remove the Tank case ASSY from the Ink refill ASSY by pulling it to the front.
- (4) Release the four Hooks and remove the Tank case cap attachment from the Tank case ASSY.

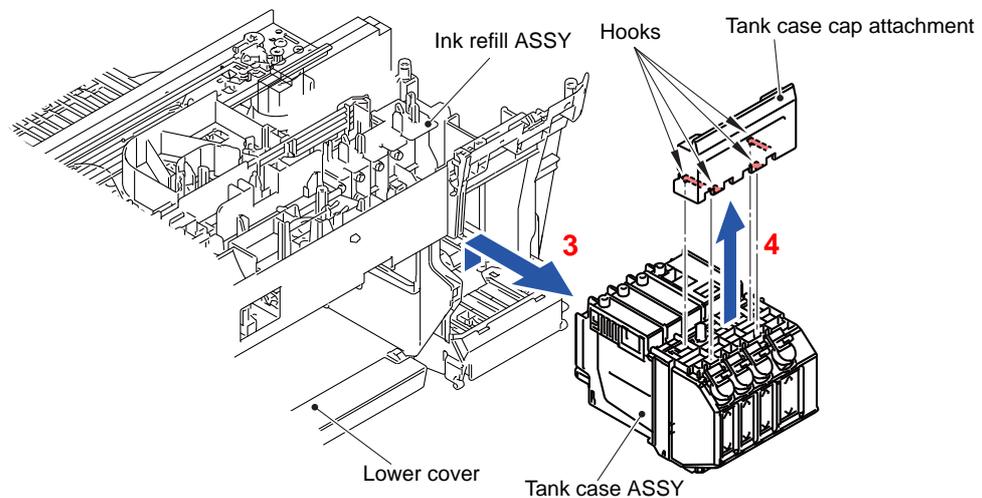


Fig. 3-135

## 9.41 Ink Refill ASSY

- (1) Remove the Ink supply tube from the Support wire.
- (2) Remove the Ink supply tube from the Tube support plate.
- (3) Release the wiring of Carriage motor harness attached to the Ink refill ASSY.
- (4) < Ink tank model / Simple Ink cartridge model only >  
Peel off the Cable band just from the Ink sensor flat cable.

**Note:** Do not remove the Cable band from the Lower cover to reuse it when mounting a new Ink refill ASSY.

- (5) Release the wiring of the Ink sensor flat cable from the Lower cover.
  - (6) < Ink tank model only >  
Remove the two screws (TAPTITE CUP B M3x10) from the Ink refill ASSY.
  - (7) Remove the Ink refill ASSY from the Lower cover.
- < Ink cartridge model >

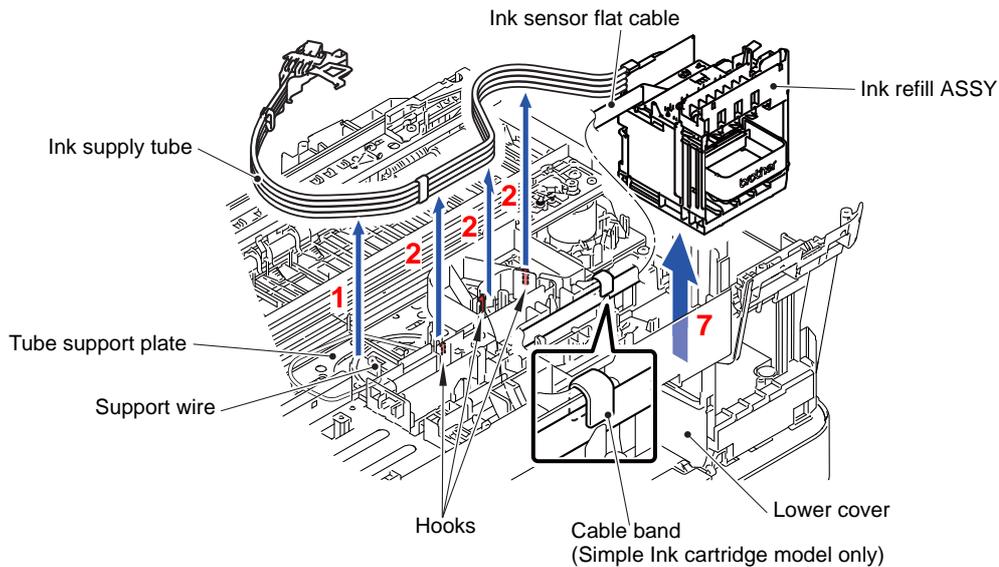


Fig. 3-136

< Ink tank model >

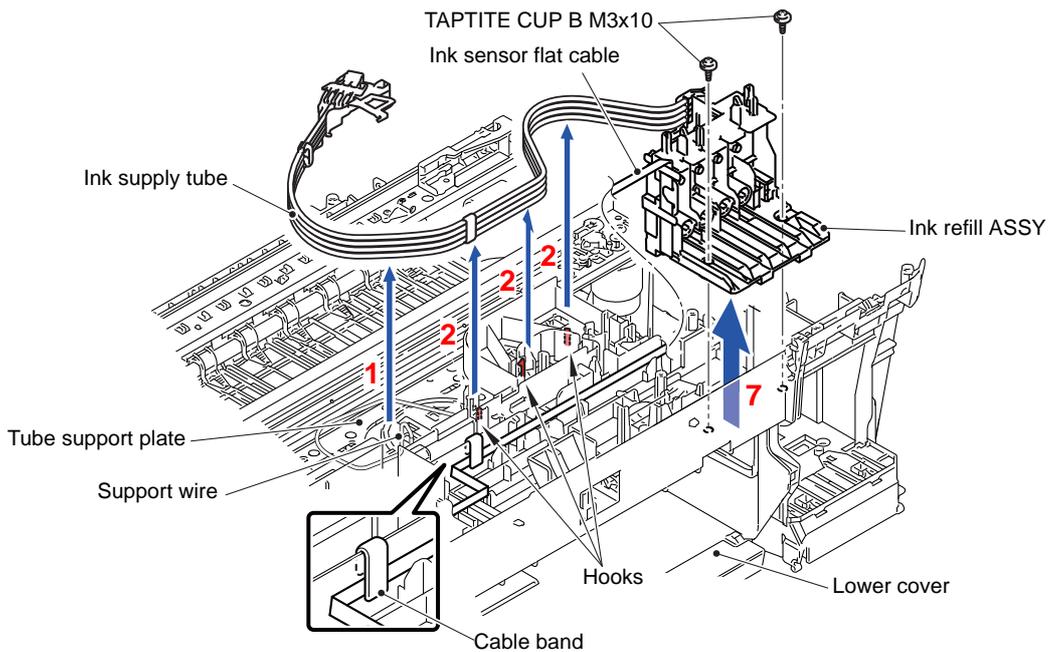


Fig. 3-137

**Routing of harnesses:** See “[2 Main PCB/Modem PCB](#)”.

## 9.42 Ink Absorber Felt (For Ink Refill ASSY)

- (1) Remove the Ink absorber felt (For ink refill ASSY) from the Lower cover.

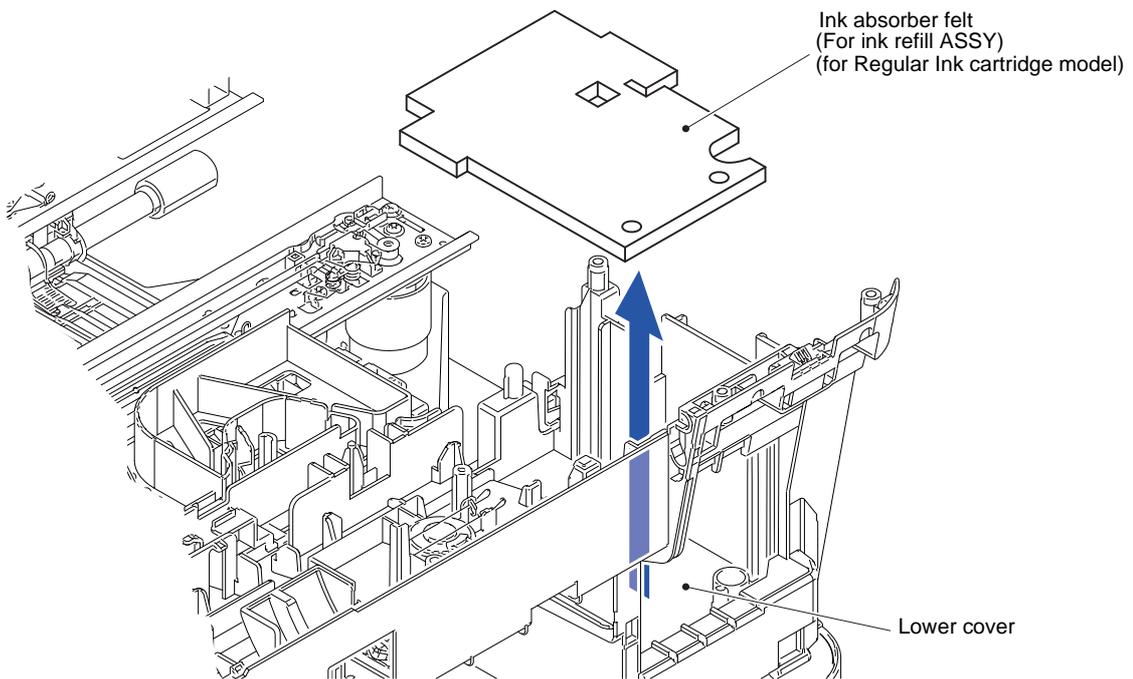


Fig. 3-138

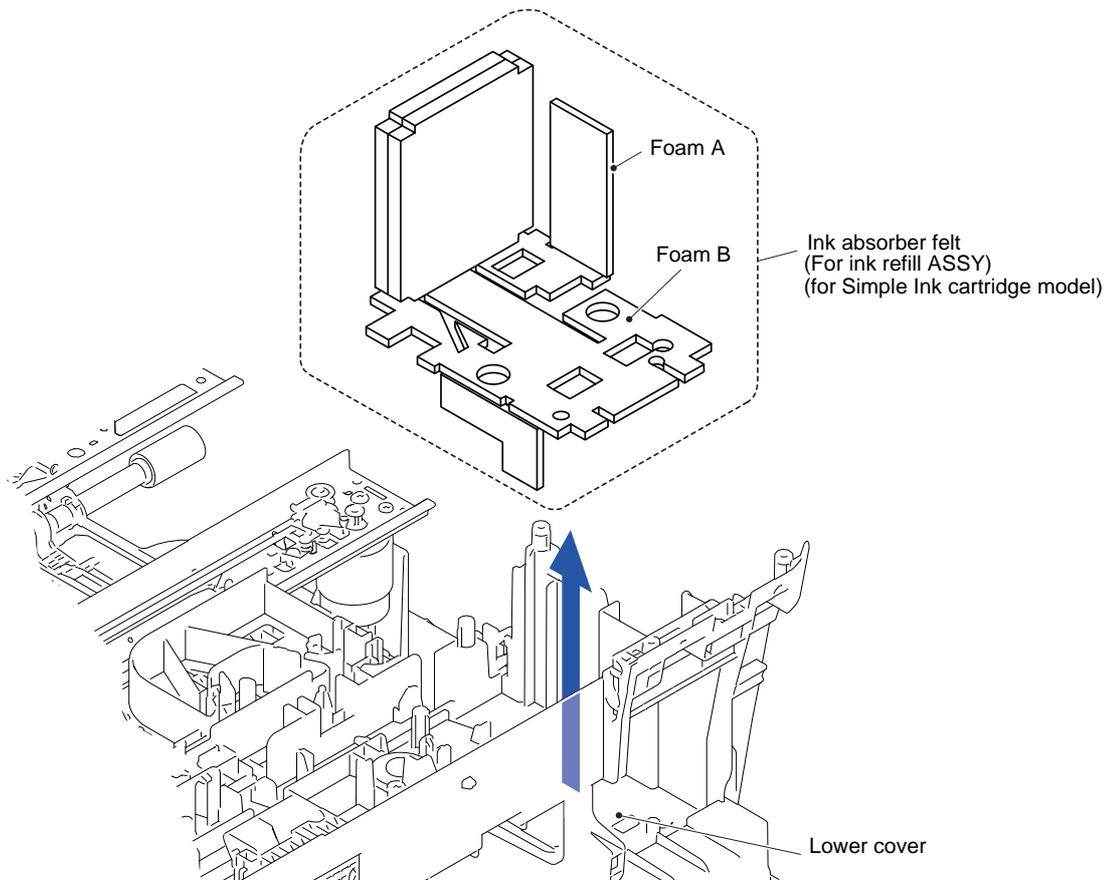
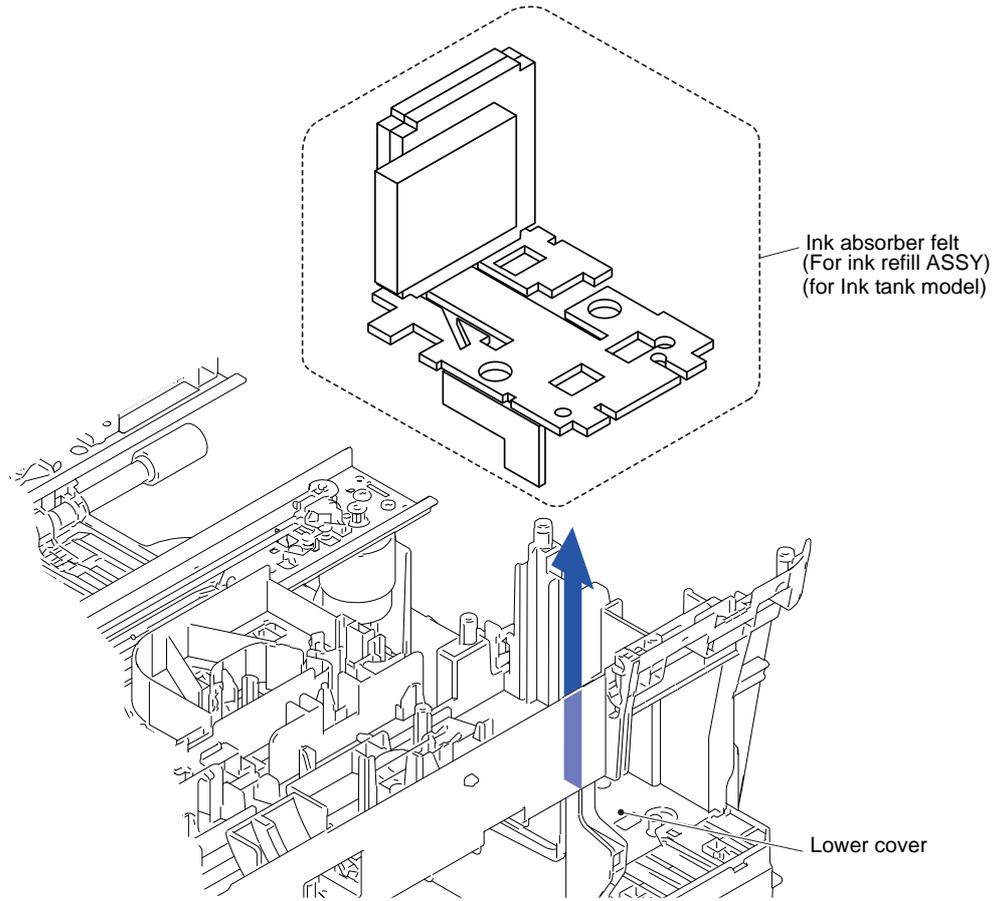


Fig. 3-139

**Assembling Note:** When affixing the Foam A to the Lower cover, it must contact the top surface of the Foam B.



**Fig. 3-140**

### 9.43 Ink Cartridge Cover Sensor

- (1) Release the wiring of the Ink cartridge cover sensor.
- (2) Release the Hook and remove the Ink cartridge cover sensor from the Lower cover.

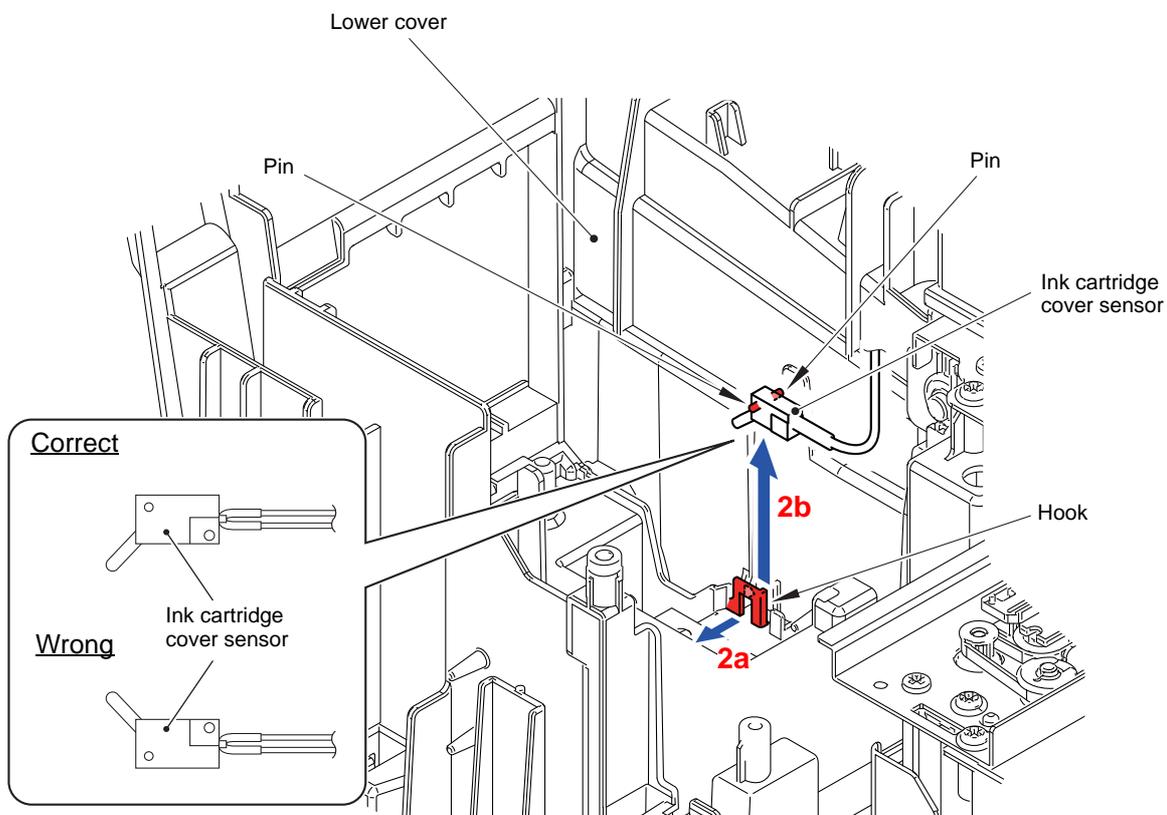


Fig. 3-141

**Assembling Note:** When mounting the Ink cartridge cover sensor, be careful about the top and bottom orientation.

**Routing of harnesses:** See “[8 Ink cartridge cover sensor](#)”.

## 9.44 Ink Absorber Box

- (1) < Except 3rd tray model >  
Turn the main body upright as shown in the figure.  
< 3rd tray model >  
When finishing step (2) of "9.49. LT Frame ASSY (T2 Paper Pull-in Roller L/R)" and step (2) of "9.63. 3rd Tray Relay PCB", turn the Lower tray unit upright as shown in the figure.

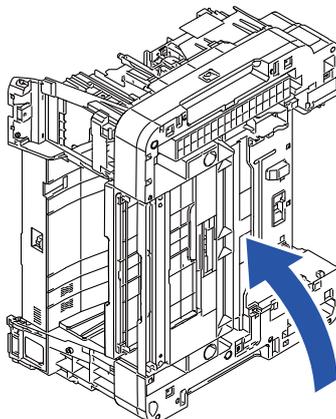


Fig. 3-142

- (2) [Model with Lower tray]  
Remove the two screws (TAPTITE CUP B M3x10) and remove the Ink absorber box from the Main body.

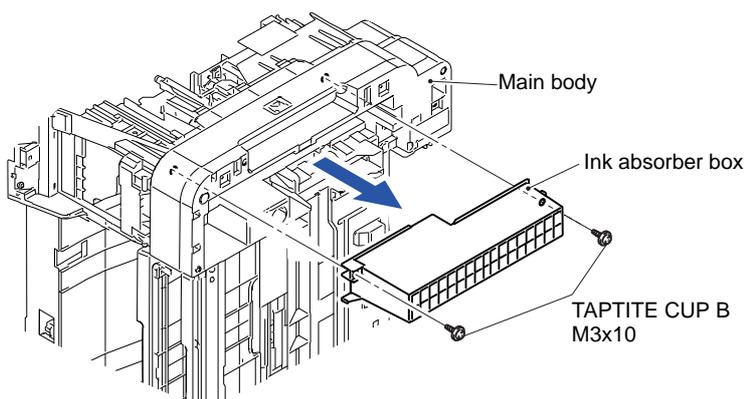


Fig. 3-143

- [Model without Lower tray]  
Remove the four screws (TAPTITE CUP B M3x10) and remove the Ink absorber box from the Main body.

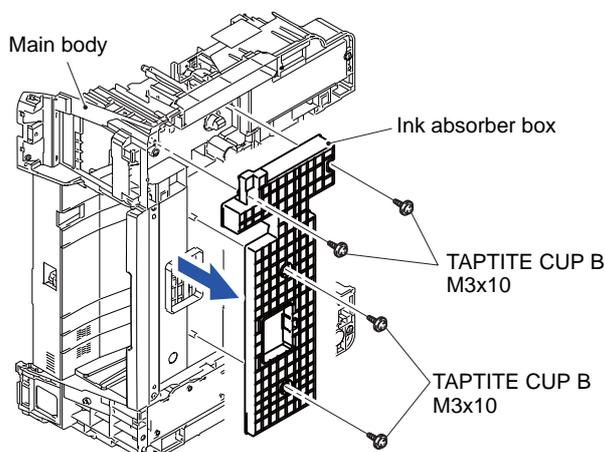


Fig. 3-144

## 9.45 Switchback Sensor PCB

- (1) Release the wiring of the harnesses attached to the Tube support plate.
- (2) Release the seven Hooks and remove the Tube support plate from the Main body.

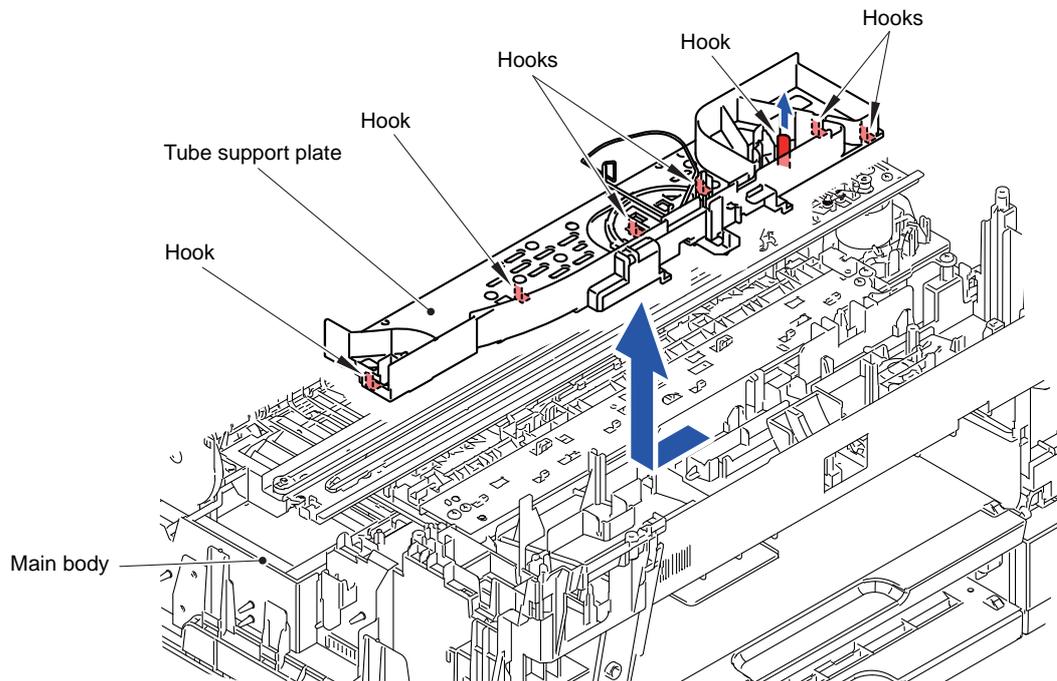


Fig. 3-145

- (3) Release the wiring of the switchback sensor harness.
- (4) Release the two Hooks and remove the Switchback sensor PCB from the Main body.

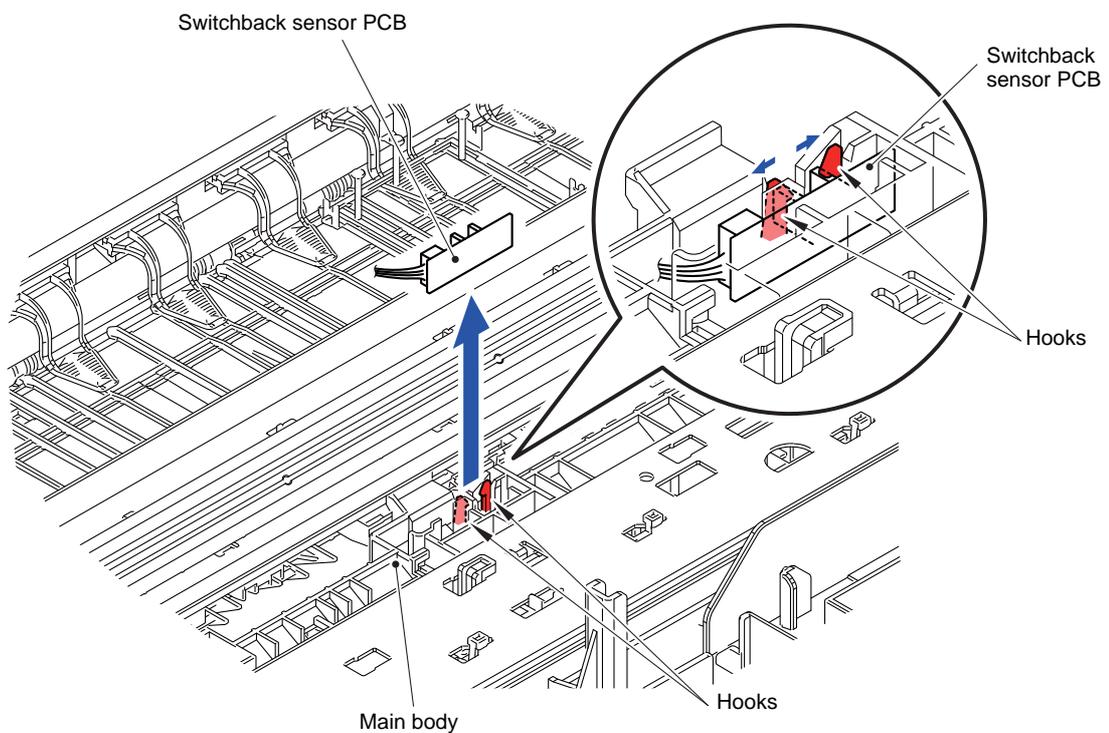


Fig. 3-146

Routing of harnesses: See “7 Lower cover L”, “9 Switchback sensor PCB”.

## 9.46 CR Encoder Strip

- (1) Remove the CR encoder strip from the Encoder spring.
- (2) Remove the CR encoder strip from the CR frame ASSY.

**Note:** Take care not to scratch the CR encoder strip. If it is stained or scratched, replace it with a new one.

**Assembling Note:** When mounting the CR encoder strip, be sure to mount it in a way that the ▲ -marked point comes to the right side (carriage motor side) and the ▲ mark points up.

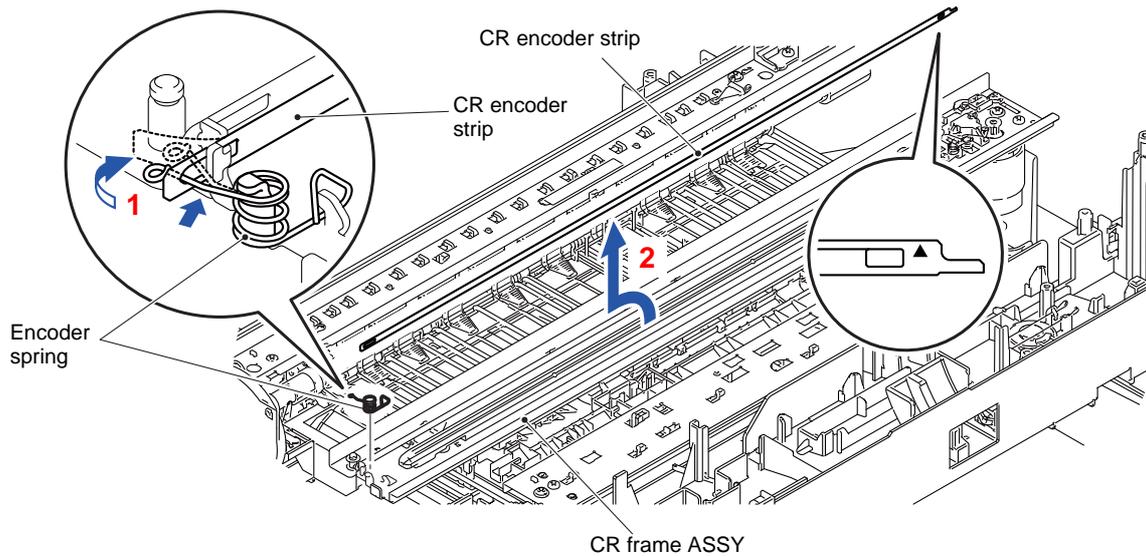


Fig. 3-147

## 9.47 Carriage Motor

- (1) Release the Boss and five Hooks and remove the Tube protector from the CR frame ASSY.

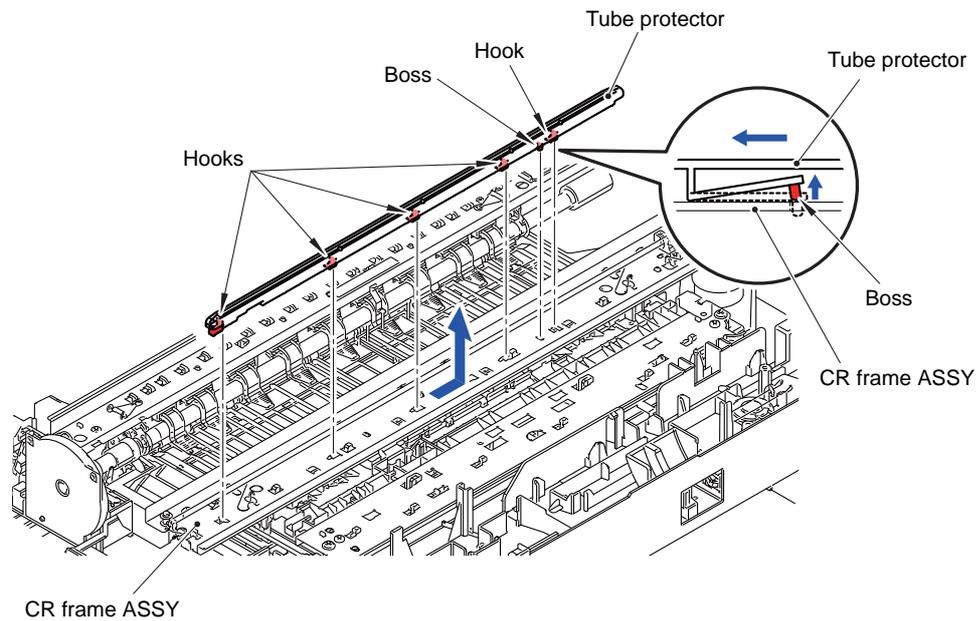


Fig. 3-148

- (2) Remove the ferrite core, and release the wiring of the Carriage motor harness.
- (3) Remove the screw (TAPTITE CUP B M3x10) from the CR frame ASSY.
- (4) Remove the two CR frame springs from the CR frame ASSY.
- (5) Release the Hook and remove the CR frame ASSY from the Main body.

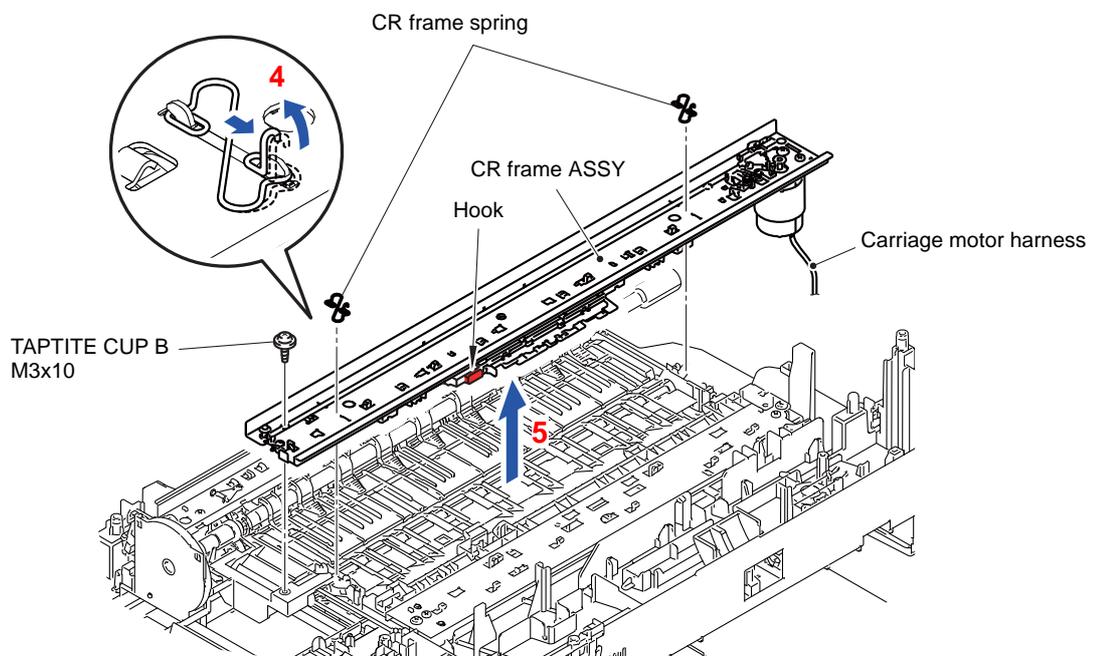
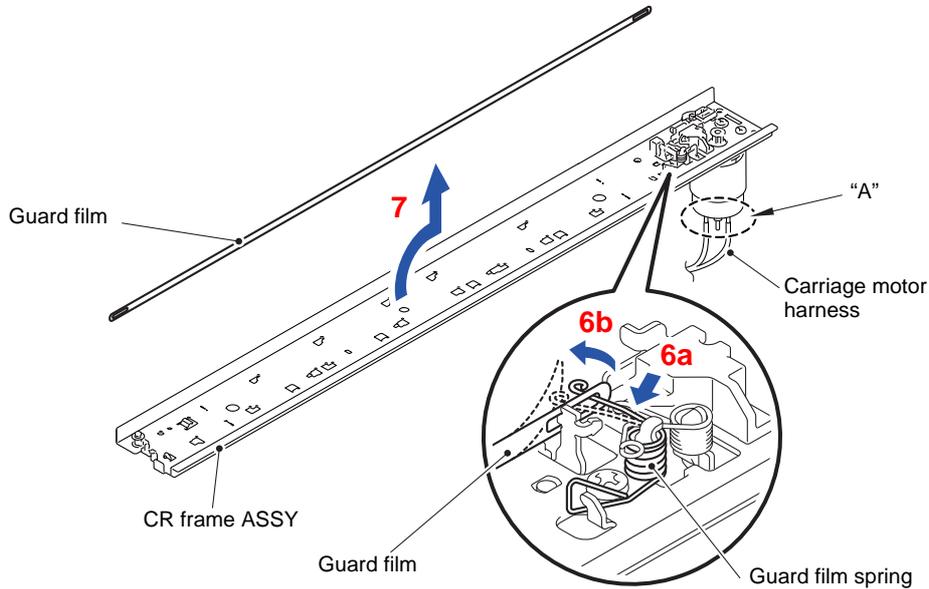


Fig. 3-149

(6) Remove the Guard film from the Guard film spring.

(7) Remove the Guard film from the CR frame ASSY.

**Note:** When performing this procedure, place the unit in a way that the section "A" of the Carriage motor harness will not be damaged.

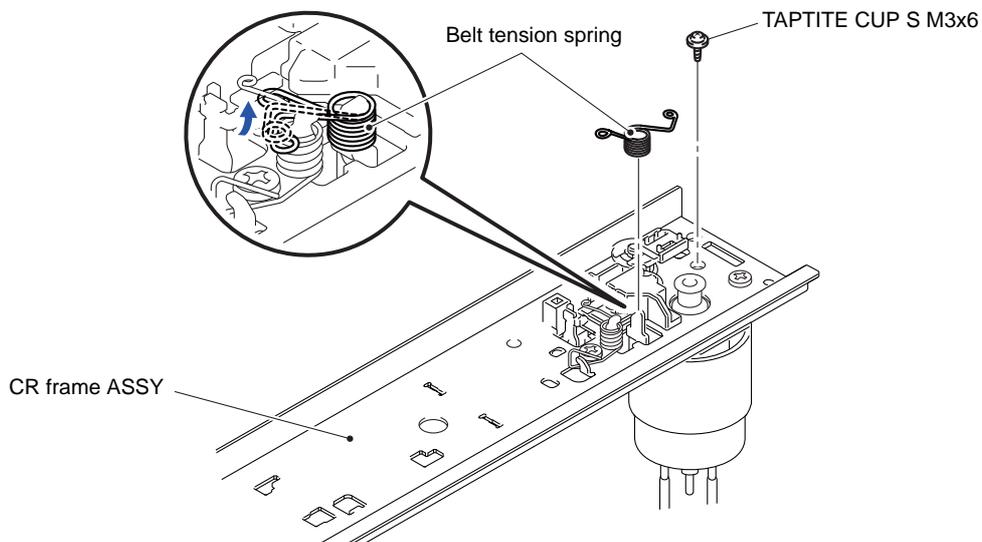


**Fig. 3-150**

(8) Remove the screw (TAPTITE CUP S M3x6) from the CR frame ASSY.

**Assembling Note:** Tighten the screw (TAPTITE CUP S M3x6) temporarily and then perform the following procedures before mounting the Upper cover.

- 1) Mount the Head/carriage unit and CR timing belt to the CR frame ASSY.
  - 2) Tighten the screw (TAPTITE CUP S M3x6) firmly.
- (9) Remove the Belt tension spring from the CR frame ASSY.



**Fig. 3-151**

(10) Remove the two screws (SCREW BIND M3x6) and remove the Motor plate from the CR frame ASSY.

(11) Remove the two screws (SCREW BIND M3x6) and remove the Carriage motor from the Motor plate.

**Assembling Note:** Assemble the carriage motor in a way that the print section comes to the position shown in the figure.

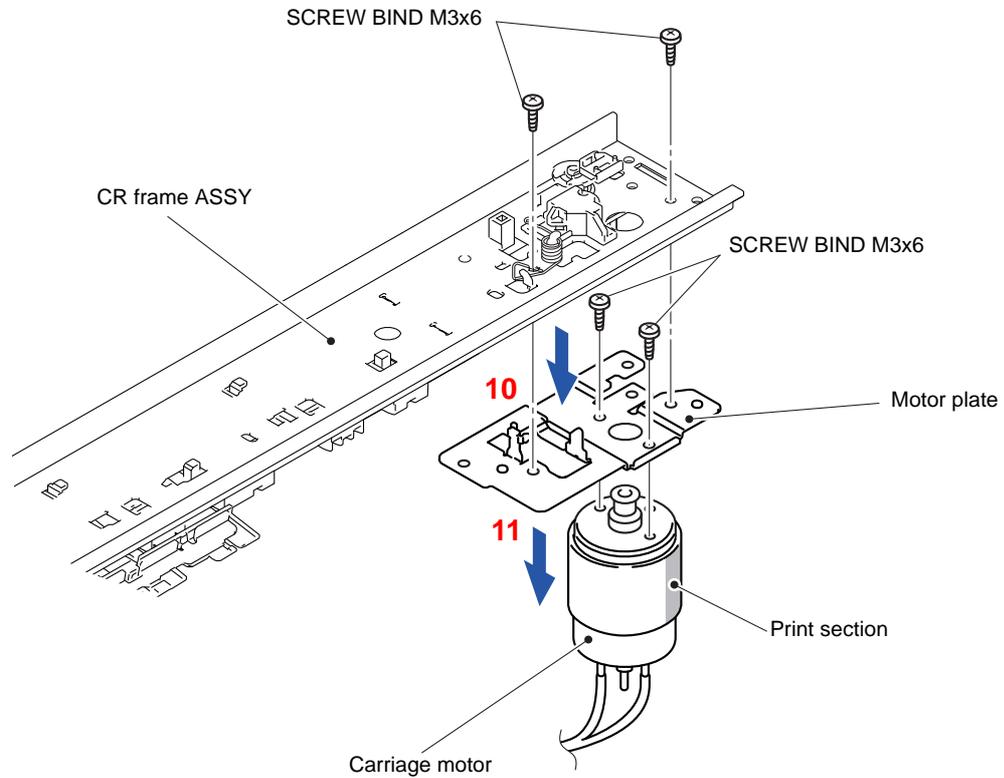


Fig. 3-152

**Routing of harnesses:** See “[11](#) Lower cover R”, “[16](#) Ink refill ASSY”.

### 9.48 Flushing Base

(1) Remove the Flushing base from the PF motor frame.

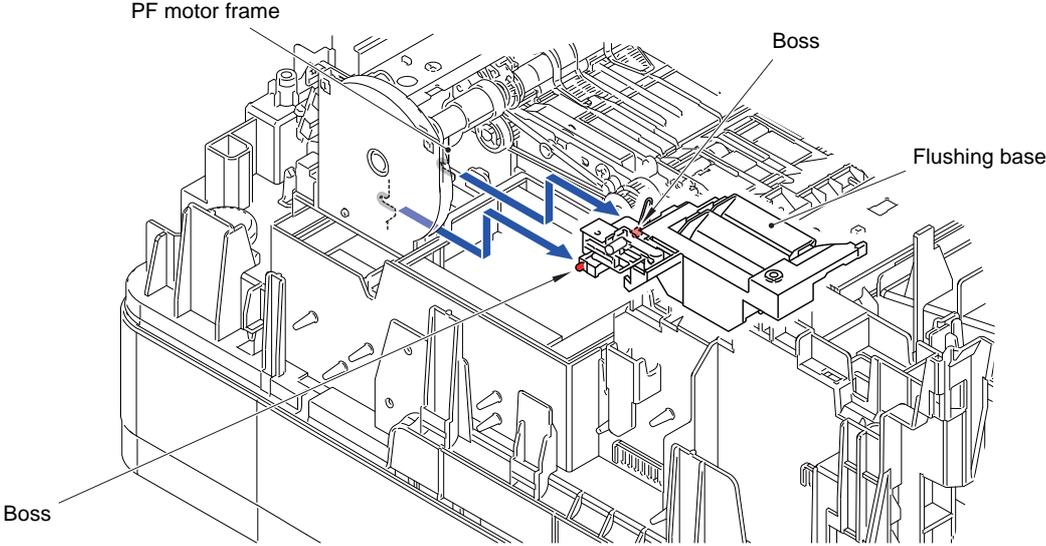


Fig. 3-153

**Assembling Note:** Assemble not to put the section "A" of the Flushing base over the Switchback roller belt.

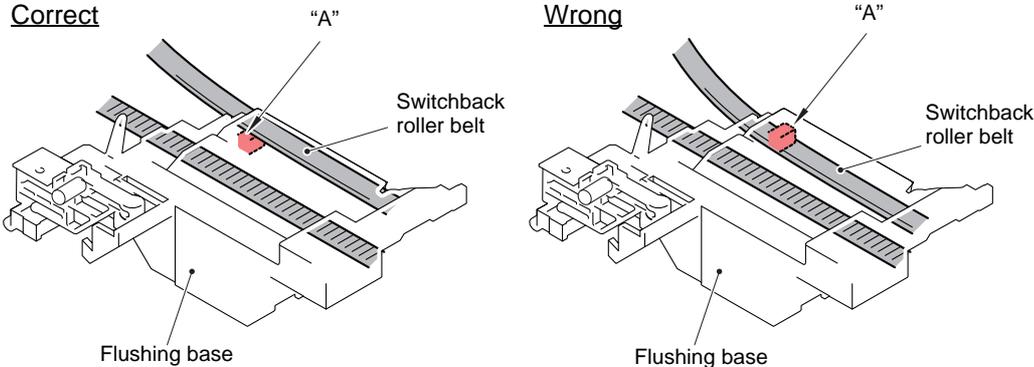
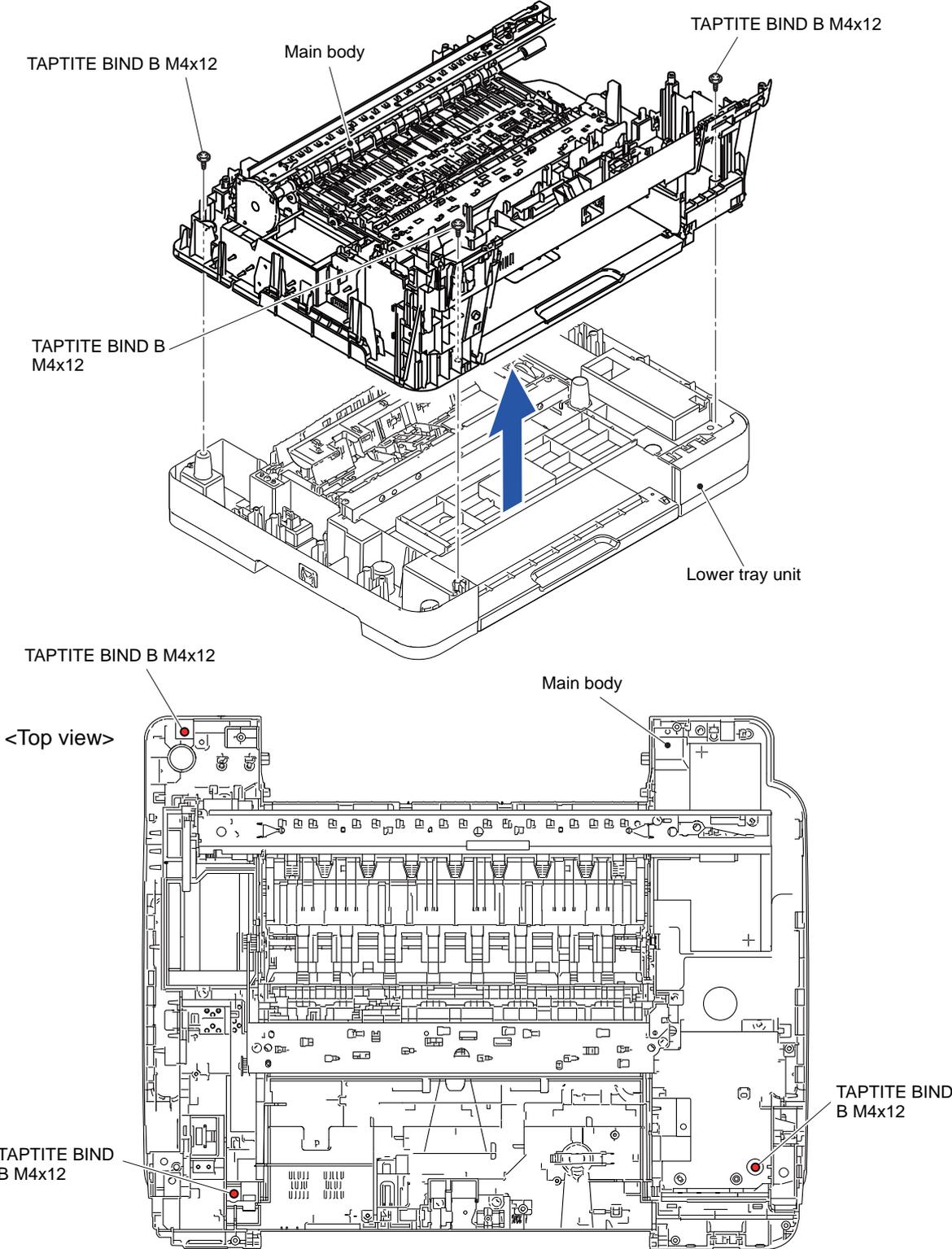


Fig. 3-154

**9.49 LT Frame ASSY (T2 Paper Pull-in Roller L/R)**

- (1) Release the wiring of the LT frame ASSY.
- (2) Remove the three screws (TAPTITE BIND B M4x12) and remove the Main body from the Lower tray unit.



**Fig. 3-155**

- (3) Release the wiring of the LT frame ASSY.
- (4) Remove the three screws (TAPTITE CUP B M3x10) and remove the LT frame ASSY from the Cover LT.

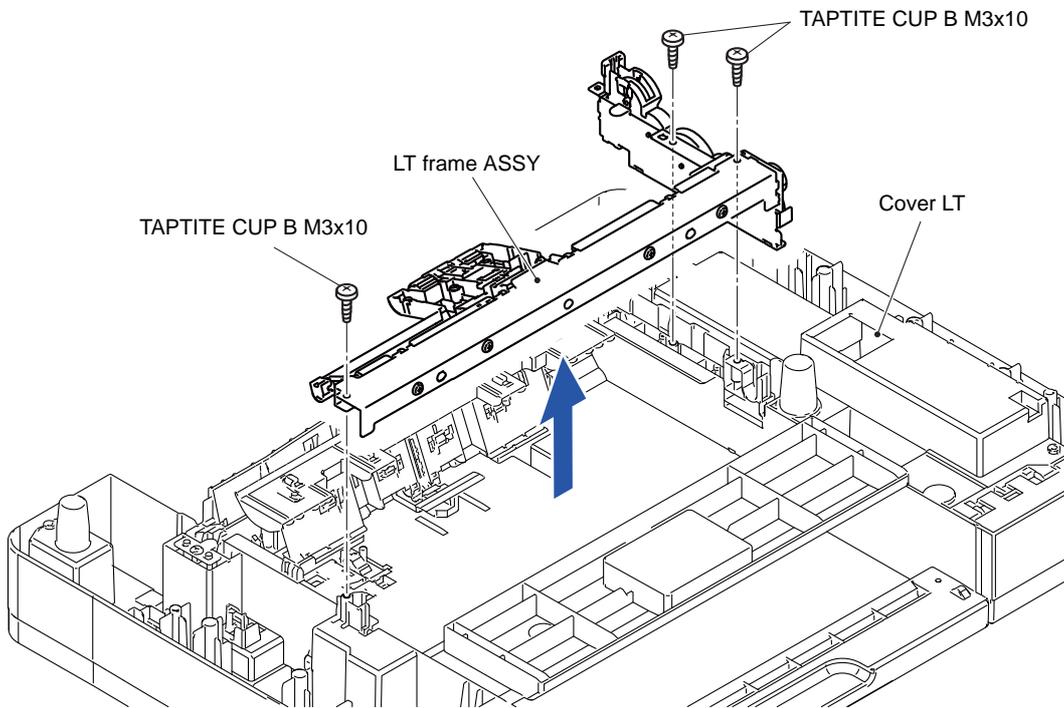


Fig. 3-156

- (5) Remove the screw (SCREW CUP M3x6) and remove the Idle gear holder frame LT ASSY from the LT frame ASSY.

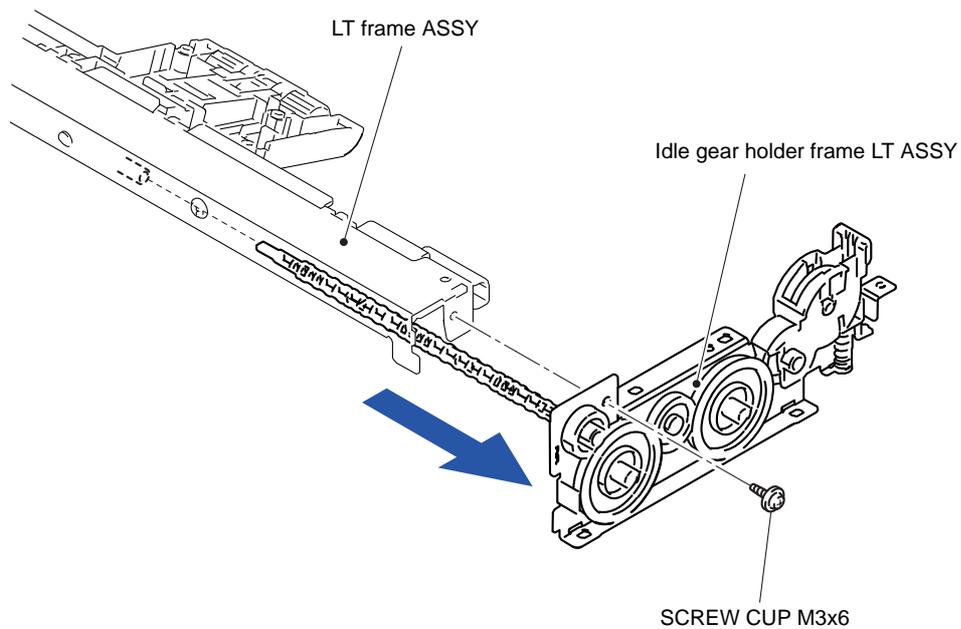
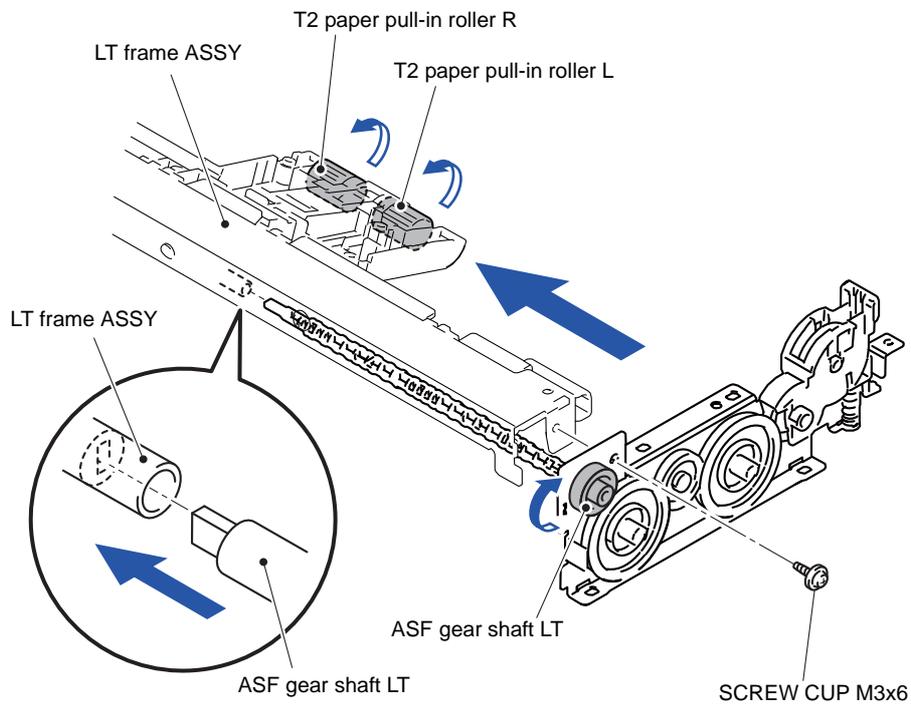


Fig. 3-157

**Assembling Note:** Insert the shaft of the ASF gear shaft LT into the LT frame ASSY as fitting it to the hole of the bushing.  
Turn the ASF gear shaft LT and check that the T2 paper pull-in roller L/R turns.



**Fig. 3-158**

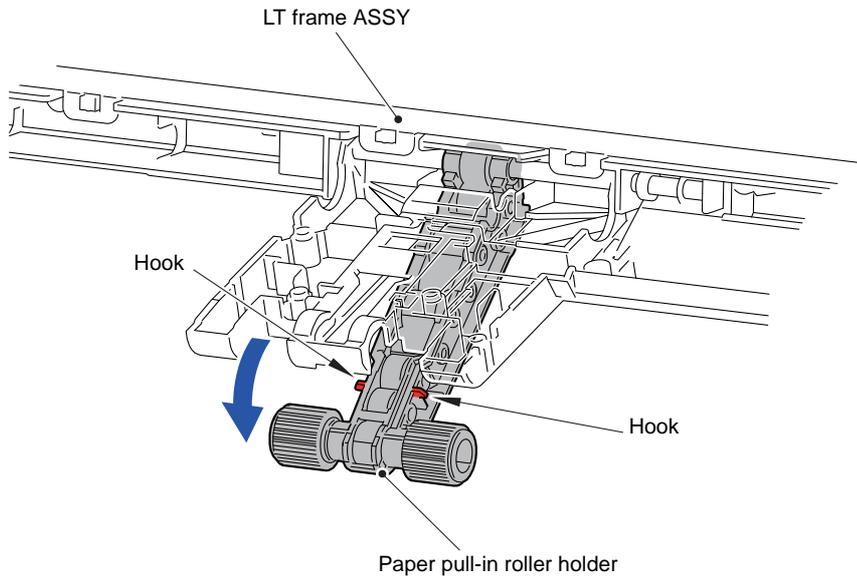
**Routing of harnesses:** See “**7** Lower cover L”, “**13** Lower tray”.

### **How to remove T2 paper pull-in roller L/R only**

For the products before design change was made, the Paper pull-in roller holder cannot be pushed down sufficiently in step (1).

For the products after design change was made, the T2 paper pull-in roller L/R only can be removed using the following procedure without the need to remove the LT frame ASSY.

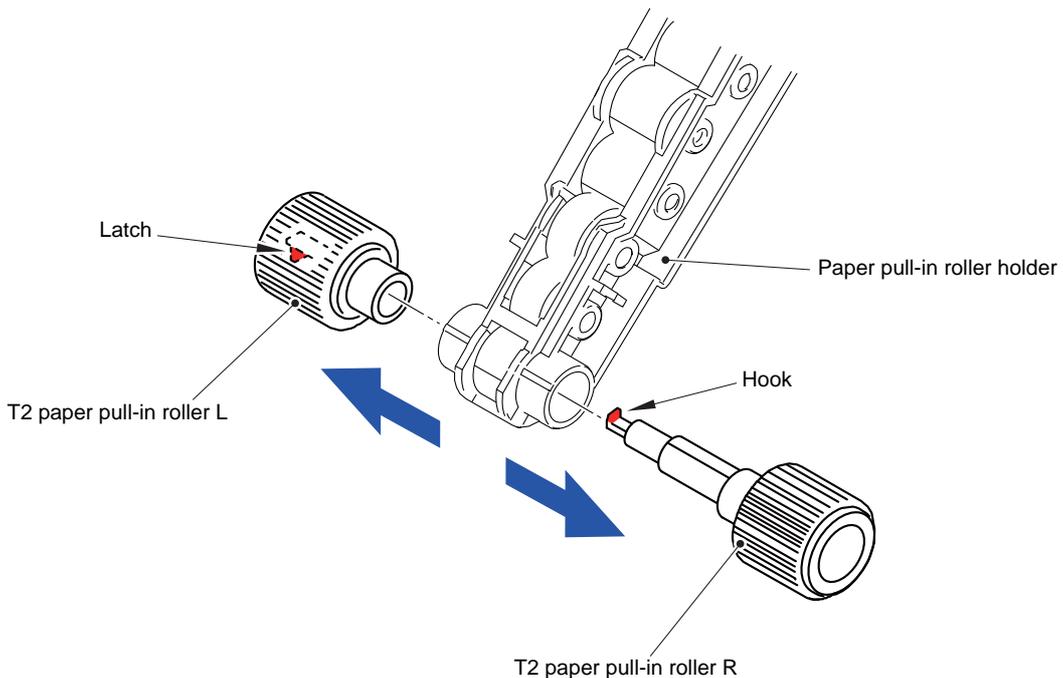
- (1) Release the two Hooks and push down the Paper pull-in roller holder.



**Fig. 3-159**

- (2) Open the Latch to the outer side and remove the T2 paper pull-in roller L/R from the Paper pull-in roller holder.

**Assembling Note:** When assembling the T2 paper pull-in roller L/R, make sure to engage the Hook with the Latch.



**Fig. 3-160**

## 9.50 T2 Bank ASSY

- (1) Remove the two screws (TAPTITE BIND B M3x10) and remove the Bank chute LT from the Lower tray unit.

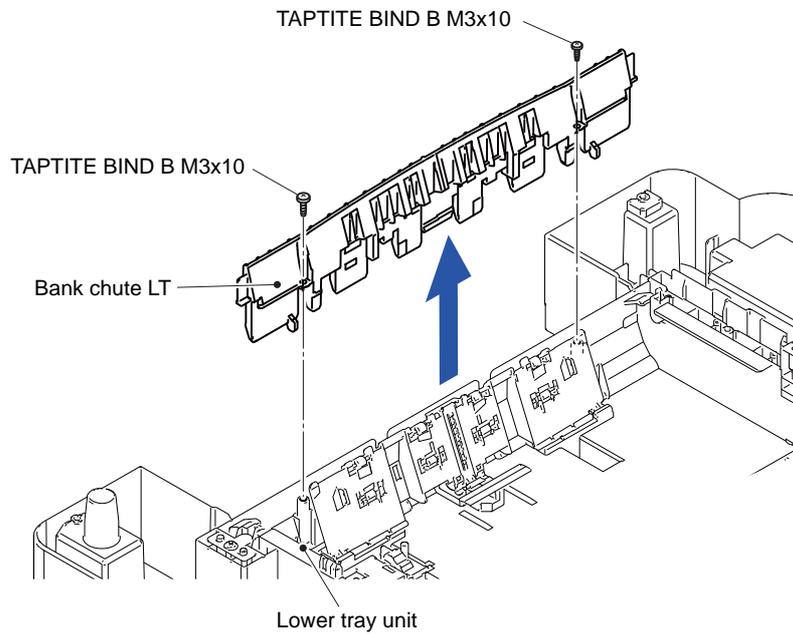


Fig. 3-161

- (2) Release the three Hooks and remove the T2 bank ASSY from the Lower tray unit.

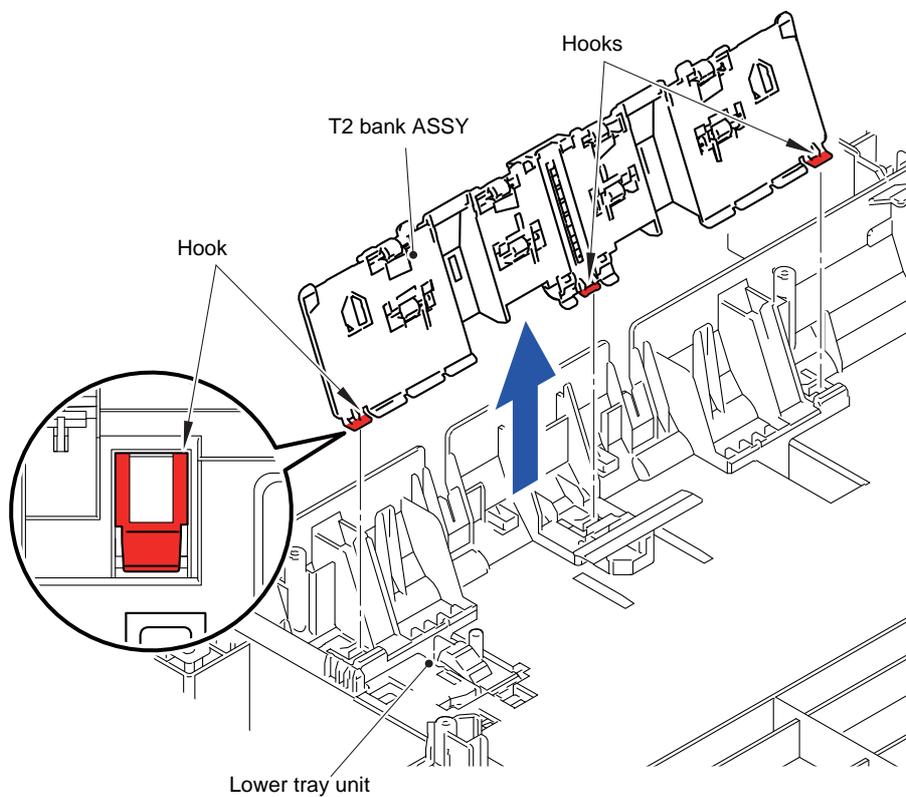


Fig. 3-162

## 9.51 Power Supply PCB ASSY

- (1) Remove the screw (TAPTITE CUP B M3x10) from the Lower cover.
- (2) Release the Hook and remove the Power supply unit from the Lower cover.

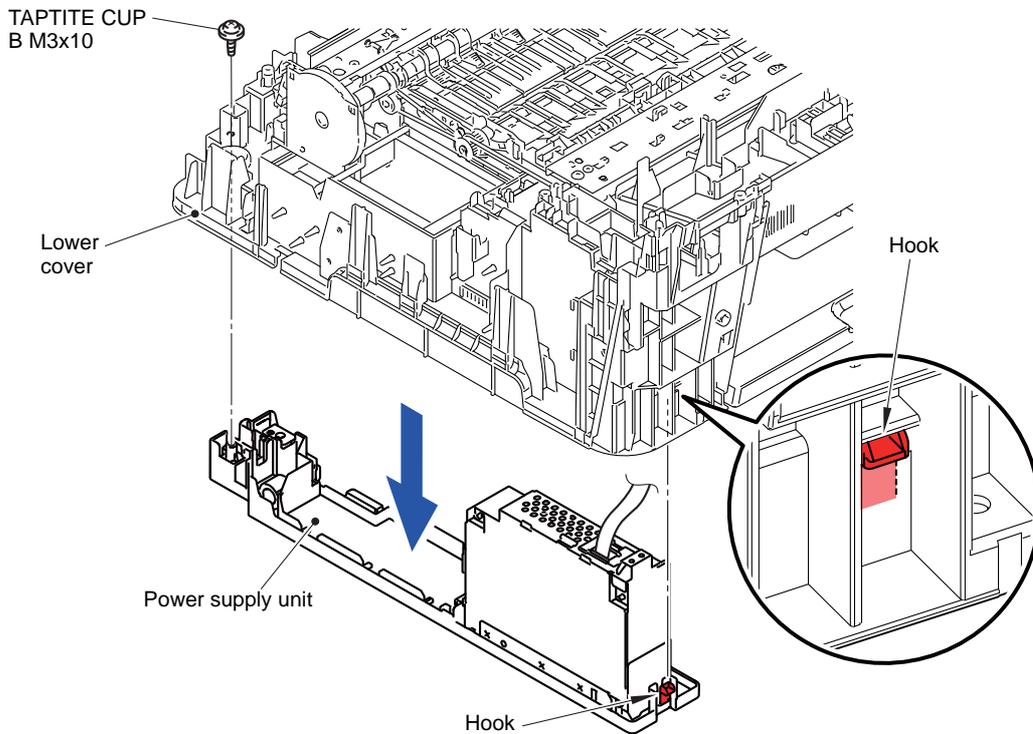


Fig. 3-163

- (3) Release the two Hooks and remove the Power supply shield from the Power supply unit.

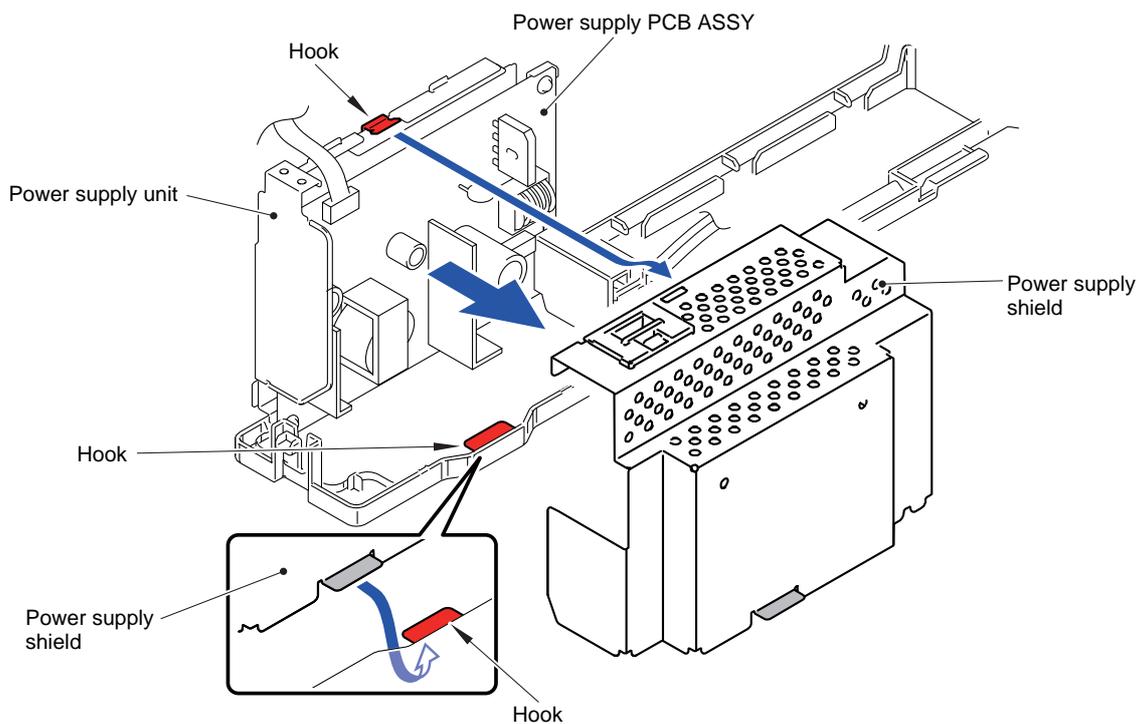


Fig. 3-164

(4) Remove the screw (SCREW PAN (S/P WASHER) M3.5x6) and remove the AC cord FG wire. (Case of 200 V)

**Assembling Note:** After connecting the AC cord FG wire, be sure to check that there is no looseness of the wire.

(5) Remove the Power cord and two Ferrite cores from the Enclosure base.

**Assembling Note:** When handling the Power cord, be sure to check the sheath is not damaged.

(6) < Made-in-Philippines machine only >

Remove the Protect holder L/R from the Power supply unit.

(7) Remove the three screws (SCREW CUP M3x6) and remove the Power supply PCB ASSY from the Power supply unit.

**Assembling Note:** Two insulation sheets must be interleaved without damage between the Power supply PCB ASSY and Power supply unit.

(8) Disconnect the Power supply harness from the Power supply PCB ASSY.

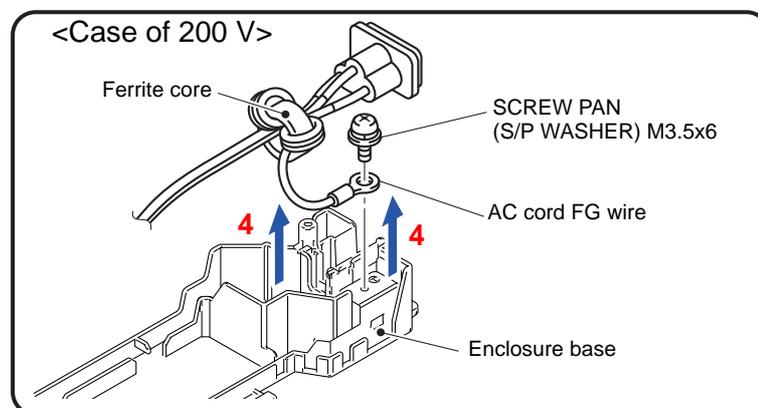
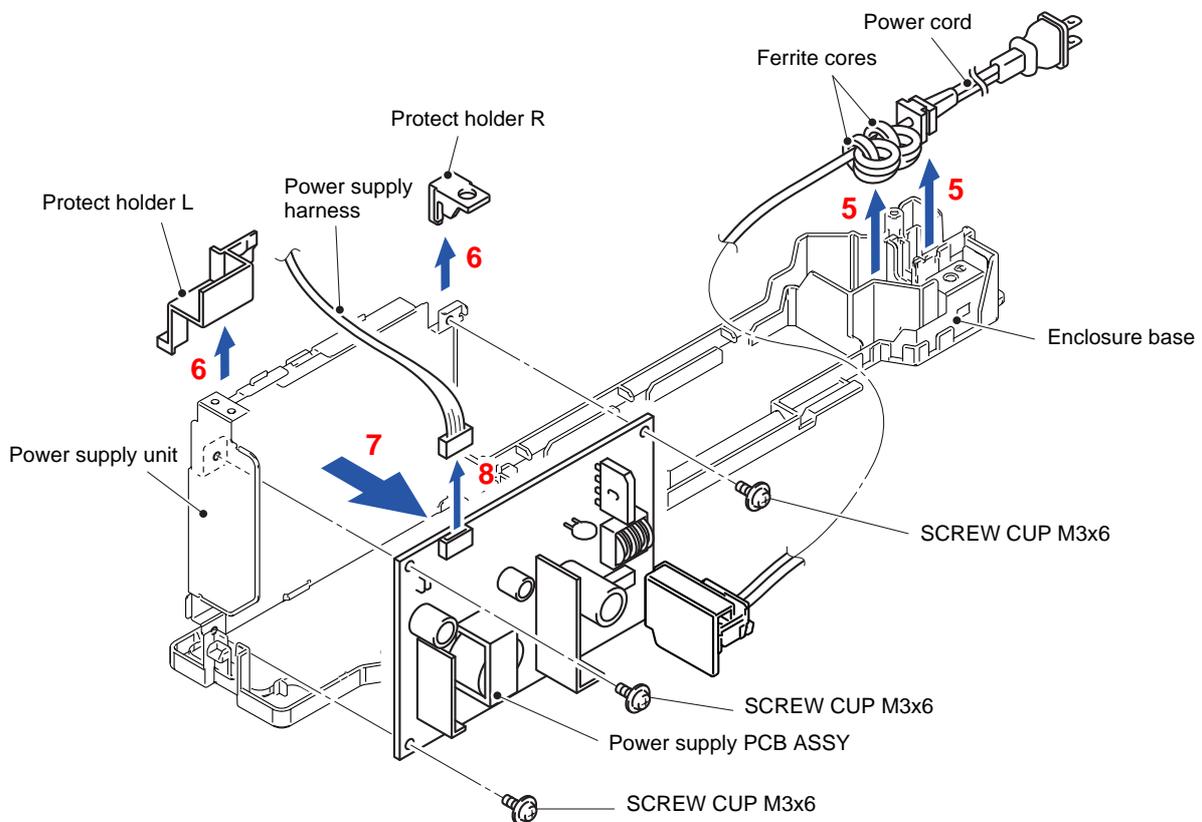


Fig. 3-165

Routing of harnesses: See "[12 Power supply PCB ASSY](#)".

## 9.52 Switchback Roller

- (1) Remove the two screws (TAPTITE CUP B M3x10) from the Switchback frame ASSY.
- (2) Remove the two screws (SCREW BIND M3x6) from the Switchback frame ASSY.
- (3) Remove the Switchback frame ASSY from the main body.

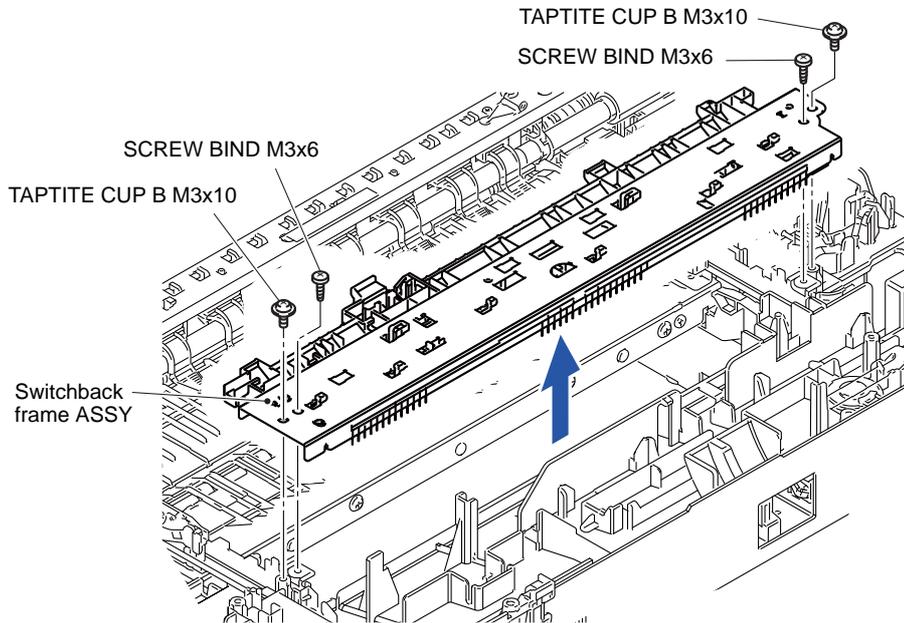


Fig. 3-166

- (4) Remove the SB roller belt from the Switchback roller and Paper ejection roller.
- (5) Remove the Switchback roller and Switchback outer paper guide from the SB side frame.

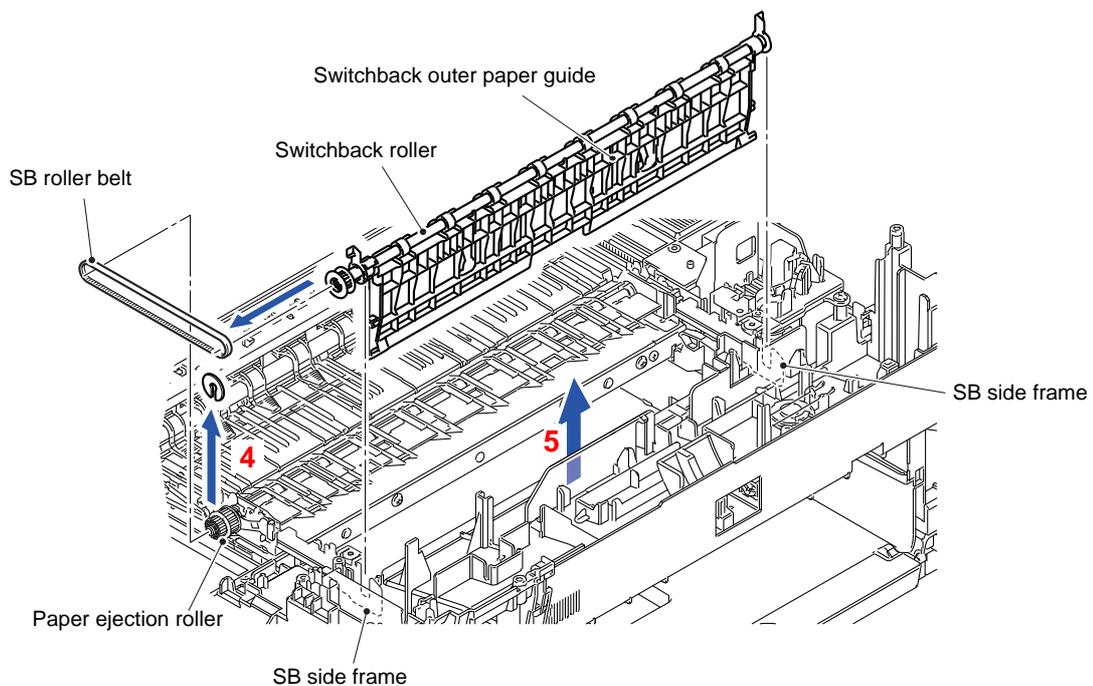


Fig. 3-167

- (6) Remove the SB bushing R from the Switchback outer paper guide.
- (7) Remove the Switchback roller from the Switchback outer paper guide.

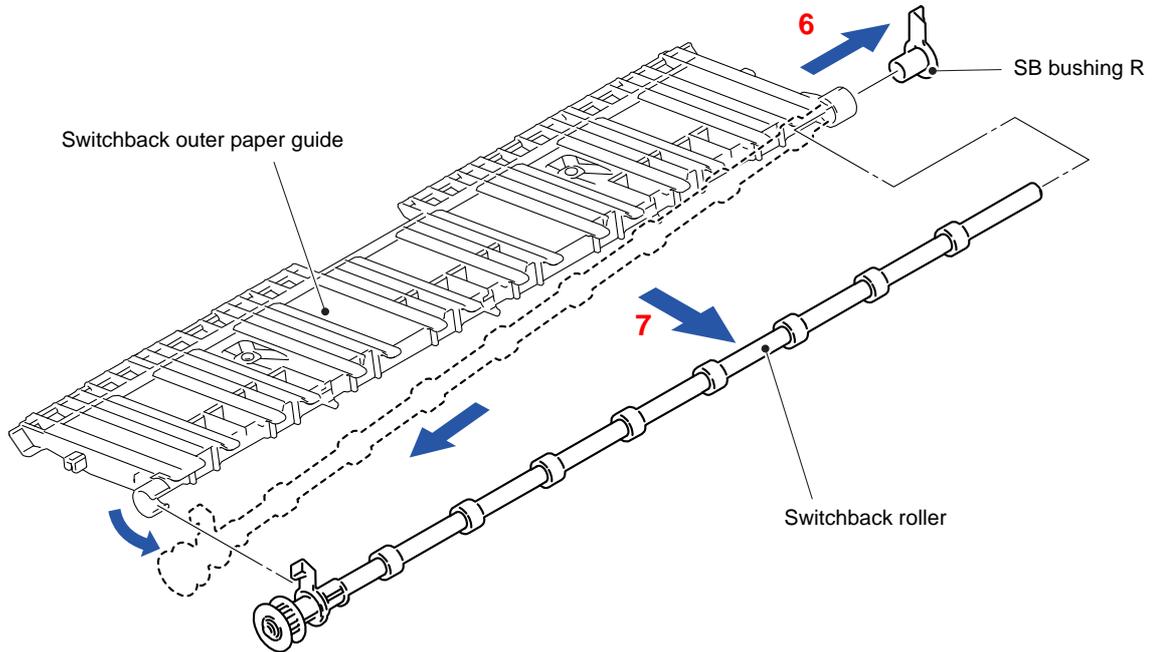


Fig. 3-168

### 9.53 PF Encoder Disk

- (1) Remove the Encoder cover 2 from the Encoder cover.
- (2) Peel off the PF encoder disk from the PF roller pulley.

**Note:** Once removed, the PF encoder disk should be replaced with a new one.

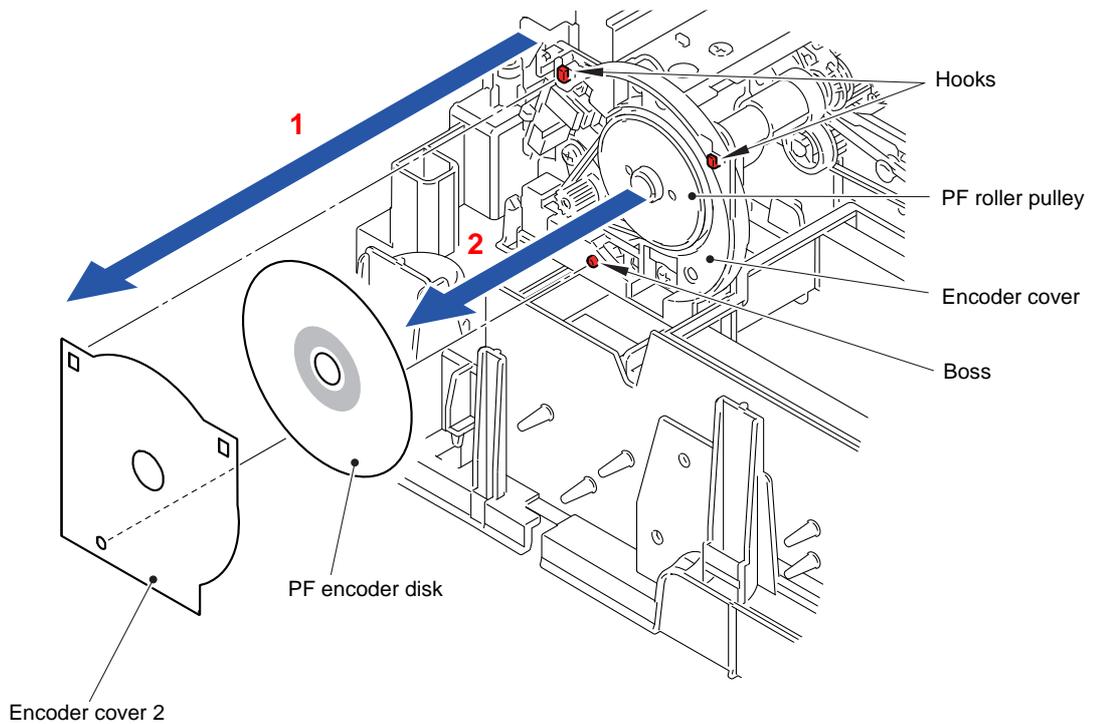


Fig. 3-169

## 9.54 PF Encoder Sensor PCB

- (1) Remove the two screws (SCREW BIND M3x6) and remove the Encoder cover from the PF motor frame.

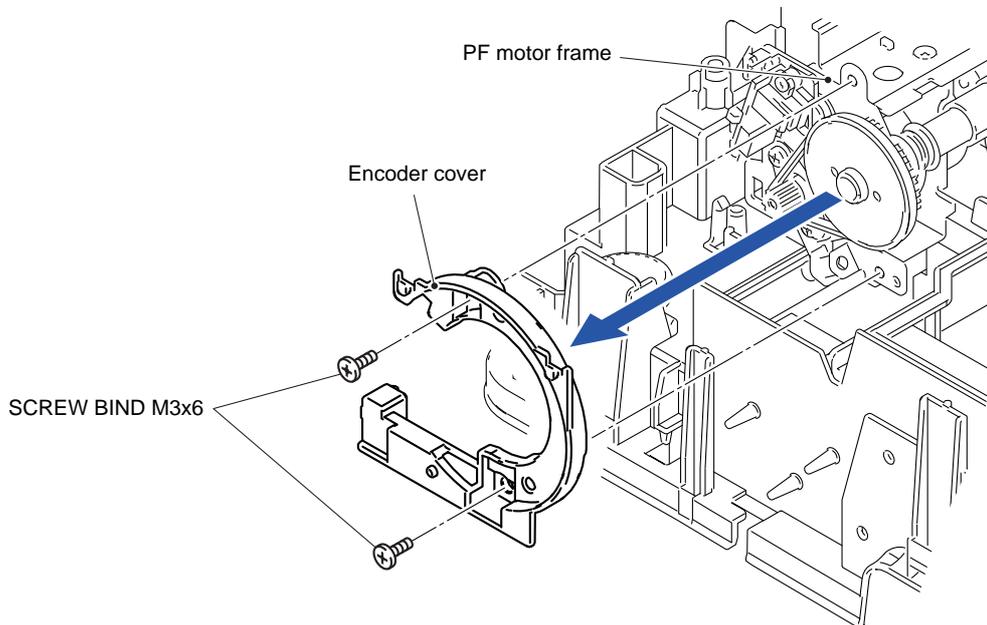


Fig. 3-170

- (2) Release the wiring of the PF encoder sensor harness.
- (3) Remove the two screws (SCREW BIND M2x12) and remove the Encoder sensor holder from the PF motor frame.
- (4) Release the Hook and remove the PF encoder sensor PCB from the Encoder sensor holder.
- (5) Disconnect the PF encoder sensor harness from the PF encoder sensor PCB.

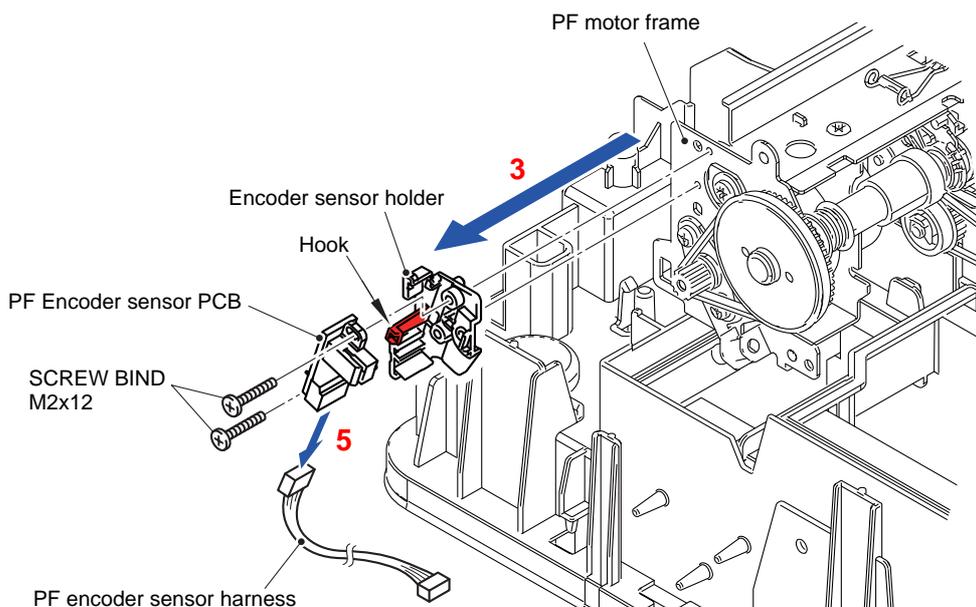
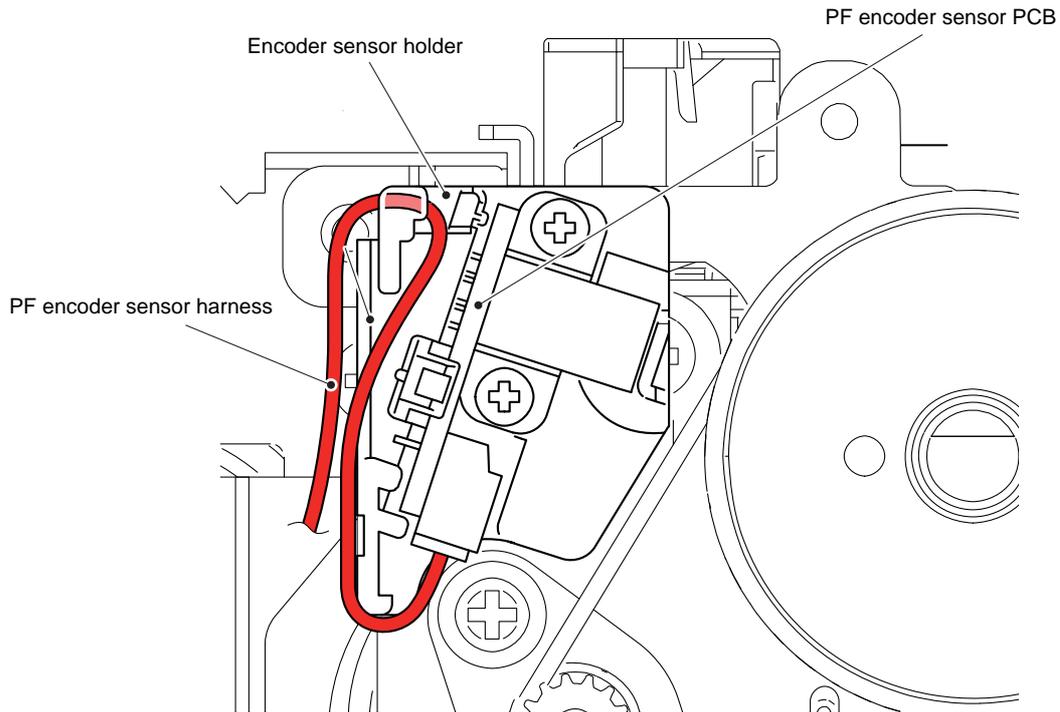


Fig. 3-171

**Assembling Note:** Mount the PF encoder sensor PCB as shown in the figure below.



**Fig. 3-172**

**Routing of harnesses:** See “**7** Lower cover L”, “**10** Paper feed motor”.

## 9.55 Paper Feed Motor

- (1) Remove the two screws (SCREW BIND M3x6) from the CR guide rail.
- (2) Remove the two CR guide rail springs.
- (3) Remove the CR guide rail from the Main body.

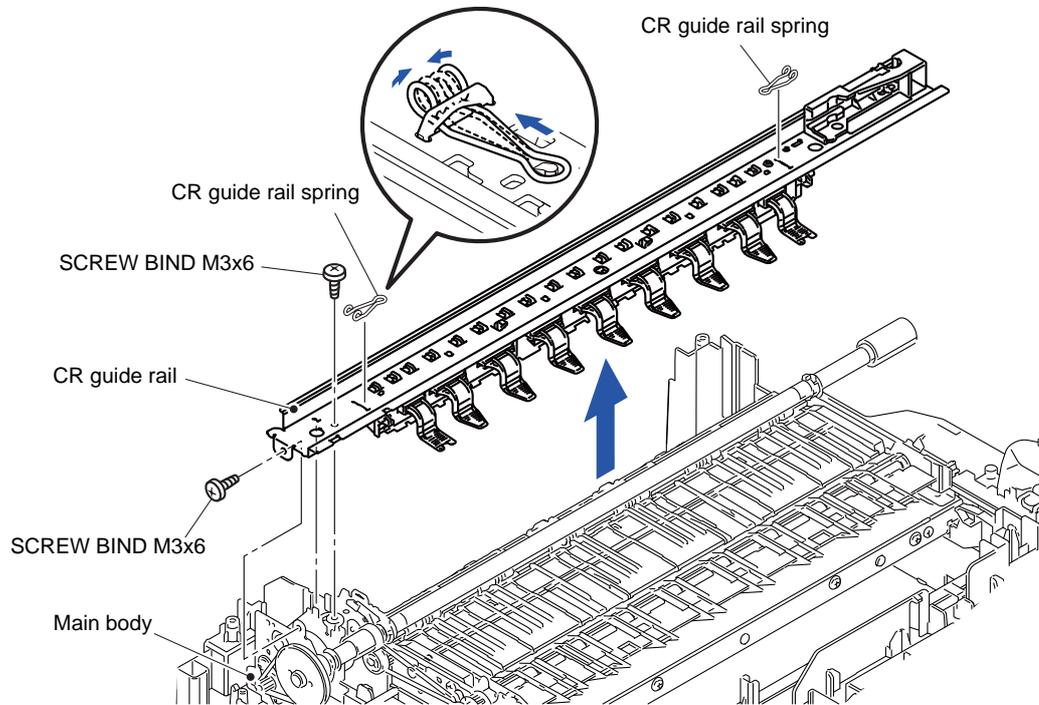


Fig. 3-173

**Note:** Do not place the removed CR guide rail with the Recording paper holder down.

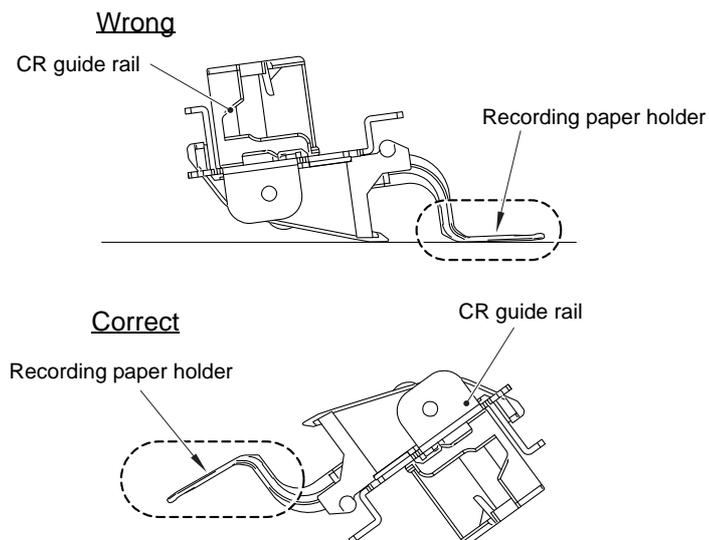
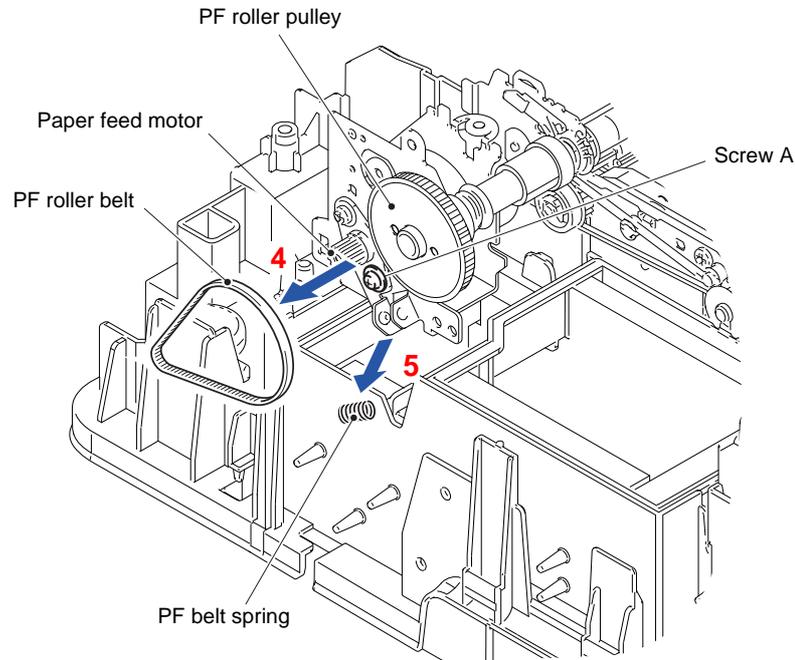


Fig. 3-174

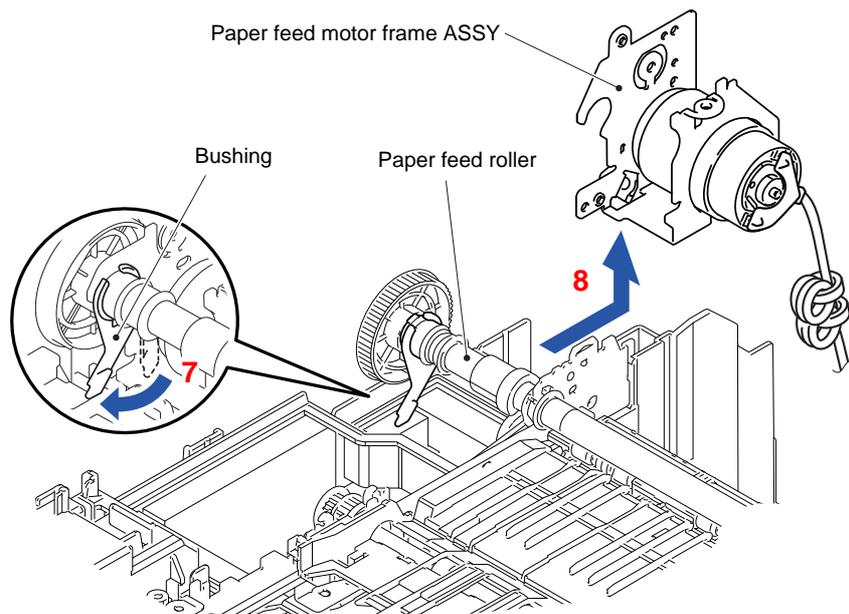
- (4) Remove the PF roller belt from the PF roller pulley and Paper feed motor.
- (5) Remove the PF belt spring.

**Assembling Note:** When mounting the PF roller belt and PF belt spring, remove the screw A first, and then assemble the PF belt spring and PF roller belt in this order. After that, tighten the screw A.



**Fig. 3-175**

- (6) Release the wiring of the PF motor harness, T1 FG wire and PF FG wire.
- (7) Turn the Bushing in the direction of the arrow to unlock it.
- (8) Remove the Paper feed motor frame ASSY from the Paper feed roller.



**Fig. 3-176**

- (9) Remove the two screws (SCREW PAN (S/P WASHER) M3x6) and remove the Paper feed motor from the Paper feed motor frame ASSY.

**Note:** When removing the Paper feed motor, be careful not to lose the Paper feed motor sleeve.

- (10) Disconnect the PF motor harness from the Paper feed motor.

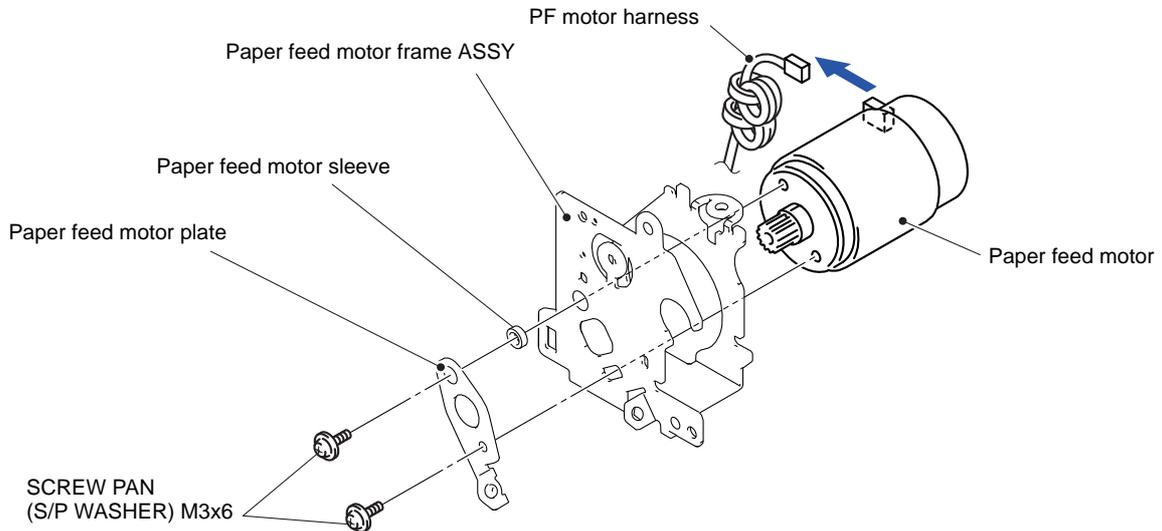


Fig. 3-177

**Routing of harnesses:** See “[7 Lower cover L](#)”, “[10 Paper feed motor](#)”.

## 9.56 Paper Feed Roller

- (1) Turn the PF bushing L2 in the direction of the arrow to unlock it.
- (2) Turn the PF bushing R in the direction of the arrow to unlock it.
- (3) Remove the Paper feed roller from the Main body.

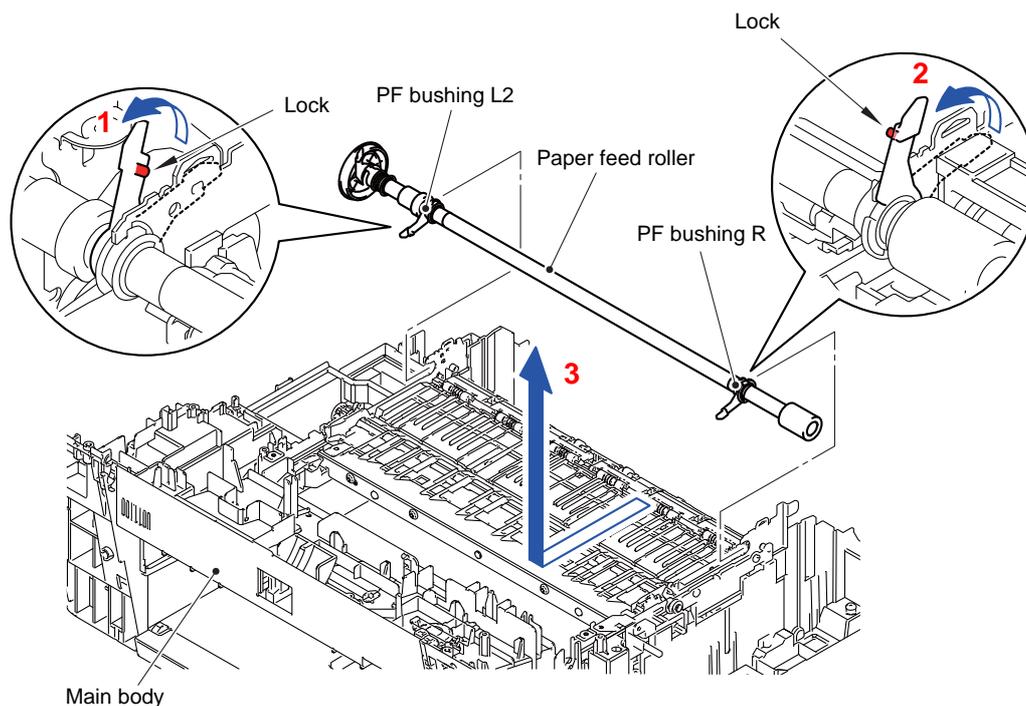


Fig. 3-178

## 9.57 Platen/Paper Ejection Roller

- (1) Remove the Idle pulley and remove the Paper ejection roller belt from the Idle gear pulley and Paper ejection roller.

**Note:** Be careful not to lose the Idle pulley.

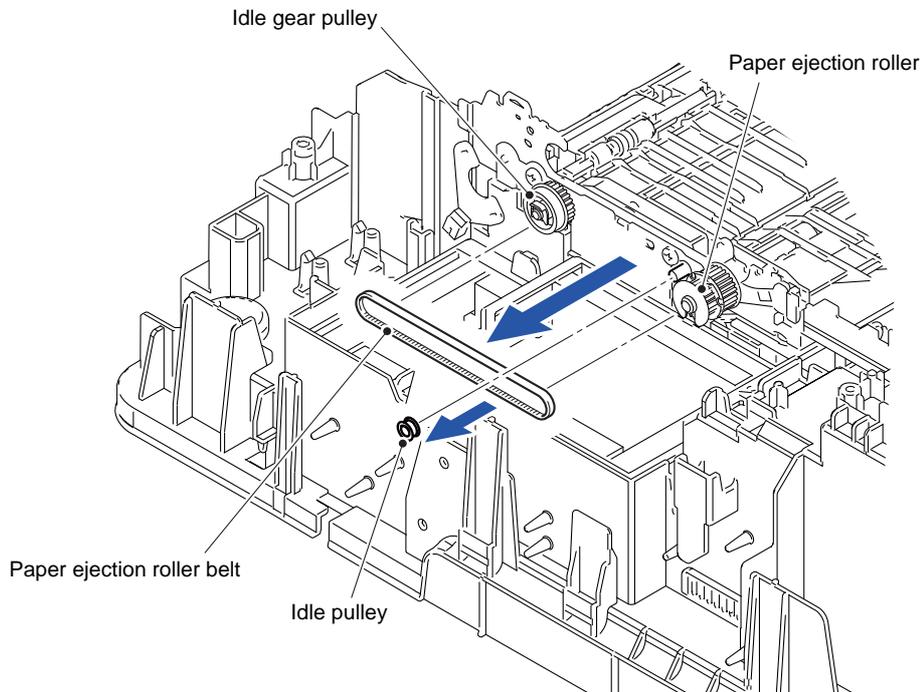


Fig. 3-179

- (2) Remove the Switchback inner paper guide from the Main body.

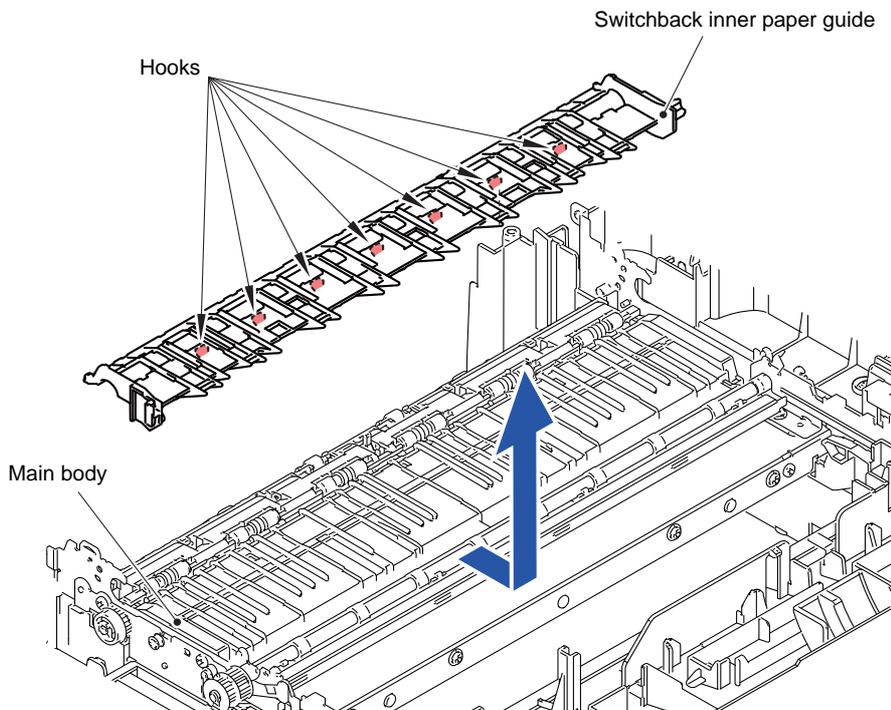


Fig. 3-180

(3) Remove the SB side frame from the Main body.

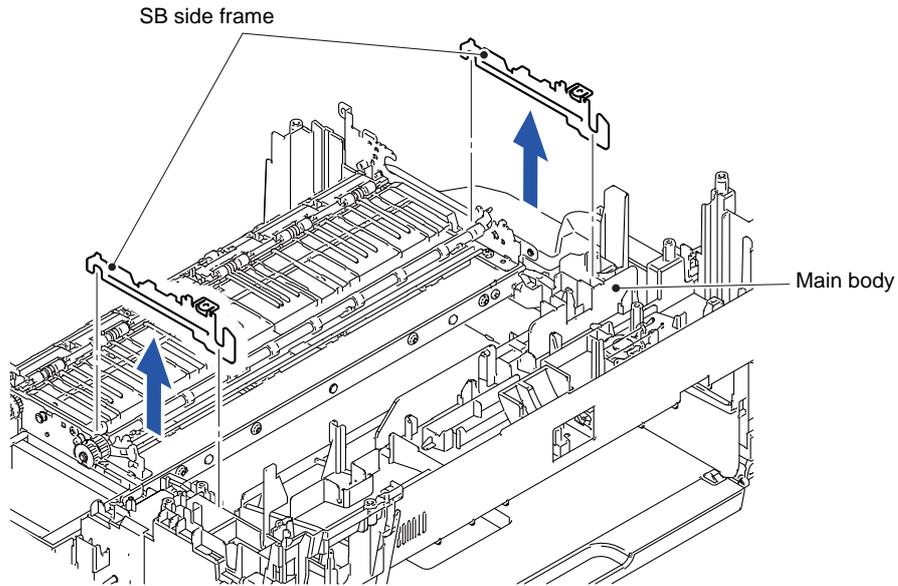


Fig. 3-181

(4) Hold the section "A" and remove the Paper ejection roller and Platen.

**Assembling Note:** Mount the Paper ejection roller with its bushing lever tilted forward as shown below.

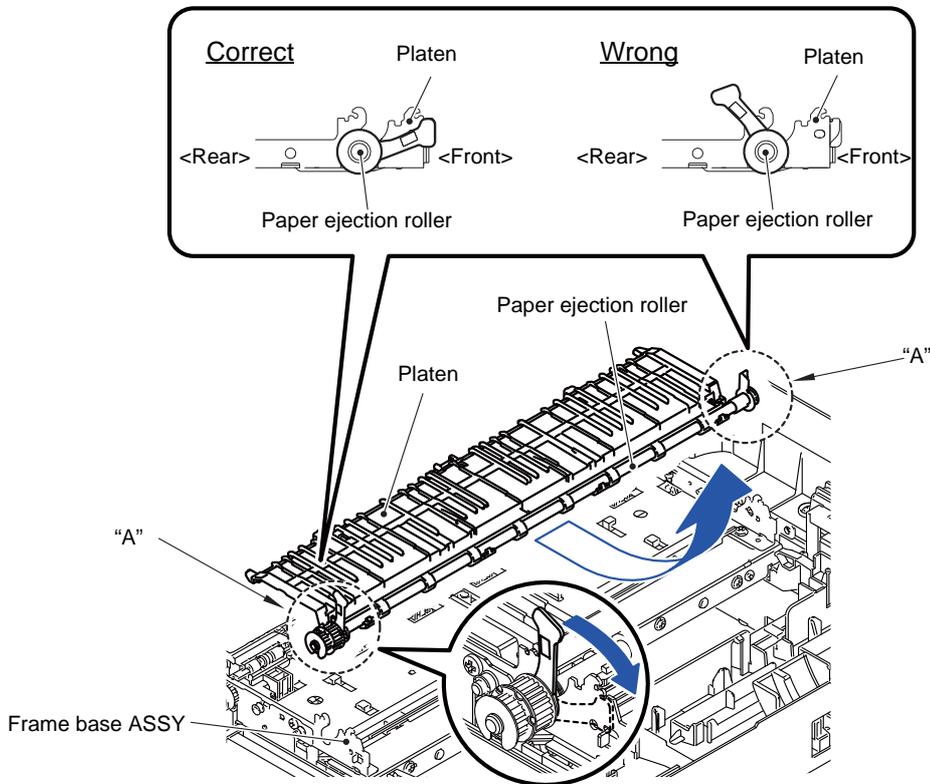


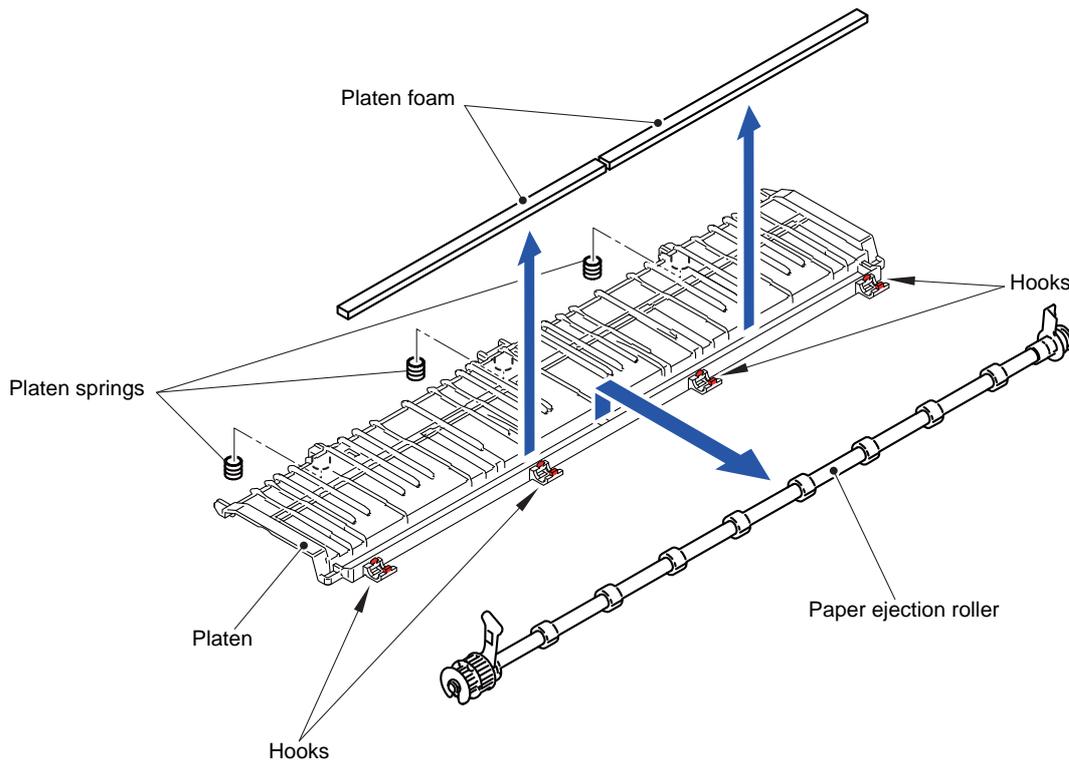
Fig. 3-182

**Assembling Note:** Platen springs should not be bent or turned over.



**Fig. 3-183**

- (5) Release the four Hooks and remove the Paper ejection roller from the Platen.
- (6) Remove the Platen springs and Platen foam from the Platen.



**Fig. 3-184**

## 9.58 Registration Sensor PCB

- (1) Release the wiring of the Registration sensor harness.
- (2) Remove the four screws (TAPTITE CUP B M3x10) and remove the Frame base ASSY from the Lower cover.

**Assembling Note:** When tightening the four screws (TAPTITE CUP B M3x10), tighten them in the order shown in the figure.

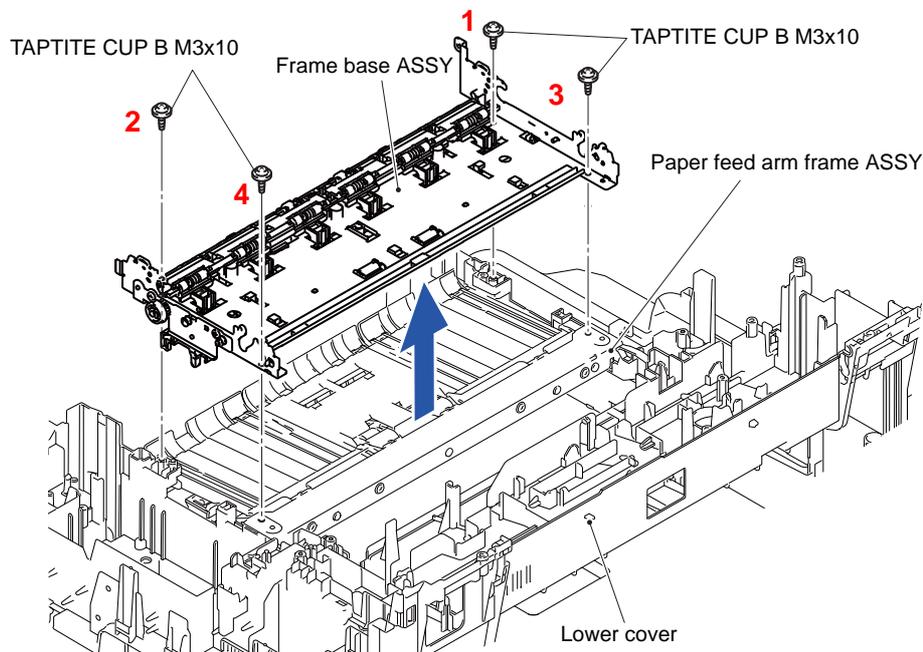


Fig. 3-185

- (3) Release the two Hooks A and two Bosses and remove the DX paper guide from the Frame base ASSY.
- (4) Release the wiring of the Registration sensor harness.

**Assembling Note:** When assembling the DX paper guide, be sure there is no looseness of the Harness. Also, the two Hooks B at the right and left sides must be inserted properly.

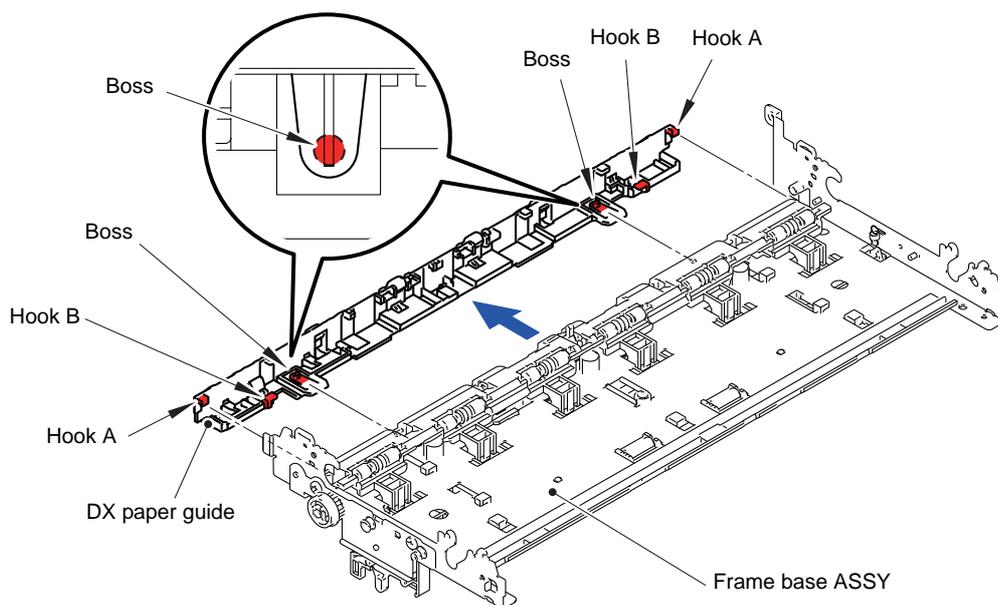


Fig. 3-186

- (5) Slide the PF release guide in the direction of the arrow 5a, and release the Pressure roller holder from the Frame base ASSY.

**Note:** When releasing the Pressure roller holder, be careful not to lose any Spring.

**Assembling Note:** When assembling the Pressure roller holder, assemble it as fitting the Springs to the Bosses.

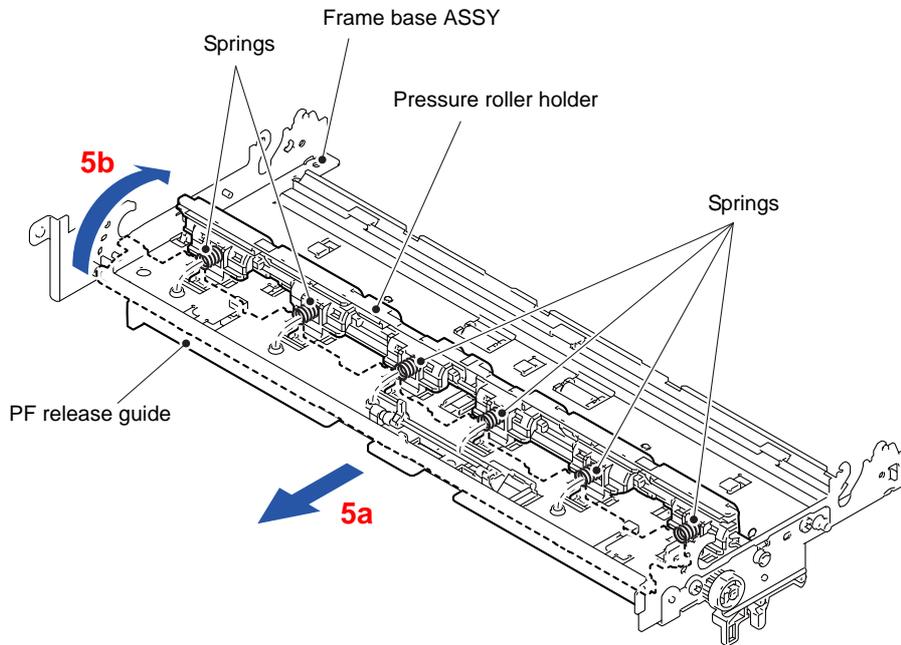


Fig. 3-187

- (6) While sliding the Registration sensor holder ASSY in the direction of the arrow 6a, release the Boss and then remove the Registration sensor holder ASSY from the Frame base ASSY.

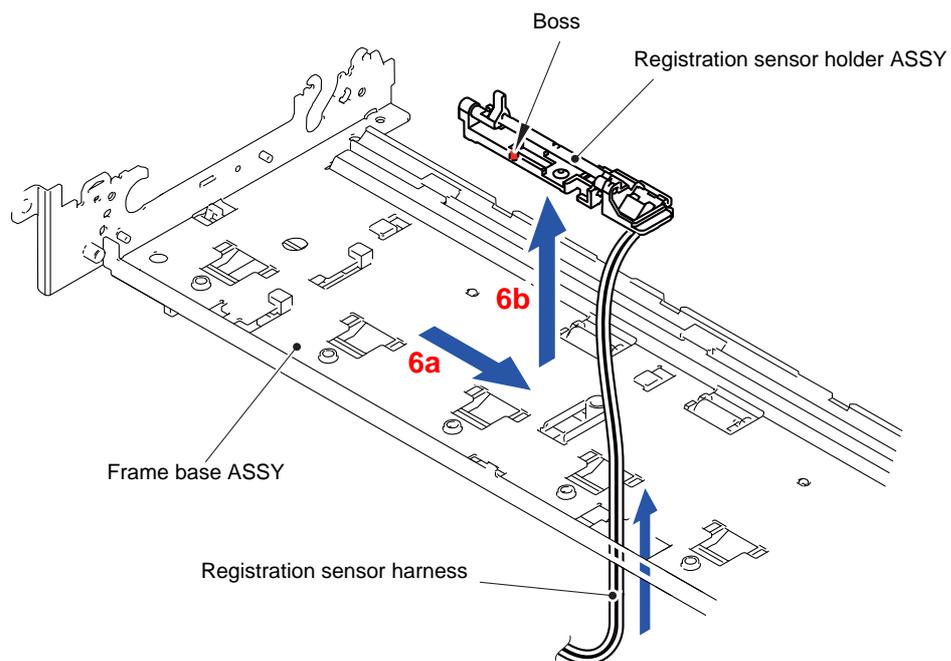


Fig. 3-188

- (7) Release the Boss at one side and remove the Registration actuator and Registration actuator spring from the Registration sensor holder.

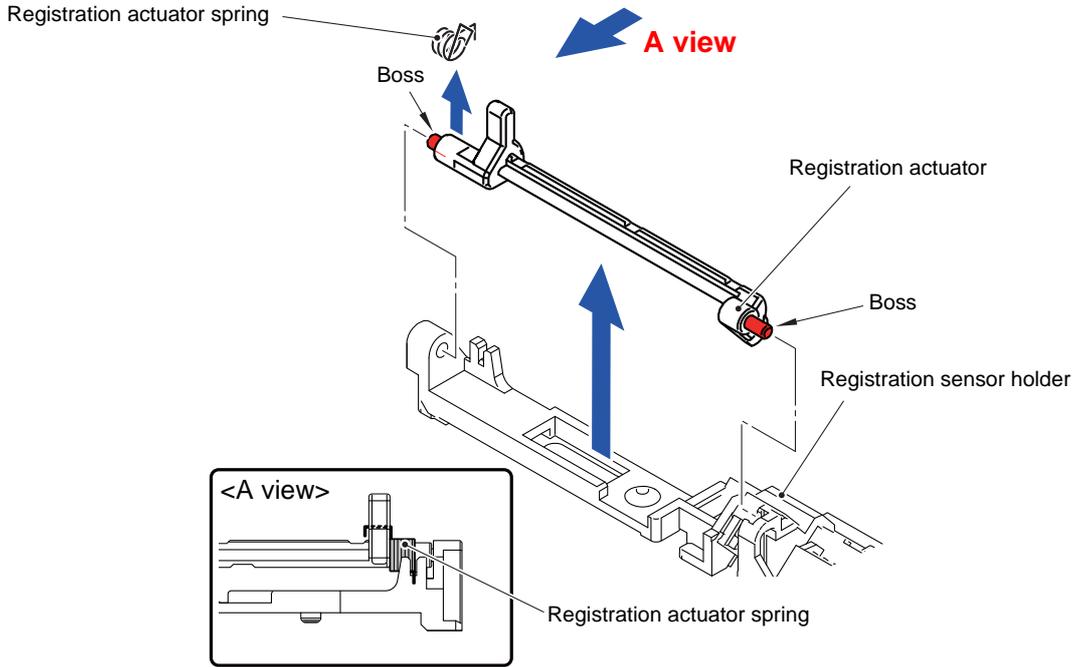


Fig. 3-189

- (8) Remove the Registration sensor PCB from the Registration sensor holder.  
 (9) Disconnect the Registration sensor harness from the Registration sensor PCB.

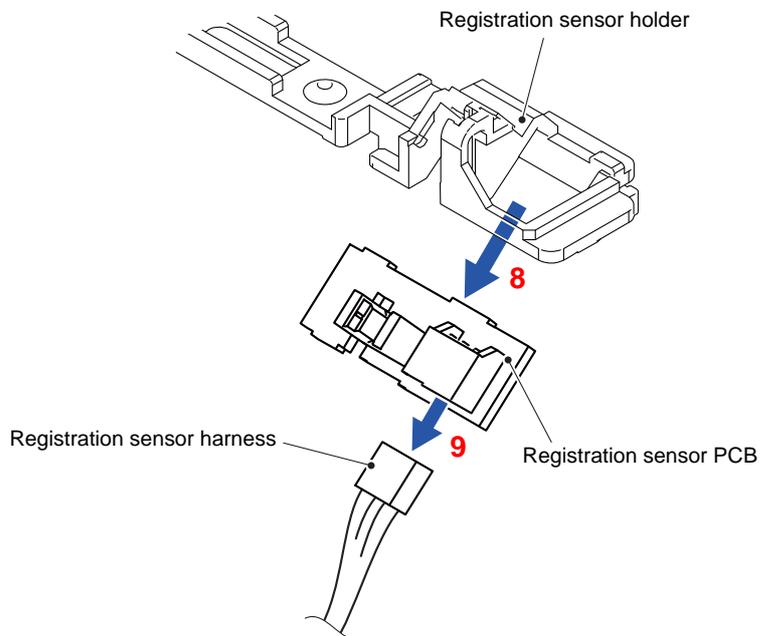


Fig. 3-190

**Routing of harnesses:** See “**6** Paper feed arm frame ASSY”, “**15** Registration sensor harness”.

## 9.59 Flushing Box

- (1) Remove the two screws (TAPTITE CUP B M3x10) and remove the Flushing box from the Lower cover.

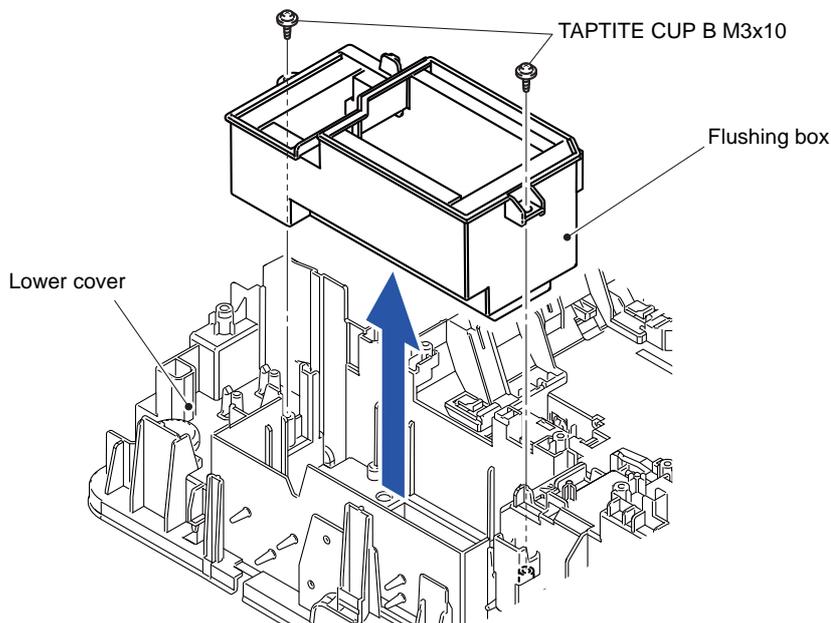


Fig. 3-191

## 9.60 Paper Feed Arm Frame ASSY (T1 Paper Pull-in Roller L/R)

- (1) Release the wiring of the Paper feed arm frame ASSY.
- (2) Remove the two screws (TAPTITE CUP B M3x10) and remove the Paper feed arm frame ASSY from the Lower cover.

**Assembling Note:** When tightening the two screws (TAPTITE CUP B M3x10), tighten them in the order shown in the figure.

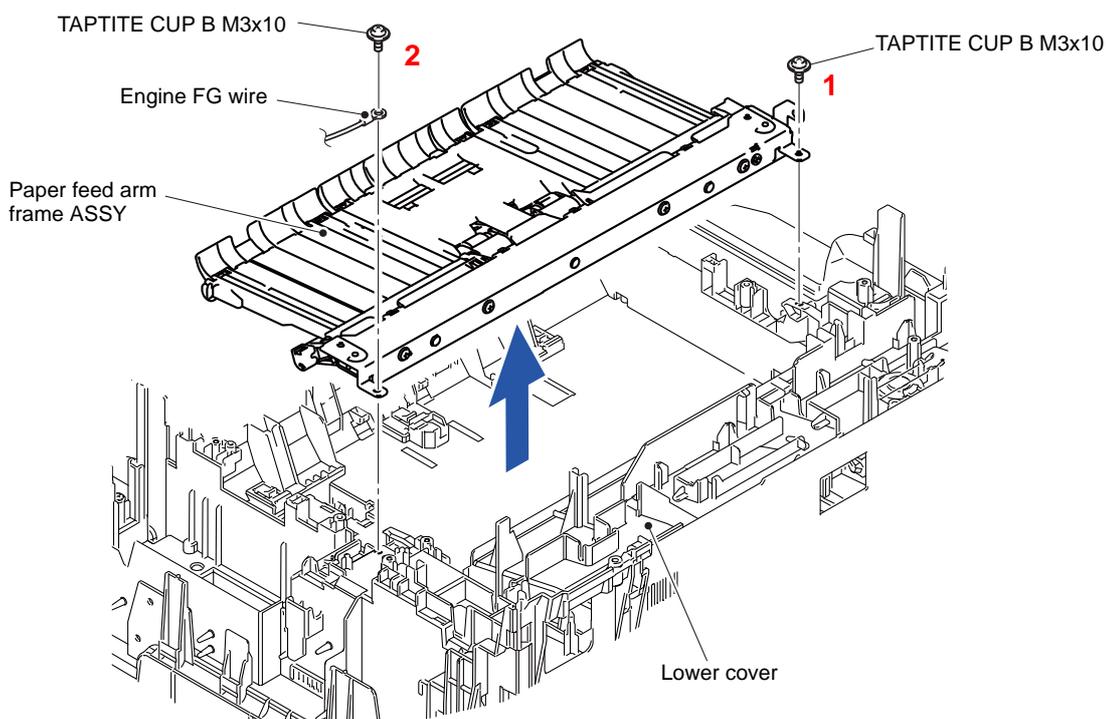


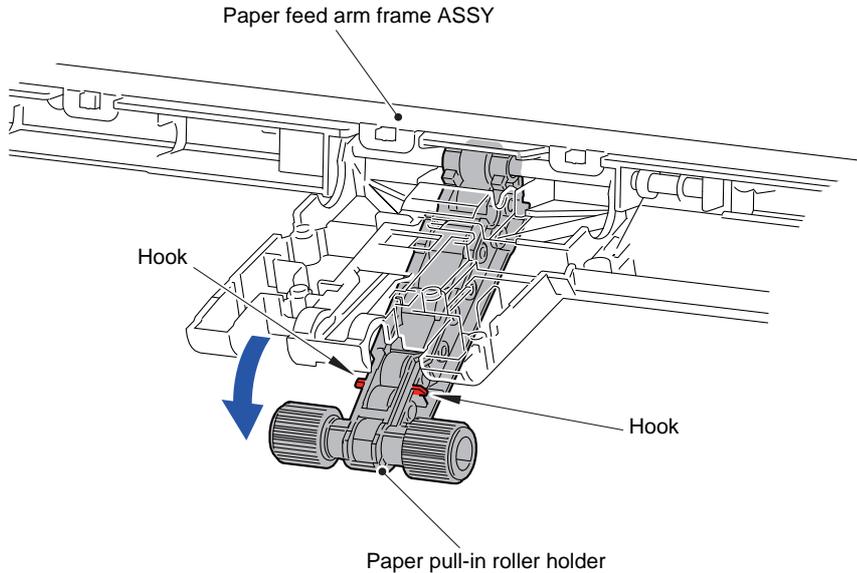
Fig. 3-192

### **How to remove T1 paper pull-in roller L/R only**

For the products before design change was made, the Paper pull-in roller holder cannot be pushed down sufficiently in step (1).

For the products after design change was made, the T1 paper pull-in roller L/R only can be removed using the following procedure without the need to remove the Paper feed arm frame ASSY.

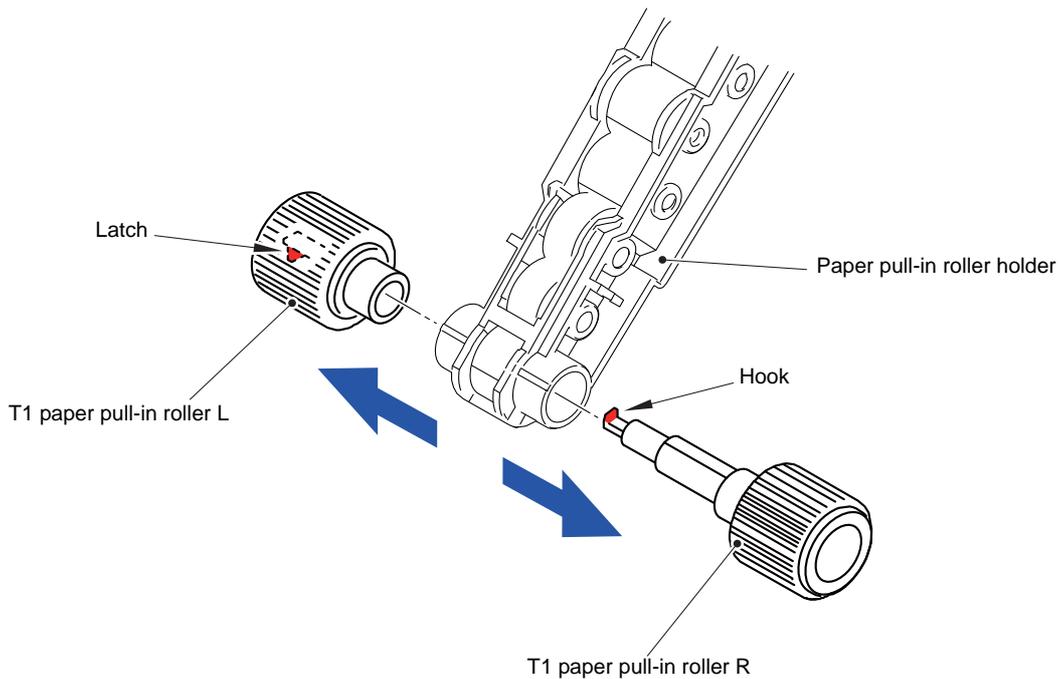
- (1) Release the two Hooks and push down the Paper pull-in roller holder.



**Fig. 3-193**

- (2) Open the Latch to the outer side and remove the T1 paper pull-in roller L/R from the Paper pull-in roller holder.

**Assembling Note:** When assembling the T1 paper pull-in roller L/R, make sure to engage the Hook with the Latch.



**Fig. 3-194**

## 9.61 T1 Bank ASSY

- (1) Remove the Tray lock cam and Tray lock spring from the Lower cover.

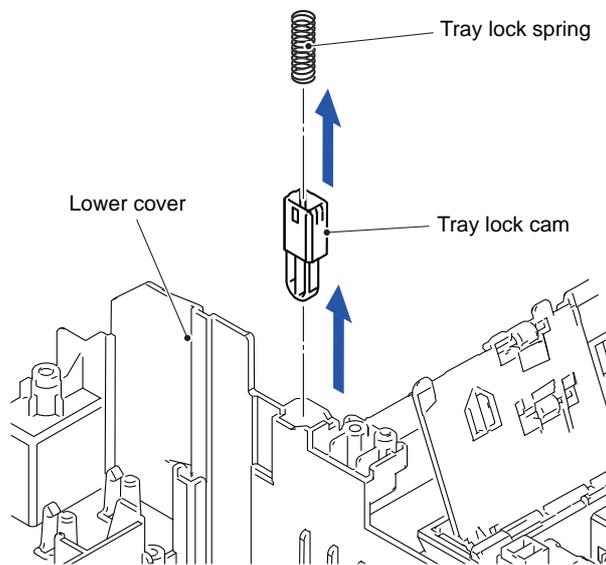


Fig. 3-195

- (2) Turn the Main body upside down.
- (3) Remove the screw (TAPTITE CUP B M3x10) and remove the Tray FG wire.
- (4) Remove the three screws (TAPTITE CUP B M3x10) and remove the Lower cover frame from the Lower cover.

**Assembling Note:** When tightening the four screws (TAPTITE CUP B M3x10), tighten them in the order shown in the figure.

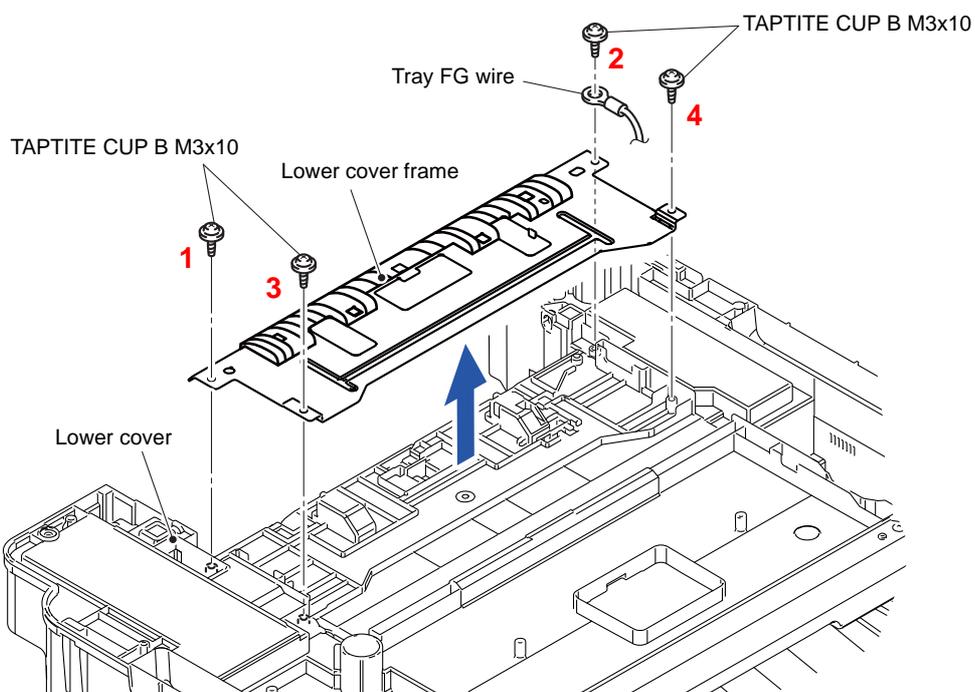
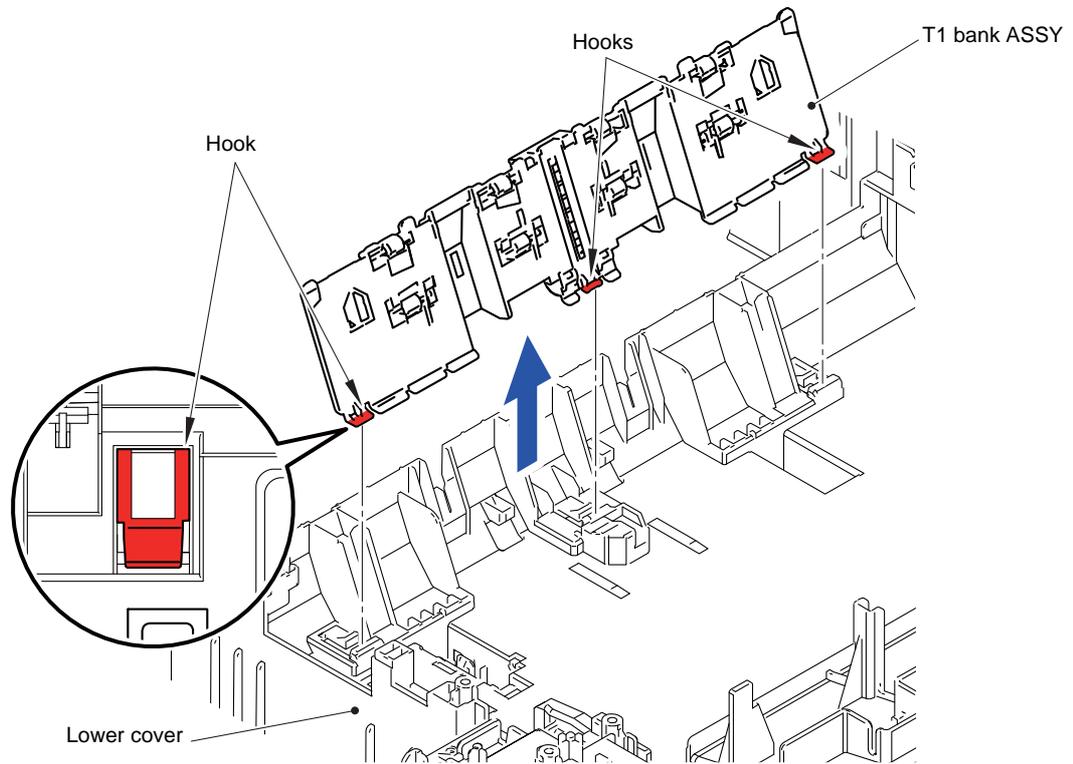


Fig. 3-196

- (5) Turn the Main body right side up.
- (6) Release the three Hooks and remove the T1 bank ASSY from the Lower cover.



**Fig. 3-197**

## 9.62 T1 Base Pad / T2 Base Pad / T3 Base Pad

(1) Peel off the T1 base pad from the Paper tray ASSY #1.

**Note:** Once the T1 base pad is peeled off, it cannot be used again so that the pad needs to be replaced with a new one.

(2) With the same procedure, peel off the T2/T3 base pad from the Paper tray ASSY #2/#3.

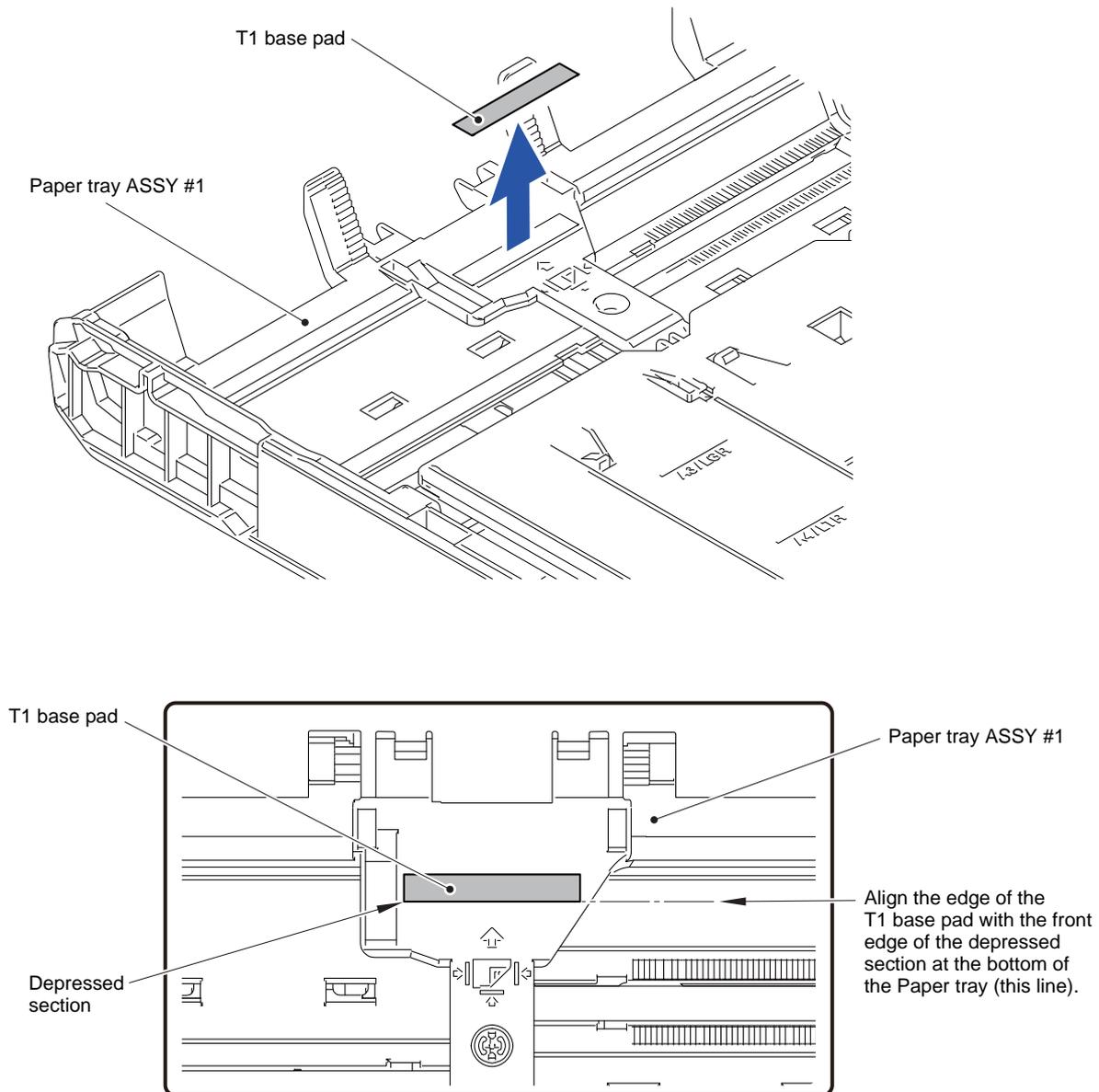


Fig. 3-198

**Assembling Note:** When attaching a new T1 base pad to the Paper tray ASSY #1, align the front edge of the pad with that of the Depressed section on the Paper tray ASSY #1 and center the pad widthways as shown above.

### 9.63 3rd Tray Relay PCB

- (1) Release the wiring of the 3rd tray relay harness from the Lower tray unit.
- (2) Remove the six screws (TAPTITE BIND B M4x12) and remove the Lower tray unit from the 3rd tray unit.

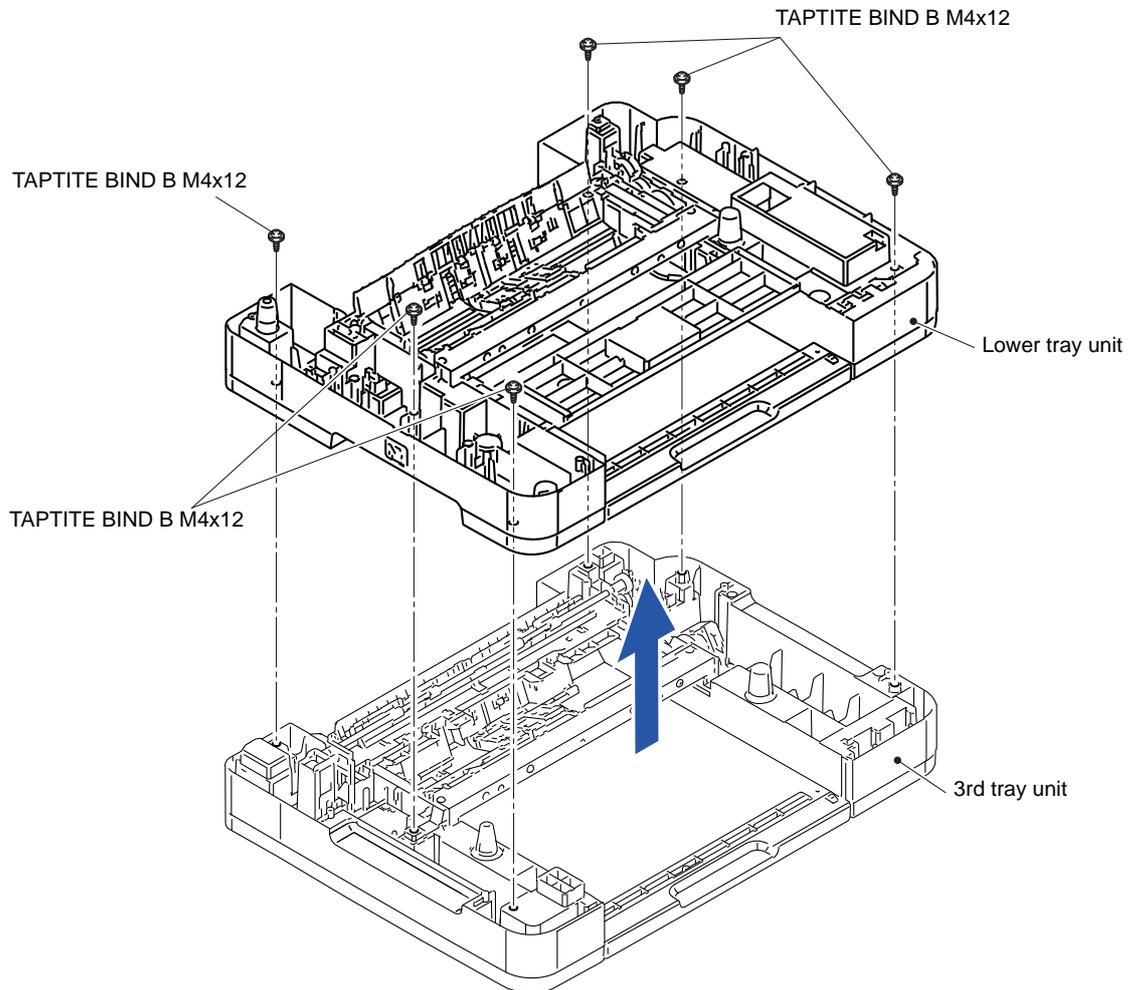


Fig. 3-199

- (3) Disconnect the five connectors from the 3rd tray relay PCB.
- (4) Remove the two screws (TAPTITE CUP B M3x10) from the 3rd tray relay PCB.
- (5) Remove the 3rd tray relay PCB from the 3rd tray unit.

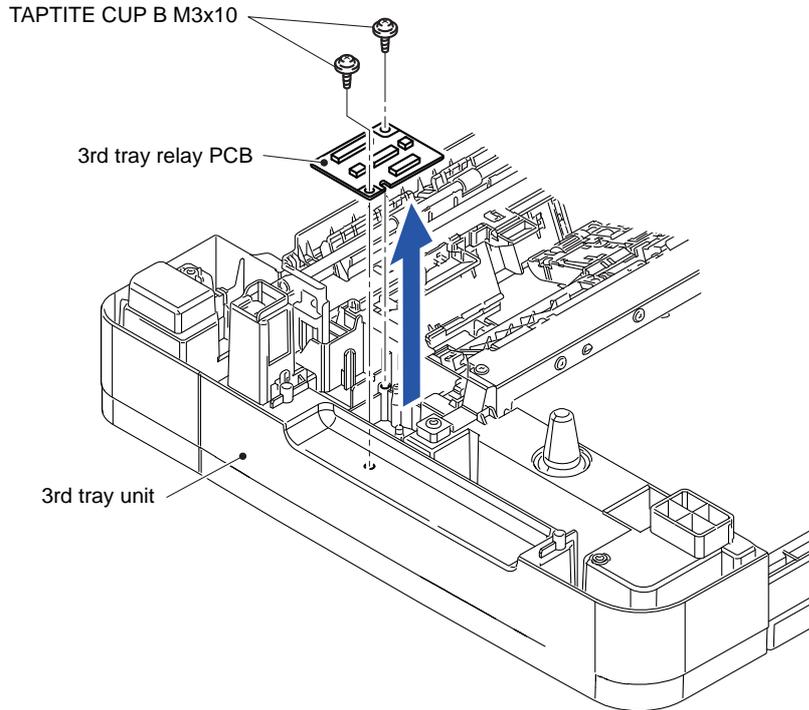


Fig. 3-200

Routing of harnesses: See “[18](#) 3rd tray relay PCB”.

### 9.64 3rd Tray Paper Pull-in Sensor PCB

- (1) Release one Lock and remove the 3rd tray paper pull-in sensor PCB from the 3rd tray sensor holder ASSY.
- (2) Release the 3rd tray paper pull-in sensor harness.

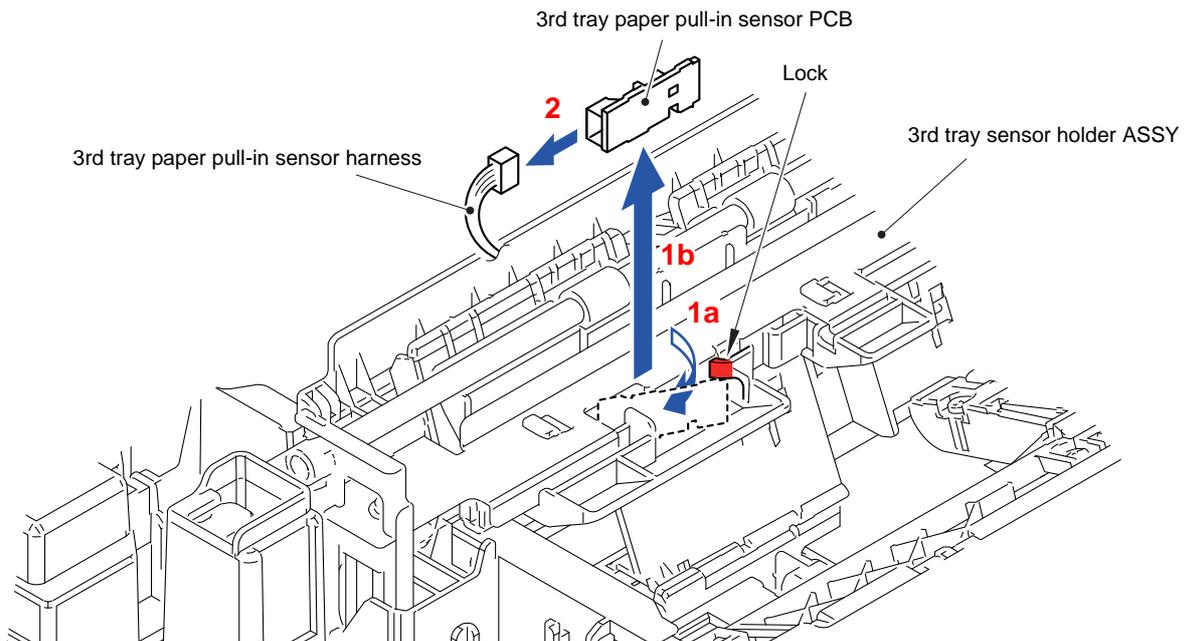


Fig. 3-201

### 9.65 Intermediate Roller

- (1) Rotate the Intermediate roller bushing L to release lock.
- (2) Remove the Intermediate roller from the 3rd tray sensor holder ASSY.

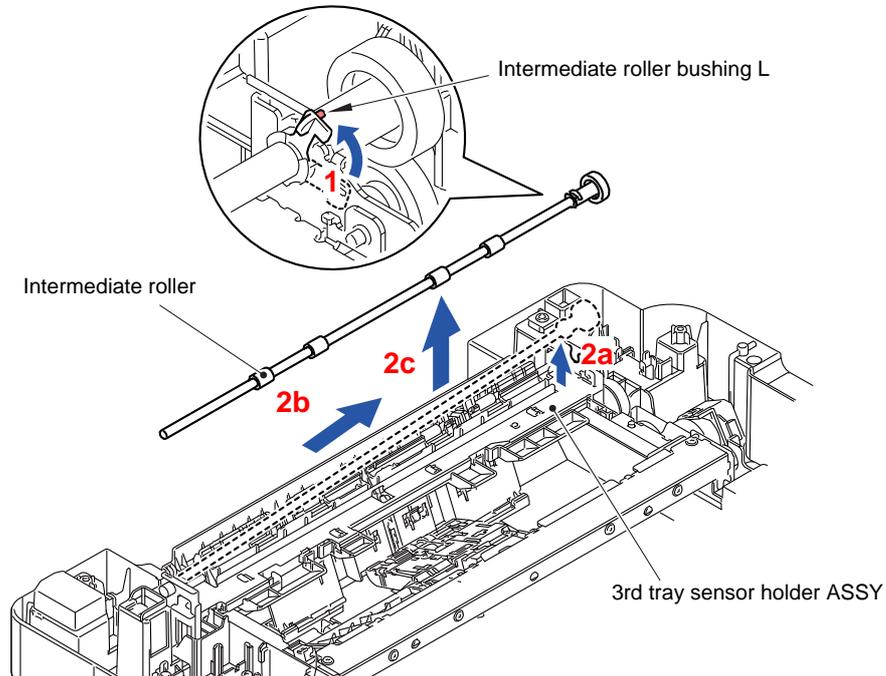


Fig. 3-202

### 9.66 3rd Tray Paper Feed Motor

- (1) Release the wiring of the 3rd tray paper pull-in sensor harness.
- (2) Remove the two screws (SCREW PAN (S/P WASHER) M3x6) and remove the 3rd tray sensor holder ASSY from the 3rd tray unit.

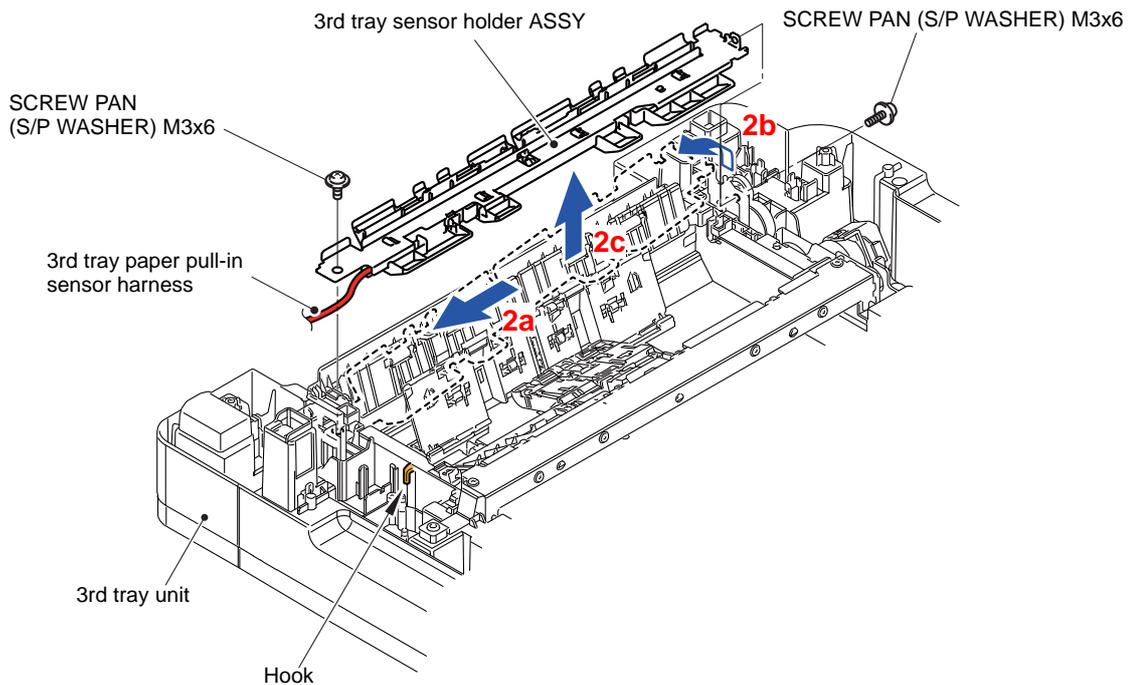
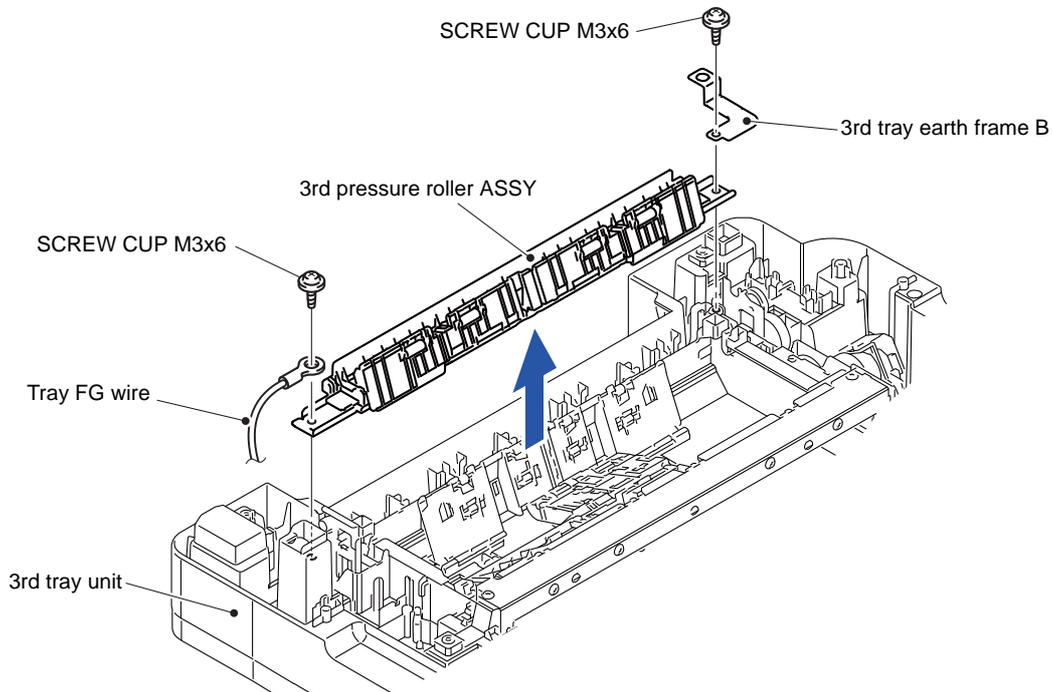


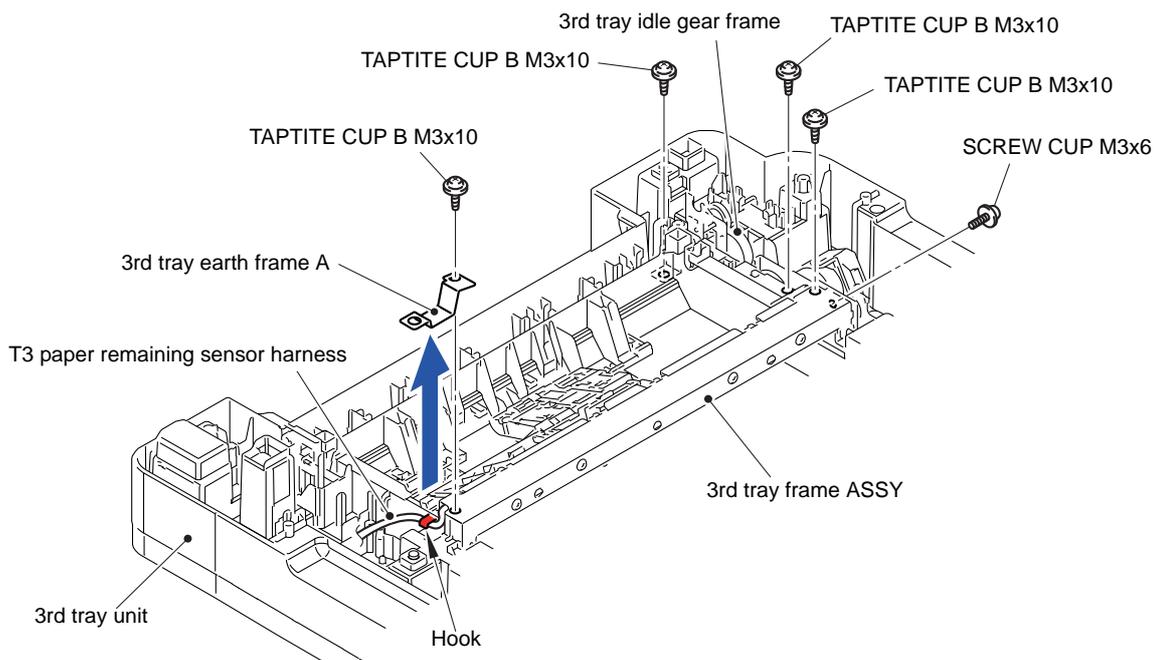
Fig. 3-203

- (3) Remove the screw (SCREW CUP M3x6) and remove the 3rd tray earth frame B from the 3rd tray unit.
- (4) Remove the screw (SCREW CUP M3x6) and remove the 3rd pressure roller ASSY from the 3rd tray unit.



**Fig. 3-204**

- (5) Remove the screw (TAPTITE CUP B M3x10) and remove the 3rd tray earth frame A from the 3rd tray unit.
- (6) Remove the screw (TAPTITE CUP B M3x10) from the 3rd tray frame ASSY.
- (7) Remove the two screws (TAPTITE CUP B M3x10) and the screw (SCREW CUP M3x6) from the 3rd tray idle gear frame.
- (8) Release the wiring of the T3 paper remaining sensor harness.



**Fig. 3-205**

- (9) Slightly lift the 3rd tray idle gear frame and pull out the 3rd tray frame ASSY in the direction of the arrow 9b to remove it.

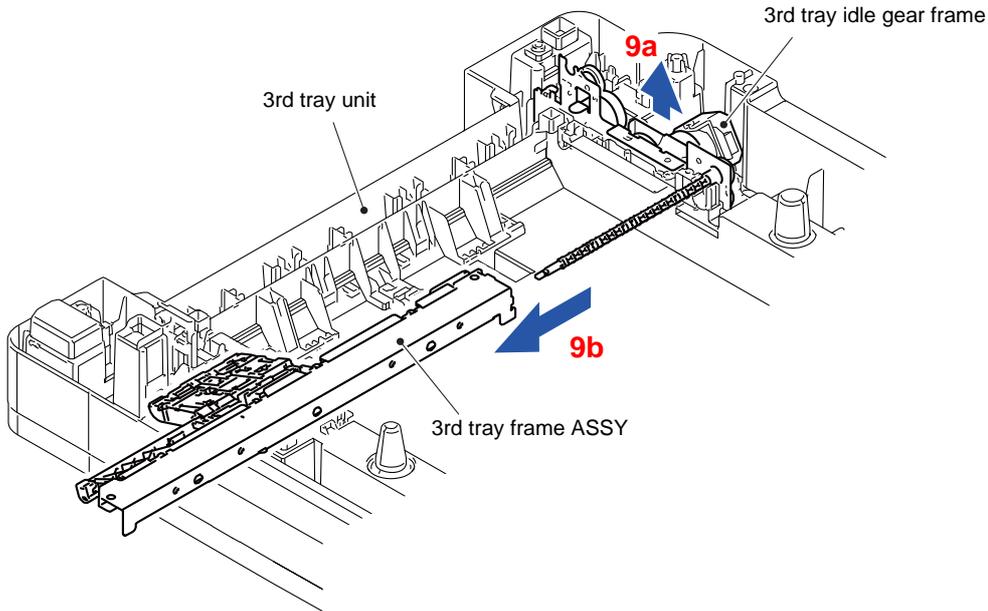


Fig. 3-206

**Assembling Note:** Insert the shaft of the ASF gear shaft LT into the 3rd tray frame ASSY as fitting it to the hole of the bushing. Turn the ASF gear shaft LT and check that the T3 paper pull-in roller L/R turns.

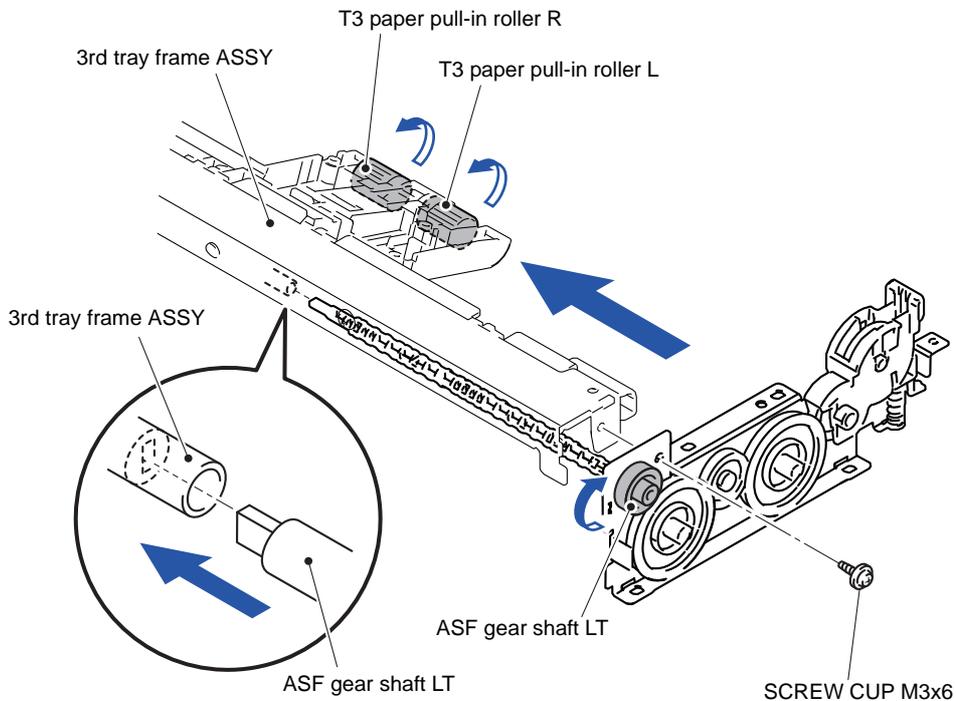
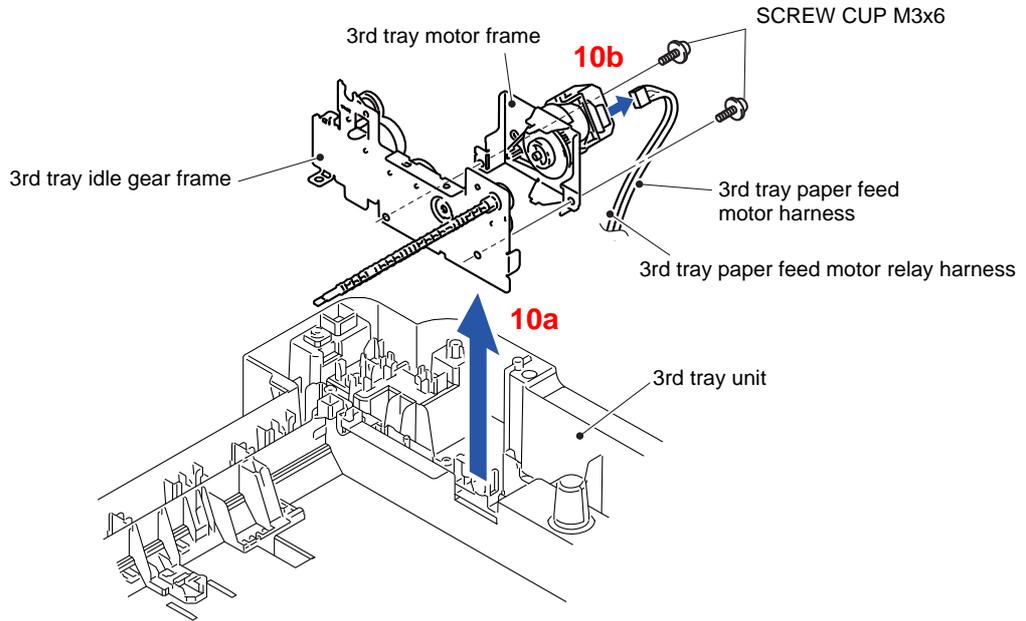


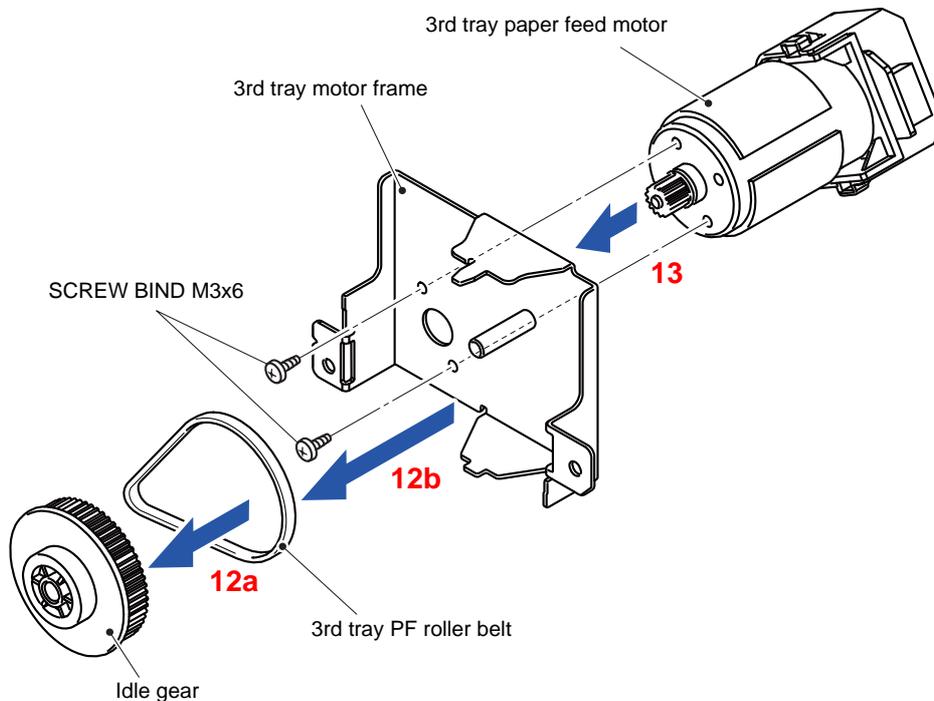
Fig. 3-207

- (10) Lift the 3rd tray idle gear frame from the 3rd tray unit and disconnect the harness connector.
- (11) Remove the two screws (SCREW CUP M3x6) and remove the 3rd tray motor frame from the 3rd tray idle gear frame.



**Fig. 3-208**

- (12) Remove the Idle gear and 3rd tray PF roller belt from the 3rd tray motor frame.
- (13) Remove the two screws (SCREW BIND M3x6) and remove the 3rd tray paper feed motor from the 3rd tray motor frame.



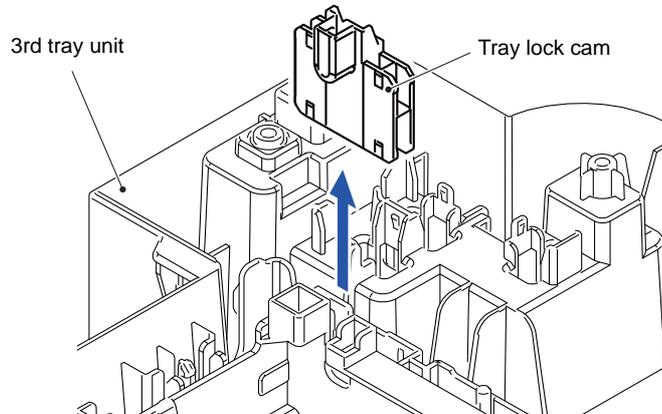
**Fig. 3-209**

**Routing of harnesses:** See “**18** 3rd tray relay PCB”.

## 9.67 T3 Bank ASSY

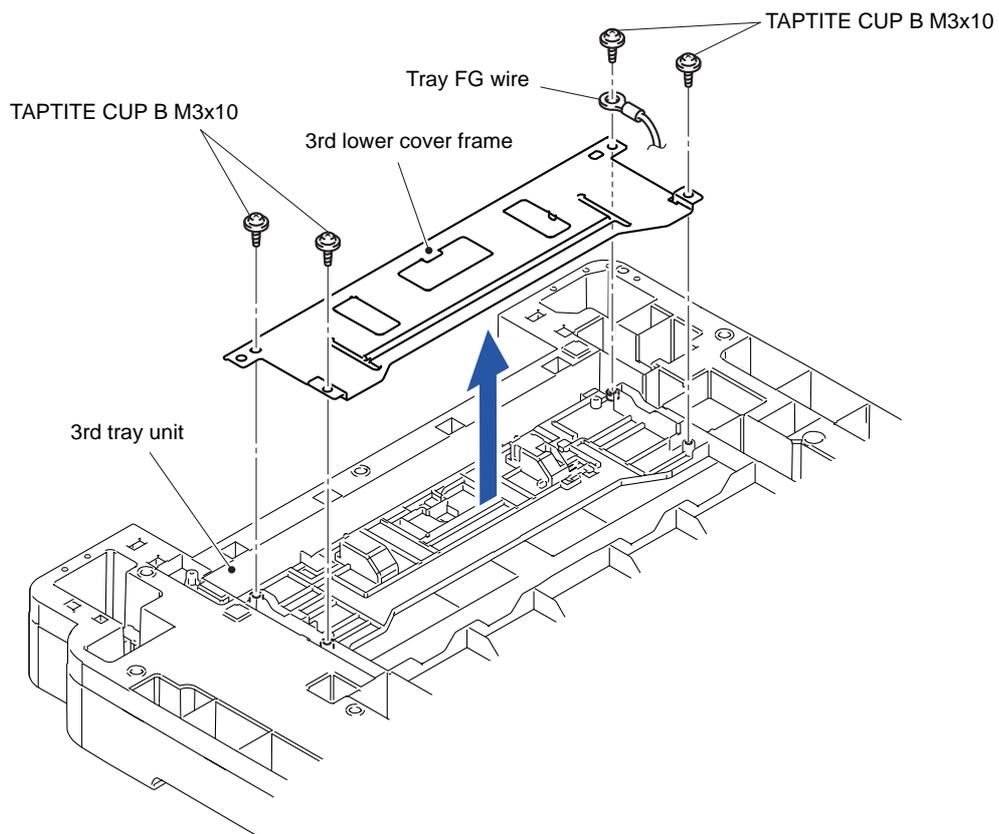
(1) Turn the 3rd tray unit upside down.

**Note:** Make sure to remove the Tray lock cam in advance. Otherwise, it falls when the 3rd tray unit is turned over.



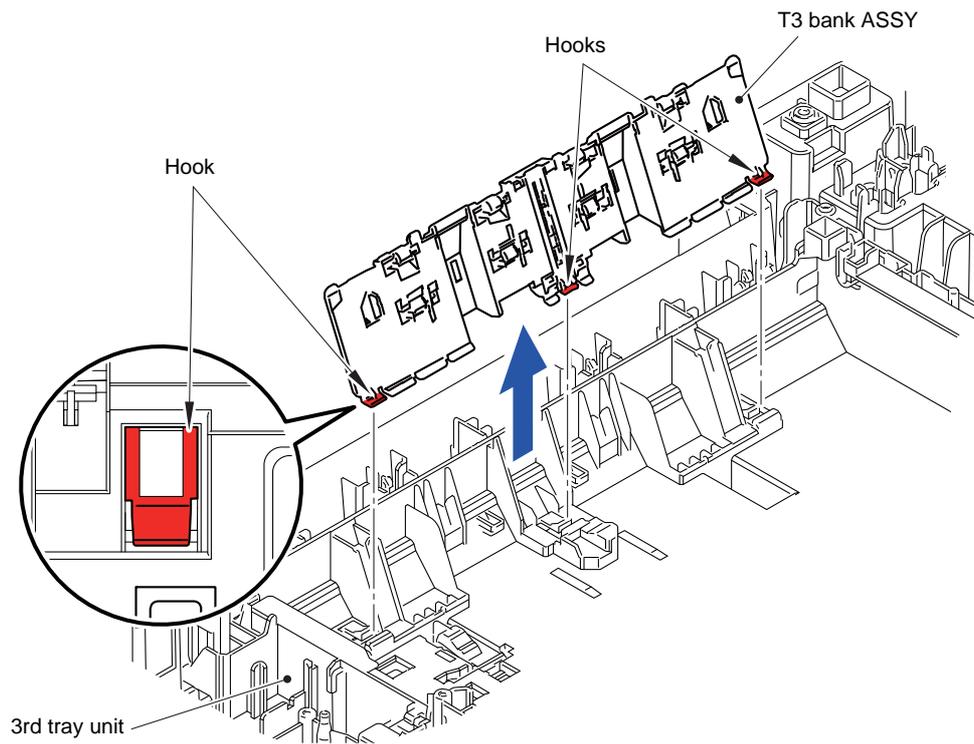
**Fig. 3-210**

(2) Remove the four screws (TAPTITE CUP B M3x10) and remove the 3rd lower cover frame from the 3rd tray unit.



**Fig. 3-211**

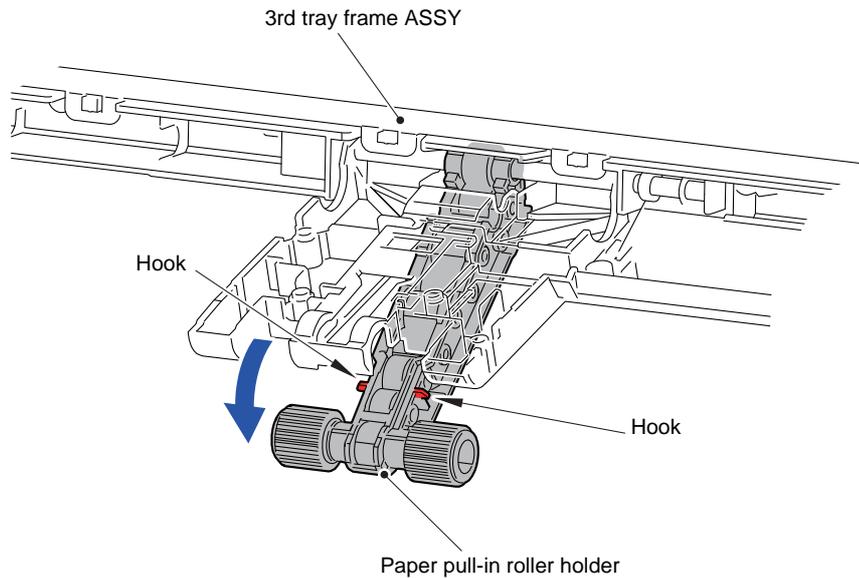
(3) Release the three Hooks and remove the T3 bank ASSY from the 3rd tray unit.



**Fig. 3-212**

## 9.68 T3 Paper Pull-in Roller L/R

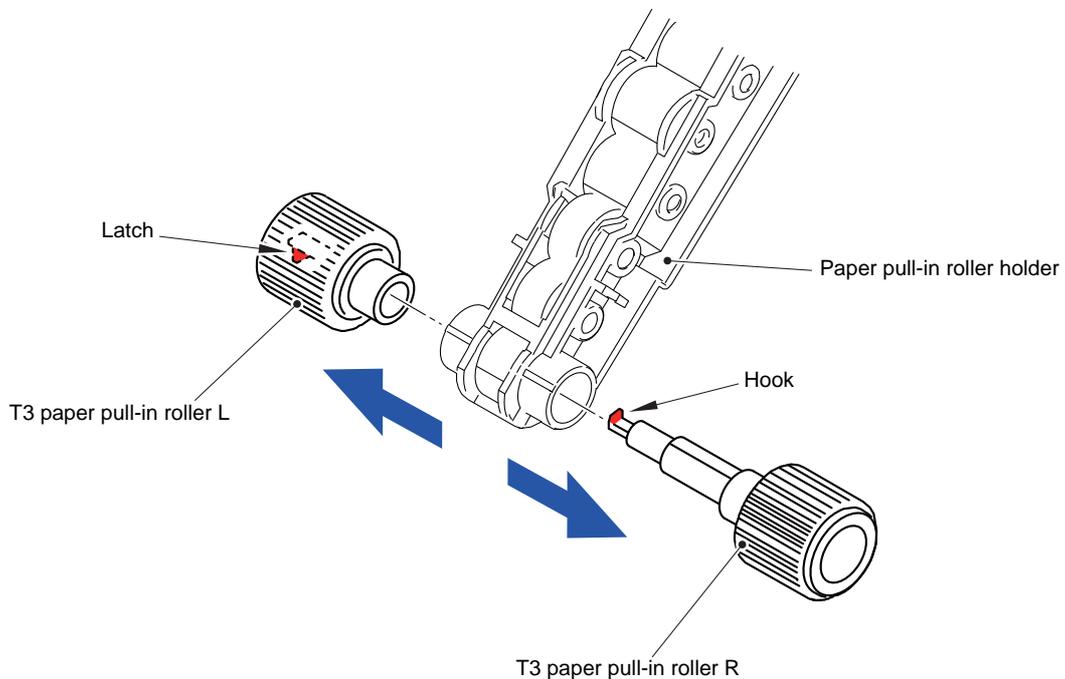
- (1) Release the two Hooks and push down the Paper pull-in roller holder.



**Fig. 3-213**

- (2) Open the Latch to the outer side and remove the T3 paper pull-in roller L/R from the Paper pull-in roller holder.

**Assembling Note:** When assembling the T3 paper pull-in roller L/R, make sure to engage the Hook with the Latch.



**Fig. 3-214**

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

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### 1 IF YOU REPLACE THE MAIN PCB

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If the machine information has not been backed up in a USB flash memory before the start of repair, it is necessary to replace the ink absorber box and flushing box and then reset their counts.

#### <Operations>

- 1.1 Customize destinations (Maintenance mode 74)
- 1.2 < Except for Printer model > Set the CIS type (Maintenance mode 59)
- 1.3 Install the firmware (Maintenance mode 28)
- 1.4 Initialize the EEPROM parameters (Maintenance mode 01)
- 1.5 Restore the head calibration data (Maintenance mode 68)
- 1.6 Set the serial number (Maintenance mode 80)
- 1.7 Updating of head property information (Maintenance mode 68)
- 1.8 Restore machine information (Maintenance mode 46)
- 1.9 Adjust the touch panel (Maintenance mode 78)
- 1.10 < Except for Printer model > Acquire white/black level data (Maintenance mode 55)
- 1.11 Adjustment of software correction for inclination/corrugation/ruled lines (Maintenance mode 65 / User menu)
- 1.12 Updating of paper feeding correction values (Maintenance mode 58 / User menu)
- 1.13 Adjustment of margins in borderless printing (Maintenance mode 66)
- 1.14 Reset purge and flushing counts
- 1.15 < Paper remaining sensor model only > Disable inter-machine variation calibration for paper remaining sensor (Maintenance mode 88)
- 1.16 Write head calibration data (Maintenance mode 02)
- 1.17 Check scanning and printing

### < Requirements >

- (1) USB cable (one piece)
- (2) PC (Windows® XP or later)  
Create a temporary folder in the C drive.
- (3) Memory access tool (MemoryAccessTool.exe)
- (4) Service setting tool (brusbsn.zip)  
Make a copy of the service setting tool in the temporary folder in the C drive.  
Extract the copied file and run "brusbsn.exe" by double-clicking.
- (5) Download utility (FILEDG32.EXE)  
Make a copy of the download utility in the temporary folder in the C drive.
- (6) Maintenance driver (MaintenanceDriver.zip), if not installed  
Make a copy of the maintenance driver in the temporary folder in the C drive.  
Extract the copied file and install it, referring to **APPENDIX 3 "INSTALLING THE MAINTENANCE PRINTER DRIVER."**
- (7) Firmware  
D00XXX\_\$.djf (For installing firmware using a USB flash memory or PC)  
D00XXX\_\$.upd (For installing firmware using a PC)
- (8) USB flash memory
- (9) Stylus
- (10) Data files of print patterns
- (11) < Except for Printer model >  
Color test chart CTC-001

## 1.1 Customize destinations (Maintenance mode 74)

Customize destinations, referring to [Chapter 5, Section 1.3.26 "Customizing Destinations \(Maintenance mode 74\)."](#)

If "PLS UPDATE PROG" appears on the LCD, install the firmware using the procedure in Section 1.3.

## 1.2 < Except for Printer model > Set the CIS type (Maintenance mode 59)

Set the CIS type, referring to [Chapter 5, Section 1.3.19 "Checking of CIS Travel and Specifying of CIS Type \(Maintenance mode 59\)."](#)

If "PLS UPDATE PROG" appears on the LCD, install the firmware using the procedure in Section 1.3.

## 1.3 Install the firmware (Maintenance mode 28)

This procedure is not required unless "PLS UPDATE PROG" appears on the LCD in Section 1.1 or 1.2. If the message appears, install the latest firmware, referring to [Chapter 5, Section 1.3.8 "Updating of Firmware Using a USB flash memory \(Maintenance mode 28\)."](#)

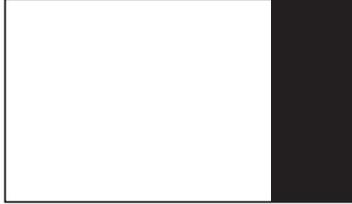
It is also possible to install the firmware using a PC according to the following procedure.

- (1) Turn the machine on and switch it to the maintenance mode.
- (2) Connect the machine to your PC using a USB cable.
- (3) On the PC, run "filedg32.exe."
- (4) Drag and drop the firmware (e.g., D00XXX\_A.djf) onto the Brother Maintenance USB Printer driver icon in the filedg32 window.  
After approx. 2 to 3 minutes, the loading operation is complete and the machine automatically reboots and returns to standby.
- (5) On the machine, display the version of the installed firmware on the LCD to check that the firmware installation has been successfully finished, referring to [Chapter 5, Section 2.1 "Displaying the Firmware Version."](#)

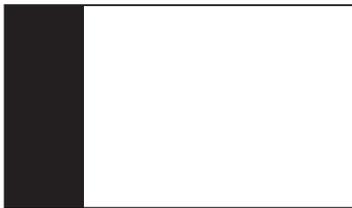
**Note:** If loading operation ends abnormally, turn the machine OFF and ON. Wait for the machine to emit a long beep and automatically enter the firmware loading mode, and then perform the loading procedure above again with the firmware having an extension upd.

If the machine does not automatically enter the firmware loading mode, perform the following procedure for switching to that mode and then load the firmware having an extension upd.

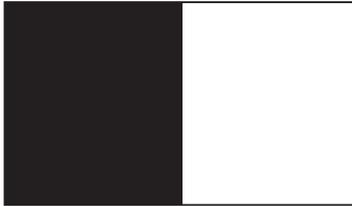
- 1) While holding down , plug the power cord into an electrical outlet. When the LED power indicator lights, release  and immediately press  once to display the following pattern.



- 2) Within three seconds after the above pattern appears, hold down  for approximately two seconds to display the following pattern.



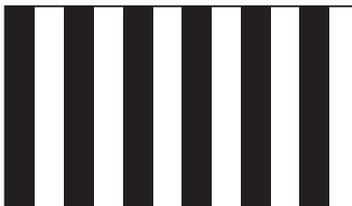
- 3) Within three seconds after the above pattern appears, press  once to display the following pattern.



- 4) Within three seconds after the above pattern appears, press  two times to display the following pattern.



- 5) Within three seconds after the above pattern appears, press  three times to display the following pattern.



#### 1.4 Initialize the EEPROM parameters (Maintenance mode 01)

Initialize the EEPROM parameters, referring to [Chapter 5, Section 1.3.1 "EEPROM Parameter Initialization \(Maintenance mode 01, 91\)."](#)

#### 1.5 Restore the head calibration data (Maintenance mode 68)

Restore head calibration data that has been backed up in a USB flash memory, referring to [Chapter 5, Section 1.3.24 "Updating of Head Property Information and Backup/Restoration of Head Calibration Data \(Maintenance mode 68\)."](#)

If the restoration is successfully completed, the procedure given in ["1.16 Write head calibration data \(Maintenance mode 02\)"](#) is not required.

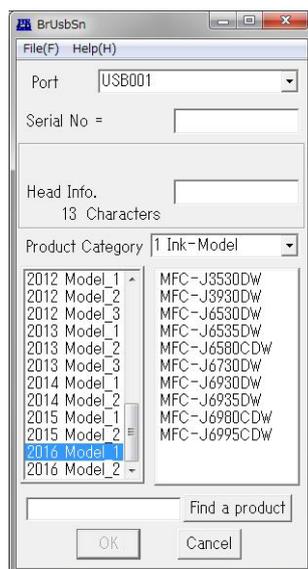
#### 1.6 Set the serial number (Maintenance mode 80)

Set the serial number, referring to [Chapter 5, Section 1.3.31 "Display of the Equipment's Log \(Maintenance mode 80\)."](#)

The serial number can also be set with the service setting tool (BrUsbSn.exe) that enables the head property information to be updated (["1.7 Updating of head property information \(Maintenance mode 68\)"](#)) at the same time.

The serial number setting procedure is given below.

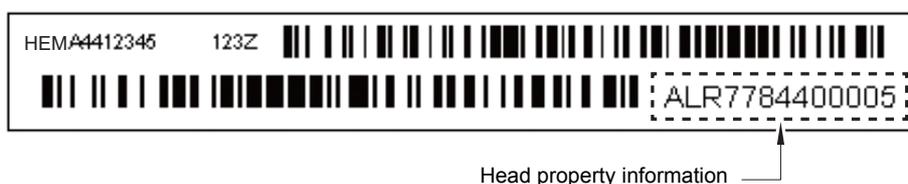
- (1) Turn the machine on and switch it to the maintenance mode.
- (2) Connect the machine to your PC using a USB cable.
- (3) Double-click the memory access tool (MemoryAccessTool.exe) to display "Maintenance Exception Tool" window.
- (4) After checking that the printer is set to "Brother Maintenance USB Printer" on the window, click **Execute**.  
**Tip:** Running the memory access tool enables you to write the setting information. When the main power of the product is turned off, it will disable you to write the information. Run the memory access tool again.
- (5) On the PC, run the service setting tool (BrUsbSn.exe) to display the following window.



- (6) In **Product Category**, select **1. Ink-Model**.

- (7) Select **2016 Model\_1**.

- (8) In **Port** on the BrUsbSn screen, select the port number assigned to the Brother Maintenance USB Printer.  
If the port number is unknown, follow steps 1) through 4) below.
  - 1) Click **Start | Devices and Printers**.
  - 2) Right-click the Brother Maintenance USB Printer driver icon.
  - 3) Click **Properties**.
  - 4) Click the **Ports** tab.
- (9) In the **Serial No.** box on the BrUsbSn screen, type the 15-digit serial number which is printed on the serial number label attached to the machine.
- (10) In the **Head Info.** box, type the 13-digit head property information. The head property information is printed on the bar code label attached to the head/carriage unit.



- (11) Click **OK**.
- (12) Wait for the confirmation screen of the entered serial number and head property information to appear, then click **Yes**.
- (13) Use Maintenance mode 80 to display the serial number and head property information and check that the entered data is correct.

## 1.7 Updating of head property information (Maintenance mode 68)

Update the head property information, referring to [Chapter 5, Section 1.3.24 "Updating of Head Property Information and Backup/Restoration of Head Calibration Data \(Maintenance mode 68\)."](#)

The head property information can also be updated with the service setting tool (BrUsbSn.exe). For details, refer to ["1.6 Set the serial number \(Maintenance mode 80\)"](#).

## 1.8 Restore machine information (Maintenance mode 46)

Restore the machine information and user setting information that have been backed up in a USB flash memory, referring to [Chapter 5, Section 1.3.12 "Backup of Machine Information \(Maintenance mode 46\)."](#)

If the machine information is successfully restored, it is not necessary to perform operations given in Sections 1.9 to 1.15.

If the machine has failed to restore the machine information from the USB flash memory, replace the ink absorber box and flushing box and then reset their counts using the procedure given in Section 1.14.

## 1.9 Adjust the touch panel (Maintenance mode 78)

Adjust the touch panel, referring to [Chapter 5, Section 1.3.30 "Adjustment of Touch Panel \(Maintenance mode 78\)."](#)

## 1.10 < Except for Printer model >

### Acquire white/black level data (Maintenance mode 55)

Acquire white/black level data, referring to [Chapter 5, Section 1.3.15 "Acquisition of White/Black Level Data \(Maintenance mode 55\)."](#)

## 1.11 Adjustment of software correction for inclination/corrugation/ruled lines (Maintenance mode 65 / User menu)

< Regular Ink cartridge model / Ink tank model (Printer model) / Simple Ink cartridge model (Printer model) >

Refer to [Chapter 5, Section 1.3.22 "Adjustment of Software Correction for Inclination/Corrugation/Ruled Lines \(Maintenance mode 65\)."](#)

< Ink tank model (MFC model) / Simple Ink cartridge model (MFC model) >

(1) Press . Press **Maintenance**.

(2) Press **Improve Print Quality**. Press **Alignment**.

(3) Perform auto adjustment according to the instructions on the LCD.

**Note:** When an error message appears on the LCD, perform Maintenance mode 65.

## 1.12 Updating of paper feeding correction values (Maintenance mode 58 / User menu)

< Regular Ink cartridge model / Ink tank model (Printer model) / Simple Ink cartridge model (Printer model) >

Refer to [Chapter 5, Section 1.3.18 "Updating of Paper Feeding Correction Values \(Maintenance mode 58\)."](#)

< Ink tank model (MFC model) / Simple Ink cartridge model (MFC model) >

(1) Press . Press **Maintenance**.

(2) Press **Improve Print Quality**. Press **Correct Paper Feed**.

(3) Perform auto adjustment according to the instructions on the LCD.

**Note:** When an error message appears on the LCD, perform Maintenance mode 58.

## 1.13 Adjustment of margins in borderless printing (Maintenance mode 66)

Refer to [Chapter 5, Section 1.3.23 "Adjustment of Margins in Borderless Printing \(Maintenance mode 66\)."](#)

## 1.14 Reset purge and flushing counts

(1) Switch the machine to the maintenance mode.

(2) Press the **8** and **0** keys in this order.

(3) Press the **▼** key several times until the "PURGE COUNT" (or "FLUSHING") appears on the LCD.

(4) Press the **▶** key once to display "PURGE: \*\*\*\*\*" (or "FLSBK: \*\*\*\*\*" and then press the **▼** key once to display "FLSCL: \*\*\*\*\*") on the LCD.

(5) Press the **2**, **7**, **8** and **3** keys in this order to reset the purge (or flushing) count.

Once the purge or flushing count reaches the upper limit value\*, a message, "Unable to Print 46" is displayed, and the purge operation and flushing operation are prohibited, respectively.

If this occurs, it is required to replace the ink absorber box or the flushing box with new ones, and reset the purge count or the flushing count in the steps described above.

\* Upper limit value of Purge/Flushing count

		Purge count	Flushing count	
			BK	CL
Ink cartridge model	Model without lower tray	13,723	3,711,465,657	
	Model with lower tray	16,609		
Ink tank model		13,723	1,471,770,026	

**Note:** Even if you reset the purge count, it will not become 0, since the ink in the intermediate absorber box is taken into consideration.

**1.15 < Paper remaining sensor model only >**

**Disable inter-machine variation calibration for paper remaining sensor (Maintenance mode 88 <Selector 1 on AMS04>)**

Refer to [Chapter 5, Section 1.3.34 "Assurance Mode Switch Setting \(Maintenance mode 88\)" <Selector 1 on AMS04>](#).

**1.16 Write head calibration data (Maintenance mode 02)**

Write head calibration data, referring to [Chapter 5, Section 1.3.2 "Creating of Head Calibration Data and Writing it into Flash ROM \(Maintenance mode 02\)."](#)

**1.17 Check scanning and printing**

To make a final check after replacement of the main PCB, print test patterns for updating of paper feeding correction values, adjustment of software correction for inclination/corrugation/ruled lines, adjustment of margins in borderless printing, and then check a copy of a color test chart CTC-001.

**Updating of paper feeding correction values**

Check the test patterns, referring to [Chapter 5, Section 1.3.18 "Updating of Paper Feeding Correction Values \(Maintenance mode 58\)."](#)

**Adjustment of software correction for inclination/corrugation/ruled lines**

Check the test patterns, referring to [Chapter 5, Section 1.3.22 "Adjustment of Software Correction for Inclination/Corrugation/Ruled Lines \(Maintenance mode 65\)."](#)

**Adjustment of margins in borderless printing**

Check the test patterns, referring to [Chapter 5, Section 1.3.23 "Adjustment of Margins in Borderless Printing \(Maintenance mode 66\)."](#)

< Except for Printer model >

**Making a copy of a color test chart CTC-001**

- (1) Set the printed color test chart CTC-001 on the document cover glass with its printed face down.
- (2) Proceed **Copy > Options > Quality** and set to "Normal" on the home screen, press the **Color Start** key to copy the document.
- (3) Check the copied color test chart CTC-001 for problems. If any problem is found, perform the adjustment procedure again.
- (4) Duplex scanning models: Turn over the printed color test chart CTC-001, and set into the ADF. Copy it with duplex-printing and check whether the color test chart CTC-001 printed on the second side has any problem.

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## 2 IF YOU REPLACE THE HEAD/CARRIAGE UNIT

---

### <Operations>

- 2.1 Update the head property information (Maintenance mode 68)
- 2.2 Perform ink supply purge (Maintenance mode 76)
- 2.3 Check head nozzles (Maintenance mode 09)
- 2.4 Adjust head inclination
- 2.5 Adjustment of software correction for inclination/corrugation/ruled lines (Maintenance mode 65 / User menu)
- 2.6 Updating of paper feeding correction values (Maintenance mode 58 / User menu)
- 2.7 Adjustment of margins in borderless printing (Maintenance mode 66)
- 2.8 Write head calibration data (Maintenance mode 02)
- 2.9 Check printing
- 2.10 Obtain machine information at the user site (Instruction to the end user)

### <Requirements>

- (1) USB cable (one piece)
- (2) PC (Windows® XP or later)  
Create a temporary folder in the C drive.
- (3) Memory access tool (MemoryAccessTool.exe)
- (4) Service setting tool (brusbsn.zip)  
Make a copy of the service setting tool in the temporary folder in the C drive.  
Extract the copied file and run "brusbsn.exe" by double-clicking.
- (5) Download utility (FILEDG32.EXE)  
Make a copy of the download utility in the temporary folder in the C drive.
- (6) Maintenance driver (MaintenanceDriver.zip), if not installed  
Make a copy of the maintenance driver in the temporary folder in the C drive.  
Extract the copied file and install it, referring to **APPENDIX 3 "INSTALLING THE MAINTENANCE PRINTER DRIVER."**
- (7) USB flash memory
- (8) Data files of print patterns

## 2.1 Update the head property information (Maintenance mode 68)

Update the head property information, referring to [Chapter 5, Section 1.3.24 "Updating of Head Property Information and Backup/Restoration of Head Calibration Data \(Maintenance mode 68\)."](#)

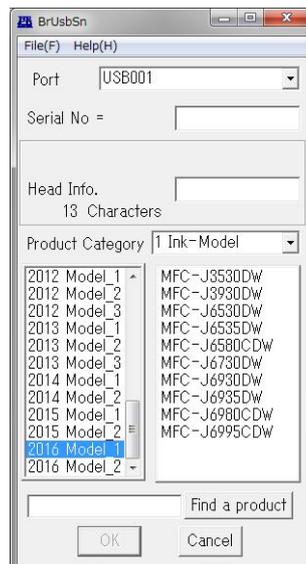
The head property information can also be updated with the service setting tool (BrUsbSn.exe).

The head property information updating procedure is given below.

- (1) Turn the machine on and switch it to the maintenance mode.
- (2) Connect the machine to your PC using a USB cable.
- (3) Double-click the memory access tool (MemoryAccessTool.exe) to display "Maintenance Exception Tool" window.
- (4) After checking that the printer is set to "Brother Maintenance USB Printer" on the window, click **Execute**.

**Tip:** Running the memory access tool enables you to write the setting information. When the main power of the product is turned off, it will disable you to write the information. Run the memory access tool again.

- (5) On the PC, run the service setting tool (BrUsbSn.exe) to display the following window.



- (6) In **Product Category**, select **1. Ink-Model**.
- (7) Select **2016 Model\_1**.
- (8) In **Port** on the BrUsbSn screen, select the port number assigned to the Brother Maintenance USB Printer.  
If the port number is unknown, follow steps 1) through 4) below.
  - 1) Click **Start | Devices and Printers**.
  - 2) Right-click the Brother Maintenance USB Printer driver icon.
  - 3) Click **Properties**.
  - 4) Click the **Ports** tab.
- (9) In the **Head Info.** box, type the 13-digit head property information. The head property information is printed on the bar code label attached to the head/carriage unit.
- (10) Click **OK**.



If the sum of the selected values is 13 or larger, turn the external ring to the negative side by 5 scale marks. If the external ring cannot turn exceeding 3 to 4 scale marks, turn the external ring to the -7 position.

If the external ring cannot turn exceeding 2 scale marks, turn the internal ring to the -1 position and then turn the external ring to the center (0 position).

If the internal ring is already set in the +1 or -1 position and cannot be turned further, then replace the head/carriage unit.

**Note:** When turning the internal ring, hold down the head/carriage unit. Failure to do so may cause missing block.

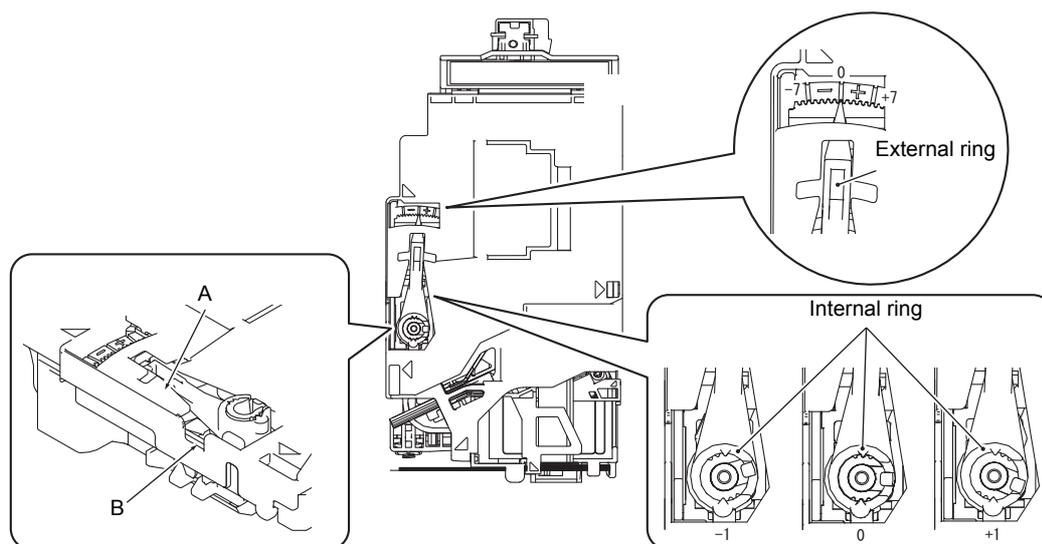


Fig. 4-1

■ Turning the rings

External ring

Apply the tip of a flat screwdriver to the groove at section "A". While pressing down the external ring with the screwdriver, turn it to the + or - position.

Internal ring

Insert the tip of a flat screwdriver under the external ring from section "B" and remove the external ring upwards. Put the external ring on the internal ring inside out and use it as a wrench to turn the internal ring to the + or - position.

- 3) Go back to step (2), print out a test pattern again, and check the C and D patterns. Repeat this procedure until the sum of block number that shows the most indistinct horizontal lines comes to between 8 and 12, inclusive.

## 2.5 Adjustment of software correction for inclination/corrugation/ruled lines (Maintenance mode 65 / User menu)

< Regular Ink cartridge model / Ink tank model (Printer model) / Simple Ink cartridge model (Printer model) >

Refer to [Chapter 5, Section 1.3.22 "Adjustment of Software Correction for Inclination/Corrugation/Ruled Lines \(Maintenance mode 65\)."](#)

< Ink tank model (MFC model) / Simple Ink cartridge model (MFC model) >

- (1) Press . Press **Maintenance**.
- (2) Press **Improve Print Quality**. Press **Alignment**.
- (3) Perform auto adjustment according to the instructions on the LCD.

**Note:** When an error message appears on the LCD, perform Maintenance mode 65.

## 2.6 Updating of paper feeding correction values (Maintenance mode 58 / User menu)

< Regular Ink cartridge model / Ink tank model (Printer model) / Simple Ink cartridge model (Printer model) >

Refer to [Chapter 5, Section 1.3.18 "Updating of Paper Feeding Correction Values \(Maintenance mode 58\)."](#)

< Ink tank model (MFC model) / Simple Ink cartridge model (MFC model) >

(1) Press . Press **Maintenance**.

(2) Press **Improve Print Quality**. Press **Correct Paper Feed**.

(3) Perform auto adjustment according to the instructions on the LCD.

**Note:** When an error message appears on the LCD, perform Maintenance mode 58.

## 2.7 Adjustment of margins in borderless printing (Maintenance mode 66)

Refer to [Chapter 5, Section 1.3.23 "Adjustment of Margins in Borderless Printing \(Maintenance mode 66\)."](#)

## 2.8 Write head calibration data (Maintenance mode 02)

Refer to [Chapter 5, Section 1.3.2 "Creating of Head Calibration Data and Writing it into Flash ROM \(Maintenance mode 02\)."](#)

## 2.9 Check printing

Under "[1.17 Check scanning and printing](#)" in this chapter, refer to and take steps for "Updating of paper feeding correction values", "Adjustment of software correction for inclination/corrugation/ruled lines" and "Adjustment of margins in borderless printing".

## 2.10 Obtain machine information at the user site (Instruction to the end user)

When the user receives the repaired machine, he/she needs to retrieve the head calibration data and save it into his/her PC at the user site. The service personnel should contact the user to instruct him/her to perform the following procedure.

< **Windows®** >

- (1) On the user computer, click **Start | Devices and Printers** to display the Printers window.
- (2) Right-click the Brother Printer driver icon to display the pull-down menu.
- (3) Click **Properties | Print Settings | Advanced | Other print options | Retrieve Printer's Color Data**.
- (4) Check that the **Use Printer's Color Data** check box is selected.
- (5) Click **Retrieve Printer's Color Data**.
- (6) Wait for the dialog to appear and click **OK**.

< **Macintosh** >

- (1) On the user Mac, display the printer list and select the repaired machine.
- (2) Select **Open Print Queue | Printer Setup | Utility | Open Printer Utility**.
- (3) From the menu bar, select **Control | Retrieve Printer's Color Data**.
- (4) Wait for the dialog to appear and click **OK**.

\* For detailed instructions on how to obtain machine information, refer to the FAQ at the Brother Solution Center.

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### 3 IF YOU REPLACE THE DOCUMENT SCANNER UNIT, ADF UNIT OR CIS UNIT

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#### <Operations>

- 3.1 Set the CIS type (Maintenance mode 59) (Not required after replacement of the ADF unit on simplex scanning models)
- 3.2 Acquire white/black level data (Maintenance mode 55) (Not required after replacement of the ADF unit on simplex scanning models)
- 3.3 Check scanning

#### <Requirements>

- (1) USB cable (one piece)
- (2) PC (Windows® XP or later)  
Create a temporary folder in the C drive.
- (3) Download utility (FILEDG32.EXE)  
Make a copy of the download utility in the temporary folder in the C drive.
- (4) Maintenance driver (MaintenanceDriver.zip), if not installed  
Make a copy of the maintenance driver in the temporary folder in the C drive.  
Extract the copied file and install it, referring to [APPENDIX 3 "INSTALLING THE MAINTENANCE PRINTER DRIVER."](#)
- (5) Firmware  
D00XXX\_\$.djf (For installing firmware using a USB flash memory or PC)  
D00XXX\_\$.upd (For installing firmware using a PC)
- (6) USB flash memory
- (7) Color test chart CTC-001

#### 3.1 Set the CIS type (Maintenance mode 59) (Not required after replacement of the ADF unit on simplex scanning models)

Set the CIS type, referring to [Chapter 5, Section 1.3.19 "Checking of CIS Travel and Specifying of CIS Type \(Maintenance mode 59\)."](#)

If "PLS UPDATE PROG" appears on the LCD, install the firmware using the procedure in [Chapter 5, Section 1.3.8 "Updating of Firmware Using a USB flash memory \(Maintenance mode 28\)."](#)

#### 3.2 Acquire white/black level data (Maintenance mode 55) (Not required after replacement of the ADF unit on simplex scanning models)

Acquire white/black level data, referring to [Chapter 5, Section 1.3.15 "Acquisition of White/Black Level Data \(Maintenance mode 55\)."](#)

#### 3.3 Check scanning

To make a final check after replacement, check a copy of a color test chart CTC-001. Check scanning, referring to "Making a copy of a color test chart CTC-001" in ["1.17 Check scanning and printing"](#).

---

## 4 IF YOU REPLACE THE CONTROL PANEL ASSY

---

### <Operations>

- 4.1 Adjust the touch panel (Maintenance mode 78)
- 4.2 Check LCD operation (Maintenance mode 12)
- 4.3 Check the operation of the control panel keys (Maintenance mode 13)

### <Requirements>

- (1) Stylus

#### 4.1 Adjust the touch panel (Maintenance mode 78)

Adjust the touch panel, referring to [Chapter 5, Section 1.3.30 "Adjustment of Touch Panel \(Maintenance mode 78\)."](#)

#### 4.2 Check LCD operation (Maintenance mode 12)

Check the LCD operation, referring to [Chapter 5, Section 1.3.6 "Operational Check of LCD \(Maintenance mode 12\)."](#)

#### 4.3 Check the operation of the control panel keys (Maintenance mode 13)

Check the operation of the control panel keys, referring to [Chapter 5, Section 1.3.7 "Operational Check of Keys on Control Panel \(Maintenance mode 13\)."](#)

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## 5 IF YOU REPLACE THE INK ABSORBER BOX OR FLUSHING BOX

---

### <Operations>

- 5.1 Reset purge or flushing counts

### <Requirements> None

#### 5.1 Reset purge or flushing counts

Reset purge or flushing counts, referring to ["1.14 Reset purge and flushing counts"](#).

---

## 6 IF YOU REPLACE THE PAPER FEEDING RELATED PARTS AND MAINTENANCE UNIT

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The paper feeding related parts to be adjusted after replacement are listed below.

- Paper feed roller
- Paper ejection roller
- Switchback roller
- Carriage motor
- Paper feed motor
- CR encoder strip
- PF encoder disk
- PF encoder sensor PCB
- CR timing belt
- Registration sensor PCB
- Carriage PCB ASSY
- Platen
- Flushing box
- Flushing base
- Maintenance unit
- Paper feed arm frame ASSY
- LT frame ASSY

### <Operations>

6.1 Check head nozzles (Maintenance mode 09)

6.2 Adjustment of software correction for inclination/corrugation/ruled lines  
(Maintenance mode 65 / User menu)

6.3 Updating of paper feeding correction values (Maintenance mode 58 / User menu)

6.4 Adjustment of margins in borderless printing (Maintenance mode 66)

6.5 < Only when replacing the Paper feed arm frame ASSY or LT frame ASSY of the  
paper remaining sensor model > Disable inter-machine variation calibration for  
paper remaining sensor (Maintenance mode 88 <Selector 1 on AMS04>)

6.6 Check printing

### <Requirements>

- (1) USB cable (one piece)
- (2) PC (Windows<sup>®</sup> XP or later)  
Create a temporary folder in the C drive.
- (3) Download utility (FILEDG32.EXE)  
Make a copy of the download utility in the temporary folder in the C drive.
- (4) Maintenance driver (MaintenanceDriver.zip), if not installed  
Make a copy of the maintenance driver in the temporary folder in the C drive.  
Extract the copied file and install it, referring to **APPENDIX 3 "INSTALLING THE  
MAINTENANCE PRINTER DRIVER."**
- (5) USB flash memory
- (6) Data files of print patterns

## 6.1 Check head nozzles (Maintenance mode 09)

Check head nozzles, referring to ["2.3 Check head nozzles \(Maintenance mode 09\)"](#).

## 6.2 Adjustment of software correction for inclination/corrugation/ruled lines (Maintenance mode 65 / User menu)

< Regular Ink cartridge model / Ink tank model (Printer model) / Simple Ink cartridge model (Printer model) >

Refer to [Chapter 5, Section 1.3.22 "Adjustment of Software Correction for Inclination/Corrugation/Ruled Lines \(Maintenance mode 65\)."](#)

< Ink tank model (MFC model) / Simple Ink cartridge model (MFC model) >

(1) Press . Press **Maintenance**.

(2) Press **Improve Print Quality**. Press **Alignment**.

(3) Perform auto adjustment according to the instructions on the LCD.

**Note:** When an error message appears on the LCD, perform Maintenance mode 65.

## 6.3 Updating of paper feeding correction values (Maintenance mode 58 / User menu)

< Regular Ink cartridge model / Ink tank model (Printer model) / Simple Ink cartridge model (Printer model) >

Refer to [Chapter 5, Section 1.3.18 "Updating of Paper Feeding Correction Values \(Maintenance mode 58\)."](#)

< Ink tank model (MFC model) / Simple Ink cartridge model (MFC model) >

(1) Press . Press **Maintenance**.

(2) Press **Improve Print Quality**. Press **Correct Paper Feed**.

(3) Perform auto adjustment according to the instructions on the LCD.

**Note:** When an error message appears on the LCD, perform Maintenance mode 58.

## 6.4 Adjustment of margins in borderless printing (Maintenance mode 66)

Refer to [Chapter 5, Section 1.3.23 "Adjustment of Margins in Borderless Printing \(Maintenance mode 66\)."](#)

## 6.5 < Only when replacing the Paper feed arm frame ASSY or LT frame ASSY of the paper remaining sensor model > Disable inter-machine variation calibration for paper remaining sensor (Maintenance mode 88 <Selector 1 on AMS04>)

Refer to [Chapter 5, Section 1.3.34 "Assurance Mode Switch Setting \(Maintenance mode 88\)" <Selector 1 on AMS04>.](#)

## 6.6 Check printing

Under ["1.17 Check scanning and printing"](#) in this chapter, refer to and take steps for "Updating of paper feeding correction values", "Adjustment of software correction for inclination/corrugation/ruled lines" and "Adjustment of margins in borderless printing".

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## CHAPTER 5 SERVICE FUNCTIONS

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### 1 MAINTENANCE MODE

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The maintenance mode is exclusively designed for the purpose of checks, settings and adjustments of the machine and can be triggered by the keys on the control panel.

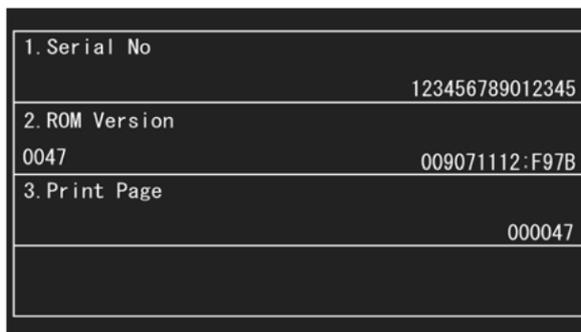
In the maintenance mode, you can perform operational checks of sensors, perform a print test, display the log information or error codes, and configure worker switches (WSW).

#### 1.1 Entry to the Maintenance Mode

##### 1.1.1 How to Enter the Maintenance Mode for Service Personnel

###### < Operating Procedure >

- (1) When the machine is on standby, hold down the **Home** key for approx. 5 seconds to display the following screen on the LCD.



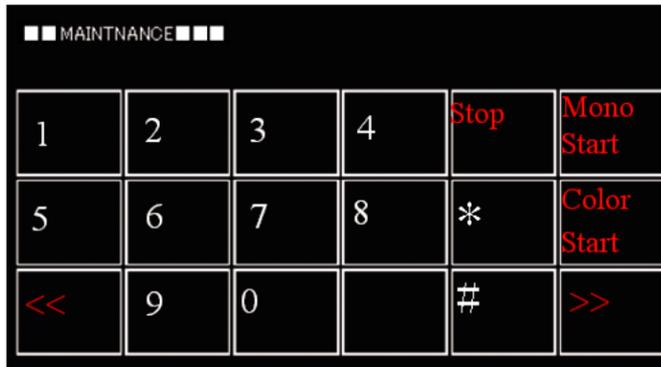
1. Serial No	123456789012345
2. ROM Version	0047 009071112:F97B
3. Print Page	000047

- (2) Press the blank area at the bottom of the LCD to display the following screen.



1	2	3	4	Stop	Mono Start
5	6	7	8	*	Color Start
<<	9	0		#	>>

- (3) Press the \*, 2, 8, 6 and 4 keys on the LCD in this order. The machine displays the following screen on the LCD and enters the maintenance mode.



■■ MAINTNANCE ■■■					
1	2	3	4	Stop	Mono Start
5	6	7	8	*	Color Start
<<	9	0		#	>>

- (4) To select one of the maintenance mode functions listed on the 5-4 page, enter the corresponding 2-digit code using the numerical keys.

- Notes:**
- Pressing the 9 key twice in the initial stage of the maintenance mode switches the machine to standby.
  - Pressing the X key after entering only one digit returns the machine to the initial stage of the maintenance mode.
  - If an invalid maintenance code is entered, the machine returns to the initial stage of the maintenance mode.

### 1.1.2 How to Enter the End User-accessible Maintenance Mode

Basically, the maintenance-mode functions should be accessed by service personnel only. However, you can allow end users to access some of these under the guidance of service personnel (e.g., by telephone).

The user-accessible functions are *shaded* in the table given on the [next page](#). (Maintenance mode [10](#), [11](#), [12](#), [28](#), [37](#), [45](#), [46](#), [53](#), [54](#), [56](#), [58](#), [65](#), [66](#), [75](#), [76](#), [77](#), [80](#), [82](#), [87](#), [88](#), [91](#))

#### < Operating Procedure >

- (1) When the machine is on standby, hold down the **Home** key for approx. 5 seconds to display the following screen on the LCD.



1. Serial No	123456789012345
2. ROM Version	0047 009071112:F97B
3. Print Page	000047

- (2) Press the blank area at the bottom of the LCD to display the following screen.



1	2	3	4	Stop	Mono Start
5	6	7	8	*	Color Start
<<	9	0		#	>>

- (3) Press the \*, **0** and # keys on the LCD in this order. The machine becomes ready to accept entry from the keys. Enter the desired maintenance code.
- (4) When each of the maintenance mode functions is completed, the machine automatically returns to standby.

**Note:** To stop the above procedure in midway and switch to standby, press the **X** key.

## 1.2 List of Maintenance-mode Functions

Maintenance Mode	Function	Reference Section (Page)
01	EEPROM Parameter Initialization	1.3.1 (5-5)
02	Creating of Head Calibration Data and Writing it into Flash ROM	1.3.2 (5-6)
08	ADF Performance Test	1.3.3 (5-11)
09	Printout of Test Pattern	1.3.4 (5-12)
10	Worker Switch (WSW) Setting	1.3.5 (5-13)
11	Printout of Worker Switch (WSW) Data	1.3.5 (5-13)
12	Operational Check of LCD	1.3.6 (5-15)
13	Operational Check of Keys on Control Panel	1.3.7 (5-17)
28	Updating of Firmware Using a USB flash memory	1.3.8 (5-18)
32	Sensor Operational Check	1.3.9 (5-19)
37*	Printout of Dial Log	1.3.10 (5-21)
45	PCL/PS function setting (MFC-J6935DW/J6945DW/J6947DW, HL-J6000DW/J6100DW only)	1.3.11 (5-22)
46	Backup of Machine Information	1.3.12 (5-23)
53	Transfer of Received FAX Data and/or Equipment's Log	1.3.13 (5-25)
54	Fine Adjustment of Scanning Position	1.3.14 (5-27)
55	Acquisition of White/Black Level Data	1.3.15 (5-28)
56	Periodic Purge Time Setting (Ink tank model/Simple Ink cartridge model only)	1.3.16 (5-28)
57	Cartridge IC Communication Check	1.3.17 (5-29)
58	Updating of Paper Feeding Correction Values	1.3.18 (5-30)
59	Checking of CIS Travel and Setting of CIS Type	1.3.19 (5-34)
61	Printout of PRN/JPEG Files in USB Flash Memory	1.3.20 (5-35)
63	Move of the Head/Carriage Unit to the Adjustment Position	1.3.21 (5-36)
65	Adjustment of Software Correction for Inclination/Corrugation/Ruled Lines	1.3.22 (5-37)
66	Adjustment of Margins in Borderless Printing	1.3.23 (5-39)
68	Updating of Head Property Information and Backup/Restoration of Head Calibration Data	1.3.24 (5-41)
69	Traveling Speed Check of Head/Carriage Unit	1.3.25 (5-43)
74	Customizing Destinations	1.3.26 (5-43)
75	Move of the Head/Carriage Unit to the Center	1.3.27 (5-46)
76	Purge Operation	1.3.28 (5-47)
77	Print of the Maintenance Information	1.3.29 (5-51)
78	Adjustment of Touch Panel	1.3.30 (5-58)
80	Display of the Equipment's Log	1.3.31 (5-59)
82	Equipment Error Code Indication	1.3.32 (5-72)
87	Output of Transmission Log to the Telephone Line	1.3.33 (5-72)
88	Assurance Mode Switch Setting (AMS)	1.3.34 (5-73)
89	Printout of Block Pattern (Ink tank model/Simple Ink cartridge model only)	1.3.35 (5-82)
91	EEPROM Parameter Initialization	1.3.1 (5-5)
99	Exit from the Maintenance Mode	

Shaded maintenance mode functions are available to end users.

\* Exclusive to the end user-accessible maintenance mode.

### 1.3 Detailed Description of Maintenance-mode Functions

#### 1.3.1 EEPROM Parameter Initialization (Maintenance mode 01, 91)

##### < Function >

This function initializes the parameters, user switches and worker switches settings registered in the EEPROM, to the initial values. Entering Maintenance mode 01 initializes almost all of the EEPROM areas, but entering Maintenance mode 91 does not initialize some areas, as listed below.

Maintenance mode	01	91
Data item		
Maintenance-mode functions User switches Worker switches (Regular Ink cartridge model) Remote activation code Assurance mode switch settings Outside line number	All of these will be initialized.	These will be initialized.
Maintenance-mode functions Worker switches (Ink tank model / Simple Ink cartridge model) Activity report Station ID data Telephone function registration Speed dialing Group dialing Call transfer data		These will <u>not</u> be initialized.
EEPROM customizing code (4-digit)	This will <u>not</u> be initialized.	

##### < Operating Procedure >

- (1) Press the **0** and **1** keys in this order to display "SELECT 01?" on the LCD (or press the **9** and **1** keys in this order according to your need to display "SELECT 91?") in the initial stage of the maintenance mode.
- (2) Press the **Mono Start** key.  
The "PARAMETER INIT" appears on the LCD.
- (3) Upon completion of parameter initialization, the machine returns to the initial stage of the maintenance mode.

## 1.3.2 Creating of Head Calibration Data and Writing it into Flash ROM (Maintenance mode 02)

### < Function >

This procedure scans the "Print pattern for creating head calibration data" sheets (see 5-9 page) placed on the document cover glass of the document cover, creates the head calibration data using the scanning result, and writes it into the flash ROM on the main PCB.

**Note:** On the Printer model, head calibration data is not created, and only initialization of the droplet variation parameter is performed.

### < Operating Procedure >

**Notes:** – Before carrying out maintenance mode 02, update the firmware to the latest version.

- Before proceeding to the procedure given below, use "1.3.4 Printout of Test Pattern (Maintenance mode 09)" in this chapter to check that there is no block missing.
- Before proceeding to the procedure given below, use "1.3.34 Assurance Mode Switch Setting (Maintenance mode 88)" in this chapter to check that the uneven printing correction for upper and lower ends of the nozzle is set to ON (Selector 1 on AMS05 is "0").
- Before proceeding to the procedure given below, use the following to enable the machine to make high precision printing.  
"1.3.15 Acquisition of White/Black Level Data (Maintenance mode 55)"
- Make sure that both the document scanner unit and document cover are closed.
- For higher precision of uneven printing correction, it is recommended to use the recording paper specified below to print the pattern for creating head calibration data.

US: Xerox 4200DP 20 lb., Brother BP60PL

EU, AP and others: Xerox Business 80 g/m<sup>2</sup>, Brother BP60PA

### **MFC model**

- (1) Save a copy of "head\_calib\_BHM17.prn" to a USB flash memory.
- (2) Use "1.3.20 Printout of PRN/JPEG Files in USB Flash Memory (Maintenance mode 61)" to print the file pattern (2 sheets).

**Tip:** The pattern can also be printed by opening "Filedrgs" on your PC and drag-and-drop this file onto the Brother Maintenance USB Printer driver icon.

- (3) Set the pattern printed with "1\_page" on the document cover glass of the document cover so that the ▲ mark fits on the left rear of the document cover.
- (4) Press the **0** and **2** keys in this order in the initial stage of the maintenance mode. The "MAINTENANCE 02" and "No. 1 Sheet Set" appear on the LCD in this order.

**Note:** Pressing the **Stop** key immediately returns the machine to the initial stage of the maintenance mode without creating head calibration data.

- (5) Press the **Mono Start** key.  
The machine displays the "Scanning" on the LCD and starts scanning the "Print pattern for creating head calibration data" placed on the document cover glass.
- (6) If "No. 2 Sheet Set" appears on the LCD, remove the pattern printed with "1\_page" from the document cover glass and set the pattern printed with "2\_page."

- (7) Press the **Mono Start** key.  
The machine displays the "Scanning" on the LCD and starts scanning the "Print pattern for creating head calibration data" placed on the document cover glass.
- (8) Upon completion of scanning, the machine displays the "Write Head Calib" on the LCD, creates the head calibration data, and writes it into the flash ROM on the main PCB.  
Upon completion of writing, the "Complete" appears. Press the **Stop** key to return to the initial stage of the maintenance mode.

### **Printer model**

- (1) Press the **0** and **2** keys in this order in the initial stage of the maintenance mode.  
"Init Head Calib?" appears on the LCD.
- (2) Press the **Mono Start** key. The machine displays the "Write Head Calib" on the LCD, initializes the droplet variation parameter, and displays the "Complete". Press the **Stop** key to return to the initial stage of the maintenance mode.

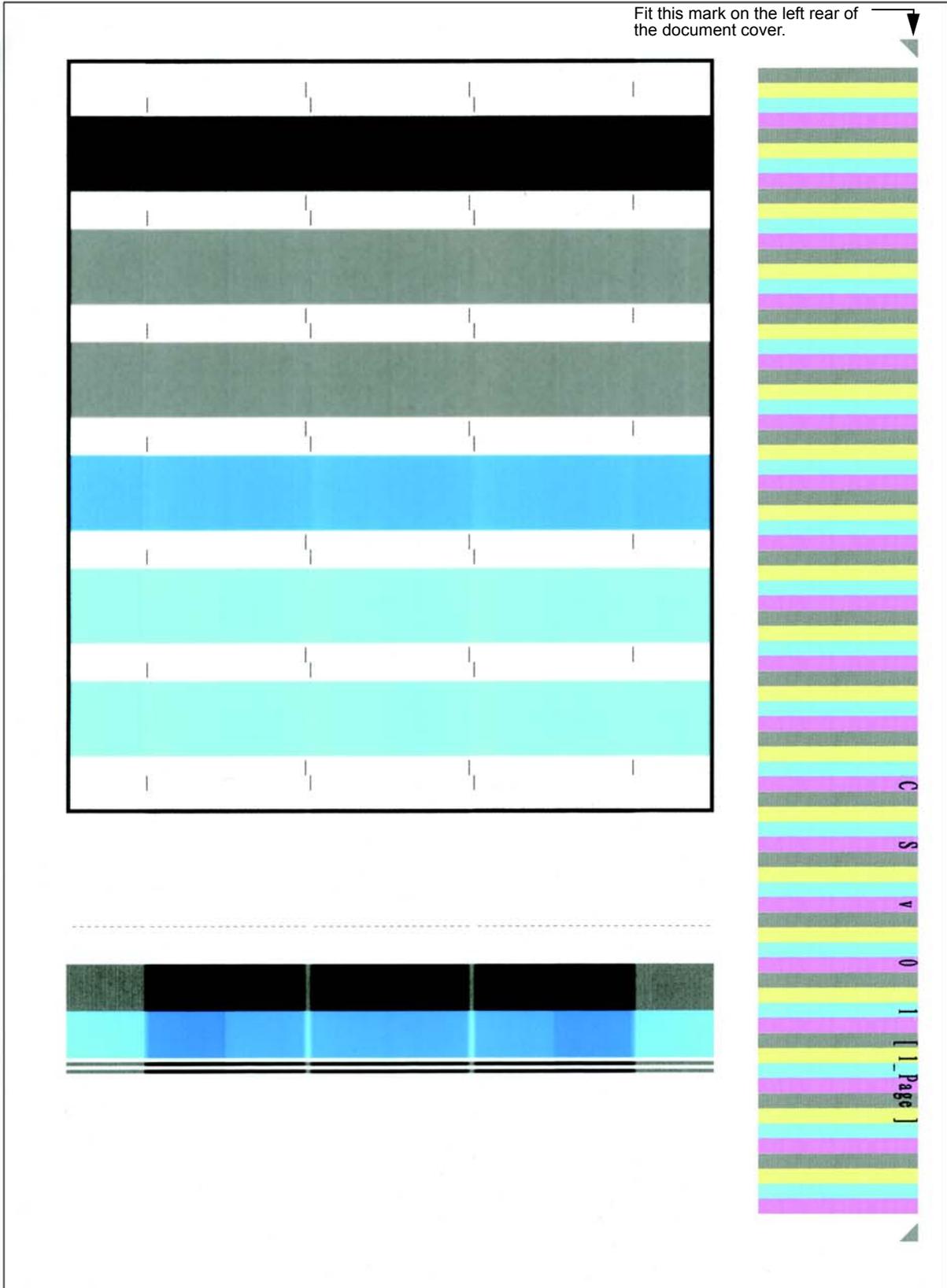
**Note:** If required print quality cannot be obtained with the initialized calibrated value, set Fine to Print Quality or write calibration data using the procedure given below:

- 1) On the Printer model machine to which calibration data is written, perform the steps (1) and (2) for MFC model and print patterns.
- 2) On a MFC model machine, perform the steps (3) to (8) for MFC model.
- 3) Referring to Maintenance 68, and back up the head calibration data of the MFC model machine in a USB flash memory.
- 4) Referring to Maintenance 68, and perform restore of head calibration data on the Printer model machine.

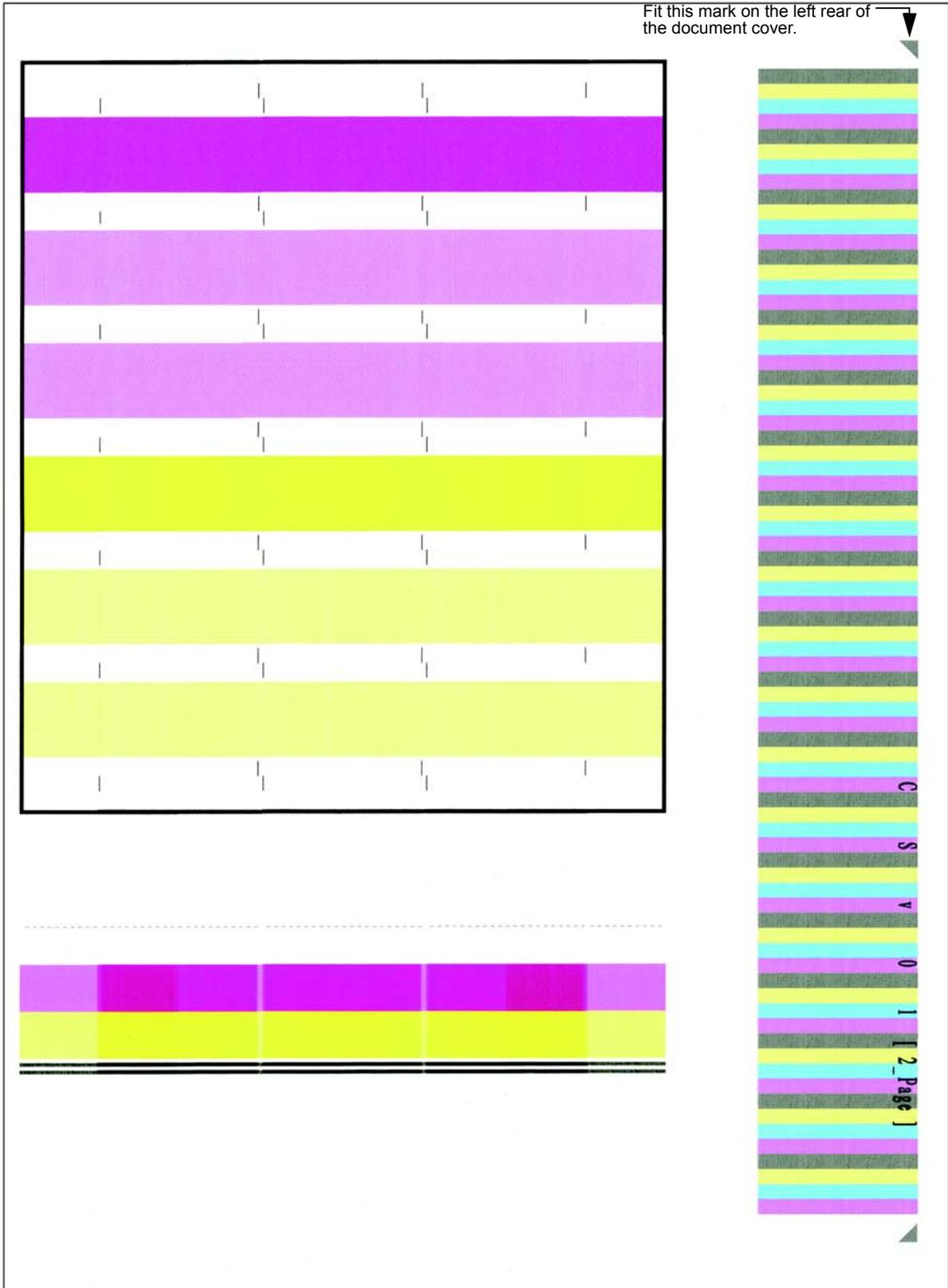
**Note:** If an error occurs, the machine beeps and displays "Error No \*\*" on the LCD. Press the **Stop** key to return to the initial stage of the maintenance mode and then recover the machine from the error state, following the table given below. Then go back to step (3).

Error code	The following error has occurred.	Do the following:
01	Failed to detect the external frame.	<ul style="list-style-type: none"> <li>- Clean the document cover glass.</li> <li>- Reset the print pattern so that the ▲ mark is aligned with the left rear of the document cover without tilt.</li> <li>- Check that there is no block missing.</li> <li>- Go back to step (2) and print out "Print pattern for creating head calibration data" again.</li> </ul>
02	Internal image inclined.	
03	Failed to detect position.	
04	Failed to write head calibration data.	<ul style="list-style-type: none"> <li>- Clean the document cover glass.</li> <li>- Reset the print pattern so that the ▲ mark is aligned with the left rear of the document cover without tilt.</li> <li>- Check that there is no block missing.</li> <li>- Restart the machine and perform the procedure from the beginning again.</li> <li>- Replace the main PCB.</li> </ul>
05	The uneven printing correction function for upper and lower ends of the nozzle is disabled with Maintenance 88.	<ul style="list-style-type: none"> <li>- Set selector 1 on AMS05 to "0" (ON) in "1.3.34 Assurance Mode Switch Setting (Maintenance mode 88)" in this chapter.</li> </ul>
06	Cannot get data due to memory full.	<ul style="list-style-type: none"> <li>- Delete fax data and other data stored in the memory.</li> <li>- Replace the main PCB.</li> </ul>
07	The document scanner unit is open.	<ul style="list-style-type: none"> <li>- Close the document scanner unit.</li> <li>- Reconnect the document scanner sensor harness.</li> <li>- Replace the document scanner if the boss that presses the document scanner sensor is broken.</li> <li>- Replace the main PCB.</li> </ul>
09	Scanning errors other than the above.	<ul style="list-style-type: none"> <li>- Use "1.3.15 Acquisition of White/Black Level Data (Maintenance mode 55)" in this chapter.</li> </ul>
10	With a media being inserted, the USB cable or LAN cable is connected.	<ul style="list-style-type: none"> <li>- Disconnect the USB cable or LAN cable.</li> </ul>
11	The scanner cover is open.	<ul style="list-style-type: none"> <li>- Close the scanner cover.</li> </ul>

■ Print Pattern for Creating Head Calibration Data



■ Print Pattern for Creating Head Calibration Data



### 1.3.3 ADF Performance Test (Maintenance mode 08)

#### < Function >

The function counts the documents fed by the automatic document feeder (ADF) and displays the count on the LCD for checking the ADF performance.

#### < Operating Procedure >

- (1) Set documents on the ADF unit.  
The "Doc. Ready" appears on the LCD.
- (2) Press the **0** and **8** keys in this order in the initial stage of the maintenance mode.  
The machine feeds the documents in and out while counting them and displaying "ADF CHECK P.\*\*" on the LCD. (\*\* shows the current count).
- (3) Press the **X** key to return the machine to the initial stage of the maintenance mode.

**Note:** If no document is set on the ADF, the machine displays "NO DOCUMENT" on the LCD and returns to the initial stage of the maintenance mode.

### 1.3.4 Printout of Test Pattern (Maintenance mode 09)

#### < Function >

This function prints out a test pattern (Print Quality Check sheet) to allow the service personnel to check the print quality, together with the serial number.

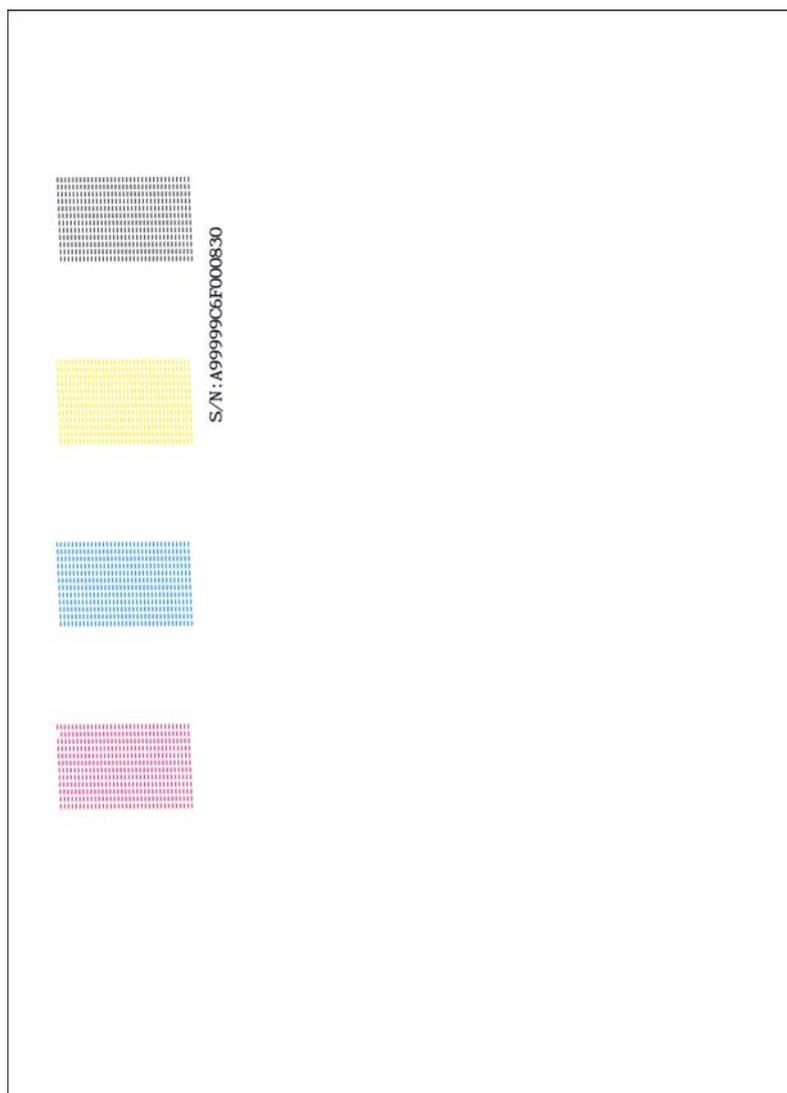
If any print quality problem is found, use "1.3.28 Purge Operation (Maintenance mode 76)" to perform head cleaning.

#### < Operating Procedure >

- (1) Press the **0** and **9** keys in this order in the initial stage of the maintenance mode.
- (2) Press the **Mono Start** key. The machine displays "PRINTING" on the LCD and prints out a test pattern.  
If no recording paper is loaded in the paper tray, an error is displayed.
- (3) Upon completion of printing, the machine returns to the initial stage of the maintenance mode.

**Note:** When recording paper runs out during printing, load recording paper in the paper tray and open/close the document scanner, and printing resumes.

#### ■ Test Pattern



### 1.3.5 Worker Switch Setting and Printout (Maintenance modes 10 and 11)

#### [ 1 ] Worker switch setting (Maintenance mode 10)

##### < Function >

The worker switch functions customize the machine to meet various needs. They can be activated with the procedures using the control panel keys.

The worker switches have been configured at the factory in conformity to the communications standards and codes of each country. Do not disturb them unless necessary.

\* For details about the worker switches, refer to the document separately issued.

##### < Operating Procedure >

(1) Press the **1** and **0** keys in this order in the initial stage of the maintenance mode. The machine displays the "WSW00" on the LCD.

(2) Enter a worker switch number to be modified.

The following appears on the LCD:

Selector 1	Selector 8
↓	↓
WSWXX = 0 0 0 0 0 0 0 0	

(3) Press the ◀ or ▶ key to move the cursor to the selector position to be modified. Press the **0** or **1** key to change the setting.

(4) Press the **SET** key. This operation saves the newly entered selector values onto the EEPROM and readies the machine for accepting a worker switch number ("WSW00").

(5) When all the switches are entered, press the **X** key to return the machine to the initial stage of the maintenance mode.

**Notes:** - To cancel the setting and return to the initial stage of the maintenance mode, press the **X** key.

- If there is a pause of more than one minute after a single-digit number is entered for double-digit worker switch numbers, the machine automatically returns to the initial stage of the maintenance mode.

## [ 2 ] Printout of worker switch data (Maintenance mode 11)

### < Function >

This function prints out the setting items of the worker switches and their contents specified.

### < Operating Procedure >

- (1) Press the **1** key twice in the initial stage of the maintenance mode.  
The machine shows "PRINTING" on the LCD and prints out the configuration list as shown below.  
If no recording paper is loaded in the paper tray, printing will be canceled.
- (2) Upon completion of printing, the machine returns to the initial stage of the maintenance mode.

**Note:** When recording paper runs out during printing, load recording paper in the paper tray and open/close the document scanner, and printing resumes.

WSW		Setting	Content
CONFIGURATION LIST			
		MODEL :	BCA-U17-001
		TIME :	13/04/2012 18:31
		REV. :	UI28409050VER.U
		PCI :	5.00
		SUM :	BCFA
		SER. # :	U63310234567890
WSW01	= 00010000	1-2. DIAL FORMAT	: NORMAL
		3-4. BREAK TIME	: 57 MS
		5-6. INTERDIGIT PAUSE	: 800 MS
		7. DP/PB CHANGE IN USER SN	: YES
		8. DP/PB FIXING SELECTION	: PB
WSW02	= 01011100	1-2. ON TIME	: 80 MS
		3-4. OFF TIME	: 80 MS
		5-8. LINE BEEP ATTENUATOR	: 12 DB
WSW03	= 10100000	1. PARA. CNG DETECTION1	: B
		2-4. PBX DT DETECTION TIME	: 800 MS
		5. PARA. CNG DETECTION2	: A
		6-7. DT DETECTION OF PBX	: 3.5 SEC WAITING
		8. NOT USED	
WSW04	= 10010001	1-4. NOT USED	
		5. ADDITIONAL DELAY OF CML ON-OSM	: 0 SEC
		6-8. FLASHING TIME	: 100 MS
WSW05	= 00000110	1-3. DIAL TONE DETECTION	: 3.5 SEC WAITING
		4. REMOTE ID DETECTION TIMEOUT	: 2 SEC
		5-6. BUSY TONE DETECTION (CALLING)	: AFTER DIALING
		7. BUSY TONE DETECTION (CALLED)	: OFF
		8. NOT USED	
WSW06	= 00101100	1-3. PULSE KEY	: 3.5 SEC WAITING
		4. 2ND DT DETECTION TIME	: 800 MS
		5. 2ND DT DETECTION CYCLE	: 1 CYCLE
		6. 2ND DT INTERRUPT DETECTION TIME	: 30 MS
WSW07	= 01011000	1-2. FREQUENCY RANGE	: INITIAL DATA
		3. NOT USED	
		4-5. 2ND DT DETECTION LEVEL	: -39 DBM
		7. 1ST DT INTERRUPT DETECTION TIME	: 30 MS
		8. NOT USED	
WSW08	= 01100111	1-3. 1ST DT DETECTION TIME	: 800 MS
		4. 1ST/2ND DT TIME OUT	: 10 SEC
		5-8. 1ST DT DETECTION LEVEL	: -42 DBM
WSW09	= 00000000	1. ECM FRAME	: 255 OCTET
		2. NON STANDARD FACILITIES	: ON
		3-4. TIMES OF FALL BACK	: 4
		5. TS TIMER	: 300 SEC
		6. T1 TIMER	: 35 SEC
		7-8. CALLING TIMEOUT	: 60 SEC
WSW10	= 00010100	1. NOT USED	
		2. TIMING OF LAST DIGIT-MODEM CHANGE	: 100 MS
		3. TIMING OF CML ON CNG TRANSMISSION	: 2 SEC
		4. TIMING OF CML ON CED TRANSMISSION	: 2 SEC
		5-6. TRAINING RETRIES	: ON
		7. CODING METHOD MR	: ON
		8. CODING METHOD MMR	: ON
WSW11	= 01100000	1-2. FREQUENCY RANGE	: INITIAL DATA
		3-8. ON/OFF TIME	: 250 - 750 / 250 - 750 MS
		ECM RX	: ON
		CALL WAITING CALLER ID	: OFF
		4-8. NOT USED	
WSW23	= 00011111	1. FIX TCF CHECK	: TOP
		2-3. TCF ERROR LIMIT	: 8%
		4-5. RTN CRITERION	: 14%
		6-7. NOT USED	
		8. ATTENUATOR LIMIT	: NO
		MOVING TO PHASE-C BY RTC	: YES
		IGNORE CI COUNT	: OFF
WSW48	= 00001100	1-2. NOT USED	
		3-5. ENTRY NUMBER OF NETWORK PC SCANNER	: AUTO
		6-8. NOT USED	
		CNG DETECTION RESULT ACT REPORT )	: OFF
		7-9. ENABLE REVERSE POLARITY INT DELAY TIME	: 500 MSEC
WSW61	= 00000000	1-8. NOT USED	
WSW62	= 00000000	1-8. NOT USED	

### 1.3.6 Operational Check of LCD (Maintenance mode 12)

#### < Function >

This function checks whether the LCD on the control panel works normally.

#### < Operating Procedure >

(1) Press the **1** and **2** keys in this order in the initial stage of the maintenance mode.

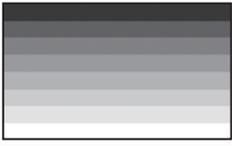
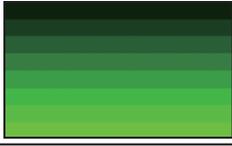
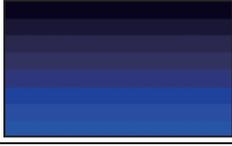
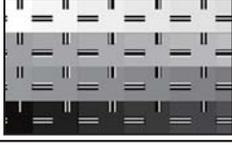
#### Regular Ink cartridge model

(2) Each time you press the **Home** key, the LCD cycles through the screens as shown below.

Pressing the **Back** key goes back to the immediately preceding screen.

When Screen 12 displays, pressing the **Home** key switches to Screen 1.

(3) Press the **X** key in any process of the screen cycle to return the machine to the initial stage of the maintenance mode.

< Screen 1 > Completely blank		< Screen 7 > White stepwise	
< Screen 2 > All black		< Screen 8 > Red stepwise	
< Screen 3 > All gray		< Screen 9 > Green stepwise	
< Screen 4 > All red		< Screen 10 > Blue stepwise	
< Screen 5 > All green		< Screen 11 > Stroke detection	
< Screen 6 > All blue		< Screen 12 > Image data	

**Ink tank model / Simple Ink cartridge model**

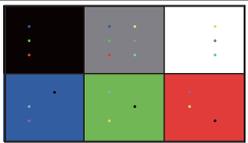
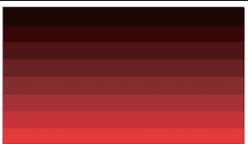
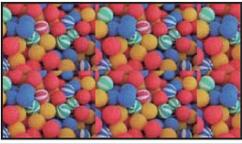
(2) Press the **Power** key to switch between the screens shown in the "A" column and those shown in the "B" column.

Each time you press the **Home** or **#** key, the LCD cycles through the screens in each column.

Pressing the **Home** or **#** key while displaying Screen B-6 goes back to Screen B-1. Pressing the **Back** or **\*** key goes back to the immediately preceding screen.

**Note:** You cannot switch to screens in the "B" column while displaying Screen A-7, even if you press the **Power** key.

(3) Press the **X** key while displaying Screen A-7 or Screen B-1 through B6 to return the machine to the initial stage of the maintenance mode.

< Screen A-1 > Completely blank		< Screen B-1 > Bright point/flashing	
< Screen A-2 > All black		< Screen B-2 > Bright point	
< Screen A-3 > All gray		< Screen B-3 > White stepwise	
< Screen A-4 > All red		< Screen B-4 > Red stepwise	
< Screen A-5 > All green		< Screen B-5 > Green stepwise	
< Screen A-6 > All blue		< Screen B-6 > Blue stepwise	
< Screen A-7 > Image data			

### 1.3.7 Operational Check of Keys on Control Panel (Maintenance mode 13)

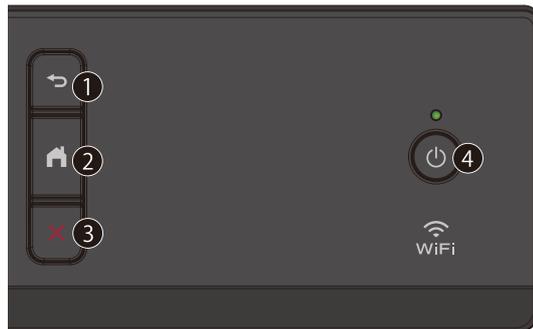
#### < Function >

This function checks the keys on the control panel for normal operation.

#### < Operating Procedure >

- (1) Press the **1** and **3** keys in this order in the initial stage of the maintenance mode. The "00" appears on the LCD.
- (2) Press the keys on the control panel in the order designated in the illustration shown below. Each time a key is pressed, the LCD shows the corresponding number in 2 digits. Check that the number assigned to the pressed key matches the number shown on the LCD. If a key is pressed out of order, "INVALID OPERATE" appears on the LCD. Press the **X** key and then press the correct key.
- (3) After the last number key is pressed in the correct entry procedure, the machine makes a beep and return to the initial stage of the maintenance mode. To terminate this operation halfway through the procedure and return to the initial stage of the maintenance mode, press the **X** key.

#### Model without numerical keys



#### Model with numerical keys



### 1.3.8 Updating of Firmware Using a USB flash memory (Maintenance mode 28)

#### < Function >

This function updates firmware stored in the flash ROM on the main PCB using a USB flash memory. It enables updating of firmware without connecting the machine to a PC.

**TIP:** For instructions on how to update firmware when the main PCB has been replaced or for operations using a PC, refer to [Chapter 4, Section 1.3 "Install the firmware \(Maintenance mode 28\)."](#)

#### < Operating Procedure >

- (1) Switch your PC ON and insert a USB flash memory.
- (2) Create a folder named "BROTHER" in the top layer of the USB flash memory's directory and copy the firmware file having the extension ".djf" into that folder.  
**Note:** Before copying, check that the firmware file name having the extension ".djf" matches your machine. The number of files having the extension ".djf" in the "BROTHER" folder should be 100 or less.  
**Tip:** If a firmware file not matching the machine is used, the firmware cannot be updated, but note that you can superficially continue the operation until step (5) below without any error.
- (3) Remove the USB flash memory from the PC and insert it into the machine in the initial stage of the maintenance mode.
- (4) On the machine, press the **2** and **8** keys in this order.  
The file name "\*\*\*\*\*.djf" appears on the LCD.
- (5) Press the **▲** or **▼** key to select the target firmware file.
- (6) Press the **Mono Start** key.  
"Program Updating" appears on the LCD.  
**Note:** Never remove the USB flash memory from the machine when updating is in progress.
- (7) Updating will complete in a few minutes, and the machine automatically restarts and returns to the standby state.  
Remove the USB flash memory from the machine and store it in a safe place.

**Note:** If any of the error messages listed below appears, press the **X** key, and the machine returns to the initial stage of the maintenance mode.

Error Message	Cause
Card is used	The USB flash memory is being used by another operation.
Insert Card	No USB flash memory is inserted.
No file	No file with the djf extension. / No "BROTHER" folder exists.
Card Error	USB flash memory defective

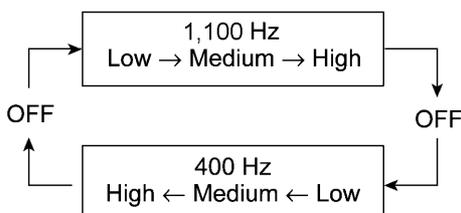
### 1.3.9 Sensor Operational Check (Maintenance mode 32)

#### < Function >

This function checks whether sensors work normally.

#### < Operating Procedure >

- Press the **3** and **2** keys in this order in the initial stage of the maintenance mode. The machine sounds 1,100 Hz and 400 Hz tones cyclically through the following volumes for testing the speaker:



**Note:** To stop beeping, press the **SET** key.

The LCD shows the 1st sensor group "DFDRCVRSCCPGCPAC."

- Press the **Mono Start** key to switch to the next sensor group. If asterisks (\*\*) appear on the LCD, it means that the corresponding sensor does not exist on the model.

Given below is the relationship between the LCD indication, sensor name and sensor status.

LCD	Sensors	Sensing status (display/no display)
DF	ADF document detection sensor	No document/Document present
DR	Document scanning position sensor	No document/Document present
CV	Document scanner sensor	Document scanner closed/Document scanner opened
RS	Registration sensor	No recording paper/Recording paper present
CC	Ink cartridge cover sensor	Cover closed/Cover opened
PG	Purge cam sensor	Out of origin/Origin
CP	Cap cam sensor	Out of origin/Origin
AC	ADF cover sensor	Cover closed/Cover opened
IK	Ink cartridge detection sensor (K)	Cartridge present/No cartridge*
IY	Ink cartridge detection sensor (Y)	Cartridge present/No cartridge*
IC	Ink cartridge detection sensor (C)	Cartridge present/No cartridge*
IM	Ink cartridge detection sensor (M)	Cartridge present/No cartridge*
EK	Ink remaining sensor (K)	Ink present/No ink
EY	Ink remaining sensor (Y)	Ink present/No ink
EC	Ink remaining sensor (C)	Ink present/No ink
EM	Ink remaining sensor (M)	Ink present/No ink
ST	T1 detection sensor	Paper tray #1 present/No paper tray #1
LT	T2 detection sensor	Paper tray #2 present/No paper tray #2
3T	T3 detection sensor	Paper tray #3 present/No paper tray #3
MP	MP paper detection sensor	No recording paper/Recording paper present
SB	Switchback sensor	No recording paper/Recording paper present

LCD	Sensors	Sensing status (display/no display)
A3	ADF document width sensor	No A3 document/A3 document present
FC	Document cover sensor	Document cover closed/Document cover opened
VT	Head thermistor	Normal temperature/Abnormal temperature
T1	High temperature detector in the complex IC (for main PCB)	Normal temperature/Abnormal temperature
Q1	T1 paper remaining sensor	No recording paper/Recording paper present
Q2	T2 paper remaining sensor	No recording paper/Recording paper present
Q3	T3 paper remaining sensor	No recording paper/Recording paper present
MR	3rd tray paper pull-in sensor	No recording paper/Recording paper present
AD	ADF document size sensor	Does not function in service maintenance mode.
FD	FB document size sensor	Does not function in service maintenance mode.

\* Among the Regular Ink cartridge models except MFC-J6535DW/J6935DW, supply super high yield cartridges for any destinations other than China are not displayed on the LCD even if they are inserted correctly, but they are displayed on the LCD when inserted further.

- (3) Change the detecting conditions (e.g., insert paper through the registration sensor, open the ink cartridge cover or document scanner, or remove the ink cartridges), and then check that the indication on the LCD changes according to the sensor states.
- (4) Press the **X** key to stop this operation and return the machine to the initial stage of the maintenance mode.

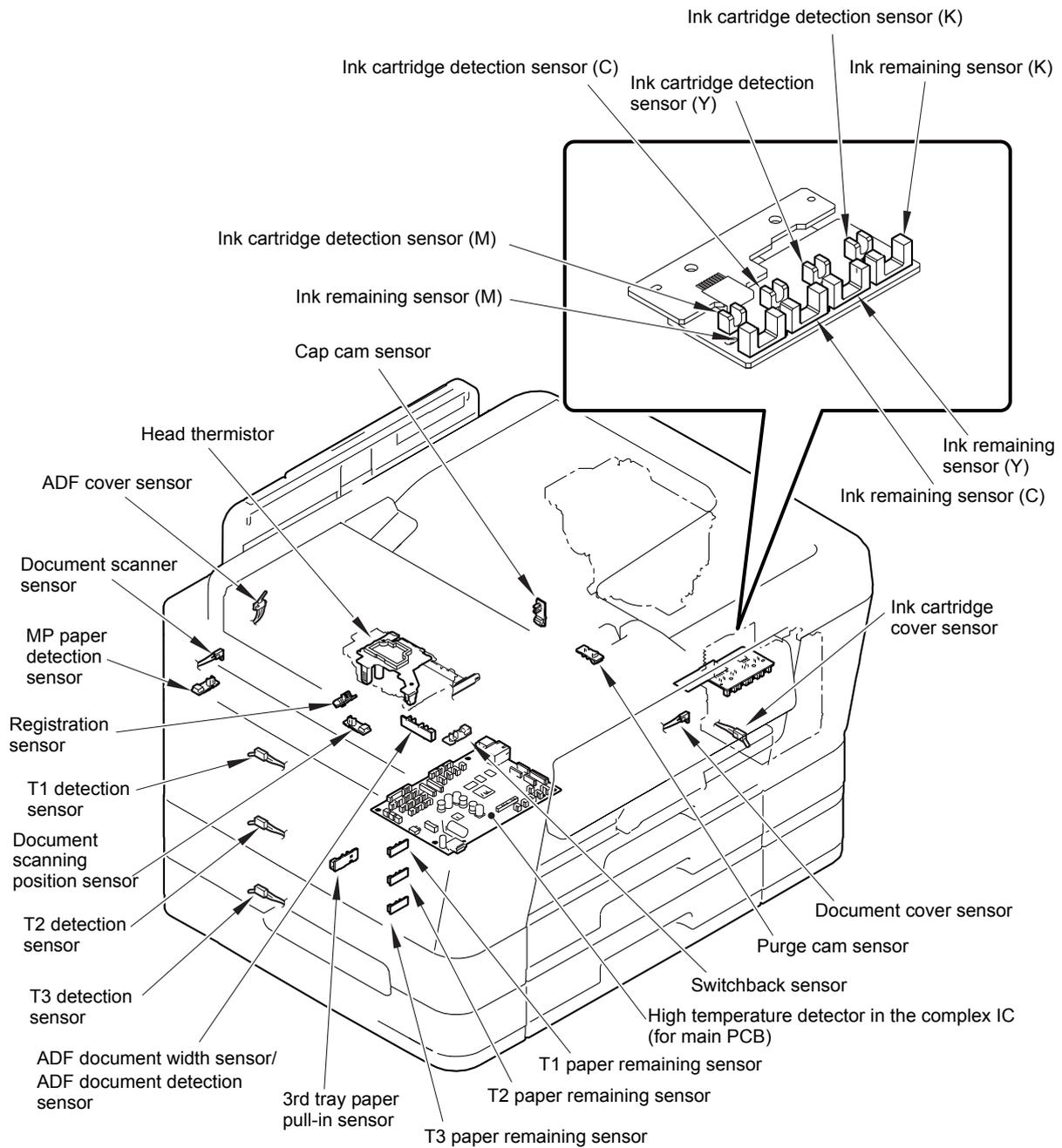


Fig. 5-1

### 1.3.10 Printout of Dial Log (Maintenance mode 37)

#### < Function >

This function outputs a list of telephone numbers dialed.

#### < Operating Procedure >

- (1) In the initial stage of the end user-accessible maintenance mode, press the **3** and **7** keys in this order.

The machine displays "PRINTING" on the LCD and prints out a list of dial log.

**Note:** When recording paper runs out during printing, load recording paper in the paper tray and open/close the document scanner, and printing resumes.

### 1.3.11 PCL/PS function setting (Maintenance mode 45)

#### < Function >

This function is used to change the settings of the PCL/PS functions summarized in the table below.

#### < Operating Procedure >

- (1) Press the **4** and **5** keys in this order in the initial stage of the maintenance mode. "JB-Can Time" is displayed on the LCD.
- (2) Press the **▲** or **▼** key to select the function you want to set and press the **SET** key.
- (3) For fixed parameters (On/Off, etc.), press the **▲** or **▼** key, or change the parameter using the numeric keys. And press the **SET** key.  
For parameters requiring numerical value entry, directly input a numeric value from the ten-key pad and press the **SET** key.
- (4) Press the **X** key to return the machine to the initial state of the maintenance mode.

#### ■ Function setting

LCD	Detail description	Set value	Initial
Resolution	Setting for the print resolution, which is effective for the print from the computer. When the resolution is set on the computer, the setting becomes effective and this setting is ignored.	300 (Cannot be changed)	300
JB-Can Time	Setting for the time until the host time-out at the Job Cancel.	0 to 255 (seconds)	4 (seconds)
Sleep Time	Setting for the time until shift to the Sleep Time. Change the setting of the Function Menu.	0 to 99 (minutes)	5 (minutes)
Emulation	Setting for the print language. Change the setting of the Function Menu. When the data includes the ENTER LANGUAGE, the setting becomes effective. And this setting is ignored.	Driver (MFC-J6935DW only)/ Auto/PCL/PS	Driver or Auto
Media Type	Setting for the recording paper type. Effective for the print from the computer. When set the type of the paper on the computer, the setting becomes effective. And this setting is ignored.	Plain/Glossy/Inkjet/ BP71 (except for MFC-J6935DW)	Plain
Paper Size	Setting for the drawing size. Does not set the Paper Size of the Menu, set the drawing size of the PC-Print. When set the size of the paper on the computer, the setting becomes effective. And this setting is ignored. "Letter" is the default for the U.S.A. and Canada and "A4" is the default for other countries.	Letter/Legal/A4/ Executive/B5/ JISB5/A5/B6/A6/ Monarch/C5/ COM10/DL/Post Card/Folio/Mexican Legal/India Legal/ A3/JISB4/16k 195x270/Ledger	Letter or A4
Orientation	Setting for the print direction. Effective for the print from the computer.	Portrait/Landscape	Portrait
Auto FF	Setting for the ON/OFF of the Auto Form Feed. Effective for the print from the computer.	On/Off	Off
Auto FF Time	Setting for the TimeOut, when the Auto Form Feed is ON.	1 to 99 (seconds)	5 (seconds)
Color Adapt	Setting for auto detection of Color/Mono, which is effective when Render Mode is Color or Auto Color.	On/Off	On
Auto LF	Setting for the auto line feed.	On/Off	Off
Auto CR	Setting for the auto carriage return and CR addition to the LF code.	On/Off	Off
Auto WRAP	Setting for the auto CRLF at the print width.	On/Off	Off
Auto Skip	Setting for the skip and blank-space addition at the back-end/tip of the paper.	On/Off	On
Lines	Setting for the number of the lines in the PCL.	5 to 128 (lines)	60 (lines)
Error Print	Setting for the ErrorPrint of the BR-Script3.	On/Off	On

### 1.3.12 Backup of Machine Information (Maintenance mode 46)

#### < Function >

This procedure backs up the machine information and user setting information into a USB flash memory and restores it when necessary.

- Machine information (Preset values, count values, error information, machine specifications data, etc.)
- User setting information (Telephone directory, password, station ID, transfer information, telephone area code, user settings, etc.)
- Other data (Received fax data, ICM/OGM data, etc.)

Note that the following information cannot be backed up.

- Serial number of the machine
- MAC address
- Call and caller ID records
- Activity report
- Fax data to be sent (by delayed-timer, redialing, and polling)
- Head calibration data

- Notes:**
- The user can use the backup and restoration (given on the next page) procedures, except "Import all" in the restoration procedure.
  - A USB flash memory for backup should have a free space larger than the RAM size of the machine.
  - When performing this procedure for any other machine with the same USB flash memory, delete the data previously stored in the USB flash memory.

#### < Operating Procedure >

##### **Backup Procedure**

- (1) On the PC, create a "BROTHER" folder in a USB flash memory to be used for saving backup data.
- (2) Insert the USB flash memory into the slot of the machine in the initial stage of the maintenance mode.

**Note:** If the USB flash memory inserted already contains backup data of the same model, the existing data will be overwritten with new data.

- (3) Press the **4** and **6** keys in this order.  
The "Export to Card" appears on the LCD.
- (4) Press the **Mono Start** key.  
The "\*\*\*\*\*.msd" appears on the LCD. The "\*\*\*\*\*" is unique to each model.
- (5) Press the **Mono Start** key.  
The "Export to Card" appears again on the LCD.
- (6) Press the **Mono Start** key.  
The "Please wait" appears on the LCD.

- Notes:**
- Never remove the USB flash memory from the machine when exporting is in progress.
  - If this procedure has been started with the user-access, the machine returns to the standby state after showing the "Please wait" on the LCD.

- (7) Once the machine has returned to the initial stage of the maintenance mode, remove the USB flash memory and keep it in a safe place.

**Note:** If any of the error messages listed below appears, press the **X** key, and the machine returns to the initial stage of the maintenance mode.

Error Message	Cause
Card is used	The USB flash memory is being used by another operation.
Insert Card	No USB flash memory is inserted.
No file	File name is invalid or no "BROTHER" folder exists
Machine ID Error	Mismatch of serial numbers between the machine and the backup data (which is detected only in data restoration).
Write Error	Insufficient free space in USB flash memory.

### **Restoration Procedure**

- (1) Insert the USB flash memory containing the backup data into the slot of the machine in the initial stage of the maintenance mode.

**Note:** If the serial number in the backup data stored in the USB flash memory does not match that of the machine, data restoration cannot be performed.

- (2) Press the **4** and **6** keys in this order.

The "Export to Card" appears on the LCD.

- (3) Press the **▲** or **▼** key until the desired restoration procedure, any of the following, appears.

"Import from Card" for restoring only user setting information

"Import all" for restoring all backup data including machine information

- (4) Press the **Mono Start** key.

The "\*\*\*\*\*.msd" appears on the LCD. The "\*\*\*\*\*" is unique to each model.

- (5) Press the **Mono Start** key.

The "Import from Card" or "Import all" appears on the LCD again.

- (6) Press the **Mono Start** key.

The "Please wait" appears on the LCD.

**Note:** Never remove the USB flash memory from the machine when importing is in progress.

- (7) Once the machine has returned to the initial stage of the maintenance mode, remove the USB flash memory and keep it in a safe place.

**Note:** If any of the error messages shown in "Backup Procedure" appears, press the **X** key to return the machine to the initial stage of the maintenance mode.

### 1.3.13 Transfer of Received FAX Data and/or Equipment's Log (Maintenance mode 53)

#### < Function >

This function transfers received FAX data to another machine. It is useful when the machine cannot print received data due to the printing mechanism defective.

This function also transfers the activity report, the communications list, and the equipment' log of the machine as fax data.

**Notes:** - Before carrying out maintenance mode 53, update the firmware to the latest version.

- The number of files that can be transferred at a time is 99. To transfer 100 files or more, carry out the following procedure more than one time.
- If there are both color and monochrome data in a file to be transferred, the monochrome data will be transferred first. If the receiver machine does not support the color function, the sender machine cannot transfer color data, resulting in an error.

#### < Operating Procedure >

- (1) Press the **5** and **3** keys in this order in the initial stage of the maintenance mode. The "FAX TRANSFER" appears on the LCD.
  - To check the number of received files, press the **1** key.  
The "1.No. Of Jobs" appears on the LCD.  
Press the **SET** key to display the number of received files, just as "No. Of Jobs: 10."
  - To transfer the activity report only, press the **2** key.  
The "2.Activity" appears.
  - To transfer received files (together with the activity report), press the **3** key.  
The "3.Documents" appears. Note that if there is no received file, the "No Documents" appears in step (2).
  - To transfer the communication list for the latest communication, press the **4** key.  
The "4.Com.List (New)" appears.
  - To transfer the communication list for the last three errors, press the **5** key.  
The "5.Com.List (Err3)" appears.
  - To transfer the maintenance information (List of Maintenance mode 77), press the **6** key.  
The "6.MNT77 LIST" appears.
  - To transfer the user setting information, press the **7** key.  
The "7.USER SETTINGS" appears.
  - To transfer the caller ID history, press the **8** key.  
The "8.CALLER ID HIST" appears.
  - To transfer the outgoing call history, press the **9** key.  
The "9.OUTGOING CALL" appears.
  - To transfer the radio wave condition list, press the **0** key.  
The "0.WLAN DATA" appears.
- (2) With one of "2.ACTIVITY," "3.DOCUMENTS," "4.COM.LIST (NEW)," "5.COM.LIST (ERR3)," "6.MNT77LIST," "7.USER SETTINGS," "8.CALLER ID HIST," "9.OUTGOING CALL" and "0.WLAN DATA" being displayed, press the **SET** key. The "ENTER NO&OK" appears on the LCD.

- (3) Enter the telephone number of the receiver machine and press the **SET** key again.
- (4) The machine displays the "ACCEPTED" for approx. two seconds and starts dialing to transfer data.

**Notes:** - Be sure to type the telephone number with the numerical keys. No auto-dial numbers stored in memory can be used in this procedure.

- No station ID will be attached. A cover page and end page as shown below will be automatically attached, instead.

### Cover page sample

=== FAX TRANSFER COVER PAGE ===		
NO. OF JOBS	:001	← Job number for identification
TOTAL PAGE[S]	:001	← Total number of pages to be transferred
NAME	:BROTHER	← Station ID registered in the sender equipment
FAX	:052 824 2330	← FAX number of the sender equipment
TEL	:	← Telephone number of the sender equipment
TIME	:06/06/2016 22:21	← Transfer start date
8CH-121		← Model code
B1603261602		← Boot ROM info
U1604221449 VER.0		← ROM info
G01234567890		← Serial number

### End page sample

=== FAX TRANSFER END PAGE ===		
NO. OF JOBS	:001	← Job number for identification
TOTAL PAGE[S]	:001	← Total number of pages to be transferred
NAME	:BROTHER	← Station ID registered in the sender equipment
FAX	:052 824 2330	← FAX number of the sender equipment
TEL	:	← Telephone number of the sender equipment
MACHINE STATUS 1	AF:0906062216	} Error codes
MACHINE STATUS 2	43:0906062216	
MACHINE STATUS 3	48:0906022216	
MACHINE STATUS 4	AF:0906062017	
MACHINE STATUS 5	43:0906062017	
MACHINE STATUS 6	48:0906062017	
MACHINE STATUS 7	AF:0906061756	
MACHINE STATUS 8	43:0906061756	
MACHINE STATUS 9	48:0906061756	

### 1.3.14 Fine Adjustment of Scanning Position (Maintenance mode 54)

#### < Function >

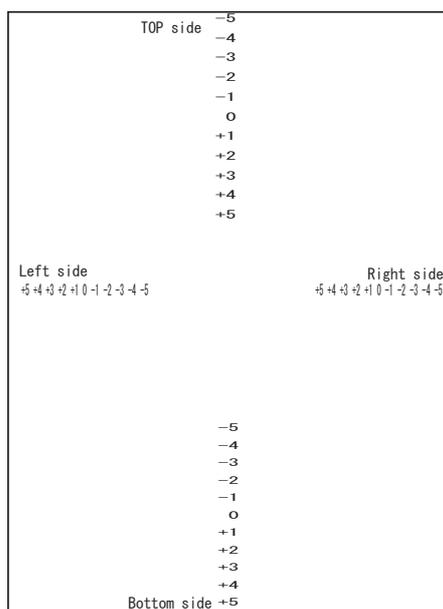
This function adjusts the scanning start and end positions of the ADF and FB.

#### < Operating Procedure >

- (1) Press the **5** and **4** keys in this order in the initial stage of the maintenance mode. The "SCAN START ADJ" appears on the LCD and then the "0: ADF 1: FB" appears.
- (2) To adjust the ADF, press the **0** key. The "0:MAIN 1:TP 2:HP" appears on the LCD. To adjust the FB, press the **1** key. The "0:MAIN 1:SUB" appears on the LCD. Go to step (5).
- (3) To adjust the right and left edges, press the **0** key. To adjust the top edge, press the **1** key. To adjust the bottom edge, press the **2** key.  
 Duplex scanning models: The "0: FRONT 1: BACK" appears on the LCD.  
 Simplex scanning models: The current setting of the selected adjustment value appears on the LCD. Go to step (6).
- (4) To adjust the first side scanning position, press the **0** key. To adjust the second side scanning position, press the **1** key.  
 The current setting of the selected adjustment value appears on the LCD. Go to step (6).
- (5) To adjust the right and left edges, press the **0** key. To adjust the top and bottom edges, press the **1** key.  
 The current setting of the selected adjustment value appears on the LCD.
- (6) Enter the correction value (in units of 0.1 mm) multiplied by 10.  
 To increase the value by 1 (+1: +0.1 mm), press the **▲** key; to decrease it, press the **▼** key.  
 To increase the value by 10 (+10: +1.0 mm), press the **▶** key; to decrease it, press the **◀** key.

**Notes:** - Pressing the **CLR** key resets the setting value to 0.  
 - Pressing the **X** key returns the machine to the initial stage of the maintenance mode without making changes of the correction value.

- (7) Upon completion of adjustment, press the **SET** key. The machine displays the "Accepted" on the LCD and returns to the initial stage of the maintenance mode.



### 1.3.15 Acquisition of White/Black Level Data (Maintenance mode 55)

#### < Function >

This procedure allows the machine to obtain white/black level data for the CIS scanner and save it into the EEPROM on the Main PCB.

#### < Operating Procedure >

- (1) Press the **5** key twice in the initial stage of the maintenance mode.  
If any error has occurred in the machine, the "ME AF STOP" appears on the LCD.  
If no error has occurred in the machine, the machine automatically goes to step (2).
- (2) The machine displays the "Press START" on the LCD. Press the **Mono Start** key.
- (3) The machine displays the "SCANNER AREA SET" on the LCD and obtains white/black level data.
- (4) After a few seconds, the machine saves the white/black level data into the EEPROM and returns to the initial stage of the maintenance mode.

### 1.3.16 Periodic Purge Time Setting (Ink tank model/Simple Ink cartridge model only) (Maintenance mode 56)

#### < Function >

This function is used to set periodic purge time.

#### < Operating Procedure >

- (1) Press the **5** and **6** keys in this order in the initial stage of the maintenance mode.  
The "SELECT 56?" appears on the LCD.
- (2) Press the **Mono Start** key.  
The "PurgeTime \*\*\*" appears on the LCD. ("\*\*\*" indicates the periodic purge time currently set.)
- (3) Press the **2**, **8**, **6**, and **4** keys in this order to enter the time input mode.
- (4) Set the desired time in the range from 00 to 23 (00:00 to 23:00) by using the corresponding numeric keys (**0** to **9** keys).
- (5) Press the **SET** key. The newly entered periodic purge time will be saved and the machine will return to the initial stage of the maintenance mode.

### 1.3.17 Cartridge IC Communication Check (Maintenance mode 57)

#### < Function >

This function checks the applicable cartridge, color information, destination, size and data version in the IC chip built in an ink cartridge.

#### < Operating Procedure >

- (1) Press the **5** and **7** keys in this order in the initial stage of the maintenance mode.  
The "IC\_ACT ALL" appears on the LCD.

To check whether the cartridge is applicable, press the **1** key.  
The "IC\_ACT ALL" appears on the LCD.

To check the color information of the cartridge, press the **2** key.  
The "IC\_COL ALL" appears on the LCD.

To check the destination of the cartridge, press the **3** key.  
The "IC\_AREA ALL" appears on the LCD.

To check the cartridge size, press the **4** key.  
The "IC\_SIZE ALL" appears on the LCD.

To check the data version of the cartridge, press the **5** key.  
The "IC\_VER BLACK" appears on the LCD.

- (2) Select the slot number of the cartridge to be checked, using the ◀ or ▶ key.

ALL: all colors (except MAIN)

BLACK: black

MAGENTA: magenta

CYAN: cyan

YELLOW: yellow

MAIN: IC chip in the machine

**Note:** The color displayed on the LCD indicates not the cartridge color but the cartridge slot color position.

- (3) Press the **Mono Start** key.  
If checking is successfully completed, the LCD shows "OK."  
If any error is detected, the LCD shows the corresponding error code as shown below. Press the **X** key to return the machine to the initial stage of the maintenance mode.

Display	Causes
NG0 to NG99	Failure of IC integrated in the machine
NG100 to NG199	No response from the IC - Ink cartridge not loaded - No IC in the ink cartridge - IC contact defective
NG200 to NG299	Wrong response result from the IC
NG300 to NG399	Succeeded in verifying IC, but the information judged as mismatching - Loading mistake

### 1.3.18 Updating of Paper Feeding Correction Values (Maintenance mode 58)

#### < Function >

To match the paper feeding amount with the head nozzle pitch, the machine optimizes the rotations of the paper feed roller and paper ejection roller, using the correction values stored in the EEPROM on the main PCB.

If you replace the head/carriage unit or main PCB or remove the engine-related parts, you need to update the paper feeding correction values according to the procedure given below.

#### < Operating Procedure >

**Note:** Before carrying out maintenance mode 58, update the firmware to the latest version.

#### For printout of test patterns

- (1) On your PC, when using A4-sized paper, save a copy of "NEW\_pfadj\_A4\_BHM17.prn" and when using letter-sized paper, save a copy of "NEW\_pfadj\_LTR\_BHM17.prn" to a USB flash memory.
- (2) Use "1.3.20 Printout of PRN/JPEG Files in USB Flash Memory (Maintenance mode 61)" to print test patterns.

**Tip:** The test patterns can also be printed by opening "Filedrgs" on your PC and dragging & dropping the above adjustment files onto the Brother Maintenance USB Printer driver icon.

#### For adjustment of all paper feeding correction values

- (1) Press the **5** and **8** keys in this order in the initial stage of the maintenance mode. The "Select 58?" appears on the LCD.
- (2) Press the **Mono Start** key. The "1. ALL" appears on the LCD.
- (3) Press the **1** key. The "PF\_ONLY NO. +0" appears on the LCD.
- (4) On the test patterns, check the blocks of PFO row. Select the block that is the least uneven print and enter the block number. For example, if the number of the least uneven block is +4, press the **4** key with the "PF\_ONLY NO. +0" being displayed on the LCD. If the number is -4, press the **▼** key to display the "PF\_ONLY NO. -0" and press the **4** key. Then press the **SET** key.
- (5) The "PF1 NO. +0" appears on the LCD.
- (6) On the test patterns, check each of the PF1 through PF6 rows sequentially. First, on the PF1 row, select the block that is the least uneven print and enter the block number. Then press the **SET** key.
- (7) In the same way, enter the number of the least uneven block for each of PF2 through PF6 on the test patterns, and then press the **SET** key. The "EXT1 NO. +0" appears on the LCD.
- (8) On the test patterns, check the blocks of EXT1 row. In the same way as in step (4), enter the number of the block that is the least uneven print and then press the **SET** key. The "EXT2 NO. +0" appears on the LCD.
- (9) In the same way, enter the number of the least uneven block for each of EXT2 through EXT6 on the test patterns, and then press the **SET** key. The "LF300\_1 NO. +0" appears on the LCD.

- (10) On the test patterns, check the blocks of LF300\_1 row. In the same way as in step (4), enter the number of the block that is the least uneven print and then press the **SET** key.  
The "LF300\_2 NO. +0" appears on the LCD.
- (11) In the same way, enter the number of the least uneven block for each of LF300\_2 through LF300\_4 on the test patterns, and then press the **SET** key.  
The "COR1 NO. +0" appears on the LCD.
- (12) On the test patterns, check the blocks of COR1 row. In the same way as in step (4), enter the number of the block that is the least uneven print and then press the **SET** key.  
The "COR2 NO. +0" appears on the LCD.
- (13) In the same way, enter the number of the least uneven block for each of COR2 through COR6 on the test patterns, and then press the **SET** key.  
Press the **X** key to return the machine to the initial stage of the maintenance mode.

#### For the paper feed roller diameter adjustment

- (1) Press the **5** and **8** keys in this order in the initial stage of the maintenance mode.  
The "Select 58?" appears on the LCD.
- (2) Press the **Mono Start** key.  
The "1. ALL" appears on the LCD.
- (3) Press the **▶** key once.  
The "1. PF 2. EXT" appears on the LCD.
- (4) Press the **1** key.  
The "PF1 NO. +0" appears on the LCD.
- (5) On the test patterns, check the blocks of PF1 row. In the same way as in step (4) of the adjustment of all paper feeding correction values, enter the number of the block that is the least uneven print and then press the **SET** key.
- (6) In the same way, check the blocks of PF2 through PF6 on the test patterns. Enter the number of the block that is the least uneven print and press the **SET** key.  
Press the **X** key to return the machine to the initial stage of the maintenance mode.

#### For the paper ejection roller diameter adjustment

- (1) Press the **5** and **8** keys in this order in the initial stage of the maintenance mode.  
The "Select 58?" appears on the LCD.
- (2) Press the **Mono Start** key.  
The "1. ALL" appears on the LCD.
- (3) Press the **▶** key once.  
The "1. PF 2. EXT" appears on the LCD.
- (4) Press the **2** key.  
The "EXT1 NO. +0" appears on the LCD.
- (5) On the test patterns, check the blocks of EXT1 row. In the same way as in step (4) of the adjustment of all paper feeding correction values, enter the number of the block that is the least uneven print and then press the **SET** key.
- (6) In the same way, on the test patterns, check the blocks of EXT2 through EXT6 respectively. Enter the number of the block that is the least uneven print, and then press the **SET** key.  
Press the **X** key to return the machine to the initial stage of the maintenance mode.

#### For the LF resolution 300 adjustment

- (1) Press the **5** and **8** keys in this order in the initial stage of the maintenance mode.  
The "Select 58?" appears on the LCD.
- (2) Press the **Mono Start** key.  
The "1. ALL" appears on the LCD.
- (3) Press the **▶** key twice.  
The "1. LF300" appears on the LCD.
- (4) Press the **1** key.  
The "LF300\_1 NO. +0" appears on the LCD.
- (5) On the test patterns, check the blocks of LF300\_1 row. In the same way as in step (4) of the adjustment of all paper feeding correction values, enter the number of the block that is the least uneven print and then press the **SET** key.
- (6) In the same way, check the blocks of LF300\_2 through LF300\_4 on the test patterns respectively. Enter the number of the block that is the least uneven print, and then press the **SET** key.  
Press the **X** key to return the machine to the initial stage of the maintenance mode.

#### For the paper feed roller alone adjustment

- (1) Press the **5** and **8** keys in this order in the initial stage of the maintenance mode.  
The "Select 58?" appears on the LCD.
- (2) Press the **Mono Start** key.  
The "1. ALL" appears on the LCD.
- (3) Press the **▶** key three times.  
The "1. PF\_ONLY" appears on the LCD.
- (4) Press the **1** key.  
The "PF\_ONLY NO. +0" appears on the LCD.
- (5) On the test patterns, check the blocks of PFO row. In the same way as in step (4) of the adjustment of all paper feeding correction values, enter the number of the block that is the least uneven print and then press the **SET** key.  
Press the **X** key to return the machine to the initial stage of the maintenance mode.

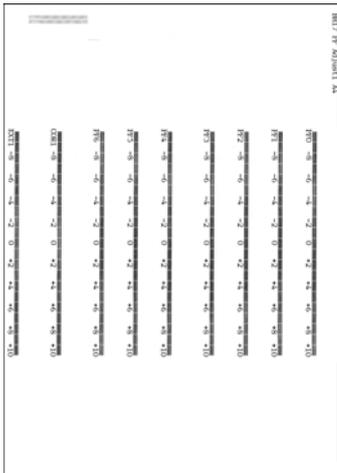
#### For corrugation feed adjustment

- (1) Press the **5** and **8** keys in this order in the initial stage of the maintenance mode.  
The "Select 58?" appears on the LCD.
- (2) Press the **Mono Start** key.  
The "1. ALL" appears on the LCD.
- (3) Press the **▶** key four times.  
The "1.COR" appears on the LCD.
- (4) Press the **1** key.  
The "COR1 NO. +0" appears on the LCD.
- (5) On the test patterns, check the blocks of COR1 row. In the same way as in step (4) of the adjustment of all paper feeding correction values, enter the number of the block that is the least uneven print and then press the **SET** key.
- (6) In the same way, on the test patterns, check the blocks of COR2 through COR6 respectively. Enter the number of the block that is the least uneven print, and then press the **SET** key.  
Press the **X** key to return the machine to the initial stage of the maintenance mode.

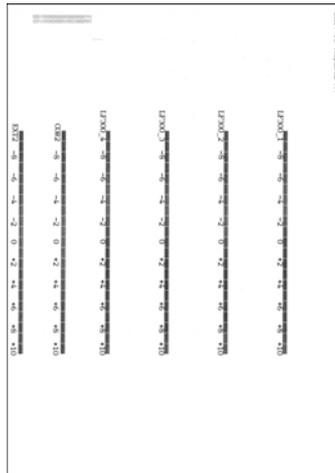
For initialization of adjustment values

- (1) Press the **5** and **8** keys in this order in the initial stage of the maintenance mode.  
The "Select 58?" appears on the LCD.
- (2) Press the **Mono Start** key.  
The "1. ALL" appears on the LCD.
- (3) Press the **8, 9, 5,** and **4** keys in this order.  
The machine initializes all paper feeding correction values.  
The "CLEAR PF & EXIT" and "1. ALL" appear.  
Press the **X** key to return the machine to the initial stage of the maintenance mode

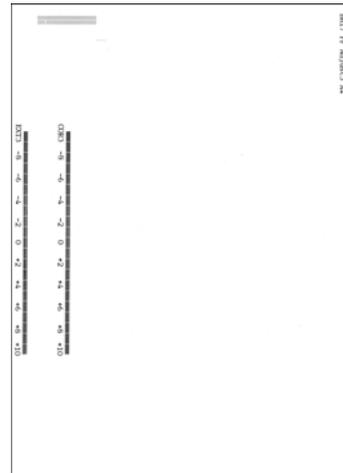
■ Test pattern



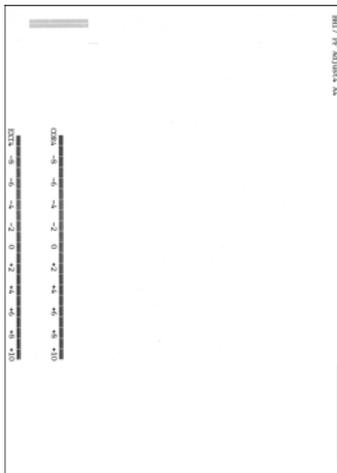
pfadj1 Pattern



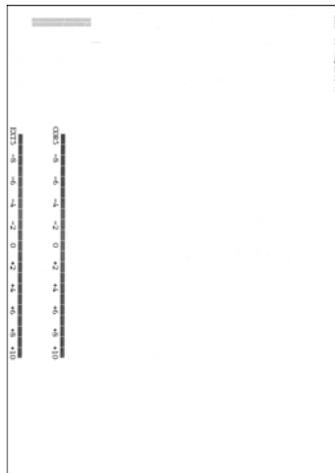
pfadj2 Pattern



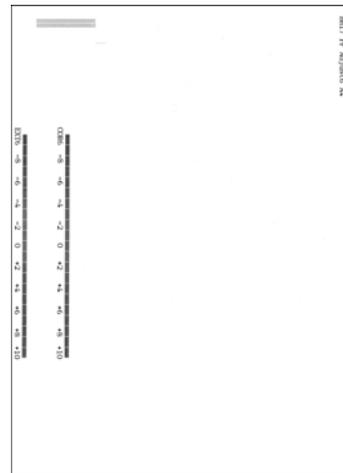
pfadj3 Pattern



pfadj4 Pattern



pfadj5 Pattern



pfadj6 Pattern

### 1.3.19 Checking of CIS Travel and Specifying of CIS Type (Maintenance mode 59)

#### < Function >

This procedure allows you to check the movement of the CIS unit integrated in the document scanner unit.

The CIS unit travels to the three positions – the ADF scanning position, FB scanning start and end positions.

It also allows you to specify the CIS type into the EEPROM on the main PCB. If you replace the main PCB, you need to specify the CIS type according to the procedure given below.

#### < Operating Procedure >

##### Check the movement of the CIS unit

- (1) Press the **5** and **9** keys in this order in the initial stage of the maintenance mode. The machine displays the "1:MO 2:CO 3:CHG?" on the LCD.
- (2) Press the **1** key.  
Duplex scanning models: The "1:FB 2:ADF 3:BTH" appears on the LCD. Press the **1** key.  
Simplex scanning models: Go to step (3).
- (3) The "1:30 2:60 3:12?" appears on the LCD. Press the **1** key. Press the **SET** key repeatedly until the "1: ADF 2: FRT 3: MV" appears on the LCD.
- (4) Press the **1** key and then press the **SET** key to move to the ADF scanning position. Press the **2** key and then press the **SET** key to move to the FB scanning start position. Press the **3** key and then press the **SET** key to move to the FB scanning end position.
- (5) To return the machine to the initial stage of the maintenance mode, press the **X** key.

##### Specify the CIS type

- (1) Press the **5** and **9** keys in this order in the initial stage of the maintenance mode. The machine displays the "1:MO 2:CO 3:CHG?" on the LCD.
- (2) Press the **3** key.  
Duplex scanning models: The "1:FB 2:ADF?" appears on the LCD.  
To specify the type of the first side CIS, press the **1** key; to specify that of the second side CIS, press the **2** key.  
Simplex scanning models: Go to step (3).
- (3) The "1:AUTO 2:MANUAL?" appears on the LCD.
- (4) Press the **1** key.  
The machine automatically sets the CIS type and returns to the initial stage of the maintenance mode.  
If the completion of automatic setting of the CIS type results in mismatch between the built-in CIS unit and the firmware setting, the "PLS UPDATE PROG" appears on the LCD. If this happens, load the latest firmware.

**Note:** If a failure in the automatic setting of the CIS type results in machine error AF00, press the **2** key in step (3) and specify the CIS type manually. When "CIS TYPE\*→" is displayed on the LCD (where \* indicates the automatically set CIS type), enter the CIS type (0 or 1).

### 1.3.20 Printout of PRN/JPEG Files in USB Flash Memory (Maintenance mode 61)

#### < Function >

This procedure prints PRN files and JPEG files stored in a USB flash memory.

The following four print modes are available.

- Printing the specified file *once*
- Printing the specified file *repeatedly*
- Printing all PRN/JPEG files *once*
- Printing all PRN/JPEG files *repeatedly*

#### File requirements

File with PRN or JPG (or prn or jpg) extension in root folder or "BROTHER" folder.

**Note:** Un-displayable characters in filenames will be replaced with different characters.  
Only the first 16 characters of filenames are displayed.

#### < Operating Procedure >

**Note:** Before carrying out maintenance mode 61, update the firmware to the latest version.

- (1) Insert a USB flash memory.
- (2) Press the **6** and **1** keys in this order in the initial stage of the maintenance mode. The "MAINTENANCE 61" appears on the LCD.
- (3) To print a PRN file(s), press the **#** key; to print a JPEG file(s), press the **\*** key. Files of the selected type appear on the LCD.
- (4) To print the specified file once, select the target file with the **▲** / **▼** keys and press the **4** key.  
  
To print the specified file repeatedly, select the target file with the **▲** / **▼** keys and press the **6** key.  
  
To print all files of the selected type once, press the **7** key.  
  
To print all files of the selected type repeatedly, press the **9** key.
- (5) The "1.A4 2.LETTER" appears on the LCD.
- (6) Pressing the **1** key or the **2** key, in accordance with the size of the recording paper, starts printing. Upon completion of printing, the machine returns to the initial stage of the maintenance mode. Pressing the **X** key during repeated printing returns the machine to the state showing the "MAINTENANCE 61" on the LCD.

**Notes:** - This function is not available when Error Code A\*\*\* or B\*\*\* occurs.

- When recording paper runs out during printing, the maintenance mode goes back to the initial state, therefore, be sure to load recording paper in the paper tray before executing printing.

### 1.3.21 Move of the Head/Carriage Unit to the Adjustment Position (Maintenance mode 63)

#### < Function >

This function moves the head/carriage unit to the adjustment position.

#### < Operating Procedure >

- (1) Press the **6** and **3** keys in this order in the initial stage of the maintenance mode.  
The "SELECT 63?" appears on the LCD.
- (2) Press the **Mono Start** key.  
The "START 63" appears on the LCD.
- (3) Press the \* key.  
The head/carriage unit moves to the adjustment position and the "HEAD ADJ" appears on the LCD.
- (4) After completion of adjustment jobs, press the **X** key.
- (5) The head/carriage unit returns to the home position and locks itself, then the machine returns to the initial stage of the maintenance mode.

### 1.3.22 Adjustment of Software Correction for Inclination/Corrugation/Ruled Lines (Maintenance mode 65)

#### < Function >

This procedure aligns vertical lines printed in the forward and backward directions of the head/carriage unit.

If the head/carriage unit, main PCB, or engine-related parts are replaced, you need to make the adjustment given below.

#### < Operating Procedure >

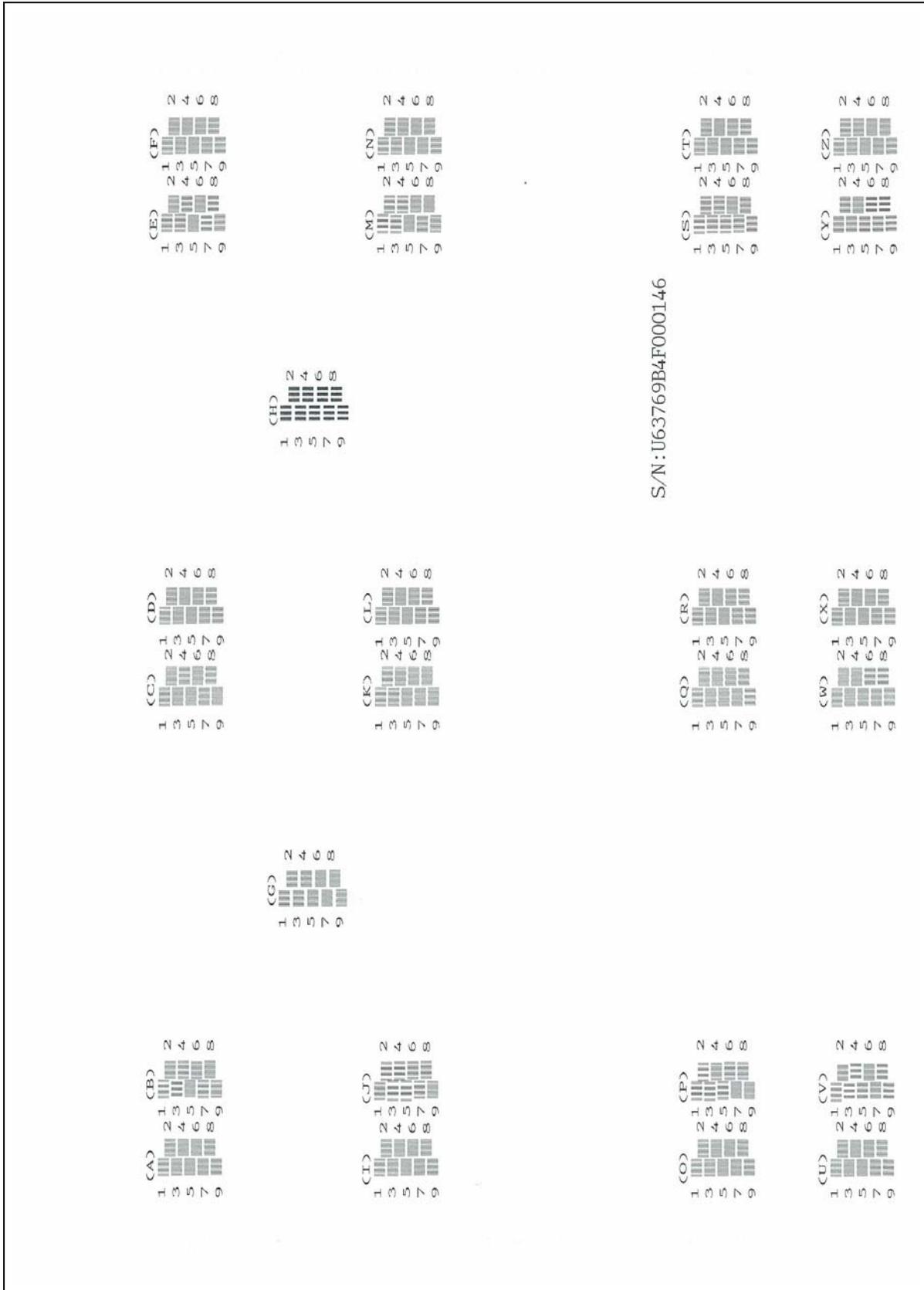
- (1) On your PC, when using A4-sized paper, save a copy of  
<Regular Ink cartridge model> "Corrugate\_A4\_BHM17.prn"  
<Ink tank model> "Tank\_Corrugate\_A4\_BHM17.prn"  
<Simple Ink cartridge model> "Simple\_Corrugate\_A4\_BHM17.prn",  
and when using letter-sized paper, save a copy of  
<Regular Ink cartridge model> "Corrugate\_LTR\_BHM17.prn"  
<Ink tank model> "Tank\_Corrugate\_LTR\_BHM17.prn"  
<Simple Ink cartridge model> "Simple\_Corrugate\_LTR\_BHM17.prn"  
to a USB flash memory.

Use "1.3.20 Printout of PRN/JPEG Files in USB Flash Memory (Maintenance mode 61)" in this chapter to print test patterns.

**Tip:** The test pattern can also be printed by opening "Filedrgs" on your PC and dragging and dropping the above file onto the Brother Maintenance USB Printer driver icon.

- (2) Press the **6** and **5** keys in this order in the initial stage of the maintenance mode. The "MAINTENANCE 65" appears on the LCD.
- (3) Press the **2** key. The "A1 No.(1-9)5" appears on the LCD.
- (4) Check the printed A, find which number block shows the most indistinct vertical lines, and then enter that block number. Then press the **SET** key. The "B No.(1-9)5" appears on the LCD.
- (5) In the same way, for each of the printed B to Z, enter the number of the block that shows the most indistinct vertical lines. Then press the **SET** key. Press the **◀** key to return to the last block number. Press the **X** key to discard the entered information and return the machine to the initial stage of the maintenance mode.
- (6) After entry of the block number for Z, the "OK? 1.YES 2.NO" appears on the LCD. Press the **1** key to save individual adjustment values and return the machine to the initial stage of the maintenance mode.

■ Adjustment of Software Correction for Inclination/Corrugation/Ruled Lines Check Pattern



S/N: U63769B4F000146

### 1.3.23 Adjustment of Margins in Borderless Printing (Maintenance mode 66)

#### < Function >

This procedure adjusts the left, right and bottom margins for borderless printing. Print out a margin check pattern, measure each margin, and enter the measured margin values.

If the head/carriage unit or main PCB is replaced or the engine and its related components are disassembled, you need to make the adjustment given below.

#### < Operating Procedure >

(1) On your PC, when using A4-sized paper, save a copy of "NEW\_mediaadj\_A4\_BHM17.prn" to a USB flash memory. When using letter-sized paper, save a copy of "NEW\_mediaadj\_LTR\_BHM17.prn".

(2) Use "1.3.20 Printout of PRN/JPEG Files in USB Flash Memory (Maintenance mode 61)" to print test patterns.

**Tip:** The test patterns can also be printed by opening "Filedrgs" on your PC and dragging & dropping the above adjustment file onto the Brother Maintenance USB Printer driver icon.

(3) Measure the left, right, and bottom margins on the printed pattern.  
If each margin is within the range of 2.9 to 3.1 mm, no adjustment is required.

(4) Press the **6** key two times in the initial stage of the maintenance mode.  
Wait for the "SELECT 66?" to appear and then press the **Mono Start** key.  
The "\*.MEDIA #.REGI" appears on the LCD.

(5) Press the \* key to display the "LEFT 1 :30."  
Enter the measured upper left margin value "A" multiplied by 10. If the measured left margin is 2.8 mm, for example, press the **2**, **8**, and **SET** keys.  
The "RIGHT1 :10" appears on the LCD.

(6) Enter the measured upper right margin value "B" multiplied by 10. If the measured right margin is 3.0 mm, for example, press the **3**, **0**, and **SET** keys.  
The "LEFT 2 :30" appears on the LCD.

(7) Enter the measured lower left margin value "C" multiplied by 10. If the measured left margin is 2.9 mm, for example, press the **2**, **9**, and **SET** keys.  
The "RIGHT 2 :10" appears on the LCD.

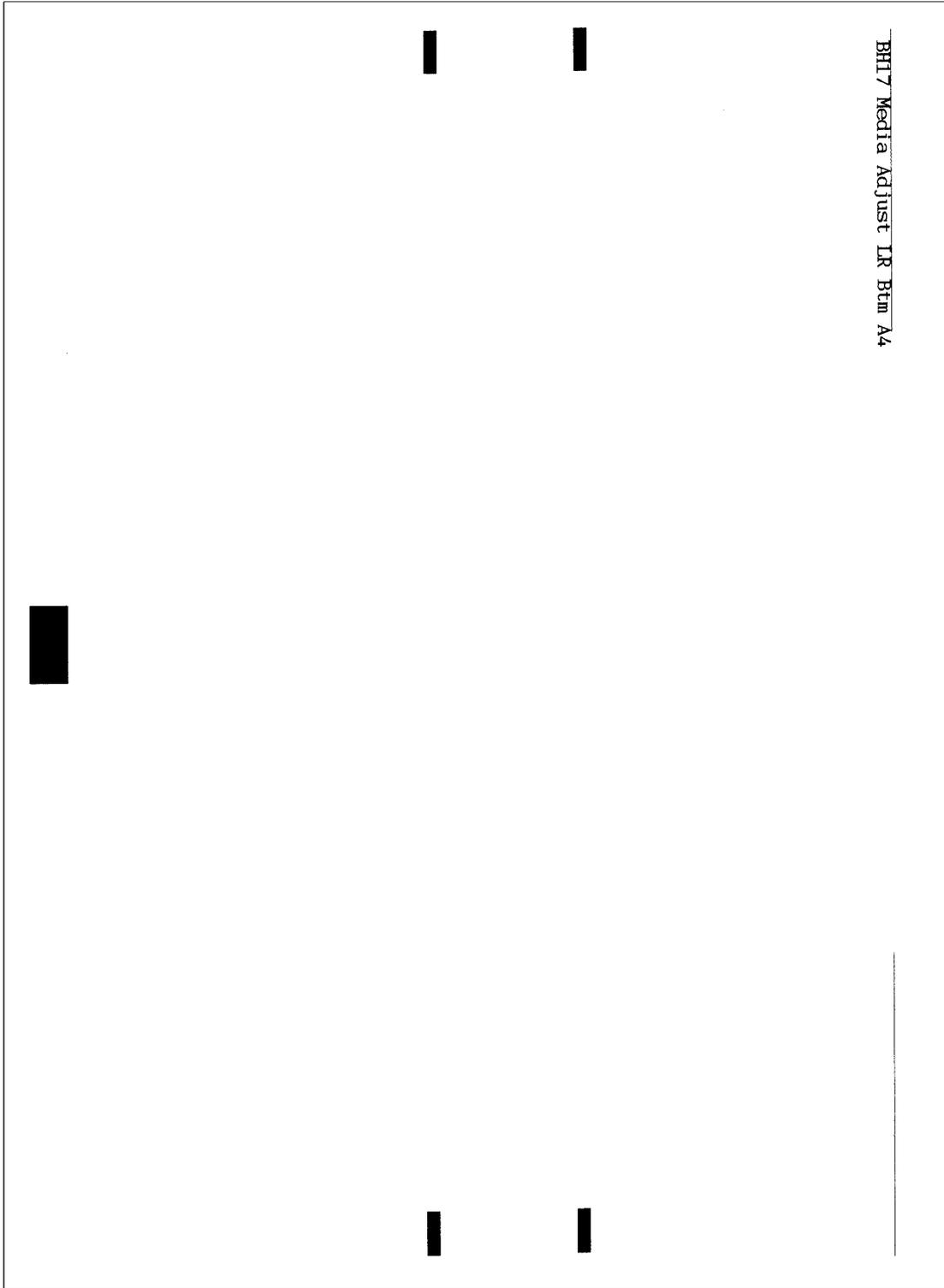
(8) Enter the measured lower right margin value "D" multiplied by 10. If the measured right margin is 3.1 mm, for example, press the **3**, **1**, and **SET** keys.  
The machine saves the left and right margin values and returns to the initial stage of the maintenance mode.

(9) Press the **6** key two times in the initial stage of the maintenance mode.  
Wait for the "SELECT 66?" to appear and then press the **Mono Start** key.  
The "\*.MEDIA #.REGI" appears on the LCD.

(10) Press the # key to display the "BOTTOM :30."  
Enter the measured bottom margin value "E" multiplied by 10. If the measured bottom margin is 3.5 mm, for example, press the **3**, **5**, and **SET** keys.  
The machine saves the bottom margin value and returns to the initial stage of the maintenance mode.

(11) Go back to step (2) and print the margin check pattern again. If each margin is within the range of 2.9 to 3.1 mm, the adjustment is completed.

■ Margin Check Pattern



### 1.3.24 Updating of Head Property Information and Backup/Restoration of Head Calibration Data (Maintenance mode 68)

#### < Function >

Maintenance mode 68 provides two types of procedures--one for updating the head property information and the other for backing up the head calibration data and restoring it.

#### Updating the head property information

To keep the print quality, the machine optimizes the drive conditions of individual head/carriage units according to the head property information.

The property data is stored in the EEPROM on the main PCB and its property information is printed on the property labels attached to the head/carriage unit.

If you replace the head/carriage unit, you need to enter its property information printed on the head property label (pasted on the new spare part).

#### Backing up the head calibration data and restoring it

This procedure backs up the head calibration data into a USB flash memory and restores it to the machine.

#### < Operating Procedure >

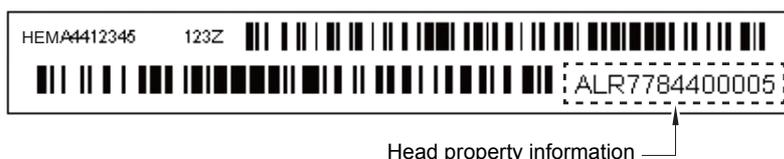
##### Head Property Information Updating Procedure

- (1) Press the **6** and **8** keys in this order in the initial stage of the maintenance mode.
- (2) Press the **2**, **5**, **8**, and **0** keys in this order.

The current property information stored in the EEPROM appears on the LCD and the machine is ready for entry.

- (3) Check the head property label pasted on a new head/carriage unit and enter the property information.

The code to be entered is 10 digits excluding the heading "ALR".



- (4) After entry of 10-digit code, press the **SET** key.  
The machine displays the "INPUT ACCEPTED" on the LCD, writes the entered head property information into the EEPROM, and then returns to the initial stage of the maintenance mode.

**Note:** If the entered data contains any checksum error, the machine shows the "INPUT ERROR" and becomes ready to accept entry. Go back to step (3).

## Head Calibration Data Backup/Restoration Procedures

### **Backup procedure**

- (1) Press the **6** and **8** keys in this order in the initial stage of the maintenance mode.
- (2) Press the **0**, **6**, **2**, and **6** keys in this order.  
The "HeadCalib->Media" appears on the LCD.
- (3) Insert a USB flash memory into the memory slot.
- (4) Press the **SET** or **Mono Start** key.  
The machine displays "Now Saving" on the LCD and starts the backup operation.  
Upon completion of the backup operation, the machine displays "Head Calib.data" on the LCD and returns to the initial stage of the maintenance mode.

### **Restoration procedure**

- (1) Press the **6** and **8** keys in this order in the initial stage of the maintenance mode.
- (2) Press the **0**, **6**, **2**, and **6** keys in this order.  
The "HeadCalib->Media" appears on the LCD.
- (3) Use the **▶** or **◀** key to display "Media->HeadCalib" on the LCD.
- (4) Insert the USB flash memory holding the head calibration data into the memory slot.
- (5) Press the **SET** or **Mono Start** key.  
The machine displays "Now Loading" on the LCD and starts the restoration operation.  
Upon completion of the restoration operation, the machine displays "Complete" on the LCD and returns to the initial stage of the maintenance mode.

- Notes:** - If the USB flash memory inserted in step (5) holds no head calibration data, the "Can't Open File" appears on the LCD.
- This procedure should be performed with the USB cable disconnected. If it is performed with the USB cable being connected, disconnect it.

### 1.3.25 Traveling Speed Check of Head/Carriage Unit (Maintenance mode 69)

#### < Function >

This procedure checks whether the traveling speed of the head/carriage unit is within the specified range.

#### < Operating Procedure >

- (1) Press the **6** and **9** keys in this order in the initial stage of the maintenance mode. The machine shows "CR AGING" on the LCD and starts checking the traveling speed of the head/carriage unit. In each of travel speeds of 43.3, 26.7 and 21.7 inches/second (ips), the machine checks whether the maximum and minimum traveling speeds of the head/carriage unit are within the specified range.
  - If the maximum and minimum speeds in all of the three traveling speeds are within the specified range, the "430 270 210" appears on the LCD.
  - If any one is out of the range, the machine shows some message, e.g., "430 270 21X" on the LCD. This sample message indicates that the speed variation is within the allowable range when the head/carriage unit travels at 43.3 and 26.7 inches/second; however, it is out of the range at 21.7 inches/second.
- (2) Press the **X** key to return the machine to the initial stage of the maintenance mode.

### 1.3.26 Customizing Destinations (Maintenance mode 74)

#### < Function >

This procedure customizes the machine according to settings of the language, functions, and worker switches.

#### < Operating Procedure >

- (1) Press the **7** and **4** keys in this order in the initial stage of the maintenance mode. The "Select 74?" appears on the LCD.
  - (2) Press the **Mono Start** key to display the current settings on the LCD.
  - (3) Enter the desired customizing code.
  - (4) Press the **Mono Start** key to save the new setting and return the machine to the initial stage of the maintenance mode. If the destination is changed, the "PARAMETER INIT" appears on the LCD. Then, if "PLS UPDATE PROG" and "Please DL ROM" is also displayed on the LCD, load the latest firmware. (refer to [Chapter 4, Section 1.3 "Install the firmware \(Maintenance mode 28\)."](#))
  - (5) Pressing the **X** key during the above procedure returns the machine to the initial stage of the maintenance mode without saving the customizing code.
- Note:** If no keys are pressed for at least one minute with any display state, the machine automatically returns to the initial stage of the maintenance mode.

< EEPROM Customizing Codes List >

	HL- J6000DW	HL- J6100DW	HL- T4000DW	MFC- J3530DW	MFC- J3930DW	MFC- J6530DW	MFC- J6535DW
U.S.A.	---	---	---	---	---	0001	0501
Canada	---	---	---	---	---	0002	0502
Mexico	---	---	0001	---	---	---	---
Argentina	---	---	---	---	---	---	---
Brazil	---	---	0042	---	---	---	---
Chile	---	---	---	---	---	---	---
Germany	---	---	---	---	---	0003	---
UK	0099 (0004)	0199 (0104)	---	---	---	0004	---
France/Belgium/ Holland (France/Belgium/ Holland)	---	---	---	---	---	0055 (0005/ 0008/0009)	---
Italy/Iberia (Italy/ Spain/Portugal)	---	---	---	---	---	0066 (0016/ 0015/0018)	---
Switzerland	---	---	---	---	---	0010	---
Pan-Nordic (Norway/Sweden/ Finland/Denmark)	---	---	---	---	---	0057 (0007/ 0026/0012/ 0013)	---
CEE-General	---	---	---	0254	0454	---	---
Russia	---	---	---	0248	0448	---	---
EU-Regional (Germany/UK/ France/Norway/ Belgium/Holland/ Switzerland/ Finland/Denmark/ Spain/Italy/ Portugal/Sweden/ Russia/CEE- General)	0099 (0004)	0199 (0104)	---	---	---	---	---
Oceania (Australia/ New Zealand)	---	---	---	---	---	0056 (0006/0027)	---
Hong Kong	---	---	---	0228	---	---	---
Malaysia	---	---	---	0240	0440	---	---
Indonesia	---	---	---	0240	---	---	---
ASA	---	---	0040	---	---	---	---
Thailand	---	---	---	---	0440	---	---
Gulf/Turkey (Gulf/ Turkey)	---	---	---	---	0474 (0441/0425)	---	---
Gulf	---	---	---	0241	---	---	---
India	---	---	0045	---	---	---	---
Korea	---	---	0044	0244	0444	---	---
South Africa	---	---	---	0224	0424	---	---
Taiwan	---	---	0023	---	0423	---	---
China	---	---	0020	0220	0420	---	---

	MFC- J6545DW	MFC- J6730DW	MFC- J6930DW	MFC- J6935DW	MFC- J6945DW	MFC- J6947DW	MFC- T4500DW
U.S.A.	0001	---	0001	0101	0101	---	---
Canada	0002	---	0002	---	0102	---	---
Mexico	---	---	---	---	---	---	0001
Argentina	---	0136	---	---	---	---	0036
Brazil	0042	---	---	0142	0142	---	0042
Chile	---	0136	---	---	---	---	0036
Germany	---	---	0003	0103	0199 (0103)	0299 (0203)	---
UK	---	---	0004	0104	0199 (0104)	0299 (0204)	---
France/Belgium/ Holland (France/Belgium/ Holland)	---	---	0055 (0005/ 0008/0009)	0155 (0105/ 0108/0109)	---	---	---
Italy/Iberia (Italy/ Spain/Portugal)	---	---	0066 (0016/ 0015/0018)	0166 (0116/ 0115/0118)	---	---	---
Switzerland	---	---	0010	0110	---	---	---
Pan-Nordic (Norway/Sweden/ Finland/Denmark)	---	---	0057 (0007/ 0026/0012/ 0013)	0157 (0107/ 0126/0112/ 0113)	---	---	---
CEE-General	---	---	---	---	---	---	---
Russia	---	---	---	---	---	---	---
EU-Regional (Germany/UK/ France/Norway/ Belgium/Holland/ Switzerland/ Finland/Denmark/ Spain/Italy/ Portugal/Sweden/ Russia/CEE- General)	---	---	---	---	0199 (0103/ 0104/0105/ 0107/0108/ 0109/0110/ 0112/0113/ 0115/0116/ 0118/0126/ 0148/0154)	0299 (0203/ 0204/0205/ 0207/0208/ 0209/0210/ 0212/0213/ 0215/0216/ 0218/0226/ 0248/0254)	---
Oceania (Australia/ New Zealand)	---	0156 (0106/0127)	0056 (0006/0027)	0156 (0106/0127)	0156 (0106/0127)	---	---
Hong Kong	---	---	---	---	---	---	---
Malaysia	---	---	---	---	---	---	---
Indonesia	---	---	---	---	---	---	---
ASA	---	---	---	---	---	---	0040
Thailand	---	---	---	---	---	---	---
Gulf/Turkey (Gulf/ Turkey)	---	---	---	---	---	---	---
Gulf	---	---	---	---	---	---	---
India	---	---	---	---	---	---	0045
Korea	---	---	---	---	---	---	0044
South Africa	---	---	---	---	---	---	---
Taiwan	---	---	---	---	---	---	0023
China	---	---	---	---	---	---	0020

The above information is as of May 2018. Please confirm the latest firmware information which is available from your local Brother Customer Service.

### 1.3.27 Move of the Head/Carriage Unit to the Center (Maintenance mode 75)

#### < Function >

This function is used to remove paper particles and dust accumulated between the maintenance unit and head/carriage unit. Using this function moves the head/carriage unit to the center, allowing you to easily remove the paper particles and dust accumulated.

#### < Operating Procedure >

- (1) Press the **7** and **5** keys in this order in the initial stage of the maintenance mode.  
The "PLS OPEN COVER" appears on the LCD.  
The head/carriage unit moves to the center.
- (2) Open the scanner cover.  
The "PLS CLOSE COVER" appears on the LCD.
- (3) Remove the paper particles and dust accumulated.
- (4) Close the scanner cover.  
The head/carriage unit moves back to the home position and the machine returns to the initial stage of the maintenance mode.

### 1.3.28 Purge Operation (Maintenance mode 76)

#### < Function >

This function allows you to select the desired purge type from several types of purge operations and carry it out.

#### < Operating Procedure >

- (1) Press the **7** and **6** keys in this order in the initial stage of the maintenance mode. The LCD displays "CLEANING" and then "NORMAL\_P ALL".
- (2) Enter the purge code according to the table on the [next page](#).
- (3) Press the ◀ or ▶ key to display the target color for purge on the LCD.  
"\*\*\*\*\* ALL": Purge for all four color inks  
"\*\*\*\*\* BLACK": Purge for black ink  
"\*\*\*\*\* MAGENTA" / "\*\*\*\*\* CYAN" / "\*\*\*\*\* YELLOW": Any color choice performs purge for all three color inks.
- (4) Press the **Mono Start** key. The LCD displays "CLEANING".  
Upon completion of purging, the machine automatically returns to the initial stage of the maintenance mode.

**Notes:** - Before performing a purge operation, be sure to check that ink cartridges with the sufficient amount of ink remaining are mounted or there is enough ink remaining in the tank.

- This machine counts all purge operations and flushing operations performed since produced in order to prevent the ink absorber box and flushing box from overflowing with drained and flushed ink, respectively. If purges for all four color inks are carried out at the same time, the purge count is not always equal to the total of black and color ink purge counts.
- When the purge or flushing count reaches the upper limit, the "Unable to Print 46" appears, and further purge or flushing operations are prohibited. Replace the ink absorber box or flushing box and then reset the corresponding count using the procedure given below.

#### ■ Resetting purge or flushing count

- 1) Press the **8** and **0** keys in this order in the initial stage of the maintenance mode to call up the machine's log information. (Refer to "[1.3.31 Display of the Equipment's Log \(Maintenance mode 80\)](#)" in this chapter.)
- 2) Press the ▼ key several times until "PURGE COUNT" (or "FLUSHING COUNT") appears on the LCD.
- 3) Press the ▶ key once to display "PURGE:\*\*\*\*\*" (or "FLSBK:\*\*\*\*\*"; press the ▼ key once to display "FLSCL:\*\*\*\*\*") on the LCD.
- 4) Press the **2**, **7**, **8**, and **3** keys in this order to reset the purge or flushing count. The machine automatically returns to the initial stage of the maintenance mode.

**Note:** Even if you reset the purge count, it will not become 0, since the ink in the intermediate absorber box is taken into consideration.

## **Purge types and purge codes**

Purge Types	Description	Purge Codes (to be entered with Maintenance mode 76)
Normal purge (NP)	Purge to be performed by user purge.	1
Periodical reset purge (RP)	Purge to be performed periodically. The cycle varies due to the ambient temperature.	2
Power purge (PP)	Purge to be performed by user purge.	3
Initial purge (uIP)	Purge to be performed automatically immediately after the user purchases the machine.	4
User reset purge (RP3)	Purge to be performed by user purge.	5
Engine setup purge (eIP)	Purge to be performed for refilling the tubes with ink.	6
Periodic expelling purge (RP2)	Purge to be performed periodically. The cycle varies due to the ambient temperature.	7
Periodic suction purge (SP)	Purge to be performed periodically. The cycle varies due to the ambient temperature.	8
Engine inspection strong purge (CPP)	Purge to be performed at engine inspection.	D
Power reset purge (QPP)	Purge to be performed by user purge.	F
More powerful reset purge 2 (MPP2)	Purge to be performed by user purge.	* 7

## **Ink usage and purge counts**

### **[ Regular Ink cartridge model ]**

		Ink Usage (ml)			Purge Counts		
		ALL	BLACK only	COLOR only	ALL	BLACK only	COLOR only
Normal purge (NP)	BK CL	0.420255 2.12008	0.4125375 0.04536	0.024255 2.12008	75	19	56
Periodical reset purge (RP)	BK CL	0.300255 1.460328	0.2925375 0.32436	0.1059 1.4664	50	26	41
Power purge (PP)	BK CL	0.784255 2.97108	0.7765375 0.32436	0.117255 2.97108	132	49	100
Initial purge (uIP)	BK CL	7.128844 19.972736	---	---	1232	---	---
User reset purge (RP3)	BK CL	0.513255 2.39908	0.5055375 0.32436	0.117255 2.39908	92	36	73
Engine setup purge (eIP)	BK CL	7.038544 19.972736	---	---	1228	---	---
Periodic expelling purge (RP2)	BK CL	0.093 0.279	---	---	17	---	---
Periodic suction purge (SP)	BK CL	0.207255 1.181328	---	---	34	---	---
Engine inspection strong purge (CPP)	BK CL	1.38251 5.38416	---	---	231	---	---
Power reset purge (QPP)	BK CL	0.691255 2.69208	---	---	116	---	---
More powerful reset purge 2 (MPP2)	BK CL	1.337 4.067	1.33 0.794	0.267 3.698	235	95	184

**[ Ink tank model ]**

		Ink Usage (ml)			Purge Counts		
		ALL	BLACK only	COLOR only	ALL	BLACK only	COLOR only
Normal purge (NP)	BK CL	0.420255 2.12008	0.4125375 0.04536	0.024255 2.12008	75	19	56
Periodical reset purge (RP)	BK CL	0.300255 1.460328	0.2925375 0.32436	0.1059 1.4664	50	26	41
Power purge (PP)	BK CL	0.784255 2.97108	0.7765375 0.32436	0.117255 2.97108	132	49	100
Initial purge (uIP)	BK CL	7.976 22.823	---	---	1396	---	---
User reset purge (RP3)	BK CL	0.513255 2.39908	0.5055375 0.32436	0.117255 2.39908	92	36	73
Engine setup purge (eIP)	BK CL	7.67 21.905	---	---	1272	---	---
Periodic expelling purge (RP2)	BK CL	0.093 0.279	---	---	17	---	---
Periodic suction purge (SP)	BK CL	0.207255 1.181328	---	---	34	---	---
Engine inspection strong purge (CPP)	BK CL	1.38251 5.38416	---	---	231	---	---
Power reset purge (QPP)	BK CL	0.691255 2.69208	---	---	116	---	---
More powerful reset purge 2 (MPP2)	BK CL	1.337 4.607	1.33 0.794	0.267 3.698	235	95	184

**[ Simple Ink cartridge model ]**

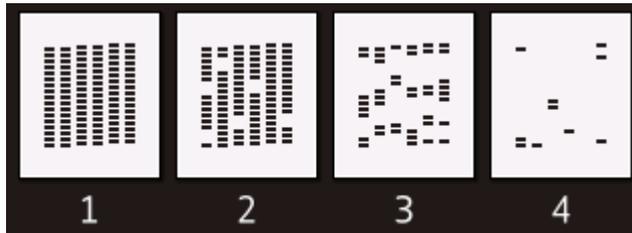
		Ink Usage (ml)			Purge Counts		
		ALL	BLACK only	COLOR only	ALL	BLACK only	COLOR only
Normal purge (NP)	BK CL	0.420255 2.12008	0.4125375 0.04536	0.024255 2.12008	75	19	56
Periodical reset purge (RP)	BK CL	0.300255 1.460328	0.2925375 0.32436	0.1059 1.4664	50	26	41
Power purge (PP)	BK CL	0.784255 2.97108	0.7765375 0.32436	0.117255 2.97108	132	49	100
Initial purge (uIP)	BK CL	8.07 23.391	---	---	1353	---	---
User reset purge (RP3)	BK CL	0.513255 2.39908	0.5055375 0.32436	0.117255 2.39908	92	36	73
Engine setup purge (eIP)	BK CL	8.07 23.391	---	---	1353	---	---
Periodic expelling purge (RP2)	BK CL	0.093 0.279	---	---	17	---	---
Periodic suction purge (SP)	BK CL	0.207255 1.181328	---	---	34	---	---
Engine inspection strong purge (CPP)	BK CL	1.38251 5.38416	---	---	231	---	---
Power reset purge (QPP)	BK CL	0.691255 2.69208	---	---	116	---	---
More powerful reset purge 2 (MPP2)	BK CL	1.337 4.607	1.33 0.794	0.267 3.698	235	95	184

The ink usage of COLOR are total values of three colors.  
 There is a mode in which color ink is consumed even though the black ink purge is selected.  
 Likewise, there is a mode in which black ink is consumed even though the color ink purge is selected.

### < Recommended purge procedures >

When a print failure occurs due to the non-discharge of ink, make a recovery from the nondischarge in accordance with the recommended procedures below.

- (1) Open the document scanner unit and check if there is ink in the ink supply tubes from the opening of the upper cover.  
If there is ink, go on to the step (3).  
If there is no ink, go on to the step (2).
- (2) Perform Maintenance 76-4 (uIP).  
Check if there is ink in the ink supply tubes again.  
If there is ink, go on to the step (3).  
If there is no ink, replace the maintenance unit and ink refill ASSY.
- (3) Perform Maintenance 76-3 (PP).
- (4) Print the test pattern by performing Maintenance 09.  
If a lot of blocks are missing in the test pattern (pattern 4 in the figure below), perform Maintenance 76-D (CPP).  
If about a half of the blocks are missing (pattern 3 in the figure below), perform Maintenance 76-F (QPP).  
If few blocks are missing (pattern 2 in the figure below), perform Maintenance 76-1 (NP).  
If no blocks are missing (pattern 1 in the figure below), end the operation.



- (5) Repeat the step (4) three times until there is no more missing block in the test pattern.
- (6) If blocks are still missing in the test pattern, leave the machine for 8 hours (if possible), and perform the step (4) again.
- (7) If blocks are still more missing in the test pattern, replace the head/carriage unit.
- (8) Perform Maintenance 76-4 (uIP).
- (9) Repeat the step (4) three times until there is no more missing block in the test pattern.

### 1.3.29 Print of the Maintenance Information (Maintenance mode 77)

#### < Function >

The machine prints out its log information or saves it into a USB flash memory.

#### < Operating Procedure >

##### Printing

- (1) Press the **7** key twice in the initial stage of the maintenance mode.  
The machine prints out the maintenance information.
- (2) Upon completion of the printing, the machine returns to the initial stage of the maintenance mode.

##### Saving into a USB flash memory

- (1) Insert a USB flash memory into the memory slot in the initial stage of the maintenance mode.  
The "\*\*\*\*Active" or "?" appears on the LCD (where "\*\*\*\*\*" is the name of the inserted USB flash memory).
- (2) Press the **7** key twice to display "Print out" on the LCD.
- (3) Press the **▲** or **▼** key to select "Save Data."
- (4) Press the **Mono Start** key.  
The LCD shows "\*\*\*\*\*" (where "\*\*\*\*\*" is "Model name + Lower 9 digits of the machine's serial number").
- (5) Upon completion of the saving, the machine returns to the initial stage of the maintenance mode.  
**Note:** Be sure to load recording paper in the paper tray before executing printing.



1	Model code, Serial number, Country code, Checksum of WSW, PSW, USW, and FSW * <sup>1</sup>	37	Paper pull-in failure count: Paper tray #1, Paper tray #2, Label * <sup>2</sup> , Manual feed slot, MP tray, Paper tray #3
2	Version of main firmware, Production date & time, Checksum, ROM1 checksum * <sup>1</sup>	38	Roller cleaning count: Paper tray #1, Paper tray #2, MP tray, Paper tray #3
3	Version of boot firmware * <sup>1</sup> , Checksum * <sup>1</sup> , Real-time clock (RTC) check result * <sup>1</sup> , RTC backup check result * <sup>1</sup> (OK: Backup completed, NG: Backup failed)	39	Paper piece removal count, Job cancel count
		40	ADF jam count: Simplex, Duplex
4	Head property information/Head voltage correction value/Head calibration data – calibration ratio – Presence of variation calibration data (1:Exist, 0: Not exist)	41	Scanning count: ADF, ADF duplex, FB, FAX, Scanner
		42	Home positioning error code of the CIS unit/ Home positioning detection log data * <sup>1</sup>
5	First side CIS type/Second side CIS type	43	Purge count: Purge, Sensor purge, Wipe, Black flushing, Color flushing, Flushing count error detection count
6	Total ink drop count from a new head (including flushing)		
7	Ink drop count after replacement of ink cartridge or refill of ink	44	Purge count (black) * <sup>3</sup>
		45	Purge count (color) * <sup>3</sup>
8	Ink drop count after detection of "Ink Low"	46	Purge count (Other) * <sup>3</sup>
		47	Initial purge log * <sup>1</sup> (FF: normal end)
9	Ink drop count for droplets jetted out onto the platen * <sup>1</sup>	48	Initial purge execution time * <sup>1</sup>
10	Ink drop count by cleaning after replacement of ink cartridge or refill of ink	49	Last three purge logs * <sup>7</sup>
11	Manufacture date of ink cartridge	50	Total power-ON time, Power-ON count, Capacitor failure detection count
12	Ink cartridge change count * <sup>8</sup>		
13	Ink cartridge detection failure count (Cannot Detect display count), "Ink Low" count	51	(Ink tank model/Simple Ink cartridge model only) Power-ON count by phone line detection
14	Ink drop count at the previous replacement of ink cartridge or refill of ink	52	Machine error history (Error code: Date of occurrence: Machine temperature degree-C at the time of occurrence)
15	Ink drop count after detection of "Ink Low" at the previous replacement of ink cartridge or refill of ink		
16	Ink drop count by cleaning at the previous replacement of ink cartridge or refill of ink	53	Communications error history (Error code: Date of occurrence)
17	Ink drop count at ink remaining failure	54	Machine information backup file version * <sup>1</sup>
18	Total printed page count, A3 paper printed page count	55	Sensor status * <sup>4</sup>
19	Printed page count: PC print, Copy, FAX	56	Ink cartridge type loaded in each slot * <sup>5</sup> Ink remaining state (0: OK 1: NG)
20	Printed page count: Media, List, Web Connect		
21	Printed page count: AirPrint, iPrint, Google Cloud Print	57	Executed maintenance modes * <sup>1</sup>
		58	Executed special maintenance modes * <sup>1</sup>
22	Printed page count: Test pattern, User line alignment, User feeding amount adjustment, Other	59	Reset count * <sup>6</sup> /Total Power-ON time at the time of last reset, Operation start date of the machine (The date when the user operates the machine first after unpacking)
23	Total printed page count in duplex printing		

24	Printed page count in duplex printing: PC print, Copy, Other	60	User line alignment: Start count, completion count
25	Printed page count per recording paper size: A4 and LTR, A3 and LGR, Envelope		User feeding amount adjustment: Start count, completion count
26	Printed page count per recording paper size: 4x6 and A5, Hagaki *2, Photo-L	61	(Ink tank model only) Log of ink state when the remaining ink state was reset: Number of times remaining ink was 70% to 100%; number of times remaining ink was 40% to 69%; number of times remaining ink was 1% to 39%; number of ink low events; number of ink empty events
27	Printed page count per recording paper size in duplex printing: A4 and LTR, A3 and LGR, A5, Hagaki *2		
28	(Ink tank model / Simple Ink cartridge model only) Number of borderless printing (plain paper/inkjet paper/glossy paper)		
29	High-level ink usage page count (count of pages that exceed a specified level of ink usage), Total printed page count in the previous month	62	(Ink tank model only) Log of user input results at ink refill confirmation: Number of times "Yes" was entered for all colors at ink refill confirmation and again for ink refill re-confirmation; number of times "Yes" was entered for all colors; number of times "No" was entered for one or more colors
30	Printed page count per tray: Paper tray #1, Paper tray #2, Label *2, Manual feed slot, MP tray, Paper tray #3		
31	Printed page count of the present cartridge or refilled tank, Printed page count of the previous cartridge or refilled tank	63	(Ink tank model only) Number of ink cover open events: Open time less than 10 seconds / greater than or equal to 10 seconds
32	Average coverage of all cartridges or all refilled tanks	64	(Ink tank model only) Log of user checks of remaining ink state: Number of times the conditions for displaying the confirmation screen were satisfied; number of print jobs until confirmation screen was cleared: 0 / 1 / 2 to 4 / 5 to 29 / 30 or more
33	Average coverage of the present cartridge or refilled tank, Average coverage of the previous cartridge or refilled tank		
34	Recording paper jam count: Total count, when printing the second side in duplex printing (Model for India only)	65	(Ink tank model/Simple Ink cartridge model only) printed page count of each coverage for each color
	Paper jam count detected by paper width sensor/Preprint detection count *1/Printed page count with jam detection by paper width sensor effective *1	66	(Ink tank model/Simple Ink cartridge model only) SSW (SolutionSW) on/off information *1
35	Recording paper jam count per tray: Paper tray #1, Paper tray #2, Label *2, Manual feed slot, MP tray, Paper tray #3 *2	67	(Simple Ink cartridge model only) Number of insertion for currently loaded cartridge, number of ink flow failure at cartridge replacement *1
36	(Ink tank model/Simple Ink cartridge model only) Recording paper jam count during paper pull-in, feeding, and carriage: (Error codes) Paper pull-in: 1800, 8200, 8B00; feeding: 1300, 1500, 8400; carriage: 3100, 3800, 3C00	68	(Simple Ink cartridge model only) Ink remaining of Sub-tank at replacement *1, ink flow state (1:ON 0: OFF) *1
	(Ink tank model/Simple Ink cartridge model only) Number of errors: ME18/ME82/ME83:ME15/ME84/ME87/ME88:ME31/ME35/ME38/ME3B/ME3C	69	(Simple Ink cartridge model only) Ink remaining of Cartridge IC at replacement *1, ink flow failure state (1:ON 0: OFF) *1

\*1: Not required for servicing.

\*2: Not used.

\*3: For details about the purge type, refer to Maintenance mode 76 (refer to "1.3.28 Purge Operation (Maintenance mode 76)").

\*4: For details about sensors, refer to Maintenance mode 32 (refer to "1.3.9 Sensor Operational Check (Maintenance mode 32)").

\*5: 0: No ink cartridge loaded

1: Refer to Type 1 in the table shown in \*8.

2: Refer to Type 2 in the table shown in \*8.

- \*: Unidentifiable ink cartridge
- ? : Ink cartridge with the incorrect amount of ink remaining
- \*6: Excluding the resets triggered by the following.
  - Maintenance modes 01 and 91
  - Maintenance mode 80 (Resetting the purge and flushing counts)

\*7: Noted in the following order: previous purge (black, color), purge prior to that (black, color), and purge prior to that (black, color). Each 4-digit value is noted in hexadecimal notation. Convert each to a 16-digit binary value and consult the table below ("How to read the purge logs") for its meaning. Each 16-digit value consists of the following components:

< Regular Ink cartridge model >

- First 2 digits: Purge execution trigger
- Next 6 digits: Purge execution type
- Next 4 digits: Cause of purge execution
- Last 4 digits: Not required for servicing

< Ink tank model / Simple Ink cartridge model >

- First 2 digits: Not used
- Next 6 digits: Purge execution type
- Next 4 digits: Cause of purge execution
- Next 4 digits: Purge execution trigger

< How to read the purge logs >

Purge execution trigger (Regular Ink cartridge model)		Purge execution type		Cause of purge execution		Purge execution trigger (Ink tank model / Simple Ink cartridge model)	
00	User-execution	000000	No purge execution	0000	None (user-execution)	0000	None applies
01	Before printing	000001	NP	0001	Initial installation	0001	Selection from test print
10	Automatically executed	000010	RP	0010	Periodic purge	0010	Selection from User mode
		000011	PP	0011	Ink replacement		
		000100	CP	0100	12th ink replacement	0011	Selection from Maintenance mode of machine
		000101	uIP	0101	Purge to eliminate paper dust		
		000110	MPP				
		000111	TPP (Regular Ink cartridge model) QAP ((Ink tank model/ Simple Ink cartridge model)	0110	30th power ON/OFF	0100	Selection from Maintenance tab on PC
				0111	Machine error/power off		
				1000	M-misdirection purge		
				1001	Purge before printing after dry	0101	Before printing
		001000	Suction without ink	1010	Low PV user purge	0110	Periodic purge, HBP purge
		001001	SPP	1011	20th purge for ME5X7X		
		001010	MNT Initialization	1100	No PV user purge before printing		
		001011	WIPE				
		001100	REM				
		001101	Suction without ink				
		001110	Periodic flush				
		001111	MPP2				
		010000	QMPP				
		010001	Flush to retain moisture				
		010010	HPP				
		010011	Reset exhaustion				
		010100	eIP				
		010101	RP3				
		010110	ARP				
		010111	QPP				
		011000	Continuous exhaustion				
		011001	CPP				
		011010	UncapCap				
		011011	Wait				
		011100	SP				
		011101	RP2				
		011110	SRP				
		100000	REP				
		100100	Air cleaning				
		100101	Black sedimentation suction purge				
		100110	LRP				

\*8: Refer to the table below

	MFC-J6535DW/J6935DW, Models for China	Other
Type 1	N/A	Supply super high yield cartridges
Type 2	All cartridges	Bundled* or supply high yield cartridges

\* MFC-J6545DW XL has two bundled cartridges. The one with larger capacity is Type 1, and the other with smaller capacity is Type 2.

### 1.3.30 Adjustment of Touch Panel (Maintenance mode 78)

#### < Function >

This function adjusts the detection area on the touch panel.

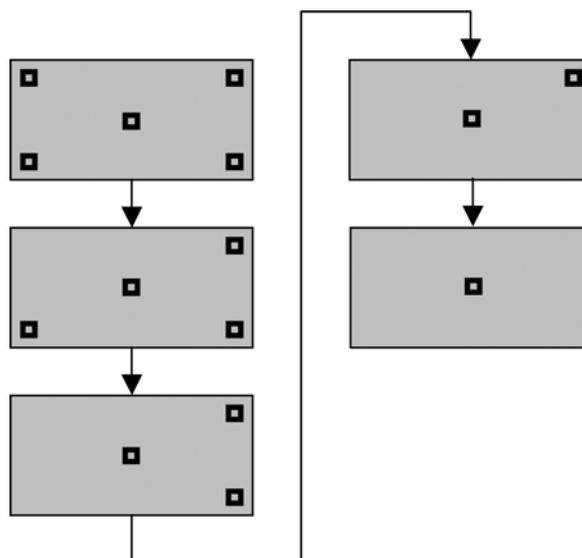
**Note:** The adjustment procedure requires a stylus with a thin tip.

A commercially available stylus designed for electronic dictionaries or personal digital assistance (PDA) can be used. If you do not have it on hand, order the "TOUCH PEN" from the Brother's parts list.

#### < Operating Procedure >

- (1) Press the **7** and **8** keys in this order in the initial stage of the maintenance mode. The adjustment screens shown below appear on the LCD.
- (2) Touch the symbols on the touch panel with a stylus in the order of top-left, bottom-left, bottom-right, top-right, and the center. After a symbol touched disappears, touch the next one.  
After the fifth symbol (center) is pressed, the "OK" appears if the adjustment is normally completed. After approx. three seconds, the machine returns to the initial stage of the maintenance mode.

- Notes:**
- Do not use tools other than a pen designed for touch panels. Especially, never use a pointed one, e.g., a screwdriver. Using such a tool damages the touch panel.
  - Do not touch the touch panel with fingers. The contact area of a finger is too large to adjust the touch panel precisely.
  - If no keys are pressed for one minute in the above procedure or you press the **X** key, the machine stops the procedure and returns to the initial stage of the maintenance mode.
  - If the touch panel is improperly pressed or a wrong point is pressed, the "ERROR" appears on the LCD. After approx. three seconds, the screen returns to the state in step (2). Start pressing the five symbols again from the first one (top-left).
  - If the "ERROR" appears on the LCD, check the panel flat cable for a contact failure, breakage, or short-circuit. If the "ERROR" continues to be displayed without any of such problems, replace the touch panel.



### 1.3.31 Display of the Equipment's Log (Maintenance mode 80)

#### < Function >

This function displays the log information on the LCD.

#### < Operating Procedure >

- (1) Press the **8** and **0** keys in this order in the initial stage of the maintenance mode.  
The "ERROR CODE" appears on the LCD.
- (2) Press the **▼** key to call up the following log information items, one by one.  
To return to the previous item, press the **▲** key.  
  
Press the **▶** key while the item is displayed to go to the supplemental information in the item.  
  
Press the **◀** key while the item is displayed to return to the information of the upper level.
- (3) Press the **X** key to return the machine to the initial stage of the maintenance mode.

Log information item

	LCD	[▶]	[▶]	[▶]	Description
[▼]	ERROR CODE	MACERR_01:8C00	DATE:1610071324	TEMP:24	Machine error history (Error code, Date of occurrence, Machine temperature degree-C at the time of occurrence) (Last 10 errors)
		⋮	⋮	⋮	
		MACERR_10:8C00	DATE:1609201234	TEMP:24	Communications error history (Error code, Date of occurrence) (Last 3 errors)
		COMERR1:BF010000	DATE:1609012345	---	
⋮	⋮	⋮			
		COMERR3:BF010000	DATE:1609012343	---	
[▼]	DEVICE INFO	8CH-121-001	---	---	Model code
		COUNTRY:3001	---	---	Country code
		SWITCH:82	---	---	Checksum of WSW, PSW, USW, and FSW *1
		U1607211213 0A	---	---	Main firmware version and production date & time
		3415 5314	---	---	Main firmware checksum/ROM1 checksum *1
		B1606101054:34CD	---	---	Boot firmware version and checksum *1
		S/N	654321234567890	---	Serial number *2
		ALR777FFFFFFF8	---	---	Head property information
		HEAD_CALIB:1-1-1	---	---	Head calibration data - Calibration ratio - Presence of variation calibration data (1:Exist, 0: Not exist)
		CISF:00 CISA:00	---	---	CIS type, CISF: First side CIS, CISA: Second side CIS
		BACKUP VER:a	---	---	Machine information backup file version *1
		SETUP:20160101	---	---	Operation start date of the machine (Current date when the user operates the machine first after unpacking)
[▼]	DOT COUNT	DK:0000000000001	---	---	Ink drop count after replacement of ink cartridge or refill of ink (Black)
		DY:0000000000001	---	---	Ink drop count after replacement of ink cartridge or refill of ink (Yellow)
		DC:0000000000001	---	---	Ink drop count after replacement of ink cartridge or refill of ink (Cyan)
		DM:0000000000001	---	---	Ink drop count after replacement of ink cartridge or refill of ink (Magenta)
		SEN K:0000000001	---	---	Ink drop count after detection of "Ink Low" (Black)
		SEN Y:0000000001	---	---	Ink drop count after detection of "Ink Low" (Yellow)
		SEN C:0000000001	---	---	Ink drop count after detection of "Ink Low" (Cyan)
		SEN M:0000000001	---	---	Ink drop count after detection of "Ink Low" (Magenta)

	LCD	[▶]	[▶]	[▶]	Description	
[▼]	DOT COUNT	PLA K:0000000001	---	---	Ink drop count for droplets jetted out onto the platen (Black) *1	
		PLA Y:0000000001	---	---	Ink drop count for droplets jetted out onto the platen (Yellow) *1	
		PLA C:0000000001	---	---	Ink drop count for droplets jetted out onto the platen (Cyan) *1	
		PLA M:0000000001	---	---	Ink drop count for droplets jetted out onto the platen (Magenta) *1	
		LK:00000000000001	---	---	Total ink drop count from a new head (Black)	
		LY:00000000000001	---	---	Total ink drop count from a new head (Yellow)	
		LC:00000000000001	---	---	Total ink drop count from a new head (Cyan)	
		LM:00000000000001	---	---	Total ink drop count from a new head (Magenta)	
		CLN K:0000000001	---	---	Ink drop count by cleaning after replacement of ink cartridge or refill of ink (Black)	
		CLN Y:0000000001	---	---	Ink drop count by cleaning after replacement of ink cartridge or refill of ink (Yellow)	
		CLN C:0000000001	---	---	Ink drop count by cleaning after replacement of ink cartridge or refill of ink (Cyan)	
		CLN M:0000000001	---	---	Ink drop count by cleaning after replacement of ink cartridge or refill of ink (Magenta)	
		INV K:0000000001	---	---	Ink drop count at ink remaining failure (Black)	
		INV Y:0000000001	---	---	Ink drop count at ink remaining failure (Yellow)	
		INV C:0000000001	---	---	Ink drop count at ink remaining failure (Cyan)	
		INV M:0000000001	---	---	Ink drop count at ink remaining failure (Magenta)	
		INK CHG DOT	K:0000000001	---	---	Ink drop count at the previous replacement of ink cartridge or refill of ink (Black)
			Y:0000000001	---	---	Ink drop count at the previous replacement of ink cartridge or refill of ink (Yellow)
			C:0000000001	---	---	Ink drop count at the previous replacement of ink cartridge or refill of ink (Cyan)
			M:0000000001	---	---	Ink drop count at the previous replacement of ink cartridge or refill of ink (Magenta)
		INK CHG SEN DOT	K:0000000001	---	---	Ink drop count after detection of "Ink Low" at the previous replacement of ink cartridge or refill of ink (Black)
			Y:0000000001	---	---	Ink drop count after detection of "Ink Low" at the previous replacement of ink cartridge or refill of ink (Yellow)
			C:0000000001	---	---	Ink drop count after detection of "Ink Low" at the previous replacement of ink cartridge or refill of ink (Cyan)
			M:0000000001	---	---	Ink drop count after detection of "Ink Low" at the previous replacement of ink cartridge or refill of ink (Magenta)

	LCD	[▶]	[▶]	[▶]	Description
[▼]	DOT COUNT	INK CHG CLEAN	K:0000000001	---	Ink drop count by cleaning at the previous replacement of ink cartridge or refill of ink (Black)
			Y:0000000001	---	Ink drop count by cleaning at the previous replacement of ink cartridge or refill of ink (Yellow)
			C:0000000001	---	Ink drop count by cleaning at the previous replacement of ink cartridge or refill of ink (Cyan)
			M:0000000001	---	Ink drop count by cleaning at the previous replacement of ink cartridge or refill of ink (Magenta)
[▼]	INK CHG COUNT	INKCH K:001	---	---	Ink cartridge change count (Type 1 *9) (Black)
		INKCH Y:001	---	---	Ink cartridge change count (Type 1 *9) (Yellow)
		INKCH C:001	---	---	Ink cartridge change count (Type 1 *9) (Cyan)
		INKCH M:001	---	---	Ink cartridge change count (Type 1 *9) (Magenta)
		INKCH2 K:001	---	---	Ink cartridge change count (Type 2 *9) (Black)
		INKCH2 Y:001	---	---	Ink cartridge change count (Type 2 *9) (Yellow)
		INKCH2 C:001	---	---	Ink cartridge change count (Type 2 *9) (Cyan)
		INKCH2 M:001	---	---	Ink cartridge change count (Type 2 *9) (Magenta)
		CHGMISS K:001	---	---	Ink cartridge detection failure count (Black)
		CHGMISS Y:001	---	---	Ink cartridge detection failure count (Yellow)
		CHGMISS C:001	---	---	Ink cartridge detection failure count (Cyan)
CHGMISS M:001	---	---	Ink cartridge detection failure count (Magenta)		
[▼]	PAGE COUNT	PAGE:16777215	---	---	Total printed page count
		PG MN:00000001	---	---	Total monochrome printed page count
		PG CL:00000001	---	---	Total color printed page count
		A3:000002	---	---	Total A3 paper printed page count
		A3 MN:000001	---	---	A3 paper monochrome printed page count
		A3 CL:000001	---	---	A3 paper color printed page count
		PC:000001	---	---	Total PC printed page count
		PC MN:000001	---	---	Monochrome PC printed page count
		PC CL:000001	---	---	Color PC printed page count
		COPY:000002	---	---	Total Copy printed page count
		COPY MN:000001	---	---	Monochrome copy printed page count
		COPY CL:000001	---	---	Color copy printed page count
		FAX:000002	---	---	Total Fax printed page count
		FAX MN:000001	---	---	Monochrome Fax printed page count
		FAX CL:000001	---	---	Color Fax printed page count
LIST:000002	---	---	Total list printed page count		

	LCD	[▶]	[▶]	[▶]	Description
[▼]	PAGE COUNT	LIST MN:000001	---	---	Monochrome list printed page count
		LIST CL:000001	---	---	Color list printed page count
		MEDIA:000002	---	---	Total USB flash memory printed page count
		MEDIA MN:000001	---	---	Monochrome USB flash memory printed page count
		MEDIA CL:000001	---	---	Color USB flash memory printed page count
		WCDL:000002	---	---	Total Web Connect printed page count
		WCDL MN:000001	---	---	Monochrome Web Connect printed page count
		WCDL CL:000001	---	---	Color Web Connect printed page count
		AIR:000002	---	---	Total AirPrint printed page count
		AIR MN:000001	---	---	Monochrome AirPrint printed page count
		AIR CL:000001	---	---	Color AirPrint printed page count
		IPRINT:000002	---	---	Total iPrint printed page count
		IPRINT MN:000001	---	---	Monochrome iPrint printed page count
		IPRINT CL:000001	---	---	Color iPrint printed page count
		GCP:000002	---	---	Total Google Cloud Print printed page count
		GCP MN:000001	---	---	Monochrome Google Cloud Print printed page count
		GCP CL:000001	---	---	Color Google Cloud Print printed page count
		QLTY_CHK:000001	---	---	Test pattern printed page count
		ALIGNMENT:000001	---	---	User line alignment printed page count
		FEED_ADJ:000001	---	---	User feeding amount adjustment printed page count
OTHER:000002	---	---	Total other printed page count		
OTHER MN:000001	---	---	Monochrome other printed page count		
OTHER CL:000001	---	---	Color other printed page count		
[▼]	DX PAGE COUNT	TTL:16777215	---	---	Total printed page count in duplex printing
		MN:00000001	---	---	Monochrome printed page count in duplex printing
		CL:00000001	---	---	Color printed page count in duplex printing
		PC:000001	---	---	Total PC printed page count in duplex printing
		PC MN:000001	---	---	Monochrome PC printed page count in duplex printing
		PC CL:000001	---	---	Color PC printed page count in duplex printing
		COPY:000001	---	---	Total copy printed page count in duplex printing
		COPY MN:000001	---	---	Monochrome copy printed page count in duplex printing
		COPY CL:000001	---	---	Color copy printed page count in duplex printing
		OTHER:000001	---	---	Total other printed page count in duplex printing
		OTHER MN:000001	---	---	Monochrome other printed page count in duplex printing
OTHER CL:000001	---	---	Color other printed page count in duplex printing		
[▼]	SIZE_TYPE PAGE	A4LTR_P:000000	---	---	A4/LTR size plain paper printed page count
		A4LTR_I:000000	---	---	A4/LTR size inkjet paper printed page count
		A4LTR_G:000000	---	---	A4/LTR size Glossy paper printed page count
		A3LDG_P:000001	---	---	A3/LGR size plain paper printed page count
		A3LDG_I:000001	---	---	A3/LGR size inkjet paper printed page count
		A3LDG_G:000001	---	---	A3/LGR size Glossy paper printed page count
		4*6_P:000001	---	---	4X6 size plain paper printed page count
		4*6_I:000001	---	---	4X6 size inkjet paper printed page count

	LCD	[▶]	[▶]	[▶]	Description
[▼]	SIZE_TYPE PAGE	4*6_G:000001	---	---	4X6 size Glossy paper printed page count
		HGK_P:000001	---	---	Hagaki size plain paper printed page count *5
		HGK_I:000001	---	---	Hagaki size inkjet paper printed page count *5
		HGK_G:000001	---	---	Hagaki size Glossy paper printed page count *5
		LBAN_P:000001	---	---	Photo L size plain paper printed page count
		LBAN_I:000001	---	---	Photo L size inkjet paper printed page count
		LBAN_G:000001	---	---	Photo L size Glossy paper printed page count
		EVP:000001	---	---	Envelopes printed page count
[▼]	SIZE_TYPE DXPAGE	A4LT_P DX:000000	---	---	A4/LTR size plain paper printed page count in duplex printing
		A3LG_P DX:000000	---	---	A3/LGR size plain paper printed page count in duplex printing
		A5_P DX:000000	---	---	A5/JISB6 size plain paper printed page count in duplex printing
		HGK_P DX:000001	---	---	Hagaki size plain paper printed page count in duplex printing *5
		HGK_I DX:000001	---	---	Hagaki size inkjet paper printed page count in duplex printing *5
		HGK_G DX:000001	---	---	Hagaki size Glossy paper printed page count in duplex printing *5
[▼]	DARK PAGE	K:000001	---	---	High-level ink usage page count (count of pages that exceed a specified level of ink usage) (Black)
		Y:000001	---	---	High-level ink usage page count (count of pages that exceed a specified level of ink usage) (Yellow)
		C:000001	---	---	High-level ink usage page count (count of pages that exceed a specified level of ink usage) (Cyan)
		M:000001	---	---	High-level ink usage page count (count of pages that exceed a specified level of ink usage) (Magenta)
[▼]	CURINK PAGE	BK:000001	---	---	Printed page count of the present cartridge or refilled tank (Black)
		YL:000003	---	---	Printed page count of the present cartridge or refilled tank (Yellow)
		CY:000003	---	---	Printed page count of the present cartridge or refilled tank (Cyan)
		MZ:000003	---	---	Printed page count of the present cartridge or refilled tank (Magenta)
[▼]	PREINK PAGE	BK:000003	---	---	Printed page count of the previous cartridge or refilled tank (Black)
		YL:000003	---	---	Printed page count of the previous cartridge or refilled tank (Yellow)
		CY:000003	---	---	Printed page count of the previous cartridge or refilled tank (Cyan)
		MZ:000003	---	---	Printed page count of the previous cartridge or refilled tank (Magenta)
[▼]	TRAY PAGE	TRAY1:000002	---	---	Paper tray #1 printed page count
		TRAY2:000002	---	---	Paper tray #2 printed page count
		TRAY3:000002	---	---	Paper tray #3 printed page count
		MFS:000001	---	---	Manual feed slot printed page count
		MPTRAY:000001	---	---	MP tray printed page count

	LCD	[▶]	[▶]	[▶]	Description
[▼]	TRAY JAM	TTL:000000	---	---	Recording paper total jam count
		DX BACK:000000	---	---	Recording paper jam count: when printing the second side in duplex printing
		TRAY1:000000	---	---	Recording paper jam count: Paper tray #1
		TRAY2:000000	---	---	Recording paper jam count: Paper tray #2
		TRAY3:000100	---	---	Recording paper jam count: Paper tray #3
		MFS:000010	---	---	Recording paper jam count: Manual feed slot
		MPTRAY:000010	---	---	Recording paper jam count: MP tray
[▼]	MOTION JAM *7*8	INS:000000	---	---	Recording paper jam count during paper pull-in: Error code (1800, 8200, 8B00)
		FEED:000000	---	---	Recording paper jam count during feeding: Error code (1300, 1500, 8400)
		CR:000000	---	---	Recording paper jam count during carriage: Error code (3100, 3800, 3C00)
[▼]	ROLLER CLEANING	TRAY1:001	---	---	Paper tray #1 roller cleaning count
		TRAY2:001	---	---	Paper tray #2 roller cleaning count
		TRAY3:002	---	---	Paper tray #3 roller cleaning count
		MPTRAY:001	---	---	MP tray roller cleaning count
[▼]	PICKMISS	TRAY1:000000	---	---	Paper tray #1 paper pull-in failure count
		TRAY2:000000	---	---	Paper tray #2 paper pull-in failure count
		TRAY3:000001	---	---	Paper tray #3 paper pull-in failure count
		MFS:000001	---	---	Manual feed slot paper pull-in failure count
		MPTRAY:000001	---	---	MP tray paper pull-in failure count
[▼]	PURGE COUNT	PURGE:00001	---	---	Purge count *3
		SEN PURGE:00001	---	---	Sensor purge count
		eIP_BK:001/001	---	---	Engine setup purge (Black) count (Auto/Manual)
		uIP_BK:001/001	---	---	Initial purge (Black) count (Auto/Manual)
		RP_BK:001/001	---	---	Periodical reset purge (Black) count (Auto/Manual)
		SRP_BK:001/001	---	---	Small reset purge (Black) count (Auto/Manual)
		SP_BK:001/001	---	---	Periodic suction purge (Black) count (Auto/Manual)
		RP2_BK:001/001	---	---	Periodic expelling purge (Black) count (Auto/Manual)
		CP_BK:001/001	---	---	Ink replacement purge (Black) count (Auto/Manual)
		NP_BK:001/001	---	---	Normal purge (Black) count (Auto/Manual)
		RP3_BK:001/001	---	---	User reset purge (Black) count (Auto/Manual)
		PP_BK:001/001	---	---	Power purge (Black) count (Auto/Manual)
		QPP_BK:001/001	---	---	Power reset purge (Black) count (Auto/Manual)
		MPP_BK:001/001	---	---	More powerful reset purge (Black) count (Auto/Manual)
		REP_BK:001/001	---	---	Ink replacement purge (Black) count (Auto/Manual)
		SPP_BK:000/000	---	---	Special purge (Black) count (Auto/Manual) *7
		MPP2_BK:000/000	---	---	More powerful reset purge 2 (Black) count (Auto/Manual)
		QMPP_BK:000/000	---	---	Super strong recovery purge (Black) count (Auto/Manual)
		BKEP_BK:000/000	---	---	Thickened ink purge (Black) count (Auto/Manual)
		LRP_BK:000/000	---	---	Periodic reset purge for low PV (Black) count (Auto/Manual) *6
SEP_BK:000/000	---	---	Sediment ejection purge (Black) count (Auto/Manual) *7*8		

	LCD	[▶]	[▶]	[▶]	Description		
[▼]	PURGE COUNT	REM_BK:000/000	---	---	Initial ink purge (Black) count (Auto/Manual) *7		
		HPP_BK:000/000	---	---	User super-high-strength recovery reset purge (Black) count (Auto/Manual) *7		
		QAP_BK:000/000	---	---	QA additional purge (Black) count (Auto/Manual) *7*8		
		ARP_BK:000/000	---	---	Small purge after initial ink replacement (Black) count (Auto/Manual) *7*8		
		STR_BK:000/000	---	---	Sub-tank removal purge (Black) count (Auto/Manual) *8		
		QSR_BK:000/000	---	---	QA inspection Sub-tank removal purge (Black) count (Auto/Manual) *8		
		eIP_CL:001/001	---	---	Engine setup purge (Color) count (Auto/Manual)		
		uIP_CL:001/001	---	---	Initial purge (Color) count (Auto/Manual)		
		RP_CL:001/001	---	---	Periodical reset purge (Color) count (Auto/Manual)		
		SRP_CL:001/001	---	---	Small reset purge (Color) count (Auto/Manual)		
		SP_CL:001/001	---	---	Periodic suction purge (Color) count (Auto/Manual)		
		RP2_CL:001/001	---	---	Periodic expelling purge (Color) count (Auto/Manual)		
		CP_CL:001/001	---	---	Ink replacement purge (Color) count (Auto/Manual)		
		NP_CL:001/001	---	---	Normal purge (Color) count (Auto/Manual)		
		RP3_CL:001/001	---	---	User reset purge (Color) count (Auto/Manual)		
		PP_CL:001/001	---	---	Power purge (Color) count (Auto/Manual)		
		QPP_CL:001/001	---	---	Power reset purge (Color) count (Auto/Manual)		
		MPP_CL:001/001	---	---	More powerful reset purge (Color) count (Auto/Manual)		
		REP_CL:001/001	---	---	Ink replacement purge (Color) count (Auto/Manual)		
		SPP_CL:000/000	---	---	Special purge (Color) count (Auto/Manual) *7		
		MPP2_CL:000/000	---	---	More powerful reset purge 2 (Color) count (Auto/Manual)		
		QMPP_CL:000/000	---	---	Super strong recovery purge (Color) count (Auto/Manual)		
		BKEP_CL:000/000	---	---	Thickened ink purge (Color) count (Auto/Manual)		
		LRP_CL:000/000	---	---	Periodic reset purge for low PV (Color) count (Auto/Manual) *6		
		SEP_CL:000/000	---	---	Sediment ejection purge (Color) count (Auto/Manual) *7*8		
		REM_CL:000/000	---	---	Initial ink purge (Color) count (Auto/Manual) *7		
		HPP_CL:000/000	---	---	User super-high-strength recovery reset purge (Color) count (Auto/Manual) *7		
		QAP_CL:000/000	---	---	Additional QA purge (Color) count (Auto/Manual) *7*8		
		ARP_CL:000/000	---	---	Small purge after initial ink replacement (Color) count (Auto/Manual) *7*8		
		STR_CL:000/000	---	---	Sub-tank removal purge (Color) count (Auto/Manual) *8		
		QSR_CL:000/000	---	---	QA inspection sub-tank removal purge (Color) count (Auto/Manual) *8		
		[▼]	PURGE COUNT_OTHER	t_FLS:00001	---	---	Periodic flushing execution count
				hFL:00000	---	---	After-printing moisturizing flushing count
RVP:00000	---			---	Re-dispersion purge		
[▼]	FLUSHING	FLSBK:0000000001	---	---	Flushing count (Black) *3		
		FLSCL:0000000001	---	---	Flushing count (Color) *3		
		FLUSHLOG:001	---	---	Flushing count error detection count		

	LCD	[▶]	[▶]	[▶]	Description
[▼]	PURGE HIST	BK1:0000	---	---	Type of purge performed last time (Black)
		CL1:0000	---	---	Type of purge performed last time (Color)
		BK2:0000	---	---	Type of purge performed before the last purge (Black)
		CL2:0000	---	---	Type of purge performed before the last purge (Color)
		BK3:0000	---	---	Type of purge performed before the last two purges (Black)
		CL3:0000	---	---	Type of purge performed before the last two purges (Color)
[▼]	SCAN COUNT	FB:0000000006	---	---	FB scanning count
		ADF:0000000006	---	---	ADF scanning count
		ADFDX:0000000021	---	---	ADF duplex scanning count
		FAX:0000000021	---	---	FAX scanning count
		SCAN:0000000021	---	---	Scanner count
		JAM SX:0000000006	---	---	ADF document jam count (Simplex)
		JAM DX:0000000000	---	---	ADF document jam count (Duplex)
[▼]	HP ERR	HP_ERR_CODE:XX	---	---	CIS home position error code *1
		HP_LOG1:XXXXXXXX	---	---	CIS home position detection log data (0 to 3 Byte) *1
		HP_LOG2:XXXXXXXX	---	---	CIS home position detection log data (4 to 7 Byte) *1
		HP_LOG3:XXXXXXXX	---	---	CIS home position detection log data (8 to 11 Byte) *1
		HP_LOG4:XXXXXXXX	---	---	CIS home position detection log data (12 to 15 Byte) *1
[▼]	INK LOW	BK:001	---	---	"Ink Low" count (Black)
		YL:001	---	---	"Ink Low" count (Yellow)
		CY:001	---	---	"Ink Low" count (Cyan)
		MZ:001	---	---	"Ink Low" count (Magenta)
[▼]	CVRGACC	BK:1.06%	---	---	Average coverage of all cartridges or all refilled tanks (Black)
		YL:1.06%	---	---	Average coverage of all cartridges or all refilled tanks (Yellow)
		CY:1.06%	---	---	Average coverage of all cartridges or all refilled tanks (Cyan)
		MZ1.06%	---	---	Average coverage of all cartridges or all refilled tanks (Magenta)
[▼]	CVRGUSI_CUR	BK:1.06%	---	---	Average coverage of the present cartridge or refilled tank (Black)
		YL:1.06%	---	---	Average coverage of the present cartridge or refilled tank (Yellow)
		CY:1.06%	---	---	Average coverage of the present cartridge or refilled tank (Cyan)
		MZ1.06%	---	---	Average coverage of the present cartridge or refilled tank (Magenta)
[▼]	CVRGUSI_PRE	BK:1.06%	---	---	Average coverage of the previous cartridge or refilled tank (Black)
		YL:1.06%	---	---	Average coverage of the previous cartridge or refilled tank (Yellow)
		CY:1.06%	---	---	Average coverage of the previous cartridge or refilled tank (Cyan)
		MZ1.06%	---	---	Average coverage of the previous cartridge or refilled tank (Magenta)

	LCD	[▶]	[▶]	[▶]	Description
[▼]	OTHER COUNT	JBCAN:000000	---	---	Job cancel count
		PP REMOVE:001	---	---	Paper piece removal count
		LSTMONTH:000000	---	---	Total printed page count in the previous month
		WIPE_CL:00001	---	---	Wipe count
		POWER:000000353	---	---	Total power-ON time
		PWCNT:00000353	---	---	Power-ON count
		PWROFF CAP:255	---	---	Capacitor failure detection count
		RESET COUNT:001	POWER: 000000353	---	Reset count <sup>*4</sup> , Total Power-On time at the time of last reset
		ALIGNMENT1:001	---	---	User line alignment start count
		ALIGNMENT2:001	---	---	User line alignment completion count
		FEEDADJ1:001	---	---	User feeding amount adjustment start count
FEEDADJ2:001	---	---	User feeding amount adjustment completion count		
[▼]	CART PRODUCT	BK:170127	---	---	Manufacture date of ink cartridge (Black)
		YL:170127	---	---	Manufacture date of ink cartridge (Yellow)
		CY:170127	---	---	Manufacture date of ink cartridge (Cyan)
		MZ:170127	---	---	Manufacture date of ink cartridge (Magenta)
[▼]	INKREFILL _LOG <sup>*7</sup>	FULL1_BK:000	---	---	Number of times remaining ink was 70% to 100% when remaining ink was reset (Black)
		FULL1_YL:000	---	---	Number of times remaining ink was 70% to 100% when remaining ink was reset (Yellow)
		FULL1_CY:000	---	---	Number of times remaining ink was 70% to 100% when remaining ink was reset (Cyan)
		FULL1_MZ:000	---	---	Number of times remaining ink was 70% to 100% when remaining ink was reset (Magenta)
		FULL2_BK:000	---	---	Number of times remaining ink was 40% to 69% when remaining ink was reset (Black)
		FULL2_YL:000	---	---	Number of times remaining ink was 40% to 69% when remaining ink was reset (Yellow)
		FULL2_CY:000	---	---	Number of times remaining ink was 40% to 69% when remaining ink was reset (Cyan)
		FULL2_MZ:000	---	---	Number of times remaining ink was 40% to 69% when remaining ink was reset (Magenta)
		FULL3_BK:000	---	---	Number of times remaining ink was 1% to 39% when remaining ink was reset (Black)
		FULL3_YL:000	---	---	Number of times remaining ink was 1% to 39% when remaining ink was reset (Yellow)
		FULL3_CY:000	---	---	Number of times remaining ink was 1% to 39% when remaining ink was reset (Cyan)
		FULL3_MZ:000	---	---	Number of times remaining ink was 1% to 39% when remaining ink was reset (Magenta)
		LOW_BK:000	---	---	Number of times ink level was low when remaining ink was reset (Black)
LOW_YL:000	---	---	Number of times ink level was low when remaining ink was reset (Yellow)		

	LCD	[▶]	[▶]	[▶]	Description
[▼]	INKREFILL_ LOG *7	LOW_CY:000	---	---	Number of times ink level was low when remaining ink was reset (Cyan)
		LOW_MZ:000	---	---	Number of times ink level was low when remaining ink was reset (Magenta)
		EMP_BK:000	---	---	Number of times ink was empty when remaining ink was reset (Black)
		EMP_YL:000	---	---	Number of times ink was empty when remaining ink was reset (Yellow)
		EMP_CY:000	---	---	Number of times ink was empty when remaining ink was reset (Cyan)
		EMP_MZ:000	---	---	Number of times ink was empty when remaining ink was reset (Magenta)
		ALL_YES:000	---	---	Number of times user entered "Yes" for all colors at ink refill confirmation and again for ink refill re-confirmation
		4COLORS_YES:000	---	---	Number of times user entered "Yes" for all colors at ink refill confirmation
		ANY_NO:000	---	---	Number of times user entered "No" for at least one color at ink refill confirmation
[▼]	INKCVR_ OPEN *7	SHORT:00000	---	---	Number of ink cover open/close (less than 10 seconds)
		LONG:00000	---	---	Number of ink cover open/close (10 seconds or more)
[▼]	INKREMAIN_ ASK *7	ON:000	---	---	Number of times display conditions of remaining ink confirmation were satisfied
		OFF1:000	---	---	Number of times that the print jobs was 0 before the remaining ink confirmation was cleared
		OFF2:000	---	---	Number of times that the print jobs was 1 before the remaining ink confirmation was cleared
		OFF3:000	---	---	Number of times that the print jobs was 2 to 4 before the remaining ink confirmation was cleared
		OFF4:000	---	---	Number of times that the print jobs was 5 to 29 before the remaining ink confirmation was cleared
		OFF5:000	---	---	Number of times that the print jobs was 30 or more before the remaining ink confirmation was cleared
[▼]	COVERAGE_ RANGE *7*8	LOW_BK:-	---	---	Printed page count of low coverage (0-1%) (Black)
		LOW_YL:-	---	---	Printed page count of low coverage (0-1%) (Yellow)
		LOW_CY:-	---	---	Printed page count of low coverage (0-1%) (Cyan)
		LOW_MZ:-	---	---	Printed page count of low coverage (0-1%) (Magenta)
		MID_BK:-	---	---	Printed page count of middle coverage (1-10%) (Black)
		MID_YL:-	---	---	Printed page count of middle coverage (1-10%) (Yellow)
		MID_CY:-	---	---	Printed page count of middle coverage (1-10%) (Cyan)
		MID_MZ:-	---	---	Printed page count of middle coverage (1-10%) (Magenta)
		HIGH_BK:-	---	---	Printed page count of high coverage (more than 10%) (Black)
		HIGH_YL:-	---	---	Printed page count of high coverage (more than 10%) (Yellow)

	LCD	[▶]	[▶]	[▶]	Description
[▼]	COVERAGE RANGE <sup>*7*8</sup>	HIGH_CY:-	---	---	Printed page count of high coverage (more than 10%) (Cyan)
		HIGH_MZ:-	---	---	Printed page count of high coverage (more than 10%) (Magenta)
[▼]	FUNCTION_INFO <sup>*1</sup>	FUNC1:0000000000	---	---	Solution SW information (No. 1 to 40)
		FUNC2:0000000000	---	---	Solution SW information (No. 41 to 80)
[▼]	SIMPLE_CARTRIDGE <sup>*8</sup>	CUR_CART_SET_CNT	K:000	---	Number of insertion for currently loaded cartridge (Black)
			Y:000	---	Number of insertion for currently loaded cartridge (Yellow)
			C:000	---	Number of insertion for currently loaded cartridge (Cyan)
			M:000	---	Number of insertion for currently loaded cartridge (Magenta)
		INFLOW_NG_CNT <sup>*1</sup>	K:000	---	Number of ink flow failure at cartridge replacement (Black)
			Y:000	---	Number of ink flow failure at cartridge replacement (Yellow)
			C:000	---	Number of ink flow failure at cartridge replacement (Cyan)
			M:000	---	Number of ink flow failure at cartridge replacement (Magenta)
		INKCHG_SBT_REM <sup>*1</sup>	K:0000000000	---	Ink remaining of Sub-tank at replacement (Black)
			Y:0000000000	---	Ink remaining of Sub-tank at replacement (Yellow)
			C:0000000000	---	Ink remaining of Sub-tank at replacement (Cyan)
			M:0000000000	---	Ink remaining of Sub-tank at replacement (Magenta)
		INKCHG_CTG_REM <sup>*1</sup>	K:000000000000	---	Ink remaining of Cartridge IC at replacement (Black)
			Y:000000000000	---	Ink remaining of Cartridge IC at replacement (Yellow)
			C:000000000000	---	Ink remaining of Cartridge IC at replacement (Cyan)
			M:000000000000	---	Ink remaining of Cartridge IC at replacement (Magenta)
		INFLOW_CHECK <sup>*1</sup>	K:0	---	Ink flow state (Black) (1: ON 0: OFF)
			Y:0	---	Ink flow state (Yellow) (1: ON 0: OFF)
			C:0	---	Ink flow state (Cyan) (1: ON 0: OFF)
			M:0	---	Ink flow state (Magenta) (1: ON 0: OFF)
		INFLOW_NG <sup>*1</sup>	K:0	---	Ink flow failure state (Black) (1: ON 0: OFF)
			Y:0	---	Ink flow failure state (Yellow) (1: ON 0: OFF)
			C:0	---	Ink flow failure state (Cyan) (1:ON 0:OFF)
			M:0	---	Ink flow failure state (Magenta) (1:ON 0:OFF)

\*1: Not required for servicing.

\*2: The serial number of the machine can be changed with the following procedure.

- 1) While the serial number is displayed, press the **9**, **4**, **7** and **5** keys in this order. The uppermost digit of the current serial number starts blinking, indicating that the machine switches to the edit mode.
- 2) Enter the uppermost digit of the desired serial number with numerical keys. Press the **▶** key to move the cursor to the second digit. In the same way, enter the remaining 14 digits.

Entry of alphabet letters

To enter an alphabet letter, press the corresponding numerical key repeatedly until the target alphabet letter appears.

Numerical keys	Letters supported
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) Press the **SET** key to save the serial number and press the **X** key to return the machine to the initial stage of the maintenance mode.

\*3: With the purge count or flushing count displayed, press the **2**, **7**, **8** and **3** keys in this order to reset the count.

**Note:** Even if you reset the purge count, it will not become 0, since the ink in the intermediate absorber box is taken into consideration.

\*4: Resetting shown below are out of target.

Maintenance mode 01, 91

Purge count and flushing count at maintenance mode 80.

\*5: Not used.

\*6: for Regular Ink cartridge model

\*7: for Ink tank model

\*8: for Simple Ink cartridge model

\*9: See \*8 for Maintenance 77.

### 1.3.32 Equipment Error Code Indication (Maintenance mode 82)

#### < Function >

This function displays all the error codes of the machine errors that are currently occurring on the LCD.

#### < Operating Procedure >

- (1) Press the **8** and **2** keys in this order in the initial stage of the maintenance mode. The LCD shows the "MACHINE ERR XXXX."

If no error has occurred, "MACHINE ERR 0000" is displayed on the LCD.

**Tip:** If two or more errors have occurred, press the **Mono Start** key to cycle through the error codes.

- (2) Press the **X** key to stop this operation and return the machine to the initial stage of the maintenance mode.

### 1.3.33 Output of Transmission Log to the Telephone Line (Maintenance mode 87)

#### < Function >

This function outputs the transmission log to the telephone line. It allows the service personnel to receive the transmission log of the user's machine at a remote location and use it for analyzing FAX transmission problems arising in the user's machine.

#### < Operating Procedure >

- At the service site

- (1) Call the user's machine at a remote location from your machine.

- At the user site, have the user perform the following.

- (2) With the machine on standby, hold down the **Home** key to switch the LCD screen.

- (3) Press the blank frame at the bottom of the LCD.

- (4) Press the **\***, **0**, **#**, **8**, and **7** keys in this order.

The user's machine displays the "SENDING P.01" on the LCD and outputs the transmission log (error list).

- (5) Upon completion of error list transmission, the machine returns to the standby state.

- At the service site

- (6) Upon start of error list transmission, press the **Start** key. "Send or Receive?/1.Send 2.Receive" is displayed on the LCD screen.

- (7) Press the **2** key to start the receipt of the error list.

### 1.3.34 Assurance Mode Switch Setting (Maintenance mode 88)

#### < Function >

When the machine does not function normally because the usage environments or operating conditions are not usual, the assurance mode switches provide workarounds to make the machine usable by changing the machine settings to untypical ones.

The machine incorporates seven assurance mode switches (AMS01 through AMS07) that are firmware switches just as the ones described in "1.3.5 Worker Switch Setting and Printout (Maintenance modes 10 and 11)" in this chapter.

The user is allowed to access the assurance mode switches under the guidance of service personnel (e.g., by telephone).

The details about AMS01 through AMS07 are described on the [next page](#).

#### < Operating Procedure >

- (1) Press the **8** key twice in the initial stage of the maintenance mode.  
The machine displays "AMS00" on the LCD and becomes ready to accept an assurance mode switch number.
- (2) Enter the desired number from the assurance mode switch numbers (01 through 07).

The following appears on the LCD:

Selector 1	Selector 8
↓	↓
AMSXX = <u>0</u> 0 0 0 0 0 0	

- (3) Use the **◀** or **▶** key to make the selector you want to change blink.
- (4) Enter the desired number (0 or 1) using the **0** and **1** keys.
- (5) Press the **SET** key. This operation saves the newly entered selector values onto the EEPROM and readies the machine for accepting an assurance mode switch number.
- (6) Repeat steps (2) through (5) until the modification for the desired assurance mode switches is completed.
- (7) Press the **X** key to return the machine to the initial stage of the maintenance mode.

- Notes:**
- To cancel this operation and return the machine to the initial stage of the maintenance mode during the above procedure, press the **X** key.
  - If there is a pause of more than one minute after a single-digit number is entered for double-digit assurance mode switch numbers, the machine will automatically return to the initial stage of the maintenance mode.
  - Initializing the EEPROM with Maintenance mode 01 or 91 initializes the AMS switch settings.

### AMS01 (Printing assurance 1)

Selector No.	Function	Setting and Specifications
1	Prevention of stains on back side of leading edge of paper in borderless printing	0: Disable (default)      1: Enable
2	(Ink tank model / Simple Ink cartridge model only) Head scratch prevention disabled	0: Scratch prevention enabled (default) 1: Disabled
3 4	Protection of platen from no-paper printing to prevent stains (Functional restriction on the paper width sensor)	No.3 4 0 0 : Determine the sensor function depending upon the print resolution selected (default) 0 1 : Detect the leading edge plus right and left edges of paper 1 0 : Detect the leading edge of paper 1 1 : No paper detection
5	Assurance print 1 (Printing with black, cyan inks in monochrome copy)	0: Disable (default)      1: Enable
6	Assurance print 2 (Printing with black, cyan inks in monochrome FAX reception and in list output)	0: Disable (default)      1: Enable
7 8	Workaround for false jam detection (Functional restriction on the paper width sensor)	No.7 8 0 0 : Detect both the leading edge and width of paper (default) 0 1 : Detect both the leading edge and width of paper 1 0 : Detect only the leading edge of paper 1 1 : No detection

**- Selector 1: Prevention of stains on back side of leading edge of paper in borderless printing**

Setting this selector to "1" reduces the protruding amount of the leading edge of recording paper to the platen groove to minimize stains that could be caused by ink mist on the back side of the leading edge. Enabling this function reduces the throughput than disabling it.

**- Selector 2: Head scratch prevention disabled**

Disable functionality for stopping the head/carriage unit when the head comes into contact with the recording paper in order to keep the head from rubbing against the paper.

**- Selectors 3 and 4: Protection of platen from no-paper printing to prevent stains(Functional restriction on the paper width sensor)**

The setting made by these selectors applies to such printing that is assumed to be at a high resolution, that is, printing from a PC or USB flash memory, copying.

If these selectors are set to "0, 0," the machine automatically determines the functions of the paper width sensor depending upon the print resolution selected. Therefore, in low resolution printing, e.g. when the "Fast" print quality is selected, the paper width sensor is automatically disabled. On the contrary, in high resolution printing, e.g. when the "Highest" print quality is selected, the sensor is automatically enabled.

Setting these selectors to "1, 1" disables the paper width sensor to save the sensing time for higher throughput.

**- Selectors 5 and 6: Assurance print 1 and 2**

Enabling assurance print 1 or 2 causes the machine to mix black ink and a little of cyan ink to use in monochrome copy or in monochrome FAX reception and list output, respectively.

If black ink is not jetted out normally, cyan ink can be substituted for black ink in printing. This ensures that in list printing (in which data once printed will be deleted) the data will be preserved as a printout.

**- Selectors 7 and 8: Workaround for false jam detection (Functional restriction on the paper width sensor)**

The setting made by these selectors applies to the FAX, list, index printing and test printing.

When colored recording paper is used, for example, the paper width sensor might misdetect the paper present state as "no paper loaded" due to the recording paper's color. Limiting the paper width sensor functions with these selectors avoids detecting such a false paper jam.

## AMS02 (Printing assurance 2)

Selector No.	Function	Setting and Specifications
1   5	Not used.	
6	Registration time offset to slipping in plain paper feeding	0: Disable (default)    1: Enable
7	Unidirectional print for higher print quality	0: Disable (default)    1: Enable
8	Improvement of paper feeding reliability	0: Disable (default)    1: Enable

### - Selector 6: Registration time offset to slipping in plain paper feeding

Enabling the registration time offset with this selector increases the registration time (during which the paper feed roller rotates in the reverse direction), avoiding the occurrence of a paper feeding timeout error even if the paper cannot reach the registration sensor actuator within the predetermined registration time due to slipping of the paper pull-in rollers against paper in the paper tray.

Selecting the "Fast" print quality disables the registration time offset even if it is enabled with this selector.

**Note:** Selecting the "Glossy paper" automatically enables the registration time offset.

### - Selector 7: Unidirectional print for higher print quality

The machine prints bidirectionally by default. To get higher print quality, set this selector to "1" to switch to the unidirectional print mode in which printing is performed only when the head/carriage unit travels from left to right. Note that the unidirectional print mode sacrifices the print speed.

Print object	Unidirectional print
Print FAX message received	Yes
Copy	Yes
Print from PC	No
Print from USB flash memory	Yes
Print USB flash memory index	Yes
Print a list	Yes
Print a test pattern	No

### - Selector 8: Improvement of paper feeding reliability

Setting this selector to "1" improves the paper feeding reliability, sacrificing the print speed.

### AMS03 (Printing assurance 3)

Selector No.	Function	Setting and Specifications
1   4	Not used.	
5 6	Measure for black streaks at trailing edge of recording paper	No. 5 6 0 0 : Machine correction value (default) 0 1 : 1/2 of machine correction value 0 0 : 2/3 of machine correction value 1 0 : No correction
7 8	Not used.	

#### - Selectors 5 and 6: Measure for black streaks at trailing edge of recording paper

When the trailing edge of the recording paper goes through the paper feed roller, black streaks may appear on the printed paper in the case of high-density printing, because the paper is stretched around the paper ejection roller.

While the feed amount is corrected based on printing density, the level of stretch differs by material of the recording paper. Therefore, black streaks at the trailing edge of the paper should be improved by switching the feed correction value for the paper.

### AMS04 (Maintenance assurance 1)

Selector No.	Function	Setting and Specifications
1	(Simple Ink cartridge model only) Disabling inter-machine variation calibration for paper remaining sensor	0: Calibration ON (default) 1: Calibration OFF
2	LED display setting in Sleep Mode	0: Blinking (default)      1: OFF
3	Not used.	
4	Automatic purging for color ink	0: Enable (default)1: Disable
5	Not used.	
6	Periodic purge	0: Enable (default)1: Disable
7	Not used.	
8	Automatic purging for black ink	0: Enable (default)1: Disable

#### - Selector 1: Disabling inter-machine variation calibration for paper remaining sensor

This selector disables inter-machine variation calibration control of the paper remaining sensors for all trays. When calibration is turned OFF, Middle to Near sensor calibration is disabled. Consequently, when the paper amount is Near, the sensor value is immediately reflected. (operation is equivalent to that of Regular Ink cartridge model equipped with ink remaining sensor.)

**- Selector 2: LED display setting in Sleep Mode**

You can select either OFF or blinking as the state of the power LED in the Sleep Mode.

**- Selectors 4 and 8: Automatic purging for color ink and for black ink**

The machine performs an automatic purge when it loses the clock or periodically. You can disable the automatic purge.

Setting selector 4 or 8 to "1" disables the setting made by selectors 6.

**- Selector 6: Periodic purge**

The machine periodically performs a purge by default. The periodic purge, however, wastes ink when no printing has occurred. To avoid it, disable the periodic purge with this selector. In the first printing after a long no-print period, disabling it may lower the print quality.

**AMS05 (Printing assurance 4)**

Selector No.	Function	Setting and Specifications
1	Uneven printing correction for upper and lower ends of the nozzle	0: ON (default) 1: OFF
2   5	Not used.	
6   8	Adjustment of print head drive voltage rank	No. 6 7 8 0 0 0: +0 1 0 0: -0 0 0 1: +1 0 1 0: +2 0 1 1: +3 1 0 1: -1 1 1 0: -2 1 1 1: -3

**- Selector 1: Uneven printing correction for upper and lower ends of the nozzle**

If performing the correction lowers the print quality due to wrong nozzle property data, set this selector to "1" to disable the correction function.

**- Selectors 6 through 8: Adjustment of print head drive voltage rank**

This selector regulates the print head drive voltage rank for adjusting the ink drop amount.

If the black section printed on glossy paper is greenish or the printed ink does not dry quickly, increase the print head drive voltage rank to decrease the ink drop amount; if it is reddish, decrease the rank to increase the ink drop amount.

### AMS06 (Printing assurance 5)

Selector No.	Function	Setting and Specifications
1 2	Improvement of white and black horizontal streaks on bottom edge of the paper during normal and high-speed printing on plain paper	No. 1 2 0 0 : Disable (default) 0 1 : Improve black horizontal streaks 1 0 : Improve white horizontal streaks 1 1 : Further improve black horizontal streaks
3 4	Improvement of white and black horizontal streaks from leading edge to center of paper during high-speed and normal print on plain paper	No. 3 4 0 0 : Disable (default) 0 1 : Improve black horizontal streaks 1 0 : Improve white horizontal streaks 1 1 : Further improve black horizontal streaks
5 6	Improvement of white and black horizontal streaks during print on glossy paper	No. 5 6 0 0 : Disable (default) 0 1 : Improve black horizontal streaks 1 0 : Improve white horizontal streaks 1 1 : Further improve black horizontal streaks
7	Extension of the lower range of printable temperatures	0: Disable (default) 1: Enable
8	Not used.	

**- Selectors 1 and 2: Improvement of white and black horizontal streaks on bottom edge of the paper during normal and high-speed printing on plain paper**

Setting these selectors enables improvement of the white and black horizontal streaks on the bottom edge of paper during normal and high-speed printing on plain paper.

**- Selectors 3 and 4: Improvement of white and black horizontal streaks from leading edge to center of paper during high-speed and normal print on plain paper**

Setting these selectors enables improvement of the white and black horizontal streaks from the leading edge to the center of paper during normal and high-speed printing on plain paper.

**- Selectors 5 and 6: Improvement of white and black horizontal streaks during print on glossy paper**

Setting these selectors enables improvement of the white and black horizontal streaks during printing on glossy paper.

**- Selector 7: Extension of the lower range of printable temperatures**

Change the lowest printable temperature from 5 to 0 degree-C.

While switching from "Enable" to "Disable" takes effect without powering OFF and ON the machine, switching from "Disable" to "Enable" requires powering OFF and ON to take effect.

## AMS07 (Printing assurance 6)

**Note:** Before the setting change of Selector 1-3, update the firmware to the latest version.

Selector No.	Function	Setting and Specifications
1	(Ink tank model only) Paper width sensor recording paper drift detection stop function enabled/disabled	[India]      0: Enable stop function (default) 1: Disable stop function
		[Except for India]      0: Disable stop function (default) 1: Enable stop function
2 3	(Ink tank model only) Head carriage unit low-speed detection threshold adjustment	No.2 3 threshold 0 0 : speed1 (default) 0 1 : speed3 1 0 : speed2 1 1 : speed3
4	Disable T3 detection sensor	0: Function OFF 1: Function ON
5	Disable paper remaining sensor	0: Function OFF 1: Function ON
6	Disable T2 detection sensor	0: Function OFF 1: Function ON
7	Disable display of MP tray setting request screen	0: Disable (default) 1: Enable
8	Disable display of wrong setting screen before printing	0: Disable (default) 1: Enable

### - Selector 1: Paper width sensor recording paper drift detection stop function enabled/disabled

To prevent scratch to the head due to recording paper drift, the machine has a function to detect recording paper drift with the paper width sensor and stop the head carriage unit. Changing this selector enables or disables this function.

### - Selectors 2 and 3: Head carriage unit low-speed detection threshold adjustment

To prevent scratch to the head with recording paper, the machine has a function to detect head carriage unit low-speed, and when the threshold is exceeded, stop the head carriage unit. Changing these two selectors enables to adjust the threshold among three speeds.

speed1: Detected with a slight speed reduction

speed2: Intermediate between speed1 and speed3

speed3: Detected with a large speed reduction

### - Selector 4: Disable T3 detection sensor

In a machine with paper tray #3, "Paper tray #3 not detected" is displayed on the LCD when the paper tray #3 is not set. Setting this selector to "1" enables to use the machine without the caution message displayed, even if paper tray #3 is not set.

- **Selector 5: Disable paper remaining sensor**

When the paper remaining sensor had failure in the state of “no recording paper”, the print operation becomes unavailable. To avoid the stop of the print operation, if “1: Function ON” is selected, the state of all the paper trays is fixed to “Recording paper loaded”, and the print operation can be started.

- **Selector 6: Disable T2 detection sensor**

In a machine with paper tray #2, "Paper tray #2 not detected" is displayed on the LCD when the paper tray #2 is not set.

Setting this selector to "1" enables to use the machine without the caution message displayed, even if paper tray #2 is not set.

- **Selector 7: Disable display of MP tray setting request screen**

Setting this selector to “1” disables display of the setting request screen when the recording paper is loaded into the MP tray.

- **Selector 8: Disable display of wrong setting screen before printing**

Setting this selector to “1” disables display of the wrong setting screen before printing.

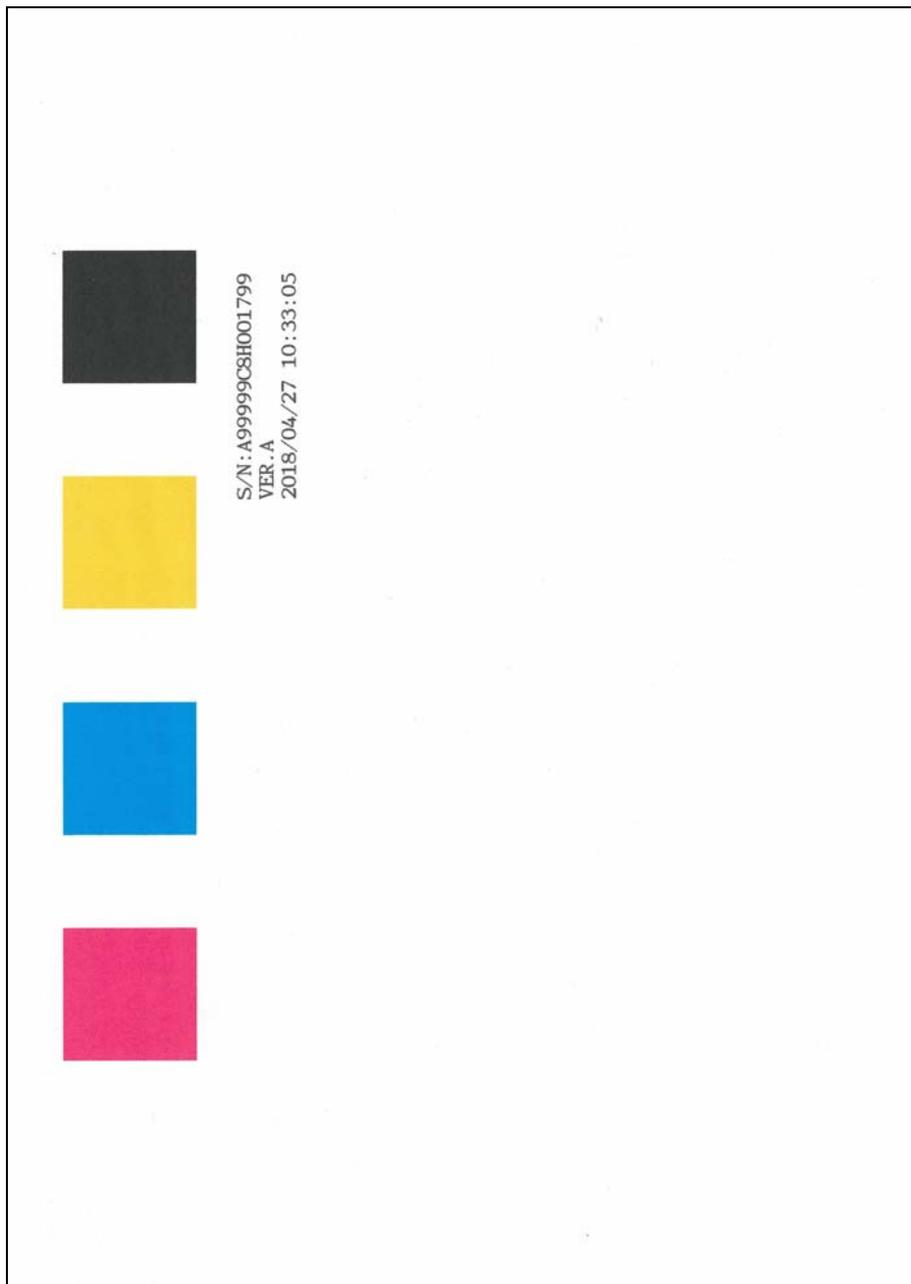
### 1.3.35 Printout of Block Pattern (Ink tank model / Simple Ink cartridge model only) (Maintenance mode 89)

#### < Function >

This function is used to print out a block pattern for each color.

#### < Operating Procedure >

- (1) Press the **8** and **9** keys in this order in the initial stage of the maintenance mode.
- (2) Press the **1** key.
- (3) The machine prints out a block pattern.



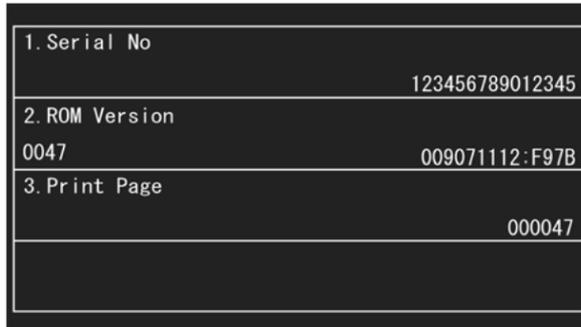
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## 2 OTHER SERVICE FUNCTIONS

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### 2.1 Displaying the Firmware Version

- (1) When the machine is on standby, hold down the **Home** key for approx. 5 seconds to display the following screen on the LCD.



The screenshot shows a black LCD screen with white text. It is divided into three horizontal sections by thin white lines. The first section is labeled '1. Serial No' and shows the number '123456789012345'. The second section is labeled '2. ROM Version' and shows '0047' on the left and '009071112:F97B' on the right. The third section is labeled '3. Print Page' and shows the number '000047' on the right. There is a blank space at the bottom of the screen.

1. Serial No	123456789012345
2. ROM Version	0047 009071112:F97B
3. Print Page	000047

The firmware version displays in the "2. ROM Version" area

### 2.2 Moving the Head/Carriage Unit

- (1) Holding down the **X** key with the document scanner unit opened for more than five seconds moves the head/carriage unit to the center of its travel.

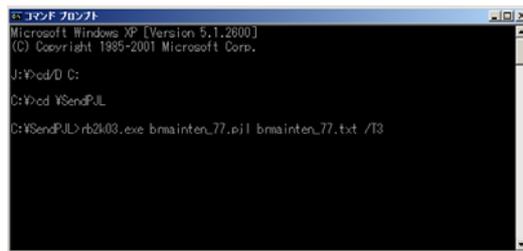
## 2.3 Retrieving the Equipment Log Information

### < Function >

This procedure retrieves the log information from the machine to the connected PC as electronic data.

### < Operating Procedure >

- (1) Switch your PC ON.
- (2) Create an arbitrary folder in the C: directory and save the readback tool (rb2k03.exe) and PJL command file (brmainten\_77.pjl) in that folder.  
**Note:** The rb2k03.exe is available only in Windows XP.
- (3) Switch the machine to the maintenance mode.  
(Refer to “1.1 Entry to the Maintenance Mode” in this chapter.)
- (4) Connect the machine to the PC using a USB cable.
- (5) On the PC, start Command Prompt and change to the directory where the readback tool is located.  
(In the example below, a "SendPjL" folder is created in the C: directory and the readback tool is saved in that folder.)



```
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1995-2001 Microsoft Corp.

C:\>cd C:
C:\>cd \SendPjL
C:\SendPjL>rb2k03.exe brmainten_77.pjl brmainten_77.txt /T3
```

- (6) In Command Prompt, type `rb2k03.exe brmainten_77.pjl brmainten_77.txt /T3` and press the **Enter** key.  
**Note:** Be sure to enter a space to the points marked with an asterisk (\*) shown below.  
`rb2k03.exe*brmainten_77.pjl*brmainten_77.txt*/T3`  
Otherwise, an error occurs.  
`brmainten_77.txt` is created in the arbitrary folder.
- (7) In Excel, open the created text and delete the header/footer added by the PjL stipulation.

## 2.4 Special Purge (SPP) < Ink tank model only >

### < Function >

This purge function restores operation from a nondischarge state caused by a large amount of air in the ink line. It can be initiated by the user by following instructions from service personnel, for example as received over the phone.

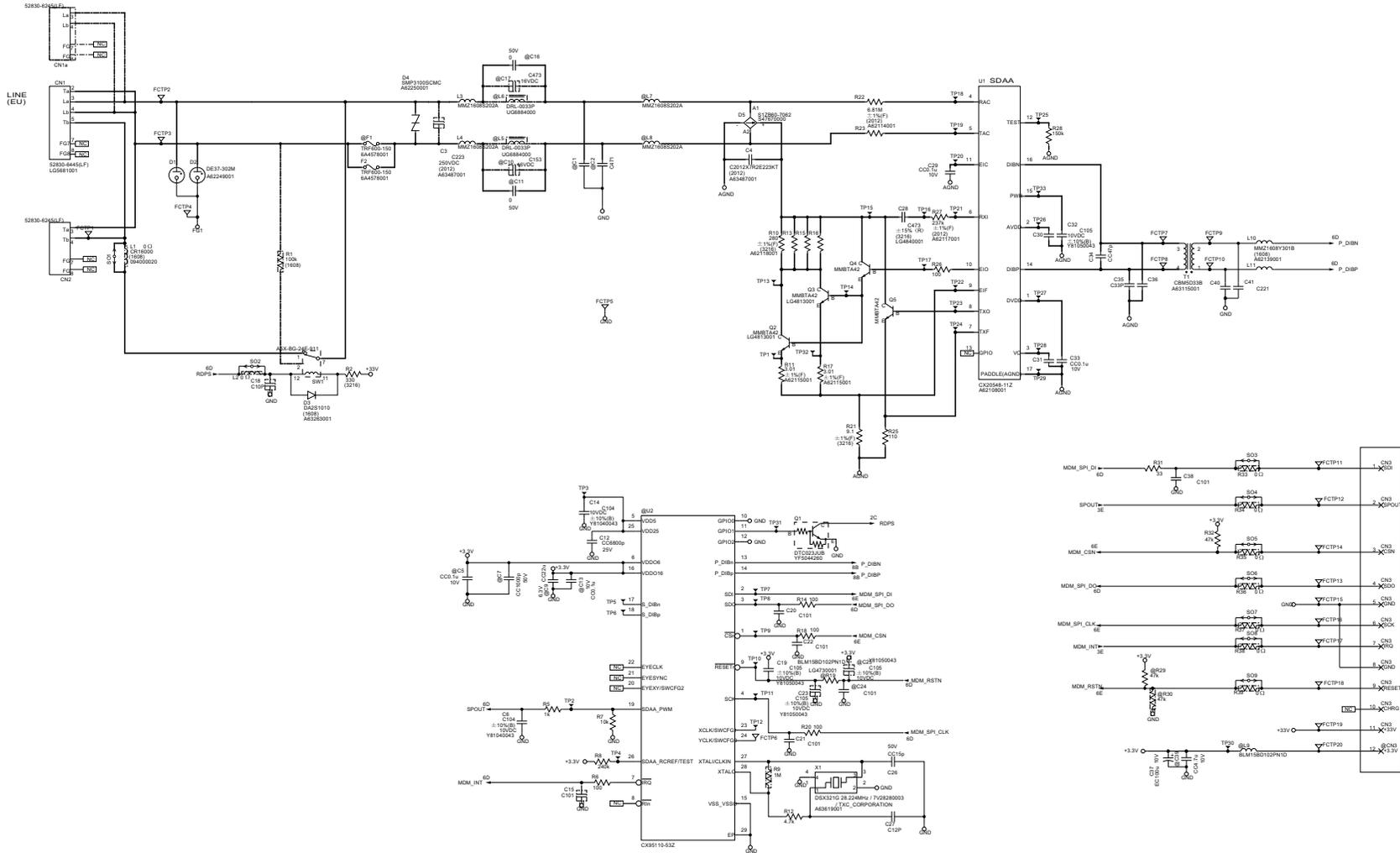
### < Operating Procedure >

- (1) Press the **Ink** key while the printer is in the standby state.
- (2) Choose **Print Head Cleaning**. The **Black only/Color only/All** selection screen will be displayed.
- (3) Hold down the **X** key for approx. 5 seconds. The SPP will be performed.

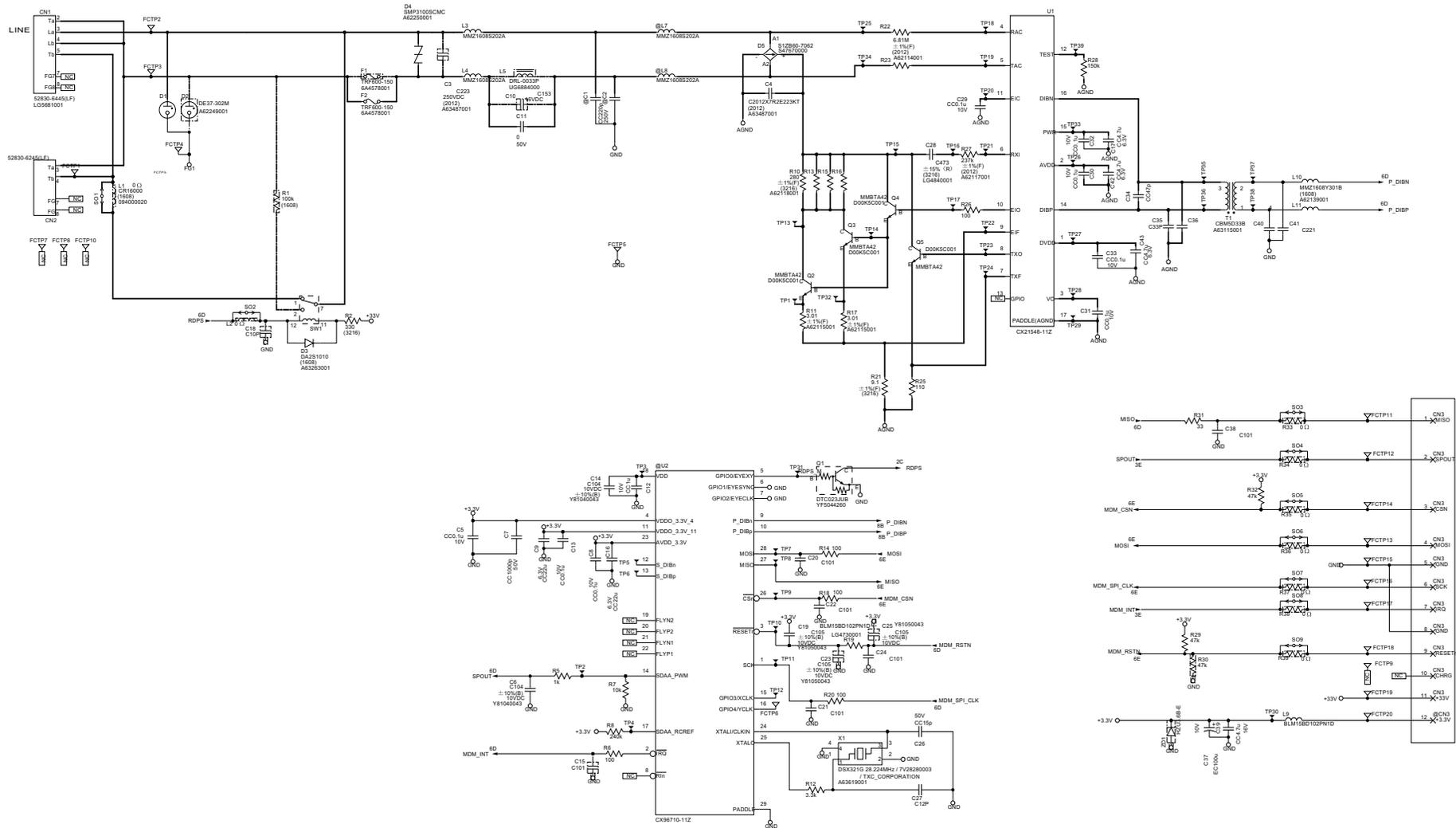
# CHAPTER 6 CIRCUIT DIAGRAMS AND WIRING DIAGRAMS

## ■ Modem PCB

< Made-in-China machine >

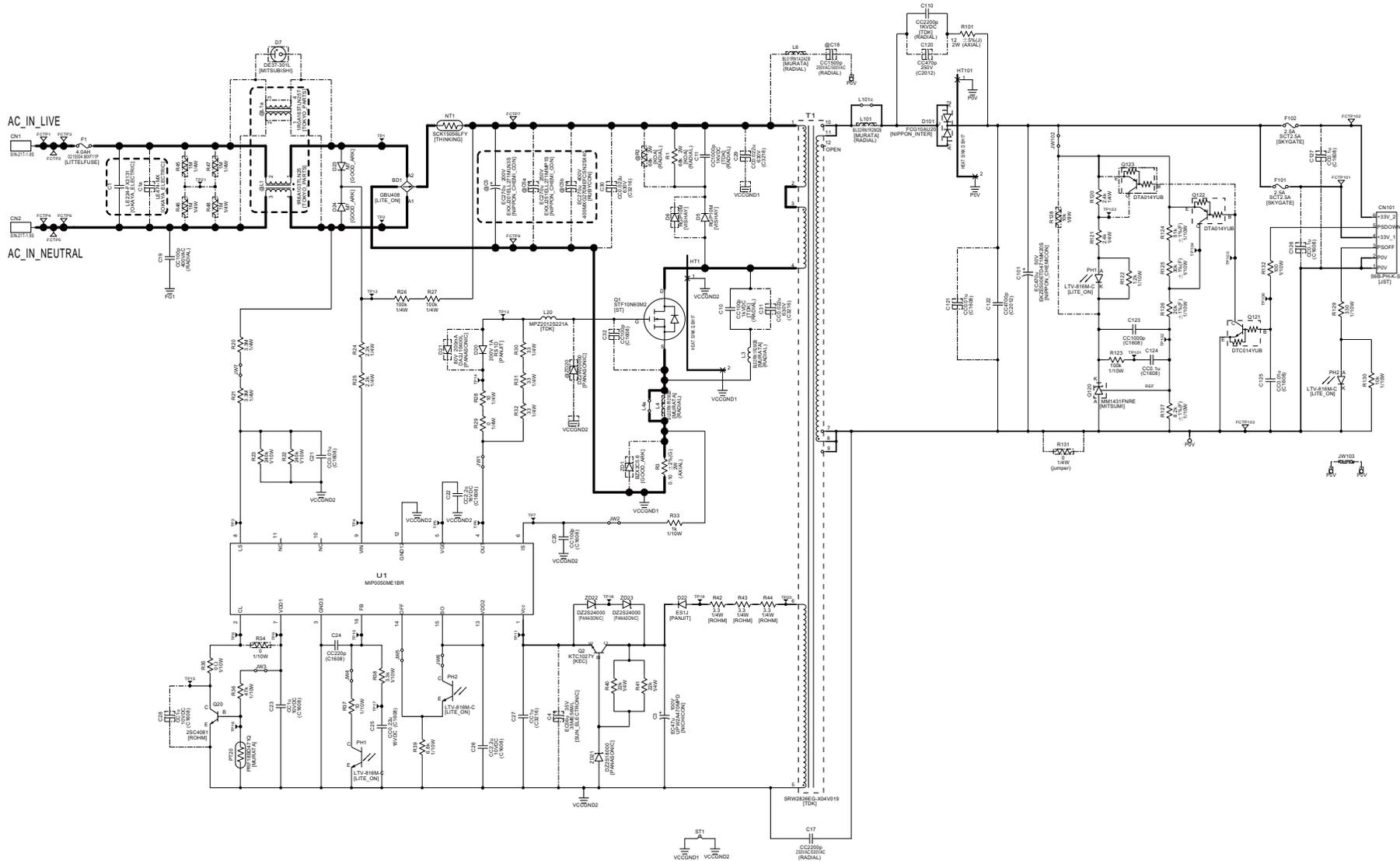


< Made-in-Philippines machine >

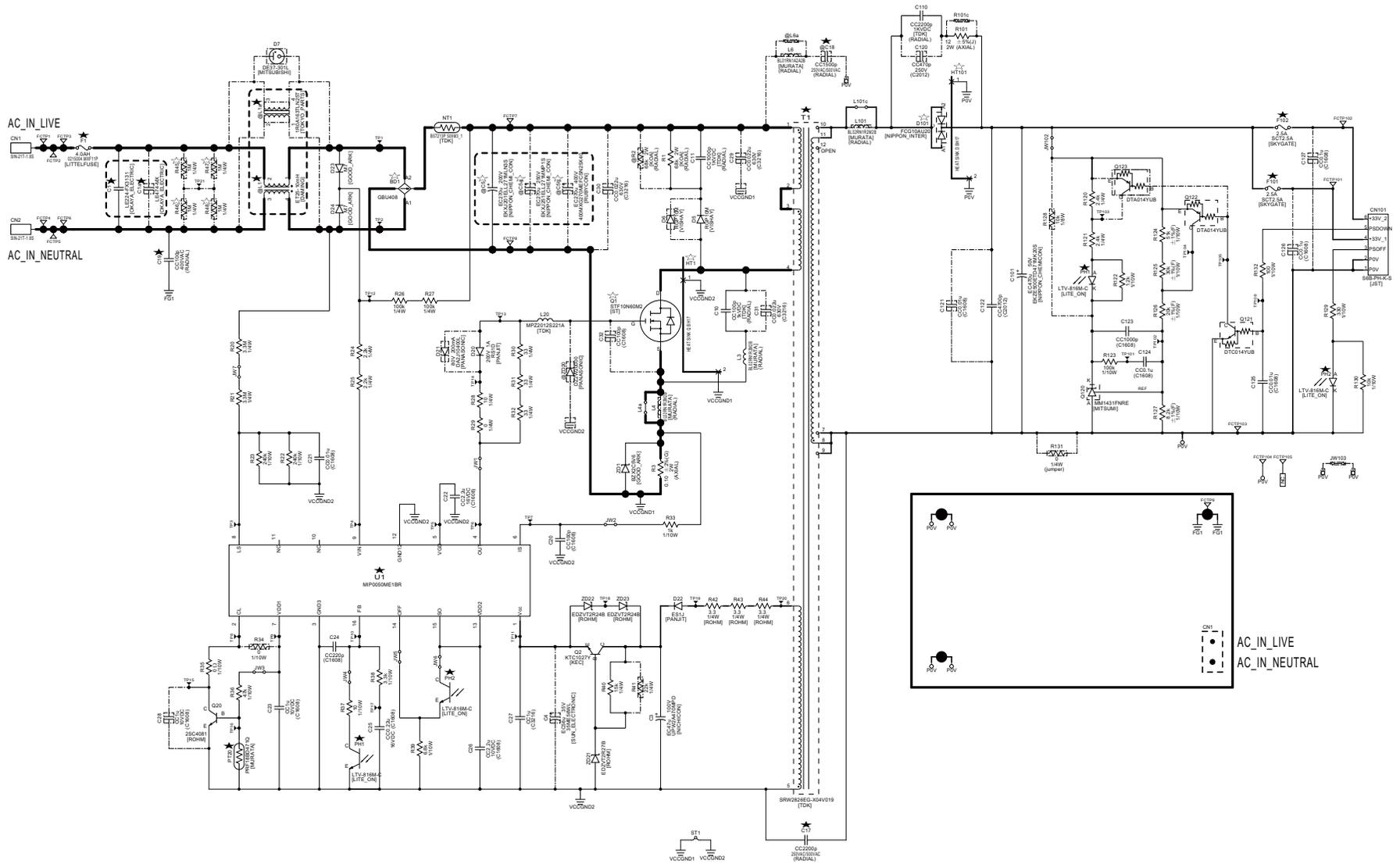


■ Power supply PCB, 100 V series

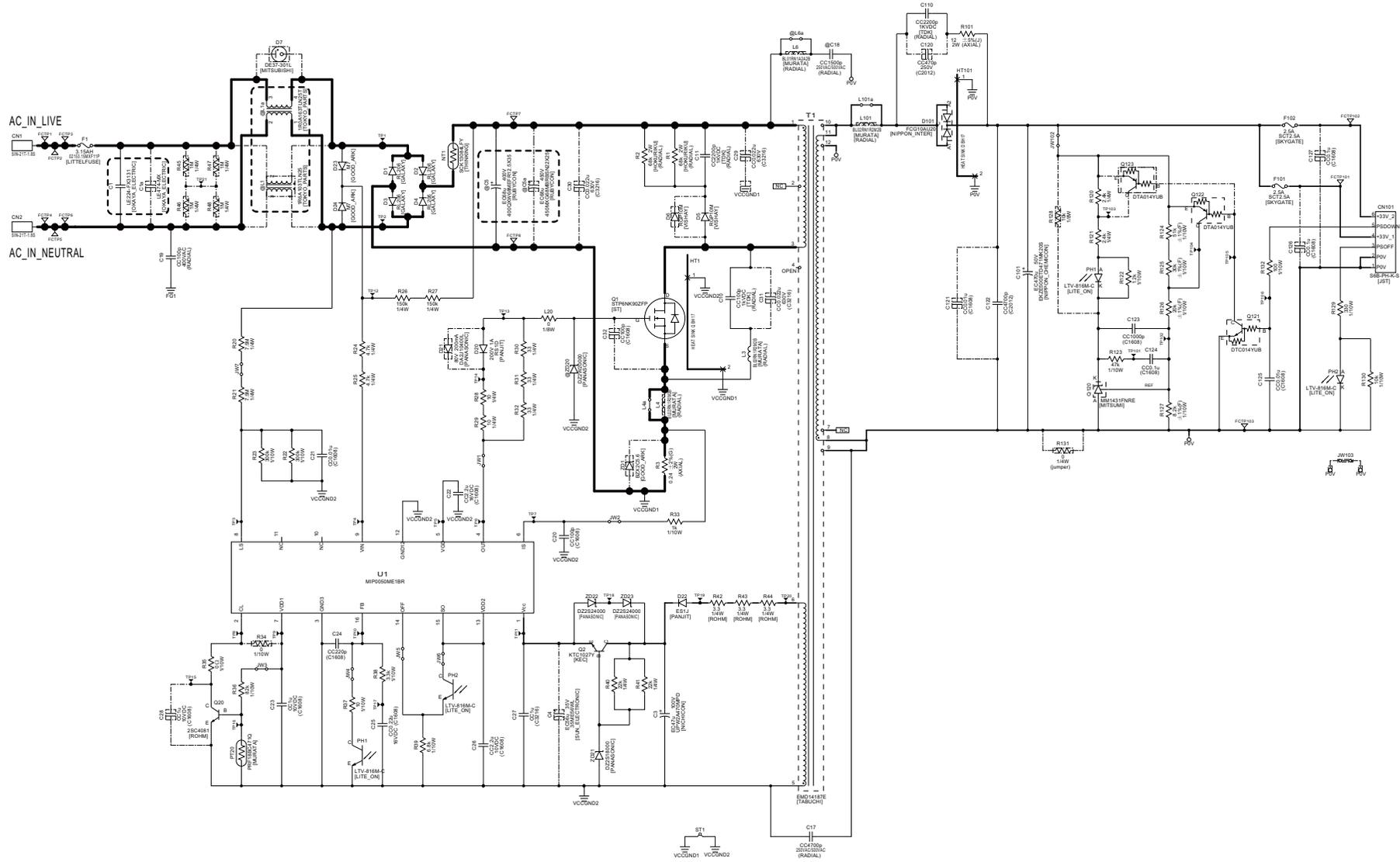
< Made-in-China machine >



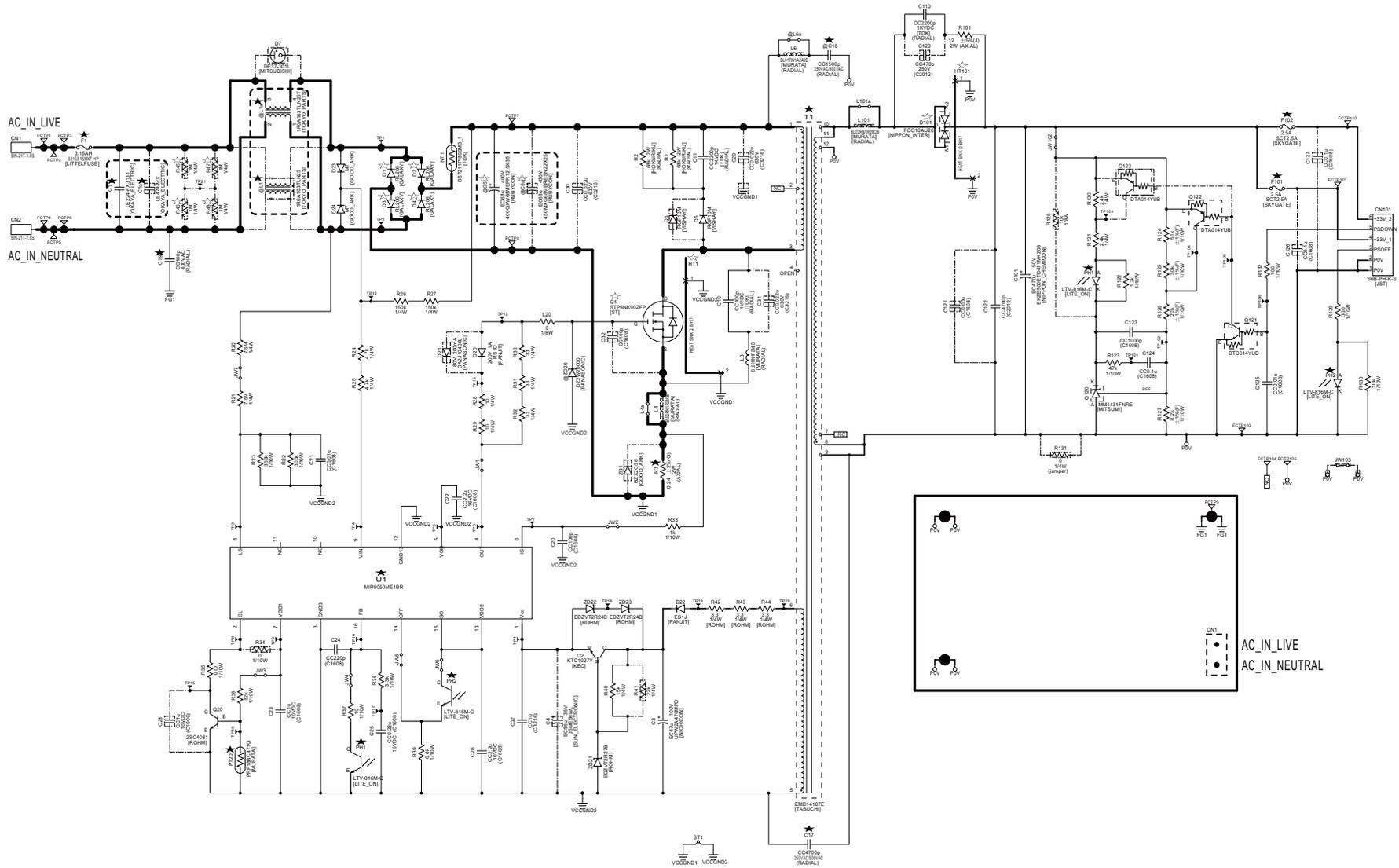
< Made-in-Philippines machine >



■ Power supply PCB, 200 V series  
 < Made-in-China machine >



< Made-in-Philippines machine >





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## **CHAPTER 7 PERIODICAL MAINTENANCE**

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### **1 PERIODICAL REPLACEMENT PARTS**

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There are no parts to be replaced periodically.

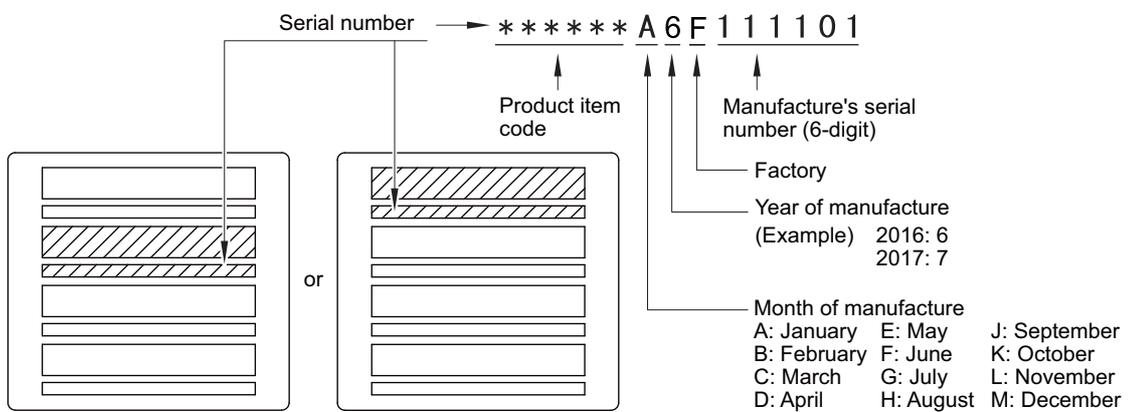
# APPENDIX 1. SERIAL NUMBERING SYSTEM

This appendix shows the location of labels put on specific parts and describes the coding information for serial number and head property information.

## < Reading Labels >

An individual machine has a "serial number label" for the machine itself and "head property label" for the head/carriage unit. This section lists the coding information for those serial number and head property information.

### (1) Serial number label for the machine itself



### Location

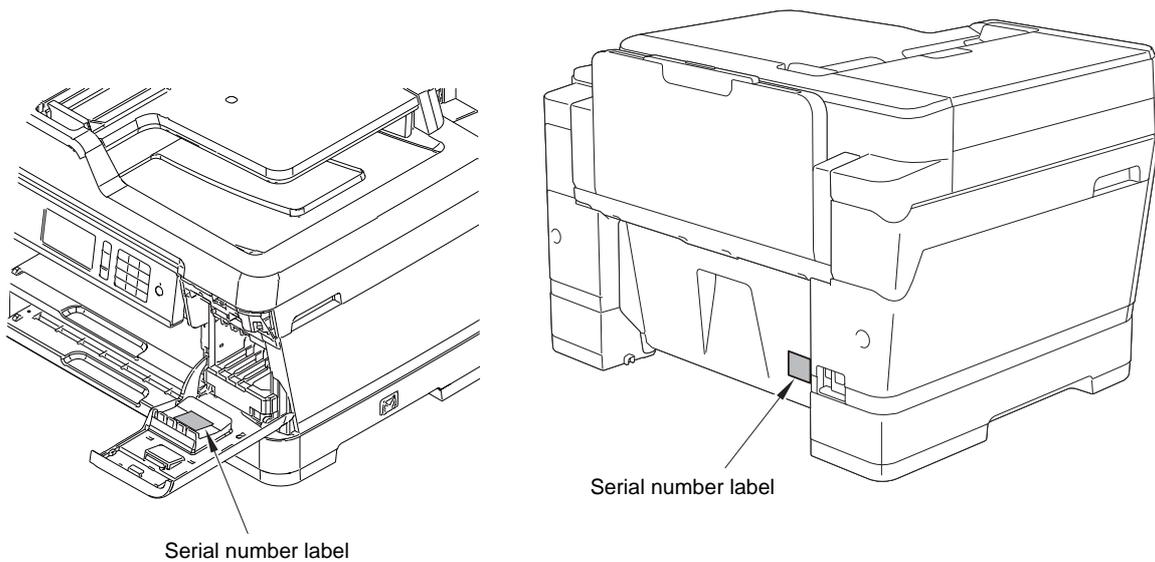


Fig. App 1-1

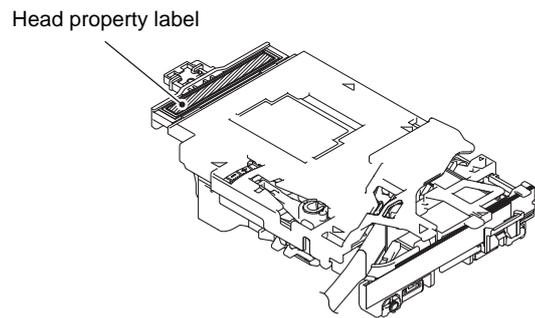
## (2) Head property label

The property information of the head/carriage unit is printed on the head property label attached to the head/carriage unit.

### ■ Head property label on the head/carriage unit



### Location



**Fig. App 1-2**

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## APPENDIX 2. DELETION OF USER SETTING INFORMATION

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The following user setting information in the machine is recorded in the EEPROM on the main PCB. It can be deleted with the operation below.

- User's name and telephone number
- Speed dialing
- Group dialing
- Dial record (stored for redialing)
- Receiver info for fax transfer (The transfer setting will also be canceled.)
- Data stored in the memory (Received data and voice messages will also be deleted.)
- Fax preview
- Fax data not yet transferred in PC-Fax receiving (Fax data already transferred to the PC will not be deleted.)
- Fax data waiting to be sent in polling
- Receiver info for timer faxing
- Receiver info for broadcasting or batch transmission
- Caller ID history
- Activity report
- Favorite copy settings
- Network settings (e-mail addresses, server settings, account settings, etc)

### ■ Operating Procedure

- (1) Press  .
- (2) Press **All Settings | Initial Setup | Reset | All Settings**.
- (3) Press **OK** for 2 seconds or more.

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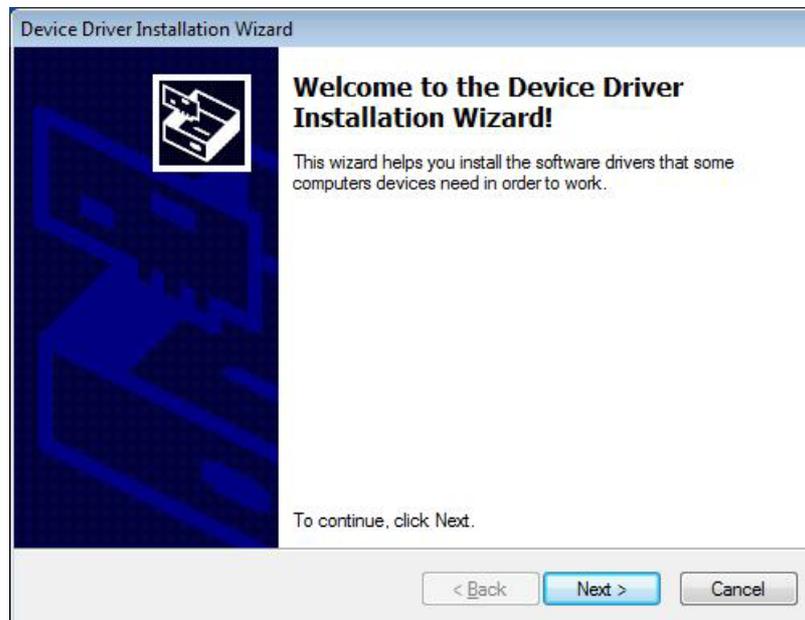
## APPENDIX 3. INSTALLING THE MAINTENANCE PRINTER DRIVER

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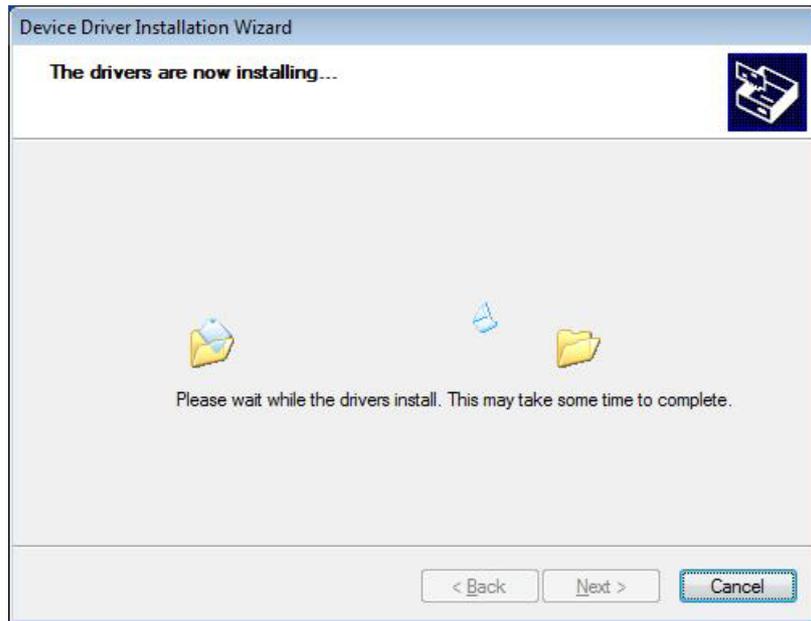
To identify machines connected via USB direct interface, the PC requires the corresponding driver for the virtual USB device. If you connect any number of machines to your PC, the same number of virtual USB devices will be automatically configured on your PC. To prevent many virtual USB devices from being configured, use the unique driver installation procedure described below that enables your PC to identify terminals via one single virtual USB device.

**Notes:**

- Once this installation procedure is carried out for a PC, no more driver/software installation will be required for that PC to identify machines. If the Brother Maintenance USB Printer driver has been already installed to your PC according to this procedure, skip this section.
  - Before starting the following procedure, confirm that the Brother Maintenance USB Printer driver has been copied to a folder in your PC.
- (1) Check that the power switch of the machine is turned off. Disconnect the USB cable that connects the machine with your PC.
  - (2) Turn on your PC.
  - (3) Double-click the Setup.exe in the Brother Maintenance USB Printer held in an arbitrary folder. Wait for the following screen to appear and click **Next**.



The following screen is displayed during installation.



(4) Wait for the following screen to appear and click **Finish**.



(5) Plug the power cord of the machine into an electrical outlet.

(6) Switch the machine to the maintenance mode. (Refer to [Chapter 5](#).)

(7) Connect the machine to your PC using a USB cable to start automatic installation.